

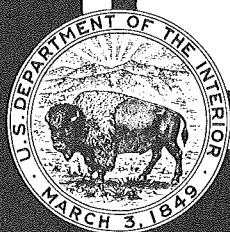
Joe N. Robblee
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1968

Water Resources Data for California

Part 1. Surface Water Records

Volume 2: Northern Great Basin and Central Valley



**UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY**

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

UNITED STATES
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GEOLOGICAL SURVEY
Water Resources Division

WATER RESOURCES DATA
FOR
CALIFORNIA
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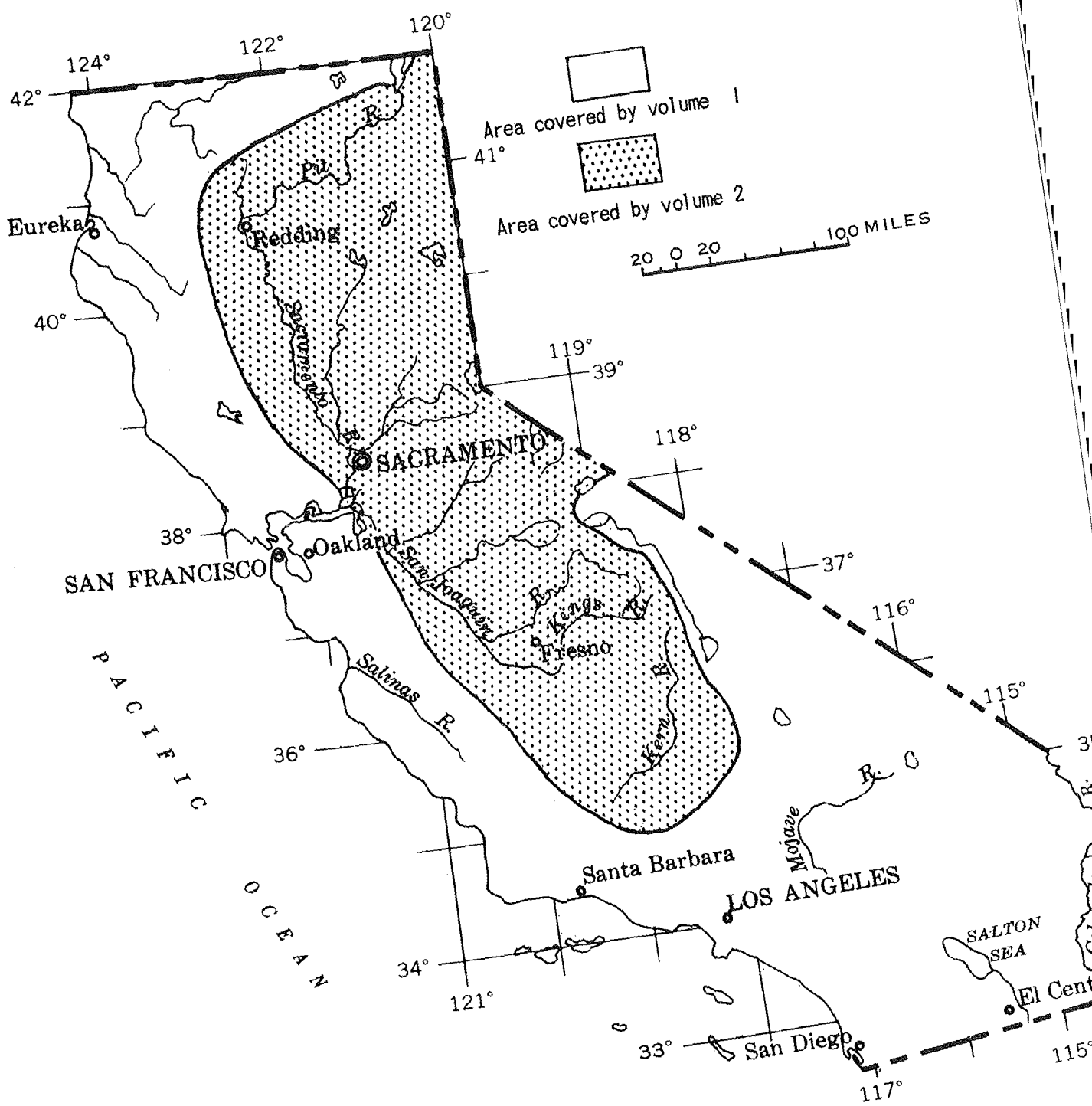
Water-resources records, 1968, for California are in the following reports of the U.S. Geological Survey:

1. Water Resources Data for California
Part 1: Surface Water Records
Volume 1: Colorado River Basin, Southern Great Basin, and Pacific Slope Basins excluding Central Valley
2. Water Resources Data for California
Part 1: Surface Water Records
Volume 2: Northern Great Basin and Central Valley
3. Water Resources Data for California
Part 2: Water Quality Records

Copies of these reports may be obtained from
District Chief, Water Resources Division
U.S. Geological Survey
855 Oak Grove Avenue
Menlo Park, California 94025

Prepared in cooperation with

California Department of Water Resources
Alameda County Flood Control and Water Conservation
District
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Bollinas Harbor District
Calaveras County Water District
Coachella Valley County Water District
Contra Costa County Flood Control and Water Conservation
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Soil Conservation Service, U.S. Department of Agriculture



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WATER RESOURCES DATA FOR CALIFORNIA, 1968

Part 1. SURFACE WATER RECORDS

INTRODUCTION

The surface-water records for the 1968 water year for gaging stations, partial-record stations, and miscellaneous sites within California are given in this report. For convenience, also included are records for a few pertinent gaging stations in bordering States. The records were collected and computed by the Water Resources Division of the U.S. Geological Survey, under the direction of R. Stanley Lord, district chief, Menlo Park, Calif.

Through September 30, 1960, the records of discharge and stage of streams and contents and stage of lakes or reservoirs were published in an annual series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Since 1951 there have been 20 volumes in the series; each volume covered an area whose boundaries coincided with those of certain natural drainage areas. The records in California were contained in Parts 9, 10, and 11 of that series.

Beginning with the 1961 water year, streamflow records and related data are being released by the Geological Survey in annual reports on a State-boundary basis. Distribution of these basic-data reports is limited and is made primarily for local needs. The records later will be published in Geological Survey water-supply papers at 5-year intervals. These water-supply papers will show daily discharge and will be compiled for the same geographical areas used for the annual series.

COOPERATION

In California the work was done under cooperative agreements with:

- California Department of Water Resources, William R. Gianelli, director.
- Alameda County Flood Control and Water Conservation District, Paul E. Lanferman, engineer-manager.
- Alameda County Water District, M. P. Whitfield, general manager.
- Bolinas Harbor District, Gene McDaniel, president.
- Calaveras County Water District, T. Stanley Edwards, secretary-manager.
- Coachella Valley County Water District, Lowell O. Weeks, general manager-chief engineer.
- Contra Costa County Flood Control and Water Conservation District, C. C. Rich, deputy chief engineer.
- Lake County Flood Control and Water Conservation District, Williard D. Hansen, manager.
- Montecito County Water District, Delbert D. Smith, general manager.
- Monterey County Flood Control and Water Conservation District, Loran Bunte, Jr., district engineer.
- Santa Clara County Flood Control and Water District, Donald K. Currlin, manager-counsel.
- Orange County Flood Control District, H. G. Osborne, chief engineer.
- Riverside County Flood Control and Water Conservation District, John W. Bryant, chief engineer.
- San Benito County Water Conservation and Flood Control District, Ernest E. Ricotti, manager.
- San Luis Obispo County Flood Control and Water Conservation District, Robert H. Born, county hydraulic engineer.
- Santa Barbara County Water Agency, Curtis Tunnell, chairman; succeeded by Francis H. Beattie.
- Santa Cruz County Flood Control and Water Conservation District, Warren M. Harrison, director of public works.
- San Mateo County, Don S. Wilson, County Engineer and Road Commissioner.
- San Diego (city), R. E. Graham, director of utilities.
- Santa Barbara City Water Department, Neil Mendenall, superintendent.
- Antelope Valley-East Kern Water Agency, W. G. Spinarski, manager.
- East Bay Municipal Utility District, J. S. Harnett, chief engineer and assistant general manager.
- Georgetown Divide Public Utility District, J. E. Christensen, manager.

Imperial Irrigation District, R. F. Carter, general manager.
San Bernardino Valley Water Conservation District, E. F. Dibble, engineer and secretary.
Santa Maria Valley Water Conservation District, L. H. Adam, president.
Ventura River Municipal Water District, Robert McKinney, general manager and chief engineer.
University of California (Berkeley), A. Starker Leopold, professor of zoology.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army; U.S. Navy; Bureau of Reclamation and National Park Service, U.S. Department of the Interior; Forest Service, and Soil Conservation Service, U.S. Department of Agriculture; and the city and county of San Francisco.

The following organizations and individuals aided in collecting records: Pacific Power and Light Co., Bear Valley Mutual Water Co., California American Water Co., Metropolitan Water District of California, Fontana Union Water Co., Irvine Ranch, Kings River Water Association, Los Angeles City Department of Water and Power, Los Angeles County Flood Control District, Rancho California, Pacific Gas and Electric Co., Placer County Water Agency, Sacramento Municipal Utility District, Southern California Edison Co., Kern County Land and Water Co., United Water Conservation District, Ventura County Flood Control District, Helix, Madera, Merced, Modesto, Nevada, Serrano and Carpenter, Turlock, Oroville-Wyandotte, Oakdale-South San Joaquin, Vista, and Woodbridge Irrigation Districts, and Yuba County Water Agency.

DEFINITION OF TERMS AND ABBREVIATIONS

The terms of streamflow and other hydrologic data, as used in this report, are defined as follows:

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is obtained.

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

Cubic foot per second (cfs) is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

Cubic feet per second per square mile (cfs/m) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

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

Acre-foot (ac-ft) is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet.

Cfs-day 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, 1.983471 acre-feet, or 646,317 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

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

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, a long reach of the channel, or an artificial structure.

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.

The drainage area of a stream at a specified location is that area, measured in a horizontal plane, which is so enclosed by a topographic divide that direct surface runoff

from precipitation normally would drain by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or non-contributing areas, within the area unless otherwise noted.

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

DOWNSTREAM ORDER AND STATION NUMBERS

Stations are listed in the same downstream order used in the water-supply papers. Records are listed in a downstream direction along the main stem with all stations on a tributary entering above a main-stem station listed before the station. If a tributary enters between two main-stem stations, it is listed between them. A similar order is followed listing stations on first rank, second rank, and other ranks of tributaries. To indicate the rank of any tributary on which a gaging station is situated and the stream to which it is immediately tributary, each indentation in the listing of gaging stations in the table of contents of this report represents one rank. This downstream order and system of indentation shows which gaging stations are on tributaries between any two stations on a main stem and the rank of the tributary on which each gaging station is situated.

As an added means of identification, each gaging station and partial-record station has been assigned a station number. The numbers have been assigned in the same downstream order used in the annual series of water-supply papers. In assigning station numbers, no distinction is made between partial-record and continuous-record gaging stations, so that the 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 numbers to allow for new stations that may be established; hence, the numbers are not consecutive.

The complete 8-digit number for each station, such as 11-1208.00 includes the part number "11" plus a 6-digit number. In this report, the nonessential zeros are not shown. For example, the complete number 11-1208.00 would

appear as 11-1208., just to the left of the station name. In this report, the records are listed in downstream order by parts. All records for a drainage basin encompassing more than one State could be arranged in downstream order by assembling pages from the various State reports by station number.

EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data in determining the daily flow. Records of stage are obtained from a graphic water-stage recorder that gives a continuous chart of the fluctuations from a digital recorder that produces a tape punched at 15-minute intervals or from direct readings on a nonrecording gage. Measurements of discharge are made with a current meter by the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge.

Rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, or computation of flow over dams or weirs), velocity-area studies, and logarithmic plotting. The application of the daily mean gage height to those rating tables gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. 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 shifting-control method, in which correction factors, based on individual discharge measurements and notes by engineers and observers, are used in applying the gage heights to the rating tables.

At some 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 determining discharge. Information required for determining 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. For such stations, the rate of change in stage is used as a factor in determining discharge.

At some gaging stations the stage-discharge relation is affected by ice during the winter, and computing the discharge in the usual manner is impossible. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and engineers, and comparable records of discharge for other stations in the same or nearby basins.

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 the daily discharge. This can happen when the recorder stops or otherwise fails to operate properly, when intakes are plugged, or when the float is held by ice. For such periods the daily discharges are estimated on the basis of recorded range in stage, adjacent good record, discharge measurements, weather records, and comparison with station records from the same or nearby basins.

The data in this report generally comprise a description of the station and a table showing the daily discharge and monthly and yearly discharge of the stream. Records are published for the water year which begins October 1 and ends September 30.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, and general remarks. The location of the gaging station and the drainage area are obtained from the most accurate maps available. Under "Records available" are given the periods for which there are published records for the present station or for generally equivalent stations. Under "Gage" are given the type of gage currently in use and the datum of the gage above mean sea level and a condensed history of the types, locations, and datums of previous gages used

during the period of records available. The references to "datum of 1929" and adjustments of other years are to the datum and adjustments of the U.S. Coast and Geodetic Survey. Under "Average discharge" is given the average discharge for the number of years indicated. It is not given for stations having fewer than 5 complete years of record or for stations where changes in water development cause the figure to have little significance. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height if it is significant. In the first paragraph, the data given are for the complete current water year unless otherwise specified. In the second paragraph, the data given are for the periods of record within the calendar year dates in the heading (not necessarily those for the complete years indicated by the heading dates). Reliable information concerning major floods that have occurred outside the period of record are given in the third or last paragraph under "Extremes." Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder, a crest-stage indicator, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge, it is given separately. Information pertaining to the accuracy of the records and to conditions which affect the natural flow at the gaging station is given under "Remarks."

The daily table gives the discharge corresponding to the daily mean gage height, unless the discharge changes greatly during a day. For days having large or rapid changes, the discharge is computed by averaging the mean discharges for several parts of the day. For digital recorders, the daily mean discharge is the average of the discharges at each punched reading. For stations equipped with nonrecording gages, the daily discharge corresponds to once-daily readings of the gage or to the mean of twice-daily readings; but for periods of rapidly changing stage the discharge is determined from a gage-height graph based on gage readings.

In the monthly summary below the daily table, the "Total" is the sum of the daily figures; it is the total cfs-days for the month. The "Mean" is the average flow in cubic feet per second during the month. Discharge for the month is expressed in acre-feet ("Ac-ft"). For three stations only discharge for the month is expressed in cubic

feet per second per square mile ("Cfsm"), in inches ("In."), and in acre-feet ("Ac-ft"). For those stations equipped with a tipping-bucket rain gage, precipitation, in inches, is given for the month.

In the yearly summary below the monthly summary, the figures of maximum are the maximum daily discharges, not the momentary discharges when the water was at crest stage. Likewise, the minimums in this summary are the minimum daily discharges.

Peak discharges and the times of their occurrence and corresponding gage heights for most stations are listed below the table of daily and monthly discharge. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year can be presented. Peak discharges are not published for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time, for example, 12:30 a.m. is 0030 and 1:30 p.m. is 1330 hours.

In a general footnote, introduced by the word "Note," certain periods are indicated for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-discharge relation, or of any other unusual condition at the gage are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published each year for all lakes and reservoirs for which records are published on a daily basis, but it is not published for lakes and reservoirs for which there are only monthly data.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of streamflow data 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 observations of stage, measurements of discharge, and interpretation of records.

The station description, under "Remarks," states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good," within 10 percent; and "fair," within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

For most gaging stations equipped with digital recorders the figures of mean daily discharge are shown to the nearest hundredth for discharges less than 1 cfs. At graphic recording stations nonsignificant zeros are added to the mean daily discharges which are less than 1 cfs. This has been done as a matter of uniformity in the computer program and should not be construed to indicate an accuracy greater than that used in the past.

Discharge at some stations, as indicated by the monthly mean, may vary widely from natural runoff, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes or to other factors. 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 when large negative adjustments are made or when evaporation is large in comparison with the observed discharge.

OTHER DATA AVAILABLE

Data from partial-record stations and measurements made at miscellaneous sites are given at the end of this report. Occasionally, discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also at the end of this report. Data for most crest-stage partial-record stations in California are not included in this report. They are published separately in an annual report, "Floods from Small Drainage Areas," copies of which may be obtained from the district office.

More detailed information than that published for most of the gaging stations is on file in the district office; information, such as discharge measurements and recorder charts or nonrecording-gage readings. Most gaging-station records in the State through 1958 have been analyzed with an electronic computer to give: (1) The number of days in each year that the daily discharge was between selected limits (duration tables); (2) the lowest mean discharge for selected numbers of consecutive days in each year; and (3) the highest mean discharge for selected numbers of consecutive days in each year.

At or near some gaging stations, water-quality records also are collected. Data are obtained on the chemical quality of the stream water, on water temperature, on suspended-sediment concentration, and on the particle-size distribution of suspended sediment and bed material. These data are given in Part 2 of this report. Under the "Remarks" paragraph of the gaging-station description, reference is made to water-quality records collected on a regular basis.

HYDROLOGIC CONDITIONS

Despite below-normal precipitation which generally prevailed over the State during October, streamflow was excessive from the higher elevations of the Sierra Nevada and from Santa Barbara, Ventura, and Los Angeles Counties in southern California. This resulted from the abnormally

high precipitation and runoff from the preceding water year. Streamflow was well above normal in the north-coastal area, but deficient in the extreme southern part of the State since the preceding storms had not penetrated that far south. Low humidity and high winds and temperatures were contributing factors resulting in an estimated 100,000 acres of brush and forest which burned in southern California. During November below-normal precipitation and above-normal temperatures in northern California reduced runoff to near normal except from the Sierra Nevada into the San Joaquin Valley which continued to be excessive, but less than the previous months. Severe storms occurred, however, in the coastal mountains of southern California. Runoff from Santa Barbara, Ventura, and Los Angeles Counties in southern California continued to be excessive although in the extreme south runoff was still deficient. Precipitation was generally below normal during December and most of January, and runoff generally declined. During the last few days of January, however, generally heavy storms over the State increased runoff, and the snowpack in the mountainous areas that was considerably below normal also increased. Although the precipitation was generally below normal in January, temperatures were above normal and runoff increased as the below-normal snowpack was depleted still further. Streamflow in February was excessive in the north-coastal area, above normal in the Sacramento River basin, and near normal in the southern part of the San Joaquin River basin and in southern California, except in the extreme south where it continued to be deficient. Streamflow was near normal in March as the snowmelt continued and precipitation was near normal. Streamflow was generally deficient during May and June because of below-normal precipitation and the declining contribution of diminished snowpack. Heavier demands were made from reservoir storage for irrigation and the above-normal contents decreased to near normal. Streamflow in July continued to be generally deficient although isolated electrical storms in the desert areas produced high runoff in some areas. In August streamflow increased to above or near normal in the northern part of the State because of storms in that area, but decreased southward along the Sierra Nevada to below normal in the southern part, although thunderstorms in scattered areas produced above-normal streamflow and peaks of record in some desert drainages. Streamflow in September was near normal in the north-coastal area and the northern part of the Sierra Nevada, but decreased southward and was deficient in the southern part. Streamflow was again below normal in southern California and deficient in the extreme south except for a few drainages where the

intense thunderstorms in August kept the streamflow higher than normal. Because of the generally dry year, heavier demands were made on reservoirs for irrigation; however, the contents at the end of the year averaged less than 10 percent below normal because of the large carryover from the preceding wet year.

Figure 1 shows the runoff for the 1968 water year, in percentage of the 1930-60 median. Runoff at the selected sites over the entire State averaged only 76 percent of median in contrast to that of last year which averaged 236 percent, 3 times greater. At individual sites the runoff varied from about one-fourth of median at one station in the extreme south-coastal area, and one station in the central-coastal area to one and one-half times median at one station in the south-coastal area. The above median runoff at the latter station was caused by exceptionally heavy storms in that particular watershed.

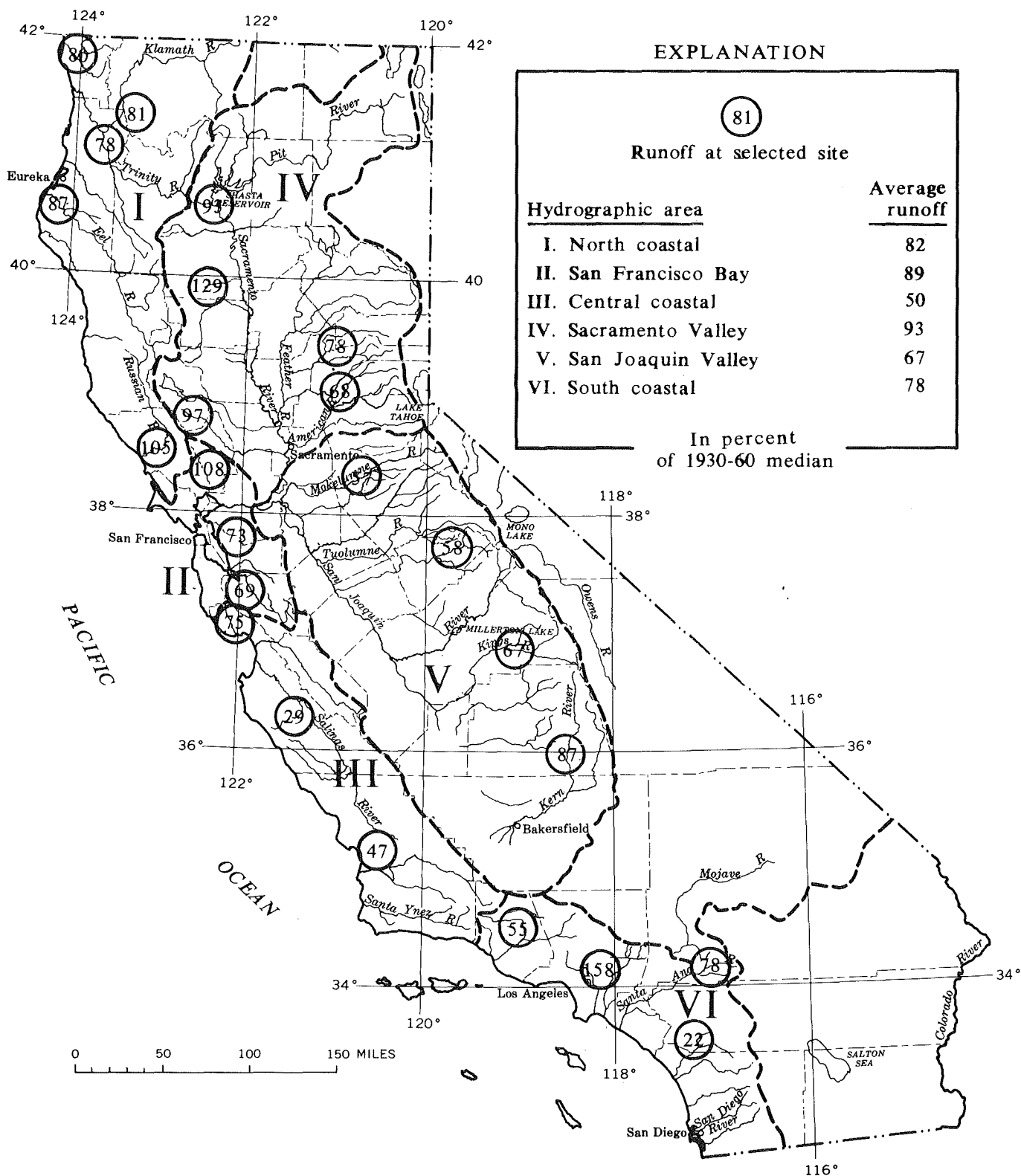


Figure 1.-- Runoff for the 1968 water year.

WALKER LAKE BASIN

513

10-2890. VIRGINIA CREEK NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°11'30", long 119°12'30", near center of W $\frac{1}{2}$ sec.22, T.4 N., R.25 E., on right bank 1.25 miles downstream from Clearwater Creek, 3 miles upstream from mouth, and 4.25 miles southeast of Bridgeport.

DRAINAGE AREA.--63.6 sq mi.

RECORDS AVAILABLE.--October 1953 to September 1968:

GAGE.--Digital water-stage recorder. Altitude of gage is 6,700 ft (from topographic map). Prior to Aug. 31, 1968, graphic water-stage recorder.

AVERAGE DISCHARGE.--15 years, 15.0 cfs (10,860 acre-ft per year).

EXTREMES.--Maximum discharge during year, 42 cfs Feb. 20 (gage height, 3.22 ft); maximum gage height, 3.50 ft (backwater from ice); minimum discharge, 2.8 cfs July 19, 20, 23.
1953-68: Maximum discharge, 1,300 cfs Dec. 23, 1955 (gage height, 8.40 ft), from rating curve extended above 170 cfs on basis of slope-area measurement of peak flow; minimum, 1.0 cfs Aug. 18, 1960, July 28, 1961.

REMARKS.--Records excellent except those for winter months, which are poor. Flow partly regulated by Virginia Lakes and other lakes near headwaters. Diversions for irrigation of 3,000 acres above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	15	12	12	10	19	18	16	12	4.8	5.0	4.9
2	16	15	10	14	11	19	16	18	13	4.8	4.0	4.8
3	16	15	13	13	12	19	16	18	16	4.5	3.8	4.8
4	15	15	14	11	12	18	15	18	17	4.2	3.5	4.8
5	14	15	15	11	12	18	15	18	16	3.8	3.8	4.8
6	15	15	10	11	12	15	14	16	16	4.2	3.2	4.7
7	14	15	13	11	12	14	14	16	15	4.5	3.2	4.7
8	14	14	12	12	12	15	14	16	12	5.0	3.5	4.7
9	14	14	11	12	12	14	14	16	8.8	5.8	3.8	5.0
10	14	15	10	11	13	12	14	16	7.9	6.4	4.2	5.0
11	14	14	10	9.0	12	14	16	14	7.6	5.0	4.2	5.0
12	14	14	8.0	11	12	14	15	18	7.9	4.5	4.2	5.0
13	14	14	7.0	12	12	12	14	16	8.2	4.2	4.2	5.0
14	14	16	7.0	12	12	12	14	17	7.6	4.2	4.5	4.9
15	15	15	8.0	16	12	11	15	15	7.0	4.0	4.5	4.9
16	14	15	9.0	15	12	12	14	13	8.8	3.8	4.8	5.2
17	14	15	9.0	12	14	11	14	13	9.2	3.5	4.8	5.4
18	14	16	9.0	12	15	12	15	12	9.9	3.5	4.5	5.3
19	14	18	9.0	12	18	12	15	11	9.6	3.2	4.2	5.3
20	14	19	7.0	12	31	11	15	11	9.9	3.2	3.8	5.5
21	14	18	6.4	12	23	11	14	11	9.2	3.2	4.8	5.8
22	14	16	8.0	13	23	12	13	12	8.8	3.2	5.5	6.1
23	14	16	9.0	12	28	13	13	12	8.2	3.2	5.5	6.1
24	14	16	10	13	23	15	14	11	8.5	3.2	5.2	6.0
25	14	16	11	13	22	18	14	11	8.2	3.2	5.0	5.7
26	14	15	11	13	23	16	15	9.9	6.7	3.2	5.0	5.5
27	14	15	13	12	23	16	15	10	6.1	3.5	4.8	5.5
28	14	14	12	10	20	18	14	12	5.2	3.8	4.5	5.7
29	14	14	12	10	19	20	15	15	5.0	4.8	4.5	6.4
30	14	14	11	11	-----	20	16	14	5.0	5.5	4.5	7.9
31	14	-----	11	11	-----	20	-----	14	-----	5.5	4.9	-----
TOTAL	443	458	317.4	371.0	472	463	440	439.9	290.3	129.4	135.9	160.4
MEAN	14.3	15.3	10.2	12.0	16.3	14.9	14.7	14.2	9.68	4.17	4.38	5.35
MAX	16	19	15	16	31	20	18	18	17	6.4	5.5	7.9
MIN	14	14	6.4	9.0	10	11	13	9.9	5.0	3.2	3.2	4.7
AC-FT	879	908	630	736	936	918	873	873	576	257	270	318

CAL YR 1967 TOTAL 11,095.7 MEAN 30.4 MAX 199 MIN 6.1 AC-FT 22,010
WTR YR 1968 TOTAL 4,120.3 MEAN 11.3 MAX 31 MIN 3.2 AC-FT 8,170

Peak discharge (base, 50 cfs).--No peak above base.

WALKER LAKE BASIN

10-2895. GREEN CREEK NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°10'25", long 119°14'00", in NE¼SE¼ sec.29, T.4 N., R.25 E., on right bank 130 ft downstream from county road bridge, 0.1 mile upstream from diversion to Summers Creek, and 5.5 miles south of Bridgeport.

DRAINAGE AREA.--19.5 sq mi.

RECORDS AVAILABLE.--October 1953 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 6,850 ft (from topographic map). Prior to July 26, 1964, graphic water-stage recorder.

AVERAGE DISCHARGE.--15 years, 27.4 cfs (19,840 acre-ft per year).

EXTREMES.--Maximum discharge during year, 94 cfs June 3 (gage height, 2.60 ft); maximum gage height, 3.08 ft Dec. 16 (backwater from ice); minimum discharge, 5.7 cfs Sept. 28, 29.
1953-68; Maximum discharge, 351 cfs July 4, 1967; maximum gage height, 4.09 ft Feb. 25, 1962 (backwater from ice); minimum discharge, 1.4 cfs Apr. 4, 1964.

REMARKS.--Records good except those for winter months, which are fair. Flow regulated by West, Green, East, Summit, and other lakes.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	10	9.0	7.4	8.0	14	19	31	71	33	27	7.0
2	18	10	8.0	7.6	9.3	13	17	34	77	33	28	7.0
3	18	10	8.6	7.0	9.4	13	16	36	87	32	48	7.0
4	17	10	10	6.5	9.4	13	16	36	85	31	43	15
5	16	10	11	6.5	9.0	13	16	37	78	33	40	16
6	16	10	8.0	6.5	9.0	12	16	32	67	33	38	15
7	16	10	13	6.5	9.0	12	16	31	57	29	36	15
8	16	10	12	7.0	9.0	12	16	32	49	28	34	15
9	15	10	12	7.4	9.0	12	17	32	42	27	37	15
10	15	11	12	7.4	9.4	10	19	32	39	26	32	14
11	14	10	12	6.6	9.0	10	21	32	40	26	28	14
12	13	10	11	7.0	9.0	11	23	33	46	26	27	13
13	13	10	9.0	7.6	9.0	11	22	32	50	25	17	12
14	13	10	7.0	7.0	8.6	11	22	29	53	24	13	11
15	12	9.3	8.0	10	8.2	11	23	28	60	24	12	9.4
16	12	9.0	9.0	11	8.6	12	24	28	65	23	11	8.2
17	12	9.0	9.0	9.0	9.8	10	22	28	70	25	11	8.2
18	12	9.4	9.0	8.4	11	11	21	29	70	24	11	7.6
19	12	12	9.0	8.6	12	10	21	35	74	23	11	7.3
20	12	12	7.0	8.6	17	10	19	40	71	23	12	7.0
21	12	11	6.0	8.6	22	11	18	49	63	22	13	6.6
22	11	9.4	7.0	8.6	19	12	17	42	64	21	12	6.6
23	11	9.8	7.5	8.2	19	11	17	39	57	21	11	6.6
24	11	9.4	8.0	8.2	19	11	16	36	51	20	11	6.5
25	11	9.4	8.0	8.6	17	12	17	35	50	20	9.8	6.4
26	11	8.6	8.0	8.2	16	12	20	37	42	19	9.0	6.1
27	11	8.4	8.5	8.2	16	12	22	44	38	19	8.6	6.1
28	11	8.4	8.0	7.0	15	13	24	62	36	20	8.2	5.9
29	10	8.8	8.0	8.0	14	14	26	77	35	21	7.8	6.2
30	10	10	7.0	8.0	-----	16	28	74	34	23	7.0	7.3
31	10	-----	7.0	6.4	-----	18	-----	70	-----	23	7.0	-----
TOTAL	410	294.9	276.6	241.6	349.7	373	591	1,212	1,721	777	620.4	288.0
MEAN	13.2	9.83	8.92	7.79	12.1	12.0	19.7	39.1	57.4	25.1	20.0	9.60
MAX	19	12	13	11	22	18	28	77	87	33	48	16
MIN	10	8.4	6.0	6.4	8.0	10	16	28	34	19	7.0	5.9
AC-FT	813	585	549	479	694	740	1,170	2,400	3,410	1,540	1,230	571
CAL YR 1967	TOTAL 15,590.9		MEAN 42.7		MAX 283		MIN 6.0		AC-FT 30,920			
WTR YR 1968	TOTAL 7,155.2		MEAN 19.5		MAX 87		MIN 5.9		AC-FT 14,190			

10-2903. UPPER TWIN LAKE NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°09'15", long 119°20'58", in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.5, T.3 N., R.24 E., at outlet, and 10 miles southwest of Bridgeport.

DRAINAGE AREA.--29.5 Sq mi.

RECORDS AVAILABLE.--December 1961 to February 1964, September 1964 to September 1968.

GAGE.--Water-stage recorder. Datum of gage is project datum of U.S. Indian Irrigation Service.

EXTREMES.--Maximum contents during year, 2,560 acre-ft June 3 (elevation, 7,208.54 ft); minimum, (a) 314 acre-ft Sept. 30.

1961-68: Maximum contents observed, 2,900 acre-ft June 22, July 5, 6, 1967 (elevation, 7,209.58 ft); minimum observed, 62 acre-ft Oct. 31, Nov. 1, 1964 (elevation, 7,200.22 ft).
No contents observed Oct. 17, 1961.

REMARKS.--Contents regulated by dam at outlet. Figures given herein represent usable contents. Usable contents, 2,070 acre-ft between elevations 7,200 (natural rim) and 7,207 ft (spillway crest).

ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Oct. 31.....	7,207.33	2,180	-40
Nov. 28.....	7,207.26	2,150	-30
Nov. 30.....	-	a 2,150	0
Dec. 13.....	7,207.21	2,140	-10
Dec. 31.....	-	a 2,130	-20
Calendar year 1967.....	-	-	+130
Jan. 9.....	7,207.16	2,120	-20
Feb. 12.....	7,207.16	2,120	0
Mar. 12.....	7,207.08	2,100	-20
Apr. 18.....	7,207.46	2,220	+120
May 9.....	7,207.78	2,320	+100
May 31.....	7,208.27	2,480	+160
June 30.....	7,207.92	2,360	-120
July 31.....	7,207.69	2,290	-50
Aug. 31.....	-	a 832	-1,460
Sept. 16.....	7,201.26	353	-479
Sept. 30.....	-	a 314	-39
Water year 1967-68.....	-	-	-1,910

a Contents interpolated.

WALKER LAKE BASIN

10-2904. LOWER TWIN LAKE NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°10'05", long 119°19'33", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.33, T.4 N., R.24 E., at outlet and 8 miles southwest of Bridgeport.

DRAINAGE AREA.--38.9 sq mi.

RECORDS AVAILABLE.--December 1961 to September 1968.

GAGE.--Water-stage recorder. Datum of gage is at project datum of U.S. Indian Irrigation Service. Prior to October 1966 at different site at same datum.

EXTREMES.--Maximum contents during year, 4,800 acre-ft June 20 (elevation, 7,201.85 ft); minimum, (a) 590 acre-ft Sept. 30.

1961-68: Maximum contents, 5,270 acre-ft June 20, 1963 (elevation, 7,202.94 ft); no contents Nov. 17, 1966.

REMARKS.--Contents regulated by dam at outlet and by Upper Twin Lake. Figures given herein represent usable contents. Usable contents, 4,010 acre-ft between elevations 7,190 (natural rim) and 7,200 ft (spillway crest). One transarea diversion out of Tamarack Creek into Summers Creek.

ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Oct. 10.....	7,200.77	4,330	-30
Oct. 31.....	7,200.63	4,280	-50
Nov. 14.....	7,200.60	4,260	-20
Nov. 28.....	7,200.59	4,260	0
Nov. 30.....	-	a 4,250	-10
Dec. 13.....	7,200.52	4,230	-20
Calendar year 1967.....	-	-	+3.61
Jan. 9.....	7,200.45	4,200	-30
Feb. 12.....	7,200.53	4,230	+30
Mar. 12.....	7,200.55	4,240	+10
Apr. 18.....	7,200.73	4,320	+80
May 9.....	7,200.28	4,130	-90
May 31.....	7,201.02	4,440	+310
June 30.....	7,201.39	4,600	+160
July 31.....	7,198.00	3,200	-1,400
Aug. 14.....	7,196.25	2,500	-700
Sept. 16.....	7,191.81	724	-1,780
Sept. 30.....	-	a 590	-134
Water year 1967-68.....	-	-	-3,670

a Contents interpolated.

WALKER LAKE BASIN

517

10-2905. ROBINSON CREEK AT TWIN LAKES OUTLET, NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°10'20", long 119°19'25", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.28, T.4 N., R.24 E., on left bank 0.2 mile downstream from Twin Lakes, and 8 miles southwest of Bridgeport.

DRAINAGE AREA.--39.1 sq mi.

RECORDS AVAILABLE.--October 1953 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 7,050 ft (from topographic map). Prior to July 27, 1964, graphic water-stage recorder.

AVERAGE DISCHARGE.--15 years, 56.4 cfs (40,830 acre-ft per year), unadjusted.

EXTREMES.--Maximum discharge during year, 181 cfs June 5 (gage height, 3.26 ft); minimum daily, 16 cfs Jan. 26. 1953-68: Maximum discharge, 492 cfs June 20, 1963; maximum gage height, 4.61 ft July 4, 1967; no flow for many days in some years. Maximum discharge known, 660 cfs June 21, 1911 (gage height, 5.2 ft), at site 2.5 miles downstream.

REMARKS.--Records good. Flow regulated by Twin Lakes.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	25	28	20	25	30	23	78	138	101	100	78
2	42	25	27	19	23	29	23	74	145	94	99	77
3	41	25	28	19	22	29	24	74	163	89	96	75
4	39	25	25	19	22	28	25	75	174	87	94	78
5	38	25	30	18	21	27	26	78	177	85	92	81
6	38	24	27	18	20	27	25	75	142	83	90	78
7	38	24	30	17	20	25	25	74	101	81	88	76
8	38	25	24	17	19	27	25	73	105	80	86	72
9	37	24	22	17	21	27	25	73	100	81	84	63
10	37	23	21	18	22	26	25	73	93	83	81	61
11	36	23	21	19	22	25	27	73	87	81	79	59
12	35	23	20	19	21	28	29	74	88	78	77	57
13	35	23	19	18	21	25	29	75	92	75	74	54
14	34	25	17	18	20	25	32	73	99	72	71	49
15	33	23	17	21	20	23	34	72	105	71	71	42
16	33	23	18	22	20	25	34	70	115	71	83	38
17	32	23	18	21	22	28	33	69	129	69	94	34
18	32	24	20	20	22	26	33	68	141	87	87	32
19	31	28	22	20	22	24	33	68	153	102	81	29
20	30	30	22	19	29	23	33	72	159	87	77	25
21	30	29	21	19	29	22	32	70	157	78	75	22
22	28	28	21	19	36	21	30	72	151	92	76	21
23	28	27	20	18	34	21	30	79	147	120	76	19
24	28	26	21	18	36	20	29	81	144	115	76	22
25	27	25	20	18	36	23	29	92	142	113	74	25
26	26	24	20	16	35	20	29	92	136	110	74	27
27	26	24	20	19	33	19	30	90	129	109	72	27
28	28	24	21	20	32	19	32	96	124	107	75	27
29	25	25	20	17	31	19	59	109	115	105	77	27
30	25	28	20	21	-----	20	88	127	108	104	78	27
31	24	-----	20	27	-----	20	-----	136	-----	102	78	-----
TOTAL	1,015	750	680	591	736	751	951	2,505	3,859	2,812	2,535	1,402
MEAN	32.7	25.0	21.9	19.1	25.4	24.2	31.7	80.8	129	90.7	81.8	46.7
MAX	42	30	30	27	36	30	88	136	177	120	100	81
MIN	24	23	17	16	19	19	23	68	87	69	71	19
AC-FT	2,010	1,490	1,350	1,170	1,460	1,490	1,890	4,970	7,650	5,580	5,030	2,780
CAL YR 1967	TOTAL 32,495.45		MEAN 89.0		MAX 467		MIN .10		AC-FT 64,450			
WTR YR 1968	TOTAL 18,587		MEAN 50.8		MAX 177		MIN 16		AC-FT 36,870			

WALKER LAKE BASIN

10-2915. BUCKEYE CREEK NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°14'20", long 119°19'30", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.4, T.4 N., R.24 E., on right bank at Buckeye Hot Springs, 0.6 mile downstream from Eagle Creek, and 5.5 miles southwest of Bridgeport.

DRAINAGE AREA.--44.1 sq mi.

RECORDS AVAILABLE.--November 1910 to September 1914 (fragmentary), October 1953 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 6,900 ft (from topographic map). November 1910 to September 1914, staff gage at site 0.5 mile downstream at different datum. Oct. 1, 1953, to Apr. 13, 1965, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--16 years (1911-12, 1953-68), 56.5 cfs (40,900 acre-ft per year).

EXTREMES.--Maximum discharge during year, 241 cfs May 28 (gage height, 3.06 ft); minimum, 9.8 cfs Jan. 26, 1953-68; Maximum discharge, 947 cfs Feb. 1, 1963 (gage height, 4.41 ft), from rating curve extended above 360 cfs on basis of slope-area measurement at gage height 4.00 ft and logarithmic plotting; minimum, 3.3 cfs Dec. 12, 1959, result of freezeup.

Flood of June 21, 1911, reached an observed stage of 4.8 ft (discharge not determined), site and datum then in use.

REMARKS.--Records excellent except those for winter months, which are poor. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	29	22	20	16	30	48	95	146	62	35	19
2	40	29	20	20	20	30	42	106	169	60	31	18
3	45	29	22	18	22	30	39	110	174	58	30	18
4	43	29	23	17	22	30	39	105	160	56	28	18
5	44	28	24	17	22	29	39	106	136	55	26	17
6	42	28	21	17	21	28	36	89	106	53	25	17
7	40	28	27	18	21	30	36	88	95	54	24	17
8	38	28	24	19	21	31	38	97	85	54	24	17
9	37	27	22	21	22	28	41	98	81	62	24	16
10	37	27	22	19	21	27	48	85	84	55	24	16
11	36	27	22	15	21	25	56	89	97	50	23	16
12	36	27	20	19	21	28	58	82	103	49	22	16
13	35	27	17	20	21	28	55	69	102	48	28	15
14	35	29	16	21	21	27	57	64	103	45	24	15
15	34	29	20	31	20	26	61	62	112	44	22	15
16	34	28	20	24	21	26	54	64	119	42	22	15
17	34	27	20	20	23	24	50	72	121	40	21	15
18	33	28	21	25	23	26	45	91	122	39	21	15
19	33	31	18	22	29	24	43	113	124	37	26	14
20	33	31	16	22	56	23	43	136	112	36	32	15
21	32	28	14	22	40	25	41	134	102	35	24	15
22	32	26	17	22	39	26	39	100	102	35	23	15
23	31	25	18	21	42	27	39	84	102	33	22	15
24	31	24	20	22	37	28	43	77	97	31	21	15
25	30	26	20	22	35	30	47	81	86	31	20	15
26	31	24	20	21	35	28	56	102	85	31	20	15
27	30	22	22	21	35	29	64	128	85	31	19	14
28	30	22	21	18	35	32	68	162	81	32	19	14
29	30	23	21	20	35	39	79	169	70	37	19	16
30	30	26	18	23	-----	46	91	144	64	35	18	17
31	30	-----	20	20	-----	47	-----	136	-----	35	19	-----
TOTAL	1,087	812	628	637	797	907	1,495	3,138	3,225	1,365	736	475
MEAN	35.1	27.1	20.3	20.5	27.5	29.3	49.8	101	108	44.0	23.7	15.8
MAX	45	31	27	31	56	47	91	169	174	62	35	19
MIN	30	22	14	15	16	23	36	62	64	31	18	14
AC-FT	2,160	1,610	1,250	1,260	1,580	1,800	2,970	6,220	6,400	2,710	1,460	942

CAL YR 1967 TOTAL 35,220 MEAN 96.5 MAX 639 MIN 12 AC-FT 69,860
WTR YR 1968 TOTAL 15,302 MEAN 41.8 MAX 174 MIN 14 AC-FT 30,350

PEAK DISCHARGE (BASE, 100 CFS)

DATE	TIME	G.H.T.	DISCHARGE	DATE	TIME	G.H.T.	DISCHARGE
05-03	0045	2.65	136	05-28	2400	3.06	241
05-20	2300	2.91	197	06-19	0030	2.74	153

10-2920. SWAGER CREEK NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°17'00", long 119°17'50", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 23, T.5 N., R.24 E., on right bank 0.8 mile downstream from Yaney Canyon, and 4 miles northwest of Bridgeport.

DRAINAGE AREA.--52.8 sq mi.

RECORDS AVAILABLE.--June 1911 to September 1915 (fragmentary), October 1953 to September 1968.

GAGE.--Water-stage recorder. Altitude of gage is 6,620 ft (from topographic map). June 1911 to September 1915 staff gages at approximately same site at different datums.

AVERAGE DISCHARGE.--16 years (1911-12, 1953-68), 10.9 cfs (7,890 acre-ft per year).

EXTREMES.--Maximum discharge during year, 47 cfs Feb. 22 (gage height, 2.99 ft); maximum gage height, 3.82 ft Dec. 20 (backwater from ice); minimum discharge, 1.6 cfs Aug. 17.
1911-15, 1953-68: Maximum discharge, 585 cfs Dec. 23, 1955 (gage height, 6.24 ft), from rating curve extended above 175 cfs on basis of slope-area measurement of peak flow; minimum observed, 0.50 cfs Apr. 20, 1912.

REMARKS.--Records excellent except those for winter months, which are fair. Diversions for irrigation of about 1,000 acres above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	12	8.6	10	8.6	14	14	9.6	10	3.3	1.8	4.3
2	12	12	7.6	9.6	11	14	12	9.6	10	2.8	2.0	2.6
3	12	12	9.3	9.3	11	14	12	8.9	9.6	3.0	2.8	2.3
4	12	12	11	7.9	11	14	12	6.6	9.3	2.8	2.8	2.9
5	12	12	10	8.3	11	14	12	4.7	9.3	2.2	3.3	3.7
6	12	12	6.6	7.9	11	13	11	4.9	9.6	2.2	3.3	4.3
7	12	11	8.3	7.9	11	13	11	4.9	10	2.2	3.5	3.2
8	11	12	9.3	8.6	12	14	11	5.2	10	2.0	2.6	3.1
9	11	12	7.7	9.3	12	13	12	6.1	10	2.4	2.0	3.1
10	11	12	9.6	9.3	12	12	13	6.3	9.6	2.8	1.8	3.1
11	10	12	10	8.6	12	12	14	6.6	9.3	2.4	1.7	2.7
12	10	12	10	8.9	11	13	13	8.6	9.3	1.8	1.7	2.4
13	10	12	5.8	9.6	11	12	12	8.3	8.9	2.4	1.9	2.6
14	10	12	4.9	10	11	12	12	8.9	7.6	2.2	1.7	2.4
15	11	12	5.8	13	10	12	13	7.9	2.8	2.0	1.7	2.1
16	11	12	7.2	11	11	12	12	7.6	2.6	1.9	1.8	2.1
17	11	12	8.4	8.6	13	12	11	7.2	2.8	1.8	1.7	2.5
18	11	12	9.3	10	13	12	10	6.9	2.6	1.8	1.8	2.5
19	11	13	7.0	10	15	10	11	7.9	3.5	1.8	2.0	1.9
20	11	13	5.0	10	20	10	12	8.3	3.5	1.8	1.9	4.0
21	11	12	4.5	10	18	11	10	8.6	3.9	1.8	3.7	6.5
22	11	12	10	11	23	12	9.3	7.9	3.5	1.9	5.8	6.5
23	11	12	10	11	21	12	10	7.6	3.0	1.9	5.8	6.5
24	11	12	10	11	18	9.6	11	7.6	3.7	1.9	5.8	6.4
25	11	12	10	11	17	7.2	10	7.2	3.7	1.8	5.8	6.2
26	11	10	10	11	17	7.6	11	7.6	3.5	1.7	5.5	6.1
27	12	11	11	10	16	7.9	10	8.9	3.0	1.9	5.5	6.0
28	12	10	11	8.9	15	9.6	10	8.9	2.4	1.9	5.5	5.9
29	11	11	10	9.3	15	12	10	10	2.4	2.0	5.8	6.7
30	12	11	8.9	10	-----	14	9.3	10	2.8	1.9	6.0	6.8
31	12	-----	8.9	10	-----	14	-----	10	-----	2.0	5.7	-----
TOTAL	348	354	265.7	301.0	397.6	368.9	340.6	239.3	182.2	66.3	104.7	121.4
MEAN	11.2	11.8	8.57	9.71	13.7	11.9	11.4	7.72	6.07	2.14	3.38	4.05
MAX	12	13	11	13	23	14	14	10	10	3.3	6.0	6.8
MIN	10	10	4.5	7.9	8.6	7.2	9.3	4.7	2.4	1.7	1.7	1.9
AC-FT	690	702	527	597	789	732	676	475	361	132	208	241

CAL YR 1967 TOTAL 7,815.6 MEAN 21.4 MAX 171 MIN 3.7 AC-FT 15,500
WTR YR 1968 TOTAL 3,089.7 MEAN 8.44 MAX 23 MIN 1.7 AC-FT 6,130

Peak discharge (base, 25 cfs).--Feb. 20 (1500 hrs) 25 cfs (2.70 ft); Feb. 22 (1600 hrs) 47 cfs (2.99 ft).

WALKER LAKE BASIN

10-2923. BRIDGEPORT RESERVOIR TRIBUTARY NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°17'15", long 119°12'50", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.16, T.5 N., R.25 E., on left bank on upstream side of State Highway 22, 0.5 mile upstream from Rock Springs Canyon, and 2.4 miles north of Bridgeport.

DRAINAGE AREA.--0.79 sq mi.

RECORDS AVAILABLE.--Water year 1963 (annual maximum), October 1963 to September 1968.

GAGE.--Water-stage recorder with rain-gage attachment and crest-stage gage. Altitude of gage is 6,500 ft (from topographic map). Oct. 1, 1962, to Sept. 30, 1963, crest-stage gage at same site and datum.

AVERAGE DISCHARGE.--5 years, 0.03 cfs (22 acre-ft per year).

EXTREMES.--Maximum discharge during year, 0.10 cfs Jan. 15 (gage height, 3.49 ft); no mean daily flow the entire year.

1962-68: Maximum discharge, 98 cfs Mar. 16, 1967 (gage height, 10.91 ft); no flow most of the time.

REMARKS.--Mean daily flows of 0.05 cfs or less occur at times and are considered to be below reportable stage and are given as no flow.

10-2925. BRIDGEPORT RESERVOIR NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°19'30", long 119°12'50", in SE¼NE¼ sec.34, T.6 N., R.25 E., at Bridgeport Dam on East Walker River, 4.5 miles north of Bridgeport.

DRAINAGE AREA.--358 sq mi.

RECORDS AVAILABLE.--March 1926 to September 1968. Month-end contents only for some periods, published in WSP 1314.

GAGE.--Float gage read once daily. Datum of gage is at mean sea level.

EXTREMES.--Maximum contents during year, 42,760 acre-ft Mar. 23 to Apr. 1 (elevation, 6,460.12 ft); minimum, 7,460 acre-ft Sept. 29 (elevation, 6,441.36 ft).
1926-68: Maximum contents, 44,580 acre-ft June 12, 1938, June 25, 26, 1958 (elevation, 6,460.7 ft); no contents during fall of 1929, 1930, 1960.

REMARKS.--Reservoir is formed by earthfill, rock-faced dam. Storage began Dec. 8, 1923. Dam completed in November 1924. Capacity, 42,460 acre-ft between elevations 6,415 (approximate elevation of bottom of reservoir) and 6,460 ft (crest of spillway). Elevation of sill of outlet gate, 6,412 ft. No dead storage. Figures given herein represent total contents. Water is used for irrigation by Walker River Irrigation District.

COOPERATION.--Elevations and capacity table furnished by Walker River Irrigation District.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

6,441	7,120	6,452	22,580
6,442	8,080	6,456	31,570
6,445	11,380	6,461	45,490
6,448	15,470		

CONTENTS, IN ACRE-FEET, AT 0800 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30,490	30,850	36,230	38,430	40,560	40,710	42,760	37,320	31,700	28,930	20,160	13,720
2	30,360	30,970	36,360	38,430	40,710	41,000	42,610	37,040	31,700	28,820	19,980	13,380
3	30,240	31,090	36,630	38,570	40,560	41,150	42,610	36,760	31,700	28,700	19,700	13,040
4	30,240	31,210	36,760	38,570	40,710	41,440	42,610	36,630	31,700	28,580	19,520	12,630
5	30,240	31,450	37,040	38,570	40,710	41,730	42,460	36,360	31,820	28,360	19,240	12,260
6	30,120	31,570	37,320	38,570	40,710	41,730	42,310	36,100	31,820	28,240	19,060	11,880
7	30,120	31,820	37,590	38,570	40,710	41,880	42,310	35,830	31,950	28,010	18,780	11,500
8	30,000	31,950	37,730	37,710	40,710	42,020	42,170	35,570	32,080	27,780	18,610	11,140
9	30,000	32,080	37,730	38,710	40,710	42,020	42,170	35,440	32,080	27,550	18,440	11,030
10	30,000	32,330	37,730	38,710	40,850	42,170	42,020	35,170	31,820	27,320	18,260	10,550
11	30,000	32,460	37,590	38,840	40,850	42,170	42,020	35,040	31,700	26,980	18,090	10,260
12	30,000	32,710	37,590	38,840	40,850	42,460	41,880	34,770	31,450	26,640	17,920	9,920
13	30,000	32,840	37,590	38,840	41,000	42,170	41,580	34,640	31,210	26,310	17,830	9,540
14	30,000	33,090	37,460	38,980	40,850	42,310	41,440	34,510	30,970	25,870	17,580	9,380
15	29,880	33,090	37,320	39,120	40,850	42,310	41,290	34,240	30,850	25,430	17,320	9,000
16	29,880	33,350	37,320	39,540	40,850	42,460	41,000	33,980	30,730	24,990	17,140	8,790
17	29,760	33,480	37,320	39,540	40,850	42,460	40,560	33,730	30,610	24,560	16,900	8,440
18	29,760	33,600	37,460	39,690	41,000	42,460	40,270	33,480	30,610	24,140	16,740	8,280
19	29,760	33,860	37,590	39,690	40,420	42,610	40,120	33,350	30,610	23,720	16,660	8,030
20	29,760	34,240	37,590	39,830	40,560	42,610	39,830	33,350	30,490	23,410	16,500	7,700
21	29,760	34,380	37,590	39,980	40,710	42,610	39,690	33,350	30,360	23,100	16,260	7,600
22	29,760	34,640	37,730	39,980	40,560	42,610	39,400	33,090	30,360	22,790	16,110	7,600
23	29,760	34,900	37,730	39,980	40,560	42,760	39,120	32,970	30,240	22,480	15,870	7,600
24	29,760	35,040	37,870	40,120	40,560	42,760	38,840	32,710	30,120	22,190	15,710	7,600
25	29,880	35,170	37,870	40,270	40,420	42,760	38,710	32,460	30,000	21,890	15,470	7,600
26	30,000	35,440	38,010	40,420	40,420	42,760	38,430	32,330	29,880	21,600	15,170	7,600
27	30,120	35,570	38,010	40,420	40,420	42,760	38,150	32,200	29,880	21,310	14,950	7,550
28	30,360	35,830	38,150	40,420	40,560	42,760	37,870	32,080	29,640	21,010	14,800	7,500
29	30,360	35,960	38,150	40,560	40,710	42,760	37,730	31,950	29,280	20,720	14,580	7,460
30	30,490	36,100	38,290	40,560	-----	42,760	37,460	31,820	29,160	20,530	14,210	7,500
31	30,610	-----	38,290	40,560	-----	42,760	-----	31,700	-----	20,340	13,920	-----
(a)	6,455.61	6,457.75	6,458.55	6,459.37	6,459.38	6,460.11	6,458.26	6,456.05	6,455.01	6,450.83	6,446.97	6,441.40
(b)	0	+5,490	+2,190	+2,270	+150	+2,050	-5,300	-5,760	-2,540	-8,820	-6,420	-6,420

CAL YR 1967 b +19,330

WTR YR 1968 b -23,110

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

WALKER LAKE BASIN

10-2930. EAST WALKER RIVER NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°19'40", long 119°12'50", in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.34, T.6 N., R.25 E., on right bank 1,500 ft downstream from Bridgeport Reservoir, 5 miles north of Bridgeport, and 10 miles upstream from Sweetwater Creek.

DRAINAGE AREA.--359 sq mi.

RECORDS AVAILABLE.--July 1911 to September 1914 (gage heights only), October 1921 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 6,400 ft (from topographic map). Prior to Oct. 1, 1921, staff gage at site 0.5 mile upstream at different datum. Oct. 1, 1921, to Feb. 21, 1924, graphic water-stage recorder at site 1 mile downstream at different datum. Feb. 22, 1924, to Sept. 30, 1931, graphic water-stage recorder and Oct. 1, 1931, to May 25, 1939, staff gage at present site at datum 2.34 ft lower. May 26, 1939, to Apr. 13, 1965, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--45 years (1922-24, 1925-68), 133 cfs (96,290 acre-ft per year), unadjusted.

EXTREMES.--Maximum discharge during year, 257 cfs June 2 (gage height, 1.77 ft); minimum daily, 16 cfs Oct. 31 to Nov. 6.

1921-68: Maximum discharge, 1,390 cfs June 19, 1963 (gage height, 4.64 ft); maximum gage height, 4.95 ft Jan. 22, 1943 (top of surge); minimum daily discharge, 0.2 cfs Nov. 2-29, Dec. 1-22, 25-28, 1955, Jan. 17-25, 1956.

REMARKS.--Records excellent. Diversions for irrigation of meadow pasture lands near Bridgeport. Flow regulated by Bridgeport Reservoir.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	153	16	18	69	117	66	89	196	218	159	184	173
2	153	16	18	69	117	51	88	196	248	146	179	194
3	153	16	18	69	117	52	107	196	248	146	163	210
4	153	16	18	69	117	52	116	203	232	146	163	210
5	153	16	18	67	117	52	116	220	232	146	163	207
6	153	16	18	67	117	52	101	198	232	155	163	207
7	140	17	18	67	117	52	88	166	232	173	155	200
8	132	17	86	67	117	91	88	166	232	173	142	192
9	132	17	125	67	117	117	95	166	234	173	142	189
10	132	17	125	69	117	100	132	166	232	179	142	192
11	132	17	125	69	117	89	144	166	226	210	140	192
12	132	17	125	69	117	93	144	166	202	210	140	192
13	132	17	125	69	131	89	153	166	187	229	140	189
14	132	17	125	69	138	89	171	166	187	245	140	175
15	132	17	98	70	138	89	171	166	187	245	134	177
16	132	18	72	70	138	89	171	166	187	245	114	173
17	132	18	72	70	138	89	171	166	187	234	109	153
18	119	18	73	70	138	89	171	146	187	218	98	151
19	114	18	72	70	169	89	163	138	187	192	104	151
20	114	18	72	73	218	89	150	138	187	173	116	138
21	114	18	72	73	243	89	150	153	187	173	116	91
22	114	18	72	73	240	89	150	175	187	173	116	46
23	93	18	72	73	240	89	150	175	187	173	121	45
24	67	18	72	73	240	89	150	175	182	173	134	43
25	58	18	70	75	218	91	150	166	166	170	134	49
26	42	18	70	75	192	89	163	148	166	177	129	63
27	34	18	70	75	148	89	173	148	168	187	121	63
28	34	18	70	75	101	89	169	159	168	184	138	63
29	34	18	70	75	89	89	169	184	168	184	159	63
30	23	18	69	76	-----	89	179	205	168	184	173	58
31	16	-----	69	101	-----	89	-----	205	-----	184	173	-----
TOTAL	3,354	519	2,197	2,223	4,323	2,560	4,232	5,350	6,011	5,759	4,345	4,249
MEAN	108	17.3	70.9	71.7	149	82.6	141	173	200	186	140	142
MAX	153	18	125	101	243	117	179	220	248	245	184	210
MIN	16	16	18	67	89	51	88	138	166	146	98	43
AC-FT	6,650	1,030	4,360	4,410	8,570	5,080	8,390	10,610	11,920	11,420	8,620	8,430
CAL YR 1967	TOTAL 89,033.0			MEAN 244	MAX 1,340	MIN 3.9	AC-FT 176,600					
WTR YR 1968	TOTAL 45,122			MEAN 123	MAX 248	MIN 16	AC-FT 89,500					

10-2935. EAST WALKER RIVER ABOVE STROSNIDER DITCH, NEAR MASON, NEV.

LOCATION.--Lat 38°48'50", long 119°02'50", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.14, T.11 N., R.26 E., on right bank 0.8 mile upstream from head of Strosnider ditch, 12 miles southeast of Mason, and 13.5 miles southeast of Yerington.

DRAINAGE AREA.--1,100 sq mi, approximately.

RECORDS AVAILABLE.--January 1947 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 4,574.10 ft above mean sea level, datum of 1929. Prior to Oct. 24, 1957, at site 400 ft upstream at datum 0.56 ft higher. Prior to July 22, 1964, graphic water-stage recorder.

AVERAGE DISCHARGE.--21 years (1947-68), 134 cfs (97,010 acre-ft per year).

EXTREMES.--Maximum discharge during year, 269 cfs Feb. 24 (gage height, 2.44 ft); maximum gage height, 3.30 ft Dec. 14 (backwater from ice); minimum discharge, 36 cfs Dec. 3.
1947-68: Maximum discharge, 2,380 cfs Feb. 1, 1963 (gage height, 7.60 ft); minimum, 3.1 cfs Mar. 21 1948; minimum daily, 3.4 cfs Mar. 21-24, 1948, Apr. 5, 1961.

REMARKS.--Records good except those for periods of no gage-height record, which are poor. Diversions for irrigation above station. Flow regulated by Bridgeport Reservoir.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	164	56	41	80	108	114	71	148	140	125	167	119
2	163	54	38	80	131	97	68	157	158	133	161	118
3	159	52	37	77	134	81	64	156	194	133	152	133
4	157	50	40	78	136	75	68	159	194	128	144	148
5	159	48	42	78	139	70	71	178	187	128	137	155
6	161	47	44	79	138	68	77	187	196	123	126	155
7	164	45	46	76	137	66	77	177	190	136	112	158
8	161	45	47	78	137	66	65	160	200	146	134	155
9	150	43	57	75	140	75	60	157	200	150	131	150
10	149	43	116	77	146	102	57	156	198	156	138	155
11	148	43	129	76	142	99	68	158	199	153	131	153
12	147	43	134	78	141	91	85	175	188	165	126	153
13	147	43	138	78	142	90	91	178	165	166	131	150
14	145	42	138	78	148	87	96	169	151	191	143	147
15	145	42	132	78	156	82	113	168	144	208	133	140
16	145	42	123	78	157	82	117	168	147	201	130	146
17	146	42	84	78	158	83	118	160	149	198	110	132
18	146	42	90	80	159	85	119	159	150	192	99	114
19	138	44	86	80	160	81	122	152	151	186	87	105
20	130	44	86	80	187	80	123	138	144	172	76	122
21	129	45	86	78	236	80	111	126	141	152	78	123
22	129	44	86	80	260	82	111	126	145	152	80	100
23	128	43	83	82	265	81	114	137	149	150	78	71
24	120	42	83	82	265	82	119	139	147	149	80	63
25	104	42	83	82	264	80	120	138	143	146	85	60
26	91	41	83	80	239	79	117	145	134	140	87	58
27	84	41	85	80	211	76	132	132	133	149	87	66
28	73	40	82	82	171	75	150	119	128	155	80	68
29	69	42	82	82	131	74	144	116	123	151	83	71
30	66	40	79	82	-----	74	141	127	121	149	91	72
31	64	-----	79	97	-----	73	-----	142	-----	159	111	-----
TOTAL	4,081	1,330	2,559	2,469	4,938	2,530	2,989	4,707	4,809	4,842	3,508	3,560
MEAN	132	44.3	82.5	79.6	170	81.6	99.6	152	160	156	113	119
MAX	164	56	138	97	265	114	150	187	200	208	167	158
MIN	64	40	37	75	108	66	57	116	121	123	76	58
AC-FT	8,090	2,640	5,080	4,900	9,790	5,020	5,930	9,340	9,540	9,600	6,960	7,060
CAL YR 1967	TOTAL 91,931		MEAN 252		MAX 1,300		MIN 18		AC-FT 182,300			
WTR YR 1968	TOTAL 42,322		MEAN 116		MAX 265		MIN 37		AC-FT 83,940			

WALKER LAKE BASIN

10-2955. LITTLE WALKER RIVER NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°21'30", long 119°26'30", in NW¼ sec.22, T.6 N., R.23 E., on right bank 0.8 mile north of Sonora Junction, 1.5 miles upstream from mouth, and 14 miles northwest of Bridgeport.

DRAINAGE AREA.--63.0 sq mi.

RECORDS AVAILABLE.--April to August 1910, October 1944 to September 1968. Prior to October 1958, published as East Fork West Walker River near Bridgeport.

GAGE.--Digital water-stage recorder. Altitude of gage is 6,790 ft (from topographic map). April to August 1910, staff gage at site 1 mile upstream at different datum. Dec. 2, 1944, to July 25, 1964, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--24 years (1944-68), 49.0 cfs (35,470 acre-ft per year).

EXTREMES.--Maximum discharge during year, 199 cfs June 2 (gage height, 1.73 ft); maximum gage height, 2.66 ft Dec. 20 (backwater from ice); minimum discharge, 5.6 cfs Sept. 3. 1910, 1944-68: Maximum discharge, 1,510 cfs Jan. 31, 1963 (gage height, 3.22 ft), from rating curve extended above 350 cfs on basis of slope-area measurement at gage height 2.80 ft and logarithmic plotting; maximum gage height recorded, 3.63 ft Jan. 3, 1945, (backwater from ice); minimum discharge recorded, 4.9 cfs Nov. 17, 1948, but may have been less during periods of ice effect.

REMARKS.--Records excellent except those for December and January, which are poor. Small diversions above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	26	24	20	15	32	37	56	125	55	29	9.0
2	34	27	20	22	18	30	34	61	144	56	24	7.5
3	36	26	23	19	21	30	33	59	147	51	26	6.5
4	34	26	25	17	19	27	31	60	137	49	28	6.5
5	35	26	28	17	18	25	31	63	118	46	25	7.0
6	35	25	25	17	18	24	31	56	102	42	24	7.5
7	35	25	28	17	18	28	30	54	94	43	23	11
8	33	25	25	18	18	29	30	58	88	44	23	12
9	32	24	21	20	19	28	30	56	82	52	24	13
10	32	25	22	23	18	28	33	54	84	47	24	14
11	31	25	23	15	18	29	38	56	89	42	23	14
12	30	24	21	17	18	28	40	64	91	40	21	13
13	30	24	18	18	18	25	37	50	89	37	21	13
14	30	30	15	18	18	28	37	51	94	35	16	13
15	30	25	20	30	18	28	40	47	100	33	14	12
16	30	25	18	25	18	26	38	44	104	32	13	13
17	30	25	17	20	22	25	36	49	106	33	12	13
18	29	26	17	17	23	25	34	58	108	32	15	12
19	28	28	17	17	42	25	33	72	108	31	19	12
20	28	29	14	17	94	24	31	88	96	31	24	13
21	28	25	13	17	56	25	30	89	88	30	22	13
22	28	25	15	17	48	25	28	78	88	29	21	14
23	28	26	16	17	56	25	29	72	88	28	21	14
24	28	26	17	16	43	26	28	67	81	28	18	14
25	28	24	18	17	40	28	30	69	75	27	16	13
26	28	25	18	17	40	26	34	81	73	27	16	13
27	28	27	21	17	38	26	36	100	72	28	15	13
28	28	23	18	15	35	28	41	125	67	24	15	12
29	27	24	18	17	33	33	44	132	59	26	15	14
30	27	24	17	23	-----	37	50	121	55	28	12	15
31	27	-----	17	19	-----	36	-----	118	-----	30	9.5	-----
TOTAL	941	765	609	576	860	859	1,034	2,208	2,852	1,136	608.5	357.0
MEAN	30.4	25.5	19.6	18.6	29.7	27.7	34.5	71.2	95.1	36.6	19.6	11.9
MAX	36	30	28	30	94	37	50	132	147	56	29	15
MIN	27	23	13	15	15	24	28	44	55	24	9.5	6.5
AC-FT	1,870	1,520	1,210	1,140	1,710	1,700	2,050	4,380	5,660	2,250	1,210	708

CAL YR 1967 TOTAL 32,239 MEAN 88.3 MAX 565 MIN 12 AC-FT 63,950
WTR YR 1968 TOTAL 12,805.5 MEAN 35.0 MAX 147 MIN 6.5 AC-FT 25,400

Peak discharge (base, 200 cfs).--No peak above base.

10-2960. WEST WALKER RIVER BELOW LITTLE WALKER RIVER, NEAR COLEVILLE, CALIF.

LOCATION.--Lat 38°22'45", long 119°27'00", in NW¼SE¼ sec.9, T.6 N., R.23 E., on left bank 100 ft downstream from Little Walker River, 200 ft upstream from bridge on U.S. Highway 395, and 13 miles southeast of Coleville.

DRAINAGE AREA.--180 sq mi.

RECORDS AVAILABLE.--April 1938 to September 1968. Prior to October 1958, published as "below East Fork."

GAGE.--Water-stage recorder. Altitude of gage is 6,650 ft (from topographic map). Prior to Oct. 1, 1939, at site 125 ft downstream at datum 1.00 ft higher.

AVERAGE DISCHARGE.--30 years, 252 cfs (182,400 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,270 cfs June 2 (gage height, 4.07 ft); minimum daily, 27 cfs Dec. 21.

1938-68: Maximum discharge, 6,220 cfs Nov. 20, 1950 (gage height, 8.10 ft), from rating curve extended above 1,900 cfs on basis of slope-area measurement of peak flow; minimum, 4.0 cfs Nov. 18, 1948, result of freezeup.

Maximum discharge observed prior to 1938, 5,800 cfs Dec. 11, 1937, by slope-area measurement.

REMARKS.--Records good except those for December and January, which are poor. Station is above diversions except for a few small ranch ditches. Flow very slightly regulated by Poor Lake Reservoir (capacity unknown) 7 miles upstream.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	97	58	39	37	37	142	209	542	854	222	125	63
2	94	58	31	38	44	135	186	586	980	225	98	59
3	104	60	45	33	54	132	169	610	1,010	209	91	57
4	104	58	50	30	54	130	161	604	882	203	82	54
5	102	58	50	29	58	130	164	570	714	203	72	53
6	99	58	29	28	58	120	155	457	495	186	68	53
7	94	58	36	30	58	118	153	430	426	192	65	53
8	90	56	45	35	58	120	155	485	373	189	68	49
9	85	54	38	40	58	115	172	495	365	209	78	49
10	82	56	40	32	58	110	206	398	426	186	78	49
11	80	58	40	29	58	108	263	426	515	164	78	48
12	78	56	44	35	58	110	294	439	547	155	76	45
13	76	56	47	40	56	105	300	341	530	153	93	43
14	76	69	41	52	56	102	300	309	542	145	87	42
15	73	76	43	80	52	102	330	294	622	138	78	43
16	73	69	40	62	54	102	310	305	634	130	72	43
17	73	67	43	56	67	97	280	341	640	122	70	43
18	71	69	45	48	76	98	240	426	640	112	70	45
19	69	82	40	52	109	93	220	580	622	108	78	43
20	69	82	35	50	252	91	215	728	525	100	148	39
21	67	69	27	54	198	96	210	770	466	97	120	38
22	67	67	36	52	167	102	205	536	470	93	102	38
23	65	63	38	50	191	100	205	416	480	87	87	38
24	65	60	40	47	179	105	210	365	439	82	80	37
25	62	56	44	46	166	110	220	403	377	80	74	36
26	62	50	47	48	161	105	280	547	361	82	70	35
27	62	48	52	44	155	105	330	728	357	91	68	36
28	60	52	48	40	150	118	370	924	329	89	68	35
29	58	50	48	43	145	142	410	1,010	267	93	68	36
30	60	40	33	46	-----	186	500	861	231	100	68	38
31	60	-----	35	47	-----	197	-----	791	-----	122	65	-----
TOTAL	2,377	1,813	1,269	1,353	2,887	3,626	7,422	16,717	16,119	4,367	2,545	1,340
MEAN	76.7	60.4	40.9	43.6	99.6	117	247	539	537	141	82.1	44.7
MAX	104	82	52	80	252	197	500	1,010	1,010	225	148	63
MIN	58	40	27	28	37	91	153	294	231	80	65	35
AC-FT	4,710	3,600	2,520	2,680	5,730	7,190	14,720	33,160	31,970	8,660	5,050	2,660

CAL YR 1967 TOTAL 150,309 MEAN 412 MAX 2,660 MIN 27 AC-FT 298,100
WTR YR 1968 TOTAL 61,835 MEAN 169 MAX 1,010 MIN 27 AC-FT 122,600

Peak discharge (base, 1,120 cfs).--May 28 (2400 hrs) 1,230 cfs (4.02 ft); June 2 (2400 hrs) 1,270 cfs (4.07 ft).

WALKER LAKE BASIN

10-2965. WEST WALKER RIVER NEAR COLEVILLE, CALIF.

LOCATION.--Lat 38°30'55", long 119°27'15", in NW¼NE¼ sec.28, T.8 N., R.23 E., on left bank 0.2 mile downstream from Rock Creek, and 5 miles southeast of Coleville.

DRAINAGE AREA.--271 sq mi.

RECORDS AVAILABLE.--October 1902 to July 1908 (published as West Fork of Walker River near Coleville 1903, 1905-8 and as Walker River (West Fork) near Coleville 1904), March 1909 to September 1910, June 1915 to March 1938, May 1957 to September 1968. Monthly discharge only for some periods, published in WSP 1314.

GAGE.--Digital water-stage recorder. Altitude of gage is 5,520 ft (from topographic map). Prior to July 31, 1908, staff gage at site/0.5 mile upstream at different datum. Mar. 1, 1909, to Aug. 31, 1910, staff gage, and June 18, 1915, to Aug. 15, 1919, graphic water-stage recorder near present site at different datums. Aug. 16, 1919, to Mar. 31, 1938, graphic water-stage recorder at site 1,000 ft upstream at different datum. May 26, 1957, to July 25, 1964, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--39 years (1902-7, 1909-10, 1915-37, 1957-68), 269 cfs (194,700 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,330 cfs June 3 (gage height, 3.05 ft); minimum daily, 32 cfs Dec. 21.

1915-38, 1957-68: Maximum discharge, 6,500 cfs Dec. 11, 1937, from slope-area measurement of peak flow; minimum, 5 cfs Dec. 3, 1924, Aug. 27, 1931.

REMARKS.--Records good except those for winter months, which are fair. Station is above diversions except for a few small ranch ditches. Flow very slightly regulated by Poor Lake Reservoir (capacity unknown) 17 miles upstream.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	82	65	45	40	162	246	562	899	250	137	73
2	106	82	46	48	52	153	221	623	1,030	240	110	69
3	115	81	54	40	62	148	200	646	1,110	230	101	66
4	120	81	62	34	60	148	190	663	967	220	93	65
5	114	80	68	34	64	151	193	650	815	220	82	64
6	117	79	50	34	65	141	184	502	545	205	80	62
7	112	80	60	39	67	138	178	462	477	210	74	63
8	107	77	52	60	68	143	180	506	430	205	74	60
9	102	75	39	62	70	136	196	538	422	220	85	60
10	100	76	43	54	67	125	232	438	457	200	86	59
11	99	77	40	39	68	122	299	454	541	180	86	60
12	97	75	68	46	68	130	333	464	593	170	86	58
13	96	75	50	46	68	122	323	391	572	170	98	57
14	95	82	58	60	66	121	324	355	560	160	101	54
15	93	88	54	68	63	118	360	339	649	150	89	55
16	96	83	50	66	66	125	346	348	674	139	83	56
17	96	80	58	64	74	112	303	379	680	129	80	56
18	94	81	60	60	81	117	261	431	657	120	78	55
19	92	89	52	62	97	111	245	604	663	115	83	55
20	92	91	40	60	265	104	233	777	561	110	148	52
21	91	84	32	62	230	110	218	863	488	105	133	50
22	90	83	35	60	189	117	204	591	479	100	113	50
23	89	77	39	55	219	115	208	464	492	96	102	50
24	89	74	42	54	215	117	222	419	462	92	92	48
25	85	75	41	60	192	123	242	436	404	91	85	47
26	84	68	40	64	184	119	306	557	388	91	81	44
27	85	69	54	53	178	119	363	758	380	101	79	43
28	84	69	50	43	172	129	391	975	350	100	78	43
29	82	68	52	54	164	155	464	1,080	290	101	77	44
30	83	71	37	64	-----	208	545	936	260	102	77	51
31	83	-----	40	60	-----	229	-----	835	-----	136	75	-----
TOTAL	2,996	2,352	1,531	1,650	3,274	4,168	8,210	18,046	17,295	4,758	2,846	1,669
MEAN	96.6	78.4	49.4	53.2	113	134	274	582	577	153	91.8	55.6
MAX	120	91	68	68	265	229	545	1,080	1,110	250	148	73
MIN	82	68	32	34	40	104	178	339	260	91	74	43
AC-FT	5,940	4,670	3,040	3,270	6,490	8,270	16,280	35,790	34,300	9,440	5,640	3,310

CAL YR 1967 TOTAL 155,895

MEAN 427

MAX 2,470

MIN 32

AC-FT 309,200

WTR YR 1968 TOTAL 68,795

MEAN 188

MAX 1,110

MIN 32

AC-FT 136,600

Peak discharge (based, 1,120 cfs).--June 3 (0200 hrs) 1,330 cfs (3.05 ft).

10-2970. TOPAZ RESERVOIR NEAR TOPAZ, CALIF.

LOCATION.--Lat 38°41'35", long 119°31'10", in NW¼NE¼ sec.33, T.10 N., R.22 E., at outlet works of Topaz Reservoir, 5.5 miles north of Topaz

RECORDS AVAILABLE.--December 1921 to September 1931 (monthly contents only published in WSP 1734), October 1931 to September 1968.

GAGE.--Float and staff gages read once daily. Datum of gage is at mean sea level (levels by Walker River Irrigation District).

EXTREMES.--Maximum contents during year, 59,600 acre-ft Apr. 1 (elevation, 5,005.07 ft); minimum, 7,640 acre-ft Sept. 30 (elevation, 4,977.20 ft).

1921-68: Maximum contents, 60,240 acre-ft June 30, 1941 (elevation 5,005.35 ft); no contents Oct. 31, 1924, Sept. 22, 24-30, Oct. 1-15, 1960.

REMARKS.--Topaz Reservoir, formerly known as Alkali Lake, was formed by the diversion of water from West Walker River through a feeder canal and the construction of an outlet tunnel through a low saddle in rim of lake. Storage began December 1921. Usable capacity, 59,440 acre-ft between elevations 4,972.3 (lowest practical elevation for diversion through tunnel, bottom of outlet tunnel at elevation 4,970 ft) and 5,005 ft (3 ft below top of levee). Capacity of reservoir increased from 45,000 acre-ft to 59,440 acre-ft in October 1937 by an earthfill, rock-faced levee at south end. Figures given herein represent usable contents. Water is used for irrigation in Walker River Irrigation District.

COOPERATION.--Elevations furnished by Walker River Irrigation District.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

4,977	7,320	4,995	38,100
4,980	12,130	5,000	48,350
4,985	20,390	5,006	61,760
4,990	28,970		

CONTENTS, IN ACRE-FEET, AT 0700 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41,250	40,890	46,120	51,070	56,280	58,520	59,600	51,990	50,070	48,770	27,610	15,070
2	41,170	41,030	46,220	51,220	56,480	58,660	59,550	51,850	50,590	48,220	27,230	14,640
3	40,970	41,170	46,390	51,370	56,710	58,820	59,460	51,720	51,280	47,710	26,850	14,250
4	40,870	41,330	46,670	51,500	56,870	59,000	59,350	51,570	52,070	47,150	26,410	13,840
5	40,810	41,450	46,900	51,630	57,020	59,190	59,140	51,480	52,620	46,560	26,030	13,460
6	40,690	41,570	47,130	51,790	57,160	59,260	58,910	51,200	52,800	45,990	25,640	13,040
7	40,670	41,760	47,320	51,900	57,300	59,350	58,680	50,780	52,690	45,300	25,310	12,650
8	40,670	41,960	47,470	52,050	57,430	59,480	58,460	50,390	52,490	44,660	24,920	12,310
9	40,710	42,120	47,640	52,200	57,540	59,320	58,230	50,050	52,250	43,950	24,520	11,970
10	40,770	42,240	47,880	52,360	57,730	59,260	57,980	49,830	52,050	43,290	24,110	11,640
11	40,830	42,390	48,070	52,560	57,840	59,350	57,680	49,510	51,850	42,610	23,750	11,290
12	40,850	42,550	48,220	52,710	57,930	59,440	57,390	49,200	51,770	41,960	23,390	10,930
13	40,870	42,740	48,350	52,840	57,950	59,320	57,110	49,140	51,720	41,250	22,970	10,600
14	40,890	42,920	48,390	53,020	57,930	59,300	56,840	48,820	51,680	40,610	22,520	10,240
15	40,890	43,040	48,430	53,260	57,890	59,300	56,640	48,580	51,570	39,910	22,100	9,920
16	40,930	43,190	48,560	53,510	57,890	59,320	56,390	48,280	51,630	39,110	21,740	9,630
17	40,970	43,350	48,710	53,730	57,930	59,440	56,050	48,000	51,770	38,330	21,360	9,380
18	40,970	43,520	48,860	53,880	57,890	59,390	55,670	47,790	51,880	37,510	20,930	9,100
19	40,970	43,720	48,990	54,080	58,090	59,440	55,380	47,680	51,990	36,670	20,510	8,860
20	40,970	43,970	49,140	54,260	58,070	59,480	55,020	47,730	52,070	35,910	20,070	8,620
21	40,950	44,180	49,250	54,440	58,300	59,480	54,750	48,200	52,030	35,170	19,540	8,450
22	40,950	44,380	49,400	54,600	58,270	59,530	54,400	48,430	51,880	34,380	19,100	8,310
23	40,970	44,590	49,530	54,780	58,000	59,580	54,060	48,370	51,660	33,620	18,680	8,200
24	40,910	44,820	49,680	54,950	58,020	59,580	53,710	48,130	51,440	32,870	18,300	8,120
25	40,870	45,010	49,830	55,130	58,070	59,580	53,370	47,830	51,150	32,160	17,880	8,040
26	40,810	45,200	50,020	55,310	58,070	59,550	53,110	47,580	50,830	31,370	17,450	7,960
27	40,770	45,360	50,220	55,450	58,110	59,580	52,870	47,620	50,590	30,660	17,020	7,860
28	40,790	45,530	50,390	55,580	58,250	59,550	52,580	47,920	50,310	29,990	16,640	7,780
29	40,790	45,720	50,590	55,740	58,390	59,550	52,380	48,450	49,920	29,290	16,220	7,700
30	40,790	45,910	50,740	55,920	-----	59,550	52,160	49,200	49,330	28,590	15,810	7,640
31	40,810	-----	50,910	56,170	-----	59,580	-----	49,700	-----	28,010	15,450	-----
(a)	4,996.37	4,998.85	5,001.19	5,003.56	5,004.54	5,005.06	5,001.76	5,000.63	5,000.46	4,989.45	4,982.03	4,977.20
(b)	-480	+5,100	+5,000	+5,260	+2,220	+1,190	-7,420	-2,460	-370	-21,320	-12,560	-7,810

CAL YR 1967 b +31,510

WTR YR 1968 b -33,650

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

WALKER LAKE BASIN

10-2975. WEST WALKER RIVER AT HOYE BRIDGE, NEAR WELLINGTON, NEV.

LOCATION.--Lat 38°43'40", long 119°25'40", in NE¼SE¼ sec.17, T.10 N., R.23 E., on left bank 20 ft upstream from Hoyer Bridge, 2 miles upstream from head of Saroni Canal, and 4 miles southwest of Wellington.

DRAINAGE AREA.--533 sq mi.

RECORDS AVAILABLE.--April to August 1910 (published as West Walker River near Wellington), July 1920 to September 1923, March 1924 to September 1932, October 1957 to September 1968. Monthly discharge only for some periods published in WSP 1314.

GAGE.--Digital water-stage recorder. Altitude of gage is 4,980 ft (from topographic map). April to August 1910, staff gage at same site at different datum. July 1, 1920, to Sept. 30, 1923, graphic water-stage recorder at site 3 miles downstream (1 mile downstream from Saroni Canal) at different datum and supplemental staff gage on Saroni Canal 1 mile downstream from head. Mar. 1, 1924, to Sept. 30, 1932, graphic water-stage recorder at same site at different datum. Oct. 1, 1957, to Aug. 12, 1964, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--21 years (1920-23, 1925-32, 1957-68), 218 cfs (157,800 acre-ft per year), unadjusted.

EXTREMES.--Maximum discharge during year, 580 cfs May 6 (gage height, 4.92 ft); minimum, 11 cfs Dec. 13. 1910, 1920-23, 1924-32, 1957-68: Maximum discharge, 2,180 cfs June 6, 1922; minimum observed, 4.8 cfs Jan. 5, 1961.

REMARKS.--Records good. Flow regulated by off-channel storage in Topaz Reservoir since Jan. 30, 1922. Diversions for irrigation of 10,500 acres above station. Records include releases from Topaz Reservoir and all return flow from Antelope Valley.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	130	47	37	35	29	142	196	497	504	417	275	214
2	140	43	36	30	36	122	231	523	513	384	256	210
3	144	37	36	30	44	94	226	533	525	382	243	208
4	140	37	36	30	60	92	231	543	495	406	224	204
5	132	36	36	30	61	103	228	560	516	406	222	204
6	125	36	36	31	60	123	222	575	518	413	214	212
7	114	33	34	32	59	128	222	555	504	430	214	200
8	103	33	35	34	59	243	208	528	483	437	226	190
9	95	33	35	33	67	318	218	533	472	437	222	186
10	83	33	35	33	85	186	249	533	453	446	216	188
11	81	33	35	33	90	146	305	525	446	413	214	190
12	80	33	36	34	112	170	305	518	451	395	214	186
13	80	33	34	34	130	206	307	495	444	375	224	174
14	78	33	33	34	149	174	287	469	453	367	224	170
15	78	33	33	34	127	147	301	433	469	397	212	158
16	78	33	33	33	98	137	358	426	460	402	200	147
17	78	34	33	35	102	144	369	404	465	408	220	146
18	78	35	35	36	112	146	351	408	469	422	231	139
19	78	36	33	36	144	128	303	433	462	422	231	125
20	78	37	31	36	206	122	296	422	462	400	241	111
21	78	38	28	35	285	122	287	485	449	397	245	95
22	78	37	30	35	334	122	285	481	449	397	241	82
23	90	36	30	34	301	123	285	469	462	402	237	80
24	105	36	31	34	239	128	279	439	462	389	237	66
25	105	36	34	34	239	130	264	455	467	384	235	63
26	105	36	34	33	226	135	270	446	428	378	224	71
27	101	35	34	32	182	128	338	453	391	367	220	70
28	92	36	35	30	142	128	371	504	393	386	222	69
29	94	36	35	29	142	130	395	528	406	367	224	69
30	92	38	34	30	-----	147	478	506	426	345	198	67
31	87	-----	34	30	-----	174	-----	497	-----	312	206	-----
TOTAL	3,020	1,072	1,051	1,019	3,920	4,538	8,665	15,176	13,897	12,283	7,012	4,294
MEAN	97.4	35.7	33.9	32.9	135	146	289	490	463	396	226	143
MAX	144	47	37	36	334	318	478	575	525	446	275	214
MIN	78	33	28	29	29	92	196	404	391	312	198	63
AC-FT	5,990	2,130	2,080	2,020	7,780	9,000	17,190	30,100	27,560	24,360	13,910	8,520
CAL YR 1967	TOTAL 144,019		MEAN 395		MAX 2,060		MIN 16		AC-FT 285,700			
WTR YR 1968	TOTAL 75,947		MEAN 208		MAX 575		MIN 28		AC-FT 150,600			

CARSON RIVER BASIN

529

10-3082. EAST FORK CARSON RIVER BELOW MARKLEEVILLE CREEK, NEAR MARKLEEVILLE, CALIF.

LOCATION.--Lat 38°42'50", long 119°45'50", in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.15, T.10 N., R.20 E., on right bank 0.5 mile downstream from Markleeville Creek and 1.5 miles north-northeast of Markleeville.

DRAINAGE AREA.--276 sq mi.

RECORDS AVAILABLE.--August 1960 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 5,400 ft (from topographic map). Prior to Nov. 23, 1963, graphic water-stage recorder. Prior to Oct. 1, 1967, at present site at datum 2.00 ft higher.

AVERAGE DISCHARGE.--8 years, 338 cfs (244,700 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,530 cfs May 20 (gage height, 4.48 ft); minimum daily, 45 cfs Dec. 15, 21.
1960-68: Maximum discharge, 15,100 cfs Jan. 31, 1963 (gage height, 10.21 ft, present datum); minimum, 16 cfs Nov. 17, 1961.

REMARKS.--Records good except those for winter months, which are fair. A few small diversions for irrigation above station. Flow slightly regulated by several small reservoirs (total capacity, 5,000 acre-ft).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	111	86	76	140	70	312	477	872	957	213	140	88
2	111	84	64	120	90	288	390	821	1,020	199	135	86
3	178	84	76	100	100	278	343	778	1,050	190	130	84
4	135	84	92	100	90	278	338	880	965	184	120	82
5	123	84	90	100	96	278	355	812	804	181	111	80
6	120	84	88	120	97	251	316	696	640	178	102	78
7	118	84	100	120	97	244	312	703	577	178	107	74
8	111	82	98	130	98	248	326	761	528	175	107	69
9	109	82	90	150	109	236	361	719	500	167	107	58
10	107	82	80	145	100	213	442	696	500	169	107	58
11	105	82	70	120	105	210	535	703	528	161	105	64
12	100	82	64	110	111	221	542	787	542	159	102	62
13	100	80	54	120	107	217	521	626	521	150	116	64
14	98	92	50	200	102	210	563	584	507	148	125	58
15	96	88	45	370	96	199	549	570	535	145	128	54
16	98	84	60	326	100	206	471	598	521	148	125	50
17	94	84	60	200	148	193	407	626	535	145	120	48
18	92	86	70	130	161	196	384	710	528	140	116	48
19	92	107	64	125	221	187	372	948	507	133	135	46
20	92	105	60	105	778	184	361	1,190	459	133	178	47
21	90	94	45	100	598	199	338	1,170	419	135	135	51
22	90	82	54	90	430	213	332	914	413	140	128	51
23	88	82	58	85	556	213	349	719	390	150	120	53
24	88	80	70	80	483	229	378	647	355	143	116	53
25	88	82	80	85	390	255	436	675	316	138	107	54
26	86	73	90	85	367	232	507	778	297	130	102	53
27	88	74	95	75	355	232	528	923	278	130	98	54
28	86	78	100	74	332	267	626	1,100	263	138	92	54
29	86	78	105	86	307	316	770	1,170	240	133	96	56
30	86	82	110	96	-----	343	812	1,040	225	113	98	62
31	86	-----	110	92	-----	454	-----	948	-----	118	92	-----
TOTAL	3,152	2,531	2,368	3,979	6,694	7,602	13,441	25,164	15,920	4,764	3,600	1,839
MEAN	102	84.4	76.4	128	231	245	448	812	531	154	116	61.3
MAX	178	107	110	370	778	454	812	1,190	1,050	213	178	88
MIN	86	73	45	74	70	184	312	570	225	113	92	46
AC-FT	6,250	5,020	4,700	7,890	13,280	15,080	26,660	49,910	31,580	9,450	7,140	3,650

CAL YR 1967 TOTAL 208,447 MEAN 571 MAX 3,590 MIN 45 AC-FT 413,400
WTR YR 1968 TOTAL 91,054 MEAN 249 MAX 1,190 MIN 45 AC-FT 180,600

Peak discharge (base, 1,300 cfs).--May 20 (2100 hrs) 1,530 cfs (4.48 ft); May 29 (0130 hrs) 1,440 cfs (4.39 ft).

CARSON RIVER BASIN

10-3090. EAST FORK CARSON RIVER NEAR GARDNERVILLE, NEV.

LOCATION.--Lat 38°50'40", long 119°42'10", in SW¼ sec. 2, T.11 N., R.20 E., on left bank 0.1 mile downstream from Horseshoe Bend, 2 miles east of Mud Lake Reservoir, 4.5 miles downstream from Bryant Creek, and 7 miles southeast of Gardnerville.

DRAINAGE AREA.--341 sq mi.

RECORDS AVAILABLE.--January 1890 to December 1893, October 1900 to December 1903 (gage heights only August to December 1904 and July to December 1905), January 1908 to December 1910, June to October 1917, December 1924 to September 1928, June to September 1929, October 1935 to December 1937, May 1939 to September 1968. Monthly discharge only for some periods published in WSP 1314.

GAGE.--Digital water-stage recorder and graphic water-stage recorder with thermograph attachment. Datum of gage is 4,985.11 ft above mean sea level (levels by Bureau of Reclamation). Prior to May 19, 1939, staff gages at several sites within 2 miles of present site at various datums. May 19, 1939 to June 30, 1955, graphic water-stage recorder. July 1, 1955 to Dec. 8, 1966, graphic water-stage recorder with thermograph attachment.

AVERAGE DISCHARGE.--42 years (1890-93, 1900-1903, 1908-10, 1925-28, 1935-37, 1939-68), 386 cfs (279,500 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,390 cfs May 21 (gage height, 3.29 ft); minimum, 48 cfs Sept. 19, 20. 1890-93, 1900-1906, 1908-10, 1917, 1924-28, 1929, 1935-37, 1939-68: Maximum discharge, 17,600 cfs Dec. 23, 1955 (gage height, 11.88 ft), from rating curve extended above 6,000 cfs on basis of slope-area measurements at gage heights 9.66 and 11.88 ft; minimum observed, 8 cfs Dec. 4-10, 19-23, 1904.

REMARKS.--Records excellent except those for winter months, which are fair. Station is above all diversions in Carson Valley. Diversions for irrigation above station. Flow slightly regulated by several small reservoirs (total capacity, 5,000 acre-ft). Records of water temperature for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	127	104	104	181	80	314	511	829	931	222	132	87
2	122	104	106	150	100	294	416	872	984	205	124	86
3	184	104	129	120	108	289	365	786	1,030	192	119	84
4	102	104	113	110	100	290	349	822	953	183	110	84
5	139	104	125	105	104	284	375	876	829	179	100	84
6	137	104	86	130	100	261	341	752	667	175	89	81
7	134	104	113	140	101	255	330	704	613	170	93	80
8	129	102	100	140	101	260	335	761	555	172	94	77
9	125	102	95	150	113	245	362	787	521	157	95	61
10	122	100	90	167	105	223	433	704	508	159	96	61
11	120	102	80	131	106	218	555	734	537	149	94	68
12	118	100	70	125	114	226	569	818	556	145	91	66
13	118	100	70	145	113	226	547	702	543	140	106	70
14	116	106	65	187	102	221	522	613	523	136	115	67
15	116	118	70	344	98	210	591	599	553	133	114	61
16	116	109	76	310	98	224	556	623	543	131	112	54
17	113	106	76	145	134	202	475	650	559	132	109	52
18	111	109	76	119	174	210	404	696	548	127	106	51
19	111	129	76	111	193	197	384	889	540	119	119	49
20	111	139	66	100	769	193	385	1,080	485	115	171	51
21	109	122	60	98	657	210	367	1,160	440	116	133	54
22	109	111	68	96	475	229	339	934	423	118	125	55
23	109	104	80	92	529	229	340	758	414	136	117	55
24	106	104	90	92	450	242	370	673	384	131	113	55
25	104	106	105	96	389	267	398	678	341	124	103	55
26	104	97	111	95	375	262	486	773	319	117	101	54
27	106	93	115	87	358	244	554	885	297	115	97	52
28	104	104	120	83	333	272	571	1,030	278	125	91	51
29	104	93	125	96	320	342	704	1,120	252	119	96	51
30	104	106	137	107	-----	454	809	1,030	236	102	98	60
31	106	-----	152	101	-----	471	-----	936	-----	106	92	-----
TOTAL	3,696	3,190	2,949	4,153	6,799	8,064	13,743	25,274	16,362	4,450	3,355	1,916
MEAN	119	106	95.1	134	234	260	458	815	545	144	108	63.9
MAX	184	139	152	344	769	471	809	1,160	1,030	222	171	87
MIN	104	93	60	83	80	193	330	599	236	102	89	49
AC-FT	7,330	6,330	5,850	8,240	13,490	15,990	27,260	50,130	32,450	8,830	6,650	3,800
CAL YR 1967	TOTAL 204,840	MEAN 561	MAX 3,330	MIN 60	AC-FT 406,300							
WTR YR 1968	TOTAL 93,951	MEAN 257	MAX 1,160	MIN 49	AC-FT 186,300							

Peak discharge (base, 1,300 cfs).--May 21 (0100 hrs) 1,390 cfs (3.29 ft).

10-3100. WEST FORK CARSON RIVER AT WOODFORDS, CALIF.

LOCATION.--Lat 38°46'10", long 119°49'55", in NW¼SE¼ sec.34, T.11 N., R.19 E., on left bank 0.3 mile downstream from bridge on State Highway 88-89, 0.6 mile southwest of Woodfords, and 3.8 miles downstream from Willow Creek.

DRAINAGE AREA.--65.6 sq mi.

RECORDS AVAILABLE.--October 1900 to May 1907, 1910-11 (fragmentary), October 1938 to September 1968. January 1890 to March 1892, June 1907 to September 1920 (except portions of 1910-11) at site 0.7 mile downstream; records not equivalent owing to diversions for irrigation. Monthly discharge only for some periods, published in WSP 1314.

GAGE.--Water-stage recorder. Altitude of gage is 5,760 ft (from river-profile map). Prior to Oct. 1, 1938, staff gage at same site at different datum. Oct. 1, 1938, to Nov. 11, 1958, water-stage recorder at same site at datum 1.02 ft lower. Nov. 13, 1958, to Jan. 30, 1963, water-stage recorder at site 150 ft downstream at datum 3.06 ft lower.

AVERAGE DISCHARGE.--37 years (1900-1907, 1938-68), 113 cfs (81,810 acre-ft per year).

EXTREMES.--Maximum discharge during year, 360 cfs Apr. 29; maximum gage height, 2.67 ft; minimum daily discharge, 12 cfs Sept. 6-8, 16, 18-21.

1900-1907, 1910-11, 1938-68: Maximum discharge, 4,890 cfs Feb. 1, 1963 (gage height, 9.0 ft), on basis of slope-area measurement of peak flow; minimum (1900-1907, 1938-68), about 5 cfs Dec. 23, 1961.

Flood of Dec. 11, 1937, reached a stage of 8.0 ft (present datum), from floodmarks (discharge, 3,500 cfs by slope-area measurement).

REMARKS.--Records good except those for winter months, which are poor. One small diversion above station for irrigation. Flow slightly regulated by several small reservoirs (total capacity, about 1,500 acre-ft).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	40	30	32	44	129	194	315	197	59	78	22
2	49	39	30	31	45	118	158	315	199	60	68	16
3	129	40	30	28	45	117	143	315	211	59	65	15
4	69	39	32	27	44	120	154	318	202	73	45	14
5	56	39	34	27	44	118	166	300	181	76	29	14
6	52	39	34	26	44	102	145	256	158	56	28	12
7	48	39	32	26	44	96	150	245	150	42	28	12
8	46	39	31	26	44	92	168	250	136	35	32	12
9	44	38	31	28	44	83	190	250	136	32	32	16
10	44	38	30	30	44	71	229	237	130	31	28	19
11	44	38	28	29	43	68	264	239	136	38	25	17
12	43	38	27	28	44	65	264	273	137	39	31	17
13	43	39	26	29	43	52	256	245	130	37	53	16
14	43	44	26	30	43	63	256	237	125	36	64	14
15	42	46	25	32	43	59	267	229	136	46	64	13
16	42	42	25	36	43	53	245	216	127	55	59	12
17	42	42	26	40	46	46	216	209	125	66	51	13
18	42	42	27	37	50	58	197	219	124	69	32	12
19	41	48	25	32	62	52	202	242	118	63	25	12
20	41	49	23	32	120	51	209	264	107	54	29	12
21	41	45	21	32	156	44	197	264	99	33	24	12
22	41	42	22	33	170	43	181	232	96	27	26	12
23	40	40	23	34	206	51	197	206	92	25	25	16
24	41	38	25	35	206	52	209	185	84	25	23	15
25	41	35	27	36	174	68	224	185	77	28	22	14
26	40	33	30	37	156	59	250	190	70	29	41	14
27	40	32	32	38	148	63	259	206	63	28	49	14
28	42	31	34	37	139	86	264	221	56	26	47	13
29	41	31	35	37	127	125	300	221	51	37	41	14
30	40	30	33	38	-----	162	321	206	49	50	34	15
31	40	-----	31	41	-----	183	-----	197	-----	71	28	-----
TOTAL	1,467	1,175	885	1,004	2,461	2,549	6,475	7,487	3,702	1,405	1,226	429
MEAN	47.3	39.2	28.5	32.4	84.9	82.2	216	242	123	45.3	39.5	14.3
MAX	129	49	35	41	206	183	321	318	211	76	78	22
MIN	40	30	21	26	43	43	143	185	49	25	22	12
AC-FT	2,910	2,330	1,760	1,990	4,880	5,060	12,840	14,850	7,340	2,790	2,430	851
CAL YR 1967	TOTAL 50,863			MEAN 139		MAX 1,120		MIN 21		AC-FT 100,900		
WTR YR 1968	TOTAL 30,265			MEAN 82.7		MAX 321		MIN 12		AC-FT 60,030		

Peak discharge (base, 500 cfs).--No peak above base.

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3366. UPPER TRUCKEE RIVER NEAR MEYERS, CALIF.

LOCATION.--Lat 38°50'35", long 120°01'25", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.31, T.12 N., R.18 E., 0.4 mile upstream from mouth of Echo Lake outlet, 1.1 miles southwest of Meyers, and 2.5 miles upstream from Angora Creek.

DRAINAGE AREA.--33.1 sq mi.

RECORDS AVAILABLE.--October 1960 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 6,325 ft (from topographic map). Prior to Feb. 25, 1964, graphic water-stage recorder.

AVERAGE DISCHARGE.--8 years, 61.9 cfs (44,810 acre-ft per year).

EXTREMES.--Maximum discharge during year, 321 cfs May 20 (gage height, 6.75 ft); minimum, 4.1 cfs Sept. 28, 29, 1960-68: Maximum discharge, 2,550 cfs Feb. 1, 1963 (gage height, 12.41 ft); minimum, 2.0 cfs Jan. 13, 1961.

REMARKS.--Records good except those for winter months, which are fair. No regulation. Some small diversions for domestic use above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	11	7.0	8.4	11	67	99	186	153	26	11	5.5
2	14	11	6.6	8.4	12	62	75	197	161	25	11	5.5
3	40	11	9.5	8.0	13	62	67	204	156	23	10	7.3
4	28	9.8	9.5	8.0	13	64	69	210	138	23	9.9	7.8
5	22	10	9.5	8.0	13	66	72	192	112	21	9.2	7.3
6	17	9.5	7.6	8.0	12	57	65	153	96	21	7.5	7.1
7	15	8.5	7.6	8.0	12	52	65	147	93	20	6.0	6.4
8	15	8.3	8.0	8.5	11	49	70	165	84	20	5.8	5.8
9	15	8.3	9.0	10	12	45	79	171	82	18	5.8	5.7
10	15	8.0	11	12	12	43	103	167	81	17	5.7	5.4
11	13	8.0	11	9.0	11	41	125	155	83	16	5.5	5.2
12	13	8.3	10	11	11	40	125	171	81	15	5.4	5.0
13	13	8.3	8.0	12	11	38	113	138	76	14	6.2	4.9
14	13	12	7.0	12	11	35	116	115	74	13	6.7	4.7
15	12	11	7.5	25	11	34	125	112	74	12	6.2	4.6
16	12	9.5	8.0	21	11	34	107	115	71	12	6.0	4.4
17	12	9.5	7.6	20	15	33	88	119	70	12	6.0	4.4
18	12	9.5	8.0	18	18	32	79	140	66	12	6.0	4.4
19	12	13	7.5	16	26	29	77	189	62	12	7.3	4.3
20	11	13	7.0	15	149	29	78	224	57	12	11	4.4
21	11	13	6.0	15	115	30	74	216	54	12	7.8	4.7
22	12	11	7.0	14	84	32	70	159	51	12	8.0	4.9
23	12	11	8.0	13	133	32	74	122	48	12	8.0	4.9
24	11	10	8.5	13	114	34	83	107	44	12	6.9	4.7
25	11	9.3	10	13	81	37	99	125	40	11	6.2	4.6
26	11	9.0	9.8	13	70	36	124	155	38	11	5.8	4.4
27	11	9.3	9.0	12	66	36	132	188	35	11	5.7	4.4
28	11	8.8	8.8	11	67	47	141	207	32	11	5.7	4.3
29	12	7.0	9.3	12	66	69	172	197	28	11	5.5	4.3
30	11	7.0	8.4	13	-----	89	181	168	26	10	5.5	4.6
31	11	-----	8.4	13	-----	96	-----	155	-----	10	5.5	-----
TOTAL	441	292.9	260.1	388.3	1,191	1,450	2,947	5,069	2,266	467	218.8	155.9
MEAN	14.2	9.76	8.39	12.5	41.1	46.8	98.2	164	75.5	15.1	7.06	5.20
MAX	40	13	11	25	149	96	181	224	161	26	11	7.8
MIN	11	7.0	6.0	8.0	11	29	65	107	26	10	5.4	4.3
AC-FT	875	581	516	770	2,360	2,880	5,850	10,050	4,490	926	434	309

CAL YR 1967 TOTAL 34,863.0 MEAN 95.5 MAX 632 MIN 6.0 AC-FT 69,150
WTR YR 1968 TOTAL 15,147.0 MEAN 41.4 MAX 224 MIN 4.3 AC-FT 30,040

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
05-04	2015	6.37	255	05-28	2145	6.50	277
05-20	2130	6.75	321				

PYRAMID AND WINNEMUCCA LAKES BASIN

533

10-3366.6. BLACKWOOD CREEK NEAR TAHOE CITY, CALIF.

LOCATION.--Lat 39°06'27", long 120°09'37", in NE¼ sec.36, T.15 N., R.16 E., on left bank just downstream from bridge on State Highway 89, 700 ft upstream from Lake Tahoe, and 4.6 miles south of Tahoe City.

DRAINAGE AREA.--11.2 sq mi.

RECORDS AVAILABLE.--October 1960 to September 1968.

GAGE.--Water-stage recorder. Altitude of gage is 6,235 ft (from topographic map). Prior to Oct. 1, 1964 at datum 1.75 ft higher.

AVERAGE DISCHARGE.--8 years, 33.5 cfs (24,250 acre-ft per year).

EXTREMES.--Maximum discharge during year, 334 cfs Feb. 20 (gage height, 6.11 ft); minimum, 0.30 cfs Sept. 19.
1960-68: Maximum discharge, 2,100 cfs Dec. 22 or 24, 1964, from indirect measurement of peak flow;
maximum gage height, 9.90 ft Dec. 22, 1964; minimum discharge, 0.30 cfs Sept. 19, 1968.

REMARKS.--Records fair except those for winter months, which are poor. No known diversion or regulation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	4.0	3.1	4.0	4.6	53	67	125	85	16	3.4	3.7
2	8.0	4.4	2.9	4.0	4.8	50	53	125	90	16	3.7	3.4
3	11	4.4	3.2	3.5	8.0	50	50	135	81	14	4.0	3.4
4	8.5	4.4	3.7	3.5	8.0	50	50	140	74	14	4.0	3.1
5	7.2	4.0	5.9	3.5	8.0	50	50	123	63	14	3.7	3.1
6	6.3	4.0	4.0	3.5	8.2	45	47	107	55	13	3.7	3.1
7	5.9	4.0	3.9	3.5	8.5	42	50	101	57	13	3.7	3.1
8	5.4	3.7	3.8	3.8	8.5	60	52	103	52	11	3.7	3.1
9	5.0	3.7	3.7	4.0	8.5	35	60	105	51	9.9	3.7	2.8
10	4.7	3.7	3.7	5.0	8.5	33	73	107	49	9.9	3.7	2.4
11	4.4	3.7	4.0	3.5	8.5	32	83	103	49	9.0	3.7	2.1
12	4.4	3.7	4.0	3.5	8.5	31	86	96	46	8.1	3.4	2.1
13	4.4	4.0	3.7	4.0	9.0	35	80	81	44	7.6	3.4	1.6
14	4.4	5.0	3.4	5.2	8.5	33	85	73	43	7.2	2.4	1.5
15	4.4	4.0	3.0	9.0	8.5	30	88	67	42	7.2	2.4	1.3
16	4.4	3.7	3.2	10	9.0	43	78	67	43	6.8	2.4	1.2
17	3.4	3.4	3.2	7.0	15	49	64	70	41	6.3	3.1	.76
18	3.4	3.4	3.2	7.0	18	30	58	80	38	5.9	2.1	.64
19	3.4	5.9	3.2	7.4	33	29	60	96	35	5.9	15	.52
20	3.7	8.1	3.0	8.0	189	29	58	112	33	5.0	14	1.0
21	3.7	5.4	2.7	7.5	98	29	56	107	31	5.0	10	.90
22	3.7	4.4	2.9	7.8	76	29	55	90	30	4.4	8.9	.80
23	3.7	4.0	3.9	7.8	138	29	58	74	30	4.4	7.2	.60
24	3.7	3.7	3.5	7.8	99	30	61	70	28	3.7	5.9	.50
25	3.7	3.4	4.0	8.0	73	30	68	80	24	3.7	5.4	.50
26	3.7	3.1	4.2	8.0	65	30	78	85	24	3.1	4.7	.50
27	3.7	3.1	4.5	7.0	63	30	86	96	22	3.4	4.0	.50
28	3.7	3.4	5.0	7.5	60	33	88	105	19	3.1	4.0	.60
29	4.0	3.3	4.6	9.0	55	42	109	101	18	3.1	4.0	.60
30	4.0	3.2	4.3	9.0	-----	56	121	92	17	3.1	4.0	.80
31	4.0	-----	4.0	7.5	-----	63	-----	85	-----	3.7	3.7	-----
TOTAL	147.9	122.2	115.4	189.8	1,109.6	1,210	2,072	3,001	1,314	240.5	151.0	50.22
MEAN	4.77	4.07	3.72	6.12	38.3	39.0	69.1	96.8	43.8	7.76	4.87	1.67
MAX	11	8.1	5.9	10	189	63	121	140	90	16	15	3.7
MIN	3.4	3.1	2.7	3.5	4.6	29	47	67	17	3.1	2.1	.50
AC-FT	293	242	229	376	2,200	2,400	4,110	5,950	2,610	477	300	100

CAL YR 1967 TOTAL 17,800.8 MEAN 48.8 MAX 914 MIN 1.6 AC-FT 35,310
WTR YR 1968 TOTAL 9,723.62 MEAN 26.6 MAX 189 MIN .50 AC-FT 19,290

Peak discharge (base, 200 cfs).--Feb. 20 (0700 hrs) 334 cfs (6.11 ft).

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3367.8. TROUT CREEK NEAR TAHOE VALLEY, CALIF.

LOCATION.--Lat 38°55'12", long 119°58'17", in SE $\frac{1}{4}$ sec.3, T.12 N., R.18 E., on left bank 15 ft downstream from Martin Ave. bridge, 500 ft upstream from Heavenly Valley Creek, and 1.8 miles east of Tahoe Valley.

DRAINAGE AREA.--36.7 sq mi.

RECORDS AVAILABLE.--October 1960 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 6,250 ft (from topographic map). Prior to Feb. 24, 1965, graphic water-stage recorder.

AVERAGE DISCHARGE.--8 years, 33.3 cfs (24,110 acre-ft per year).

EXTREMES.--Maximum discharge during year, 82 cfs Feb. 20 (gage height, 7.27 ft); minimum, 6.0 cfs Sept. 8, 9. 1960-68: Maximum discharge, 535 cfs Feb. 1, 1963 (gage height, 11.14 ft), from rating curve extended above 110 cfs on basis of computation of peak flow (weir formula) and logarithmic projection. No flow for part of Sept. 11, 1966.

REMARKS.--Records good except those for December and January, which are poor. Minor diversion for local water supply.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	23	18	17	17	38	45	48	58	24	16	9.2
2	27	23	18	17	18	37	38	50	60	23	13	9.0
3	47	23	20	15	20	37	35	52	63	24	13	8.7
4	36	23	20	15	22	37	35	53	61	22	12	8.6
5	30	22	21	15	22	36	36	52	58	23	11	8.4
6	29	24	18	15	21	33	33	48	57	24	11	8.4
7	29	29	18	15	22	32	34	47	57	24	11	8.1
8	28	29	17	17	22	32	35	51	49	23	11	7.2
9	27	22	18	20	22	31	37	53	48	22	11	6.5
10	26	22	20	25	21	29	40	47	46	21	10	7.3
11	26	21	22	16	21	29	44	48	44	20	10	7.7
12	26	21	20	17	22	28	43	61	42	20	10	8.0
13	25	22	19	18	21	28	41	57	41	18	12	7.9
14	25	25	17	25	21	27	42	51	40	18	11	7.8
15	24	22	16	35	21	27	44	49	40	18	11	8.7
16	25	21	18	27	21	27	42	48	39	16	11	8.5
17	25	21	17	22	26	27	39	48	39	16	11	8.5
18	24	23	17	20	25	26	37	48	38	16	12	8.7
19	25	27	17	21	31	27	36	52	36	15	13	8.5
20	24	28	15	22	74	27	36	55	34	15	12	9.5
21	25	23	15	22	59	27	34	57	33	15	12	10
22	24	22	15	22	49	26	33	53	32	14	13	10
23	24	23	17	22	63	26	35	50	31	14	13	12
24	22	22	19	22	53	27	36	48	30	14	12	12
25	23	22	20	21	44	29	38	49	29	13	11	11
26	23	22	18	20	40	28	40	50	28	13	11	12
27	23	23	18	18	39	28	41	54	30	13	11	11
28	23	22	18	17	39	32	43	58	27	13	11	12
29	23	21	17	19	38	37	47	60	27	12	10	13
30	23	20	17	20	-----	40	49	59	27	12	10	14
31	23	-----	18	20	-----	40	-----	58	-----	15	9.9	-----
TOTAL	811	691	558	617	914	955	1,168	1,614	1,244	550	355.9	282.2
MEAN	26.2	23.0	18.0	19.9	31.5	30.8	38.9	52.1	41.5	17.7	11.5	9.41
MAX	47	29	22	35	74	40	49	61	63	24	16	14
MIN	22	20	15	15	17	26	33	47	27	12	9.9	6.5
AC-FT	1,610	1,370	1,110	1,220	1,810	1,890	2,320	3,200	2,470	1,090	706	560

CAL YR 1967 TOTAL 20,808 MEAN 57.0 MAX 265 MIN 15 AC-FT 41,270
 WTR YR 1968 TOTAL 9,760.1 MEAN 26.7 MAX 74 MIN 6.5 AC-FT 19,360

Peak discharge (base, 100 cfs).--No peak above base.

PYRAMID AND WINNEMUCCA LAKES BASIN

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10-3370. LAKE TAHOE AT TAHOE CITY, CALIF.

LOCATION.--Lat 39°10'04", long 120°08'23", in NE $\frac{1}{4}$ sec.7, T.15 N., R.17 E., at Tahoe City, on pier 1,000 ft east of dam at lake outlet.

DRAINAGE AREA.--505 sq mi at lake outlet.

RECORDS AVAILABLE.--April 1900 to September 1968. Month-end elevations only for October 1943 to September 1957, published in WSP 1734. Prior to October 1961, published as "at Tahoe."

GAGE.--Water-stage recorder. Datum of gage is 6,220.00 ft above mean sea level, datum of Bureau of Reclamation (6,218.86 ft, datum of 1929, supplementary adjustment of 1959). Prior to Oct. 1, 1957, staff gages at several sites near outlet of lake at same datum. Oct. 1, 1957, to May 8, 1958, water-stage recorder on left wingwall of dam at outlet of lake at same datum.

EXTREMES.--Maximum elevation during year, 6,228.75 ft June 24; minimum, 6,227.28 ft Sept. 30.
1900-1968: Maximum elevation, 6,231.26 ft July 14, 15, 17, 18, 1907; minimum, 6,221.74 ft Dec. 26, 1934.

REMARKS.--Lake levels regulated by a 17-gate concrete dam at outlet of lake; storage began 1874. Figures given herein represent usable contents. Usable capacity, 744,600 acre-ft between elevations 6,223 (natural rim of lake) and 6,229.1 ft (maximum permissible elevation by Federal Court decree). Water is used for domestic and recreational purposes in Lake Tahoe area and for irrigation and power in downstream areas. Lake elevations are referred to Bureau of Reclamation datum because that datum is used as the official reference point by all local, state, and federal agencies. One intermittent transmountain diversion from Echo Lake to South Fork American River for power and irrigation.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

					6,227	486,800						
					6,229	732,300						
ELEVATION, IN FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.05	7.85	7.74	7.51	7.70	8.10	8.27	8.33	8.66	8.64	8.26	7.68
2	8.10	7.86	7.72	7.51	7.70	8.11	8.28	8.34	8.67	8.63	8.25	7.68
3	8.10	7.85	7.70	7.49	7.70	8.12	8.28	8.36	8.68	8.60	8.22	7.66
4	8.05	7.83	7.74	7.48	7.70	8.11	8.28	8.37	8.68	8.61	8.21	7.66
5	8.09	7.84	7.80	7.47	7.69	8.12	8.30	8.37	8.68	8.60	8.19	7.65
6	8.05	7.83	7.75	7.46	7.69	8.12	8.29	8.38	8.70	8.60	8.19	7.64
7	8.07	7.82	7.78	7.45	7.69	8.14	8.30	8.39	8.70	8.60	8.18	7.64
8	8.06	7.81	7.78	7.44	7.71	8.20	8.30	8.40	8.71	8.57	8.16	7.63
9	8.05	7.79	7.78	7.43	7.74	8.20	8.30	8.41	8.73	8.56	8.16	7.62
10	8.05	7.77	7.77	7.52	7.73	8.19	8.31	8.41	8.73	8.54	8.12	7.61
11	8.04	7.77	7.75	7.51	7.73	8.20	8.31	8.46	8.71	8.52	8.10	7.60
12	8.05	7.76	7.80	7.51	7.76	8.19	8.31	8.47	8.71	8.49	8.08	7.60
13	8.04	7.75	7.79	7.51	7.76	8.23	8.32	8.49	8.71	8.47	8.03	7.55
14	8.04	7.79	7.68	7.51	7.76	8.23	8.33	8.51	8.72	8.47	8.03	7.54
15	8.00	7.76	7.63	7.55	7.74	8.22	8.32	8.52	8.72	8.46	7.98	7.53
16	8.01	7.75	7.60	7.54	7.77	8.29	8.32	8.52	8.73	8.44	7.98	7.50
17	8.00	7.75	7.60	7.54	7.79	8.27	8.32	8.53	8.73	8.44	7.90	7.50
18	7.99	7.75	7.67	7.54	7.80	8.27	8.32	8.53	8.73	8.42	7.93	7.46
19	7.99	7.81	7.66	7.54	7.89	8.27	8.32	8.55	8.73	8.41	7.89	7.45
20	7.97	7.78	7.64	7.55	7.94	8.26	8.31	8.55	8.72	8.40	7.85	7.40
21	7.96	7.78	7.63	7.55	7.98	8.26	8.32	8.55	8.72	8.37	7.83	7.41
22	7.95	7.74	7.62	7.54	8.01	8.25	8.30	8.56	8.72	8.37	7.83	7.37
23	7.95	7.73	7.61	7.55	8.04	8.25	8.29	8.57	8.73	8.35	7.80	7.36
24	7.93	7.73	7.60	7.55	8.06	8.25	8.30	8.56	8.72	8.34	7.78	7.35
25	7.94	7.71	7.59	7.54	8.06	8.24	8.30	8.57	8.70	8.32	7.76	7.34
26	7.92	7.70	7.58	7.55	8.07	8.24	8.31	8.59	8.72	8.31	7.73	7.34
27	7.90	7.69	7.57	7.55	8.08	8.24	8.32	8.60	8.69	8.30	7.73	7.33
28	7.91	7.71	7.58	7.54	8.08	8.25	8.32	8.61	8.64	8.28	7.71	7.35
29	7.89	7.71	7.55	7.55	8.08	8.25	8.32	8.62	8.66	8.27	7.70	7.30
30	7.87	7.76	7.54	7.67	-----	8.26	8.32	8.64	8.62	8.27	7.70	7.28
31	7.87	-----	7.53	7.66	-----	8.25	-----	8.65	-----	8.28	7.70	-----
(a)	593,300	579,900	551,700	567,700	619,100	640,000	648,700	689,200	685,600	643,700	572,600	521,100
(b)	-27,100	-13,400	-28,200	+16,000	+51,400	+20,900	+8,700	+40,500	-3,600	-41,900	-71,100	-51,500
CAL YR 1967	b +186,900											
WTR YR 1968	b -99,300											

a Contents, in acre-feet, at end of month.

b Change in contents, in acre-feet.

Note.--Add 6,220 to obtain elevation above Bureau of Reclamation datum.

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3375. TRUCKEE RIVER AT TAHOE CITY, CALIF.

LOCATION.--Lat 39°10'00", long 120°08'40", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.7, T.15 N., R.17 E., at Tahoe City, on left bank 510 ft downstream from dam at outlet of Lake Tahoe.

DRAINAGE AREA.--506 sq mi.

RECORDS AVAILABLE.--July 1895 to February 1896, March 1900 to September 1968. Monthly discharge only for some periods, published in WSP 1314 and 1734. Prior to October 1961, published as "at Tahoe."

GAGE.--Water-stage recorder. Datum of gage is 6,216.75 ft above mean sea level, datum of 1929. Prior to Nov. 12, 1912, staff gage at site 370 ft upstream at different datum. Nov. 12, 1912, to Sept. 30, 1937, staff gage, Oct. 1, 1937, to Aug. 21, 1957, water-stage recorder at datum 2.26 ft higher and Aug. 22, 1957, to July 10, 1960, at datum 2.42 ft higher; all at site 270 ft upstream.

AVERAGE DISCHARGE.--68 years (1900-1968), 237 cfs (171,600 acre-ft per year), unadjusted.

EXTREMES.--Maximum discharge during year, 574 cfs Dec. 22, 23 (gage height, 5.08 ft); minimum daily, 35 cfs Oct. 31, Nov. 1.
1895-96, 1900-1968: Maximum discharge, 1,870 cfs Apr. 5, 6, 1958 (gage height, 7.30 ft, site and datum then in use); maximum gage height, 8.20 ft Nov. 30, 1965; no flow for parts of many years.

REMARKS.--Records excellent. Flow regulated by Lake Tahoe (operating capacity, 744,600 acre-ft).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	35	215	392	248	58	324	165	71	290	390	265
2	50	36	214	395	248	58	322	165	71	324	395	265
3	40	36	215	372	248	58	273	165	72	349	395	265
4	40	36	214	347	248	74	77	166	72	356	395	249
5	40	36	219	309	225	120	76	166	72	356	395	219
6	40	148	219	294	171	118	75	166	73	356	385	181
7	40	215	234	294	156	118	76	151	73	360	375	170
8	40	215	267	294	103	118	76	79	73	378	375	168
9	40	217	267	298	103	118	77	73	78	380	372	168
10	40	217	265	298	103	117	77	72	78	380	375	160
11	40	217	263	298	103	117	77	73	78	400	375	142
12	40	217	261	298	103	118	78	73	79	402	360	152
13	39	217	329	298	104	117	77	72	192	402	347	168
14	38	217	420	298	104	116	76	71	89	400	310	173
15	38	217	412	255	104	116	75	71	89	400	307	173
16	38	215	410	225	124	92	74	70	89	400	311	171
17	38	215	410	142	192	83	73	71	89	398	311	171
18	38	215	412	86	191	83	72	71	89	398	311	150
19	38	217	412	86	114	82	89	71	110	398	294	126
20	38	215	450	86	66	248	140	72	147	398	281	129
21	38	214	465	86	65	342	138	71	138	398	283	128
22	38	214	495	86	62	335	126	71	138	395	298	128
23	38	214	571	86	65	318	104	71	138	395	318	128
24	38	214	571	139	62	320	162	71	168	395	327	128
25	38	214	571	149	60	320	160	71	214	395	327	128
26	38	212	571	145	60	320	162	71	219	395	309	128
27	38	212	568	143	59	320	164	71	219	395	283	125
28	38	212	544	143	59	320	164	72	230	395	269	118
29	36	214	442	196	58	322	164	72	230	392	265	117
30	36	215	395	248	-----	322	165	72	248	392	265	94
31	35	-----	392	249	-----	324	-----	72	-----	392	265	-----
TOTAL	1,237	5,488	11,693	7,035	3,608	5,692	3,793	2,868	3,726	11,864	10,268	4,887
MEAN	39.9	183	377	227	124	184	126	92.5	124	383	331	163
MAX	71	217	571	395	248	342	324	166	248	402	395	265
MIN	35	35	214	86	58	58	72	70	71	290	265	94
AC-FT	2,450	10,890	23,190	13,950	7,160	11,290	7,520	5,690	7,390	23,530	20,370	9,690
CAL YR 1967	TOTAL 117,151		MEAN 321		MAX 1,500		MIN 31		AC-FT 232,400			
WTR YR 1968	TOTAL 72,159		MEAN 197		MAX 571		MIN 35		AC-FT 143,100			

10-3385. DONNER CREEK AT DONNER LAKE, NEAR TRUCKEE, CALIF.

LOCATION.--Lat 39°19'25", long 120°14'00", in SW¼ sec.17, T.17 N., R.16 E., on left bank 10 ft downstream from bridge on Donner Memorial State Park road, 0.2 mile downstream from Donner Lake outlet, 0.7 mile upstream from Cold Creek, and 2.5 miles west of Truckee.

DRAINAGE AREA.--14.6 sq mi.

RECORDS AVAILABLE.--November 1909 to August 1910, January 1929 to October 1935, January 1936 to March 1938, July to October 1938, January 1939 to February 1943, June 1943 to December 1953, May 1955 to December 1957, October 1958 to September 1968. Monthly discharge only prior to October 1958, published in WSP 1314 and 1734.

GAGE.--Water-state recorder. Altitude of gage is 5,930 ft (from topographic map). Nov. 1, 1909, to Aug. 31, 1910, staff gage at different datum. January 1929 to December 1957, water-stage recorder at same site at unknown datum.

AVERAGE DISCHARGE.--31 years (1929-35, 1936-37, 1939-42, 1943-52, 1955-57, 1958-68), 31.6 cfs (22,880 acre-ft per year), unadjusted.

EXTREMES.--Maximum discharge during year, 205 cfs May 21 (gage height, 3.35 ft); minimum daily, 1.4 cfs Dec. 18, May 1.

1909-10, 1929-53, 1955-57, 1958-68: Maximum daily discharge, 700 cfs (estimated) Nov. 21, 1950; maximum gage height observed, 4.55 ft Dec. 25, 1964; no flow at times 1960-62, 1965, 1967.

REMARKS.--Records good except those for period of no gage-height record, which are fair. Flow regulated by dam at outlet of Donner Lake (usable capacity, 9,500 acre-ft).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	5.6	9.5	7.5	27	112	4.6	1.4	28	5.2	8.5	10
2	64	5.2	9.0	7.2	28	104	4.6	20	28	5.0	8.5	11
3	61	5.0	8.5	7.2	29	100	5.9	64	61	5.0	9.0	11
4	54	4.8	10	7.2	28	94	7.2	78	76	5.0	8.5	11
5	49	4.8	14	6.9	26	90	6.9	76	50	4.6	8.2	11
6	44	4.8	14	6.9	26	86	6.6	133	38	3.9	7.8	11
7	41	4.8	18	6.6	26	83	6.2	140	48	3.4	7.4	11
8	37	4.3	15	6.9	25	82	6.2	116	54	2.8	8.6	10
9	34	4.3	14	6.9	25	77	6.2	89	52	2.6	7.0	10
10	31	4.1	13	13	24	71	5.2	73	36	2.4	6.7	10
11	29	4.1	12	11	23	67	5.2	66	27	2.6	6.7	10
12	26	3.9	12	11	22	63	4.6	66	19	2.8	6.7	10
13	24	3.6	10	10	23	63	3.9	64	15	2.2	6.7	10
14	20	4.3	9.5	11	23	60	3.4	64	10	2.2	6.7	10
15	18	4.8	8.5	20	22	38	3.0	60	6.9	9.0	6.7	10
16	16	5.0	8.2	27	21	17	2.6	44	6.6	12	6.7	10
17	15	5.0	6.9	26	24	20	2.4	38	6.6	10	6.4	10
18	13	5.0	1.4	25	28	20	2.4	37	6.2	10	6.4	61
19	12	6.2	5.1	24	34	21	2.4	35	6.2	9.0	6.0	86
20	11	6.6	12	23	77	21	2.3	88	5.6	9.0	6.4	82
21	10	5.9	12	22	107	12	2.1	188	5.6	8.5	6.4	79
22	9.5	5.6	11	21	118	5.9	1.8	72	5.2	8.5	5.7	76
23	8.2	5.6	10	20	134	5.9	1.8	29	5.2	8.5	5.1	74
24	7.8	5.6	9.5	20	147	5.9	1.8	12	5.2	8.5	5.1	71
25	7.2	5.6	9.0	20	142	5.9	1.8	6.9	5.2	8.5	4.8	71
26	6.9	5.2	8.5	20	136	5.6	1.8	6.6	5.2	8.0	4.8	73
27	6.9	5.2	8.5	20	128	5.2	1.8	6.6	5.2	8.0	4.8	70
28	6.2	5.9	8.2	21	122	4.8	1.8	6.9	5.2	8.0	10	68
29	5.9	6.6	8.5	22	116	4.6	1.8	9.5	5.6	8.0	12	67
30	5.9	9.5	8.2	28	-----	4.6	1.8	16	5.2	8.0	10	86
31	5.9	-----	7.8	29	-----	4.6	-----	22	-----	8.0	10	-----
TOTAL	753.4	156.9	311.8	507.3	1,711	1,354.0	110.1	1,727.9	632.9	199.2	224.3	1,140
MEAN	24.3	5.23	10.1	16.4	59.0	43.7	3.67	55.7	21.1	6.43	7.24	38.0
MAX	74	9.5	18	29	147	112	7.2	188	76	12	12	86
MIN	5.9	3.6	1.4	6.6	21	4.6	1.8	1.4	5.2	2.2	4.8	10
AC-FT	1,490	311	618	1,010	3,390	2,690	218	3,430	1,260	395	445	2,260
CAL YR 1967	TOTAL 20,453.8		MEAN 56.0		MAX 416		MIN 1.4		AC-FT 40,570			
WTR YR 1968	TOTAL 8,828.8		MEAN 24.1		MAX 188		MIN 1.4		AC-FT 17,510			

Note.--No gage-height record July 13-31, Aug. 6 to Sept. 30.

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3394. MARTIS CREEK NEAR TRUCKEE, CALIF.

LOCATION.--Lat 39°20'20", long 120°07'00", in SE 1/4 sec. 8, T.17 N., R.17 E., on left bank 0.8 mile upstream from mouth and 3.5 miles northeast of Truckee.

DRAINAGE AREA.--41.0 sq mi.

RECORDS AVAILABLE.--October 1958 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 5,700 ft (from topographic map). Prior to July 24, 1964, graphic water-stage recorder.

AVERAGE DISCHARGE.--10 years, 20.6 cfs (14,910 acre-ft per year).

EXTREMES.--Maximum discharge during year, 141 cfs Feb. 23 (gage height, 2.61 ft); minimum discharge, 2.4 cfs July 28, 29, Sept. 13-19.
1958-68: Maximum discharge, 1,880 cfs Feb. 1, 1963 (gage height, 6.16 ft); minimum, 1.1 cfs July 19, 20, 1961.

REMARKS.--Records excellent except those for winter months, which are poor.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	10	12	14	10	53	85	27	9.1	3.4	4.1	3.6
2	27	10	10	15	11	54	65	26	8.5	3.4	3.4	3.4
3	29	10	13	13	13	53	55	27	8.2	3.9	3.3	3.6
4	13	10	14	12	13	56	53	26	8.5	3.4	3.3	3.6
5	11	11	15	12	14	57	53	23	8.5	3.6	3.1	3.6
6	11	11	14	12	14	45	47	20	19	4.1	3.1	3.6
7	11	11	12	12	14	39	47	25	21	3.8	2.9	3.8
8	10	11	12	14	15	38	49	24	14	3.6	3.3	3.6
9	10	11	11	11	14	39	51	24	14	3.3	3.6	3.8
10	10	11	11	15	14	35	56	24	10	3.1	3.6	3.9
11	9.4	11	12	12	14	31	60	25	9.1	2.9	3.4	3.9
12	9.1	11	12	10	14	29	58	42	7.8	2.7	3.1	3.8
13	9.0	11	12	12	15	29	54	32	7.5	2.9	3.6	3.6
14	9.1	15	11	13	14	32	52	26	7.5	2.9	3.6	3.3
15	9.1	12	10	25	16	34	52	22	6.5	2.9	3.9	3.1
16	9.2	12	11	34	14	28	49	20	6.0	2.9	4.3	3.3
17	9.1	11	11	18	22	29	45	19	5.5	2.7	9.5	2.7
18	9.1	12	11	13	26	27	37	19	5.8	2.9	5.3	2.7
19	9.1	16	11	13	38	26	29	18	5.3	2.7	6.3	2.7
20	9.0	14	10	14	105	28	28	18	5.1	2.9	5.8	6.5
21	9.4	13	10	13	100	29	25	18	5.1	2.7	5.3	4.3
22	9.6	12	12	14	82	31	23	18	5.1	2.6	5.8	4.3
23	9.5	12	12	14	101	34	23	17	4.6	2.6	4.8	4.3
24	9.5	11	12	13	84	36	24	16	4.3	2.6	4.3	4.3
25	9.3	11	12	13	62	44	24	15	4.1	2.6	3.9	4.3
26	9.8	11	12	13	58	38	25	14	4.1	2.7	3.8	4.3
27	9.9	11	13	12	59	40	25	14	4.1	2.9	3.6	4.3
28	10	12	18	12	59	46	24	12	3.9	2.7	3.6	4.3
29	9.8	12	16	13	55	55	26	11	3.8	2.6	3.6	4.1
30	9.9	11	14	14	-----	63	28	10	3.6	2.7	3.6	4.1
31	9.9	-----	14	12	-----	67	-----	9.8	-----	3.4	3.6	-----
TOTAL	339.8	347	380	437	1,070	1,245	1,272	641.8	229.6	94.1	128.4	114.7
MEAN	11.0	11.6	12.3	14.1	36.9	40.2	42.4	20.7	7.65	3.04	4.14	3.82
MAX	29	16	18	34	105	67	85	42	21	4.1	9.5	6.5
MIN	9.0	10	10	10	10	26	23	9.8	3.6	2.6	2.9	2.7
AC-FT	674	688	754	867	2,120	2,470	2,520	1,270	455	187	255	228
CAL YR 1967	TOTAL 16,432.7			MEAN 45.0		MAX 343		MIN 7.7		AC-FT 32,590		
WTR YR 1968	TOTAL 6,289.4			MEAN 17.2		MAX 105		MIN 2.6		AC-FT 12,490		

Peak discharge (base, 170 cfs).--No peak above base.

PYRAMID AND WINNEMUCCA LAKES BASIN

539

10-3399. ALDER CREEK NEAR TRUCKEE, CALIF.

LOCATION.--Lat 39°22'10", long 120°10'50", in SE¼NE¼ sec.34, T.18 N., R.16 E., on right bank 2 miles upstream from mouth and 2.5 miles north of Truckee.

DRAINAGE AREA.--7.47 sq mi.

RECORDS AVAILABLE.--October 1958 to September 1968.

GAGE.--Water-stage recorder. Altitude of gage is 5,800 ft (from topographic map).

AVERAGE DISCHARGE.--10 years, 8.32 cfs (6,020 acre-ft per year).

EXTREMES.--Maximum discharge during year, 45 cfs Feb. 20 (gage height, 1.92 ft); minimum discharge, 0.40 cfs July 28, 29.
1958-68: Maximum discharge, 730 cfs Jan. 31, 1963 (gage height, 5.86 ft), from rating curve extended above 36 cfs on basis of computation of peak flow through culvert; no flow for some periods in most years.

REMARKS.--Records good except those for winter months, which are fair. No upstream diversions or regulation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	1.6	1.6	1.0	1.4	18	24	24	5.6	1.6	1.0	.80
2	3.0	1.6	1.5	1.0	2.0	17	21	24	5.1	1.6	.80	.80
3	4.3	1.6	1.8	1.0	3.4	17	20	25	4.9	1.6	.70	.80
4	2.8	1.6	1.8	1.0	2.5	17	21	25	4.7	1.4	.60	.70
5	2.6	1.6	2.0	1.0	2.2	17	21	24	4.7	1.3	.70	.70
6	2.3	1.6	1.7	1.0	2.0	15	20	23	5.4	1.4	.70	.70
7	2.2	1.6	1.8	1.0	2.2	14	20	21	6.6	1.6	.70	.70
8	2.0	1.6	1.8	1.0	2.0	13	21	21	4.9	1.6	.70	.70
9	1.8	1.6	1.8	1.0	2.2	11	23	20	4.9	1.4	.80	.70
10	1.8	1.6	1.6	1.0	2.2	10	26	20	4.0	1.2	.80	.70
11	1.8	1.6	1.6	1.0	2.0	9.3	30	20	4.0	1.1	.80	.70
12	1.8	1.6	1.6	1.0	2.2	8.3	30	20	3.6	1.1	.80	.70
13	1.8	1.6	1.4	1.1	2.3	8.3	29	20	3.3	1.0	1.0	.70
14	1.7	2.6	1.4	1.3	2.2	7.6	28	17	3.1	1.1	1.0	.70
15	1.7	1.8	1.3	2.6	2.0	7.3	29	15	3.1	1.0	1.1	.70
16	1.7	1.7	1.2	3.0	2.0	7.3	26	13	3.0	1.0	1.2	.70
17	1.7	1.7	1.3	2.5	3.5	7.6	23	13	2.6	1.0	1.7	.70
18	1.7	1.6	1.3	2.3	5.1	6.6	21	12	2.5	1.1	1.4	.70
19	1.7	2.6	1.2	2.4	5.6	6.6	21	11	2.3	1.0	3.1	.80
20	1.7	2.8	1.1	2.5	21	7.0	20	12	2.5	.80	2.3	1.4
21	1.7	2.3	1.0	2.5	35	7.0	19	11	2.3	.80	1.6	1.2
22	1.7	1.7	1.0	2.2	26	6.8	18	11	2.2	.80	1.4	1.1
23	1.7	1.7	1.0	2.0	36	7.3	18	10	2.0	.80	1.3	1.0
24	1.7	1.6	1.1	1.8	27	7.8	19	9.3	2.2	.70	1.2	.80
25	1.7	1.7	1.1	1.8	22	9.0	20	9.0	1.8	.80	1.2	.80
26	1.6	1.6	1.1	1.8	20	9.0	21	8.3	1.8	.70	1.1	.70
27	1.6	1.5	1.2	1.5	20	10	23	8.0	1.6	.70	1.1	.70
28	1.6	1.6	1.2	1.4	19	13	24	7.3	1.8	.70	1.1	.70
29	1.6	1.8	1.1	1.4	18	17	24	7.0	1.8	.70	1.1	.70
30	1.6	1.6	1.1	2.6	-----	21	25	6.6	1.7	.70	1.1	.80
31	1.6	-----	1.0	2.0	-----	24	-----	6.0	-----	.80	1.1	-----
TOTAL	59.8	52.7	42.7	50.7	293.0	356.8	685	473.5	100.0	33.10	35.20	23.60
MEAN	1.93	1.76	1.38	1.64	10.1	11.5	22.8	15.3	3.33	1.07	1.14	.79
MAX	4.3	2.8	2.0	3.0	36	24	30	25	6.6	1.6	3.1	1.4
MIN	1.6	1.5	1.0	1.0	1.4	6.6	18	6.0	1.6	.70	.60	.70
AC-FT	119	105	85	101	581	708	1,360	939	198	66	70	47

CAL YR 1967 TOTAL 5,993.2 MEAN 16.4 MAX 156 MIN 1.0 AC-FT 11,890

WTR YR 1968 TOTAL 2,206.10 MEAN 6.03 MAX 36 MIN .60 AC-FT 4,380

PEAK DISCHARGE (BASE, 25 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
02-20	2100	1.92	45	04-11	1900	1.86	38
02-23	1800	1.89	42	05-02	2100	1.68	27
03-31	1900	1.74	29				

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3403. PROSSER CREEK RESERVOIR NEAR BOCA, CALIF.

LOCATION.--Lat 38°22'45", long 120°08'25", in NW¼SW¼ sec.30, T.18 N., R.17 E., in control house at Prosser Creek Dam, 1.5 miles upstream from mouth of Prosser Creek, and 3 miles west of Boca.

DRAINAGE AREA.--50 sq mi, approximately.

RECORDS AVAILABLE.--January 1963 to September 1968.

GAGE.--Water-stage recorder with surface follower and telemark. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

EXTREMES.--Maximum contents during year, 19,260 acre-ft June 24 (elevation, 5,727.05 ft); minimum, 7,680 acre-ft Mar. 11 (elevation, 5,700.80 ft).

1963-68: Maximum contents, 30,760 acre-ft May 22, 1963 (elevation, 5,743.95 ft); minimum, 6,500 acre-ft Feb. 19, 1965 (elevation, 5,696.85 ft).

REMARKS.--Reservoir is formed by rolled-earth and rockfill dam. Storage began Jan. 30, 1963. Usable capacity, 28,640 acre-ft between elevations, 5,660.6 (top of inactive storage) and 5,741.2 ft (spillway crest). Inactive storage, 1,200 acre-ft (includes 83 acre-ft dead storage) below elevation 5,660.6 ft. Elevation of streambed at dam axis, 5,622 ft. Figures given herein represent usable contents. Reservoir is used for flood control, enhancement of fishery, and recreation.

COOPERATION.--Records furnished by Bureau of Reclamation.

MONTH-END ELEVATIONS AND CONTENTS, AT 0800 HOURS, OCTOBER 1967 TO SEPTEMBER 1968

Date	Elevation (feet)	Contents (acre-ft)	Change in contents (acre-ft)
Oct. 31.....	5,703.47	8,550	-9,330
Nov. 30.....	5,702.49	8,230	-320
Dec. 31.....	5,703.05	8,410	+180
Calendar year 1967.....	-	-	+1,000
Jan. 31.....	5,703.07	8,420	+10
Feb. 29.....	5,702.12	8,110	-310
Mar. 31.....	5,705.65	9,310	+1,200
Apr. 30.....	5,714.93	13,030	+3,720
May 31.....	5,722.04	16,490	+3,460
June 30.....	5,726.68	19,050	+2,560
July 31.....	5,726.07	18,700	-350
Aug. 31.....	5,724.86	18,020	-680
Sept. 30.....	5,709.60	10,790	-7,230
Water year 1967-68.....	-	-	-7,090

PYRAMID AND WINNEMUCCA LAKES BASIN

541

10-3405. PROSSER CREEK NEAR BOCA, CALIF.

LOCATION.--Lat 39°22'10", long 120°07'10", in SW¼NW¼ sec.32, T.18 N., R.17 E., on left bank 0.2 mile upstream from mouth, and 2 miles southwest of Boca.

DRAINAGE AREA.--53.6 sq mi.

RECORDS AVAILABLE.--October 1902 to June 1903 (gage heights only), October 1942 to December 1950, June 1951 to September 1968. Records for April 1889 to November 1890, published in the 11th and 12th Annual Reports, Part 2, have been found to be unreliable and should not be used. Monthly discharge only for October 1942 to December 1950, published in WSP 1734.

GAGE.--Water-stage recorder. Datum of gage is 5,572.66 ft above mean sea level (levels by Bureau of Reclamation). April 1889 to November 1890 and October 1902 to June 1903, staff gages at same site at different datums. October 1942 to December 1950, water-stage recorder at approximately same site at different datum. June 1951 to September 1956, water-stage recorder at present site at datum 2.00 ft higher.

AVERAGE DISCHARGE.--25 years (1942-50, 1951-68), 82.9 cfs (60,020 acre-ft per year). Adjusted for storage.

EXTREMES.--Maximum discharge during year, 686 cfs Feb. 24 (gage height, 4.49 ft); minimum daily, 11 cfs Dec. 21, July 23 to Aug. 12.

1942-68: Maximum discharge, 4,560 cfs Dec. 23, 1955 (gage height, 10.13 ft, present datum), from rating curve extended above 910 cfs on basis of slope-area measurement of peak flow; maximum gage height, 11.0 ft from floodmarks, (present datum) Nov. 20, 1950 (discharge, 4,320 cfs by slope-area measurement); minimum discharge, 0.4 cfs July 18, 1961, result of work on dam upstream.

REMARKS.--Records excellent. Flow regulated by Prosser Creek dam since Jan. 31, 1963.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	30	28	29	28	169	398	52	57	39	11	29
2	17	30	28	29	40	160	350	14	57	34	11	29
3	16	30	28	29	56	160	257	14	57	33	11	29
4	26	29	28	29	55	160	210	14	59	32	11	88
5	33	29	28	29	55	160	173	13	59	32	11	120
6	197	29	28	29	55	157	157	162	59	32	11	120
7	286	29	28	29	55	157	157	240	40	33	11	120
8	286	29	28	29	55	157	118	219	30	35	11	120
9	281	28	28	29	56	160	97	210	30	34	11	120
10	281	28	28	30	56	160	46	189	30	34	11	122
11	339	28	28	29	56	76	16	180	30	34	11	142
12	269	28	28	29	40	32	16	180	18	33	11	151
13	267	28	28	29	31	33	16	142	13	33	20	151
14	267	29	27	29	31	33	16	124	12	33	28	151
15	264	29	43	31	30	89	90	98	13	18	28	151
16	264	29	54	30	30	120	135	90	13	13	28	151
17	264	29	54	66	31	122	110	90	12	12	29	151
18	262	28	29	87	31	122	98	92	12	12	29	151
19	262	29	12	87	68	118	98	94	23	12	29	151
20	262	28	12	87	95	93	98	95	32	12	29	151
21	262	28	11	87	223	57	98	95	51	12	29	151
22	262	28	12	58	303	57	98	95	63	12	29	151
23	259	28	12	28	353	57	98	95	64	11	29	151
24	257	28	12	28	468	58	45	97	64	11	29	149
25	150	28	12	28	582	60	15	97	64	11	29	149
26	97	27	12	28	244	60	15	95	64	11	29	149
27	54	28	12	28	212	60	14	97	65	11	29	146
28	31	28	12	28	212	60	14	97	65	11	29	146
29	31	28	26	28	196	62	92	98	65	11	29	146
30	31	28	29	29	-----	63	133	97	55	11	29	127
31	31	-----	29	28	-----	343	-----	69	-----	11	29	-----
TOTAL	5,624	855	774	1,193	3,747	3,375	3,278	3,344	1,276	673	671	3,863
MEAN	181	28.5	25.0	38.5	129	109	109	108	42.5	21.7	21.6	129
MAX	339	30	54	87	582	343	398	240	65	39	29	151
MIN	16	27	11	28	28	32	14	13	12	11	11	29
AC-FT	11,160	1,700	1,540	2,370	7,430	6,690	6,500	6,630	2,530	1,330	1,330	7,660
Mean a	29.8	23.2	28.0	38.7	124	128	172	164	85.5	15.9	10.6	7.23
Ac-ft a	1,830	1,380	1,720	2,380	7,120	7,890	10,220	10,090	5,090	980	650	430
CAL YR 1967	TOTAL 53,322	MEAN 146	MAX 793	MIN 10	AC-FT 105,800	MEAN a 148	AC-FT a 106,800					
WYR YR 1968	TOTAL 28,673	MEAN 78.3	MAX 582	MIN 11	AC-FT 56,870	MEAN a 68.6	AC-FT a 49,780					

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3420. LITTLE TRUCKEE RIVER NEAR HOBART MILLS, CALIF.

LOCATION.--Lat 39°30'05", long 120°16'35", in NE¼NE¼ sec.14, T.19 N., R.15 E., on left bank 0.5 mile upstream from Independence Creek, and 7.5 miles northwest of Hobart Mills.

DRAINAGE AREA.--36.5 sq mi.

RECORDS AVAILABLE.--December 1946 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 6,290 ft (from topographic map). Prior to Nov. 9, 1962, graphic water-stage recorder at site 100 ft downstream at datum 0.63 ft lower. Nov. 9, 1962, to Dec. 22, 1964, graphic water-stage recorder at site 100 ft downstream at datum 0.78 ft lower. Dec. 23, 1964, to Aug. 5, 1965, twice monthly observations referred to bridge 75 ft upstream at present datum.

AVERAGE DISCHARGE.--21 years (1947-68), 86.7 cfs (62,770 acre-ft per year).

EXTREMES.--Maximum discharge during year, 420 cfs May 3, 4 (gage height, 3.70 ft); minimum, 1.3 cfs July 19-22. 1946-68: Maximum discharge, 7,910 cfs Feb. 1, 1963 (gage height, 7.76 ft), from rating curve extended above 1,100 cfs on basis of slope-area measurements at gage heights 6.97 and 7.68 ft; minimum, that of Oct. 19, 1966.

REMARKS.--Records excellent except those for winter months, which are poor. One transmountain diversion to Sierra Valley above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	7.2	7.6	12	12	130	148	350	168	3.0	2.5	3.3
2	16	7.3	7.3	11	12	118	121	332	176	2.8	2.2	3.3
3	29	7.1	7.6	8.0	18	115	106	344	168	2.8	2.0	3.1
4	16	7.1	8.8	7.6	18	112	106	357	140	2.6	2.0	3.1
5	15	7.4	10	7.2	18	112	106	308	115	2.6	1.9	3.3
6	13	7.5	10	7.5	20	103	100	245	95	2.6	1.7	3.1
7	11	7.5	11	8.0	23	95	100	220	100	2.6	1.7	3.1
8	11	7.4	15	9.0	22	90	109	220	81	2.3	1.7	3.1
9	10	7.2	10	10	21	81	127	224	86	2.3	1.9	3.1
10	9.7	7.3	9.0	11	20	72	169	228	68	2.2	1.9	3.1
11	9.3	7.3	10	10	19	66	208	220	66	2.0	2.0	3.1
12	9.0	7.3	8.0	7.0	19	62	216	193	62	1.9	2.6	3.0
13	8.7	7.7	7.0	11	19	66	200	179	51	1.9	2.8	3.1
14	8.4	14	7.0	17	16	62	200	137	46	1.7	3.0	3.1
15	8.4	12	7.0	25	18	56	216	118	48	1.7	3.0	3.0
16	8.4	9.5	8.0	35	18	53	197	121	48	1.7	3.1	3.0
17	8.4	8.9	7.0	25	23	62	162	141	48	1.6	4.0	3.0
18	7.9	9.2	6.5	18	36	54	141	169	43	1.6	3.8	3.1
19	7.9	15	6.0	18	39	50	141	212	36	1.5	6.8	3.1
20	7.9	17	6.0	20	190	48	144	290	27	1.5	7.2	3.1
21	7.8	13	6.0	20	193	45	134	255	19	1.7	5.4	3.3
22	7.9	10	8.0	20	155	46	121	186	16	1.6	4.8	3.3
23	7.8	10	9.0	20	245	50	127	148	10	2.2	4.5	3.3
24	7.5	9.8	9.8	20	275	51	141	121	6.4	2.2	4.3	3.1
25	7.5	9.5	9.4	20	228	56	165	144	4.5	2.0	4.3	3.1
26	7.5	8.5	10	20	193	51	197	165	4.0	2.0	4.3	3.0
27	7.5	9.2	11	17	165	51	224	186	3.8	2.0	4.0	3.0
28	7.5	8.9	11	17	151	62	240	204	3.5	2.0	4.0	3.0
29	7.3	9.1	12	20	141	83	290	204	3.3	1.9	3.8	3.0
30	7.2	8.0	12	23	-----	118	338	186	3.1	2.0	3.8	3.1
31	7.3	-----	12	17	-----	140	-----	172	-----	2.2	3.5	-----
TOTAL	304.2	276.9	279.0	491.3	2,328	2,360	4,994	6,579	1,745.6	64.7	104.5	93.4
MEAN	9.81	9.23	9.00	15.8	80.3	76.1	166	212	58.2	2.09	3.37	3.11
MAX	29	17	15	35	275	140	338	357	176	3.0	7.2	3.3
MIN	6.4	7.1	6.0	7.0	12	45	100	118	3.1	1.5	1.7	3.0
AC-FT	603	549	553	974	4,620	4,680	9,910	13,050	3,460	128	207	185

CAL YR 1967 TOTAL 51,447.5 MEAN 141 MAX 1,050 MIN 1.9 AC-FT 102,000
 WTR YR 1968 TOTAL 19,620.6 MEAN 53.6 MAX 357 MIN 1.5 AC-FT 38,920

Peak discharge (base, 500 cfs).--No peak above base.

PYRAMID AND WINNEMUCCA LAKES BASIN

543

10-3435, SAGEHEN CREEK NEAR TRUCKEE, CALIF.
(Hydrologic benchmark station)

LOCATION.--Lat 39°25'50", long 120°14'10", in NE $\frac{1}{4}$ sec. 7, T.18 N., R.16 E., on left bank 2.2 miles upstream from bridge on State Highway 89, and 7.5 miles north of Truckee.

DRAINAGE AREA.--10.8 sq mi.

RECORDS AVAILABLE.--October 1953 to September 1968.

GAGE.--Graphic water-stage recorder and concrete control. Altitude of gage is 6,320 ft (from topographic map). Prior to Dec. 2, 1953, staff gage at site 100 ft upstream at different datum.

AVERAGE DISCHARGE.--15 years, 11.4 cfs (8,250 acre-ft per year).

EXTREMES.--Maximum discharge during year, 49 cfs May 2 (gage height, 2.61 ft); minimum daily, 2.3 cfs on several days in August and September.

1953-68: Maximum discharge, 765 cfs Feb. 1, 1963 (gage height, 4.64 ft, from floodmarks), from rating curve extended above 70 cfs on basis of slope-area measurement at gage height 4.28 ft; minimum, 0.6 cfs Aug. 8, 1960, Aug. 7, 1961, result of temporary regulation.

REMARKS.--Records good. No storage or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	3.9	4.7	5.1	4.8	14	24	30	11	3.9	3.1	2.4
2	10	3.9	4.6	5.1	5.6	14	20	32	11	3.9	2.7	2.4
3	8.4	3.9	4.6	4.9	6.9	15	20	35	11	3.9	2.6	2.4
4	5.8	3.9	4.7	4.8	6.0	15	21	34	10	3.7	2.5	2.3
5	5.3	4.0	4.7	4.8	5.8	15	21	31	10	3.7	2.4	2.3
6	5.1	3.9	4.7	4.8	5.3	13	20	27	13	3.7	2.4	2.3
7	4.6	3.9	4.7	4.9	5.3	13	21	26	13	3.7	2.3	2.3
8	4.4	3.9	4.5	5.1	5.1	12	22	26	12	3.6	2.4	2.3
9	4.2	3.9	4.3	5.1	5.3	12	27	26	11	3.4	2.3	2.3
10	4.2	3.9	4.5	4.9	5.1	11	29	24	9.4	3.2	2.4	2.3
11	4.2	3.9	4.5	4.7	5.1	10	32	24	8.9	3.1	2.3	2.3
12	3.9	3.9	4.5	4.9	5.1	9.7	31	24	8.4	3.0	2.3	2.3
13	3.9	3.9	4.3	5.3	4.9	9.7	29	24	7.6	3.0	2.4	2.3
14	3.9	6.0	4.3	6.0	4.7	9.4	30	20	7.1	3.0	2.4	2.4
15	3.9	4.7	4.3	14	4.7	8.9	30	18	6.5	2.9	2.5	2.4
16	4.0	4.6	4.5	12	4.7	9.1	26	18	6.0	2.9	2.9	2.3
17	4.0	4.4	4.6	8.4	7.8	9.1	22	17	5.6	2.9	3.4	2.3
18	3.9	4.6	4.9	7.1	7.9	8.6	21	17	5.3	2.7	2.9	2.3
19	3.9	6.5	4.9	6.7	12	8.4	22	17	5.3	2.7	5.4	2.4
20	3.9	6.0	4.9	6.5	30	8.4	22	18	4.7	2.7	3.8	2.6
21	3.9	5.1	4.9	6.2	26	8.4	19	16	4.7	2.5	3.2	2.6
22	3.9	4.6	4.9	6.0	22	8.4	18	16	4.6	2.6	3.1	2.6
23	3.9	4.4	4.9	5.6	30	8.6	19	15	4.7	2.5	2.8	2.5
24	3.8	4.4	4.9	5.6	22	9.4	20	14	4.6	2.5	2.7	2.4
25	3.8	4.2	4.9	5.6	18	10	21	15	4.2	2.5	2.5	2.4
26	3.9	4.0	4.9	5.4	17	9.4	24	14	4.2	2.4	2.4	2.4
27	3.9	4.0	5.1	5.3	16	10	24	13	4.2	2.5	2.5	2.4
28	3.9	3.9	5.1	5.3	15	12	25	13	4.1	2.5	2.5	2.4
29	3.8	3.9	5.1	5.3	15	16	29	12	4.2	2.5	2.4	2.4
30	3.9	4.9	5.1	5.4	-----	21	30	12	4.1	2.5	2.4	2.5
31	3.9	-----	5.1	5.2	-----	23	-----	12	-----	2.9	2.4	-----
TOTAL	138.1	131.0	146.6	186.0	323.1	361.5	719.	640	220.4	93.5	84.3	71.5
MEAN	4.45	4.37	4.73	6.00	11.1	11.7	24.0	20.6	7.35	3.02	2.72	2.38
MAX	10	6.5	5.1	14	30	23	32	35	13	3.9	5.4	2.6
MIN	3.8	3.9	4.3	4.7	4.7	8.4	18	12	4.1	2.4	2.3	2.3
AC-FT	274	260	291	369	641	717	1,430	1,270	437	185	167	142

CAL YR 1967 TOTAL 7,767.1 MEAN 21.3 MAX 170 MIN 3.6 AC-FT 15,410
WTR YR 1968 TOTAL 3,115.0 MEAN 8.51 MAX 35 MIN 2.3 AC-FT 6,180

Peak discharge (base, 50 cfs).--No peak above base.

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3444. LITTLE TRUCKEE RIVER ABOVE BOCA RESERVOIR, NEAR BOCA, CALIF.

LOCATION.--Lat 39°26'10", long 120°05'00", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.3, T.18 N., R.17 E., on left bank 1 mile upstream from Boca Reservoir, 1.5 miles upstream from Dry Creek, and 3.5 miles north of Boca.

DRAINAGE AREA.--146 sq mi.

RECORDS AVAILABLE.--June 1903 to October 1910, September 1939 to September 1968. Published as "at Pine Station" June 1903 to December 1907 and as "at Starr" January 1908 to October 1910. Monthly discharge only for some periods, published in WSP 1314 and 1734.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 5,618.67 ft above mean sea level (Bureau of Reclamation bench-mark). June 1903 to October 1910, staff gages at different sites and datums.

AVERAGE DISCHARGE.--36 years (1903-10, 1939-68), 191 cfs (138,300 acre-ft per year).

EXTREMES.--Maximum discharge during year, 727 cfs Feb. 23 (gage height, 2.39 ft); minimum, 4.8 cfs July 3, result of diverting streamflow into diversion tunnel during construction of Stampede Dam.

1903-10, 1939-68: Maximum discharge, 13,300 cfs Feb. 1, 1963 (gage height, 9.00 ft), from rating curve extended above 1,600 cfs on basis of slope-area measurement of peak flow; minimum recorded, 2.2 cfs Dec. 5, 1959.

REMARKS.--Records excellent except those for winter months, which are poor. Flow slightly regulated by Independence Lake (capacity, 17,500 acre-ft) and one transmountain diversion to Sierra Valley.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	34	59	32	32	364	425	448	196	24	20	29
2	37	37	54	32	37	343	364	442	196	23	18	28
3	106	83	56	28	56	343	313	442	210	18	17	27
4	61	90	61	27	68	359	303	465	192	21	15	26
5	51	90	56	28	62	364	308	430	175	20	15	26
6	48	90	52	28	84	313	280	353	159	22	14	26
7	44	90	52	27	108	280	271	313	196	23	13	26
8	42	90	50	29	103	276	276	303	178	26	11	24
9	41	90	45	33	106	249	294	308	185	21	11	23
10	40	90	40	45	103	217	343	298	156	20	11	21
11	38	90	36	30	101	199	402	298	128	19	11	21
12	38	90	34	26	101	188	408	289	125	17	11	21
13	38	90	32	32	96	188	375	266	118	17	14	29
14	37	101	30	50	92	185	364	225	103	17	14	66
15	36	103	30	70	88	178	380	188	94	17	15	79
16	37	103	31	80	92	172	364	175	92	17	15	75
17	36	131	32	50	118	166	318	192	94	17	25	71
18	36	139	30	45	136	156	266	202	88	17	21	79
19	36	153	27	48	147	144	244	245	81	17	23	79
20	36	159	25	50	328	144	258	323	73	16	31	81
21	36	147	25	50	419	150	249	323	64	16	26	81
22	36	139	30	50	408	162	225	253	57	16	23	81
23	36	139	45	50	546	169	225	206	51	15	28	81
24	35	136	45	50	606	185	237	178	45	16	32	79
25	34	134	40	50	520	206	253	175	41	16	30	79
26	34	128	42	50	477	199	280	196	37	16	30	75
27	35	128	43	45	448	196	323	213	34	15	29	75
28	34	131	45	45	419	237	328	229	29	15	28	75
29	34	123	45	50	391	289	380	233	26	15	29	75
30	34	59	35	60	-----	353	425	221	25	15	30	75
31	34	-----	32	50	-----	397	-----	202	-----	17	29	-----
TOTAL	1,251	3,207	1,259	1,340	6,292	7,371	9,481	8,634	3,248	561	639	1,633
MEAN	40.4	107	40.6	43.2	217	238	316	279	108	18.1	20.6	54.4
MAX	106	159	61	80	606	397	425	465	210	26	32	81
MIN	31	34	25	26	32	144	225	175	25	15	11	21
AC-FT	2,480	6,360	2,500	2,660	12,480	14,620	18,810	17,130	6,440	1,110	1,270	3,240
CAL YR 1967	TOTAL 114,030		MEAN 312		MAX 2,130	MIN 25		AC-FT 226,200				
WTR YR 1968	TOTAL 44,916		MEAN 123		MAX 606	MIN 11		AC-FT 89,090				

Peak discharge (base, 500 cfs).--Feb. 23 (1930 hrs) 727 cfs (2.39 ft); May 4 (0430 hrs) 520 cfs (2.14 ft).

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LOCATION.--Lat 39°23'20", long 120°05'40", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.28, T.18 N., R.17 E., in control house at Boca Dam, 1,800 ft upstream from mouth of Little Truckee River, and 0.5 mile northwest of Boca.

RECORDS AVAILABLE.--December 1938 to September 1968. Month-end contents only for December 1938 to September 1957, published in WSP 1734.

EXTREMES.--Maximum contents during year, 35,460 acre-ft June 4, 5 (elevation, 5,599.25 ft); minimum, 1,300 acre-ft Dec. 15, 16 (elevation, 5,534.10 ft).

1939-68: Maximum contents, 41,440 acre-ft Dec. 23, 1955 (elevation, 5,605.55 ft); minimum, 37 acre-ft Mar. 4-9, 1955 (elevation, 5,521.65 ft).

COOPERATION.--Daily elevations furnished by Washoe County Water Conservation District.

5,534	1,280	5,570	13,760
5,540	2,340	5,580	20,020
5,550	4,970	5,590	27,510
5,560	8,790	5,600	36,150

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25,610	7,260	1,560	1,650	1,480	3,200	9,760	28,160	35,320	31,260	25,760	18,460
2	25,300	6,250	1,510	1,670	1,520	2,770	10,640	28,450	35,360	31,090	25,530	18,130
3	25,100	5,220	1,480	1,690	1,630	2,390	11,430	28,650	35,410	30,960	25,340	17,780
4	24,830	4,220	1,460	1,660	1,740	2,070	12,150	29,190	35,460	30,700	25,100	17,420
5	24,450	3,240	1,450	1,650	1,840	2,410	12,830	29,600	35,460	30,660	24,830	17,130
6	24,110	2,440	1,410	1,650	1,890	2,700	13,480	29,860	35,410	30,680	24,680	16,850
7	23,770	2,060	1,440	1,640	1,890	2,890	13,790	30,400	35,360	30,440	24,530	16,600
8	23,400	1,860	1,480	1,640	1,890	3,010	14,730	30,870	35,320	30,320	24,380	16,320
9	23,220	1,810	1,490	1,650	1,910	3,100	15,380	31,340	35,320	30,200	24,180	16,040
10	22,690	1,800	1,530	1,670	1,880	3,130	15,950	31,730	35,230	30,020	24,000	15,740
11	22,320	1,780	1,550	1,660	1,830	3,100	16,910	32,080	35,100	29,820	23,850	15,440
12	22,070	1,760	1,560	1,630	1,800	3,140	17,610	32,520	34,920	29,600	23,660	15,200
13	21,570	1,740	1,580	1,640	1,760	3,180	18,530	32,780	34,740	29,440	23,500	14,900
14	20,960	1,740	1,450	1,660	1,700	3,300	19,260	32,910	34,640	29,270	23,250	14,670
15	20,400	1,770	1,300	1,720	1,650	3,430	19,950	32,990	34,510	29,110	22,950	14,470
16	19,880	1,770	1,300	1,800	1,600	3,670	20,740	33,040	34,380	28,940	22,690	14,300
17	19,300	1,800	1,330	1,910	1,600	3,960	21,420	33,040	34,150	28,740	22,400	14,150
18	18,760	1,830	1,350	1,890	1,650	4,180	21,930	33,080	33,970	28,570	22,140	13,960
19	18,200	1,870	1,370	1,890	1,750	4,420	22,440	33,120	33,840	28,410	21,820	13,900
20	17,640	1,930	1,400	1,880	2,040	4,630	23,020	33,260	33,660	28,240	21,540	13,840
21	17,040	1,990	1,420	1,770	2,610	4,810	23,540	33,610	33,350	28,080	21,240	13,760
22	16,470	1,980	1,440	1,820	3,010	5,060	24,070	33,970	33,120	27,920	20,960	13,740
23	15,920	1,960	1,470	1,780	3,250	5,300	24,630	34,150	32,910	27,750	20,710	13,650
24	15,200	1,940	1,500	1,720	3,970	5,540	25,020	34,240	32,640	27,590	20,570	13,620
25	14,520	1,910	1,520	1,660	4,470	5,890	25,450	34,330	32,420	27,430	20,430	13,510
26	13,430	1,890	1,550	1,610	4,350	6,260	25,980	34,460	32,290	27,270	20,290	13,480
27	12,480	1,860	1,570	1,560	4,120	6,620	26,390	34,560	32,120	27,030	20,060	13,380
28	11,430	1,830	1,600	1,480	3,860	6,980	26,950	34,780	31,900	26,790	19,740	13,270
29	10,350	1,800	1,620	1,420	3,530	7,420	27,390	34,920	31,690	26,550		

CAL YR 1967	b -130
WTR YR 1968	b -13,030

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

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3445. LITTLE TRUCKEE RIVER AT BOCA, CALIF.

LOCATION.--Lat 39°23'10", long 120°05'40", in NE¼NW¼ sec.28, T.18 N., R.17 E., on right bank 800 ft upstream from mouth, 1,000 ft downstream from Boca Dam, and 0.3 mile northwest of Boca.

DRAINAGE AREA.--172 sq mi.

RECORDS AVAILABLE.--April to October 1890 (monthly discharge only), January 1911 to September 1915, January 1939 to September 1988. Monthly discharge only for January 1939 to September 1957, published in WSP 1734.

GAGE.--Water-stage recorder. Altitude of gage is 5,500 ft (from topographic map). Jan. 1, 1911, to Sept. 30, 1915, staff gage at site 650 ft downstream at different datum. January 1939 to September 1957, records computed from daily log of rated settings of needle valve in dam, and from computed flow over spillway. Prior to August 1968, graphic water-stage recorder.

AVERAGE DISCHARGE.--33 years (1911-15, 1939-68), 186 cfs (134,700 acre-ft per year), unadjusted.

EXTREMES.--Maximum discharge during year, 565 cfs Feb. 25 (gage height, 3.70 ft); minimum daily discharge, 1.6 cfs Apr. 1.

1890, 1911-15, 1939-68: Maximum discharge, 8,800 cfs Dec. 24, 1955, from records of Washoe County Water Conservation District; no flow for many days in most years.

REMARKS.--Records excellent. Flow regulated by Boca Reservoir (capacity, 40,900 acre-ft), Independence Lake (capacity, 17,500 acre-ft), and one transmountain diversion to Sierra Valley.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	183	510	105	51	55	532	1.6	294	159	107	141	192
2	184	510	78	51	55	519	1.7	309	161	99	131	192
3	206	513	76	53	56	506	1.7	264	161	90	125	192
4	203	497	76	53	56	336	1.7	253	163	89	124	177
5	203	475	76	53	71	244	1.7	228	163	78	110	166
6	203	352	63	52	86	249	1.7	116	165	70	98	165
7	203	193	52	52	86	253	1.7	44	177	70	98	165
8	203	140	52	51	86	255	1.7	70	188	71	98	165
9	203	103	52	51	98	253	1.7	90	188	82	98	170
10	201	102	52	51	105	251	1.7	109	188	109	98	175
11	148	102	52	51	105	222	1.7	116	188	120	98	166
12	244	102	52	51	105	197	1.7	116	179	105	96	159
13	271	100	66	51	105	174	1.7	168	158	94	114	159
14	285	99	99	51	105	151	1.7	142	147	94	141	159
15	282	99	78	51	105	121	1.8	154	158	94	152	159
16	282	99	51	51	91	78	1.8	161	170	94	161	154
17	280	112	51	85	82	78	1.8	161	159	94	168	153
18	282	122	51	105	82	75	1.8	163	151	94	168	133
19	285	124	51	103	84	75	1.8	163	147	92	168	105
20	290	136	51	103	85	75	1.8	134	170	92	168	105
21	290	147	51	103	238	76	1.8	114	163	92	168	103
22	287	147	51	103	329	76	1.8	119	149	92	154	103
23	319	147	51	103	347	76	1.8	122	149	92	119	109
24	339	147	51	103	390	78	33	122	138	92	102	113
25	445	147	51	103	501	78	52	122	116	92	102	112
26	513	147	51	103	558	78	52	122	107	128	130	110
27	503	146	51	102	558	79	53	122	107	144	179	121
28	519	146	51	102	552	80	73	122	107	144	193	125
29	519	146	51	67	542	80	157	122	107	142	193	125
30	510	144	51	55	-----	81	244	122	107	142	193	124
31	513	-----	51	55	-----	35	-----	142	-----	142	192	-----
TOTAL	9,398	5,954	1,845	2,219	5,718	5,461	703.9	4,606	4,590	3,140	4,280	4,356
MEAN	303	198	59.5	71.6	197	176	23.5	149	153	101	138	145
MAX	519	513	105	105	558	532	244	309	188	144	193	192
MIN	148	99	51	51	55	35	1.6	44	107	70	96	103
AC-FT	18,640	11,810	3,660	4,400	11,340	10,830	1,400	9,140	9,100	6,230	8,490	8,640

CAL YR 1967 TOTAL 126,734

MEAN 347

MAX 1,980

MIN 42

AC-FT 251,400

WTR YR 1968 TOTAL 52,270.9

MEAN 143

MAX 558

MIN 1.6

AC-FT 103,700

PYRAMID AND WINNEMUCCA LAKES BASIN

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10-3460. TRUCKEE RIVER AT FARAD, CALIF.

LOCATION.--Lat 39°25'41", long 120°01'59", in NE¼ sec.12, T.18 N., R.17 E., on left bank 0.5 mile upstream from Mystic Canyon, 0.7 mile downstream from Farad powerplant, 2.5 miles north of Floriston, 3.4 miles downstream from Bronco Creek, and 3.5 miles upstream from California-Nevada State line.

DRAINAGE AREA.--932 sq mi.

RECORDS AVAILABLE.--March to October 1890 (monthly discharge only), September 1899 to September 1968. Published as "near Boca" March to October 1890, "at or near Nevada-California State line" September 1899 to August 1912, and as "at Iceland" August 1912 to December 1937. Monthly discharge only for January 1944 to July 1957, published in WSP 1734.

GAGE.--Digital water-stage recorder. Datum of gage is 5,153.21 ft above mean sea level (Bureau of Reclamation bench-mark). March to October 1890, staff gage at site 7 miles upstream at different datum. Sept. 7, 1899, to May 31, 1909, staff gage at approximately present location at different datum. June 1, 1909, to July 31, 1912, staff gage at site 2.5 miles downstream at different datum. Aug. 1, 1912, to Dec. 31, 1937, graphic water-stage recorder at site 4.1 miles upstream at different datum. Jan. 1, 1938, to Aug. 27, 1957, graphic water-stage recorder at approximately present location at different datum. Aug. 28, 1957, to July 24, 1964, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--69 years (1899-1968), 783 cfs (566,900 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,100 cfs Feb. 23 (gage height, 5.05 ft); minimum, 136 cfs Jan. 18, result of upstream regulation.
1899-1968: Maximum discharge, 17,500 cfs Nov. 21, 1950 (gage height, 14.5 ft, present datum, from flood-marks), from slope-area measurement of peak flow; minimum, 28 cfs Dec. 18, 1930.

REMARKS.--Records excellent. Flow regulated by Lake Tahoe, Prosser Creek and Boca Reservoirs, Donner and Independence Lakes, and by several powerplants. Records of chemical analyses and water temperatures for the 1968 water year are published in Part 2 of this report for Truckee River at Floriston, California. No appreciable inflow between sampling point and gaging station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	446	705	437	532	442	1,270	1,230	1,020	730	541	586	523
2	446	700	390	532	460	1,220	1,060	1,010	742	549	575	522
3	554	700	390	532	518	1,200	914	1,030	766	564	565	523
4	451	685	402	509	505	1,020	670	1,090	745	573	562	548
5	442	665	424	491	509	932	600	1,020	703	566	553	562
6	536	568	390	464	469	902	550	986	649	559	539	531
7	630	505	386	455	451	878	545	1,010	664	551	523	504
8	625	469	415	446	398	872	532	944	633	567	522	501
9	620	410	428	442	394	836	527	905	638	573	519	499
10	615	410	424	455	398	806	536	903	618	587	521	511
11	625	406	424	478	394	710	568	888	608	602	519	499
12	660	406	424	478	382	610	568	898	593	601	516	500
13	680	402	442	455	378	595	536	869	558	586	517	513
14	700	424	610	451	370	559	518	779	592	584	535	524
15	695	406	625	563	362	559	581	745	534	574	523	524
16	695	406	610	527	354	527	610	725	542	568	536	521
17	690	410	615	500	437	487	554	728	535	566	564	518
18	690	428	577	415	527	478	500	755	511	563	549	526
19	695	455	536	406	550	464	482	832	503	560	572	512
20	700	469	554	390	1,180	478	523	903	560	557	582	520
21	700	469	577	390	1,230	640	527	992	566	555	533	510
22	700	460	572	370	1,340	645	505	851	554	551	525	501
23	725	455	635	330	1,720	635	473	699	547	550	507	503
24	752	455	650	330	1,800	645	510	656	536	547	496	504
25	764	451	650	398	1,870	665	525	658	542	545	493	504
26	776	446	655	378	1,480	660	557	692	555	565	507	500
27	740	446	655	378	1,400	660	590	729	534	583	525	500
28	720	455	650	370	1,370	690	605	766	544	583	534	504
29	725	455	620	350	1,320	752	792	775	539	582	527	500
30	710	464	536	415	-----	842	1,000	743	527	583	526	491
31	705	-----	536	433	-----	1,090	-----	724	-----	587	525	-----
TOTAL	20,212	14,585	16,239	13,663	23,008	23,327	18,688	26,325	17,868	17,622	16,576	15,398
MEAN	652	486	524	441	793	752	623	849	596	568	535	513
MAX	776	705	655	563	1,870	1,270	1,230	1,090	766	602	586	562
MIN	442	402	386	330	354	464	473	656	503	541	493	491
AC-FT	40,090	28,930	32,210	27,100	45,640	46,270	37,070	52,210	35,440	34,950	32,880	30,540
CAL YR 1967	TOTAL 461,910			MEAN 1,266		MAX 6,080		MIN 332		AC-FT 916,200		
WTR YR 1968	TOTAL 223,511			MEAN 611		MAX 1,870		MIN 330		AC-FT 443,300		

Peak discharge (base, 1,600 cfs).--Feb. 23 (2000 hrs) 2,100 cfs (5.05 ft).

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3480. TRUCKEE RIVER AT RENO, NEV.

LOCATION.--Lat 39°31'55", long 119°47'05", in NW¼ sec.7, T.19 N., R.20 E., on left bank 400 ft downstream from Kietzke Lane bridge, 0.5 mile downstream from Scott Island, 1.5 miles east of Reno Post Office, and 5 miles upstream from Steamboat Creek.

DRAINAGE AREA.--1,067 sq mi.

RECORDS AVAILABLE.--July 1906 to September 1921, June 1925 to September 1926, January 1930 to December 1935, January to December 1943, January 1946 to September 1968. Monthly discharge only for some periods, published in WSP 1314 and 1734.

GAGE.--Digital water-stage recorder. Datum of gage is 4,431.97 ft above mean sea level (levels by Corps of Engineers). July 1906 to September 1946, staff gage at site 1 mile upstream at different datum. Jan. 1, 1947, to Feb. 11, 1965, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--42 years (1906-21, 1925-26, 1930-34, 1946-68), 653 cfs (472,800 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,330 cfs Feb. 24 (gage height, 5.79 ft); minimum, 158 cfs Sept. 9, 1906-21, 1925-26, 1930-35, 1943, 1946-68; Maximum discharge, 20,800 cfs Dec. 23, 1955; maximum gage height, 13.83 ft Nov. 21, 1950; no flow Sept. 12, 14-24, 26-30, 1926.

REMARKS.--Records good. Flow regulated by Lake Tahoe, Prosser Creek and Boca Reservoirs, Donner and Independence Lakes, and by several powerplants. Many diversions above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	273	636	421	505	457	1,330	1,280	746	457	208	303	215
2	217	641	357	505	480	1,260	1,080	707	471	213	282	210
3	515	636	353	510	581	1,240	950	735	510	221	245	208
4	384	630	365	495	545	1,130	718	806	505	236	248	213
5	356	608	430	471	530	974	570	776	475	242	242	251
6	334	580	365	435	520	962	485	707	426	227	233	230
7	480	394	361	426	466	932	435	746	444	215	224	210
8	470	426	357	426	444	938	417	707	399	215	215	200
9	460	353	394	426	430	896	373	663	369	218	200	195
10	451	353	390	485	444	860	399	636	342	257	203	205
11	456	349	390	435	408	800	412	625	321	248	200	203
12	495	349	385	444	403	647	426	702	342	266	198	200
13	485	349	342	462	385	647	377	674	254	245	203	208
14	515	361	460	453	377	586	345	586	307	245	227	221
15	515	369	570	603	365	575	361	515	221	242	213	230
16	510	357	520	592	357	565	444	466	233	227	218	224
17	505	349	520	510	369	515	385	453	230	221	279	227
18	505	369	520	462	555	495	307	466	205	224	266	239
19	500	394	520	412	597	462	286	555	195	221	275	275
20	490	421	560	394	1,330	457	275	625	224	227	324	282
21	505	421	560	394	1,390	619	303	758	257	224	251	260
22	500	412	486	385	1,540	663	272	674	251	218	245	254
23	500	403	636	331	1,810	636	269	457	230	205	227	251
24	550	403	636	331	1,990	636	248	403	221	203	193	251
25	550	394	646	377	2,040	663	227	373	221	203	200	251
26	586	394	641	385	1,620	674	239	403	224	210	188	245
27	575	398	674	365	1,530	636	263	439	210	242	203	242
28	530	416	646	381	1,470	674	272	485	213	245	221	248
29	575	426	624	373	1,400	740	390	525	215	242	215	254
30	575	430	525	403	-----	842	669	495	213	242	213	254
31	570	-----	510	466	-----	993	-----	466	-----	257	215	-----
TOTAL	14,932	13,021	15,164	13,642	24,833	24,047	13,477	18,374	9,185	7,109	7,169	6,956
MEAN	482	434	489	440	856	776	449	593	306	229	231	232
MAX	586	641	674	603	2,040	1,330	1,280	806	510	266	324	282
MIN	217	349	342	331	357	457	227	373	195	203	188	195
AC-FT	29,620	25,830	30,080	27,060	49,260	47,700	26,730	36,440	18,220	14,100	14,220	13,800
CAL YR 1967	TOTAL 427,753		MEAN 1,172		MAX 6,200		MIN 196		AC-FT 848,400			
WTR YR 1968	TOTAL 167,909		MEAN 459		MAX 2,040		MIN 188		AC-FT 333,000			

Peak discharge (base, 1,600 cfs).--Feb. 24 (0045 hrs) 2,330 cfs (5.79 ft).

HONEY LAKE BASIN

549

10-3547. MILL CREEK AT MILFORD, CALIF.

LOCATION.--Lat 40°10'15", long 120°22'14", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.26, T.27 N., R.14 E., on left bank 7 ft upstream from culvert on U.S. Highway 395 in Milford.

DRAINAGE AREA.--2.26 sq mi.

RECORDS AVAILABLE.--August 1963 to September 1968.

GAGE.--Graphic water-stage recorder with recording rain-gage attachment and crest-stage gages. Altitude of gage is 4,200 ft (from topographic map).

AVERAGE DISCHARGE.--5 years, 1.08 cfs (782 acre-ft per year).

EXTREMES.--Maximum discharge during year, 3.1 cfs Feb. 23 (gage height, 2.40 ft); minimum daily, 0.17 cfs June 23.

1963-68: Maximum discharge, 28 cfs Jan. 29, 1967 (gage height, 4.13 ft), from rating curve extended above 4 cfs on basis of computation of flow through culvert at gage heights 3.00, 3.59, and 4.13 ft; no flow Aug. 23, 1964, Aug. 28, 1966.

REMARKS.--Records fair. Small diversions above station for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.26	.94	1.0	.90	.88	1.1	1.0	.90	.48	.58	.82	.29
2	.88	.94	1.0	.90	.94	1.1	1.0	.90	.30	.48	.82	.58
3	.82	.94	1.0	.90	.94	1.1	1.0	.80	.40	.44	.70	.58
4	.82	.94	1.1	.90	.88	1.1	1.0	.80	.44	.44	.38	.58
5	.82	.94	1.1	.90	.88	1.1	1.0	.80	.58	.64	.70	.58
6	.82	.94	1.0	.90	.88	1.1	1.0	.80	.64	.52	.76	.58
7	.76	.94	1.1	.90	.88	1.1	1.0	.80	.58	.38	.76	.58
8	.70	.94	1.0	.90	.88	1.2	1.0	.70	.58	.76	.76	.53
9	.82	1.0	.90	.90	.94	1.2	1.0	.70	.34	.76	.82	.58
10	.82	1.0	.90	1.2	.94	1.1	1.0	.70	.58	.70	.71	.58
11	.82	.94	.90	1.0	.94	1.0	1.1	.70	.58	.76	.18	.58
12	.82	.94	.90	.90	.94	.90	1.1	.70	.58	.76	.58	.58
13	.82	.94	.90	.90	.94	.90	1.1	.70	.58	.76	.76	.58
14	.82	.94	.90	.90	.94	.90	1.1	.70	.64	.40	.76	.58
15	.82	.94	.90	1.1	.94	.90	1.1	.70	.51	.64	.82	.38
16	.82	.94	.90	1.0	.94	1.2	1.1	.70	.54	.64	.88	.32
17	.82	.94	.90	.90	.94	1.2	1.1	.70	.64	.64	.94	.36
18	.82	.94	.90	.90	.94	1.1	1.1	.50	.70	.64	.94	.58
19	.82	.94	.90	.90	1.2	1.0	1.1	.20	.70	.64	.94	.76
20	.82	.88	.90	.90	1.8	1.0	1.1	.70	.58	.57	.94	.76
21	.82	.88	.90	.90	2.4	1.0	1.1	.70	.58	.24	1.0	.73
22	.82	.88	.90	.84	2.1	1.0	1.1	.70	.50	.64	.90	.29
23	.82	.88	.90	.76	2.8	1.0	1.1	.90	.17	.64	.80	.70
24	.82	.88	.90	.76	2.0	1.0	1.1	.80	.53	.64	.50	.70
25	.88	.88	.90	.82	1.6	1.1	1.1	.50	.48	.64	.20	.70
26	.94	.88	.90	.82	1.3	1.1	1.0	.20	.48	.64	.70	.70
27	.94	.88	.90	.82	1.2	1.0	1.0	.70	.48	.60	.64	.70
28	.94	.88	.90	.82	1.2	1.0	1.0	.71	.48	.33	.64	.59
29	.94	.94	.90	.88	1.1	1.0	.90	.76	.51	.64	.64	.18
30	.94	1.0	.90	.88	-----	1.0	.90	.76	.26	.64	.64	.58
31	.94	-----	.90	.88	-----	1.0	-----	.64	-----	.76	.51	-----
TOTAL	25.52	27.84	29.00	27.88	35.26	32.50	31.30	21.57	15.44	18.56	22.14	16.81
MEAN	.82	.93	.94	.90	1.22	1.05	1.04	.70	.51	.60	.71	.56
MAX	.94	1.0	1.1	1.2	2.8	1.2	1.1	.90	.70	.76	1.0	.76
MIN	.26	.88	.90	.76	.88	.90	.90	.20	.17	.24	.18	.18
AC-FT	51	55	58	55	70	64	62	43	31	37	44	33
(a)	1.27	1.18	--	--	1.61	--	--	--	.38	0	.53	0
CAL YR 1967	TOTAL 556.16			MEAN 1.52	MAX 15	MIN .20	AC-FT 1,100					
WTR YR 1968	TOTAL 303.82			MEAN .83	MAX 2.8	MIN .17	AC-FT 603					

Note.--No gage-height record Dec. 9 to Jan. 22, Mar. 8 to Apr. 14, Apr. 17 to May 28.

(a) Precipitation in inches (some precipitation falling as snow may not be included).

HONEY LAKE BASIN

10-3565. SUSAN RIVER AT SUSANVILLE, CALIF.

LOCATION.--Lat 40°25'05", long 120°40'15", in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.31, T.30 N., R.12 E., on left bank 0.5 mile west of Susanville and 1.1 miles upstream from Piute Creek.

DRAINAGE AREA.--184 sq mi.

RECORDS AVAILABLE.--June 1900 to December 1905 (gage height only August 1901 to January 1903), March to May 1913 (gage heights, only), February 1917 to June 1921, October 1950 to September 1968. Published as "near Susanville" 1900-1905. 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.--Graphic water-stage recorder. Datum of gage is 4,225.72 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1950, staff gages at several sites in vicinity of old powerplant 0.9 mile upstream at various datums.

AVERAGE DISCHARGE.--24 years (1900-1901, 1903-5, 1917-20, 1950-68), 93.5 cfs (67,690 acre-ft per year).

EXTREMES.--Maximum discharge during year, 820 cfs Feb. 23 (gage height, 4.70 ft); minimum daily, 1.7 cfs Aug. 12.

1900-1905, 1913, 1917-21, 1950-68: Maximum discharge, 5,100 cfs Dec. 22, 1964 (gage height, 7.30 ft), from rating curve extended above 1,500 cfs on basis of slope-area measurement at gage height 6.62 ft; no flow Aug. 15, 1961.

REMARKS.--Records fair. 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. Records of chemical analyses for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.1	11	14	10	28	176	208	93	125	79	6.9	2.9
2	22	11	14	10	35	152	178	99	122	80	6.3	2.5
3	32	11	15	10	42	154	156	105	120	80	5.1	2.8
4	15	11	18	10	40	144	148	105	123	79	3.4	2.5
5	12	11	25	10	37	142	148	99	117	79	2.6	2.3
6	12	11	20	11	35	141	133	92	135	79	2.3	2.3
7	13	11	16	11	34	126	126	88	120	76	1.9	2.0
8	11	11	14	11	38	125	123	86	108	75	2.0	2.0
9	10	11	13	11	45	109	123	84	96	75	2.0	2.2
10	10	11	12	11	55	99	133	81	99	76	1.9	2.3
11	9.8	11	11	11	56	93	152	80	109	76	1.8	2.5
12	9.5	11	11	11	59	90	158	78	106	75	1.7	2.5
13	9.8	11	10	12	62	90	133	84	105	76	1.8	2.8
14	9.5	12	9.5	50	52	93	125	86	105	76	2.0	2.9
15	9.8	13	10	200	45	101	123	120	102	75	2.3	3.0
16	10	12	12	80	41	115	117	115	98	74	4.8	3.0
17	10	12	11	50	65	104	106	108	96	73	7.9	3.0
18	10	12	11	40	101	91	101	102	97	72	4.4	3.0
19	10	23	11	32	172	84	97	98	96	71	6.3	2.9
20	10	22	11	27	440	84	91	98	94	73	9.0	3.4
21	10	19	11	24	560	85	86	125	94	75	8.8	3.9
22	10	16	11	22	412	86	81	144	88	76	7.7	4.2
23	10	14	12	25	665	91	80	150	85	84	5.9	4.2
24	10	14	12	24	432	97	80	150	84	85	4.7	4.2
25	10	13	12	26	282	122	80	141	82	81	3.9	4.0
26	10	12	12	22	243	118	79	132	80	50	3.8	3.9
27	10	12	12	24	224	108	80	123	79	18	3.3	3.9
28	10	14	12	24	206	120	79	132	79	9.8	3.4	3.6
29	10	14	12	21	180	154	84	125	79	7.1	3.4	3.6
30	10	14	11	17	-----	194	90	133	79	6.3	3.0	3.9
31	10	-----	10	20	-----	210	-----	130	-----	5.5	2.8	-----
TOTAL	351.5	391	395.5	867	4,686	3,698	3,498	3,386	3,002	2,016.7	127.1	92.2
MEAN	11.3	13.0	12.8	28.0	162	119	117	109	100	65.1	4.10	3.07
MAX	32	23	25	200	665	210	208	150	135	85	9.0	4.2
MIN	6.1	11	9.5	10	28	84	79	78	79	5.5	1.7	2.0
AC-FT	697	776	784	1,720	9,290	7,330	6,940	6,720	5,950	4,000	252	183

CAL YR 1967 TOTAL 47,144.1 MEAN 129 MAX 1,280 MIN 4.2 AC-FT 93,510
WTR YR 1968 TOTAL 22,511.0 MEAN 61.5 MAX 665 MIN 1.7 AC-FT 44,650

Peak discharge (base, 400 cfs).--Feb. 20 (0200 hrs) 690 cfs (4.48 ft); Feb. 23 (1900 hrs) 820 cfs (4.70 ft).

Note.--No gage-height record Dec. 3 to Jan. 24.

HONEY LAKE BASIN

551

10-3584.7. WILLOW CREEK TRIBUTARY NEAR SUSANVILLE, CALIF.

LOCATION.--Lat 40°29'48", long 120°33'30", in SW¼ sec.31, T.31 N., R.13 E., on left bank at culvert on State Highway No. 139 and 7.5 miles northeast of Susanville.

DRAINAGE AREA.--3.08 sq mi.

RECORDS AVAILABLE.--Water years 1963-65 (annual maximum), October 1965 to September 1968.

GAGE.--Graphic water-stage recorder with recording rain-gage attachment and crest-stage gages. Altitude of gage is 4,890 ft (from topographic map). July 16, 1962, to Aug. 30, 1965, crest-stage gages at same site and datum.

EXTREMES.--Maximum discharge during year, 24 cfs Feb. 21 (gage height, 3.12 ft); no flow for several months. 1962-68: Maximum discharge, 97 cfs Feb. 1, 1963 (gage height, 4.90 ft); no flow for several months each year.

REMARKS.--Records good. No storage or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0			0	0	.62	.23			0		
2	.26			0	.20	.57	.20			0		
3	0			0	.01	.40	.16			0		
4	0			0	0	.40	.14			0		
5	0			0	0	.40	.14			0		
6	0			0	0	.26	.12			0		
7	0			0	0	.26	.11			0		
8	0			0	0	.52	.08			0		
9	0			0	.11	.28	.06			0		
10	0			0	.32	.18	.08			0		
11	0			0	5.3	.15	.08			0		
12	0			0	6.6	.15	.08			0		
13	0			0	6.9	.20	.05			0		
14	0			0	4.8	.17	.05			0		
15	0			.16	1.1	.14	.06			0		
16	0			.04	.62	.31	.06				.01	
17	0			0	1.7	.28	.04			0		
18	0			0	4.2	.15	.05			0		
19	0			0	6.7	.12	.04			0		
20	0			0	11	.10	.04			0		
21	0			0	14	.10	.03			0		
22	0			0	12	.12	.01			0		
23	0			0	12	.10	.02			0		
24	0			0	3.6	.10	.01			0		
25	0			0	2.4	.23	0			0		
26	0			0	2.0	.14	0			0		
27	0			0	1.5	.13	0			0		
28	0			0	.95	.14	0			0		
29	0			0	.75	.20	0			0		
30	0			0	-----	.23	0			0		
31	0	-----		0	-----	.23	-----		-----	0		-----
TOTAL	0.26	0	0	0.20	98.76	7.38	1.94	0	0	0	0.01	0
MEAN	.008	0	0	.007	3.41	.24	.065	0	0	0	.0003	0
MAX	.26	0	0	.16	14	.62	.23	0	0	0	.01	0
MIN	0	0	0	0	0	.10	0	0	0	0	0	0
AC-FT	.5	0	0	.4	196	15	3.9	0	0	0	.02	0
(a)	.79	1.00	1.03	1.20	1.85	.35	0	.20	.26	.74	.51	0

CAL YR 1967 TOTAL 438.36 MEAN 1.20 MAX 28 MIN 0 AC-FT 870
WTR YR 1968 TOTAL 108.55 MEAN .30 MAX 14 MIN 0 AC-FT 215

a Precipitation, in inches (some precipitation falling as snow may not be included).

HONEY LAKE BASIN

10-3585. WILLOW CREEK NEAR SUSANVILLE, CALIF.

LOCATION.--Lat 40°29'20", long 120°32'10", in SW¼NE¼ sec.5, T.30 N., R.13 E., on left bank 4 miles upstream from Peters Valley Creek and 8 miles northeast of Susanville.

DRAINAGE AREA.--90.0 sq mi, excludes that of Eagle Lake basin.

RECORDS AVAILABLE.--October 1950 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 4,836.27 ft above mean sea level, unadjusted. Prior to June 24, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--18 years, 31.7 cfs (22,950 acre-ft per year).

EXTREMES.--Maximum discharge during year, 408 cfs Feb. 22 (gage height, 4.61 ft); minimum daily, 9.2 cfs Aug. 14, 15, 18-24, 26.

1950-68: Maximum discharge, 816 cfs Feb. 1, 1963 (gage height, 5.59 ft), from rating curve extended above 540 cfs; minimum, 8.1 cfs Nov. 16, 1951.

REMARKS.--Records good. Diversions for irrigation of 5,200 acres above station. Some flow at times enters Willow Creek from Eagle Lake through an abandoned tunnel.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	28	31	29	34	93	17	15	14	11	9.9	10
2	12	27	31	27	37	83	17	17	14	11	9.8	10
3	12	26	31	27	39	73	13	18	14	11	9.6	10
4	13	27	32	27	39	63	14	17	14	11	9.4	10
5	13	28	37	27	38	56	16	15	13	11	9.4	10
6	13	28	37	27	38	52	17	14	14	11	9.3	10
7	19	28	39	27	38	44	17	14	14	11	9.4	10
8	24	28	38	27	40	38	17	14	16	11	9.3	10
9	25	31	36	27	47	35	16	14	14	10	9.3	10
10	27	29	35	27	59	32	14	13	14	10	9.3	10
11	27	30	34	28	76	31	15	14	14	10	9.3	11
12	27	29	33	28	90	26	12	14	14	10	12	11
13	27	29	32	28	99	26	12	14	13	10	9.9	10
14	26	30	31	28	78	28	12	14	14	10	9.2	10
15	26	31	31	33	58	28	14	14	13	10	9.2	10
16	27	30	30	35	54	25	16	15	13	10	9.5	10
17	27	30	29	41	78	22	15	16	13	10	9.3	10
18	29	30	28	44	137	19	14	15	12	10	9.2	10
19	28	35	30	42	163	17	14	14	12	10	9.2	10
20	28	37	29	38	236	16	14	14	12	10	9.2	10
21	27	39	29	34	332	16	14	15	11	10	9.2	10
22	28	36	30	32	388	18	15	15	11	10	9.2	10
23	28	34	30	32	314	16	16	15	11	10	9.2	10
24	28	33	31	33	222	16	16	15	11	10	9.2	10
25	28	33	32	34	169	16	15	15	11	10	9.3	12
26	27	31	32	33	140	15	15	15	11	10	9.2	13
27	28	30	30	33	123	15	15	15	11	9.8	9.3	12
28	28	31	31	33	112	14	15	14	11	9.9	9.3	13
29	27	30	31	32	103	15	15	15	11	9.9	14	13
30	27	31	32	24	-----	16	15	14	11	9.8	11	13
31	27	-----	31	28	-----	17	-----	14	-----	9.9	10	-----
TOTAL	744	919	993	965	3,381	981	447	457	381	317.3	299.6	318
MEAN	24.0	30.6	32.0	31.1	117	31.6	14.9	14.7	12.7	10.2	9.66	10.6
MAX	29	39	39	44	388	93	17	18	16	11	14	13
MIN	11	26	28	24	34	14	12	13	11	9.8	9.2	10
AC-FT	1,480	1,820	1,970	1,910	6,710	1,950	887	906	756	629	594	631
CAL YR 1967	TOTAL 15,583		MEAN 42.7		MAX 578		MIN 10		AC-FT 30,910			
WTR YR 1968	TOTAL 10,202.9		MEAN 27.9		MAX 388		MIN 9.2		AC-FT 20,240			

Peak discharge (base, 200 cfs).--Feb. 22 (1400 hrs) 408 cfs (4.61 ft).

EAGLE LAKE BASIN

553

10-3593. PINE CREEK NEAR SUSANVILLE, CALIF.

LOCATION.--Lat 40°39'49", long 120°48'33", in SE $\frac{1}{4}$ sec.2, T.32 N., R.10 E., on right bank 1.8 miles upstream from Eagle Lake, and 18 miles northwest of Susanville.

DRAINAGE AREA.--226 sq mi.

RECORDS AVAILABLE.--October 1960 to September 1966, October 1967 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 5,185 ft (from topographic map). Prior to Nov. 29, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--7 years, 15.7 cfs (11,370 acre-ft per year).

EXTREMES.--Maximum discharge during year, 264 cfs Mar. 1 (gage height, 3.61 ft); no flow for several months. 1960-66, 1967-68: Maximum discharge, 806 cfs Feb. 1, 1963 (gage height, 5.37 ft); no flow for several months in each year.

Flood of May 18, 1967, reached a stage of 5.29 ft (discharge, 826 cfs).

REMARKS.--No storage or diversion above station except for minor stock ponds.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					0	181	236	12	.90			
2					0	154	230	13	.40			
3					0	102	193	14	.10			
4					0	105	166	15	0			
5					0	154	163	16	0			
6					0	116	145	14	0			
7					0	85	129	14	0			
8					0	70	119	14	0			
9					0	64	126	12	0			
10					0	58	141	11	0			
11					0	56	163	9.9	0			
12					0	50	166	9.4	0			
13					0	26	145	10	0			
14					0	30	105	11	0			
15					0	42	83	12	0			
16					0	62	74	12	0			
17					0	56	61	10	0			
18					0	44	48	8.2	0			
19					0	35	38	6.8	0			
20					0	31	30	6.4	0			
21					0	30	27	6.1	0			
22					0	32	23	6.4	0			
23					0	40	21	8.6	0			
24					24	56	17	11	0			
25					126	88	16	11	0			
26					190	93	14	9.9	0			
27					219	81	13	8.2	0			
28					216	102	13	6.4	0			
29					219	132	12	4.5	0			
30					-----	169	12	3.0	0			
31		-----			-----	202	-----	1.7	-----			-----
TOTAL	0	0	0	0	994	2,546	2,729	307.5	1.40	0	0	0
MEAN	0	0	0	0	34.3	82.1	91.0	9.92	.047	0	0	0
MAX	0	0	0	0	219	202	236	16	.90	0	0	0
MIN	0	0	0	0	0	26	12	1.7	0	0	0	0
AC-FT	0	0	0	0	1,970	5,050	5,410	610	2.8	0	0	0
CAL YR 1967	TOTAL -			MEAN -			MAX -			MIN -		
WTR YR 1968	TOTAL 6,577.90			MEAN 18.0			MAX 236			MIN 0		
							AC-FT -			AC-FT 13,050		

SURPRISE VALLEY BASIN

10-3602.3. EAGLE CREEK AT EAGLEVILLE, CALIF.

LOCATION.--Lat 41°18'45", long 120°07'26", in SW¼SE¼ sec.23, T.40 N., R.16 E., on left bank 0.6 mile southwest of Eagleville.

DRAINAGE AREA.--6.36 sq mi.

RECORDS AVAILABLE.--October 1961 to September 1964, October 1965 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 4,700 ft (from topographic map). Graphic water-stage recorder October 1961 to September 1964 at site 500 ft upstream at different datum. Digital water-stage recorder Oct. 1, 1965, to Mar. 31, 1966, at present site and datum.

AVERAGE DISCHARGE.--7 years, 6.80 cfs (4,920 acre-ft per year).

EXTREMES.--Maximum daily discharge during year, 25 cfs Feb. 23; minimum daily, 1.4 cfs Nov. 7, 8.

1961-64, 1965-68: Maximum daily discharge, 60 cfs Feb. 1, 1963; no flow Feb. 6, 1966.

Flood of Dec. 23, 1964, reached a stage of 4.50 ft from floodmarks, site and datum then in use (discharge, 800 cfs).

REMARKS.--Some diversion above station for irrigation.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	1.6	2.1	1.6	1.7	6.8	4.7	9.6	19	8.0	2.8	4.2
2	2.3	1.5	2.1	1.6	1.8	6.2	4.4	11	21	7.6	2.6	4.5
3	2.3	1.5	2.2	1.6	1.9	5.9	4.7	11	21	7.2	2.4	4.5
4	2.4	1.5	2.3	1.6	1.8	5.8	4.4	13	19	7.2	2.0	4.2
5	2.0	1.5	2.2	1.5	1.8	5.8	4.7	12	18	6.9	2.0	4.2
6	2.0	1.5	2.2	1.5	1.9	5.4	4.4	11	17	6.9	2.0	3.8
7	2.0	1.4	2.3	1.5	2.0	5.0	4.7	10	15	6.6	2.0	3.6
8	1.9	1.4	2.4	1.5	2.1	4.6	5.0	10	15	6.2	2.0	3.8
9	1.8	1.6	2.4	1.5	2.2	4.3	5.3	12	15	5.9	2.0	3.6
10	1.8	1.6	2.4	1.5	2.4	3.9	5.3	12	14	5.6	2.0	3.4
11	1.7	1.6	2.4	1.5	2.5	3.6	6.9	13	14	5.3	2.0	3.0
12	1.7	1.6	2.5	1.5	2.2	3.3	8.4	13	14	5.0	2.0	3.0
13	1.7	1.6	2.5	1.6	1.9	3.5	8.0	12	15	4.7	2.1	2.8
14	1.6	1.7	2.5	2.4	1.7	3.3	6.9	11	16	4.7	3.5	2.8
15	1.6	1.6	2.5	4.4	1.6	3.1	6.6	11	17	4.4	2.6	2.6
16	1.6	1.6	2.5	3.8	1.5	3.0	6.2	11	18	4.4	2.6	2.6
17	1.6	1.6	2.5	3.1	1.8	3.2	6.9	11	20	4.2	2.6	2.4
18	1.6	1.9	2.4	2.6	2.1	2.8	6.2	12	22	4.2	3.6	2.4
19	1.6	2.1	2.4	2.2	4.0	3.6	5.6	14	22	3.8	23	2.5
20	1.6	2.1	2.4	1.9	9.0	4.5	5.3	16	21	3.6	17	2.5
21	1.8	2.0	2.4	1.9	9.4	3.0	5.0	14	19	3.6	9.7	2.5
22	1.8	1.8	2.5	2.0	11	2.5	4.7	14	18	3.6	8.2	2.5
23	1.7	1.9	2.5	2.0	25	2.4	4.7	13	17	3.4	7.7	2.4
24	1.7	1.9	2.5	2.0	14	2.6	4.7	12	15	3.4	7.7	2.3
25	1.7	1.8	2.5	2.0	10	3.0	5.0	12	13	3.4	7.7	2.1
26	1.7	1.9	2.4	2.0	9.0	3.6	5.3	12	12	3.0	6.0	2.0
27	1.7	2.0	2.2	2.0	8.2	3.0	5.6	12	12	3.0	6.0	2.0
28	2.1	2.1	1.9	2.0	7.4	3.6	6.2	14	11	2.8	5.5	2.0
29	1.6	2.1	1.6	2.0	7.0	4.8	7.6	16	10	2.6	4.8	2.0
30	1.6	2.1	1.6	2.0	-----	4.2	9.2	17	8.8	2.6	4.5	2.0
31	1.6	-----	1.6	1.9	-----	4.2	-----	17	-----	2.6	4.5	-----
TOTAL	55.8	52.1	70.9	62.2	148.9	124.5	172.6	388.6	488.8	146.4	155.1	88.2
MEAN	1.80	1.74	2.29	2.01	5.13	4.02	5.75	12.5	16.3	4.72	5.00	2.94
MAX	2.4	2.1	2.5	4.4	25	6.8	9.2	17	22	8.0	23	4.5
MIN	1.6	1.4	1.6	1.5	1.5	2.4	4.4	9.6	8.8	2.6	2.0	2.0
AC-FT	111	103	141	123	295	247	342	771	970	290	308	175

CAL YR 1967 TOTAL 2,334.4

MEAN 6.40

MAX 40

MIN 1.3

AC-FT 4,630

WTR YR 1968 TOTAL 1,954.1

MEAN 5.34

MAX 25

MIN 1.4

AC-FT 3,880

Note.--No gage-height record Nov. 22 to Mar. 15.

SURPRISE VALLEY BASIN

555

10-3609. BIDWELL CREEK BELOW MILL CREEK, NEAR FORT BIDWELL, CALIF.

LOCATION.--Lat 41°52'55", long 120°10'25", in SE¼ sec.6, T.16 N., R.16 E., on right bank 0.9 mile downstream from Mill Creek, and 2.0 miles northwest of Fort Bidwell.

DRAINAGE AREA.--25.6 sq mi.

RECORDS AVAILABLE.--October 1960 to September 1968. Prior to October 1961, published as Bidwell Creek near Fort Bidwell, Calif.

GAGE.--Graphic water-stage recorder. Altitude of gage is 5,000 ft (from topographic map). Oct. 1, 1965, to Mar. 31, 1966, digital water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--8 years, 19.2 cfs (13,900 acre-ft per year).

EXTREMES.--Maximum discharge during year, 106 cfs Feb. 23 (gage height, 3.82 ft); minimum daily, 2.9 cfs Aug. 8, 10-12, Sept. 27, 28.

1960-68: Maximum discharge, 682 cfs Dec. 24, 1964 (gage height, 5.64 ft), from rating curve extended above 106 cfs on basis of slope-area measurement of maximum flow; minimum, 1.4 cfs Nov. 5, 1960.

REMARKS.--Less than 2 cfs diverted upstream for irrigation. No storage above station.

COOPERATION.--Records furnished by the California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	4.3	5.7	4.3	5.1	21	26	26	25	7.9	3.8	3.4
2	6.5	4.3	5.7	4.1	5.4	19	23	26	26	7.5	3.8	3.4
3	6.0	4.1	5.7	4.1	6.0	18	21	26	27	7.1	3.6	3.2
4	5.1	4.1	6.0	4.1	5.7	18	19	27	26	6.8	3.6	3.2
5	5.1	4.3	6.0	3.9	5.7	18	19	27	29	6.5	3.2	3.0
6	5.1	4.6	5.7	3.9	6.0	17	16	24	27	6.3	3.0	3.0
7	5.1	4.3	6.3	4.1	6.3	16	16	23	25	6.3	3.0	3.0
8	4.9	4.3	6.3	3.9	6.3	14	16	21	23	6.0	2.9	3.0
9	4.3	5.4	6.3	3.9	7.1	13	17	21	21	6.0	3.0	3.0
10	4.3	5.4	6.3	3.9	7.5	12	22	23	19	5.7	2.9	3.0
11	4.6	5.1	6.5	3.9	7.9	11	26	23	19	5.7	2.9	3.0
12	4.6	4.6	6.5	3.9	6.8	10	26	23	18	5.7	2.8	3.0
13	4.3	4.9	6.5	3.9	6.3	11	24	24	18	5.7	3.0	3.0
14	4.3	5.4	6.5	4.9	5.4	10	24	24	16	5.4	4.3	3.2
15	4.3	4.9	6.5	14	5.1	9.4	23	25	16	5.4	3.4	3.2
16	4.3	4.6	6.5	12	4.6	9.4	23	23	15	5.1	5.1	3.2
17	4.3	3.9	6.5	9.4	5.7	9.0	21	23	14	4.9	4.3	3.2
18	4.1	7.1	6.5	8.3	6.5	9.8	20	23	13	4.6	6.8	3.2
19	4.3	6.5	6.5	6.3	13	10	19	26	13	4.1	21	3.0
20	4.3	5.1	6.5	6.0	29	10	18	28	13	4.1	11	3.2
21	5.7	4.6	6.5	6.0	29	9.8	18	29	12	3.9	8.3	3.4
22	5.7	4.3	6.5	6.3	31	9.8	17	28	12	3.9	6.5	3.4
23	5.1	4.6	6.5	6.3	80	9.8	17	27	11	3.9	5.7	3.4
24	4.6	4.6	6.5	6.3	42	10	17	25	11	3.8	4.9	3.2
25	4.9	4.3	6.5	6.3	30	11	17	24	9.8	3.8	4.6	3.0
26	4.6	4.6	6.5	6.3	27	11	18	23	8.7	3.8	4.3	3.0
27	4.9	5.4	6.3	6.3	25	11	18	23	9.4	3.4	4.1	2.9
28	8.3	5.7	4.9	6.3	23	14	19	25	9.0	3.2	3.9	2.9
29	4.9	5.4	4.3	6.3	21	18	22	26	9.0	3.0	3.8	3.0
30	4.9	5.7	4.3	6.3	-----	23	25	27	8.7	3.0	3.8	3.0
31	4.6	-----	4.3	6.0	-----	25	-----	26	-----	3.2	3.6	-----
TOTAL	153.1	146.4	188.1	181.5	459.4	418.0	607	769	503.6	155.7	150.9	93.6
MEAN	4.94	4.88	6.07	5.85	15.8	13.5	20.2	24.8	16.8	5.02	4.87	3.12
MAX	8.3	7.1	6.5	14	80	25	26	29	29	7.9	21	3.4
MIN	4.1	3.9	4.3	3.9	4.6	9.0	16	21	8.7	3.0	2.8	2.9
AC-FT	304	290	373	360	911	829	1,200	1,530	999	309	299	186

CAL YR 1967 TOTAL 8,694.6

MEAN 23.8

MAX 283

MIN 3.6

AC-FT 17,250

WTR YR 1968 TOTAL 3,826.3

MEAN 10.5

MAX 80

MIN 2.8

AC-FT 7,590

Note.--No gage-height record Nov. 26 to Jan. 14.

BUENA VISTA LAKE BASIN

11-1853.5. KERN RIVER NEAR QUAKING ASPEN CAMP, CALIF.

LOCATION.--Lat 36°08'05", long 118°25'45", in SW¼SW¼ sec.32, T.20 S., R.33 E., on right bank 0.4 mile upstream from Little Kern River, and 6.8 miles east of Quaking Aspen Camp.

DRAINAGE AREA.--530 sq mi.

RECORDS AVAILABLE.--October 1960 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 4,693 ft above mean sea level (river-profile survey).

AVERAGE DISCHARGE.--8 years, 497 cfs (359,800 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,850 cfs May 29 (gage height, 5.84 ft); minimum daily, 143 cfs Sept. 26-29.

1960-68: Maximum discharge, 9,360 cfs Dec. 6, 1966 (gage height, 10.89 ft in gage well, 12.9 ft outside from floodmarks), from rating curve extended above 5,000 cfs on basis of slope-area measurement of maximum flow; minimum, 61 cfs Jan. 20, 1962.

REMARKS.--Records excellent. No regulation or diversion above station. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	504	270	297	284	253	333	456	924	1,360	426	433	178
2	472	267	330	278	267	326	441	968	1,420	404	379	175
3	449	264	340	267	264	319	418	908	1,520	390	343	173
4	430	264	323	264	262	323	418	855	1,460	375	319	170
5	415	264	323	259	259	326	422	935	1,290	364	297	166
6	408	270	310	256	256	323	411	855	979	368	276	163
7	393	267	313	259	256	323	415	805	835	361	270	163
8	382	264	313	256	256	336	422	765	815	400	290	163
9	375	264	306	264	264	319	437	730	730	441	273	163
10	364	262	303	273	273	316	464	750	651	418	264	161
11	354	262	303	262	253	319	513	810	656	390	251	158
12	347	259	303	270	262	333	560	830	695	364	240	156
13	340	256	264	264	256	330	564	770	745	347	235	156
14	336	264	235	262	251	310	560	661	750	333	230	154
15	330	270	281	270	246	313	564	627	785	330	225	154
16	323	294	297	270	256	326	555	623	820	330	214	149
17	319	340	290	253	290	310	504	710	835	319	209	147
18	316	310	297	262	294	306	464	860	805	306	204	147
19	310	364	310	262	297	303	456	1,120	770	297	197	147
20	306	364	294	259	316	300	445	1,310	730	290	194	147
21	303	361	298	259	326	297	418	1,340	666	284	192	149
22	300	340	300	262	319	306	397	1,160	623	281	192	152
23	297	326	303	262	333	297	415	974	623	278	190	149
24	290	323	300	262	333	303	418	860	614	270	182	147
25	287	319	300	264	333	310	441	850	600	264	178	145
26	284	313	300	264	333	316	521	1,040	573	294	175	143
27	281	297	300	267	333	326	642	1,310	555	306	180	143
28	278	303	300	238	336	343	765	1,540	542	333	178	143
29	278	281	297	243	333	372	815	1,650	513	418	175	143
30	276	330	290	243	-----	411	880	1,540	460	452	173	145
31	273	-----	290	270	-----	449	-----	1,400	-----	513	175	-----
TOTAL	10,620	8,832	9,310	8,128	8,310	10,124	15,201	30,480	24,420	10,946	7,333	4,649
MEAN	343	294	300	262	287	327	507	983	814	353	237	155
MAX	504	364	340	284	336	449	880	1,650	1,520	513	433	178
MIN	273	256	235	238	246	297	397	623	460	264	173	143
AC-FT	21,060	17,520	18,470	16,120	16,480	20,080	30,150	60,460	48,440	21,710	14,540	9,220

CAL YR 1967 TOTAL 365,342 MEAN 1,001 MAX 4,700 MIN 235 AC-FT 724,600
WTR YR 1968 TOTAL 148,353 MEAN 405 MAX 1,650 MIN 143 AC-FT 294,300

Peak discharge (base, 1,300 cfs).--May 21 (0800 hrs) 1,490 cfs (5.37 ft); May 29 (0700 hrs) 1,850 cfs (5.84 ft).

11-1854. LITTLE KERN RIVER NEAR QUAKING ASPEN CAMP, CALIF.

LOCATION.--Lat 36°08'05", long 118°26'10", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.31, T.20 S., R.33 E., on right bank 600 ft upstream from mouth and 5 miles east of Quaking Aspen Camp.

DRAINAGE AREA.--132 sq mi.

RECORDS AVAILABLE.--August 1957 to September 1968 (discontinued as a continuous record station; converted to a crest-stage partial-record station).

GAGE.--Graphic water-stage recorder. Datum of gage is 4,682 ft above mean sea level (river-profile survey). Prior to Sept. 26, 1967, on left bank at same datum.

AVERAGE DISCHARGE.--11 years, 110 cfs (79,640 acre-ft per year).

EXTREMES.--Maximum discharge during year, 283 cfs May 5 (gage height, 3.94 ft); minimum daily, 8.2 cfs Sept. 11-13.

1957-68: Maximum discharge, 13,100 cfs Dec. 6, 1966 (gage height, 12.60 ft in gage well, 13.0 ft, from floodmarks), from rating curve extended above 1,200 cfs on basis of slope-area measurements of maximum flow; minimum, 3.5 cfs Nov. 18, 1961.

Flood of Dec. 23, 1955, reached a stage of 12.4 ft, from floodmarks (discharge, 12,200 cfs).

REMARKS.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	25	43	36	49	111	169	239	176	44	25	15
2	44	25	44	34	51	103	152	235	171	44	20	13
3	43	25	44	31	52	100	138	226	169	41	19	13
4	41	24	40	32	52	100	135	226	164	36	16	12
5	40	24	43	33	52	100	140	242	147	35	14	10
6	40	25	39	35	51	98	130	226	128	39	14	10
7	39	25	41	37	51	94	130	210	122	38	13	10
8	38	24	44	38	51	107	138	201	120	43	16	9.0
9	36	24	40	40	57	94	150	196	111	44	16	9.0
10	36	24	40	39	62	91	169	201	103	39	14	9.0
11	35	23	41	40	52	91	187	207	98	35	12	8.2
12	34	23	41	40	54	94	196	207	94	32	12	8.2
13	34	23	38	39	51	96	190	184	93	32	12	8.2
14	34	27	31	46	48	89	184	171	87	32	14	9.0
15	32	29	35	51	47	89	184	164	86	31	15	12
16	31	31	38	58	50	93	176	169	83	31	14	12
17	31	43	40	54	103	93	164	179	79	29	16	11
18	31	34	40	50	103	87	150	201	75	26	16	9.0
19	30	86	40	47	98	81	142	226	72	25	16	10
20	29	68	39	44	115	86	140	239	66	25	16	11
21	29	58	37	47	122	86	133	235	62	25	17	14
22	29	48	38	50	115	89	124	207	61	24	19	15
23	29	45	39	51	120	87	126	184	60	24	20	14
24	27	41	41	51	120	93	133	171	58	23	17	13
25	26	41	47	52	118	100	147	169	57	21	15	12
26	26	40	48	51	111	105	176	184	52	21	15	10
27	26	39	50	52	111	109	204	201	51	23	19	10
28	26	40	49	50	120	122	224	207	50	29	17	10
29	26	35	48	48	115	138	235	210	48	32	15	10
30	26	44	42	47	-----	152	235	198	45	50	12	11
31	25	-----	39	48	-----	164	-----	184	-----	32	14	-----
TOTAL	1,023	1,063	1,279	1,371	2,301	3,142	4,901	6,299	2,788	1,005	490	327.6
MEAN	33.0	35.4	41.3	44.2	79.3	101	163	203	92.9	32.4	15.8	10.9
MAX	50	86	50	58	122	164	235	242	176	50	25	15
MIN	25	23	31	31	47	81	124	164	45	21	12	8.2
AC-FT	2,030	2,110	2,540	2,720	4,560	6,230	9,720	12,490	5,530	1,990	972	650

CAL YR 1967 TOTAL 93,332 MEAN 256 MAX 1,130 MIN 23 AC-FT 185,100
WTR YR 1968 TOTAL 25,989.6 MEAN 71.0 MAX 242 MIN 8.2 AC-FT 51,550

Peak discharge (base, 400 cfs).--No peak above base.

BUENA VISTA LAKE BASIN

11-1860. KERN RIVER NEAR KERNVILLE, CALIF.

LOCATION (revised).--Lat 35°56'43", long 118°28'36", in SW¼ sec.12, T.23 S., R.32 E. (unsurveyed), on left bank at Packsaddle Canyon Creek, 30 ft upstream from sand trap sluice gates, 100 ft downstream from diversion dam, and 13.4 miles north of Kernville. Prior to Oct. 1, 1967, at site 1.2 miles downstream.

DRAINAGE AREA.--846 sq mi, at former site 848 sq mi.

RECORDS AVAILABLE.--January 1912 to September 1968. Records for water year 1912 incomplete, yearly estimates published in WSP 1315-A. Prior to October 1953, records for river and canal published separately; combined only, October 1953 to September 1962.

GAGE.--Graphic water-stage recorder on river; graphic water-stage recorder and rectangular concrete-lined flume for canal diversion. Altitude of gage is 3,620 ft (from topographic map). Prior to Apr. 1, 1913, at site 1.4 miles downstream at different datum. Apr. 1 to Sept. 14, 1913, staff gage and Sept. 15, 1913, to Sept. 30, 1967, graphic water-stage recorder, at site 1.2 miles downstream at different datum.

AVERAGE DISCHARGE (river only).--9 years (1911-20), 790 cfs (571,900 acre-ft per year); 47 years (1921-68), 320 cfs (231,700 acre-ft per year); median of yearly mean discharges, 210 cfs (152,000 acre-ft per year).
(total flow).--57 years (1911-68), 702 cfs (508,200 acre-ft per year); median of yearly mean discharges, 620 cfs (449,000 acre-ft per year).

EXTREMES (river only).--Maximum discharge during year, 1,540 cfs May 29 (gage height, 6.30 ft); minimum daily, 15 cfs Mar. 10.

1912-68: Maximum discharge, 60,000 cfs Dec. 6, 1966 (gage height, 22.77 ft, from floodmarks), from rating curve extended above 6,000 cfs on basis of computed flow over dam at gage height 17.55 ft (basic data for computation furnished by Southern California Edison Co.) and slope-area measurement of maximum flow; no flow July 31 to Nov. 7, Nov. 12 to Dec. 7, 1924, Jan. 16 to Feb. 7, 1925.

(combined).--Maximum discharge during year, 2,100 cfs May 29; minimum daily, 167 cfs Sept. 23.

1912-68: Maximum discharge, 60,000 cfs Dec. 6, 1966; minimum daily, 78 cfs Aug. 30, 31, Sept. 17, 19, 1924.

REMARKS.--Records fair. Since 1921 Kern River No. 3 Canal diverts up to 630 cfs 100 ft upstream from station, from left bank of Kern River in sec.12, T.23 S., R.32 E. (unsurveyed), for power development; water is returned to river 15 miles downstream from station. For records of combined discharge of river and canal, see following page. Records of chemical analyses and water temperatures for the water year 1968 are published in Part 2 of this report.

COOPERATION.--Gage-height record and 21 discharge measurements for Kern River and gage-height record and 14 discharge measurements for canal furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	52	51	44	45	46	200	710	968	120	94	80
2	57	49	48	38	45	47	175	750	1,020	122	93	70
3	58	48	41	27	45	47	138	685	1,100	122	94	70
4	61	47	59	22	45	46	127	610	1,050	120	96	70
5	60	47	47	30	45	47	131	705	890	122	94	72
6	60	47	53	23	45	46	117	618	618	120	94	72
7	60	47	60	19	45	45	117	558	454	118	94	72
8	60	47	56	35	45	55	120	498	424	118	94	74
9	60	46	43	42	46	25	132	446	358	120	93	74
10	60	46	40	59	46	15	134	466	298	120	93	107
11	60	47	45	66	45	33	250	530	270	120	93	185
12	60	47	45	47	45	44	308	558	290	117	93	185
13	60	47	38	49	45	60	310	502	322	117	91	183
14	60	47	45	42	45	80	302	385	331	117	91	181
15	60	47	47	52	45	83	300	343	349	118	93	181
16	59	48	48	71	36	83	295	334	361	107	100	179
17	57	48	47	48	54	83	242	397	367	97	102	179
18	59	47	45	44	49	83	169	550	346	97	104	177
19	58	75	48	44	45	81	149	830	319	93	110	199
20	59	175	45	44	47	76	124	1,030	278	96	107	250
21	60	105	50	44	48	76	117	1,060	212	94	107	188
22	59	47	59	44	47	76	122	900	157	94	108	169
23	59	47	30	47	47	76	124	690	149	93	108	167
24	59	47	24	47	47	76	125	566	136	88	100	169
25	59	47	23	46	46	75	129	538	127	90	94	171
26	59	46	29	43	47	76	210	680	124	90	94	173
27	59	45	30	44	47	77	358	938	124	90	94	192
28	59	45	39	40	47	77	514	1,170	125	91	93	188
29	59	56	47	37	47	77	586	1,320	122	94	93	188
30	59	57	47	36	-----	94	646	1,210	122	94	93	181
31	59	-----	45	44	-----	159	-----	1,030	-----	97	91	-----
TOTAL	1,845	1,646	1,374	1,318	1,331	2,064	6,771	21,607	11,811	3,296	2,998	4,446
MEAN	59.5	54.9	44.3	42.5	45.9	66.6	226	697	394	106	96.7	148
MAX	67	175	60	71	54	159	646	1,320	1,100	122	110	250
MIN	57	45	23	19	36	15	117	334	122	88	91	70
AC-FT	3,660	3,260	2,730	2,610	2,640	4,090	13,430	42,860	23,430	6,540	5,950	8,820
CAL YR 1967	TOTAL 358,801		MEAN 983		MAX 6,220		MIN 23		AC-FT 711,700			
WTR YR 1968	TOTAL 60,507		MEAN 165		MAX 1,320		MIN 15		AC-FT 120,000			

11-1860. KERN RIVER NEAR KERNVILLE, CALIF.--Continued

Combined discharge, in cubic feet per second, of Kern River and Kern River No. 3 Canal
near Kernville, Calif., water year October 1967 to September 1968

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	634	339	386	371	358	556	791	1,270	1,530	499	500	187
2	594	339	412	370	377	535	764	1,310	1,580	474	475	188
3	561	338	442	351	375	517	716	1,250	1,660	457	387	183
4	539	336	420	341	372	509	697	1,170	1,610	448	390	180
5	515	335	427	351	369	513	707	1,270	1,450	433	365	177
6	502	337	403	341	363	508	680	1,180	1,180	438	343	173
7	486	337	403	335	363	504	671	1,120	1,010	431	328	170
8	466	333	408	344	361	616	690	1,060	978	448	360	170
9	458	330	394	349	373	573	713	1,010	910	530	338	170
10	449	326	387	373	419	539	724	1,020	849	503	318	175
11	440	325	387	391	376	526	841	1,090	821	464	305	185
12	430	321	389	365	376	531	899	1,120	841	436	290	185
13	423	318	340	361	371	530	899	1,060	876	409	278	183
14	417	327	291	350	361	509	891	937	883	395	275	181
15	405	346	368	372	351	497	888	896	901	385	265	181
16	400	366	384	399	356	515	882	888	921	377	261	179
17	396	443	377	360	534	518	831	950	934	374	255	179
18	391	398	385	351	601	492	756	1,100	913	357	250	177
19	384	518	389	353	525	477	735	1,380	887	340	257	199
20	381	599	372	351	557	465	710	1,580	846	344	235	250
21	380	524	366	353	614	465	681	1,620	783	327	231	188
22	378	449	411	358	591	482	644	1,460	725	321	232	169
23	375	425	410	363	594	473	655	1,250	708	313	228	167
24	370	415	399	363	601	485	653	1,120	700	305	212	169
25	363	408	398	369	590	499	676	1,190	685	298	198	171
26	360	400	406	369	569	528	774	1,240	651	310	193	173
27	358	382	401	372	560	542	919	1,490	621	337	201	192
28	354	388	401	339	584	566	1,070	1,730	608	352	205	188
29	351	362	397	330	571	620	1,150	1,880	591	425	194	188
30	350	445	380	348	-----	673	1,210	1,770	542	476	185	181
31	344	-----	377	388	-----	745	-----	1,590	-----	531	183	-----
TOTAL	13,254	11,509	12,110	11,131	13,412	16,508	23,917	39,001	28,194	12,537	8,737	5,458
MEAN	428	384	391	359	462	533	797	1,258	940	404	282	182
MAX	634	599	442	399	614	745	1,210	1,880	1,660	531	500	250
MIN	344	318	291	330	351	465	644	888	542	298	183	167
AC-FT	26,290	22,830	24,020	22,080	26,600	32,740	47,440	77,360	55,920	24,870	17,330	10,830
CAL YR 1967	TOTAL 552,165		MEAN 1,513		MAX 6,820		MIN 291		AC-FT 1,095,000			
WTR YR 1968	TOTAL 195,768		MEAN 535		MAX 1,880		MIN 167		AC-FT 388,300			

11-1863.4. SALMON CREEK TRIBUTARY B NEAR FAIRVIEW, CALIF.

LOCATION.--Lat 35°54'05", long 118°23'05", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.26, T.23 S., R.33 E., on left bank 0.15 mile upstream from junction with Salmon Creek, 6.3 miles east of Fairview, and 10.3 miles north of Kernville.

DRAINAGE AREA.--0.46 sq mi.

RECORDS AVAILABLE.--October 1962 to September 1968. December 1960 to September 1962 (incomplete) in files of U.S. Forest Service.

GAGE.--Graphic water-stage recorder with float-operated recording rain-gage and sharp-crested 120° V-notch weir. Altitude of gage is 7,360 ft (from topographic map).

AVERAGE DISCHARGE.--6 years, 0.164 cfs (119 acre-ft per year).

EXTREMES.--Maximum discharge during year, 0.71 cfs May 4 (gage height, 0.48 ft); minimum daily, 0.004 cfs Sept. 4-6, 20-23.
1962-68: Maximum discharge, 22.1 cfs Dec. 6, 1966 (gage height, 1.93 ft, result of release of stored water from debris dam), by slope-area measurement of maximum flow; minimum daily, 0.002 cfs Aug. 21-23, Sept. 26, 1966.

REMARKS.--Records good. No storage or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.02	.02	.01	.02	.10	.26	.67	.22	.05	.01	.006
2	.03	.02	.02	.01	.02	.09	.26	.67	.22	.05	.01	.006
3	.03	.02	.02	.01	.03	.09	.24	.67	.22	.05	.01	.006
4	.03	.02	.02	.01	.02	.08	.24	.67	.18	.05	.01	.004
5	.02	.02	.02	.01	.02	.09	.26	.67	.17	.05	.01	.004
6	.02	.02	.02	.01	.02	.09	.26	.64	.17	.04	.01	.004
7	.02	.02	.02	.01	.02	.08	.26	.60	.17	.04	.01	.006
8	.02	.02	.02	.01	.02	.08	.28	.57	.17	.05	.01	.006
9	.02	.02	.02	.01	.02	.07	.35	.57	.15	.05	.01	.006
10	.02	.02	.02	.02	.02	.06	.40	.57	.15	.04	.01	.006
11	.02	.02	.02	.02	.02	.06	.48	.54	.14	.04	.008	.006
12	.02	.02	.02	.02	.02	.06	.54	.54	.14	.04	.008	.006
13	.02	.02	.02	.02	.02	.06	.57	.51	.13	.04	.008	.006
14	.02	.02	.01	.02	.02	.06	.57	.48	.11	.04	.008	.008
15	.02	.02	.01	.03	.02	.06	.57	.45	.11	.03	.008	.008
16	.01	.02	.01	.02	.02	.06	.54	.42	.11	.03	.008	.008
17	.01	.02	.01	.02	.06	.06	.51	.42	.10	.03	.008	.006
18	.01	.02	.01	.02	.05	.05	.45	.42	.10	.03	.008	.006
19	.01	.03	.01	.02	.05	.05	.40	.42	.10	.03	.008	.006
20	.01	.03	.01	.02	.08	.05	.37	.42	.09	.03	.008	.004
21	.01	.03	.01	.02	.10	.05	.35	.42	.09	.03	.008	.004
22	.01	.03	.01	.02	.09	.05	.32	.40	.09	.02	.008	.004
23	.01	.03	.01	.02	.09	.05	.32	.40	.08	.02	.008	.004
24	.01	.02	.01	.02	.10	.06	.35	.37	.08	.02	.008	.006
25	.01	.02	.01	.02	.10	.07	.40	.35	.07	.02	.006	.006
26	.01	.02	.01	.02	.10	.08	.48	.30	.07	.02	.008	.006
27	.01	.02	.01	.02	.10	.10	.57	.28	.07	.02	.008	.006
28	.01	.02	.01	.02	.11	.11	.60	.28	.06	.02	.006	.006
29	.01	.02	.01	.02	.11	.14	.60	.26	.06	.02	.006	.006
30	.02	.02	.01	.02	-----	.18	.64	.24	.05	.02	.006	.006
31	.02	-----	.01	.02	-----	.22	-----	.24	-----	.02	.006	-----
TOTAL	0.52	0.65	0.44	0.54	1.47	2.51	12.44	14.46	3.67	1.04	0.258	0.172
MEAN	.017	.022	.014	.017	.051	.081	.415	.466	.122	.034	.008	.006
MAX	.03	.03	.02	.03	.11	.22	.64	.67	.22	.05	.01	.008
MIN	.01	.02	.01	.01	.02	.05	.24	.24	.05	.02	.006	.004
AC-FT	1.0	1.3	.9	1.1	2.9	5.0	24.7	28.7	7.3	2.1	.5	.3
(a)	0	2.12	1.62	1.54	1.56	1.24	.68	0	0	.42	0	0
CAL YR 1967	TOTAL	132.60		MEAN	0.363	MAX	4.97	MIN	0.01	AC-FT	263	
WTR YR 1968	TOTAL	38.170		MEAN	.104	MAX	.67	MIN	.004	AC-FT	75.7	

a Precipitation, in inches (some falling as snow may not be included).

BUENA VISTA LAKE BASIN

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11-1863.6. SALMON CREEK TRIBUTARY C NEAR FAIRVIEW, CALIF.

LOCATION.--Lat 35°54'15", long 118°23'30", in NE¼NW¼ sec.26, T.23 S., R.33 E., on left bank 0.1 mile upstream from junction with Salmon Creek, 6.0 miles east of Fairview, and 10.5 miles north of Kernville.

DRAINAGE AREA.--0.35 sq mi (revised).

RECORDS AVAILABLE.--October 1962 to September 1968. December 1960 to September 1962 (incomplete) in the files of U.S. Forest Service.

GAGE.--Graphic water-stage recorder and sharp-crested 120° V-notch weir. Altitude of gage is 7,200 ft (from topographic map).

AVERAGE DISCHARGE.--6 years, 0.117 cfs (85 acre-ft per year).

EXTREMES.--Maximum discharge during year, 0.24 cfs May 2-5 (gage height, 0.31 ft); maximum gage height, 0.37 ft Dec. 14 (backwater from ice); minimum daily, 0.01 cfs for several days.
1962-68: Maximum discharge, 60 cfs Dec. 6, 1966 (gage height, 2.71 ft, from floodmarks), by slope-area measurement of maximum flow; minimum daily, 0.004 cfs Aug. 12, 16, 19, 23-27, 1966.

REMARKS.--Records good. No storage or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.05	.06	.06	.07	.14	.18	.22	.10	.03	.02	.02
2	.06	.05	.06	.06	.07	.13	.18	.24	.10	.03	.02	.01
3	.06	.05	.06	.06	.07	.13	.18	.24	.10	.03	.02	.01
4	.05	.06	.06	.07	.07	.13	.20	.24	.10	.03	.02	.01
5	.05	.06	.06	.07	.07	.13	.20	.24	.10	.03	.02	.01
6	.05	.06	.06	.07	.06	.12	.18	.22	.09	.03	.02	.01
7	.05	.06	.06	.07	.06	.12	.18	.22	.09	.04	.02	.01
8	.05	.06	.06	.07	.06	.11	.18	.22	.09	.05	.02	.01
9	.05	.06	.05	.07	.06	.11	.18	.22	.09	.05	.02	.01
10	.05	.06	.05	.07	.06	.11	.20	.20	.09	.03	.02	.01
11	.05	.07	.05	.07	.06	.11	.22	.20	.09	.03	.02	.01
12	.05	.07	.05	.07	.06	.11	.22	.20	.08	.03	.02	.01
13	.05	.07	.05	.07	.06	.11	.22	.18	.08	.03	.02	.02
14	.05	.07	.05	.07	.06	.11	.22	.18	.08	.03	.02	.02
15	.05	.07	.05	.08	.06	.11	.22	.18	.07	.03	.02	.02
16	.05	.08	.05	.08	.06	.11	.22	.17	.07	.03	.02	.02
17	.05	.05	.06	.07	.12	.11	.22	.17	.06	.02	.02	.02
18	.05	.05	.06	.07	.09	.10	.22	.15	.06	.02	.02	.02
19	.05	.08	.06	.07	.10	.09	.22	.15	.06	.02	.02	.02
20	.05	.10	.06	.07	.11	.09	.22	.15	.05	.03	.02	.02
21	.05	.08	.06	.07	.13	.09	.22	.15	.05	.03	.02	.01
22	.05	.07	.06	.07	.11	.09	.20	.15	.05	.02	.02	.01
23	.05	.06	.06	.07	.13	.09	.20	.15	.05	.02	.02	.01
24	.05	.06	.06	.07	.13	.10	.20	.14	.05	.02	.01	.01
25	.04	.06	.07	.07	.13	.11	.20	.14	.05	.02	.01	.01
26	.04	.06	.07	.07	.13	.13	.20	.14	.04	.02	.01	.01
27	.04	.05	.07	.06	.14	.13	.20	.13	.04	.02	.01	.01
28	.05	.05	.07	.06	.14	.14	.22	.13	.04	.03	.01	.01
29	.05	.05	.06	.08	.14	.15	.22	.13	.04	.03	.01	.01
30	.05	.05	.06	.07	-----	.17	.22	.11	.03	.03	.01	.01
31	.05	-----	.06	.07	-----	.18	-----	.11	-----	.02	.02	-----
TOTAL	1.55	1.87	1.82	2.15	2.61	3.66	6.14	5.47	2.09	0.88	0.55	0.39
MEAN	.050	.062	.059	.069	.090	.118	.205	.176	.070	.028	.018	.013
MAX	.06	.10	.07	.08	.14	.18	.22	.24	.10	.05	.02	.02
MIN	.04	.05	.05	.06	.06	.09	.18	.11	.03	.02	.01	.01
AC-FT	3.1	3.7	3.6	4.3	5.2	7.3	12.2	10.8	4.2	1.8	1.1	.8
CAL YR 1967	TOTAL 104.00		MEAN .285	MAX 2.22	MIN .04	AC-FT 206						
WTR YR 1968	TOTAL 29.18		MEAN .080	MAX .24	MIN .01	AC-FT 57.9						

BUENA VISTA LAKE BASIN

11-1863.8. SALMON CREEK TRIBUTARY E NEAR FAIRVIEW, CALIF.

LOCATION.--Lat 35°54'15", long 118°23'45", in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.26, T.23 S., R.33 E., on left bank 0.2 mile upstream from junction with Salmon Creek, 5.7 miles east of Fairview, and 10.5 miles north of Kernville.

DRAINAGE AREA.--0.20 sq mi (revised).

RECORDS AVAILABLE.--October 1962 to September 1968. July 1961 to September 1962 in files of U.S. Forest Service.

GAGE.--Graphic water-stage recorder and sharp-crested 120° V-notch weir. Altitude of gage is 7,200 ft (from topographic map).

AVERAGE DISCHARGE.--6 years, 0.068 cfs (49 acre-ft per year).

EXTREMES.--Maximum discharge during year, 0.20 cfs Apr. 28 to May 12 (gage height, 0.29 ft); minimum daily, 0.004 cfs Sept. 6-13.

1962-68: Maximum discharge, 24 cfs Dec. 6, 1966 (gage height, unknown), by slope-area measurement of maximum flow; minimum daily, 0.001 cfs for several days in 1966.

REMARKS.--Records good. No storage or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.02	.01	.01	.02	.03	.09	.20	.09	.02	.01	.008
2	.02	.02	.01	.01	.02	.03	.09	.20	.09	.02	.01	.008
3	.02	.02	.01	.01	.02	.03	.08	.20	.08	.02	.01	.008
4	.02	.02	.01	.01	.02	.03	.08	.20	.08	.02	.01	.006
5	.02	.02	.01	.01	.02	.03	.08	.20	.08	.02	.01	.006
6	.02	.02	.01	.01	.02	.03	.08	.20	.07	.02	.01	.004
7	.02	.02	.01	.01	.02	.03	.08	.20	.07	.02	.008	.004
8	.02	.02	.01	.01	.02	.03	.09	.20	.06	.02	.01	.004
9	.02	.02	.01	.01	.02	.03	.09	.20	.06	.02	.01	.004
10	.02	.02	.01	.01	.02	.03	.10	.20	.06	.02	.01	.004
11	.02	.02	.01	.02	.02	.03	.11	.20	.05	.02	.01	.004
12	.02	.02	.01	.02	.02	.03	.13	.20	.05	.01	.01	.004
13	.02	.02	.01	.02	.02	.03	.13	.18	.05	.01	.01	.004
14	.01	.02	.01	.02	.02	.03	.14	.18	.05	.01	.01	.006
15	.01	.02	.01	.02	.01	.03	.14	.18	.05	.01	.01	.006
16	.01	.02	.01	.02	.01	.03	.14	.18	.05	.01	.01	.006
17	.01	.02	.01	.02	.03	.03	.14	.17	.04	.01	.01	.006
18	.01	.02	.01	.02	.03	.03	.14	.15	.03	.01	.01	.006
19	.01	.03	.01	.02	.02	.03	.14	.15	.03	.01	.008	.006
20	.01	.03	.01	.02	.03	.03	.14	.15	.03	.01	.01	.006
21	.02	.02	.01	.02	.04	.03	.14	.15	.03	.01	.006	.008
22	.02	.02	.01	.02	.03	.03	.14	.14	.03	.02	.006	.008
23	.01	.02	.01	.02	.03	.03	.14	.14	.03	.01	.006	.008
24	.01	.01	.01	.02	.04	.03	.14	.13	.03	.01	.006	.008
25	.01	.01	.01	.02	.04	.03	.15	.13	.03	.01	.006	.008
26	.01	.01	.01	.02	.04	.04	.17	.11	.03	.01	.006	.006
27	.01	.01	.01	.02	.04	.05	.18	.11	.03	.01	.006	.006
28	.01	.01	.01	.02	.04	.05	.20	.11	.03	.02	.006	.006
29	.01	.01	.01	.02	.04	.06	.20	.10	.03	.02	.006	.006
30	.01	.01	.01	.02	-----	.07	.20	.10	.03	.02	.008	.006
31	.01	-----	.01	.02	-----	.08	-----	.09	-----	.02	.008	-----
TOTAL	0.46	0.55	0.31	0.52	0.75	1.10	3.87	5.05	1.47	0.47	0.266	0.180
MEAN	.015	.018	.010	.017	.026	.036	.129	.163	.049	.015	.009	.006
MAX	.02	.03	.01	.02	.04	.08	.20	.20	.09	.02	.01	.01
MIN	.01	.01	.01	.01	.01	.03	.08	.09	.03	.01	.006	.004
AC-FT	.9	1.1	.6	1.0	1.5	2.2	7.7	10.0	2.9	.9	.5	.4

CAL YR 1967 TOTAL 57.29
WTR YR 1968 TOTAL 14.996

MEAN .157 MAX 1.62 MIN .01 AC-FT 114
MEAN .041 MAX .20 MIN .004 AC-FT 29.7

11-1870. KERN RIVER AT KERNVILLE, CALIF.

LOCATION.--Lat 35°45'35", long 118°25'10", in NE¼NW¼ sec.15, T.25 S., R.33 E., on left bank 0.5 mile upstream from highway bridge at Kernville, 1.7 miles upstream from Caldwell Creek, 9.5 miles upstream from Isabella Dam, and 42 miles northeast of Bakersfield.

DRAINAGE AREA.--1,009 sq mi.

RECORDS AVAILABLE.--January 1905 to December 1912, October 1953 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is 2,634.57 ft above mean sea level. January 1905 to September 1912, staff gage at two sites 3.5 miles downstream at different datums. October 1953 to Feb. 20, 1967, graphic water-stage recorder 0.6 mile downstream at datum 2,621.57 ft above mean sea level.

AVERAGE DISCHARGE.--221 years, 837 cfs (606,000 acre-ft per year); median of yearly mean discharges, 690 cfs (500,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,060 cfs May 29 (gage height, 6.42 ft); minimum daily, 126 cfs Sept. 11.

1905-12, 1953-68: Maximum discharge, 74,000 cfs Dec. 6, 1966 (gage height, 19.32 ft, from floodmarks, present site), from rating curve extended above 7,200 cfs on basis of slope-area measurement of maximum flow; minimum discharge, 74 cfs Oct. 27, 1954, Aug. 1, Oct. 4, 1961.

Maximum stage known from at least 1912 to December 1966, 18.4 ft, from floodmarks, Nov. 19, 1950 (discharge, 38,700 cfs).

REMARKS.--Records good. Slight regulation at times by operation of Kern River No. 3 canal and powerplant. A few small diversions for irrigation above station. Gilbert irrigation ditch diverts up to 7 cfs around station during irrigation season. Records of water temperatures and suspended-sediment loads for the water year 1968 are published in Part 2 of this report.

COOPERATION.--Twelve discharge measurements furnished by the Southern California Edison Co.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	626	370	388	410	410	632	820	1,280	1,560	485	510	185
2	576	370	420	406	420	620	852	1,320	1,590	450	445	185
3	543	370	465	396	425	598	792	1,280	1,660	435	388	178
4	521	370	410	374	430	582	785	1,200	1,650	420	352	175
5	505	370	455	374	410	576	785	1,260	1,510	410	324	172
6	495	370	430	374	406	570	771	1,240	1,290	410	308	168
7	480	370	410	370	406	570	750	1,140	1,030	406	292	162
8	465	370	440	360	401	687	762	1,090	1,010	420	308	162
9	460	370	430	378	410	680	778	1,040	972	510	304	158
10	455	365	415	396	460	598	778	1,040	876	485	284	155
11	445	365	410	475	410	565	820	1,100	813	440	273	126
12	425	360	415	410	410	570	876	1,160	806	410	258	165
13	425	356	380	392	406	560	924	1,140	852	388	250	162
14	420	360	288	388	396	560	940	996	860	374	243	158
15	415	370	365	401	383	543	924	940	890	370	240	158
16	410	370	392	445	396	543	924	884	940	370	236	162
17	406	450	388	415	577	576	868	940	970	360	222	162
18	406	406	406	383	701	560	806	1,080	916	347	222	162
19	396	521	410	392	587	538	785	1,320	868	334	222	162
20	388	604	410	388	609	532	778	1,590	828	324	208	162
21	388	532	383	388	694	532	743	1,600	778	316	208	168
22	388	500	390	388	656	543	708	1,480	722	304	212	172
23	383	470	400	392	656	543	668	1,310	680	300	212	175
24	378	450	420	388	680	548	680	1,170	680	296	205	172
25	378	430	450	392	662	565	750	1,090	668	282	195	168
26	370	410	460	392	632	592	860	1,200	644	282	188	165
27	370	392	450	392	609	609	1,010	1,450	603	308	198	162
28	370	396	450	374	638	632	1,110	1,680	592	324	198	158
29	356	370	440	370	620	626	1,240	1,860	570	410	192	158
30	360	480	420	375	-----	722	1,280	1,810	516	470	182	158
31	370	-----	410	420	-----	792	-----	1,640	-----	510	182	-----
TOTAL	13,373	12,287	12,800	12,198	14,900	18,364	25,567	39,330	28,344	11,950	8,061	4,935
MEAN	431	410	413	393	514	592	852	1,269	945	385	260	165
MAX	626	604	465	475	701	792	1,280	1,860	1,660	510	510	185
MIN	356	356	288	360	383	532	668	884	516	282	182	126
AC-FT	26,520	24,370	25,390	24,190	29,550	36,420	50,710	78,010	56,220	23,700	15,990	9,790
CAL YR 1967	TOTAL 570,030		MEAN 1,562		MAX 6,850		MIN 288		AC-FT 1,131,000			
WTR YR 1968	TOTAL 202,109		MEAN 552		MAX 1,860		MIN 126		AC-FT 400,900			

Peak discharge (base, 2,000 cfs).--May 29 (1600 hrs) 2,060 cfs (6.42 ft).

BUENA VISTA LAKE BASIN

11-1875. BOREL CANAL BELOW ISABELLA DAM, CALIF.

LOCATION.--Lat 35°38'30", long 118°28'10", in NE¼ sec.30, T.26 S., R.33 E., on right bank 500 ft downstream from Isabella Dam, and 3 miles upstream from point where canal crosses Erskine Creek.

RECORDS AVAILABLE.--January 1910 to September 1914, October 1925 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Published as Kern River Power Co.'s Canal at or near Kernville 1910-14. Published as "at Tillie Creek" 1925-51.

GAGE.--Graphic water-stage recorder. Altitude of gage is 2,540 ft (from topographic map). Prior to Apr. 29, 1952, at site 4 miles upstream at different datum.

AVERAGE DISCHARGE.--47 years, 368 cfs (266,400 acre-ft per year).

EXTREMES.--1910-14, 1925-68: Maximum daily discharge, 634 cfs Mar. 13, 14, 1952; no flow at times each year.

REMARKS.--Records excellent. Canal diverts from right bank of Kern River 5.5 miles upstream from Isabella dam, and above South Fork Kern River. When capacity of Isabella Reservoir is above 110,000 acre-ft, the diversion is at the dam. Canal is used to supply Borel powerplant of Southern California Edison Co., 6 miles downstream from station, at which point water is returned to the Kern River. Water temperatures for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Water-stage-recorder graph and 25 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	535	0	559	523	508	578	573	542	492	540	544	257
2	538	0	557	496	500	579	571	543	491	542	540	270
3	534	0	557	499	500	580	570	542	491	542	536	287
4	537	0	541	499	513	583	567	542	491	542	534	309
5	535	0	541	485	549	579	562	542	482	542	534	321
6	534	0	541	481	574	577	557	542	483	543	533	299
7	538	0	540	473	569	580	559	529	483	541	165	271
8	537	270	540	455	544	580	560	527	482	542	168	269
9	535	546	526	449	514	580	556	522	482	543	516	276
10	534	541	511	453	503	581	556	521	481	545	540	248
11	537	544	500	515	539	582	557	522	477	554	540	241
12	539	544	500	545	553	587	558	523	475	559	540	231
13	539	543	488	500	562	588	556	516	475	558	541	205
14	539	543	404	473	571	581	558	512	475	559	541	179
15	539	544	380	476	573	572	559	511	479	560	541	173
16	538	542	407	508	572	565	556	513	481	558	540	174
17	537	544	407	544	525	561	556	514	481	558	541	179
18	539	545	492	544	544	561	556	513	478	560	540	191
19	545	542	543	504	568	567	557	512	474	559	541	184
20	544	542	540	486	578	572	556	508	476	558	541	175
21	543	558	542	489	579	566	555	504	450	559	541	170
22	541	558	542	489	579	566	555	483	448	558	512	166
23	136	559	540	489	578	564	556	506	446	558	467	167
24	0	562	539	489	579	564	556	505	20	558	397	172
25	0	561	541	523	579	568	556	500	97	558	379	176
26	0	560	544	540	580	572	543	499	484	558	387	181
27	0	557	544	523	580	572	545	501	500	558	385	184
28	0	519	542	507	577	572	542	497	525	559	363	193
29	0	481	551	512	577	572	544	492	528	556	320	213
30	0	517	560	522	-----	575	543	489	529	549	289	219
31	0	-----	535	526	-----	576	-----	492	-----	544	253	-----
TOTAL	11,973	12,222	16,054	15,517	16,067	17,800	16,695	15,964	13,656	17,120	14,309	6,580
MEAN	386	407	518	501	554	574	557	515	455	552	462	219
MAX	545	562	560	545	580	588	573	543	529	560	544	321
MIN	0	0	380	449	500	561	542	483	20	540	165	166
AC-FT	23,750	24,240	31,840	30,780	31,870	35,310	33,110	31,660	27,090	33,960	28,380	13,050
CAL YR 1967	TOTAL 179,221.00		MEAN 491		MAX 595		MIN 0		AC-FT 355,500			
WTR YR 1968	TOTAL 173,957.00		MEAN 475		MAX 588		MIN 0		AC-FT 345,000			

11-1895. SOUTH FORK KERN RIVER NEAR ONYX, CALIF.

LOCATION.--Lat 35°44'22", long 118°10'33", T.25 S., R.35 E., on left bank three quarters of a mile north of State Highway 178, 1.6 miles upstream from Canebrake Creek, and 5 miles northeast of Onyx.

DRAINAGE AREA.--530 sq mi.

RECORDS AVAILABLE.--September 1911 to August 1914, January 1919 to September 1942, October 1947 to September 1968. Yearly estimate for water year 1927 (incomplete) and monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Altitude of gage is 2,900 ft (from topographic map). Sept. 12, 1911, to Aug. 31, 1914, staff gage and Jan. 23, 1919, to Apr. 17, 1936, graphic water-stage recorder, at site 140 ft upstream at datum 4.88 ft lower. Apr. 18, 1936, to September 1942, and October 1947, to Feb. 9, 1967, graphic water-stage recorder at datum 4.88 ft higher.

AVERAGE DISCHARGE.--44 years (1911-13, 1919-25, 1926-27, 1929-42, 1946-68), 105 cfs (76,020 acre-ft per year); median of yearly mean discharges, 77 cfs (55,700 acre-ft per year).

EXTREMES.--Maximum discharge during year, 366 cfs Apr. 2 (gage height, 3.13 ft); minimum daily, 3.7 cfs Sept. 14. 1911-14, 1919-42, 1947-68: Maximum discharge, 28,700 cfs Dec. 6, 1966 (gage height, 16.9 ft, from flood-marks, present datum), from rating curve extended above 3,000 cfs on basis of slope-area measurement of maximum flow; no flow for several days in 1929, 1934, 1960-61.

REMARKS.--Records good. Lowell and Thomas ditches divert above station for irrigation of 160 acres below station; combined capacity, 7 cfs.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	49	59	74	68	190	305	227	96	29	25	7.6
2	72	48	44	77	79	182	350	222	94	28	28	10
3	68	48	50	67	78	180	280	218	89	27	22	9.2
4	65	48	64	62	77	172	260	218	89	26	19	8.8
5	64	48	69	65	76	178	250	216	81	26	14	8.0
6	62	49	67	62	75	184	246	207	82	24	11	7.3
7	60	52	57	57	75	182	243	196	88	22	13	7.3
8	60	52	72	64	76	207	240	194	98	26	17	7.0
9	58	52	67	69	82	155	241	198	108	32	17	7.0
10	55	52	64	72	94	148	242	200	95	29	21	7.3
11	53	51	67	70	87	145	250	200	84	26	16	7.0
12	52	52	69	66	82	148	260	196	75	24	9.6	7.0
13	51	52	54	65	83	152	270	222	68	23	8.0	5.9
14	50	52	36	65	82	142	280	214	61	24	7.3	3.7
15	49	54	48	70	80	134	265	178	54	22	11	4.0
16	46	57	55	73	79	132	242	160	51	22	15	6.5
17	45	70	65	66	90	136	240	150	47	21	17	6.8
18	45	92	70	68	121	122	238	142	44	20	15	6.3
19	45	102	70	71	118	118	250	144	42	19	15	6.6
20	45	164	52	72	131	115	248	144	44	19	13	9.2
21	45	137	55	72	153	109	236	142	46	18	11	16
22	45	126	63	72	147	109	211	136	44	16	8.4	18
23	46	105	74	73	152	110	198	134	43	16	8.8	18
24	46	94	79	72	162	112	211	131	40	16	9.2	18
25	46	87	83	73	174	120	216	129	37	15	7.6	11
26	46	82	87	75	178	132	220	127	36	15	5.5	8.4
27	47	74	85	75	178	147	231	127	32	15	5.9	7.0
28	47	74	84	65	182	169	236	120	32	13	5.9	7.0
29	48	71	85	62	184	198	229	115	31	14	5.5	7.0
30	48	79	77	68	-----	238	225	109	30	13	5.5	7.0
31	49	-----	77	83	-----	272	-----	103	-----	16	6.8	-----
TOTAL	1,633	2,173	2,048	2,145	3,243	4,838	7,413	5,219	1,861	656	394.0	259.9
MEAN	52.7	72.4	66.1	69.2	112	156	247	168	62.0	21.2	12.7	8.66
MAX	75	164	87	83	184	272	350	227	108	32	28	18
MIN	45	48	36	57	68	109	198	103	30	13	5.5	3.7
AC-FT	3,240	4,310	4,060	4,250	6,430	9,600	14,700	10,350	3,690	1,300	781	516
CAL YR 1967	TOTAL 108,395			MEAN 297		MAX 1,930		MIN 36		AC-FT 215,000		
WTR YR 1968	TOTAL 31,882.9			MEAN 87.1		MAX 350		MIN 3.7		AC-FT 63,240		

PEAK DISCHARGE (BASE, 180 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
03-01	1200	2.53	203	04-02	unknown	3.13	366
03-08	0700	2.60	218	05-13	1900	2.74	250

BUENA VISTA LAKE BASIN

11-1905. ISABELLA RESERVOIR NEAR ISABELLA, CALIF.

LOCATION.--Lat 35°38'50", long 118°28'50", in SW $\frac{1}{4}$ sec.19, T.26 S., R.33 E., in main control tower near left abutment of main dam on Kern River, 1.5 miles north of Isabella, and 2.8 miles upstream from Erskine Creek.

DRAINAGE AREA.--2,074 sq mi.

RECORDS AVAILABLE.--October 1953 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

EXTREMES.--Maximum contents during year, 273,700 acre-ft Oct. 1 (elevation, 2,574.61 ft); minimum, 122,200 acre-ft Sept. 30 (elevation, 2,550.76 ft).

1953-68: Maximum contents, 538,700 acre-ft July 20, 1967 (elevation, 2,602.71 ft); minimum since appreciable storage was first attained, 4,330 acre-ft Apr. 21, 1955.

REMARKS.--Reservoir is formed by earthfill dam with sidehill spillway and auxiliary earthfill dam, completed in 1954; regulation began Apr. 15, 1954. Usable capacity, 569,700 acre-ft between elevations 2,470.0 ft (invert of main outlet) and 2,605.5 ft (spillway crest) above mean sea level. Dead storage, 326 acre-ft. Surcharge flood control storage, 271,800 acre-ft between ungated spillway crest and elevation 2,627.0 ft (maximum design spillway flood pool). Records, including extremes, represent total contents at 2400 hours. Water is released to Kern River through tunnel in left abutment of main dam and to Borel Canal (see sta. no. 11-1875.) through concrete conduit in auxiliary dam.

COOPERATION.--Records furnished by Corps of Engineers.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

2,500	5,850	2,540	77,340
2,505	8,860	2,550	118,500
2,510	13,100	2,570	239,000
2,515	18,900	2,590	407,500
2,520	26,430	2,620	747,400
2,530	47,320		

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	273.7	223.4	200.6	199.9	200.1	203.2	206.3	224.5	256.4	223.7	166.5	127.5
2	270.5	222.6	200.3	199.8	200.1	203.2	207.5	225.5	257.7	221.8	164.9	127.2
3	267.2	221.6	200.3	199.8	200.1	203.1	208.1	226.5	259.0	220.0	163.4	126.9
4	263.7	220.3	200.1	199.7	200.1	202.9	208.8	227.4	260.1	218.3	161.8	126.6
5	260.4	219.4	200.1	199.7	200.0	202.4	209.4	228.3	261.0	216.5	160.1	126.2
6	257.2	218.5	199.9	199.7	199.8	201.9	210.1	229.3	261.2	214.8	158.2	125.9
7	254.1	217.4	199.9	199.7	199.7	202.4	210.8	230.2	260.7	212.9	156.4	125.7
8	250.9	216.4	199.9	199.7	199.6	202.8	211.4	231.0	260.2	211.0	155.4	125.4
9	247.7	215.2	199.9	199.7	199.7	202.8	211.9	231.6	259.4	209.0	152.4	125.1
10	244.4	213.8	199.8	199.9	199.7	202.9	212.3	232.2	258.5	206.9	150.5	124.9
11	241.7	211.9	199.8	200.3	199.8	203.0	212.9	233.1	257.3	204.9	148.6	124.6
12	241.4	210.2	199.8	200.1	199.7	203.1	213.5	233.8	256.0	202.7	146.5	124.4
13	240.9	208.8	199.4	200.2	199.5	203.1	214.8	234.7	254.5	200.7	144.5	124.2
14	240.4	207.8	199.3	200.2	199.3	203.4	215.6	235.4	253.1	198.5	142.5	124.1
15	240.0	206.7	199.4	200.2	199.1	203.7	216.2	236.1	251.9	196.4	141.1	123.9
16	239.5	206.0	199.5	200.3	198.8	204.1	216.5	236.7	250.8	194.4	139.4	123.9
17	238.9	205.3	199.7	200.3	199.3	204.4	217.2	237.5	249.4	192.5	137.8	123.8
18	238.4	204.7	200.3	200.3	199.9	204.5	217.4	238.4	247.9	190.6	136.1	123.6
19	238.0	204.7	200.2	200.3	200.0	204.6	217.8	239.8	246.0	188.8	134.7	123.5
20	236.9	204.7	200.2	200.3	200.3	204.7	218.3	241.3	244.3	187.3	133.1	123.2
21	235.4	204.6	200.1	200.3	200.7	204.6	218.6	242.8	242.7	185.6	131.7	123.1
22	234.3	204.0	200.1	200.3	201.4	204.6	218.9	244.4	241.1	183.9	131.1	123.0
23	233.1	203.4	200.1	200.3	201.9	204.6	219.0	245.3	239.5	182.0	130.6	123.0
24	231.7	202.8	200.1	200.3	202.4	204.6	219.2	245.8	237.9	179.8	130.1	122.9
25	230.5	202.1	200.1	200.3	202.8	204.6	219.4	246.5	236.3	177.8	129.7	122.9
26	229.3	201.4	200.1	200.2	203.0	204.6	220.0	247.4	234.4	175.7	129.3	122.8
27	228.2	200.6	200.1	200.3	203.2	204.7	220.9	248.8	232.1	173.9	128.8	122.7
28	227.1	200.1	200.1	200.2	203.2	204.8	221.7	250.5	229.8	172.1	128.4	122.6
29	226.1	200.1	200.1	200.1	203.2	205.0	222.7	252.2	227.5	170.7	128.1	122.4
30	225.2	200.5	200.0	200.1	-----	205.1	223.6	253.9	225.5	169.2	127.9	122.2
31	224.3	-----	199.9	200.1	-----	205.4	-----	255.2	-----	167.9	127.7	-----

(a)	2,567.93	2,564.40	2,564.32	2,564.35	2,564.81	2,565.15	2,567.82	2,572.20	2,568.09	2,559.20	2,551.88	2,550.76
(b)	-52,360	-23,890	-524	+197	+3,030	+2,250	+18,170	+31,650	-29,770	-57,570	-40,200	-5,520
(c)	3,577	1,598	745	801	930	1,380	2,511	4,243	5,574	5,258	4,049	3,240
MAX	273,700	223,400	200,600	200,300	203,200	205,400	223,600	255,200	260,700	223,700	166,500	127,500
MIN	224,400	200,100	199,300	199,700	198,800	201,900	206,300	224,500	225,500	167,900	127,700	122,200

CAL YR 1967

b -113,400

MAX 538,700

MIN 199,300

WTR YR 1968

b -154,500

MAX 273,700

MIN 122,200

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet.

BUENA VISTA LAKE BASIN

567

11-1910. KERN RIVER BELOW ISABELLA DAM, CALIF.

LOCATION.--Lat 35°38'30", long 118°28'55", in S $\frac{1}{4}$ sec.30, T.26 S., R.33 E., on right bank 200 ft downstream from highway bridge, 0.6 mile downstream from Isabella Dam, and 1.6 miles southwest of Isabella.

DRAINAGE AREA.--2,074 sq mi.

RECORDS AVAILABLE.--April 1945 to September 1968. Prior to October 1952, published as "below Isabella damsite."

GAGE.--Digital water-stage recorder. Datum of gage is 2,435.07 ft above mean sea level (levels by Corps of Engineers). Prior to Mar. 12, 1952, water-stage recorder at site 0.6 mile upstream at different datum. Mar. 12, 1952, to July 26, 1953, staff gage at present site and datum. July 27, 1953, to Oct. 1, 1964, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--23 years, 805 cfs (582,800 acre-ft per year), adjusted for diversion to Borel Canal since 1945 and for change in storage and evaporation from Isabella Reservoir since 1954.

EXTREMES.--Maximum discharge during year, 1,940 cfs Oct. 4 (gage height, 9.69 ft); minimum daily, 4.0 cfs Mar. 17, 18.
1945-53 (prior to regulation by Isabella Reservoir): Maximum discharge, 39,000 cfs Nov. 19, 1950 (gage height, 28.6 ft from floodmarks, present site and datum), from rating curve extended above 1,100 cfs on basis of slope-area measurement of maximum flow; minimum, 2.1 cfs (regulated) Nov. 27, 1951.
1954-68: Maximum discharge, 4,870 cfs June 28, 1958 (gage height, 15.14 ft); no flow Oct. 29, 1954, Mar. 22, 1960.

REMARKS.--Records good. Flow regulated by Isabella Reservoir (see sta. no. 11-1905.) beginning Apr. 15, 1954. Borel Canal (see sta. no. 11-1875.) diverts above station. Diversion for irrigation of 3,500 acres between head of Isabella Reservoir and upstream stations. An additional 6,500 acres in reservoir can be irrigated when reservoir stage is low. Records of chemical analyses for the 1968 water year are published in Part 2 of this report.

REVISIONS (water year).--1967 report: 1958 (M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,790	848	22	7.3	7.7	213	195	449	484	850	626	9.2
2	1,790	899	45	7.2	7.6	208	80	419	476	818	640	9.2
3	1,820	950	45	7.2	7.6	270	142	403	501	835	624	9.2
4	1,850	950	45	7.2	7.6	308	96	384	537	784	592	9.2
5	1,690	950	45	7.2	29	335	92	323	585	733	617	9.2
6	1,720	950	45	7.2	13	354	72	266	620	770	677	9.2
7	1,680	950	24	7.2	4.1	293	84	273	744	852	1,110	9.2
8	1,660	685	11	7.2	5.0	193	124	278	842	895	1,130	9.2
9	1,680	447	8.8	7.2	5.0	206	196	321	901	921	733	9.2
10	1,670	676	8.8	7.2	5.0	174	242	279	886	971	704	9.2
11	1,300	789	8.8	7.2	5.0	146	258	191	954	946	701	9.2
12	217	685	7.2	7.2	16	98	255	188	1,030	869	665	9.2
13	217	598	6.2	7.2	45	49	96	232	1,100	829	623	9.2
14	173	411	6.2	7.2	51	35	151	220	1,130	838	581	9.2
15	145	400	6.2	7.2	56	4.1	273	217	1,060	840	530	9.2
16	145	338	6.2	7.2	42	4.1	296	162	1,080	778	519	9.2
17	135	271	6.2	7.2	19	4.0	326	107	1,150	741	452	9.2
18	122	238	6.2	7.2	31	4.0	270	143	1,250	738	428	9.2
19	122	238	6.2	7.2	53	24	183	249	1,330	686	413	9.2
20	480	281	7.1	7.2	58	60	146	311	1,300	576	439	9.2
21	531	341	8.0	7.2	48	86	144	330	1,170	539	314	9.2
22	528	338	8.0	7.2	28	75	145	254	1,040	594	10	9.2
23	931	338	8.0	7.2	19	54	160	375	1,040	665	9.2	9.2
24	1,070	338	8.0	7.0	19	80	177	360	1,500	755	9.2	9.2
25	1,060	338	8.0	6.8	86	92	144	311	1,490	754	9.2	9.6
26	1,060	338	8.0	6.8	154	67	91	304	1,150	734	9.2	9.6
27	1,110	338	15	6.8	240	64	76	354	1,190	688	9.2	9.6
28	935	161	21	6.8	270	112	217	403	1,190	684	9.2	9.6
29	935	5.0	15	6.8	239	112	290	494	1,130	670	9.2	9.6
30	910	5.0	7.4	7.4	-----	148	372	504	988	609	9.2	9.6
31	848	-----	7.4	7.8	-----	261	-----	530	-----	613	9.2	-----
TOTAL	30,324	15,094.0	479.9	221.9	1,570.6	4,133.2	5,393	9,634	29,848	23,575	13,210.8	278.4
MEAN	978	503	15.5	7.16	54.2	133	180	311	995	760	426	9.28
MAX	1,850	950	45	7.8	270	354	372	530	1,500	971	1,130	9.6
MIN	122	5.0	6.2	6.8	4.1	4.0	72	107	476	539	9.2	9.2
AC-FT	60,150	29,940	952	440	3,120	8,200	10,700	19,110	59,200	46,760	26,200	552
Mean a	571	536	537	524	677	767	1,084	1,409	1,044	462	300	190
Ac-ft a	35,120	31,890	33,010	32,220	38,950	47,140	64,490	86,660	62,090	28,410	18,430	11,320

CAL YR 1967 TOTAL 538,799.9 MEAN 1,476 MAX 4,100 MIN 5.0 AC-FT 1,069,000 MEAN a 1,872 AC-FT a 1,355,000
WTR YR 1968 TOTAL 133,762.8 MEAN 365 MAX 1,850 MIN 4.0 AC-FT 265,300 MEAN a 675 AC-FT a 489,700

a Adjusted for change in contents and evaporation from Isabella Reservoir and for diversion to Borel Canal.

BUENA VISTA LAKE BASIN

11-1925. KERN RIVER NEAR DEMOCRAT SPRINGS, CALIF.

LOCATION.--Lat 35°31'20", long 118°40'40", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 6, T.28 S., R.31 E., on left bank 1.0 mile southwest of Democrat Springs and 2.1 miles upstream from Cow Creek.

DRAINAGE AREA.--2,258 sq mi.

RECORDS AVAILABLE.--July 1950 to September 1968. Prior to October 1954, records for river and conduit published separately; combined only, October 1954 to September 1962.

GAGE.--Graphic water-stage recorder on river; graphic water-stage recorder for conduit diversion. Altitude of gage is 1,850 ft (from topographic map).

AVERAGE DISCHARGE (river only).--18 years, 514 cfs (372,100 acre-ft per year), unadjusted.
(total flow).--18 years, 850 cfs (615,400 acre-ft per year), adjusted for storage.

EXTREMES (river only).--Maximum discharge during year, 2,080 cfs Oct. 4 (gage height, 10.96 ft); minimum daily, 35 cfs Dec. 15.
1950-53 (prior to regulation by Isabella Reservoir): Maximum discharge, 40,000 cfs Nov. 19, 1950 (gage height, 30.7 ft), from rating curve extended above 8,700 cfs on basis of computation of maximum flow over dam (basic data for computation furnished by Southern California Edison Co.); minimum daily, 0.7 cfs Nov. 17-19, 1951.
1954-68: Maximum discharge, 10,100 cfs Dec. 6, 1966 (gage height, 18.55 ft); minimum daily, 0.1 cfs Oct. 30 to Nov. 12, 1955.
(combined).--Maximum discharge during year, 2,470 cfs Oct. 4; minimum daily, 170 cfs Sept. 24.
1950-53 (prior to regulation by Isabella Reservoir): Maximum discharge, 40,000 cfs Nov. 19, 1950; minimum daily, 123 cfs Sept. 22, 1951.
1954-68: Maximum discharge, 10,100 cfs Dec. 6, 1966; minimum daily, 99 cfs Oct. 3, 1961.

REMARKS.--Records fair. Kern River No. 1 conduit diverts up to about 420 cfs from left bank of Kern River in sec. 13, T.28 S., R.30 E., for power development; water is returned to river 7 miles below station. Flow regulated by Isabella Reservoir beginning in 1954 (see sta. no. 11-1905). Many diversions above station for irrigation. For records of combined discharge of river and conduit, see following page.

COOPERATION.--Gage-height record and 12 discharge measurements for river and gage-height record and 13 discharge measurements for conduit furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,900	575	205	163	142	415	465	510	565	1,020	747	72
2	1,900	504	223	142	139	380	248	532	545	970	764	66
3	1,890	556	223	131	142	431	324	500	565	998	764	69
4	2,030	555	216	132	150	475	279	495	591	974	711	42
5	1,790	554	210	122	193	545	272	452	636	894	723	59
6	1,840	552	210	121	220	919	249	391	681	911	794	50
7	1,830	549	183	115	210	903	250	395	764	1,010	897	52
8	1,760	526	176	96	176	788	287	400	894	1,070	925	77
9	1,820	604	161	85	158	799	349	420	970	1,070	820	51
10	1,800	782	146	79	144	774	391	413	974	1,140	838	67
11	1,520	936	133	124	167	744	395	348	1,000	1,130	838	56
12	476	830	131	174	187	708	424	331	1,090	1,060	813	65
13	487	767	119	146	226	654	316	368	1,160	1,010	750	57
14	387	584	65	106	244	633	285	352	1,230	1,010	729	65
15	328	579	35	106	256	588	406	348	1,160	1,030	648	61
16	310	534	41	127	235	573	422	317	1,140	960	666	62
17	344	458	47	166	196	568	456	248	1,220	918	585	63
18	277	432	109	172	195	565	426	276	1,310	922	555	57
19	286	433	187	150	247	562	368	373	1,400	883	532	60
20	570	463	172	119	268	603	319	398	1,390	757	540	60
21	667	472	172	120	273	651	320	426	1,280	684	570	55
22	676	498	164	123	243	657	307	358	1,140	738	268	58
23	674	495	168	124	228	576	327	463	1,110	785	98	59
24	684	500	177	126	223	561	342	458	1,170	925	57	51
25	675	498	180	142	283	314	323	422	1,170	922	73	58
26	676	495	181	174	354	286	255	387	1,230	918	56	63
27	686	492	186	168	404	258	239	436	1,320	858	57	62
28	553	444	187	153	452	300	340	454	1,330	841	56	64
29	556	139	193	153	424	297	389	542	1,310	852	55	68
30	539	162	191	144	-----	319	442	576	1,170	744	54	74
31	476	-----	183	164	-----	382	-----	600	-----	738	53	-----
TOTAL	30,407	15,968	4,974	4,167	6,779	17,228	10,215	12,989	31,515	28,742	16,036	1,823
MEAN	981	532	160	134	234	556	341	419	1,051	927	517	60.8
MAX	2,030	936	223	174	452	919	465	600	1,400	1,140	925	77
MIN	277	139	35	79	139	258	239	248	545	684	53	42
AC-FT	60,310	31,670	9,870	8,270	13,450	34,170	20,260	25,760	62,510	57,010	31,810	3,620

CAL YR 1967 TOTAL 580,781 MEAN 1,591 MAX 4,200 MIN 35 AC-FT 1,152,000
WTR YR 1968 TOTAL 180,843 MEAN 494 MAX 2,030 MIN 35 AC-FT 358,700

Note.--No gage-height record at river station Oct. 11 to Nov. 21, Nov. 29 to Feb. 26, Aug. 22 to Sept. 30.

11-1925. KERN RIVER NEAR DEMOCRAT SPRINGS, CALIF.--Continued

Combined discharge, in cubic feet per second, of Kern River and Kern River No. 1 conduit
near Democrat Springs, Calif., water year October 1967 to September 1968

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,290	968	605	550	528	796	862	912	954	1,410	1,130	270
2	2,290	897	623	530	524	765	654	933	933	1,360	1,150	280
3	2,280	952	623	518	526	815	730	901	952	1,390	1,150	300
4	2,420	952	616	518	534	856	667	896	978	1,360	1,100	315
5	2,180	952	610	508	578	857	666	852	1,020	1,280	1,110	330
6	2,230	952	610	507	604	936	645	792	1,070	1,300	1,180	310
7	2,220	951	583	500	594	906	646	797	1,150	1,400	1,280	285
8	2,150	928	574	484	558	791	684	802	1,280	1,460	1,310	280
9	2,200	1,000	559	476	542	802	746	822	1,360	1,460	1,210	285
10	2,180	1,180	544	482	526	777	788	814	1,360	1,530	1,220	265
11	1,900	1,330	533	517	550	747	791	746	1,390	1,520	1,220	250
12	862	1,220	530	566	571	710	820	729	1,480	1,450	1,200	245
13	872	1,160	516	536	610	656	712	766	1,550	1,400	1,130	225
14	772	980	456	496	628	635	680	752	1,620	1,400	1,110	200
15	712	974	423	496	642	590	802	747	1,550	1,420	1,030	185
16	694	930	431	516	617	575	826	714	1,530	1,350	1,050	185
17	728	856	432	554	578	570	862	644	1,610	1,310	968	185
18	664	830	494	560	576	567	840	672	1,700	1,310	937	195
19	675	830	576	538	628	564	770	768	1,790	1,270	914	200
20	960	860	565	506	650	605	717	795	1,780	1,140	922	185
21	1,060	870	565	508	654	653	718	822	1,660	1,070	952	180
22	1,070	895	566	511	628	659	704	749	1,520	1,120	650	175
23	1,070	893	570	512	612	578	723	854	1,490	1,170	480	175
24	1,080	898	570	512	608	644	738	854	1,560	1,310	430	170
25	1,070	896	571	528	668	674	720	819	1,560	1,310	395	185
26	1,070	895	572	560	738	662	656	784	1,620	1,300	390	190
27	1,080	892	576	554	788	640	639	833	1,710	1,240	390	195
28	946	843	578	538	834	685	740	851	1,720	1,220	390	200
29	948	532	584	538	805	688	789	938	1,700	1,140	330	220
30	930	560	581	530	-----	713	844	970	1,560	1,130	315	230
31	868	-----	571	550	-----	777	-----	991	-----	1,120	268	-----
TOTAL	42,471	27,876	17,207	16,199	17,899	21,893	22,179	25,319	43,157	40,650	27,311	6,895
MEAN	1,370	929	555	523	617	706	739	817	1,439	1,311	881	230
MAX	2,420	1,330	623	566	834	936	862	991	1,790	1,530	1,310	330
MIN	664	532	423	476	524	564	639	644	933	1,070	268	170
AC-FT	84,240	55,290	34,130	32,130	35,500	43,420	43,990	50,220	85,600	80,630	54,170	13,680
CAL YR 1967	TOTAL	721,651		MEAN	1,977	MAX	4,600	MIN	423	AC-FT	1,431,000	
WTR YR 1968	TOTAL	309,056		MEAN	844	MAX	2,420	MIN	170	AC-FT	613,000	

BUENA VISTA LAKE BASIN

11-1940. KERN RIVER NEAR BAKERSFIELD, CALIF.

LOCATION.--Lat 35°25'54", long 118°56'43", in NW¼SW¼ sec.2, T.29 S., R.28 E., on left bank 1.9 miles upstream from Sacramento Gulch, 0.8 mile northeast of Oil City, and 5.8 miles northeast of Bakersfield Post Office.

DRAINAGE AREA.--2,407 sq mi.

RECORDS AVAILABLE.--October 1893 to September 1968. Daily discharges for period October 1953 to September 1963 are in files of California District office of Geological Survey. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder and wooden control. Datum of gage is at mean sea level.

AVERAGE DISCHARGE.--75 years, 934 cfs (676,200 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,350 cfs Oct. 3 (elevation, unknown); minimum daily, 164 cfs Sept. 23.

1893-1954 (prior to regulation by Isabella Reservoir): Maximum discharge, 36,000 cfs Nov. 19, 1950 (elevation, 461.37 ft); minimum daily, 74 cfs Sept. 19, 1948.

1955-68: Maximum discharge, 9,290 cfs Dec. 6, 1966 (elevation, 454.94 ft); minimum daily, 103 cfs Oct. 9, 1961.

REMARKS.-- Flow regulated by Isabella Reservoir beginning in 1954 (see sta. no. 11-1905.), and three power-plants; many diversions above station for irrigation.

COOPERATION.--Records furnished by Kern County Land Company and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,280	889	629	570	539	833	853	940	1,000	1,460	1,180	279
2	2,300	895	644	558	539	815	652	944	990	1,410	1,200	287
3	2,320	954	644	529	545	864	749	923	1,010	1,440	1,200	298
4	2,340	954	646	529	547	887	671	938	1,050	1,390	1,140	318
5	2,230	954	635	523	579	894	678	894	1,090	1,340	1,160	327
6	2,260	954	635	526	621	941	661	824	1,130	1,360	1,220	318
7	2,240	952	622	519	615	940	650	827	1,230	1,440	1,300	279
8	2,210	902	597	505	577	823	682	824	1,340	1,490	1,290	262
9	2,230	1,000	584	496	566	830	741	841	1,430	1,510	1,250	294
10	2,170	1,160	567	503	545	803	813	841	1,430	1,560	1,250	267
11	1,950	1,330	557	512	556	782	827	778	1,460	1,530	1,260	251
12	969	1,220	553	579	573	742	849	747	1,540	1,480	1,230	239
13	889	1,180	539	566	613	679	771	785	1,610	1,440	1,190	216
14	833	1,020	502	512	633	661	672	771	1,660	1,450	1,160	196
15	740	993	440	512	654	624	857	766	1,610	1,460	1,080	188
16	704	980	449	516	621	610	872	754	1,620	1,390	1,110	194
17	684	898	452	557	612	595	908	668	1,680	1,340	1,060	192
18	666	877	489	569	577	588	854	688	1,730	1,330	1,010	206
19	683	885	604	565	636	587	800	776	1,770	1,290	988	185
20	913	907	583	520	665	625	732	829	1,750	1,180	993	183
21	1,050	957	580	524	680	672	737	845	1,670	1,140	968	189
22	1,060	957	583	526	649	656	708	761	1,550	1,160	650	178
23	1,070	957	593	528	628	623	730	886	1,540	1,210	552	164
24	1,080	957	593	529	617	688	743	883	1,600	1,290	484	179
25	1,080	957	593	525	670	688	739	857	1,580	1,290	415	184
26	1,080	957	593	573	741	679	678	857	1,660	1,290	417	165
27	1,050	957	594	587	815	644	657	882	1,700	1,260	415	199
28	957	861	592	562	853	686	722	914	1,710	1,260	394	194
29	962	591	602	556	827	691	824	996	1,690	1,240	348	210
30	950	588	595	539	-----	703	875	1,020	1,570	1,180	327	244
31	888	-----	600	567	-----	786	-----	1,040	-----	1,180	281	-----
TOTAL	42,838	28,643	17,889	16,682	18,293	22,639	22,705	26,299	44,400	41,790	28,522	6,885
MEAN	1,382	955	577	538	631	730	757	848	1,480	1,348	920	230
MAX	2,340	1,330	646	587	853	941	908	1,040	1,770	1,560	1,300	327
MIN	666	588	440	496	539	587	650	668	990	1,140	281	164
AC-FT	84,970	56,810	35,480	33,090	36,280	44,900	45,030	52,160	88,070	82,890	56,570	13,660

CAL YR 1967 TOTAL 739,009 MEAN 2,025 MAX 4,690 MIN 440 AC-FT 1,466,000
WTR YR 1968 TOTAL 317,585 MEAN 868 MAX 2,340 MIN 164 AC-FT 629,900

Note.--Mean daily discharge is computed for a 24 hour period from noon on date listed to noon on the following day.

11-1942. WAGONWHEEL CREEK NEAR REWARD, CALIF.

LOCATION.--Lat 35°19'25", long 119°44'30", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.8, T.30 S., R.21 E., at culvert on private road 3.5 miles west of Reward.

DRAINAGE AREA.--1.38 sq mi.

RECORDS AVAILABLE.--Water years 1958-65 (annual maximum), October 1965 to September 1968.

GAGE.--Graphic water-stage recorder, crest-stage gage, and tipping-bucket rain gage. Altitude of gage is 1,500 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 10 cfs Mar. 7 (gage height, 7.25 ft), from rating curve based on computation of flow through culvert as explained below; no flow most of year.
1959-68: Maximum discharge, 306 cfs Aug. 14, 1965 (gage height, 13.44 ft, from floodmarks), from rating curve based on computation of flow through culvert at gage heights 6.97, 9.05, 9.55, 9.92 ft, and on computation of flow through culvert plus flow over road at gage height 13.44 ft; no flow for several months of each year.

REMARKS.--Records poor. No regulation or diversion above station. Monthly precipitation, in inches, is as follows: November, 2.2; December, 0.7; January, 0.3; February, 0.5; March, 2.0; April, 0.7; the water year, 6.4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

Nov. 30..... 0.10
Mar. 7..... .31
Apr. 2..... .18

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1967.....	0.10	0.10	0	0.033	0.2
March 1968.....	.31	.31	0	.010	.6
April.....	.18	.18	0	.006	.4
Calendar year 1967.....	.20	.10	0	.001	.4
Water year 1967-68.....	.59	.31	0	.002	1.2

Peak discharge (base, 5.0 cfs).--Nov. 30 (time unknown) 9.2 cfs (7.16 ft); Mar. 7 (time unknown) 10 cfs (7.25 ft); Apr. 2. (time unknown) 8.7 cfs (7.12 ft).

Note.--Flow occurred only on days listed above.

BUENA VISTA LAKE BASIN

11-1955. SAN EMIGDIO CREEK AT SAN EMIGDIO RANCHHOUSE, CALIF.

LOCATION.--Lat 34°58'54", long 119°11'03", in San Emigdio Grant, on left bank 50 ft downstream from unnamed tributary 0.8 mile upstream from San Emigdio ranchhouse headquarters, and 13 miles west of Wheeler Ridge.

DRAINAGE AREA.--48.8 sq mi.

RECORDS AVAILABLE.--March 1959 to September 1968.

GAGE.--Graphic water-stage recorder and broad-crested weir with rectangular flume for flows below 15 cfs. Datum of gage is 1,617.57 ft above mean sea level.

AVERAGE DISCHARGE.--9 years, 1.06 cfs (767 acre-ft per year).

EXTREMES.--Maximum discharge during year, 16 cfs Nov. 20 (gage height, 9.40 ft from floodmarks); minimum daily, 0.47 cfs June 19.

1959-68: Maximum discharge, 6,690 cfs Aug. 5, 1961 (gage height, 19.87 ft from floodmarks), from rating curve extended above 20 cfs on basis of slope-area measurements at gage height 10.94 and 19.87 ft; minimum daily, 0.30 cfs Apr. 23, 24, 1962 and many days in 1965, 1966.

Maximum stage known since at least 1938 (from information by local residents), that of Aug. 5, 1961.

REMARKS.--Records good. Small diversions for stock and domestic use above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.5	2.0	1.3	1.4	1.2	1.3	.97	.74	.97	.62	.92
2	1.1	1.5	1.9	1.2	1.4	1.2	2.0	.92	.70	.92	.66	.87
3	1.1	1.5	1.8	1.2	1.4	1.2	1.6	.92	.70	.92	.66	.92
4	1.1	1.5	1.7	1.2	1.4	1.2	1.2	.97	.70	.92	.66	.87
5	1.1	1.6	1.7	1.2	1.3	1.3	1.2	.97	.70	.92	.66	.92
6	1.1	1.6	2.0	1.2	1.3	1.3	1.2	1.0	.74	.87	.66	.92
7	1.1	1.5	1.9	1.2	1.3	2.2	1.1	1.0	.74	.92	.70	.92
8	1.1	1.4	1.9	1.2	1.4	2.6	1.1	.97	.74	.92	.78	.87
9	1.1	1.6	1.7	1.1	1.4	1.5	1.0	.97	.74	.87	.74	.78
10	1.1	1.6	1.7	1.2	1.4	1.5	.92	.87	.70	.78	.74	.78
11	1.2	1.6	1.6	1.3	1.4	1.4	.87	.87	.66	.74	.78	.70
12	1.2	1.5	1.6	1.3	1.4	1.4	.87	1.1	.62	.70	.78	.74
13	1.2	1.5	1.6	1.3	1.4	1.7	.97	1.0	.56	.78	.87	.74
14	1.2	1.5	1.6	1.3	1.4	1.4	.97	.92	.56	.74	.87	.78
15	1.2	1.5	1.7	1.3	1.4	1.4	1.0	.82	.56	.74	.87	.82
16	1.2	1.6	1.6	1.3	1.4	1.3	1.1	.78	.53	.70	.87	.74
17	1.2	1.6	1.6	1.4	1.4	1.3	1.2	.74	.53	.70	.87	.74
18	1.3	1.6	1.8	1.4	1.4	1.9	1.3	.74	.50	.66	.87	.74
19	1.3	6.2	1.7	1.3	1.4	1.4	1.2	.78	.47	.56	.87	.78
20	1.3	7.2	1.6	1.3	1.3	1.3	1.1	.74	.50	.53	.87	.74
21	1.3	3.6	1.5	1.3	1.3	1.3	1.2	.82	.50	.56	.82	.82
22	1.4	3.4	1.5	1.3	1.3	1.2	1.2	.92	.56	.53	.87	.82
23	1.4	2.5	1.5	1.3	1.2	1.2	1.1	.92	.56	.56	.82	.62
24	1.4	2.0	1.5	1.3	1.2	1.1	1.1	.92	.59	.53	.74	.59
25	1.4	1.8	1.5	1.3	1.3	1.1	1.1	.87	.62	.56	.82	.66
26	1.4	1.6	1.4	1.4	1.3	1.1	.97	.87	.74	.56	.87	.59
27	1.5	1.6	1.4	1.8	1.2	1.1	.97	.78	.78	.56	.92	.62
28	1.5	1.8	1.3	1.5	1.2	1.0	.97	.74	.82	.59	.92	.66
29	1.5	1.8	1.3	1.4	1.2	1.0	.97	.74	.87	.59	.97	.66
30	1.6	1.9	1.2	1.4	-----	1.0	.97	.74	.92	.59	.92	.78
31	1.6	-----	1.3	1.5	-----	1.1	-----	.74	-----	.62	.92	-----
TOTAL	39.3	63.1	50.1	40.7	38.8	41.9	33.75	27.11	19.65	22.11	24.99	23.11
MEAN	1.27	2.10	1.62	1.31	1.34	1.35	1.13	.87	.66	.71	.81	.77
MAX	1.6	7.2	2.0	1.8	1.4	2.6	2.0	1.1	.92	.97	.97	.92
MIN	1.1	1.4	1.2	1.1	1.2	1.0	.87	.74	.47	.53	.62	.59
AC-FT	78	125	99	81	77	83	67	54	39	44	50	46

CAL YR 1967 TOTAL 443.00 MEAN 1.21 MAX 7.2 MIN .60 AC-FT 879
WTR YR 1968 TOTAL 424.62 MEAN 1.16 MAX 7.2 MIN .47 AC-FT 842

Peak discharge (base, 25 cfs).--No peak above base.

BUENA VISTA LAKE BASIN

573

11-1956. PASTORIA CREEK NEAR LEBEC, CALIF.

LOCATION.--Lat 34°54'35", long 118°48'55", in Los Alamos Y Agua Caliente Grant, on right bank just upstream from unnamed tributary, and 5.8 miles northeast of Lebec.

DRAINAGE AREA.--27.5 sq mi.

RECORDS AVAILABLE.--October 1964 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 1,970.93 ft above mean sea level, unadjusted. Digital water-stage recorder Apr. 20 to Dec. 20, 1966.

EXTREMES.--Maximum discharge during year, 11 cfs Nov. 20 (gage height, 1.63 ft), from rating curve extended above 3.6 cfs on basis of slope-area measurement of maximum flow; minimum daily, 0.40 cfs Oct. 8, 17, Jan. 13-20.
1964-68: Maximum discharge, 13 cfs Nov. 7, 1966 (gage height, 1.68 ft), from rating curve extended above 3.6 cfs on basis of slope-area measurement of maximum flow; no flow for many days in 1964-67.

REMARKS.--Records fair. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.54	.72	.84	.98	.62	.84	1.1	1.3	.84	1.0	1.0	.90
2	.54	.84	.84	2.0	.62	.62	2.0	.98	.72	1.2	1.2	.75
3	.46	.84	.84	1.3	.62	.54	1.5	1.1	.72	1.1	1.1	.63
4	.54	.84	.84	1.3	.62	.62	1.1	.84	.72	1.0	.80	.75
5	.54	.62	2.2	.98	.54	.62	.84	.84	.62	.72	1.2	.75
6	.62	.72	1.0	.84	.54	.72	.84	.84	.62	.90	1.2	.75
7	.54	.84	.84	.84	.54	.72	.72	.72	.62	.90	1.2	.90
8	.40	.84	.84	.72	.46	.84	.72	.72	.62	1.2	1.2	1.2
9	.54	.98	.84	.84	1.3	1.5	.72	.98	.72	.95	1.2	1.0
10	.54	.84	.84	.62	1.1	.98	.72	.84	.72	1.2	1.2	.69
11	.54	.84	.84	.62	.98	.84	.72	.84	.69	1.0	1.0	.66
12	.54	.72	.84	.54	.84	.84	.72	.84	.66	1.1	.95	.75
13	.54	.84	1.7	.40	.84	.84	.72	.54	.69	1.0	1.0	.69
14	.54	.84	1.3	.40	.84	.84	.72	.54	.85	.80	1.0	.75
15	.46	.84	1.5	.40	.84	.84	.72	.72	.75	.85	1.0	1.0
16	.54	.84	1.5	.40	.62	.84	.84	.72	.66	1.2	1.0	1.0
17	.40	.84	1.1	.40	.62	.84	.84	.84	.75	1.0	.90	.80
18	.46	.84	1.3	.40	.62	.84	.84	.84	.80	1.0	.63	.72
19	.46	1.5	.98	.40	.62	.84	1.3	.78	.85	1.0	.80	.66
20	.54	3.8	.98	.40	.62	.72	1.1	.70	.85	.80	1.3	.69
21	.54	2.2	.72	.46	.62	.72	1.3	.62	.72	.75	1.2	.72
22	.46	.84	.72	.54	.62	.72	1.5	.98	.90	.90	.72	.66
23	.54	.84	.72	.54	.62	.72	1.3	.98	.90	.90	1.2	.66
24	.54	.84	.72	.98	.72	.62	1.5	.98	.90	.72	1.2	.72
25	.62	.84	.72	.84	.84	.72	1.5	.98	1.0	.80	1.0	.72
26	.62	.84	.72	.62	.84	.72	1.3	.98	1.2	1.0	1.0	.72
27	.72	.84	.98	.62	.98	.72	1.3	.98	1.3	1.0	.90	.69
28	.62	2.0	.98	.62	.84	.84	1.3	.84	1.2	.80	.80	.66
29	.54	.84	.98	.62	.84	.84	1.3	.72	1.4	.90	.85	.69
30	.62	1.5	.98	.54	-----	.84	1.3	.72	1.4	.90	.95	.66
31	.62	-----	.98	.72	-----	.84	-----	.84	-----	.95	.75	-----
TOTAL	16.72	31.56	31.18	21.88	21.32	24.58	32.38	26.14	25.39	29.54	31.45	22.94
MEAN	.54	1.05	1.01	.71	.74	.79	1.08	.84	.85	.95	1.01	.76
MAX	.72	3.8	2.2	2.0	1.3	1.5	2.0	1.3	1.4	1.2	1.3	1.2
MIN	.40	.62	.72	.40	.46	.54	.72	.54	.62	.72	.63	.63
AC-FT	33	63	62	43	42	49	64	52	50	59	62	46

CAL YR 1967 TOTAL 218.46

MEAN .60

MAX 3.9

MIN 0

AC-FT 433

WTR YR 1968 TOTAL 315.08

MEAN .86

MAX 3.8

MIN .40

AC-FT 625

Peak discharge (base, 10 cfs).--Nov. 20 (0200 hrs) 11 cfs (1.63 ft). ✓

BUENA VISTA LAKE BASIN

11-1964. CALIENTE CREEK ABOVE TEHACHAPI CREEK, NEAR CALIENTE, CALIF.

LOCATION.--Lat 35°18'40", long 118°34'10", in SE¹SW⁴ sec.17, T.30 S., R.32 E., on right bank 0.5 mile upstream from Harper Canyon, 1.0 mile upstream from Oiler Canyon, and 3.6 miles northeast of Caliente.

DRAINAGE AREA.--165 sq mi.

RECORDS AVAILABLE.--October 1961 to September 1968.

GAGE.--Graphic water-stage recorder and concrete control. Altitude of gage is 1,575 ft (from topographic map).

AVERAGE DISCHARGE.--7 years, 1.32 cfs (956 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4.9 cfs Apr. 2 (gage height, 1.65 ft); no flow for several months.
1961-68: Maximum discharge, 1,410 cfs Aug. 8, 1963 (gage height, 7.48 ft from floodmarks), from rating curve extended above 51 cfs on basis of slope-area measurement of maximum flow; no flow for several months each year.

REMARKS.--Records good. Small diversions above station for stock and domestic use.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	1.0	1.1	.60	.94	1.3	2.3	.48	.24	.08		
2	0	1.1	.60	.60	.78	1.3	3.7	.48	.17	.11		
3	0	1.0	.54	.54	.72	1.2	2.4	.44	.14	.14		
4	0	1.2	.54	.66	.72	1.3	1.9	.44	.11	.14		
5	0	1.3	.78	.66	.78	1.4	1.8	.48	.11	.14		
6	0	1.3	.72	.66	.72	1.4	1.7	.44	.11	.14		
7	0	1.3	.72	.60	.72	1.6	1.6	.44	.17	.11		
8	0	1.3	.72	.60	.78	1.8	1.4	.48	.20	.11		
9	0	1.4	.66	.54	.94	1.6	1.3	.54	.20	.11		
10	0	1.3	.66	.60	1.1	1.6	1.3	.54	.20	.11		
11	0	.94	.66	.78	.94	1.5	1.2	.54	.17	.11		
12	0	.78	.66	.72	.94	1.5	1.1	.66	.11	.08		
13	0	.78	.66	.66	1.0	1.6	1.1	.66	.08	.08		
14	0	.78	.78	.60	1.1	1.6	1.0	.60	.20	.08		
15	0	.86	.78	.60	1.1	1.6	1.0	.48	.20	.08		
16	0	.94	.78	.66	1.0	1.7	.93	.48	.08	.08		
17	0	.78	.86	.72	1.1	2.0	.88	.44	.08	.08		
18	0	.66	1.6	.72	1.2	1.8	.83	.38	.05	.03		
19	0	.66	2.3	.66	1.2	1.7	.78	.38	.08	.01		
20	0	.54	1.6	.72	1.2	1.8	.86	.48	.05	0		
21	0	.60	.94	.66	1.2	1.8	.78	.54	.03	0		
22	0	.60	.94	.60	1.1	1.9	.72	.54	.03	0		
23	0	.48	.86	.60	1.2	1.9	.66	.54	.03	0		
24	0	.44	.72	.60	1.1	2.0	.66	.44	.03	0		
25	0	.44	.72	.54	1.1	2.2	.72	.38	.03	0		
26	0	.44	.72	.60	1.2	2.3	.66	.38	.01	0		
27	0	.44	.66	.66	1.2	2.2	.60	.32	.01	0		
28	.31	.86	.72	.94	1.3	2.2	.54	.28	.03	0		
29	.78	.78	.66	.78	1.3	1.9	.54	.20	.05	0		
30	.86	1.2	.60	.78	-----	1.9	.54	.24	.05	0		
31	1.0	-----	.66	1.0	-----	1.9	-----	.28	-----	0		-----
TOTAL	2.95	26.20	25.92	20.66	29.68	53.5	35.50	14.00	3.05	1.82	0	0
MEAN	.095	.87	.84	.67	1.02	1.73	1.18	.45	.10	.059	0	0
MAX	1.0	1.4	2.3	1.0	1.3	2.3	3.7	.66	.24	.14	0	0
MIN	0	.44	.54	.54	.72	1.2	.54	.20	.01	0	0	0
AC-FT	5.9	52	51	41	59	106	70	28	6.1	3.6	0	0
CAL YR 1967	TOTAL 600.57		MEAN 1.65		MAX 12	MIN 0	AC-FT 1,190					
WTR YR 1968	TOTAL 213.28		MEAN .58		MAX 3.7	MIN 0	AC-FT 423					

Peak discharge (base, 50 cfs).--No peak above base.

BUENA VISTA LAKE BASIN

575

11-1964.2. TEHACHAPI CREEK NEAR TEHACHAPI, CALIF.

LOCATION.--Lat 35°10'25", long 118°28'45", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.6, T.32 S., R.33 E., on right bank 1.3 miles downstream from Brite Creek, and 3.2 miles northwest of Tehachapi.

DRAINAGE AREA.--53.2 sq mi.

RECORDS AVAILABLE.--September 1962 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 3,534.48 ft above mean sea level. Prior to Aug. 5, 1964, at site 0.2 mile upstream at different datum.

AVERAGE DISCHARGE.--6 years, 0.06 cfs (43 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1.5 cfs Mar. 8 (gage height, 0.45 ft), from rating curve extended above 0.12 cfs based on five flow over weir computations; no flow for several days.

1962-68: Maximum discharge, 1,700 cfs Aug. 8, 1963 (gage heights, 5.30 ft in gage well, 6.40 ft from floodmarks, site and datum then in use), from slope-area measurement of maximum flow; no flow for parts of most years.

REMARKS.--Records good. No regulation.

REVISIONS (water year).--1967 report: 1966.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.01	.02	.01	.04	.06	.09	.15	.06	0	.01	.02
2	.02	.01	.01	.03	.04	.09	.15	.15	.06	0	.01	.02
3	.03	.01	.02	.03	.04	.09	.06	.15	.05	0	.01	.02
4	.03	.01	.02	.03	.04	.09	.06	.15	.05	0	.01	.02
5	.03	.01	.03	.03	.04	.06	.09	.09	.05	0	.01	.02
6	.03	.01	.01	.03	.04	.06	.09	.09	.05	0	.02	.02
7	.03	.01	.03	.03	.04	.50	.09	.15	.05	0	.02	.02
8	.03	.01	.02	.03	.04	1.1	.09	.15	.05	.01	.02	.01
9	.02	.01	.01	.03	.05	.24	.09	.15	.05	.01	.02	.01
10	.02	.01	.01	.03	.05	.15	.09	.15	.04	0	.02	.01
11	.02	0	.01	.04	.04	.06	.09	.15	.04	0	.02	.01
12	.02	0	.01	.02	.04	.06	.09	.24	.04	0	.02	.01
13	.02	0	.01	.07	.13	.09	.09	.15	.04	0	.02	.01
14	.02	0	.01	.04	.06	.09	.09	.24	.04	0	.03	.02
15	.01	0	.02	.04	.04	.06	.09	.15	.04	0	.03	.02
16	.01	0	.02	.04	.04	.09	.09	.15	.04	.01	.03	.02
17	.01	0	.01	.04	.06	.09	.09	.15	.03	0	.03	.01
18	.01	0	.02	.03	.04	.09	.09	.15	.04	0	.02	.01
19	.02	.04	.03	.04	.04	.06	.09	.15	.01	0	.02	.01
20	.02	.03	.03	.04	.04	.06	.06	.09	.01	0	.03	.01
21	.02	.04	0	.04	.04	.05	.09	.09	0	0	.03	.01
22	.02	.01	.01	.04	.06	.05	.15	.09	0	0	.03	.01
23	.02	.02	.02	.04	.06	.05	.15	.09	0	0	.02	.01
24	.02	.02	.02	.04	.06	.05	.15	.09	0	0	.02	0
25	.02	.02	.03	.04	.06	.05	.15	.09	0	.01	.02	0
26	.02	.01	.03	.04	.06	.05	.15	.09	0	0	.02	0
27	.01	.02	.04	.05	.06	.06	.15	.06	0	.01	.02	0
28	.01	.03	.04	.05	.06	.06	.15	.06	0	.01	.02	0
29	.01	.02	.02	.05	.06	.06	.15	.06	0	.03	.02	.01
30	0	.04	.01	.05	-----	.06	.15	.06	0	.02	.02	.01
31	.01	-----	.01	.04	-----	.06	-----	.06	-----	.02	.02	-----
TOTAL	0.58	0.40	0.58	1.16	1.47	3.79	3.21	3.84	0.84	0.13	0.64	0.35
MEAN	.019	.013	.019	.037	.051	.12	.11	.12	.028	.004	.021	.012
MAX	.03	.04	.04	.07	.13	1.1	.15	.24	.06	.03	.03	.02
MIN	0	0	0	.01	.04	.05	.06	.06	0	0	.01	0
AC-FT	1.2	.8	1.2	2.3	2.9	7.5	6.4	7.6	1.7	.3	1.3	.7

CAL YR 1967 TOTAL 2.26 MEAN .006 MAX .20 MIN 0 AC-FT 4.6
WTR YR 1968 TOTAL 16.99 MEAN .046 MAX 1.1 MIN 0 AC-FT 34

Peak discharge (base, 10 cfs).--No peak above base.

TULARE LAKE BASIN

11-1972.5. AVENAL CREEK NEAR AVENAL, CALIF.

LOCATION.--Lat 35°51'15", long 120°07'35", in NW¼ sec.10, T.24 S., R.17 E., on right bank 550 ft downstream from road ford, 0.4 mile downstream from unnamed tributary, and 10 miles south of Avenal.

DRAINAGE AREA.--57.1 sq mi.

RECORDS AVAILABLE.--October 1961 to September 1968.

GAGE.--Graphic water-stage recorder and crest-stage gages. Altitude of gage is 825 ft (from topographic map).

AVERAGE DISCHARGE.--7 years, 1.49 cfs (1,080 acre-ft per year).

EXTREMES.--Maximum discharge during year, 6.1 cfs Nov. 18 (gage height, 1.53 ft); no flow for several months. 1961-68: Maximum discharge, 1,540 cfs Dec. 6, 1966 (gage height, 5.72 ft in gage well, 7.5 ft from flood-marks), from rating curve extended above 90 cfs on basis of slope-area measurement of maximum flow; no flow for several months each year.

REMARKS.--Records poor. Minor diversions for stock above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.12	.09	.26	.16	.12	.06	.12					
2	.09	.09	.16	.16	.12	.06	.09					
3	.12	.06	.09	.16	.12	.06	.05					
4	.12	.06	.06	.16	.12	.04	.04					
5	.12	.06	.20	.16	.12	.04	.03					
6	.12	.06	.16	.16	.12	.04	.02					
7	.09	.06	.14	.16	.09	.20	.01					
8	.09	.05	.12	.16	.09	.50	0					
9	.09	.05	.09	.16	.09	.20	0					
10	.06	.04	.06	.16	.09	.16	0					
11	.07	.04	.09	.16	.09	.16	0					
12	.12	.03	.12	.16	.09	.12	0					
13	.16	.02	.16	.16	.12	.20	0					
14	.16	.01	.12	.16	.12	.16	0					
15	.12	.02	.12	.16	.12	.16	0					
16	.09	.03	.12	.12	.16	.28	0					
17	.06	.03	.20	.12	.20	.28	0					
18	.06	.34	.16	.12	.16	.28	0					
19	.06	.40	.16	.12	.12	.28	0					
20	.06	.20	.12	.12	.09	.28	0					
21	.06	.19	.12	.12	.09	.20	0					
22	.06	.18	.16	.12	.09	.20	0					
23	.09	.17	.12	.12	.09	.20	0					
24	.09	.16	.12	.12	.09	.20	0					
25	.06	.15	.12	.12	.09	.16	0					
26	.04	.14	.12	.09	.06	.16	0					
27	.06	.13	.12	.09	.06	.16	0					
28	.06	.12	.16	.09	.06	.16	0					
29	.09	.12	.16	.09	.06	.12	0					
30	.09	.26	.16	.09	-----	.12	0					
31	.09	-----	.16	.09	-----	.12	-----		-----			-----
TOTAL	2.77	3.36	4.23	4.14	3.04	5.36	0.36	0	0	0	0	0
MEAN	.089	.11	.14	.13	.10	.17	.012	0	0	0	0	0
MAX	.16	.40	.26	.16	.20	.50	.12	0	0	0	0	0
MIN	.04	.01	.06	.09	.06	.04	0	0	0	0	0	0
AC-FT	5.5	6.7	8.4	8.2	6.0	11	.7	0	0	0	0	0

CAL YR 1967 TOTAL 1,327.76 MEAN 3.64 MAX 58 MIN 0 AC-FT 2,630
WTR YR 1968 TOTAL 23.26 MEAN .064 MAX .50 MIN 0 AC-FT 46

Peak discharge (base, 30 cfs).-- No peak above base.

Note.--No gage-height record Jan. 2 to Apr. 7 except when gage was visited, Jan. 9, Feb. 12, Mar. 19 and Apr. 3.

TULARE LAKE BASIN

577

11-1978. POSO CREEK NEAR OILDALE, CALIF.

LOCATION.--Lat 35°30'50", long 118°54'15", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.6, T.28 S., R.29 E., on downstream side of highway bridge opposite mouth of Hillvale Canyon, 10 miles northeast of Oildale, and 12 miles northeast of Bakersfield.

DRAINAGE AREA.--230 sq mi.

RECORDS AVAILABLE.--July 1959 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 700 ft (from topographic map). July 1959 to Oct. 9, 1962, graphic water-stage recorder at same site and datum; Oct. 10, 1962 to Oct. 26, 1967, digital water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--9 years, 16.3 cfs (11,800 acre-ft per year).

EXTREMES.--Maximum discharge during year, 76 cfs Apr. 3 (gage height, 5.01 ft); minimum daily, 2.0 cfs June 26, Sept. 23-30.

1959-68: Maximum discharge, 4,300 cfs Dec. 6, 1966 (gage height, 11.57 ft), from rating curve extended above 300 cfs on basis of contracted opening measurement of maximum flow; minimum, 0.9 cfs July 26, 1961. Flood of Apr. 4, 1958, reached a stage of 8.6 ft from floodmarks (discharge, 2,750 cfs, furnished by Kern County Land Co.).

REMARKS.--Records good. Oilfield waste comprises most of low flow.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	3.3	6.2	19	22	19	18	10	3.2	3.7	2.8	3.2
2	3.5	3.5	6.2	18	20	18	41	10	3.0	3.9	2.8	3.0
3	3.5	3.5	6.2	18	20	17	71	9.8	2.6	4.1	2.6	3.0
4	3.7	3.3	5.8	17	21	16	64	8.8	3.0	4.1	2.6	3.2
5	3.9	3.5	6.2	17	21	17	57	8.6	3.5	3.3	2.6	3.2
6	4.1	3.7	6.2	16	20	17	53	8.4	3.3	3.0	2.6	3.2
7	4.1	3.9	6.2	16	19	18	47	7.9	3.3	2.5	2.8	3.3
8	4.1	3.9	6.2	16	20	36	42	7.3	3.2	2.3	2.8	4.1
9	4.1	4.1	5.8	16	20	49	38	7.3	3.0	2.5	2.8	4.6
10	4.1	4.2	5.8	18	22	38	35	6.6	2.6	2.5	2.8	4.1
11	4.1	4.2	5.6	26	22	40	32	6.8	2.6	3.0	2.6	3.7
12	4.1	4.2	5.4	31	21	33	28	7.3	2.6	3.0	2.6	4.8
13	3.9	4.2	5.4	24	21	31	24	7.5	2.5	2.8	2.8	3.9
14	4.2	4.4	5.4	21	23	31	23	7.7	2.6	2.6	2.8	3.3
15	4.1	4.4	5.6	19	25	31	22	8.4	2.8	2.8	2.8	3.2
16	4.1	4.8	5.8	19	22	30	21	8.1	2.8	3.0	2.6	3.0
17	4.1	4.4	5.2	20	22	34	20	7.9	2.5	3.0	2.6	3.0
18	4.4	4.4	5.6	19	45	39	19	6.8	2.3	3.0	2.8	3.2
19	4.2	5.2	15	18	50	34	19	6.0	2.8	2.8	2.8	3.2
20	3.9	5.2	17	18	39	31	20	5.4	2.8	2.8	2.8	3.0
21	4.1	4.8	14	17	34	30	19	5.2	3.0	2.8	3.0	2.8
22	4.1	4.8	13	16	31	28	17	5.4	2.6	2.8	3.0	2.2
23	3.9	4.6	16	15	28	26	16	5.8	2.8	2.8	3.2	2.0
24	3.7	5.2	18	16	26	23	16	5.6	2.3	3.3	3.0	2.0
25	3.7	6.2	18	16	24	22	15	5.2	2.2	3.2	3.0	2.0
26	3.5	5.8	19	16	22	22	14	5.0	2.0	2.8	3.0	2.0
27	3.3	5.6	20	17	22	21	13	4.6	2.2	3.0	3.0	2.0
28	3.5	4.8	21	16	21	20	12	4.1	3.3	2.8	3.0	2.0
29	3.5	5.2	21	18	20	20	11	3.5	3.9	2.8	3.0	2.0
30	3.2	6.8	20	18	-----	19	9.8	3.2	3.9	2.6	3.2	2.0
31	2.6	-----	20	19	-----	17	-----	3.3	-----	2.6	3.0	-----
TOTAL	118.6	136.1	336.8	570	723	827	836.8	207.5	85.2	92.2	87.8	90.2
MEAN	3.83	4.54	10.9	18.4	24.9	26.7	27.9	6.69	2.84	2.97	2.83	3.01
MAX	4.4	6.8	21	31	50	49	71	10	3.9	4.1	3.2	4.8
MIN	2.6	3.3	5.2	15	19	16	9.8	3.2	2.0	2.3	2.6	2.0
AC-FT	235	270	668	1,130	1,430	1,640	1,660	412	169	183	174	179

CAL YR 1967 TOTAL 14,058.7 MEAN 38.5 MAX 368 MIN 1.7 AC-FT 27,890
WTR YR 1968 TOTAL 4,111.2 MEAN 11.2 MAX 71 MIN 2.0 AC-FT 8,150

Peak discharge (base, 70 cfs).--Apr. 3 (1700 hrs) 76 cfs (5.01 ft).

TULARE LAKE BASIN

11-2008. DEER CREEK NEAR FOUNTAIN SPRINGS, CALIF.

LOCATION.--Lat 35°56'30", long 118°49'19", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.10, T.23 S., R.29 E., on left bank 1.0 mile upstream from Pothole Creek, 6.3 miles northeast of Fountain Springs, and 12 miles east of Terra Bella.

DRAINAGE AREA.--67.0 sq mi.

RECORDS AVAILABLE.--August and September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 980 ft (from topographic map).

EXTREMES.--Maximum discharge during period August to September, 1.0 cfs Aug. 25 (gage height, 2.29 ft); noflow Aug. 14-22.

Flood of Dec. 6, 1966, reached a stage of 12.54 ft (discharge, 5,330 cfs) from slope-area measurement.

REMARKS.--Records good. No storage or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1											-	.18
2											-	.40
3											-	.60
4											-	.94
5											-	.94
6											-	.90
7											-	.90
8											-	.90
9											-	.90
10											-	.90
11											-	.80
12											-	.80
13											-	.80
14											0	.80
15											0	.80
16											0	.70
17											0	.70
18											0	.70
19											0	.70
20											0	.70
21											0	.65
22											0	.65
23											.42	.65
24											.86	.64
25											.52	.52
26											.46	.46
27											.40	.22
28											.94	.22
29											.86	.18
30											.70	.40
31		-----			-----		-----		-----		.40	-----
TOTAL											-	19.65
MEAN											-	.66
MAX											-	.94
MIN											-	.18
AC-FT											-	.39
CAL YR 1967	TOTAL -		MEAN -		MAX -		MIN -		AC-FT -			
WTR YR 1968	TOTAL -		MEAN -		MAX -		MIN -		AC-FT -			

11-2020. NORTH FORK OF MIDDLE FORK TULE RIVER NEAR SPRINGVILLE, CALIF.

LOCATION.--Lat 36°10'29", long 118°41'41", in T.20 S., R.30 E. (unsurveyed), on right bank 1.2 miles upstream from mouth, 2.2 miles downstream from Hossack Creek, and 7.4 miles northeast of Springville.

DRAINAGE AREA.--39.3 sq mi.

RECORDS AVAILABLE.--October 1939 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. January 1909 to December 1912 at site 2 miles upstream, records not equivalent. Prior to October 1954, records for river and conduit published separately; combined only, October 1954 to September 1962.

GAGE.--Digital water-stage recorder and, since Aug. 6, 1958, concrete control on river; digital water-stage recorder and rectangular concrete channel for conduit diversion. Altitude of gage is 2,920 ft (from topographic map). Prior to Nov. 23, 1965, graphic water-stage recorder at river and conduit at same sites and datums.

AVERAGE DISCHARGE (river only).--29 years, 25.2 cfs (18,240 acre-ft per year).
(total flow).--29 years, 56.2 cfs (40,690 acre-ft per year).

EXTREMES (river only).--Maximum discharge during year, 156 cfs Feb. 17 (gage height, 3.78 ft); minimum daily, 0.27 cfs Aug. 6.

1939-68: Maximum discharge, 16,900 cfs Dec. 6, 1966 (gage height, 13.83 ft from floodmarks), from rating curve extended above 270 cfs on basis of critical-depth determinations at gage heights 9.67 and 12.47 ft; no flow Sept. 10, 11, 1955.

(combined).--Maximum discharge during year, 221 cfs Feb. 17; minimum daily, 13 cfs Sept. 7.

1939-68: Maximum discharge, 16,900 cfs Dec. 6, 1966; minimum daily, 7.2 cfs Aug. 18, Oct. 17, 1961.

REMARKS.--Records good. Pacific Gas and Electric Co. conduit diverts 2.5 miles upstream from station; water is returned to North Fork of Middle Fork Tule River 1.1 miles downstream from station. For records of combined discharge of river and conduit, see following page.

COOPERATION.--Gage-height record and 10 discharge measurements for the river furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project, and the conduit record furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	7.6	12	7.6	8.2	7.1	12	16	6.3	1.4	.45	.75
2	8.2	7.3	11	7.6	8.2	6.8	13	17	6.3	1.3	.57	.98
3	8.2	7.3	11	7.3	8.2	6.6	12	14	6.3	1.3	.30	.86
4	8.2	7.3	10	7.6	7.9	6.6	11	14	6.3	1.2	.45	.61
5	8.2	7.3	14	7.6	7.9	6.6	11	18	6.3	1.1	.45	.61
6	8.2	7.3	11	7.1	7.6	6.6	10	12	6.6	1.0	.27	.57
7	8.2	7.3	9.3	7.1	7.3	9.3	9.7	9.7	6.6	1.2	.38	.45
8	7.9	7.3	9.7	7.1	7.1	22	9.0	8.4	6.6	.57	.75	.98
9	8.2	7.3	8.4	6.8	8.2	15	9.0	7.9	6.3	.57	.86	.98
10	8.2	7.6	8.2	33	8.7	12	8.7	7.6	6.1	.45	1.2	.98
11	8.2	7.3	7.9	17	7.6	10	9.3	7.9	6.1	.38	1.1	1.1
12	8.2	7.3	8.4	11	7.3	11	11	8.4	5.7	.30	.86	1.1
13	8.2	7.3	8.2	9.0	7.3	11	9.7	7.9	5.7	.75	1.1	1.1
14	8.7	7.6	7.6	8.4	7.1	10	9.7	8.2	5.7	.86	1.5	.98
15	7.9	7.6	7.9	8.4	6.8	8.7	9.3	7.3	5.7	.98	1.3	1.1
16	7.9	7.6	7.6	8.4	7.3	12	9.3	6.8	5.5	.57	1.1	1.1
17	7.9	7.6	7.6	7.9	61	13	9.3	6.8	5.5	.61	.98	1.1
18	7.9	8.2	8.7	7.6	31	11	8.7	6.6	5.5	.61	.86	1.1
19	7.6	14	8.7	7.3	12	10	8.4	6.8	5.5	.61	.86	1.2
20	7.6	8.7	8.2	7.1	12	9.3	8.2	7.3	5.5	.61	.98	1.2
21	7.6	8.2	8.2	7.1	12	8.4	7.9	8.4	5.5	.57	1.1	.98
22	7.6	7.9	8.7	6.8	10	7.6	7.6	8.4	5.5	.57	.98	.98
23	7.6	7.9	9.7	6.8	9.0	7.6	7.3	7.9	5.2	.38	.86	.98
24	7.6	7.6	11	6.8	8.4	7.6	7.1	7.3	5.2	.57	.86	.98
25	7.6	7.6	11	6.8	8.2	7.6	7.3	7.1	5.2	.75	.86	.86
26	7.6	7.6	11	6.8	7.6	7.6	7.1	7.6	5.2	.75	.86	.98
27	7.6	7.6	9.7	7.6	7.6	7.6	7.3	7.1	4.8	.86	.75	.86
28	7.6	9.0	9.0	7.6	7.3	7.9	9.0	6.6	1.7	.45	.75	1.1
29	7.6	15	8.7	7.1	7.1	8.2	12	6.3	1.5	.45	.86	1.6
30	7.6	26	8.2	7.1	-----	8.4	15	6.3	1.4	.61	.75	1.1
31	7.6	-----	7.9	9.3	-----	8.2	-----	6.3	-----	.57	.75	-----
TOTAL	245.4	261.2	288.5	270.7	315.9	291.3	285.9	277.9	161.3	22.90	25.70	29.27
MEAN	7.92	8.71	9.31	8.73	10.9	9.40	9.53	8.96	5.38	.74	.83	.98
MAX	8.7	26	14	33	61	22	15	18	6.6	1.4	1.5	1.6
MIN	7.6	7.3	7.6	6.8	6.8	6.6	7.1	6.3	1.4	.30	.27	.45
AC-FT	487	518	572	537	627	578	567	551	320	45	51	58

CAL YR 1967 TOTAL 23,418.1 MEAN 64.2 MAX 389 MIN 7.3 AC-FT 46,450
WTR YR 1968 TOTAL 2,475.97 MEAN 6.76 MAX 61 MIN .27 AC-FT 4,910

Note.--No gage-height record at conduit station Nov. 28 to Mar. 28.

TULARE LAKE BASIN

11-2020. NORTH FORK OF MIDDLE FORK TULE RIVER NEAR SPRINGVILLE, CALIF.--Continued

Combined discharge, in cubic feet per second, of North Fork of Middle Fork Tule River and
Pacific Gas and Electric Co. conduit near Springville, Calif., water year October 1967 to September 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	22	33	30	32	53	68	79	51	22	15	15
2	27	21	30	30	32	50	69	80	49	23	16	15
3	27	21	29	27	35	48	63	78	48	23	15	15
4	26	21	28	28	35	47	64	78	47	22	14	15
5	26	21	35	27	36	46	64	83	45	22	14	15
6	26	21	32	26	35	45	59	76	42	22	14	15
7	25	21	30	26	34	47	58	71	34	21	14	13
8	25	21	32	26	34	69	58	67	33	18	15	14
9	25	21	28	24	35	57	60	65	31	18	15	14
10	25	22	28	54	41	50	63	67	31	17	15	14
11	24	21	30	56	35	46	67	68	30	17	15	14
12	24	21	30	38	33	48	71	68	29	18	15	14
13	24	21	27	32	32	47	69	62	29	19	16	14
14	25	23	25	32	32	45	69	62	28	18	16	14
15	24	22	26	36	30	42	67	57	28	18	16	15
16	24	23	25	41	30	47	65	57	26	17	16	15
17	23	23	25	37	105	50	63	58	26	17	16	14
18	23	25	26	34	98	46	60	61	26	17	16	15
19	23	49	29	31	70	44	57	66	24	17	16	15
20	23	32	27	30	67	43	54	68	28	16	16	14
21	23	27	25	34	72	43	51	69	28	16	17	14
22	23	26	26	35	65	44	49	65	28	16	17	14
23	23	25	31	37	60	43	48	59	28	16	16	14
24	23	25	34	39	58	42	49	55	27	17	16	14
25	23	24	34	36	59	45	50	54	24	16	16	14
26	23	24	38	37	57	46	56	56	23	16	16	14
27	23	24	38	35	56	50	62	59	23	16	16	14
28	23	27	37	30	56	56	68	61	23	16	16	14
29	23	33	36	30	56	60	73	60	22	16	15	14
30	23	45	31	30	-----	62	77	57	22	16	15	14
31	22	-----	32	24	-----	63	-----	53	-----	16	15	-----
TOTAL	749	752	937	1,032	1,420	1,524	1,851	2,019	933	559	480	429
MEAN	24.2	25.1	30.2	33.3	49.0	49.2	61.7	65.1	31.1	18.0	15.5	14.3
MAX	28	49	38	56	105	69	77	83	51	23	17	15
MIN	22	21	25	24	30	42	48	53	22	16	14	13
AC-FT	1,490	1,490	1,860	2,050	2,820	3,020	3,670	4,000	1,850	1,110	952	851
CAL YR 1967	TOTAL 33,287		MEAN 91.2		MAX 456		MIN 21		AC-FT 66,020			
WTR YR 1968	TOTAL 12,685		MEAN 34.7		MAX 105		MIN 13		AC-FT 25,160			

11-2032. TULE RIVER NEAR SPRINGVILLE, CALIF.

LOCATION.--Lat 36°06'02", long 118°52'07", in NE¼SW¼ sec.17, T.21 S., R.29 E., on left bank 10 ft downstream from highway bridge, 3.5 miles southwest of Springville, and 4.1 miles upstream from Success Dam. Prior to Mar. 20, 1968, at site 1.9 miles upstream.

DRAINAGE AREA.--247 sq mi.

RECORDS AVAILABLE.--October 1957 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 680 ft (from topographic map). Prior to Mar. 20, 1968, at site 1.9 miles upstream at different datum.

AVERAGE DISCHARGE.--11 years, 118 cfs (85,430 acre-ft per year); median of yearly mean discharges, 73 cfs (52,850 acre-ft per year).

EXTREMES.--Maximum discharge during year, 386 cfs Mar. 8 (gage height, 4.02 ft); minimum daily, 4.6 cfs Sept. 20. 1957-68: Maximum discharge, 49,600 cfs Dec. 6, 1966 (gage height, 17.18 ft, in gage well, 19.7 ft, from floodmarks), from rating curve extended above 7,400 cfs on basis of slope-area measurement of maximum flow: no flow for many days in 1961.

Flood in December 1955 reached a stage of 13.7 ft from floodmarks (discharge, 21,000 cfs).

REMARKS.--Records fair prior to Mar. 20, good thereafter. Many small diversions above station for irrigation Power is developed on Middle Fork and tributaries. Diversion to Tule River diversion ditch starts 400 ft upstream most of which is returned to the river one half mile downstream. Records since Mar. 20, 1968, include flow diverted to Tule River diversion ditch.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	34	101	82	90	128	180	123	82	14	6.4	6.3
2	47	33	73	76	87	123	220	125	77	14	6.3	5.7
3	46	32	68	72	88	119	181	123	72	15	6.3	6.3
4	44	29	66	68	90	118	168	125	72	15	6.5	5.8
5	43	29	88	65	90	116	173	132	69	14	6.5	4.9
6	41	32	97	64	90	114	161	128	62	8.0	6.1	5.6
7	40	31	79	63	90	116	153	121	62	11	5.9	5.5
8	39	31	87	63	87	322	151	115	70	13	5.8	5.3
9	37	30	78	63	88	248	148	107	66	14	5.8	5.3
10	36	32	74	89	109	206	149	104	61	13	5.6	5.1
11	35	32	73	154	94	170	149	110	53	11	5.1	5.4
12	34	31	74	106	87	154	151	116	49	10	5.1	5.4
13	32	30	76	97	85	150	147	120	44	9.9	6.3	5.4
14	32	32	67	94	85	148	147	121	42	11	6.1	5.5
15	31	33	69	95	82	140	145	120	44	11	7.4	5.5
16	31	32	74	106	80	140	135	104	42	11	6.9	5.6
17	30	33	81	101	163	163	128	98	37	10	5.5	5.5
18	31	36	88	92	248	148	126	91	31	10	5.6	5.2
19	30	112	95	88	181	138	123	95	28	10	6.3	4.9
20	31	93	90	85	170	135	116	101	27	8.6	7.4	4.6
21	32	70	82	85	179	131	110	111	26	7.0	8.9	5.3
22	33	64	83	85	167	133	105	107	25	8.0	9.6	7.0
23	33	61	88	84	159	133	101	104	26	8.0	9.1	7.0
24	34	60	92	83	154	133	102	95	25	7.5	8.4	6.1
25	34	59	94	82	150	134	104	90	21	8.5	7.0	7.4
26	34	59	95	79	144	134	107	81	20	6.7	6.3	6.5
27	34	59	94	84	140	141	111	81	20	8.1	6.4	6.0
28	34	67	92	91	138	144	117	85	19	8.4	6.8	6.1
29	34	68	90	83	136	154	123	88	16	8.5	7.0	5.4
30	34	144	87	80	-----	160	128	88	16	7.4	5.8	5.1
31	34	-----	87	97	-----	161	-----	81	-----	8.1	5.7	-----
TOTAL	1,109	1,488	2,582	2,656	3,551	4,654	4,159	3,290	1,304	319.7	203.9	170.7
MEAN	35.8	49.6	83.3	85.7	122	150	139	106	43.5	10.3	6.58	5.69
MAX	49	144	101	154	248	322	220	132	82	15	9.6	7.4
MIN	30	29	66	63	80	114	101	81	16	6.7	5.1	4.6
AC-FT	2,200	2,950	5,120	5,270	7,040	9,230	8,250	6,530	2,590	634	404	339

CAL YR 1967 TOTAL 90,619

MEAN 248

MAX 1,190

MIN 29

AC-FT 179,700

WTR YR 1968 TOTAL 25,487.3

MEAN 69.6

MAX 322

MIN 4.6

AC-FT 50,550

Peak discharge (base, 350 cfs).--Mar. 8 (1900 hrs) 386 cfs (4.02 ft).

TULARE LAKE BASIN

11-2045. SOUTH FORK TULE RIVER NEAR SUCCESS, CALIF.

LOCATION.--Lat 36°02'30", long 118°51'25", in NW¼SW¼ sec.4, T.22 S., R.29 E., on left bank 0.5 mile upstream from Crew Creek, 4 miles southeast of Success, and 5 miles upstream from mouth.

DRAINAGE AREA.--109 sq mi.

RECORDS AVAILABLE.--June 1930 to December 1954, January 1956 to September 1968. Monthly and yearly discharge only for some periods published in WSP 1735.

GAGE.--Graphic water-stage recorder. Altitude of gage is 770 ft (from topographic map). Prior to June 26, 1951, at site 0.4 mile downstream at different datum.

AVERAGE DISCHARGE.--36 years, 38.8 cfs (28,090 acre-ft per year); median of yearly mean discharges, 27 cfs (19,500 acre-ft per year).

EXTREMES.--Maximum discharge during year, 189 cfs Mar. 8 (gage height, 3.57 ft); minimum daily, 0.03 cfs Sept. 19.

1930-54, 1956-68: Maximum discharge, 14,300 cfs Dec. 6, 1966 (gage height, 12.50 ft, in gage well, 13.3 ft outside, from floodmarks), from rating curve extended above 3,100 cfs on basis of slope-area measurements at gage heights 11.36 and 12.50 ft; no flow at times in most years.

REMARKS.--Records good. Diversions for irrigation of 1,600 acres above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	7.0	24	22	29	30	54	26	12	2.2	.58	.18
2	12	7.0	20	22	26	28	80	26	12	2.4	.58	.08
3	12	7.0	20	21	26	26	63	25	12	7.0	.50	.05
4	12	7.0	18	20	25	25	59	25	11	2.9	.58	.07
5	11	7.0	24	20	26	25	64	25	11	2.2	.50	.07
6	13	7.0	24	20	26	25	56	25	12	2.0	.50	.07
7	12	7.0	20	20	26	29	54	25	12	2.0	.18	.05
8	12	6.0	26	19	25	149	52	24	13	2.1	.10	.07
9	11	6.0	21	20	26	91	50	24	12	2.9	.18	.08
10	11	6.0	20	30	37	77	48	23	11	2.4	.26	.26
11	11	6.0	19	64	29	54	44	23	10	2.2	.34	.26
12	9.5	6.0	19	29	26	50	42	24	10	2.1	.58	.26
13	9.0	6.5	16	25	26	49	41	26	9.5	2.1	.74	.26
14	9.0	6.5	13	24	26	52	41	27	9.5	1.8	.58	.34
15	9.0	6.0	18	24	25	42	40	27	9.0	1.8	.74	.42
16	8.5	6.5	18	27	24	42	38	24	9.0	1.8	.74	.42
17	8.0	8.5	18	24	72	54	37	22	8.5	1.6	.74	.34
18	8.0	8.0	21	22	78	44	35	20	8.5	1.8	.74	.07
19	8.0	40	27	21	49	42	34	19	8.0	1.8	.74	.03
20	7.5	31	23	20	48	42	33	19	7.5	2.0	.74	.05
21	7.5	22	22	20	50	42	32	19	7.5	2.1	.82	.10
22	8.0	18	22	20	48	41	30	20	5.0	2.1	.90	.18
23	8.5	17	23	20	43	41	29	19	5.0	2.7	.82	.18
24	8.5	16	24	20	42	40	29	18	5.0	1.6	.82	.18
25	8.5	16	26	20	40	42	29	18	4.7	.74	.66	.74
26	8.5	16	27	19	37	42	28	17	4.5	.66	.82	.74
27	8.5	15	27	22	36	43	28	16	3.7	.66	.90	.26
28	8.5	17	27	24	34	46	28	16	2.7	.74	.90	.18
29	9.0	18	27	24	33	47	27	16	2.4	.74	.66	.18
30	9.5	36	24	24	-----	47	27	15	2.2	.82	.42	.18
31	8.5	-----	24	29	-----	47	-----	14	-----	.58	.08	-----
TOTAL	299.0	383.0	682	736	1,038	1,454	1,252	667	250.2	60.54	18.44	6.35
MEAN	9.65	12.8	22.0	23.7	35.8	46.9	41.7	21.5	8.34	1.95	.59	.21
MAX	13	40	27	64	78	149	80	27	13	7.0	.90	.74
MIN	7.5	6.0	13	19	24	25	27	14	2.2	.58	.08	.03
AC-FT	593	760	1,350	1,460	2,060	2,880	2,480	1,320	496	120	37	13

CAL YR 1967 TOTAL 28,377.5 MEAN 77.7 MAX 454 MIN 6.0 AC-FT 56,290
WTR YR 1968 TOTAL 6,846.53 MEAN 18.7 MAX 149 MIN .03 AC-FT 13,580

Peak discharge (base, 200 cfs).--No peak above base.

11-2046.8. PIONEER DITCH BELOW SUCCESS DAM, CALIF.

LOCATION.--Lat 36°03'34", long 118°55'22", in NW¼ sec.35, T.21 S., R.28 E., on left bank 0.1 mile downstream from Success Dam, and 5.5 miles east of Porterville.

RECORDS AVAILABLE.--April 1959 to September 1968. Prior to October 1960, monthly diversions only, published with Tule River near Porterville.

GAGE.--Digital water-stage recorder and Parshall flume. Datum of gage is 549.00 ft above mean sea level (levels by Corps of Engineers). Prior to Feb. 1, 1961, graphic water-stage recorder at site 0.5 mile downstream at different datum. Feb. 1, 1961, to Oct. 2, 1964, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--9 years, 7.53 cfs (5,450 acre-ft per year).

EXTREMES.--1960-68: Maximum daily discharge, 29 cfs Apr. 15, 1961; no flow at times in most years.

REMARKS.--Records excellent. Ditch receives water from Lake Success (see sta. no. 11-2047.).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	10				0	2.8	9.9	9.3	21	18	13
2	9.8	10				0	1.8	11	9.7	19	17	13
3	9.8	11				0	1.8	11	9.7	19	14	13
4	9.8	11				0	1.8	11	9.7	19	13	13
5	9.8	11				0	1.8	11	9.7	19	13	13
6	9.8	11				0	1.8	11	9.7	19	13	13
7	9.8	11				0	1.8	11	9.7	19	13	12
8	9.8	10				0	1.8	11	9.7	17	12	12
9	9.8	8.0				0	4.1	8.2	9.7	16	12	11
10	9.8	8.0				0	6.6	7.7	9.8	16	12	11
11	9.8	8.0				0	7.5	7.7	11	17	12	11
12	9.1	8.0				0	7.6	7.7	12	17	12	11
13	9.1	7.7				0	7.7	6.2	12	17	12	11
14	9.1	7.9				0	7.7	5.6	10	17	15	11
15	9.1	7.9				0	7.7	5.6	9.1	17	16	11
16	9.1	7.3				0	7.7	5.7	11	17	16	11
17	9.1	4.8				0	7.3	5.4	9.9	17	16	11
18	11	3.6				4.5	7.1	5.4	11	17	16	11
19	12	1.2				6.8	7.1	6.4	12	15	16	11
20	12	0				5.7	7.1	7.7	11	16	15	11
21	12	0				3.4	9.9	7.7	15	17	15	11
22	12	0				3.8	11	7.7	14	16	13	11
23	12	0				3.8	11	7.7	13	16	12	12
24	12	0				3.8	8.4	7.3	17	17	12	12
25	12	0				3.8	7.1	7.3	18	17	12	12
26	12	0				3.8	7.1	7.3	17	17	12	12
27	12	0				4.1	7.1	7.3	16	17	12	12
28	11	0				4.3	7.1	7.3	17	17	13	12
29	11	0				4.3	7.7	8.3	19	17	13	12
30	10	0			-----	4.3	7.7	8.4	20	17	13	12
31	10	-----			-----	4.3	-----	8.4	-----	17	13	-----
TOTAL	323.6	157.4	0	0	0	60.7	184.7	250.9	371.7	536	424	352
MEAN	10.4	5.25	0	0	0	1.96	6.16	8.09	12.4	17.3	13.7	11.7
MAX	12	11	0	0	0	6.8	11	11	20	21	18	13
MIN	9.1	0	0	0	0	0	1.8	5.4	9.1	15	12	11
AC-FT	642	312	0	0	0	120	366	498	737	1,060	841	698

CAL YR 1967 TOTAL 2,119.10

WTR YR 1968 TOTAL 2,661.00

MEAN 5.80

MEAN 7.27

MAX 14

MAX 21

MIN 0

MIN 0

AC-FT 4,200

AC-FT 5,280

TULARE LAKE BASIN

11-2047. LAKE SUCCESS NEAR SUCCESS, CALIF.

LOCATION.--Lat 36°03'40", long 118°55'18", in SE¼NW¼ sec.35, T.21 S., R.28 E., in control tower near right abutment of Success Dam on Tule River, 5 miles east of Porterville.

DRAINAGE AREA.--391 sq mi.

RECORDS AVAILABLE.--November 1961 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level, datum of 1929 (levels by Corps of Engineers).

EXTREMES.--Maximum contents during year, 43,900 acre-ft June 5-9 (elevation, 629.95 ft); minimum, 8,880 acre-ft Sept. 30 (elevation, 590.85 ft).

1961-68: Maximum contents, 101,300 acre-ft Dec. 7, 1966 (elevation, 658.63 ft); minimum since reservoir first filled, 8,880 acre-ft Sept. 30, 1968 (elevation, 590.85 ft).

REMARKS.--Lake is formed by earthfill dam and dike. Storage began November 1961. Usable capacity, 85,400 acre-ft between elevations 559.0 ft (invert of outlet structure) and 652.5 ft (spillway crest). Surcharge flood control storage, 117,400 acre-ft between ungated spillway crest and elevation 686.8 ft (maximum spillway design flood pool). Dead storage 720 acre-ft. Records, including extremes, represent usable contents at 2400 hours.

COOPERATION.--Records furnished by Corps of Engineers.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

580	4,010	620	32,000
585	5,900	640	59,500
590	8,380	660	105,100
600	14,900	690	217,200

CONTENTS, IN ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22,900	10,100	13,800	11,800	13,300	20,800	31,000	39,700	43,800	35,300	20,000	10,800
2	22,500	10,100	13,900	11,600	13,400	21,000	31,600	39,900	43,800	35,100	19,900	10,700
3	22,100	10,200	13,900	11,600	13,600	21,100	32,100	40,100	43,800	35,000	19,800	10,700
4	21,600	10,200	13,800	11,500	13,700	21,200	32,500	40,200	43,800	35,000	19,800	10,600
5	21,200	10,200	13,800	11,400	13,800	21,300	33,000	40,400	43,900	34,800	19,400	10,600
6	20,900	10,300	13,800	11,300	14,100	21,400	33,400	40,600	43,900	34,700	18,800	10,500
7	20,500	10,300	13,700	11,300	14,300	21,500	33,800	40,800	43,900	34,600	18,100	10,400
8	20,000	10,400	13,600	11,200	14,600	22,300	34,200	41,000	43,900	34,100	17,300	10,400
9	19,600	10,500	13,400	11,300	14,800	22,900	34,500	41,100	43,900	33,300	16,600	10,300
10	19,200	10,500	13,300	11,400	15,100	23,400	34,900	41,300	43,800	32,600	15,800	10,200
11	18,700	10,600	13,100	11,900	15,400	23,800	35,200	41,400	43,600	31,800	15,000	10,100
12	18,200	10,600	12,900	12,100	15,600	24,100	35,600	41,600	43,400	31,000	14,200	10,000
13	17,800	10,700	12,800	12,100	15,800	24,500	35,800	41,800	43,200	30,200	13,500	9,940
14	17,300	10,800	12,700	12,200	16,000	24,900	36,100	42,000	43,000	29,300	13,400	9,870
15	16,800	10,800	12,600	12,200	16,200	25,200	36,400	42,200	42,700	28,600	13,400	9,810
16	16,400	10,900	12,600	12,200	16,400	25,500	36,700	42,300	42,500	28,500	13,300	9,740
17	15,900	11,000	12,500	12,300	16,900	25,900	36,900	42,400	42,300	28,400	13,200	9,680
18	15,400	11,100	12,500	12,300	17,800	26,200	37,200	42,500	42,100	28,300	13,200	9,620
19	14,900	11,500	12,600	12,300	18,300	26,500	37,400	42,600	42,000	28,200	13,100	9,550
20	14,500	11,800	12,600	12,300	18,800	26,800	37,600	42,700	41,900	28,100	12,900	9,480
21	14,000	12,000	12,500	12,300	19,300	27,100	37,900	42,800	41,800	28,000	12,600	9,420
22	13,600	12,200	12,400	12,300	19,500	27,400	38,000	42,900	41,700	27,500	12,300	9,360
23	13,100	12,400	12,300	12,200	19,700	27,700	38,200	43,000	41,400	26,800	12,000	9,300
24	12,700	12,600	12,200	12,300	19,900	28,000	38,400	43,100	41,000	26,100	11,800	9,240
25	12,300	12,700	12,100	12,400	20,000	28,400	38,500	43,100	40,300	25,200	11,600	9,180
26	11,800	12,900	12,100	12,500	20,100	28,700	38,700	43,200	39,500	24,300	11,300	9,130
27	11,400	13,000	12,000	12,600	20,300	29,000	38,900	43,400	38,600	23,300	11,100	9,060
28	11,000	13,200	12,000	12,800	20,500	29,400	39,100	43,400	37,700	22,400	11,000	9,010
29	10,600	13,400	12,000	12,900	20,700	29,700	39,300	43,600	36,800	21,600	10,900	8,940
30	10,200	13,700	11,900	13,000	-----	30,200	39,500	43,600	36,000	20,800	10,900	8,880
31	10,100	-----	11,800	13,200	-----	30,500	-----	43,700	-----	20,100	10,800	-----
(a)	592.77	598.20	595.50	597.48	607.65	618.56	626.52	629.81	623.67	606.88	593.98	590.85
(b)	-13,200	+3,600	-1,900	+1,400	+7,500	+9,800	+9,000	+4,200	-7,700	-15,900	-9,300	-1,920
(c)	383	149	74	65	95	230	505	750	995	891	567	431
MAX	22,900	13,700	13,900	13,200	20,700	30,500	39,500	43,700	43,900	35,300	20,000	10,800
MIN	10,100	10,100	11,800	11,200	13,300	20,800	31,000	39,700	36,000	20,100	10,800	8,880
CAL YR 1967	b -42,800		MAX 89,400		MIN 10,100							
WTR YR 1968	b -14,400		MAX 43,900		MIN 8,880							

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet.

11-2049. TULE RIVER BELOW SUCCESS DAM, CALIF.

LOCATION.--Lat 36°03'23", long 118°55'22", in SW¼ sec.35, T.21 S., R.28 E., on right bank 1,000 ft downstream from Success Dam, and 5 miles east of Porterville.

DRAINAGE AREA.--393 sq mi.

RECORDS AVAILABLE.--October 1953 to September 1968. Prior to October 1960, published as "at Worth Bridge, near Porterville."

GAGE.--Digital water-stage recorder and broad-crested weir. Datum of gage is 536.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to October 1960, graphic water-stage recorder at site 0.5 mile downstream at different datum. October 1960 to Oct. 2, 1964, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--15 years, 148 cfs (107,100 acre-ft per year), adjusted for storage, diversion and evaporation.

EXTREMES.--Maximum discharge during year, 456 cfs July 26 (gage height, 5.82 ft); minimum daily, 1.7 cfs Nov. 22-28.

1953-61 (prior to regulation by Lake Success): Maximum discharge, 27,000 cfs Dec. 23, 1955 (gage height, 21.65 ft, site and datum then in use), from rating curve extended above 1,400 cfs on basis of studies of upstream peaks; no flow at times in 1954-57, 1959-61.

1961-68: Maximum discharge, 9,050 cfs Dec. 6, 1966 (includes flow through spillway); no flow for several months in 1961-62, 1965.

Flood of Nov. 19, 1950, reached a stage of 26 ft from floodmarks, previous site and datum (discharge, 32,000 cfs).

REMARKS.--Records good. Flow regulated by Lake Success beginning Nov. 23, 1961 (see sta. no. 11-2047.). Discharge records during periods of high flow include flow over spillway that bypasses the gaging station. Pioneer ditch (see sta. no. 11-2046.8.) diverts above station for irrigation. Records of chemical analyses for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	253	12	81	147	64	84	12	27	33	370	35	14
2	251	11	81	147	64	84	10	27	42	51	22	14
3	251	8.3	81	133	64	85	8.5	27	46	45	17	14
4	251	7.8	112	126	64	85	8.3	27	40	40	17	14
5	251	8.0	131	126	65	85	7.3	27	37	37	190	14
6	249	8.3	131	126	15	92	7.5	27	37	37	265	14
7	245	8.1	160	126	1.9	94	7.6	27	37	37	335	14
8	241	7.9	175	105	8.0	86	7.6	27	37	256	360	14
9	251	7.2	174	64	19	82	7.7	27	38	363	355	18
10	262	7.3	173	64	23	43	5.3	27	103	362	357	28
11	269	7.5	173	64	23	34	7.8	27	137	392	360	33
12	269	7.6	173	91	23	39	16	27	137	400	347	33
13	264	7.9	155	115	23	30	20	18	137	391	320	23
14	264	7.4	134	117	21	26	20	22	135	383	25	15
15	262	6.9	122	117	18	25	18	46	135	371	19	15
16	260	6.9	110	114	17	24	21	54	135	46	16	15
17	260	6.3	111	111	20	24	27	53	130	41	16	15
18	258	4.2	111	111	19	24	20	50	127	40	16	15
19	258	2.2	140	111	18	24	13	47	55	32	17	15
20	245	2.1	158	111	18	24	14	47	52	27	74	15
21	241	1.9	158	111	47	24	14	49	52	27	119	15
22	240	1.7	162	111	100	16	14	48	52	247	112	15
23	237	1.7	160	111	132	2.8	14	46	146	319	101	14
24	237	1.7	159	80	141	2.7	24	40	245	342	95	14
25	237	1.7	159	64	141	2.7	34	38	333	434	95	15
26	235	1.7	153	63	127	2.7	30	38	384	454	94	15
27	231	1.7	147	63	104	2.7	27	31	420	450	85	16
28	228	1.7	147	64	88	2.7	27	22	424	438	42	16
29	227	6.0	147	64	85	2.7	27	18	400	393	14	15
30	224	48	147	64	-----	2.7	27	15	377	365	13	15
31	91	-----	147	64	-----	7.9	-----	21	-----	347	14	-----
TOTAL	7,542	212.7	4,372	3,085	1,552.9	1,163.6	496.6	1,027	4,463	7,537	3,947	502
MEAN	243	7.09	141	99.5	53.5	37.5	16.6	33.1	149	243	127	16.7
MAX	269	48	175	147	141	94	34	54	424	454	360	33
MIN	91	1.7	81	63	1.9	2.7	5.3	15	33	27	13	14
AC-FT	14,960	422	8,670	6,120	3,080	2,310	985	2,040	8,850	14,950	7,830	996
Mean a	44.6	75.5	112	122	186	203	182	123	48.4	15.1	0	2.77
Ac-ft a	2,740	4,490	6,900	7,520	10,700	12,490	10,810	7,570	2,880	931	0	165

CAL YR 1967 TOTAL 139,848.6 MEAN 383 MAX 810 MIN 1.7 AC-FT 277,400 MEAN a 341 AC-FT a 247,100
WTR YR 1968 TOTAL 35,900.8 MEAN 98.1 MAX 454 MIN 1.7 AC-FT 71,210 MEAN a 92.6 AC-FT a 67,200

a Adjusted for change in contents and evaporation from Lake Success and for diversion to Pioneer ditch.

TULARE LAKE BASIN

11-2065. MIDDLE FORK KAWEAH RIVER NEAR POTWISHA CAMP, CALIF.

LOCATION.--Lat 36°30'45", long 118°47'25", in NW¼ sec.25, T.16 S., R.29 E., on right bank 0.7 mile southeast of Potwisha Camp and 0.9 mile upstream from confluence with Marble Fork Kaweah River.

DRAINAGE AREA.--102 sq mi.

RECORDS AVAILABLE.--July 1949 to September 1968. Monthly discharge only for water years 1956, 1957, published in WSP 1735. Prior to October 1954, records for river and conduit published separately; combined only, October 1954 to September 1962.

GAGE.--Graphic water-stage recorder and concrete control on river; graphic water-stage recorder and concrete-lined channel for conduit diversion. Altitude of gage is 2,100 ft (from topographic map). Prior to October 1955, at datum 0.70 ft higher.

AVERAGE DISCHARGE (river only).--19 years, 125 cfs (90,500 acre-ft per year).
(total flow).--19 years, 166 cfs (120,200 acre-ft per year).

EXTREMES (river only).--Maximum discharge during year, 610 cfs May 28 (gage height, 6.15 ft); minimum daily, 6.7 cfs Oct. 10.

1949-68: Maximum discharge, 46,800 cfs Dec. 23, 1955 (gage height, 29.0 ft, from floodmarks, datum then in use), by slope-area measurement of maximum flow; minimum daily, 0.1 cfs Nov. 12-15, 1949.

(combined).--Maximum discharge during year, 661 cfs May 28; minimum daily, 9.8 cfs Sept. 28-30.

1949-68: Maximum discharge, 46,800 cfs Dec. 23, 1955; minimum daily, 8.8 cfs Sept. 23-25, 1949.

REMARKS.--Records good. Middle Fork No. 3 conduit diverts from left bank of Middle Fork Kaweah River 0.5 mile upstream from station in NE¼ sec.26, T.16 S., R.29 E. Flow from this conduit joins with that of Marble Fork Kaweah River No. 3 conduit, and the combined flow passes through Kaweah River No. 3 powerhouse of Southern California Edison Co.; water is returned to Kaweah River 2.7 miles downstream from confluence of Marble and Middle Forks. For records of combined discharge of river and conduit, see following page.

COOPERATION.--Gage-height record and 13 discharge measurements for river and gage-height record and 13 discharge measurements for conduit furnished by Southern California Edison Co.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	7.8	15	24	21	80	153	324	300	35	28	15
2	28	9.2	17	22	20	71	140	312	320	30	26	14
3	19	8.9	18	22	22	67	118	278	320	22	25	14
4	15	8.6	15	20	22	67	120	266	280	18	24	14
5	9.3	8.6	27	20	22	69	120	272	220	17	24	14
6	8.7	8.2	17	20	19	70	109	244	145	18	22	13
7	7.5	7.4	15	19	18	62	103	236	146	17	20	13
8	7.2	7.4	15	18	17	89	107	224	153	21	20	12
9	6.9	7.4	14	18	18	66	124	202	128	20	20	12
10	6.7	7.4	15	29	35	60	163	210	110	21	20	12
11	7.0	7.4	17	26	20	57	193	224	120	22	20	12
12	7.2	7.4	17	22	18	57	196	224	138	20	20	12
13	7.2	7.4	12	22	17	59	174	167	148	20	20	12
14	7.5	8.2	12	22	16	54	175	153	150	20	18	12
15	7.4	10	12	52	14	46	175	132	150	24	18	12
16	7.4	10	14	34	15	51	151	153	151	32	20	12
17	7.3	14	16	26	98	54	138	218	151	31	21	12
18	7.3	19	15	24	75	47	118	284	135	30	20	11
19	7.4	51	16	24	67	43	102	334	128	29	20	11
20	7.4	32	15	24	85	40	95	348	118	28	24	11
21	7.3	31	13	26	96	47	85	334	104	28	25	12
22	7.3	29	14	26	79	47	76	267	94	27	24	12
23	7.3	26	18	26	82	48	80	191	93	26	24	11
24	7.3	25	22	26	86	51	102	168	86	26	21	11
25	7.3	25	27	26	85	59	140	202	78	26	19	11
26	7.4	24	29	26	82	66	204	300	64	25	18	10
27	7.4	22	28	27	78	79	264	350	57	25	18	10
28	7.4	26	26	26	83	106	298	390	57	26	18	9.8
29	7.4	22	26	25	83	134	326	390	52	28	16	9.8
30	7.4	32	26	24	-----	142	332	340	42	31	15	9.8
31	7.4	-----	24	24	-----	151	-----	300	-----	29	14	-----
TOTAL	304.3	509.3	567	770	1,393	2,139	4,681	8,037	4,238	772	642	356.4
MEAN	9.82	17.0	18.3	24.8	48.0	69.0	156	259	141	24.9	20.7	11.9
MAX	42	51	29	52	98	151	332	390	320	35	28	15
MIN	6.7	7.4	12	18	14	40	76	132	42	17	14	9.8
AC-FT	604	1,010	1,120	1,530	2,760	4,240	9,280	15,940	8,410	1,530	1,270	707
CAL YR 1967	TOTAL	105,708.6	MEAN	290	MAX	1,470	MIN	6.7	AC-FT	209,700		
WTR YR 1968	TOTAL	24,409.0	MEAN	66.7	MAX	390	MIN	6.7	AC-FT	48,410		

11-2065. MIDDLE FORK KAWEAH RIVER NEAR POTWISHA CAMP, CALIF.--Continued

Combined discharge, in cubic feet per second, of Middle Fork Kaweah River and Middle Fork Kaweah River
No. 3 conduit near Potwisha Camp, Calif., water year October 1967 to September 1968

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	30	65	68	69	129	203	372	349	86	47	15
2	85	30	69	63	72	120	189	361	369	81	42	14
3	75	29	72	60	76	116	167	326	369	76	35	14
4	70	30	65	56	76	116	169	314	329	71	36	14
5	62	29	84	54	76	119	169	320	269	67	34	14
6	61	30	69	53	72	120	158	292	194	67	31	13
7	58	28	65	51	70	112	152	284	197	65	28	13
8	54	28	64	49	67	140	156	272	204	74	28	12
9	53	28	61	49	69	116	173	250	178	73	27	12
10	51	27	64	74	94	109	209	258	160	67	26	12
11	49	27	69	72	72	110	238	272	171	63	25	12
12	48	26	68	60	67	114	243	272	189	59	24	12
13	47	26	56	59	66	113	220	215	199	58	24	12
14	46	30	48	58	65	109	221	201	201	56	24	12
15	44	30	55	106	61	105	221	181	201	55	23	12
16	42	32	52	87	63	111	197	202	202	57	23	12
17	41	38	52	71	156	113	185	267	202	55	23	12
18	39	50	56	66	126	107	167	334	186	52	23	11
19	38	110	59	65	118	104	152	384	179	50	22	11
20	37	80	61	65	137	101	145	398	169	48	25	11
21	37	73	59	70	146	108	134	384	156	48	26	12
22	37	70	63	70	128	107	126	317	147	47	25	12
23	37	66	73	71	130	106	129	241	146	44	24	11
24	36	64	80	72	132	110	148	218	140	42	22	11
25	34	62	87	73	131	116	186	252	133	40	19	11
26	34	60	90	72	128	119	251	351	123	40	18	10
27	33	56	89	74	126	128	311	401	116	39	18	10
28	32	66	87	69	133	155	345	441	115	44	18	9.8
29	32	60	82	67	132	183	373	439	107	48	16	9.8
30	32	74	76	65	-----	192	379	388	96	55	15	9.8
31	31	-----	71	72	-----	201	-----	348	-----	49	14	-----
TOTAL	1,475	1,389	2,111	2,061	2,858	3,809	6,116	9,555	5,796	1,776	785	356.4
MEAN	47.6	46.3	68.1	66.5	98.6	123	204	308	193	57.3	25.3	11.9
MAX	100	110	90	106	156	201	379	441	369	86	47	15
MIN	31	26	48	49	61	101	126	181	96	39	14	9.8
AC-FT	2,930	2,760	4,190	4,090	5,670	7,560	12,130	18,950	11,500	3,520	1,560	707
CAL YR 1967	TOTAL	118,862		MEAN	376	MAX	1,490	MIN	26	AC-FT	235,800	
WTR YR 1968	TOTAL	38,087.4		MEAN	104	MAX	441	MIN	9.8	AC-FT	75,550	

TULARE LAKE BASIN

11-2080. MARBLE FORK KAWEAH RIVER AT POTWISHA CAMP, CALIF.

LOCATION.--Lat 36°31'10", long 118°48'10", in SE $\frac{1}{4}$ sec.23, T.16 S., R.29 E., on left bank 0.1 mile north of Potwisha Camp and 0.3 mile upstream from confluence with Middle Fork Kaweah River.

DRAINAGE AREA.--51.4 sq mi.

RECORDS AVAILABLE.--March 1950 to September 1968. Monthly discharge only for March 1950, published in WSP 1315-A. Prior to October 1954, records for river and conduit published separately; combined only, October 1954 to September 1962.

GAGE.--Graphic water-stage recorder and concrete control on river; graphic water-stage recorder and concrete control for conduit diversion. Altitude of gage is 2,150 ft (from topographic map).

AVERAGE DISCHARGE (river only).--18 years, 68.5 cfs (49,590 acre-ft per year); median of yearly mean discharges, 55 cfs (39,800 acre-ft per year).
(total flow).--18 years, 94.6 cfs (68,490 acre-ft per year); median of yearly mean discharges, 83 cfs (60,100 acre-ft per year).

EXTREMES (river only).--Maximum discharge during year, 278 cfs May 28 (gage height, 4.65 ft); minimum daily, 0.4 cfs Sept. 28.

1950-68: Maximum discharge, 12,500 cfs Dec. 23, 1955 (gage height, 13.4 ft), from rating curve extended above 1,100 cfs on basis of slope-area measurement of maximum flow; no flow Sept. 5-15, Oct. 24-28, 1953, Oct. 26-31, 1957.

(combined).--Maximum discharge during year, 330 cfs May 28; minimum daily, 1.6 cfs Aug. 25.

1950-68: Maximum discharge, 12,500 cfs Dec. 23, 1955; minimum daily, 1.6 cfs July 30, Sept. 14-16, 1961, Aug. 25, 1968.

REMARKS.--Records good. Marble Fork Kaweah River No. 3 conduit diverts from left bank of Marble Fork 0.3 mile above station; water is returned to Kaweah River 2.7 miles downstream from confluence of Marble and Middle Forks. For records of combined discharge of river and conduit, see following page. Records of water temperatures for the water year 1968 are published in Part 2 of this report.

COOPERATION.--Gage-height record and 14 discharge measurements for river and gage-height record and 14 discharge measurements for conduit furnished by Southern California Edison Co.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	2.9	2.9	4.8	12	24	64	152	115	9.4	6.3	2.2
2	1.3	2.9	2.9	4.6	6.8	15	46	157	120	6.8	6.3	2.2
3	1.1	2.9	2.9	4.6	3.9	12	37	144	114	5.9	6.6	2.3
4	1.1	2.9	2.9	4.6	3.9	12	41	142	98	6.1	6.3	2.0
5	1.4	2.9	3.0	4.6	3.9	15	49	141	74	5.9	6.1	2.0
6	1.9	2.9	2.9	4.3	3.9	12	37	117	42	6.1	5.7	1.9
7	2.0	2.9	2.7	3.7	3.9	7.0	37	118	40	5.7	5.5	1.6
8	2.4	2.9	2.7	3.7	3.7	11	47	110	43	5.7	5.2	1.5
9	2.2	2.9	2.7	3.7	5.5	6.6	52	97	39	5.5	4.8	1.6
10	1.7	3.0	2.7	3.7	7.3	5.9	72	103	31	5.9	4.6	1.5
11	1.9	3.0	2.7	3.7	7.3	6.1	86	113	40	6.1	4.3	1.3
12	1.9	3.0	2.7	4.6	7.6	7.8	87	106	48	5.9	3.9	2.0
13	2.4	2.9	2.9	5.7	8.9	6.1	75	75	48	5.9	3.7	2.4
14	2.7	2.9	3.2	5.9	7.3	5.7	82	65	46	5.9	4.1	2.4
15	2.7	2.7	3.2	7.0	5.2	5.2	76	59	44	5.9	3.9	2.6
16	2.7	2.9	3.2	8.1	4.8	5.7	62	72	44	5.9	3.4	2.6
17	2.7	2.7	3.0	7.5	13	5.5	59	115	41	5.9	2.9	2.7
18	2.7	2.7	3.4	7.5	15	5.9	48	146	31	5.9	2.9	2.7
19	2.7	3.2	3.4	7.5	12	5.7	42	172	25	5.9	2.9	2.7
20	2.7	3.0	3.4	7.5	21	5.7	38	168	22	5.9	3.4	2.7
21	2.7	2.9	3.5	7.5	26	5.0	32	157	12	5.9	3.0	2.9
22	2.7	2.9	3.0	7.5	18	5.0	28	124	5.2	5.9	2.2	2.9
23	2.7	2.9	3.0	7.5	20	5.2	27	81	5.5	5.8	1.9	2.9
24	2.7	2.9	3.0	7.5	22	6.6	36	79	5.0	5.7	1.5	3.0
25	2.7	2.9	3.0	7.8	22	8.9	59	106	3.4	5.9	1.2	2.9
26	2.7	2.9	3.0	7.8	22	17	106	141	5.0	6.1	1.9	2.9
27	2.9	2.7	3.0	11	20	21	141	161	6.3	6.1	2.4	1.2
28	2.9	2.7	3.0	16	28	34	146	165	6.8	6.3	1.9	.40
29	2.9	2.7	3.7	17	27	52	159	147	11	6.6	1.9	.50
30	2.9	2.9	5.0	16	-----	65	159	130	10	6.3	1.7	.90
31	2.9	-----	4.8	15	-----	66	-----	114	-----	6.3	2.2	-----
TOTAL	72.2	86.5	97.4	227.9	361.9	465.6	2,030	3,777	1,175.2	189.1	114.6	63.40
MEAN	2.33	2.88	3.14	7.35	12.5	15.0	67.7	122	39.2	6.10	3.70	2.11
MAX	2.9	3.2	5.0	17	28	66	159	172	120	9.4	6.6	3.0
MIN	1.1	2.7	2.7	3.7	3.7	5.0	27	59	3.4	5.5	1.2	.40
AC-FT	143	172	193	452	718	924	4,030	7,490	2,330	375	227	126

CAL YR 1967 TOTAL 55,162.50

WTR YR 1968 TOTAL 8,660.80

MEAN 151

MEAN 23.7

MAX 940

MAX 172

MIN .70

MIN .40

AC-FT 109,400

AC-FT 17,180

TULARE LAKE BASIN

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11-2080. MARBLE FORK KAWEAH RIVER AT POTWISHA CAMP, CALIF.--Continued

Combined discharge, in cubic feet per second, of Marble Fork Kaweah River and Marble Fork Kaweah River
No. 3 conduit at Potwisha Camp, Calif., water year October 1967 to September 1968

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	8.7	20	24	32	68	111	201	164	21	7.0	2.6
2	27	8.4	24	23	28	59	92	205	169	20	7.0	2.6
3	23	8.4	23	21	27	55	81	191	163	17	7.2	2.8
4	22	8.4	21	20	28	55	86	184	147	17	6.8	2.5
5	19	8.7	25	20	28	58	95	184	122	15	6.6	2.6
6	19	9.0	20	19	27	55	81	164	88	16	6.2	2.5
7	17	8.4	21	19	26	49	82	165	86	17	5.9	2.1
8	16	8.2	21	18	26	55	93	157	88	18	5.6	2.0
9	15	7.9	20	18	27	48	100	144	79	20	5.2	2.1
10	14	8.0	21	23	31	46	122	150	71	18	5.0	2.2
11	13	7.8	24	23	27	46	138	161	86	14	4.7	1.9
12	13	7.5	24	21	27	51	138	154	94	12	4.3	2.4
13	12	7.7	18	20	27	48	125	122	94	11	4.1	2.8
14	11	8.4	16	20	26	45	129	111	92	11	4.5	2.8
15	11	9.1	18	35	24	43	125	105	90	10	4.3	3.0
16	10	8.7	18	28	26	46	110	119	90	9.6	3.8	3.1
17	10	8.8	17	26	60	44	100	163	87	9.1	3.3	3.2
18	9.8	10	19	24	62	41	90	195	77	8.6	3.3	3.1
19	9.5	33	20	24	56	40	85	221	70	7.9	3.3	3.1
20	9.5	28	21	24	66	40	80	217	67	7.6	3.9	3.1
21	9.1	25	20	26	72	41	75	206	56	7.4	3.7	3.6
22	9.5	23	20	28	63	45	70	173	49	6.9	3.0	3.7
23	9.5	23	23	30	65	43	75	128	48	6.6	2.4	3.7
24	9.5	22	24	30	67	46	85	126	47	6.3	1.9	3.7
25	8.8	21	25	30	67	51	110	154	41	6.4	1.6	3.5
26	9.1	20	29	29	66	61	158	191	36	6.6	2.3	3.5
27	9.0	18	29	29	64	65	181	211	35	6.5	2.8	2.7
28	9.0	19	30	28	73	80	195	215	30	6.8	2.3	2.2
29	8.7	17	30	27	72	100	208	197	27	7.3	2.3	2.3
30	9.0	24	27	26	-----	112	209	180	24	7.0	2.1	2.4
31	8.7	-----	25	28	-----	113	-----	163	-----	7.0	2.6	-----
TOTAL	411.7	425.1	693	761	1,290	1,749	3,429	5,257	2,417	354.6	129.0	83.8
MEAN	13.3	14.2	22.4	24.5	44.5	56.4	114	170	80.6	11.4	4.16	2.79
MAX	31	33	30	35	73	113	209	221	169	21	7.2	3.7
MIN	8.7	7.5	16	18	24	40	70	105	24	6.3	1.6	1.9
AC-FT	817	843	1,370	1,510	2,560	3,470	6,800	10,430	4,790	703	256	166
CAL YR 1967	TOTAL 68,051.8		MEAN 186		MAX 942		MIN 7.5		AC-FT 135,000			
WTR YR 1968	TOTAL 17,000.2		MEAN 46.4		MAX 221		MIN 1.6		AC-FT 33,720			

TULARE LAKE BASIN

11-2085. MIDDLE FORK KAWEAH RIVER TRIBUTARY NEAR HAMMOND, CALIF.

LOCATION.--Lat 36°29'35", long 118°49'30", in NW¼SW¼ sec.34, T.16 S., R.29 E., at culvert on State Highway 198, in Sequoia National Park, 2.7 miles northeast of Hammond.

DRAINAGE AREA.--1.90 sq mi.

RECORDS AVAILABLE.--1960-67 (annual maximum only), May 1967 to September 1968.

GAGE.--Graphic water-stage recorder, crest-stage gage, and tipping-bucket rain gage. Altitude of gage is 1,740 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 0.91 cfs Mar. 16, Apr. 1 (gage height, 10.30 ft); no flow for many days. 1960-68: Maximum discharge, 879 cfs Dec. 6, 1966 (gage height, 30.63 ft), from rating curve extended above 7 cfs on basis of computation of flow through culvert at gage heights 11.22, 11.71, 12.00, 12.50, 18.41 ft, and computation of flow through culvert plus road-overflow at gage height 30.63 ft; no flow for many days each year.

REMARKS.--Records good. Minor diversion above station for domestic use.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.02	.24	.36	.24	.49	.61	.06	.03	.01	0	
2	.06	.02	.24	.36	.24	.49	.55	.08	.02	0	0	
3	.08	.02	.30	.36	.30	.43	.49	.08	0	0	0	
4	.08	.02	.30	.36	.30	.43	.49	.08	.03	.01	0	
5	.13	.01	.43	.36	.30	.43	.55	.05	.05	0	0	
6	.13	.03	.43	.36	.36	.43	.55	.06	.05	0	0	
7	.13	.04	.43	.36	.36	.36	.55	.04	.08	0	0	
8	.06	.05	.43	.43	.36	.49	.49	.06	.04	0	0	
9	.03	.03	.43	.36	.43	.36	.49	.08	.04	0	0	
10	.03	.05	.43	.49	.36	.36	.43	.08	.02	0	.02	
11	.05	.03	.43	.36	.30	.36	.36	.03	.01	.01	0	
12	.02	.04	.43	.36	.30	.36	.30	.10	.01	0	0	
13	.01	.02	.43	.36	.36	.43	.36	.03	.01	0	.01	
14	.02	.04	.36	.36	.30	.36	.36	.04	.02	0	0	
15	.01	.04	.36	.36	.30	.36	.36	.08	.01	.01	0	
16	0	.05	.24	.36	.36	.49	.43	.10	.03	0	0	
17	0	.05	.24	.30	.43	.43	.43	.06	0	.01	0	
18	0	.04	.36	.30	.36	.36	.36	.03	0	0	0	
19	0	.10	.36	.30	.36	.36	.30	.05	.01	0	.01	
20	.02	.08	.30	.30	.43	.43	.30	.02	0	0	0	
21	.01	.04	.30	.30	.43	.49	.30	.08	0	0	0	
22	.02	.04	.30	.30	.43	.55	.24	.06	0	0	0	
23	0	.04	.36	.30	.49	.55	.16	.04	.01	0	.01	
24	0	.04	.30	.30	.49	.55	.13	.04	0	0	0	
25	0	.02	.30	.24	.49	.49	.16	.06	0	0	0	
26	0	.02	.24	.24	.49	.49	.20	.05	0	0	0	
27	.02	.02	.30	.36	.49	.49	.16	.04	0	0	0	
28	.02	.10	.30	.30	.49	.49	.13	.03	0	0	0	
29	.01	.12	.36	.30	.43	.49	.08	.03	0	.01	0	
30	.01	.24	.36	.30	-----	.49	.06	.02	0	0	0	
31	.01	-----	.36	.30	-----	.43	-----	.04	-----	0	0	-----
TOTAL	1.02	1.46	10.65	10.40	10.98	13.72	10.38	1.70	0.47	0.06	0.05	0
MEAN	.033	.049	.34	.34	.38	.44	.35	.055	.016	.002	.002	0
MAX	.13	.24	.43	.49	.49	.55	.61	.10	.08	.01	.02	0
MIN	0	.01	.24	.24	.24	.36	.06	.02	0	0	0	0
AC-FT	2.0	2.9	21	21	22	27	21	3.4	.9	.1	.10	0
(a)	0	4.6	2.9	2.9	2.2	3.0	1.5	.2	.1	0	0	0

CAL YR 1967 TOTAL MEAN MAX MIN AC-FT
WTR YR 1968 TOTAL 60.89 MEAN .17 MAX .61 MIN 0 AC-FT 121

Peak discharge (base, 3.0 cfs).-- No peak above base.

TULARE LAKE BASIN

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11-2086.1. MONARCH CREEK NEAR HAMMOND, CALIF.

LOCATION.--Lat 36°27'09", long 118°35'37", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.15, T.17 S., R.31 E., on right bank 0.2 mile upstream from mouth, 0.3 mile northeast of Mineral King, and 14.9 miles east of Hammond.

DRAINAGE AREA.--1.89 sq mi.

RECORDS AVAILABLE.--August and September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 8,200 ft (from topographic map).

EXTREMES.--Maximum discharge during period August and September, 2.4 cfs Aug. 7, 8 (gage height, 1.14 ft); minimum daily, 1.0 cfs Sept. 27-30.

REMARKS.--Records good. Records of chemical analyses and suspended-sediment loads for the period August and September 1968 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, AUGUST AND SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1											-	1.5
2											-	1.5
3											-	1.5
4											-	1.5
5											-	1.5
6											-	1.5
7											2.3	1.4
8											2.3	1.4
9											2.3	1.4
10											2.2	1.4
11											2.2	1.3
12											2.1	1.3
13											2.2	1.3
14											2.2	1.3
15											2.1	1.3
16											2.1	1.2
17											2.1	1.2
18											2.0	1.2
19											2.0	1.2
20											2.0	1.1
21											2.0	1.1
22											2.0	1.1
23											1.9	1.1
24											1.8	1.1
25											1.8	1.1
26											1.8	1.1
27											1.8	1.0
28											1.8	1.0
29											1.7	1.0
30											1.7	1.0
31		-----			-----		-----		-----		1.6	-----
TOTAL											-	37.6
MEAN											-	1.25
MAX											-	1.5
MIN											-	1.0
AC-FT											-	75
CAL YR 1967	TOTAL -		MEAN -		MAX -		MIN -		AC-FT -			
WTR YR 1968	TOTAL -		MEAN -		MAX -		MIN -		AC-FT -			

TULARE LAKE BASIN

11-2086.2. EAST FORK KAWEAH RIVER BELOW MOSQUITO CREEK, NEAR HAMMOND, CALIF.

LOCATION.--Lat 36°27'05", long 118°37'05", in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.16, T.17 S., R.13 E., on right bank 300 ft downstream from Mosquito Creek, and 13.2 miles east of Hammond.

DRAINAGE AREA.--16.0 sq mi.

RECORDS AVAILABLE.--August and September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 7,280 ft (from topographic map).

EXTREMES.--Maximum discharge during period August and September, 12 cfs Aug. 16-19 (gage height, 1.99 ft); minimum daily, 5.0 cfs Sept. 29, 30.

REMARKS.--Records good. Records of chemical analyses, water temperatures, and suspended-sediment loads for the period August and September 1968 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, AUGUST AND SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1											-	8.2
2											-	8.2
3											-	8.2
4											-	7.9
5											-	7.9
6											-	7.9
7											-	7.9
8											-	7.6
9											-	7.6
10											-	7.6
11											-	7.6
12											-	7.6
13											-	7.2
14											-	7.2
15											-	7.2
16											12	7.2
17											12	7.2
18											12	7.2
19											12	7.2
20											11	7.2
21											11	6.9
22											11	6.3
23											10	6.0
24											9.6	5.7
25											9.0	5.4
26											9.0	5.2
27											8.6	5.2
28											8.6	5.2
29											8.2	5.0
30											8.2	5.0
31		-----			-----		-----		-----		8.2	-----
TOTAL											-	207.7
MEAN											-	6.92
MAX											-	8.2
MIN											-	5.0
AC-FT											-	412
CAL YR 1967	TOTAL -		MEAN -		MAX -		MIN -		AC-FT -			
WTR YR 1968	TOTAL -		MEAN -		MAX -		MIN -		AC-FT -			

TULARE LAKE BASIN

593

11-2086.25. EAST FORK KAWEAH RIVER AT SEQUOIA NATIONAL PARK BOUNDARY, NEAR HAMMOND, CALIF.

LOCATION.--Lat 36°27'30", long 118°39'10", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.7, T.17 S., R.31 E., on right bank 0.6 mile southwest of Silver City, and 11.4 miles east of Hammond.

DRAINAGE AREA.--23.7 sq mi.

RECORDS AVAILABLE.--August and September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 6,160 ft (from topographic map).

EXTREMES.--Maximum discharge during period August and September, 16 cfs Aug. 1 (gage height, 2.50 ft); minimum daily, 5.6 cfs Sept. 29, 30.

REMARKS.--Records good. Records of chemical analyses, water temperatures, and suspended-sediment loads for the period August and September 1968 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, AUGUST AND SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1										-	15	9.1
2										-	14	9.1
3										-	14	9.1
4										-	13	8.8
5										-	13	8.8
6										-	12	8.8
7										-	12	8.4
8										-	13	8.4
9										-	15	8.4
10										-	15	8.4
11										-	14	8.4
12										-	14	8.1
13										-	13	8.1
14										-	13	8.1
15										-	13	8.1
16										-	13	8.1
17										-	12	8.1
18										-	12	8.1
19										-	12	8.1
20										-	12	8.4
21										-	12	7.8
22										-	12	7.1
23										-	11	6.8
24										-	10	6.2
25										-	10	6.2
26										-	10	5.9
27										-	10	5.9
28										-	9.8	5.7
29										-	9.5	5.6
30										-	16	9.5
31										-	16	9.5
TOTAL										-	377.3	231.7
MEAN										-	12.2	7.72
MAX										-	15	9.1
MIN										-	9.5	5.6
AC-FT										-	748	460
CAL YR 1967	TOTAL	-	MEAN	-	MAX	-	MIN	-	AC-FT	-		
WTR YR 1968	TOTAL	-	MEAN	-	MAX	-	MIN	-	AC-FT	-		

TULARE LAKE BASIN

11-2087.3. EAST FORK KAWEAH RIVER NEAR THREE RIVERS, CALIF.

LOCATION.--Lat 36°27'05", long 118°47'15", in NW¼ sec.14, T.17 S., R.29 E., on left bank just downstream from diversion dam, and 6.6 miles east of Three Rivers.

DRAINAGE AREA.--85.8 sq mi.

RECORDS AVAILABLE.--May 1952 to September 1955, October 1957 to September 1968. Prior to October 1962, combined only.

GAGE.--Graphic water-stage recorder and Parshall flume on river; graphic water-stage recorder and Parshall flume for conduit diversion. Altitude of gage is 2,500 ft (from topographic map). May 15, 1952, to Sept. 30, 1955, at site 200 ft downstream at different datum.

AVERAGE DISCHARGE (river only).--14 years, 79.3 cfs (57,410 acre-ft per year).
(total flow).--14 years, 106 cfs (76,740 acre-ft per year).

EXTREMES (river only).--Maximum discharge during year, 424 cfs May 29 (gage height, unknown); minimum daily, 0.60 cfs Aug. 24-26, Sept. 14-16.
1952-55, 1957-68: Maximum discharge, 13,000 cfs Dec. 6, 1966 (gage height, 21 ft from flood profile), by slope-area measurement of maximum flow; no flow Jan. 22, Oct. 18-20, 1962.
(combined).--Maximum discharge during year, 450 cfs May 29; minimum daily, 11 cfs Sept. 28-30.
1952-55, 1957-68: Maximum discharge, 13,000 cfs Dec. 6, 1966; minimum daily, 3.5 cfs Sept. 28, 29, 1960.

REMARKS.--East Fork Kaweah River No. 1 conduit diverts up to 30 cfs from left bank of river near diversion dam. Flow from this conduit passes through Hammond powerhouse of Southern California Edison Co.; water is returned to Middle Fork Kaweah River in sec.8, T.17 S., R.29 E., 1.9 miles downstream from mouth of East Fork. For records of combined discharge of river and conduit, see following page. Records of chemical analyses, water temperatures, and suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Records furnished by Southern California Edison Co. and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	25	14	9.4	20	67	108	244	265	32	4.9	.80
2	30	23	14	7.7	22	67	97	146	265	28	3.8	.70
3	25	23	12	6.8	20	65	87	136	281	24	2.9	.80
4	20	23	9.7	6.6	17	60	87	230	281	19	1.9	.80
5	16	23	26	6.8	16	62	95	249	225	15	1.8	.80
6	11	23	14	6.9	18	62	87	235	168	19	1.8	.80
7	10	11	12	6.9	14	60	83	225	164	16	1.8	.80
8	8.9	1.7	11	6.9	14	81	85	225	161	31	1.8	.80
9	8.0	1.7	8.9	7.7	15	64	95	197	138	25	1.9	.80
10	7.6	1.6	9.0	54	35	58	108	206	118	22	1.4	.70
11	7.2	1.6	10	24	17	58	125	225	117	35	1.1	.70
12	6.9	1.1	9.1	13	17	61	143	220	131	12	1.1	.70
13	6.8	.80	15	12	18	61	136	193	132	11	1.2	.70
14	6.6	2.9	33	10	17	58	125	168	134	9.9	1.0	.60
15	6.4	2.6	36	47	14	51	119	157	132	9.4	1.2	.60
16	6.0	2.8	35	31	17	58	125	160	130	8.6	1.1	.60
17	5.7	4.7	35	20	96	60	97	211	124	7.6	.80	.60
18	5.4	19	39	14	83	54	75	230	110	7.1	.80	.70
19	5.0	64	44	13	62	52	80	239	98	6.5	.80	.90
20	4.8	19	40	13	78	47	85	230	91	6.2	.80	.80
21	4.6	9.7	44	15	78	49	75	276	82	5.9	.70	.80
22	4.4	7.8	42	16	65	50	64	281	73	5.3	.70	.80
23	4.2	7.2	45	17	64	47	73	211	72	4.7	.70	.80
24	4.0	6.7	45	16	64	50	83	197	68	4.2	.60	.80
25	18	6.4	45	16	58	52	92	201	61	3.9	.60	.80
26	26	6.0	33	14	58	56	132	260	62	3.7	.60	.80
27	26	5.5	14	17	62	60	181	260	55	4.3	.80	.80
28	26	8.0	12	32	67	69	201	291	50	5.7	1.0	.70
29	25	6.8	11	53	67	85	244	302	44	9.2	.90	.70
30	25	46	11	52	-----	100	244	276	38	20	.80	.70
31	25	-----	10	34	-----	103	-----	265	-----	6.1	.80	-----
TOTAL	420.5	384.60	738.7	598.7	1,193	1,927	3,431	6,946	3,870	417.3	42.10	22.40
MEAN	13.6	12.8	23.8	19.3	41.1	62.2	114	224	129	13.5	1.36	.75
MAX	35	64	45	54	96	103	244	302	281	35	4.9	.90
MIN	4.0	.80	8.9	6.6	14	47	64	136	38	3.7	.60	.60
AC-FT	834	763	1,470	1,190	2,370	3,820	6,810	13,780	7,680	828	84	44
CAL YR 1967	TOTAL 82,600.80		MEAN 226		MAX 1,240		MIN .80		AC-FT 163,800			
WTR YR 1968	TOTAL 19,991.30		MEAN 54.6		MAX 302		MIN .60		AC-FT 39,650			

11-2087.3. EAST FORK KAWEAH RIVER NEAR THREE RIVERS, CALIF.--Continued

Combined discharge, in cubic feet per second, of East Fork Kaweah River and East Fork Kaweah River No. 1 conduit near Three Rivers, Calif., water year October 1967 to September 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	25	39	34	44	85	126	269	291	58	27	17
2	56	23	39	33	48	85	115	171	291	54	26	16
3	51	24	37	32	46	83	105	161	307	50	24	16
4	46	24	35	32	43	77	105	255	307	45	23	16
5	42	24	51	31	42	77	113	274	251	41	22	15
6	37	24	39	30	41	77	105	260	194	45	21	15
7	36	25	37	30	39	75	101	250	190	42	21	15
8	35	26	36	30	39	96	102	250	187	57	22	14
9	34	26	34	32	40	79	110	222	164	51	24	14
10	34	26	34	79	61	73	123	231	144	48	23	15
11	32	26	35	49	42	73	140	250	143	50	23	14
12	32	25	34	38	41	76	158	245	157	34	22	14
13	32	25	31	37	40	76	151	219	158	32	21	14
14	32	28	33	35	39	74	140	194	160	31	22	14
15	31	29	36	73	36	68	136	183	158	30	22	14
16	31	28	35	57	38	76	144	186	156	30	21	15
17	31	31	35	45	116	78	117	237	150	29	22	14
18	30	43	39	39	103	72	96	256	136	28	21	14
19	30	89	44	38	82	70	102	265	124	26	21	14
20	30	44	40	38	99	65	107	257	117	27	21	14
21	30	35	44	40	98	67	97	303	108	27	22	15
22	29	33	42	41	85	68	86	307	99	26	21	14
23	29	32	45	42	84	65	95	237	98	26	21	14
24	29	32	45	41	84	68	105	223	94	25	19	13
25	27	31	45	41	79	71	114	227	87	25	18	12
26	26	31	41	39	78	76	155	286	85	25	16	12
27	26	30	37	42	80	80	205	286	80	25	18	12
28	26	33	37	42	85	88	225	317	76	27	17	11
29	26	32	36	53	85	103	269	328	70	28	17	11
30	26	72	36	52	-----	118	269	302	64	40	16	11
31	26	-----	35	48	-----	121	-----	291	-----	28	16	-----
TOTAL	1,043	976	1,186	1,293	1,837	2,460	4,016	7,742	4,646	1,110	650	419
MEAN	33.6	32.5	38.3	41.7	63.3	79.4	134	250	155	35.8	21.0	14.0
MAX	61	89	51	79	116	121	269	328	307	58	27	17
MIN	26	23	31	30	36	65	86	161	64	25	16	11
AC-FT	2,070	1,940	2,350	2,560	3,640	4,880	7,970	15,360	9,220	2,200	1,290	831
CAL YR 1967	TOTAL 91,010		MEAN 249		MAX 1,270		MIN 23		AC-FT 180,500			
WTR YR 1968	TOTAL 27,378		MEAN 74.8		MAX 328		MIN 11		AC-FT 54,300			

TULARE LAKE BASIN

11-2099. KAWEAH RIVER AT THREE RIVERS, CALIF.

LOCATION.--Lat 36°26'38", long 118°54'09", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.13, T.17 S., R.28 E., on right bank opposite school-house in Three Rivers, 0.25 mile downstream from North Fork Kaweah River.

DRAINAGE AREA.--418 sq mi.

RECORDS AVAILABLE.--October 1958 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 809.62 ft above mean sea level, datum of 1929.

AVERAGE DISCHARGE.--10 years, 435 cfs (314,900 acre-ft per year); median of yearly mean discharges, 300 cfs (217,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,520 cfs May 29 (gage height, 6.05 ft); minimum daily, 27 cfs Sept. 27-30.

1958-68: Maximum discharge, 73,000 cfs Dec. 5, 1966 (gage height, 16.69 ft, in gage well, 19.0 ft, from floodmarks), from rating curve extended above 13,000 cfs on basis of slope-area measurements at gage heights 13.68 and 16.69 ft; minimum, 14 cfs Sept. 9, 10, 1959, Oct. 16, 1961.

Flood of Dec. 23, 1955, reached a stage of 17.9 ft, from floodmarks.

REMARKS.--Records good. Diversions of 200 acres above station. Power is developed on the Middle and East Fork Kaweah River. Records of water temperatures for the water year 1968 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	186	84	199	184	206	388	591	950	862	162	80	35
2	162	84	175	175	202	357	544	958	882	149	74	35
3	153	83	181	166	214	339	464	880	892	142	71	34
4	146	82	170	157	216	335	452	832	815	136	67	34
5	138	82	210	152	214	339	491	901	686	129	63	32
6	136	84	211	150	210	337	452	796	480	126	57	32
7	132	90	179	149	202	314	425	778	435	126	56	31
8	120	84	179	147	197	428	446	750	477	133	56	31
9	120	83	168	147	197	368	474	695	415	141	58	31
10	116	83	165	186	260	324	561	705	368	129	56	31
11	111	82	172	258	218	310	646	750	372	116	53	30
12	110	80	177	190	204	328	680	760	408	114	52	30
13	109	78	160	177	195	318	620	620	428	108	51	30
14	108	81	129	168	199	310	624	575	420	106	53	29
15	105	89	155	229	184	294	615	530	420	102	53	30
16	102	89	150	277	184	304	561	540	415	102	52	31
17	100	92	142	214	418	337	533	685	412	100	52	31
18	97	97	170	190	493	306	470	852	379	96	51	30
19	96	252	193	184	368	294	440	1,010	357	90	49	29
20	96	218	172	181	400	284	418	1,020	337	85	48	29
21	94	163	165	188	477	294	392	1,020	310	83	51	30
22	94	149	172	190	400	306	364	891	288	81	50	31
23	95	139	195	197	395	290	370	660	278	76	48	30
24	94	136	210	197	400	294	395	595	268	73	47	30
25	85	132	226	199	405	308	458	633	250	72	42	28
26	90	128	242	195	386	326	633	866	230	72	39	28
27	91	123	238	208	375	350	790	1,040	218	70	40	27
28	90	132	236	193	402	390	856	1,110	210	73	39	27
29	89	133	222	193	405	458	936	1,100	195	76	38	27
30	90	247	204	188	-----	530	990	1,000	179	96	37	27
31	88	-----	191	222	-----	554	-----	879	-----	86	35	-----
TOTAL	3,443	3,479	5,758	5,851	8,626	10,714	16,691	25,381	12,686	3,250	1,618	910
MEAN	111	116	186	189	297	346	556	819	423	105	52.2	30.3
MAX	186	252	242	277	493	554	990	1,110	892	162	80	35
MIN	85	78	129	147	184	284	364	530	179	70	35	27
AC-FT	6,830	6,900	11,420	11,610	17,110	21,250	33,110	50,340	25,160	6,450	3,210	1,800
CAL YR 1967	TOTAL 367,355		MEAN 1,006		MAX 4,520		MIN 78		AC-FT 728,600			
WTR YR 1968	TOTAL 98,407		MEAN 269		MAX 1,110		MIN 27		AC-FT 195,200			

Peak discharge (base, 1,800 cfs).--No peak above base.

TULARE LAKE BASIN

597

11-2101. SOUTH FORK KAWEAH RIVER AT THREE RIVERS, CALIF.

LOCATION.--Lat 36°25'00", long 118°54'48", in SE $\frac{1}{4}$ sec.26, T.17 S., R.28 E., on right bank 200 ft upstream from unnamed tributary, 0.5 mile upstream from mouth, and 1.8 miles southwest of Three Rivers.

DRAINAGE AREA.--86.7 sq mi.

RECORDS AVAILABLE.--October 1958 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 807.22 ft above mean sea level, datum of 1929.

AVERAGE DISCHARGE.--10 years, 54.4 cfs (39,380 acre-ft per year); median of yearly mean discharges, 45 cfs (32,600 acre-ft per year).

EXTREMES.--Maximum discharge during year, 229 cfs May 5 (gage height, 2.78 ft); minimum daily, 0.26 cfs Oct. 18, 29.

1958-68: Maximum discharge, 11,600 cfs Dec. 6, 1966 (gage height, 9.30 ft, in gage well, 10.4 ft, from floodmarks), from rating curve extended above 2,000 cfs on basis of slope-area measurement of maximum flow; no flow at times in 1960-62.

Flood in December 1955 reached a stage of 9.5 ft from floodmarks (discharge, 10,000 cfs).

REMARKS.--Records good. Several small diversions above station for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	7.2	28	22	26	45	82	160	102	7.8	1.7	1.0
2	13	7.0	22	22	26	39	80	162	97	7.0	1.2	.76
3	12	7.0	22	20	27	37	68	136	95	7.8	1.0	.82
4	11	7.0	19	20	26	37	63	140	87	5.0	1.0	.89
5	10	7.0	26	20	26	38	66	179	87	4.7	1.2	.89
6	11	7.0	28	19	26	38	62	157	69	3.8	1.2	.85
7	10	7.0	23	19	25	37	58	140	66	3.8	1.2	.74
8	9.6	7.0	23	19	24	70	61	136	68	4.7	1.2	.48
9	9.1	7.0	20	18	22	72	66	130	62	7.0	1.2	.48
10	9.1	7.4	20	20	32	61	82	143	55	6.2	1.4	.48
11	9.1	7.8	20	42	27	47	95	157	48	4.7	1.7	.40
12	8.6	8.2	20	30	25	45	105	148	43	3.8	1.9	.40
13	9.1	8.6	19	26	24	43	97	118	40	3.4	1.9	.32
14	8.6	8.2	17	24	24	42	98	102	36	3.4	1.9	.32
15	8.6	9.1	18	26	22	39	89	98	32	3.1	2.1	.32
16	9.1	9.6	18	30	22	39	84	120	28	2.9	2.1	.32
17	8.6	9.6	17	26	48	51	80	136	26	2.9	2.1	.32
18	7.8	11	21	24	100	51	65	152	24	2.7	2.1	.26
19	7.8	52	26	23	63	42	59	176	22	2.3	1.9	.32
20	7.8	31	23	22	59	40	58	176	19	1.7	1.9	.32
21	7.4	23	22	22	70	39	52	174	17	.89	2.3	.40
22	7.4	21	21	22	62	39	46	145	16	1.0	2.3	.76
23	9.1	19	23	22	54	38	51	116	14	.89	2.7	1.5
24	9.1	19	26	22	55	37	61	109	13	.76	2.7	.89
25	9.1	18	28	22	52	38	76	111	12	.66	2.3	.40
26	8.6	17	30	22	48	40	107	130	11	.66	2.3	.32
27	8.6	17	30	23	47	42	132	143	9.6	.89	1.9	.32
28	8.2	19	29	25	47	47	140	145	9.1	1.0	2.1	.32
29	8.2	19	27	24	47	56	152	140	8.2	1.4	2.1	.26
30	8.2	42	25	25	-----	66	164	122	8.2	1.5	1.5	.32
31	7.4	-----	23	30	-----	70	-----	111	-----	1.5	1.0	-----
TOTAL	287.2	439.7	714	731	1,156	1,425	2,499	4,312	1,224.1	99.85	55.1	16.18
MEAN	9.26	14.7	23.0	23.6	39.9	46.0	83.3	139	40.8	3.22	1.78	.54
MAX	16	52	30	42	100	72	164	179	102	7.8	2.7	1.5
MIN	7.4	7.0	17	18	22	37	46	98	8.2	.66	1.0	.26
AC-FT	570	872	1,420	1,450	2,290	2,830	4,960	8,550	2,430	198	109	32
CAL YR 1967	TOTAL 46,087.6		MEAN 126		MAX 612		MIN 7.0		AC-FT 91,410			
WTR YR 1968	TOTAL 12,959.13		MEAN 35.4		MAX 179		MIN .26		AC-FT 25,700			

Peak discharge (base, 500 cfs).--No peak above base.

TULARE LAKE BASIN

11-2108.5. LEMONCOVE DITCH BELOW TERMINUS DAM, CALIF.

LOCATION.--Lat 36°24'55", long 119°00'22", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.25, T.17 S., R.27 E., on left bank 250 ft downstream from outlet tunnel of Terminus Dam, and 2.4 miles northeast of Lemoncove.

RECORDS AVAILABLE.--June 1962 to September 1968.

GAGE.--Digital water-stage recorder and Parshall flume. Datum of gage is 546.3 ft above mean sea level (levels by Corps of Engineers). Prior to Oct. 1, 1964, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--6 years, 5.07 cfs (3,670 acre-ft per year).

EXTREMES.--1962-68: Maximum daily discharge, 8.4 cfs Sept. 16, 1963, Oct. 24-27, 1964, July 27, 1968; no flow June 1-3, 23, 1962.

REMARKS.--Records excellent. Ditch receives water from Lake Kaweah (see sta. no. 11-2109.) which is used for irrigation. At times up to 3 cfs is diverted 200 ft upstream into Doffelmyer ditch for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.1	7.6	.90	1.0	1.1	1.0	4.1	8.1	8.2	8.2	8.2	8.1
2	8.1	7.9	.90	1.0	1.1	1.0	4.1	8.1	8.2	8.2	8.1	8.1
3	8.1	7.9	.90	1.0	1.1	1.0	3.9	8.1	8.2	8.2	8.2	8.1
4	7.2	7.3	.90	1.0	1.1	1.0	3.9	8.1	8.2	8.2	8.2	8.1
5	6.9	7.0	1.0	1.0	1.2	1.0	3.6	8.1	8.2	8.2	8.2	8.1
6	6.9	7.0	1.0	1.0	1.2	1.6	3.8	8.1	8.2	8.2	8.2	8.1
7	6.9	7.0	1.0	1.0	1.2	2.2	3.8	8.1	8.2	8.2	8.2	8.1
8	6.9	7.0	1.0	1.0	1.2	1.5	4.5	8.1	8.2	8.2	8.1	8.1
9	6.9	7.0	1.0	1.0	1.2	1.2	5.7	8.1	8.2	8.2	8.1	8.1
10	6.9	7.0	1.0	1.0	1.2	1.2	6.2	8.2	8.2	8.2	8.2	8.1
11	6.9	7.0	1.0	1.0	1.2	1.2	6.6	8.2	8.2	8.2	8.2	8.1
12	6.9	7.0	1.0	1.0	1.2	1.2	7.5	8.2	8.2	8.2	8.2	8.1
13	6.9	7.0	1.2	1.0	1.2	1.2	8.2	8.2	8.2	8.2	8.2	8.2
14	6.9	7.0	1.2	1.0	1.1	1.2	8.2	8.2	8.2	8.2	8.2	8.2
15	6.9	7.0	1.2	1.0	1.1	1.2	8.1	8.2	8.2	8.2	8.2	8.2
16	6.9	7.0	1.2	1.0	1.0	1.2	8.1	8.2	8.2	8.2	8.2	8.2
17	6.9	7.0	1.2	1.0	1.0	1.2	7.9	8.2	8.2	8.2	8.2	8.2
18	6.9	5.6	1.2	1.0	1.1	1.2	8.0	8.2	8.2	8.2	8.1	8.2
19	6.9	2.3	1.2	1.0	1.1	1.2	8.1	8.2	8.2	8.2	8.2	8.2
20	6.9	1.0	1.2	1.0	1.0	1.3	8.1	8.2	8.2	8.2	8.2	8.2
21	6.9	1.0	1.2	1.0	1.0	1.2	7.9	8.2	8.2	8.2	8.2	8.1
22	6.9	1.0	1.2	1.0	.90	1.2	8.0	8.2	8.2	8.2	8.2	8.1
23	6.9	1.0	1.2	1.0	.80	1.3	8.1	8.2	8.2	8.2	8.1	8.1
24	6.9	1.0	1.2	1.0	1.1	1.3	8.1	8.2	8.2	8.2	8.1	8.1
25	6.9	1.0	1.2	1.0	1.0	1.2	8.0	8.2	8.1	8.2	8.1	8.2
26	6.9	1.0	1.2	1.0	.90	1.3	8.1	8.2	8.2	8.3	8.1	8.2
27	6.9	1.0	1.2	1.0	1.0	1.8	8.1	8.2	8.2	8.4	8.1	8.2
28	6.9	1.0	1.1	1.0	1.0	2.0	8.1	8.2	8.2	8.3	8.1	8.2
29	6.7	.90	1.0	1.0	1.0	2.1	8.2	8.2	8.2	8.3	8.1	8.2
30	6.7	.90	1.0	1.0	-----	3.4	8.2	8.2	8.2	8.3	8.1	8.1
31	6.9	-----	1.0	1.1	-----	4.1	-----	8.2	-----	8.3	8.1	-----
TOTAL	217.4	140.40	33.70	31.1	31.30	45.7	203.2	253.3	245.9	254.9	252.9	244.3
MEAN	7.01	4.68	1.09	1.00	1.08	1.47	6.77	8.17	8.20	8.22	8.16	8.14
MAX	8.1	7.9	1.2	1.1	1.2	4.1	8.2	8.2	8.2	8.4	8.2	8.2
MIN	6.7	.90	.90	1.0	.80	1.0	3.6	8.1	8.1	8.2	8.1	8.1
AC-FT	431	278	67	62	62	91	403	502	488	506	502	485

CAL YR 1967 TOTAL 1,602.50
WTR YR 1968 TOTAL 1,954.10

MEAN 4.39
MEAN 5.34

MAX 8.2
MAX 8.4

MIN .90
MIN .80

AC-FT 3,180
AC-FT 3,880

TULARE LAKE BASIN

599

11-2109. LAKE KAWEAH NEAR LEMONCOVE, CALIF.

LOCATION.--Lat 36°24'53", long 119°00'07", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.25, T.17 S., R.27 E., in control tower near left abutment of Terminus Dam on Kaweah River, 2.1 miles northeast of Lemoncove.

DRAINAGE AREA.--560 sq mi.

RECORDS AVAILABLE.--October 1961 to September 1968. Fragmentary prior to March 1962. Prior to October 1962, published as Terminus Reservoir near Lemoncove.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to May 22, 1962, staff gage at same site and datum.

EXTREMES.--Maximum contents during year, 84,200 acre-ft June 3 (elevation, 656.32 ft); minimum, 7,780 acre-ft Mar. 3, 4 (elevation, 569.04 ft).
1961-68: Maximum contents, 160,200 acre-ft July 3, 4, 1967 (elevation, 699.39 ft), storage increased by a temporary sandbag dam in the ungated spillway; minimum since initial season of operation, 2,870 acre-ft Oct. 11-13, 1962; minimum elevation, 549.62 ft Oct. 13, 1962.

REMARKS.--Reservoir is formed by earthfill dam and earthfill auxiliary dam; completed and storage began in February 1962. Usable capacity, 149,400 acre-ft between elevations 520.0 (invert of outlet structure) and 694.0 ft (spillway crest). Dead storage, 166 acre-ft. Spillway design flood pool elevation, 745.1 ft (capacity, 266,000 acre-ft). Records, including extremes, represent total contents at 2400 hours.

COOPERATION.--Records furnished by Corps of Engineers.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

520	166	580	12,000
525	343	600	22,800
530	598	620	39,400
535	953	640	61,700
540	1,460	660	89,800
550	2,940	680	123,400
560	5,090	700	161,500
570	8,110	720	204,300

CONTENTS, IN ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23,100	8,070	8,520	7,910	8,110	7,950	16,400	45,600	83,800	44,000	19,400	10,300
2	22,400	8,070	8,520	7,910	8,110	7,860	17,300	47,300	84,000	43,000	18,900	10,300
3	21,400	8,060	8,520	7,900	8,130	7,780	18,100	48,800	84,200	42,000	18,400	10,200
4	20,300	8,040	8,330	7,900	8,150	7,780	18,900	50,200	84,000	41,000	17,800	10,100
5	19,100	8,020	8,150	7,900	8,120	7,850	19,800	51,800	83,600	39,900	17,200	10,000
6	18,100	8,010	8,020	7,900	8,050	7,910	20,600	53,200	82,700	39,000	16,500	9,950
7	17,200	8,020	7,960	7,910	8,020	7,920	21,400	54,500	81,900	38,100	15,900	9,870
8	16,200	8,020	7,950	7,900	7,990	8,230	22,200	55,800	81,300	37,200	15,300	9,800
9	15,800	8,000	7,940	7,900	7,980	8,200	23,100	56,900	80,500	36,200	14,800	9,720
10	15,500	8,010	7,920	7,970	8,110	7,920	24,100	58,100	79,400	35,300	14,400	9,650
11	15,200	8,010	7,940	8,270	8,160	7,820	25,200	59,500	78,200	34,400	13,900	9,580
12	14,900	8,000	7,990	8,170	8,130	7,890	26,400	60,800	77,000	33,500	13,600	9,510
13	14,600	8,000	7,980	8,110	8,060	7,950	27,300	61,900	75,900	32,500	13,200	9,430
14	14,200	8,000	7,900	8,120	8,000	7,990	28,300	62,600	74,600	31,600	12,900	9,360
15	13,700	8,020	8,100	8,200	7,960	7,980	29,300	63,300	73,400	30,700	12,600	9,280
16	13,300	8,020	8,150	8,420	7,950	7,990	30,200	64,100	72,100	29,700	12,300	9,220
17	12,900	8,030	8,040	8,450	8,460	8,140	31,100	65,100	70,500	28,800	12,000	9,150
18	12,500	8,060	8,090	8,400	9,360	8,180	31,700	66,400	68,700	27,900	11,700	9,070
19	12,200	8,580	8,150	8,310	9,480	8,190	32,400	68,200	66,800	27,000	11,400	9,000
20	11,800	9,020	8,100	8,230	9,320	8,400	33,200	69,900	64,700	26,300	11,100	8,930
21	11,400	9,250	8,020	8,160	9,160	8,710	33,900	71,600	62,600	25,600	11,000	8,860
22	11,000	9,210	8,010	8,100	8,340	9,040	34,500	73,000	60,500	25,000	10,900	8,790
23	10,600	9,050	8,050	8,060	8,130	9,460	35,100	73,800	58,400	24,300	10,900	8,720
24	10,200	8,870	8,130	8,040	8,250	9,950	35,700	74,600	56,200	23,700	10,800	8,660
25	9,730	8,680	8,250	8,030	8,330	10,500	36,500	75,400	54,100	23,200	10,800	8,580
26	9,300	8,470	8,250	8,020	8,290	11,100	37,600	76,700	51,900	22,600	10,700	8,510
27	8,870	8,330	8,170	8,060	8,180	11,800	39,000	78,300	49,900	22,100	10,700	8,450
28	8,470	8,250	8,070	8,070	8,130	12,600	40,400	80,100	48,200	21,600	10,600	8,410
29	8,100	8,190	8,000	8,040	8,050	13,400	42,100	81,600	46,600	21,000	10,500	8,380
30	8,020	8,430	7,980	8,030	-----	14,400	43,900	82,700	45,200	20,500	10,500	8,330
31	8,080	-----	7,950	8,100	-----	15,300	-----	83,500	-----	20,000	10,400	-----
(a)	569.94	570.94	569.54	570.00	569.83	587.06	624.49	655.87	625.74	595.60	576.16	570.65
(b)	-15,720	+350	-480	+150	-50	+7,250	+28,600	+39,600	-38,300	-25,200	-9,600	-2,070
(c)	250	83	32	32	45	90	347	496	1,025	773	392	294
MAX	23,100	9,250	8,520	8,450	9,480	15,300	43,900	83,500	84,200	44,000	19,400	10,300
MIN	8,020	8,000	7,950	7,900	7,950	7,780	16,400	45,600	45,200	20,000	10,400	8,330

CAL YR 1967 b +52,800 MAX 160,200 MIN 7,950
WTR YR 1968 b -15,500 MAX 84,200 MIN 7,780

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

TULARE LAKE BASIN

11-2109.3. FOOTHILL DITCH BELOW TERMINUS DAM, CALIF.

LOCATION.--Lat 36°24'48", long 119°00'47", in NE $\frac{1}{4}$ sec.35, T.17 S., R.27 E., on left bank 0.7 mile downstream from Terminus Dam, and 2.1 miles northeast of Lemoncove.

RECORDS AVAILABLE.--October 1961 to September 1968.

GAGE.--Digital water-stage recorder and Parshall flume. Datum of gage is 492.8 ft above mean sea level (levels by Corps of Engineers). Prior to Oct. 2, 1964, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--7 years, 18.1 cfs (13,100 acre-ft per year).

EXTREMES.--1961-68: Maximum daily discharge, 50 cfs Feb. 10, 1962; minimum daily, 1.0 cfs Feb. 1-2, 1962.

REMARKS.--Records excellent. Ditch receives water from Lake Kaweah (see sta. no. 11-2109.) which is used for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	16	18	17	16	17	17	16	18	17	19	14
2	20	16	18	17	16	17	17	16	18	17	19	14
3	20	16	18	17	16	17	17	16	18	17	19	14
4	21	16	18	17	16	17	16	16	18	17	19	14
5	21	16	19	17	16	17	15	16	18	17	19	14
6	21	16	19	17	16	17	15	16	18	17	19	14
7	20	16	18	16	16	20	14	16	18	17	19	14
8	20	16	18	16	16	20	14	16	18	17	19	14
9	19	16	18	16	16	20	14	16	18	17	17	14
10	18	16	18	15	16	21	15	16	20	17	17	14
11	18	16	18	16	16	20	16	16	21	17	17	14
12	18	16	18	16	16	20	16	16	21	17	17	14
13	19	16	18	16	16	20	17	16	21	17	16	14
14	19	16	17	16	16	20	17	16	21	17	16	14
15	19	16	16	16	16	20	16	16	21	17	15	14
16	19	16	16	16	15	20	16	15	21	17	16	14
17	19	16	18	16	15	20	16	15	21	18	16	14
18	18	16	17	16	15	20	16	16	21	18	16	14
19	18	16	17	16	16	20	16	16	21	18	16	14
20	19	16	18	16	17	19	15	16	19	18	16	14
21	19	16	18	16	18	18	15	16	19	17	15	14
22	19	17	17	16	18	18	15	16	19	17	14	14
23	19	18	17	16	17	18	15	16	20	17	14	14
24	19	18	17	16	17	16	15	16	19	17	14	14
25	19	18	17	16	17	16	15	16	20	17	14	14
26	19	18	18	16	17	16	15	16	19	17	14	14
27	19	18	18	16	17	16	16	16	19	17	14	14
28	19	18	18	16	17	16	16	16	18	17	14	14
29	19	18	18	16	17	16	16	16	18	17	14	13
30	16	18	17	16	-----	17	16	17	18	17	14	13
31	15	-----	17	16	-----	17	-----	17	-----	18	14	-----
TOTAL	587	497	547	501	473	566	469	496	570	532	503	418
MEAN	18.9	16.6	17.6	16.2	16.3	18.3	15.6	16.0	19.3	17.2	16.2	13.9
MAX	21	18	19	17	18	21	17	17	21	18	19	14
MIN	15	16	16	15	15	16	14	15	18	17	14	13
AC-FT	1,160	986	1,080	994	938	1,120	930	984	1,150	1,060	998	829
CAL YR 1967	TOTAL 5,488.1		MEAN 15.0		MAX 23	MIN 1.3	AC-FT 10,890					
WTR YR 1968	TOTAL 6,168		MEAN 16.9		MAX 21	MIN 13	AC-FT 12,230					

TULARE LAKE BASIN

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11-2109.5. KAWEAH RIVER BELOW TERMINUS DAM, CALIF.

LOCATION.--Lat 36°24'51", long 119°00'42", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.26, T.17 S., R.27 E., on left bank 0.6 mile downstream from Terminus Dam, and 2.2 miles northeast of Lemoncove.

DRAINAGE AREA.--561 sq mi.

RECORDS AVAILABLE.--October 1961 to September 1968.

GAGE.--Digital water-stage recorder and concrete control. Datum of gage is 495.90 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Oct. 1, 1964, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--7 years, 609 cfs (440,900 acre-ft per year), adjusted for change in contents, evaporation, and diversion.

EXTREMES.--Maximum discharge during year, 1,380 cfs June 19 (gage height, 5.34 ft); minimum daily, 16 cfs Sept. 29.

1961-68: Maximum discharge, 5,740 cfs Dec. 8, 1966 (gage height, 8.62 ft); no flow at times in most years.

REMARKS.--Records excellent. Flow regulated by Lake Kaweah (see sta. no. 11-2109.). Lemoncove ditch (see sta. no. 11-2108.5.) diverts water from Lake Kaweah for irrigation. Foothill ditch (see sta. no. 11-2109.3.) diverts water from the gage pool for irrigation. Doffelmyer ditch diverts up to 3 cfs above the station for irrigation at times some of this water is returned to the river above the station. Records of chemical analyses for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	502	61	179	202	209	458	146	223	758	716	310	41
2	511	57	180	181	212	413	143	229	848	650	314	41
3	631	60	179	168	212	394	137	232	871	626	316	41
4	700	64	239	156	212	346	108	227	932	616	317	40
5	696	65	283	149	227	326	86	228	960	612	314	37
6	605	66	281	144	243	329	98	226	945	569	317	38
7	559	64	222	138	222	329	82	216	887	547	318	38
8	549	65	180	138	212	364	76	204	852	549	289	38
9	332	62	173	139	207	449	78	193	872	555	248	38
10	218	58	168	134	209	485	107	187	952	552	230	37
11	220	59	156	163	212	378	144	185	998	537	226	34
12	218	60	149	241	223	318	178	186	1,010	525	197	34
13	252	56	162	214	230	317	191	188	1,040	521	170	33
14	269	56	154	168	229	319	182	223	1,060	518	167	33
15	269	59	70	174	209	317	173	252	1,060	516	162	33
16	265	64	106	204	188	307	166	254	1,070	514	157	34
17	253	68	181	220	184	306	161	262	1,220	501	153	34
18	249	68	156	220	187	316	156	263	1,300	487	151	33
19	247	68	174	220	347	310	119	269	1,340	457	152	32
20	249	68	202	220	491	221	89	281	1,360	422	151	32
21	249	68	201	218	592	173	81	299	1,350	377	84	31
22	247	155	177	218	788	174	78	304	1,350	345	31	31
23	240	210	174	218	538	120	81	295	1,360	348	40	32
24	242	209	180	208	386	84	89	280	1,350	331	46	34
25	244	209	180	204	406	69	98	272	1,330	301	43	32
26	246	211	236	204	434	57	130	278	1,320	298	42	32
27	245	182	278	204	448	58	176	299	1,200	302	38	26
28	234	161	279	204	448	64	198	308	1,060	301	43	19
29	230	161	264	204	461	79	210	417	976	304	43	16
30	121	173	224	204	-----	115	221	527	842	304	41	18
31	41	-----	208	204	-----	145	-----	567	-----	304	41	-----
TOTAL	10,133	2,987	5,995	5,883	9,166	8,140	3,982	8,374	32,473	14,505	5,151	992
MEAN	327	99.6	193	190	316	263	133	270	1,082	468	166	33.1
MAX	700	211	283	241	788	485	221	567	1,360	716	318	41
MIN	41	56	70	134	184	57	76	185	758	298	31	16
AC-FT	20,100	5,920	11,890	11,670	18,180	16,150	7,900	16,610	64,410	28,770	10,220	1,970
Mean a	101	128	205	210	333	402	642	950	484	96.1	40.5	25.5
Ac-ft a	6,220	7,620	12,580	12,920	19,170	24,710	38,180	58,420	28,800	5,910	2,490	1,520
CAL YR 1967	TOTAL 433,350.00			MEAN 1,187	MAX 4,040	MIN 0	AC-FT 859,500			MEAN a 1,143	AC-FT a 827,300	
WTR YR 1968	TOTAL 107,781			MEAN 294	MAX 1,360	MIN 16	AC-FT 213,800			MEAN a 301	AC-FT a 218,500	

a Adjusted for diversion to Lemoncove ditch, Foothill ditch, and change in contents and evaporation from Lake Kaweah.

TULARE LAKE BASIN

11-2113. DRY CREEK NEAR LEMONCOVE, CALIF.

LOCATION.--Lat 36°25'30", long 119°01'20", in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 26, T.17 S., R.27 E., on left bank 400 ft downstream from Pogue Canyon, 1.3 miles upstream from mouth, and 2.8 miles north of Lemoncove.

DRAINAGE AREA.--80.4 sq mi.

RECORDS AVAILABLE.--October 1959 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 515 ft (from topographic map).

AVERAGE DISCHARGE.--9 years, 13.6 cfs (9,850 acre-ft per year).

EXTREMES.--Maximum discharge during year, 42 cfs Feb. 17 (gage height, 2.70 ft); no flow for several months.
1959-68: Maximum discharge, 14,500 cfs Dec. 6, 1966 (gage height, 7.30 ft, in gage well, 8.94 ft, from floodmarks); no flow for several months each year.

REMARKS.--Records good. Small diversions above station for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	8.8	6.1	14	8.8	2.5	1.8	0			
2		0	3.7	6.1	13	8.8	11	2.1	0			
3		0	2.1	6.1	13	7.0	7.0	2.1	0			
4		0	1.5	6.1	12	7.0	4.5	2.1	0			
5		0	3.0	6.1	12	6.1	3.7	1.8	0			
6		0	7.0	6.1	11	6.1	3.0	1.8	0			
7		0	3.0	6.1	11	6.1	3.0	1.8	0			
8		0	2.1	6.1	9.8	12	3.0	1.8	4.2			
9		0	1.8	6.1	8.8	17	2.5	1.3	.34			
10		0	1.5	6.1	7.9	11	2.1	1.3	0			
11		0	1.5	14	7.9	7.9	2.1	1.0	0			
12		0	1.8	11	7.9	6.1	2.1	1.3	0			
13		0	2.1	8.8	7.0	6.1	2.1	2.1	0			
14		0	2.1	7.9	7.0	6.1	2.1	2.5	0			
15		0	2.5	7.9	7.0	5.3	2.1	3.0	0			
16		0	2.5	7.9	6.1	4.5	2.1	3.0	0			
17		0	2.5	7.9	18	8.8	2.1	2.1	0			
18		0	6.1	7.9	34	9.8	2.1	1.1	0			
19		.32	13	7.9	22	8.8	2.1	0	0			
20		1.0	11	7.9	20	7.0	2.1	0	0			
21		.92	8.8	7.9	19	5.3	2.1	0	0			
22		.82	7.9	6.1	17	4.5	1.8	0	0			
23		.71	7.0	6.1	16	3.7	1.8	0	0			
24		.54	7.9	5.3	13	3.0	1.8	0	0			
25		.54	7.9	5.3	12	3.0	1.8	0	0			
26		.54	7.0	5.3	12	3.0	1.8	0	0			
27		.66	7.9	7.9	11	2.5	1.8	0	0			
28		.72	7.9	12	9.8	2.1	1.8	0	0			
29		.92	7.0	11	8.8	2.1	1.8	0	0			
30		2.5	7.0	8.8	-----	2.1	1.8	0	0			
31		-----	7.0	12	-----	1.8	-----	0	-----			-----
TOTAL	0	10.19	162.9	237.8	368.0	193.4	81.6	34.0	4.54	0	0	0
MEAN	0	.34	5.25	7.67	12.7	6.24	2.72	1.10	.15	0	0	0
MAX	0	2.5	13	14	34	17	11	3.0	4.2	0	0	0
MIN	0	0	1.5	5.3	6.1	1.8	1.8	0	0	0	0	0
AC-FT	0	20	323	472	730	384	162	67	9.0	0	0	0
CAL YR 1967	TOTAL	15,722.59	MEAN	43.1	MAX	440	MIN	0	AC-FT	31,190		
WTR YR 1968	TOTAL	1,092.43	MEAN	2.98	MAX	34	MIN	0	AC-FT	2,170		

Peak discharge (base, 50 cfs).--No peak above base.

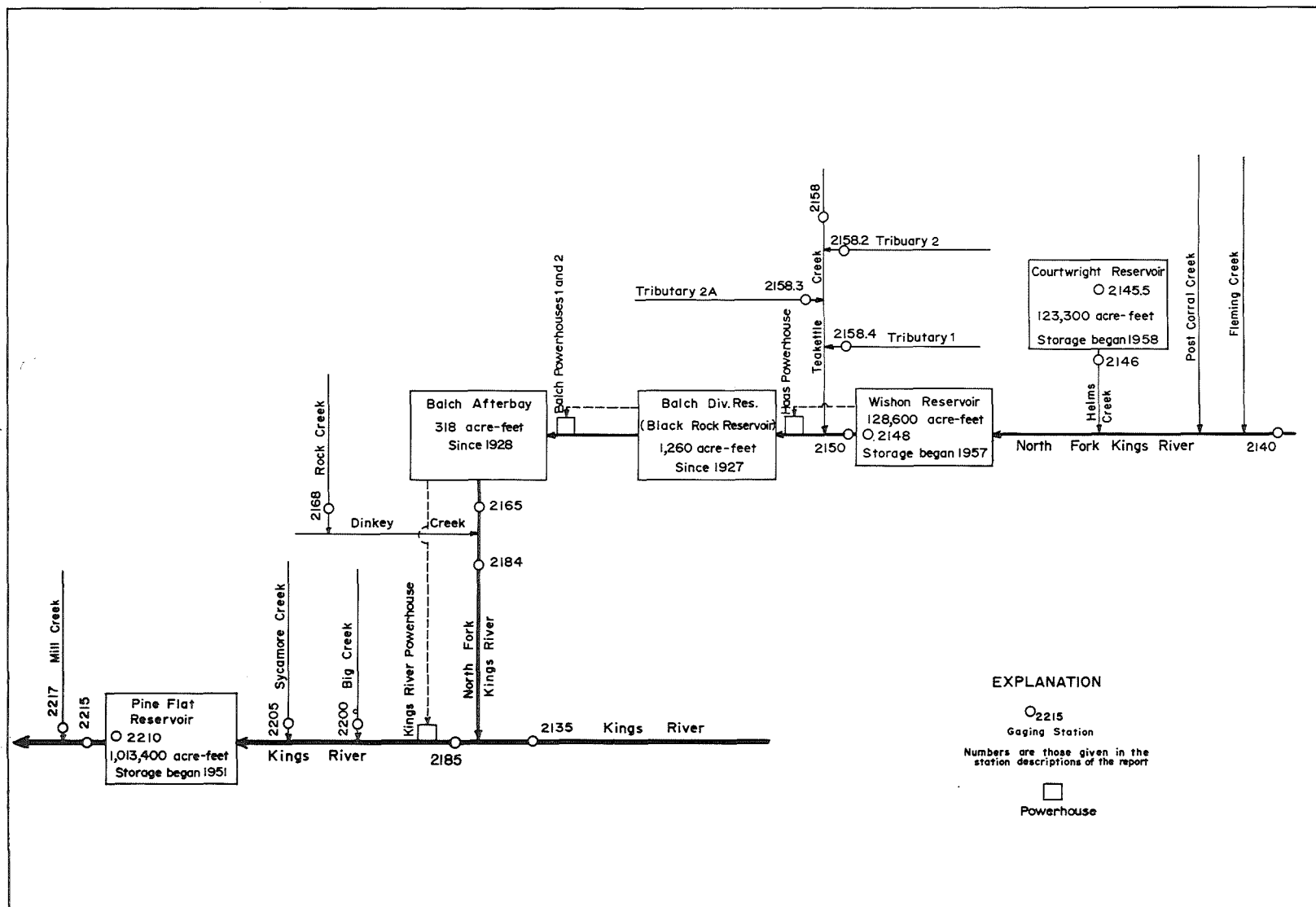


FIGURE 2.—Schematic diagram showing diversions and storage in Kings River basin.

TULARE LAKE BASIN

11-2135. KINGS RIVER ABOVE NORTH FORK, NEAR TRIMMER, CALIF.

LOCATION.--Lat 36°51'45", long 119°07'25", in NE $\frac{1}{4}$ sec. 27, T.12 S., R.26 E., on right bank at Rogers Crossing, 0.9 mile upstream from North Fork, 2.9 miles south of Balch Camp, and 9.6 miles southeast of Trimmer.

DRAINAGE AREA.--952 sq mi.

RECORDS AVAILABLE.--October 1926 to December 1928, October 1931 to September 1968. Prior to September 1965, published as Kings River above North Fork. Monthly figures only for some periods published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is 1,001.5 ft above mean sea level (river-profile survey). March 1927 to December 1928, at site 0.5 mile downstream at different datum. October 1931 to September 1965, on left bank at datum 2.00 ft higher.

AVERAGE DISCHARGE.--39 years, 1,400 cfs (1,014,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 5,550 cfs May 29 (gage height, 7.15 ft); minimum daily, 113 cfs Sept. 26-30.

1926-28, 1931-68: Maximum discharge, 59,100 cfs Dec. 23, 1955 (gage height, 18.26 ft, present datum), from rating curve extended above 12,000 cfs on basis of slope-area measurement of maximum flow; minimum daily, 70 cfs Jan. 14, 1963.

REMARKS.--Records excellent. No diversion or regulation above station. See schematic diagram for Kings River basin. Records of water temperatures for the water year 1968 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	694	265	352	373	388	688	1,240	3,240	3,720	884	730	150
2	634	259	400	356	396	666	1,120	3,400	3,970	825	600	150
3	580	256	424	338	404	634	1,010	3,140	4,100	783	540	150
4	545	256	392	317	396	628	988	3,010	3,900	747	485	150
5	509	253	468	324	392	639	1,040	3,260	3,400	705	445	146
6	488	256	420	310	388	644	988	2,860	2,350	694	410	152
7	468	256	400	304	384	617	960	2,640	1,800	672	380	158
8	440	256	400	310	376	700	988	2,570	1,720	735	370	158
9	420	253	380	314	376	644	1,060	2,320	1,640	838	355	158
10	404	244	376	359	444	617	1,200	2,160	1,500	1,010	340	156
11	388	244	376	376	400	585	1,440	2,280	1,540	870	325	154
12	380	238	376	345	400	617	1,590	2,320	1,690	771	310	152
13	370	232	334	342	384	600	1,510	2,010	1,890	700	300	152
14	366	238	277	328	373	606	1,510	1,690	1,890	661	290	146
15	356	268	307	435	356	585	1,620	1,560	2,000	628	277	127
16	345	268	338	448	362	600	1,470	1,600	2,140	606	265	125
17	338	274	345	388	585	622	1,340	2,010	2,240	585	253	124
18	331	280	376	362	628	595	1,150	2,640	2,070	555	241	122
19	320	436	388	359	555	585	1,080	3,440	1,990	532	226	120
20	310	428	392	352	672	555	1,020	3,900	1,900	514	223	119
21	304	376	376	356	789	565	946	4,050	1,680	492	215	119
22	301	356	396	359	723	580	884	3,420	1,530	484	210	119
23	301	342	416	359	683	550	918	2,540	1,490	464	202	119
24	298	331	428	356	672	555	988	2,200	1,450	444	185	119
25	286	317	436	359	666	565	1,150	2,300	1,390	432	170	116
26	280	310	444	359	661	600	1,580	3,320	1,280	432	162	113
27	277	304	440	388	656	634	2,320	3,940	1,240	472	160	113
28	274	314	432	362	666	694	2,760	4,480	1,210	540	158	113
29	274	295	416	362	678	825	2,930	4,600	1,120	628	154	113
30	274	392	392	370	-----	1,010	3,180	4,260	995	735	152	113
31	268	-----	384	396	-----	1,140	-----	3,790	-----	795	150	-----
TOTAL	11,823	8,797	12,081	11,066	14,853	20,145	41,980	90,950	60,835	20,233	9,283	4,026
MEAN	381	293	390	357	512	650	1,399	2,934	2,028	653	299	134
MAX	694	436	468	448	789	1,140	3,180	4,600	4,100	1,010	730	158
MIN	268	232	277	304	356	550	884	1,560	995	432	150	113
AC-FT	23,450	17,450	23,960	21,950	29,460	39,960	83,270	180,400	120,700	40,130	18,410	7,990
CAL YR 1967 TOTAL	959,364											
MEAN	2,628											
MAX	14,100											
MIN	232											
WTR YR 1968 TOTAL	306,072											
MEAN	836											
MAX	4,600											
MIN	113											
AC-FT	1,903,000											
AC-FT	607,100											

Peak discharge (base, 6,300 cfs).--No peak above base.

TULARE LAKE BASIN

605

11-2140. NORTH FORK KINGS RIVER BELOW MEADOW BROOK, CALIF.

LOCATION.--Lat 37°04'53", long 118°51'43", in NE $\frac{1}{4}$ sec.12, T.10 S., R.28 E., on left bank 800 ft downstream from Nichols Canyon, 0.6 mile downstream from Meadow Brook, 3.9 miles west of Blackcap Mountain, 5.9 miles east of Courtright Dam, and 23 miles southeast of town of Huntington Lake.

DRAINAGE AREA.--37.7 sq mi.

RECORDS AVAILABLE.--October 1921 to September 1935, October 1956 to September 1968. Monthly discharge only for some periods and yearly estimates for some incomplete years, published in WSP 1315-A. Records for Jan. 1-23, and Dec. 1-21, 1934, published in WSP 551 and 766, respectively, have been found to be unreliable and should not be used.

GAGE.--Graphic water-stage recorder. Datum of gage is 8,144.66 ft above mean sea level, unadjusted (levels by Pacific Gas and Electric Co.).

AVERAGE DISCHARGE.--26 years, 66.9 cfs (48,430 acre-ft per year).

EXTREMES.--Maximum discharge during year, 510 cfs May 20, July 2 (gage height, 4.34 ft); minimum daily, 1.0 cfs for several days.

1921-35, 1956-68: Maximum discharge, 1,680 cfs July 2, 1967 (gage height, 5.62 ft), from rating curve extended above 800 cfs; minimum recorded, 0.3 cfs Sept. 12-14, 1924.

Flood of Dec. 23, 1955, reached a stage of 5.85 ft, from floodmarks (discharge, 2,000 cfs).

REMARKS.--Records good. No regulation or diversion above station. See schematic diagram of Kings River basin.

COOPERATION.--Gage-height record and eight discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	3.0	9.7	10	13	40	75	257	240	18	20	1.5
2	15	2.8	16	9.7	12	30	60	257	245	16	14	1.5
3	14	2.8	20	9.2	12	27	51	245	230	15	12	1.4
4	13	2.8	18	9.2	12	28	52	238	202	13	10	1.3
5	12	2.8	17	9.2	12	33	58	240	155	13	8.4	1.2
6	11	3.0	20	9.2	11	27	47	208	111	12	6.4	1.2
7	10	3.2	18	9.2	11	24	50	198	99	13	5.8	1.2
8	9.2	3.2	18	8.4	11	24	64	185	111	14	5.8	1.2
9	8.8	3.0	16	8.4	12	22	81	168	104	25	5.4	1.2
10	8.8	3.2	16	8.0	12	24	98	146	92	27	4.8	1.1
11	8.4	3.2	16	8.0	12	22	117	137	92	22	4.2	1.1
12	7.6	3.0	16	8.4	12	24	106	152	95	17	4.0	1.0
13	7.2	3.0	14	8.4	11	22	100	120	96	14	4.0	1.0
14	6.8	5.8	11	8.0	11	22	104	112	93	13	4.0	1.0
15	6.1	5.4	9.0	8.8	9.7	22	114	105	93	12	3.8	1.0
16	5.8	4.8	10	9.7	11	20	95	117	92	10	3.2	1.1
17	5.4	4.5	9.2	9.7	11	22	82	163	89	9.2	3.0	1.1
18	5.4	4.8	10	9.2	12	20	65	220	77	8.0	2.8	1.0
19	5.0	6.4	10	9.2	16	19	59	292	71	7.2	2.8	1.0
20	4.8	11	11	9.2	20	17	56	346	64	6.1	2.8	1.1
21	4.8	13	10	9.7	27	18	50	330	54	5.8	2.6	1.2
22	4.8	11	10	10	24	21	47	242	48	5.0	2.4	1.2
23	4.5	10	11	11	27	18	58	185	43	4.8	2.2	1.2
24	4.2	9.2	11	12	30	21	72	172	40	4.5	2.0	1.2
25	4.0	8.8	12	13	31	26	106	215	38	4.2	1.7	1.1
26	4.0	7.6	14	13	32	31	152	300	34	4.0	1.6	1.1
27	4.0	6.8	15	11	30	38	195	350	31	4.2	1.6	1.0
28	3.5	6.8	16	11	34	52	225	358	29	6.1	1.5	1.0
29	3.5	6.8	14	11	38	72	242	334	25	15	1.4	1.0
30	3.2	7.6	11	11	-----	88	269	272	22	33	1.3	1.1
31	3.2	-----	11	13	-----	89	-----	240	-----	30	1.3	-----
TOTAL	224.0	169.3	419.9	304.8	516.7	963	2,950	6,904	2,815	401.1	146.8	34.3
MEAN	7.23	5.64	13.5	9.83	17.8	31.1	98.3	223	93.8	12.9	4.74	1.14
MAX	16	13	20	13	38	89	269	358	245	33	20	1.5
MIN	3.2	2.8	9.0	8.0	9.7	17	47	105	22	4.0	1.3	1.0
AC-FT	444	336	833	605	1,020	1,910	5,850	13,690	5,580	796	291	68

CAL YR 1967 TOTAL 49,421.2 MEAN 135 MAX 1,100 MIN 2.8 AC-FT 98,030
WTR YR 1968 TOTAL 15,848.9 MEAN 43.3 MAX 358 MIN 1.0 AC-FT 31,440

Peak discharge (base, 400 cfs).--May 20 (2030 hrs) 510 cfs (4.34 ft); May 27 (2030 hrs) 505 cfs (4.31 ft).

TULARE LAKE BASIN

11-2146. HELMS CREEK BELOW COURTRIGHT DAM, CALIF.

LOCATION.--Lat 37°04'40", long 118°58'05", in NW¼ sec.7, T.10 S., R.28 E., on left bank 500 ft downstream from Courtright Dam, 2.5 miles upstream from North Fork Kings River, and 17 miles southeast of town of Huntington Lake.

DRAINAGE AREA.--39.7 sq mi.

RECORDS AVAILABLE.--October 1958 to September 1968.

GAGE.--Graphic water-stage recorder and broad-crested weir with V-notch. Altitude of gage is 7,840 ft (from Pacific Gas and Electric Co. survey).

AVERAGE DISCHARGE.--10 years, 69.7 cfs (50,460 acre-ft per year), adjusted for storage.

EXTREMES.--Maximum discharge during year, 656 cfs July 3 (gage height, 5.12 ft); minimum daily, 2.7 cfs Aug. 24. 1958-68: Maximum discharge, 786 cfs Apr. 30, 1967 (gage height, 5.56 ft); maximum gage height, 6.52 ft June 2, 1961; minimum daily discharge, 0.9 cfs Oct. 30 to Nov. 6, 1958.

REMARKS.--Records good. Flow regulated since Oct. 17, 1958, by Courtright Reservoir (see sta. no. 11-2145.5.). No diversion above station. See schematic diagram of Kings River basin.

COOPERATION.--Gage-height record and seven discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	36	32	32	36	36	36	33	36	527	508	6.5
2	30	37	32	32	35	36	36	33	36	625	568	7.0
3	27	36	32	32	35	36	35	33	36	620	576	6.6
4	25	36	32	32	34	36	35	33	36	568	581	6.5
5	26	36	33	32	34	36	36	33	36	568	576	6.2
6	26	36	33	32	34	36	36	33	36	572	572	6.1
7	26	36	33	237	35	36	36	33	36	563	572	6.1
8	26	36	32	404	35	36	35	33	36	558	517	6.0
9	26	36	32	390	35	36	35	34	36	576	568	6.0
10	43	36	32	379	35	36	35	34	36	550	563	6.0
11	26	36	32	214	35	36	35	34	36	558	550	5.9
12	26	33	32	35	35	36	35	35	36	568	545	5.8
13	26	33	32	35	35	36	35	35	36	576	545	5.8
14	26	33	32	35	35	36	35	35	36	586	533	5.9
15	26	33	32	35	35	36	35	35	36	576	477	5.9
16	26	33	33	35	35	35	35	35	36	590	563	5.9
17	26	33	33	35	36	35	35	35	36	581	550	5.8
18	26	33	33	35	36	35	35	35	36	590	537	5.8
19	26	33	33	35	36	35	35	35	82	590	490	5.8
20	27	33	33	35	37	35	35	35	232	586	514	6.0
21	27	33	33	35	37	35	35	35	287	586	499	6.1
22	27	33	33	35	36	35	35	35	284	576	437	6.1
23	27	33	33	35	36	35	46	36	281	572	40	6.1
24	27	33	32	35	36	35	33	36	281	576	2.7	6.0
25	27	32	32	35	36	35	33	36	281	572	3.7	5.9
26	31	32	32	36	36	35	33	36	281	558	4.8	5.9
27	39	32	32	36	36	35	33	36	354	568	27	5.8
28	37	32	33	36	36	35	33	36	428	568	7.5	5.8
29	37	32	33	36	36	35	33	36	424	563	6.6	5.8
30	36	32	33	36	-----	35	33	36	418	581	6.4	6.0
31	36	-----	32	36	-----	35	-----	36	-----	600	6.5	-----
TOTAL	897	1,018	1,006	2,522	1,028	1,100	1,052	1,075	4,281	17,848	11,946.2	181.1
MEAN	28.9	33.9	32.5	81.4	35.4	35.5	35.1	34.7	143	576	385	6.04
MAX	43	37	33	404	37	36	46	36	428	625	581	7.0
MIN	25	32	32	32	34	35	33	33	36	527	2.7	5.8
AC-FT	1,780	2,020	2,000	5,000	2,040	2,180	2,090	2,130	8,490	35,400	23,690	359
CAL YR 1967	TOTAL 50,822		MEAN 139		MAX 706		MIN 25		AC-FT 100,800			
WTR YR 1968	TOTAL 43,954.3		MEAN 120		MAX 625		MIN 2.7		AC-FT 87,180			

RESERVOIRS IN TULARE LAKE BASIN, CALIF.

11-2145.5. COURTRIGHT RESERVOIR.--Lat 37°04'40", long 118°58'05", in NW¼ sec.7, T.10 S., R.28 E., at left end of dam on Helms Creek, 2.5 miles upstream from mouth, 4.6 miles east of Nelson Mountain, and 9.7 miles west of Blackcap Mountain. Drainage area, 39.7 sq mi. Records available, October 1958 to September 1968. Gage, graphic water-stage recorder attached to surface follower. Datum of gage is at mean sea level (levels by Pacific Gas and Electric Co.). Maximum contents during year, 76,000 acre-ft June 3-10, maximum elevation, 8,150.10 ft June 5, 7, 8; no contents Aug. 27 to Sept. 30. Maximum contents during period 1958-68, 124,200 acre-ft July 13, 1967 (elevation, 8,184.55 ft); no contents June 26 to Oct. 21, 1961, Oct. 23, 1961 to Mar. 31, 1962, Aug. 27 to Sept. 30, 1968.

Reservoir is formed by rockfill dam completed in 1958. Usable capacity, 123,300 acre-ft between elevations 7,902 (invert of tunnel) and 8,184 ft (elevation of spillway). Dead storage negligible. See schematic diagram of Kings River basin. Record of contents furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

11-2148. WISHON RESERVOIR.--Lat 37°00'20", long 118°58'00", in NW¼ sec.6, T.11 S., R.28 E., on right end of dam on North Fork Kings River, 1.2 miles north of Cliff Camp, 1.3 miles upstream from Cliff Camp gaging station, and 20 miles southeast of town of Big Creek. Drainage area, 177 sq mi. Records available, December 1957 to September 1968. Gage, graphic water-stage recorder attached to surface follower. Datum of gage is at mean sea level (levels by Pacific Gas and Electric Co.). Maximum contents during year, 126,500 acre-ft Aug. 1 (elevation, 6,547.97 ft); minimum, 9,850 acre-ft Dec. 23 (elevation, 6,380.80 ft). Maximum contents during period 1957-68, 129,700 acre-ft July 29, 1958 (elevation, 6,551.1 ft); no contents Sept. 21 to Nov. 21, 1960.

Reservoir is formed by rockfill dam completed in 1957. Capacity, 128,600 acre-ft between elevations 6,317 (bottom of slide gates) and 6,550 ft (operating crest of spillway gates). Dead storage negligible. Water is diverted to Haas powerhouse for power. See schematic diagram of Kings River basin. Record of contents furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

MONTH-END ELEVATION AND CONTENTS, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Courtright Reservoir				Wishon Reservoir		
Sept. 30.....	8,144.8	70,000	-	6,514.7	95,100	-
Oct. 31.....	8,142.7	67,700	-2,300	6,450.2	45,600	-49,500
Nov. 30.....	8,141.5	66,400	-1,300	6,394.8	15,900	-29,700
Dec. 31.....	8,140.4	65,300	-1,100	6,382.4	10,500	-5,400
Calendar year 1967....	-	-	+6,300	-	-	-8,200
Jan. 31.....	8,135.4	60,200	-5,100	6,392.0	14,700	+4,200
Feb. 29.....	8,134.8	59,600	-600	6,391.2	14,300	-400
Mar. 31.....	8,135.4	60,200	+600	6,407.4	21,900	+7,600
Apr. 30.....	8,142.6	67,600	+7,400	6,453.4	47,600	+25,700
May 31.....	8,150.0	75,800	+8,200	6,510.2	91,100	+43,500
June 30.....	8,142.0	67,000	-8,800	6,523.3	102,800	+11,700
July 31.....	8,093.0	27,000	-40,000	6,547.7	126,200	+23,400
Aug. 31.....	7,898.0	0	-27,000	6,537.6	116,200	-10,000
Sept. 30.....	7,898.0	0	0	6,509.6	90,600	-25,600
Water year 1968.....	-	-	-70,000	-	-	-4,500

TULARE LAKE BASIN

11-2150. NORTH FORK KINGS RIVER NEAR CLIFF CAMP, CALIF.

LOCATION.--Lat 36°59'38", long 118°58'50", in NE¼NW¼ sec.12, T.11 S., R.27 E., on right bank at Cliff Camp Bridge, 1 mile northwest of Cliff Camp, 1.2 miles downstream from Wishon Dam, and 2 miles downstream from Woodchuck Creek.

DRAINAGE AREA.--181 sq mi.

RECORDS AVAILABLE.--August 1921 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Digital water-stage recorder. Datum of gage is 6,143.95 ft above mean sea level, adjustment of 1912 (levels by San Joaquin Light and Power Corp.). Prior to Nov. 24, 1922, graphic water-stage recorder at site 1 mile upstream at different datum. Nov. 24, 1922, to Oct. 6, 1966, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--47 years, 355 cfs (257,000 acre-ft per year), adjusted for storage and diversion.

EXTREMES.--Maximum discharge during year, 44 cfs Feb. 20 (gage height, 3.38 ft); minimum daily, 3.9 cfs Dec. 9.

1921-57 (prior to regulation by Wishon Reservoir): Maximum discharge, 14,000 cfs Dec. 11, 1937 (gage height, 18.0 ft from floodmarks), from rating curve extended above 4,200 cfs on basis of velocity-area studies; minimum, 0.6 cfs Dec. 30, 1930.

1957-68: Maximum discharge, 4,880 cfs May 28, 1958 (gage height, 11.75 ft); minimum daily, 0.8 cfs Dec. 14, 1957.

REMARKS.--Records good. Flow regulated by Wishon Reservoir since Dec. 5, 1957 (see sta. no. 11-2148.) and Courtright Reservoir since Oct. 17, 1958 (see sta. no. 11-2145.5.). Water diverted for power from Wishon Reservoir by tunnel to Haas powerhouse since Dec. 10, 1958. See schematic diagram of Kings River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	15	15	9.5	11	15	14	8.7	15	13	15	15
2	17	16	15	9.2	12	14	15	8.7	15	13	15	15
3	18	15	15	9.0	13	14	13	9.0	14	13	15	15
4	18	15	12	9.0	12	14	13	9.0	12	13	15	15
5	18	15	6.7	9.0	12	13	16	9.0	12	13	15	15
6	18	15	4.2	8.7	12	13	13	9.2	12	13	15	15
7	17	16	4.2	8.7	12	13	12	9.2	12	13	15	14
8	17	16	4.0	9.0	12	14	12	9.2	12	13	15	14
9	17	15	3.9	9.2	13	14	11	9.5	12	13	15	14
10	17	15	4.3	10	13	14	11	9.5	12	13	15	14
11	17	15	4.6	9.8	12	15	12	9.8	12	13	15	14
12	17	15	4.3	10	12	14	11	10	12	13	15	14
13	17	15	5.2	10	11	15	10	11	12	13	15	14
14	17	16	8.7	10	12	15	10	13	12	13	15	14
15	17	15	8.7	19	12	13	10	12	12	13	15	14
16	17	15	8.5	14	12	13	9.8	11	12	13	15	14
17	17	15	8.5	13	24	14	9.8	11	12	13	15	14
18	17	16	9.2	12	19	13	9.0	11	12	14	15	14
19	17	18	9.0	12	18	13	8.7	11	12	14	15	14
20	17	16	8.7	12	33	13	8.5	11	12	14	16	13
21	17	15	8.7	12	25	13	8.3	11	12	14	16	13
22	16	15	9.2	13	21	13	8.0	11	13	14	16	13
23	16	15	9.8	13	21	13	7.8	11	13	14	15	13
24	16	14	10	13	20	14	7.8	11	13	14	15	13
25	16	14	11	13	18	14	8.0	11	13	14	15	13
26	16	14	11	12	17	11	8.0	11	13	14	15	13
27	16	15	11	13	18	11	8.0	11	13	15	15	13
28	16	15	11	12	17	12	8.3	11	13	15	15	13
29	15	15	10	12	16	13	8.5	12	13	15	15	13
30	15	16	9.8	11	-----	12	8.7	12	13	15	15	13
31	15	-----	9.5	12	-----	13	-----	14	-----	15	15	-----
TOTAL	517	457	270.7	349.1	460	415	310.2	327.8	377	422	468	415
MEAN	16.7	15.2	8.73	11.3	15.9	13.4	10.3	10.6	12.6	13.6	15.1	13.8
MAX	18	18	15	19	33	15	16	14	15	15	16	15
MIN	15	14	3.9	8.7	11	11	7.8	8.7	12	13	15	13
AC-FT	1,030	906	537	692	912	823	615	650	748	837	928	823
CAL YR 1967	TOTAL 48,290.3		MEAN 132		MAX 3,040	MIN 3.9	AC-FT 95,780					
WTR YR 1968	TOTAL 4,788.8		MEAN 13.1		MAX 33	MIN 3.9	AC-FT 9,500					

11-2158. TEAKETTLE CREEK AT SITE NO. 3, NEAR PATTERSON MOUNTAIN, CALIF.

LOCATION.--Lat 36°57'40", long 119°01'35", in NE¼ sec.21, T.11 S., R.27 E., on left bank 1.6 miles east of Patterson Mountain, 1.8 miles upstream from mouth, and 2.9 miles north of Black Rock Reservoir.

DRAINAGE AREA.--0.86 sq mi.

RECORDS AVAILABLE.--October 1957 to September 1968.

GAGE.--Graphic water-stage recorder, 90° sharp-crested V-notch weir, and sharp-crested Cipolletti weir. Datum of gage is 6,705.4 ft above mean sea level (levels by U.S. Forest Service). Prior to Oct. 1, 1961, at datum 4.00 ft lower.

AVERAGE DISCHARGE.--11 years, 1.21 cfs (876 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2.62 cfs May 15 (gage height, 0.79 ft); maximum gage height, 0.88 ft Mar. 13 (backwater from ice); minimum daily discharge, 0.16 cfs for several days in September.
1957-68: Maximum discharge, 99.0 cfs Feb. 1, 1963 (gage height, 3.81 ft); minimum daily, 0.08 cfs Sept. 6, 12-15, 1961.

REMARKS.--Records good. No diversion or regulation above station. This station is operated in connection with studies to develop and test methods of managing forest and other lands for improved water yield. See schematic diagram for Kings River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.92	0.70	1.33	0.66	0.65	1.06	1.39	1.39	0.62	0.38	0.26	0.17
2	.89	.70	.82	.65	.64	1.02	1.30	1.34	.62	.38	.24	.17
3	.86	.67	.79	.66	.64	1.02	1.22	1.30	.59	.36	.24	.17
4	.86	.67	.76	.67	.64	1.02	1.34	1.26	.59	.36	.24	.17
5	.86	.67	1.19	.65	.62	1.06	1.30	1.22	.62	.36	.24	.17
6	.86	.70	.76	.64	.59	1.10	1.22	1.18	.64	.34	.22	.16
7	.82	.70	.73	.63	.59	1.02	1.26	1.14	.85	.34	.20	.16
8	.79	.67	.73	.63	.59	1.10	1.30	1.06	.73	.36	.19	.16
9	.79	.67	.76	.66	.59	.99	1.39	1.02	.67	.34	.18	.16
10	.76	.67	.79	.78	.59	1.02	1.52	.99	.62	.32	.18	.16
11	.76	.67	.76	.73	.56	1.02	1.62	.99	.56	.32	.18	.16
12	.76	.64	.76	.62	.56	.92	1.62	1.02	.54	.32	.20	.16
13	.79	.64	.84	.63	.56	.77	1.62	1.02	.52	.32	.21	.16
14	.79	.73	.83	.85	.56	.82	1.66	1.10	.52	.32	.21	.16
15	.79	.70	.70	1.31	.56	.79	1.62	1.34	.49	.32	.21	.17
16	.79	.67	.70	1.00	.56	.97	1.57	1.02	.47	.31	.21	.16
17	.79	.67	.70	.71	.96	1.14	1.43	.96	.49	.31	.21	.16
18	.76	.67	1.07	.70	1.04	.79	1.39	.89	.47	.29	.21	.16
19	.76	.86	1.01	.69	.86	.96	1.34	.86	.47	.29	.23	.16
20	.76	.92	.70	.66	1.33	1.02	1.26	.82	.45	.29	.26	.17
21	.76	.92	.67	.65	1.10	.89	1.22	.82	.45	.29	.26	.20
22	.73	.86	.76	.65	.99	.82	1.22	.82	.42	.27	.24	.21
23	.73	.82	.76	.66	.99	.86	1.22	.81	.42	.27	.23	.21
24	.73	.82	.73	.70	1.06	.92	1.26	.79	.42	.27	.20	.20
25	.73	.82	.76	.67	1.02	.99	1.30	.76	.42	.27	.20	.20
26	.73	.82	.76	.66	.99	.99	1.34	.73	.40	.26	.18	.20
27	.73	.79	.76	.70	1.10	1.06	1.43	.70	.40	.26	.18	.20
28	.73	.79	.73	.85	1.10	1.14	1.43	.67	.38	.27	.18	.20
29	.70	.76	.70	.81	1.10	1.30	1.48	.67	.38	.26	.17	.20
30	.73	1.13	.70	.79	-----	1.39	1.43	.64	.38	.26	.17	.20
31	.70	-----	.69	.68	-----	1.48	-----	.64	-----	.27	.17	-----
Total	24.16	22.52	24.75	22.35	23.14	31.45	41.70	29.97	15.60	9.58	6.50	5.29
Mean	.779	.751	.798	.721	.798	1.01	1.39	.967	.520	.310	.210	.176
Max	.92	1.13	1.33	1.31	1.33	1.48	1.66	1.39	.85	.38	.26	.21
Min	.70	.64	.67	.62	.56	.77	1.22	.64	.38	.26	.17	.16
Ac-ft	47.9	44.7	49.1	44.3	45.9	62.4	82.7	59.4	30.9	19.0	12.9	10.5
Cal yr 1967:	Total	1,003.32		Mean	2.75	Max	12.9	Min	0.64	Ac-ft	1,990	
Wtr yr 1968:	Total	257.01		Mean	.702	Max	1.66	Min	.16	Ac-ft	510	

Note.--No gage-height record Dec. 30 to Feb. 6.

TULARE LAKE BASIN

11-2158.2. TEAKETTLE CREEK TRIBUTARY NO. 2 NEAR PATTERSON MOUNTAIN, CALIF.

LOCATION.--Lat 36°57'35", long 119°02'00", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.21, T.11 S., R.27 E., on right bank 0.8 mile upstream from junction with Teakettle Creek, 1.2 miles east of Patterson Mountain, and 2.8 miles north of Black Rock Reservoir.

DRAINAGE AREA.--0.85 sq mi.

RECORDS AVAILABLE.--October 1957 to September 1968.

GAGE.--Graphic water-stage recorder, sharp-crested 90° V-notch weir, and sharp-crested Cipolletti weir. Datum of gage is 6,905.4 ft above mean sea level (levels by U.S. Forest Service). Prior to Oct. 1, 1961, at datum 2.00 ft lower.

AVERAGE DISCHARGE.--11 years, 1.04 cfs (753 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2.14 cfs May 15 (gage height, 0.94 ft); minimum daily, 0.16 cfs Sept. 17, 18, 25-30.

1957-68: Maximum discharge, 70.2 cfs Dec. 6, 1966 (gage height, 3.62 ft); minimum, 0.04 cfs Dec. 5, 1957, Sept. 12, 1961.

REMARKS.--Records good except those for period of no gage-height record, which are poor. No regulation or diversion above station. This station is operated in connection with studies to develop and test methods of managing forest and other lands for improved water yields. See schematic diagram for Kings River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.74	0.40	0.60	0.37	0.50	0.80	0.96	1.57	0.70	0.31	0.20	0.16
2	.70	.38	.55	.35	.52	.75	.86	1.57	.67	.31	.18	.15
3	.68	.38	.45	.35	.54	.75	.82	1.57	.64	.29	.18	.15
4	.66	.38	.40	.36	.54	.74	.89	1.57	.64	.29	.18	.15
5	.64	.38	.43	.35	.54	.73	.86	1.48	.64	.29	.18	.14
6	.62	.40	.44	.34	.54	.70	.86	1.39	.64	.29	.17	.14
7	.60	.38	.40	.34	.54	.66	.89	1.30	.81	.29	.17	.14
8	.58	.38	.40	.34	.54	.67	.94	1.26	.76	.31	.17	.14
9	.56	.36	.40	.35	.52	.64	.99	1.26	.67	.29	.17	.14
10	.54	.35	.40	.37	.52	.64	1.14	1.26	.62	.27	.17	.14
11	.54	.35	.40	.41	.49	.66	1.26	1.22	.56	.26	.17	.14
12	.54	.35	.41	.40	.49	.64	1.26	1.18	.52	.26	.17	.14
13	.54	.36	.45	.36	.49	.62	1.26	1.14	.52	.26	.20	.14
14	.52	.39	.46	.40	.49	.59	1.30	1.26	.49	.26	.20	.14
15	.49	.39	.43	.72	.49	.59	1.30	1.38	.47	.26	.18	.14
16	.49	.38	.39	.60	.52	.53	1.22	1.18	.45	.26	.18	.14
17	.47	.35	.36	.45	1.09	.62	1.10	1.14	.45	.24	.18	.13
18	.47	.34	.39	.36	.78	.56	1.06	1.06	.42	.23	.18	.13
19	.45	.40	.41	.36	.73	.56	1.06	1.06	.42	.23	.20	.14
20	.45	.58	.40	.36	1.31	.59	.99	1.06	.40	.23	.23	.15
21	.45	.52	.39	.37	.92	.62	.96	1.06	.38	.23	.23	.16
22	.45	.50	.39	.37	.82	.59	.99	1.02	.38	.21	.21	.15
23	.45	.47	.40	.37	.86	.62	1.02	.99	.38	.21	.20	.15
24	.45	.45	.40	.36	.86	.64	1.06	.96	.36	.21	.17	.14
25	.42	.43	.39	.37	.80	.70	1.18	.92	.34	.21	.16	.13
26	.42	.41	.40	.38	.76	.73	1.30	.92	.34	.20	.16	.13
27	.42	.39	.40	.37	.80	.78	1.39	.89	.32	.21	.16	.13
28	.42	.39	.40	.44	.84	.87	1.43	.86	.32	.21	.16	.13
29	.40	.40	.38	.54	.82	.99	1.57	.82	.32	.21	.15	.13
30	.40	.56	.38	.50	-----	1.04	1.52	.76	.32	.21	.15	.13
31	.40	-----	.38	.48	-----	1.08	-----	.73	-----	.20	.15	-----
Total	15.96	12.20	12.88	12.49	19.61	21.70	33.44	35.84	14.95	7.74	5.56	4.22
Mean	.515	.407	.415	.403	.676	.700	1.11	1.16	.498	.250	.179	.141
Max	.74	.58	.60	.72	1.31	1.08	1.57	1.57	.81	.31	.23	.16
Min	.40	.34	.38	.34	.49	.53	.82	.73	.32	.20	.15	.13
Ac-ft	31.7	24.2	25.5	24.8	38.9	43.0	66.3	71.1	29.7	15.4	11.0	8.37
Cal yr 1967:	Total	885.86		Mean	2.43	Max	14.6	Min	0.34	Ac-ft	1,760	
Wtr yr 1968:	Total	196.59		Mean	.537	Max	1.57	Min	.13	Ac-ft	390	

Note.--No gage-height record Nov. 10 to Feb. 1.

11-2158.3. TEAKETTLE CREEK TRIBUTARY NO. 2A NEAR PATTERSON MOUNTAIN, CALIF.

LOCATION.--Lat 36°57'25", long 119°01'50", in NW¼SE¼ sec.21, T.11 S., R.27 E., on left bank 0.1 mile upstream from confluence with Teakettle Creek tributary No. 2, 1.3 miles east of Patterson Mountain, and 2.6 miles north of Black Rock Reservoir.

DRAINAGE AREA.--0.27 sq mi.

RECORDS AVAILABLE.--October 1957 to September 1968.

GAGE.--Graphic water-stage recorder and 90° sharp-crested V-notch weir. Datum of gage is 6,924 ft above mean sea level (levels by U.S. Forest Service). Prior to Oct. 1, 1961, at datum 4.00 ft lower.

AVERAGE DISCHARGE.--11 years, 0.36 cfs (261 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1.48 cfs June 7 (gage height, 0.81 ft); minimum daily, 0.02 cfs Aug. 9-18.

1957-68: Maximum discharge, 60.3 cfs Dec. 6, 1966 (gage height, 3.61 ft); minimum daily, 0.01 cfs for many days in 1960-62.

REMARKS.--Records good except those for period of no gage-height record, which are poor. No regulation or diversion above station. This station is operated in connection with studies to develop and test methods of managing forest and other lands for improved water yield. See schematic diagram for Kings River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	.08	.13	.11	.10	.31	.38	.40	.11	.04	.03	.10
2	.15	.08	.12	.11	.10	.30	.32	.38	.11	.04	.03	.11
3	.15	.08	.11	.10	.10	.29	.31	.36	.11	.04	.03	.11
4	.14	.07	.11	.10	.10	.28	.37	.36	.11	.04	.03	.11
5	.15	.08	.13	.10	.10	.27	.35	.32	.11	.04	.03	.11
6	.14	.08	.11	.10	.10	.27	.32	.31	.12	.04	.03	.11
7	.13	.08	.11	.10	.10	.26	.35	.29	.49	.04	.03	.12
8	.13	.07	.11	.10	.11	.26	.40	.27	.15	.04	.03	.12
9	.13	.07	.11	.10	.11	.24	.47	.27	.14	.05	.02	.13
10	.12	.07	.12	.11	.11	.24	.49	.27	.12	.04	.02	.14
11	.12	.07	.12	.11	.10	.26	.54	.26	.10	.04	.02	.15
12	.11	.07	.12	.10	.10	.24	.54	.27	.10	.04	.02	.15
13	.11	.07	.13	.10	.10	.23	.49	.27	.09	.04	.02	.15
14	.11	.12	.11	.20	.10	.21	.52	.32	.08	.04	.02	.16
15	.11	.08	.10	.50	.10	.21	.52	.40	.08	.04	.02	.16
16	.10	.08	.10	.25	.17	.21	.47	.27	.08	.04	.02	.16
17	.10	.08	.10	.12	.32	.21	.40	.24	.07	.04	.02	.16
18	.11	.09	.11	.11	.27	.20	.38	.23	.06	.03	.02	.16
19	.11	.21	.11	.11	.26	.20	.38	.23	.06	.03	.03	.16
20	.10	.18	.10	.11	.35	.21	.36	.21	.06	.03	.07	.16
21	.11	.15	.10	.11	.30	.23	.34	.19	.06	.03	.07	.17
22	.12	.13	.13	.10	.28	.21	.34	.17	.06	.03	.07	.18
23	.11	.13	.12	.10	.27	.23	.34	.17	.06	.03	.07	.18
24	.09	.12	.12	.11	.29	.24	.34	.16	.05	.03	.08	.17
25	.08	.11	.12	.11	.28	.28	.38	.16	.05	.03	.09	.17
26	.09	.10	.12	.10	.27	.29	.40	.15	.05	.03	.10	.17
27	.09	.10	.12	.11	.29	.32	.42	.14	.05	.03	.11	.17
28	.08	.11	.12	.12	.30	.36	.42	.13	.05	.03	.11	.17
29	.09	.09	.12	.12	.31	.43	.45	.12	.05	.03	.11	.17
30	.08	.09	.11	.11	-----	.42	.40	.12	.05	.03	.11	.18
31	.08	-----	.11	.10	-----	.45	-----	.12	-----	.03	.11	-----
TOTAL	3.50	2.94	3.55	3.93	5.49	8.36	12.19	7.56	2.88	1.11	1.57	4.46
MEAN	.113	.098	.115	.127	.189	.270	.406	.244	.096	.036	.051	.149
MAX	.16	.21	.13	.50	.35	.45	.54	.40	.49	.05	.11	.18
MIN	.08	.07	.10	.10	.10	.20	.31	.12	.05	.03	.02	.10
AC-FT	6.9	5.8	7.0	7.8	10.9	16.6	24.2	15.0	5.7	2.2	3.1	8.8
CAL YR 1967	TOTAL	319.14	MEAN	0.874	MAX	5.34	MIN	0.07	AC-FT	633		
WTR YR 1968	TOTAL	57.54	MEAN	.157	MAX	.54	MIN	.02	AC-FT	114		

Note.--No gage-height record Jan. 10 to Mar. 4.

TULARE LAKE BASIN

11-2158.4. TEAKETTLE CREEK TRIBUTARY NO. 1 NEAR PATTERSON MOUNTAIN, CALIF.

LOCATION.--Lat 36°57'00", long 119°01'10", in NW¼NW¼ sec.27, T.11 S., R.27 E., on left bank 0.2 mile upstream from confluence with Teakettle Creek, 2.1 miles north of Black Rock Reservoir, and 2.2 miles east of Patterson Mountain.

DRAINAGE AREA.--0.77 sq mi.

RECORDS AVAILABLE.--October 1957 to September 1968.

GAGE.--Graphic water-stage recorder, 90° sharp-crested V-notch weir, and sharp-crested Cipolletti weir. Datum of gage is 6,407.7 ft above mean sea level (levels by U.S. Forest Service). Prior to August 1959 at datum 4.0 ft lower.

AVERAGE DISCHARGE.--11 years, 1.12 cfs (811 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2.02 cfs May 15 (gage height, 0.92 ft); minimum daily, 0.16 cfs Sept. 11, 12, 26, 27.

1957-68: Maximum discharge, 142 cfs Dec. 6, 1966 (gage height, 4.49 ft); minimum daily, 0.06 cfs Sept. 12, 13, 1961.

REMARKS.--Records good. No regulation or diversion above station. This station is operated in connection with studies to develop and test methods of managing forest and other lands for improved water yield. See schematic diagram for Kings River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.67	.42	.78	.42	.42	.96	1.39	1.48	.59	.32	.23	.17
2	.67	.40	.49	.42	.42	.92	1.18	1.39	.56	.32	.23	.17
3	.64	.40	.47	.42	.42	.90	1.10	1.39	.54	.32	.21	.17
4	.64	.40	.47	.42	.42	.94	1.18	1.34	.54	.31	.21	.17
5	.64	.40	.54	.42	.42	.96	1.22	1.26	.54	.31	.20	.18
6	.64	.40	.50	.40	.42	.99	1.14	1.22	.56	.31	.20	.18
7	.59	.40	.47	.40	.40	.92	1.14	1.18	.77	.31	.20	.18
8	.59	.40	.45	.40	.40	.92	1.22	1.14	.67	.31	.19	.17
9	.59	.40	.45	.40	.42	.86	1.34	1.06	.59	.31	.19	.17
10	.56	.40	.45	.41	.42	.82	1.48	1.06	.54	.29	.19	.17
11	.54	.38	.45	.50	.40	.79	1.62	1.06	.49	.27	.19	.16
12	.54	.38	.45	.40	.40	.76	1.62	1.06	.49	.27	.19	.16
13	.52	.38	.51	.40	.40	.80	1.52	1.06	.47	.29	.19	.17
14	.52	.44	.58	.40	.40	.84	1.57	1.19	.47	.27	.20	.17
15	.49	.42	.40	.98	.40	.73	1.57	1.37	.45	.29	.21	.17
16	.49	.40	.38	.60	.40	.78	1.52	1.10	.42	.27	.19	.17
17	.49	.40	.38	.47	1.12	.95	1.39	1.02	.42	.27	.18	.18
18	.47	.40	.46	.45	.87	.70	1.30	.96	.40	.26	.18	.18
19	.47	.78	.49	.45	.70	.72	1.30	.96	.40	.26	.17	.17
20	.47	.64	.47	.45	1.18	.75	1.26	.92	.40	.26	.17	.17
21	.47	.56	.45	.42	1.05	.70	1.22	.92	.38	.24	.17	.17
22	.47	.52	.45	.42	.92	.70	1.22	.86	.38	.24	.17	.17
23	.47	.52	.47	.42	.89	.70	1.22	.79	.38	.24	.17	.17
24	.45	.49	.45	.42	.96	.73	1.26	.76	.38	.24	.17	.17
25	.45	.47	.45	.45	.92	.79	1.30	.73	.36	.24	.17	.17
26	.45	.47	.47	.42	.89	.86	1.39	.70	.34	.23	.17	.16
27	.45	.45	.47	.42	.92	.92	1.48	.67	.34	.23	.17	.16
28	.45	.47	.47	.55	.98	1.06	1.48	.64	.34	.24	.17	.17
29	.45	.47	.45	.56	1.00	1.22	1.52	.62	.34	.23	.17	.17
30	.42	.58	.45	.42	-----	1.30	1.48	.59	.34	.23	.18	.17
31	.42	-----	.45	.42	-----	1.39	-----	.59	-----	.23	.17	-----
TOTAL	16.18	13.64	14.67	14.13	18.96	27.38	40.63	31.09	13.89	8.41	5.80	5.11
MEAN	.522	.455	.473	.456	.654	.883	1.35	1.00	.463	.271	.187	.170
MAX	.67	.78	.78	.98	1.18	1.39	1.62	1.48	.77	.32	.23	.18
MIN	.42	.38	.38	.40	.40	.70	1.10	.59	.34	.23	.17	.16
AC-FT	32.1	27.1	29.1	28.0	37.6	54.3	80.6	61.7	27.6	16.7	11.5	10.1
CAL YR 1967	TOTAL	929.61	MEAN	2.55	MAX	13.7	MIN	0.38	AC-FT	1,840		
WTR YR 1968	TOTAL	209.89	MEAN	.573	MAX	1.62	MIN	.16	AC-FT	416		

TULARE LAKE BASIN

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11-2165. NORTH FORK KINGS RIVER ABOVE DINKEY CREEK, AT BALCH CAMP, CALIF.

LOCATION.--Lat 36°54'10", long 119°07'15", in NW¼ sec.10, T.12 S., R.26 E., on left bank 100 ft downstream from bridge at Balch Camp, 200 ft upstream from Dinkey Creek, and 9.3 miles east of Trimmer.

DRAINAGE AREA.--250 sq mi.

RECORDS AVAILABLE.--October 1919 to September 1930, March 1960 to September 1968. Records for water year 1920 incomplete, yearly estimate and monthly discharge only for some months, published in WSP 1315-A. Prior to October 1962, published as "above Dinkey Creek."

GAGE.--Graphic water-stage recorder and since Apr. 15, 1966, concrete control. Altitude of gage is 1,240 ft (from river-profile map). October 1919 to Apr. 14, 1966, at site 100 ft downstream at different datum.

AVERAGE DISCHARGE.--11 years (1919-30), 387 cfs (280,200 acre-ft per year), prior to storage and diversion.

EXTREMES.--Maximum discharge during year, 241 cfs Jan. 25 (gage height, 2.14 ft), from rating curve extended above 23 cfs on basis of computation of flow over dam; minimum daily, 5.3 cfs May 17.
1919-30 (prior to regulation by Wishon and Courtright Reservoirs): Maximum discharge, 6,080 cfs June 4, 1922 (gage height, 12.18 ft); minimum, 4 cfs Aug. 29 to Sept. 1, 1924.
1960-68: Maximum discharge, 14,000 cfs Feb. 1, 1963 (gage height, 13.24 ft, backwater from Dinkey Creek), from rating curve extended above 890 cfs; minimum daily, 0.30 cfs Nov. 3, 1964.

REMARKS.--Records good except those above 23 cfs, which are fair. Flow regulated by Courtright Reservoir (see sta. no. 11-2145.5) and Wishon Reservoir (see sta. no. 11-2148.), Black Rock Reservoir (capacity, 1,000 acre-ft), Balch afterbay (capacity, 125 acre-ft), and Haas and Balch powerplants. Diversion from Balch afterbay to Kings River powerhouse began Mar. 1, 1962. See schematic diagram of Kings River basin.

COOPERATION.--Gage-height record and 14 discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

REVISIONS (water year).--1967 report: 1966(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	17	17	8.0	8.4	7.7	9.3	7.3	16	7.3	9.8	7.7
2	17	17	18	8.0	8.0	7.7	8.8	6.9	16	7.3	9.8	8.0
3	17	17	18	8.1	8.0	7.5	8.4	7.1	14	7.5	9.8	7.7
4	17	17	14	8.0	8.2	7.3	8.4	7.1	6.7	7.5	9.8	8.4
5	17	17	13	8.0	8.6	7.3	8.6	7.1	6.9	7.3	9.5	10
6	17	17	12	8.0	8.6	7.3	8.4	7.1	7.3	7.3	9.5	9.5
7	17	17	11	8.0	8.2	7.5	8.2	7.1	7.5	6.9	9.5	8.6
8	17	17	11	8.0	7.7	9.0	7.7	6.9	7.5	7.1	9.3	9.0
9	17	17	11	8.0	7.7	8.4	7.5	7.1	7.3	7.3	9.3	9.3
10	17	17	10	9.0	7.7	8.2	7.5	7.1	7.3	7.1	9.3	9.3
11	17	17	9.6	9.0	7.7	8.2	8.0	7.1	7.1	7.1	9.3	9.3
12	17	17	8.8	8.4	7.7	8.2	7.7	7.5	7.3	7.1	9.0	9.3
13	16	17	8.6	8.3	8.0	8.2	8.0	7.7	8.4	7.1	9.0	9.5
14	17	17	8.3	8.3	8.0	7.3	7.7	8.2	8.4	7.1	9.3	9.8
15	17	17	8.1	8.6	8.0	7.7	7.7	15	8.4	7.1	9.3	9.8
16	17	17	8.1	8.4	8.2	8.6	7.7	12	8.2	6.9	9.3	9.5
17	17	18	8.1	8.4	9.3	9.3	8.0	5.3	8.0	6.9	9.3	9.5
18	17	18	9.2	8.1	8.8	9.0	7.7	7.2	8.2	6.9	9.3	9.8
19	17	20	9.2	8.3	8.6	8.8	7.7	7.3	8.2	6.9	9.3	10
20	17	18	8.4	9.2	8.6	8.4	7.7	8.2	8.4	6.9	9.3	10
21	17	18	8.3	12	8.4	8.2	7.5	8.6	8.4	6.9	9.3	10
22	17	17	8.3	8.3	8.2	8.2	7.1	8.4	7.1	7.1	9.3	9.8
23	17	17	8.3	8.0	8.2	8.0	7.3	8.4	7.3	7.1	9.3	9.8
24	17	17	8.3	8.1	8.0	8.0	7.3	8.4	7.3	7.1	8.4	9.8
25	17	17	8.3	98	8.0	8.0	7.7	8.2	7.3	7.1	7.7	10
26	17	17	8.3	21	8.0	8.2	7.7	8.2	7.3	7.1	7.7	10
27	17	17	8.3	15	8.0	8.0	7.7	8.2	7.3	7.1	7.7	10
28	17	17	8.3	32	8.0	8.0	7.5	8.0	7.5	7.7	7.7	10
29	17	17	8.3	25	7.7	7.7	7.3	8.0	7.5	9.0	7.7	9.5
30	17	19	8.3	8.4	-----	7.7	7.7	8.0	7.5	9.3	7.7	9.5
31	18	-----	8.3	9.0	-----	7.7	-----	9.3	-----	9.3	7.7	-----
TOTAL	527	519	312.7	410.9	236.5	249.3	235.5	248.0	251.6	227.4	278.2	282.4
MEAN	17.0	17.3	10.1	13.3	8.16	8.04	7.85	8.00	8.39	7.34	8.97	9.41
MAX	18	20	18	98	9.3	9.3	9.3	15	16	9.3	9.8	10
MIN	16	17	8.1	8.0	7.7	7.3	7.1	5.3	6.7	6.9	7.7	7.7
AC-FT	1,050	1,030	620	815	469	494	467	492	499	451	552	560
CAL YR 1967	TOTAL 93,909.9		MEAN 257		MAX 3,340		MIN 6.4		AC-FT 186,300			
WTR YR 1968	TOTAL 3,778.5		MEAN 10.3		MAX 98		MIN 5.3		AC-FT 7,490			

TULARE LAKE BASIN

11-2168. ROCK CREEK AT DINKEY CREEK, CALIF.

LOCATION.--Lat 37°05'20" (revised), long 119°09'40", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.5, T.10 S., R.26 E., on right bank 0.4 mile northwest of town of Dinkey Creek, and 0.5 mile upstream from mouth.

DRAINAGE AREA.--7.60 sq mi.

RECORDS AVAILABLE.--July 1960 to September 1968.

GAGE.--Graphic water-stage recorder and low-flow concrete control. Altitude of gage is 6,150 ft (from topographic map).

AVERAGE DISCHARGE.--8 years, 16.8 cfs (12,160 acre-ft per year).

EXTREMES.--Maximum discharge during year, 83 cfs Feb. 20 (gage height, 3.83 ft); minimum daily, 0.01 cfs for many days.
1960-68: Maximum discharge, 2,850 cfs Feb. 1, 1963 (gage height, 8.68 ft), from rating curve extended above 400 cfs on basis of slope-area measurement of maximum flow; no flow at times in 1961-62, 1964-67.

REMARKS.--Records good. No diversions or regulation above station. See schematic diagram for Kings River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.64	.13	.56	2.9	5.0	33	41	22	4.2	.46	.06	.01
2	.44	.13	1.0	2.4	4.4	28	32	20	4.0	.42	.05	.01
3	.44	.13	1.4	2.4	5.3	28	28	19	3.6	.38	.05	.01
4	.44	.13	1.4	2.1	5.5	29	29	18	3.5	.32	.04	.01
5	.38	.13	1.4	2.2	5.5	26	33	16	3.4	.29	.04	.01
6	.38	.14	1.5	2.2	5.1	23	29	14	3.5	.27	.04	.01
7	.32	.15	1.6	2.1	5.3	20	29	13	4.8	.38	.04	.01
8	.32	.15	1.5	2.2	5.5	18	35	12	5.3	.46	.04	.01
9	.26	.15	1.6	2.1	5.5	16	41	12	4.1	.64	.04	.01
10	.23	.14	2.1	2.1	5.3	15	48	11	3.6	.32	.04	.01
11	.21	.13	2.6	2.1	5.1	14	52	11	3.2	.23	.04	.01
12	.20	.12	2.1	2.2	5.1	15	50	11	2.9	.19	.04	.01
13	.19	.12	1.8	2.2	5.1	14	46	11	2.6	.18	.09	.01
14	.18	.32	1.6	2.3	4.8	14	45	14	2.4	.17	.08	.01
15	.17	.27	1.4	8.1	4.4	12	44	15	2.2	.17	.06	.01
16	.16	.19	1.1	11	4.8	11	36	13	2.1	.17	.06	.01
17	.15	.17	1.1	8.8	12	12	30	12	2.1	.16	.06	.01
18	.14	.52	1.1	7.0	19	11	24	10	2.1	.15	.06	.01
19	.13	2.1	1.2	6.0	17	10	22	9.6	1.9	.13	.05	.01
20	.13	2.0	1.2	6.2	65	12	22	9.1	1.7	.14	.08	.01
21	.13	2.0	1.2	6.5	47	12	20	8.6	1.5	.12	.09	.01
22	.13	1.6	1.5	6.5	36	12	19	8.6	1.2	.11	.09	.02
23	.13	1.0	2.0	7.4	38	13	20	8.2	1.0	.09	.07	.02
24	.13	.88	2.7	7.2	37	16	22	7.6	1.0	.09	.06	.02
25	.12	.72	3.4	7.2	34	21	24	7.2	.88	.08	.04	.02
26	.12	.64	4.2	6.2	30	24	27	6.7	.80	.07	.03	.01
27	.13	.51	4.8	5.1	34	28	28	6.2	.64	.07	.03	.01
28	.13	.64	5.0	5.6	39	35	28	5.6	.56	.07	.03	.01
29	.13	.42	4.2	5.6	36	44	26	5.1	.56	.06	.03	.01
30	.14	.35	3.2	6.2	-----	48	24	5.0	.51	.06	.02	.01
31	.14	-----	3.0	5.6	-----	49	-----	4.8	-----	.06	.01	-----
TOTAL	6.94	16.08	64.46	147.7	525.7	663	954	346.3	71.85	6.51	1.56	0.34
MEAN	.22	.54	2.08	4.76	18.1	21.4	31.8	11.2	2.40	.21	.050	.011
MAX	.64	2.1	5.0	11	65	49	52	22	5.3	.64	.09	.02
MIN	.12	.12	.56	2.1	4.4	10	19	4.8	.51	.06	.01	.01
AC-FT	14	32	128	293	1,040	1,320	1,890	687	143	13	3.1	.7

CAL YR 1967 TOTAL 10,437.78 MEAN 28.6 MAX 244 MIN .10 AC-FT 20,700
WTR YR 1968 TOTAL 2,804.44 MEAN 7.66 MAX 65 MIN .01 AC-FT 5,560

Peak discharge (base, 70 cfs).--Feb. 20 (1700 hrs) 83 cfs (3.83 ft); Mar. 30 (1800 hrs) 70 cfs (3.69 ft).

11-2184. NORTH FORK KINGS RIVER BELOW DINKEY CREEK, NEAR BALCH CAMP, CALIF.

LOCATION.--Lat 36°52'50", long 119°07'40", in NW¼ sec.22, T.12 S., R.26 E., on right bank 1.1 miles upstream from mouth, 1.7 miles south of Balch Camp, 2.1 miles downstream from Dinkey Creek, and 9 miles east of Trimmer.

DRAINAGE AREA.--387 sq mi.

RECORDS AVAILABLE.--March 1960 to September 1968. Prior to October 1962, published as "below Dinkey Creek."

GAGE.--Digital water-stage recorder. Altitude of gage is 1,035 ft (from river-profile map). Prior to Mar. 24, 1966, graphic water-stage recorder at same site and datum.

EXTREMES.--Maximum discharge during year, 547 cfs Apr. 28 (gage height, 4.05 ft); minimum daily, 14 cfs Sept. 1-4, 6-23, 26-30.

1960-68: Maximum discharge, 27,400 cfs Feb. 1, 1963 (gage height, 19.20 ft), from rating curve extended above 4,900 cfs; minimum daily, 14 cfs Aug. 26-30, 1964, Sept. 1-4, 6-23, 26-30, 1968.

REMARKS.--Records good. Flow regulated by Courtright Reservoir (see sta. no. 11-2145.5), Wishon Reservoir (see sta. no. 11-2148.), Black Rock Reservoir (capacity, 1,000 acre-ft), Balch afterbay (capacity, 125 acre-ft), and Haas and Balch powerplants. Diversion from Balch afterbay to Kings River powerhouse began Mar. 1, 1962. See schematic diagram of Kings River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

REVISIONS (water year).--1967 report: 1963.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	38	60	63	82	246	347	404	137	30	17	14
2	56	37	63	60	84	204	283	399	131	29	17	14
3	53	37	69	55	92	199	236	375	126	28	16	14
4	51	37	64	53	95	202	238	352	111	27	16	14
5	50	37	92	53	98	204	276	357	104	26	16	15
6	50	39	69	52	92	184	248	304	101	25	16	14
7	49	39	66	51	91	166	234	285	102	24	15	14
8	47	38	65	51	92	188	260	262	121	26	15	14
9	46	38	61	52	94	159	287	264	99	30	15	14
10	45	38	62	66	99	149	342	250	90	32	15	14
11	44	38	66	66	87	151	388	246	81	27	15	14
12	43	37	67	63	88	166	388	242	76	29	15	14
13	41	37	56	64	85	148	357	218	73	23	15	14
14	43	40	43	63	83	142	359	240	69	22	16	14
15	43	45	52	115	79	137	377	262	66	22	17	14
16	41	43	51	148	81	148	311	252	61	21	17	14
17	41	41	48	100	169	141	296	233	58	21	17	14
18	40	40	57	87	201	139	246	246	57	20	17	14
19	40	96	58	83	175	130	229	254	54	19	17	14
20	40	100	56	82	362	133	225	256	51	18	17	14
21	39	73	54	91	340	142	204	254	48	18	19	14
22	39	63	57	88	260	146	194	231	44	17	20	14
23	40	57	65	93	258	133	208	194	43	17	20	14
24	40	54	70	92	262	144	234	172	41	16	17	15
25	39	53	76	204	244	162	264	169	39	16	15	15
26	39	51	82	141	229	180	342	188	37	16	15	14
27	39	49	84	165	215	189	393	196	35	16	15	14
28	39	51	84	120	250	218	413	189	34	16	15	14
29	39	51	79	119	248	268	432	177	32	18	15	14
30	40	72	69	79	-----	325	424	159	31	18	15	14
31	39	-----	66	88	-----	332	-----	144	-----	18	15	-----
TOTAL	1,353	1,469	2,011	2,707	4,635	5,575	9,035	7,774	2,152	685	502	423
MEAN	43.6	49.0	64.9	87.3	160	180	301	251	71.7	22.1	16.2	14.1
MAX	58	100	92	204	362	332	432	404	137	32	20	15
MIN	39	37	43	51	79	130	194	144	31	16	15	14
AC-FT	2,680	2,910	3,990	5,370	9,190	11,060	17,920	15,420	4,270	1,360	996	839
CAL YR 1967	TOTAL 237,369		MEAN 650		MAX 4,590		MIN 37		AC-FT 470,800			
WTR YR 1968	TOTAL 38,321		MEAN 105		MAX 432		MIN 14		AC-FT 76,010			

TULARE LAKE BASIN

11-2185. KINGS RIVER BELOW NORTH FORK, NEAR TRIMMER, CALIF.

LOCATION.--Lat 36°52'30", long 119°08'30", in NE¼ sec.21, T.12 S., R.26 E., on right bank 0.8 mile downstream from North Fork, 2.4 miles southwest of Balch Camp, and 8.5 miles southeast of Trimmer.

DRAINAGE AREA.--1,342 sq mi.

RECORDS AVAILABLE.--October 1951 to September 1968. Prior to January 1952 monthly discharge only, published in WSP 1735. Published as Kings River below North Fork October 1951 to September 1965.

GAGE.--Graphic water-stage recorder. Datum of gage is 942.42 ft above mean sea level (levels by Corps of Engineers).

AVERAGE DISCHARGE.--17 years, 2,059 cfs (1,491,000 acre-ft per year), adjusted for change in contents in Wishon and Courtright Reservoirs.

EXTREMES.--Maximum discharge during year, 5,940 cfs May 29; minimum daily, 114 cfs Sept. 29. 1951-68: Maximum discharge, 85,200 cfs Dec. 23, 1955 (gage height, 23.08 ft), from rating curve extended above 18,000 cfs on basis of slope-area measurement of maximum flow; minimum daily, 97 cfs Jan. 13, 1963. Flood of Nov. 19, 1950, reached a stage of 21.6 ft from floodmarks (discharge, 74,200 cfs).

REMARKS.--Records good. Flow regulated by Courtright and Wishon Reservoirs (see sta. nos. 11-2145.5. and 11-2148.). Records include flow diverted to Kings River powerplant since Mar. 1, 1962. This station measures inflow to Pine Flat Reservoir. See schematic diagram for Kings River basin. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Three discharge measurements furnished by Kings River Water Association. Records of diversion to Kings River powerplant furnished by Pacific Gas and Electric Co.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,600	1,120	993	425	692	1,360	1,710	3,690	3,620	1,390	1,250	150
2	1,550	1,120	645	499	470	965	1,410	3,800	3,860	1,320	1,330	152
3	1,500	1,100	688	471	563	901	1,270	3,590	4,060	1,430	1,370	689
4	1,450	1,120	815	434	480	874	1,410	3,250	3,770	1,030	1,320	708
5	1,420	1,120	924	558	986	863	1,420	3,560	3,330	1,230	1,270	875
6	1,410	1,120	926	440	552	989	1,450	3,090	2,330	833	1,270	735
7	1,370	1,130	799	413	652	867	1,190	2,890	1,880	744	1,240	304
8	1,340	1,120	783	413	450	1,040	1,410	2,780	1,800	860	1,300	299
9	1,310	1,120	450	407	455	882	1,380	2,660	1,750	1,430	1,240	669
10	1,300	1,120	450	514	545	924	1,640	2,520	1,540	1,680	894	502
11	1,290	1,030	830	795	546	896	1,990	2,550	1,570	1,270	523	823
12	1,290	1,110	753	464	710	976	2,140	2,500	1,720	1,030	714	739
13	1,160	1,040	752	434	747	830	2,090	2,390	1,930	721	785	615
14	1,250	837	415	369	695	770	1,920	1,990	1,950	648	1,110	392
15	1,220	847	443	704	717	807	2,180	1,920	2,010	674	801	132
16	1,230	833	519	736	720	819	1,960	1,990	2,130	768	951	659
17	1,220	823	426	548	904	814	1,750	2,370	2,310	756	770	619
18	1,200	545	578	458	943	896	1,530	2,700	2,250	868	583	892
19	1,190	844	465	795	1,020	855	1,380	3,480	2,150	821	655	743
20	1,180	920	664	533	1,420	817	1,400	4,080	2,140	539	816	681
21	1,180	886	543	565	1,440	833	1,140	4,390	1,930	470	607	137
22	1,180	957	742	448	1,210	813	1,150	3,600	1,960	714	650	124
23	1,170	396	637	445	1,250	778	1,210	2,750	1,710	742	932	675
24	1,170	915	515	445	1,180	684	1,210	2,610	1,850	611	803	702
25	1,160	432	530	550	917	824	1,390	2,370	1,920	727	618	616
26	1,160	364	624	504	1,160	808	2,340	3,330	1,780	695	839	710
27	1,150	747	658	543	1,290	890	2,760	4,230	1,810	522	847	859
28	1,150	854	697	455	1,520	1,100	3,230	4,670	1,880	525	699	116
29	1,140	826	565	552	1,330	1,230	3,400	4,840	1,530	951	827	114
30	1,200	927	631	496	-----	1,390	3,660	4,450	1,030	1,020	835	725
31	1,140	-----	460	639	-----	1,650	-----	3,700	-----	1,300	172	-----
TOTAL	39,280	27,323	19,920	16,052	25,564	29,145	54,120	98,740	65,500	28,319	28,021	16,156
MEAN	1,267	911	643	518	882	940	1,804	3,185	2,183	914	904	539
MAX	1,600	1,130	993	795	1,520	1,650	3,660	4,840	4,060	1,680	1,370	892
MIN	1,140	364	415	369	450	684	1,140	1,920	1,030	470	172	114
AC-FT	77,910	54,190	39,510	31,840	50,710	57,810	107,300	195,800	129,900	56,170	55,580	32,040
Mean a	425	390	537	503	864	1,074	2,360	4,025	2,232	644	302	108
Ac-ft a	26,110	23,190	33,010	30,940	49,710	66,010	140,400	247,500	132,800	39,570	18,580	6,440

CAL YR 1967 TOTAL 1,451,485 MEAN 3,977 MAX 19,100 MIN 364 AC-FT 2,879,000 MEAN a 3,974 AC-FT a 2,877,000
WTR YR 1968 TOTAL 448,140 MEAN 1,224 MAX 4,840 MIN 114 AC-FT 888,900 MEAN a 1,122 AC-FT a 814,300

a Adjusted for change in contents in Wishon and Courtright Reservoirs.

11-2200..BIG CREEK ABOVE PINE FLAT RESERVOIR, NEAR TRIMMER, CALIF.

LOCATION.--Lat 36°55'05", long 119°14'45", in NE $\frac{1}{4}$ sec.4, T.12 S., R.25 E., on right bank 2.4 miles upstream from mouth and 2.7 miles northeast of Trimmer.

DRAINAGE AREA.--69.9 sq mi.

RECORDS AVAILABLE.--October 1953 to September 1968. Prior to September 1965 published as Big Creek above Pine Flat Reservoir.

GAGE.--Graphic water-stage recorder. Datum of gage is 962.04 ft above mean sea level (levels by Corps of Engineers).

AVERAGE DISCHARGE.--15 years, 44.9 cfs (32,510 acre-ft per year); median of yearly mean discharges, 28 cfs (20,300 acre-ft per year).

EXTREMES.--Maximum discharge during year, 167 cfs Dec. 5 (gage height, 2.85 ft); no flow for many days. 1953-68: Maximum discharge, 10,400 cfs Dec. 23, 1955 (gage height, 9.21 ft), from rating curve extended above 1,300 cfs on basis of slope-area measurement of maximum flow; no flow at times most years.

REMARKS.--Records good. This station measures inflow to Pine Flat Reservoir. No regulation or diversion above station. See schematic diagram for Kings River basin.

COOPERATION.--One discharge measurement furnished by Kings River Water Association.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	5.3	27	17	32	33	33	14	7.4	2.3	.08	
2	7.1	5.3	19	17	30	32	42	13	6.8	2.2	.04	
3	7.1	5.3	18	16	34	29	33	13	6.5	2.2	.01	
4	7.1	5.0	15	14	33	29	30	12	6.2	2.0	0	
5	7.4	5.3	69	14	33	27	32	12	6.2	1.9	0	
6	7.4	5.6	40	15	31	27	36	12	7.1	1.5	0	
7	7.4	5.6	23	15	29	27	31	12	8.7	1.4	0	
8	6.8	5.6	22	15	29	47	29	12	11	1.4	0	
9	6.2	5.6	18	15	29	48	26	12	9.1	1.9	0	
10	6.2	5.9	17	23	34	33	26	12	7.7	1.9	0	
11	5.9	6.2	16	50	29	29	25	12	7.4	1.3	0	
12	5.6	5.9	17	31	26	29	25	13	6.5	.91	0	
13	5.6	5.9	17	23	26	29	24	15	6.2	.80	0	
14	5.9	5.9	11	21	30	33	23	26	5.6	.80	0	
15	5.9	6.5	14	40	26	28	22	23	5.0	.80	0	
16	5.3	6.8	14	46	25	33	21	17	4.9	.70	0	
17	5.0	6.8	13	32	66	50	23	15	4.4	.70	0	
18	5.0	6.8	19	26	74	41	23	13	4.4	.60	0	
19	5.0	25	20	23	51	36	20	12	4.2	.50	0	
20	5.0	40	17	21	66	33	19	12	4.0	.42	.04	
21	5.3	15	15	21	68	33	19	11	3.7	.34	.18	
22	5.6	12	17	21	56	30	18	12	3.6	.18	.42	
23	5.9	11	20	21	51	29	18	12	3.5	.12	.50	
24	5.9	10	23	20	48	29	17	11	3.3	.04	.42	
25	5.6	9.4	25	20	44	30	17	11	3.2	.04	.18	
26	5.3	9.4	25	20	40	30	17	11	3.0	.04	.04	
27	5.3	9.4	25	25	38	29	16	9.8	2.7	.02	.01	
28	5.6	9.4	24	24	39	28	15	9.1	2.6	.02	0	
29	5.6	10	22	25	36	27	15	8.0	2.4	.01	0	
30	5.6	34	20	21	-----	26	14	7.4	2.4	.01	0	
31	5.6	-----	18	33	-----	26	-----	7.1	-----	.01	0	-----
TOTAL	185.0	299.9	660	725	1,153	990	709	391.4	159.7	27.06	1.92	0
MEAN	5.97	10.0	21.3	23.4	39.8	31.9	23.6	12.6	5.32	.87	.062	0
MAX	7.4	40	69	50	74	50	42	26	11	2.3	.50	0
MIN	5.0	5.0	11	14	25	26	14	7.1	2.4	.01	0	0
AC-FT	367	595	1,310	1,440	2,290	1,960	1,410	776	317	54	3.8	0

CAL YR 1967 TOTAL 39,444.0 MEAN 108 MAX 986 MIN 5.0 AC-FT 78,240
WTR YR 1968 TOTAL 5,301.98 MEAN 14.5 MAX 74 MIN 0 AC-FT 10,520

Peak discharge (base, 500 cfs).--No peak above base.

TULARE LAKE BASIN

11-2205. SYCAMORE CREEK ABOVE PINE FLAT RESERVOIR, NEAR TRIMMER, CALIF.

LOCATION.--Lat 36°55'15", long 119°18'30", in NW¼ sec.1, T.12 S., R.24 E., on right bank 0.1 mile downstream from Little Dry Creek, 1.7 miles northwest of Trimmer, and 4.8 miles upstream from mouth.

DRAINAGE AREA.--56.1 sq mi.

RECORDS AVAILABLE.--April 1953 to September 1968. Prior to October 1965, published as Sycamore Creek above Pine Flat Reservoir.

GAGE.--Graphic water-stage recorder. Datum of gage is 1,141.96 ft above mean sea level (levels by Corps of Engineers).

AVERAGE DISCHARGE.--15 years, 19.1 cfs (13,830 acre-ft per year); median of yearly mean discharges, 10 cfs (7,200 acre-ft per year).

EXTREMES.--Maximum discharge during year, 122 cfs Dec. 5 (gage height, 1.93 ft); no flow for several months. 1953-68: Maximum discharge, 6,760 cfs Dec. 24, 1955 (gage height, 9.78 ft), from rating curve extended above 2,900 cfs on basis of slope-area measurement of maximum flow; no flow for several months each year.

REMARKS.--Records good. This station measures inflow to Pine Flat Reservoir. No regulation or diversion above station. See schematic diagram for Kings River basin.

COOPERATION.--One discharge measurement furnished by Kings River Water Association.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.24	.66	13	4.3	18	5.6	9.5	2.0	.58			
2	.24	.66	6.2	4.0	14	5.6	18	1.8	.42			
3	.24	.66	4.3	4.0	14	5.2	11	1.8	.32			
4	.32	.66	3.6	3.6	12	5.6	8.3	1.6	.28			
5	.42	.66	39	3.6	9.9	5.6	7.8	1.6	.28			
6	.42	.66	12	3.6	8.8	5.6	8.3	1.5	.32			
7	.50	.66	6.2	3.6	7.8	5.6	6.7	1.5	.36			
8	.36	.58	5.2	3.6	7.3	18	6.2	1.5	.36			
9	.28	.66	4.6	3.6	7.3	18	5.2	1.5	.36			
10	.28	.66	4.0	12	7.8	15	4.9	1.5	.24			
11	.32	.74	4.0	24	6.7	9.9	4.9	1.5	.20			
12	.36	.74	4.0	9.9	6.2	8.8	4.6	1.8	.11			
13	.36	.74	4.3	7.3	6.7	11	4.3	2.5	.07			
14	.42	.74	3.3	5.9	10	12	4.0	6.7	.07			
15	.42	.74	3.0	10	7.3	8.8	4.0	4.9	.07			
16	.42	.74	3.0	9.4	6.7	16	4.0	3.6	.07			
17	.50	.84	3.0	6.7	40	32	4.3	3.0	.04			
18	.50	.84	5.6	5.9	26	18	4.3	2.5	.02			
19	.66	1.8	8.3	5.6	14	13	4.0	2.2	.02			
20	.66	2.2	7.3	5.6	14	12	3.6	1.8	.02			
21	.66	1.6	5.6	5.2	15	10	3.6	1.8	.02			
22	.58	1.4	5.6	4.9	12	9.4	3.3	1.8	.02			
23	.42	1.2	7.3	4.9	9.9	8.8	3.3	1.8	.01			
24	.42	1.2	8.8	4.6	9.4	8.3	3.3	1.6	.01			
25	.50	1.2	8.3	4.6	8.3	8.3	3.0	1.5	.01			
26	.50	1.2	7.8	4.9	7.3	7.8	3.0	1.5	0			
27	.50	1.2	6.7	7.3	6.7	7.3	2.8	1.4	0			
28	.66	1.4	5.6	12	6.2	6.7	2.5	1.1	0			
29	.66	1.4	5.2	9.9	5.6	6.2	2.2	.94	0			
30	.66	12	4.9	8.3	-----	6.2	2.0	.74	0			
31	.66	-----	4.6	38	-----	5.9	-----	.66	-----			
TOTAL	14.14	40.44	214.3	240.8	324.9	316.2	156.9	61.64	4.28	0	0	0
MEAN	.46	1.35	6.91	7.77	11.2	10.2	5.23	1.99	.14	0	0	0
MAX	.66	12	39	38	40	32	18	6.7	.58	0	0	0
MIN	.24	.58	3.0	3.6	5.6	5.2	2.0	.66	0	0	0	0
AC-FT	28	80	425	478	644	627	311	122	8.5	0	0	0

CAL YR 1967 TOTAL 14,888.68 MEAN 40.8 MAX 561 MIN 0 AC-FT 29,530
WTR YR 1968 TOTAL 1,373.60 MEAN 3.75 MAX 40 MIN 0 AC-FT 2,720

Peak discharge (base, 300 cfs).--No peak above base.

11-2210. PINE FLAT RESERVOIR NEAR PIEDRA, CALIF.

LOCATION.--Lat 36°49'55", long 119°19'25", in NE $\frac{1}{4}$ sec.2, T.13 S., R.24 E. (revised), near center of Pine Flat Dam on Kings River, 1.9 miles upstream from Mill Creek, 3.5 miles northeast of Piedra, and 16 miles north-east of Sanger.

DRAINAGE AREA.--1,545 sq mi.

RECORDS AVAILABLE.--October 1951 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers). Prior to Apr. 8, 1952, non-recording mercury gage on dam at same datum.

EXTREMES.--Maximum contents during year, 739,100 acre-ft May 31 (elevation, 903.51 ft); minimum, 305,900 acre-ft Sept. 29 (elevation, 796.77 ft).

1951-68: Maximum contents, 1,009,000 acre-ft July 15, 1967 (elevation, 952.76 ft); minimum since gross pool elevation first obtained, 305,900 acre-ft Sept. 29, 1968 (elevation, 796.77 ft).

REMARKS.--Reservoir is formed by gravity-type concrete dam; regulation of discharge from reservoir began Dec. 4, 1951. Total capacity, 1,001,500 acre-ft between elevations 565.5 (bottom of lower tier of river outlets) and 951.5 ft (gross pool elevation). No dead storage. Reservoir is used for flood control and conservation storage. Water is released down Kings River for diversion by the Kings River Water Association. Records, including extremes, represent contents at 2400 hours. See schematic diagram for Kings River basin.

COOPERATION.--Records furnished by Corps of Engineers.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

715	104,400	840	457,800
720	113,400	860	538,800
740	154,000	890	673,400
760	201,400	920	824,200
780	255,400	950	992,600
800	316,200	960	1,052,800
820	383,600		

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	666.2	651.4	694.6	699.5	681.0	706.1	656.2	674.4	738.6	549.7	377.9	346.8
2	666.2	653.0	695.7	699.4	681.1	704.5	656.4	678.8	738.3	540.9	377.6	344.4
3	666.4	654.7	696.8	699.1	681.1	701.8	656.3	682.9	738.4	532.6	377.4	342.9
4	666.9	656.5	698.1	698.6	681.2	698.9	656.7	686.4	737.8	523.7	377.0	341.7
5	667.3	658.2	700.4	698.1	681.5	695.9	657.3	690.4	736.5	515.3	376.4	340.6
6	668.0	660.1	702.3	697.3	681.4	692.5	658.2	693.6	733.4	506.9	375.3	339.1
7	668.0	662.2	702.8	696.0	681.3	689.5	658.4	696.3	729.7	498.5	374.4	336.8
8	667.0	664.4	702.5	694.8	680.8	687.2	659.1	698.8	725.5	492.6	373.4	334.1
9	665.8	666.4	701.5	693.5	680.8	684.9	659.6	701.1	720.7	487.6	372.4	331.7
10	664.6	668.5	700.4	692.7	681.0	682.8	660.4	702.9	715.5	482.9	371.1	329.8
11	663.4	670.5	700.0	692.4	681.2	680.6	661.6	704.7	710.0	477.2	369.2	328.1
12	662.3	672.4	699.7	691.5	681.9	678.3	662.7	706.4	704.3	471.0	367.9	326.6
13	661.3	674.4	699.7	690.3	682.7	676.2	663.6	708.1	698.5	464.3	366.8	325.1
14	660.5	675.4	699.3	689.2	683.4	673.9	663.9	709.3	692.0	457.5	366.2	323.3
15	659.8	676.6	699.0	688.8	684.3	671.8	664.5	710.5	684.9	451.7	365.6	320.8
16	660.0	677.6	698.9	688.5	685.1	670.3	664.7	712.0	678.1	447.1	365.1	319.2
17	660.8	678.4	698.6	687.9	686.5	669.0	664.4	713.4	671.1	442.6	364.4	317.8
18	661.5	678.3	699.4	687.0	687.7	667.9	663.7	715.9	663.8	438.6	363.3	316.6
19	662.2	679.7	700.0	686.9	688.9	666.3	662.8	719.7	655.9	434.4	362.1	315.7
20	662.2	681.3	700.2	686.2	691.0	664.5	662.0	723.6	647.7	429.6	361.5	314.3
21	661.3	682.6	699.7	685.2	693.5	662.7	660.5	728.0	639.1	424.4	360.3	312.2
22	660.4	684.1	699.5	684.1	695.8	661.6	659.1	730.5	630.2	419.7	359.3	310.1
23	659.4	684.6	699.4	683.1	698.3	660.6	657.9	730.6	620.9	414.9	358.7	308.9
24	658.2	686.0	699.0	682.1	700.4	659.6	656.7	730.4	612.0	409.5	357.9	308.4
25	657.0	686.3	698.5	681.5	702.0	658.8	656.0	729.4	603.1	404.2	356.8	308.0
26	655.8	686.5	698.5	680.9	703.9	657.9	657.3	730.3	594.0	398.8	355.8	307.7
27	654.7	687.7	698.9	681.1	705.7	657.2	659.6	732.4	585.1	393.2	354.8	307.6
28	653.5	689.0	699.2	680.7	706.9	656.7	662.7	735.0	576.8	387.7	353.6	306.6
29	652.4	690.5	699.3	680.5	707.0	656.4	666.2	737.3	567.9	383.3	352.4	305.9
30	651.2	692.8	699.7	680.3	-----	656.0	670.0	739.0	558.1	379.6	351.6	306.6
31	650.0	-----	699.6	680.4	-----	655.7	-----	739.1	-----	378.5	349.2	-----
(a)	894.05	885.03	895.46	891.48	896.99	886.25	889.29	903.51	864.55	818.56	810.07	796.99
(b)	-16.0	+42.8	+6.8	-19.2	-26.6	-51.3	+14.3	+69.1	-181.0	-179.6	-29.3	-42.6
(c)	1,832.0	78.1	331.0	336.0	462.0	904.0	1,541.0	2,246.0	2,880.0	2,787.0	2,382.0	1,959.0
MAX	668.0	692.8	702.8	699.5	707.0	706.1	670.0	739.1	738.6	549.7	377.9	346.8
MIN	650.0	651.4	694.6	680.3	680.8	655.7	656.0	674.4	558.1	378.4	349.2	305.9
CAL YR 1967		b +140.2			MAX 1,009.0		MIN 651.4					
WTR YR 1968		b -359.4			MAX 739.1		MIN 305.9					

a Elevation, in feet, at end of month.

b Change in contents, in thousands of acre-feet.

c Evaporation, in acre-feet.

TULARE LAKE BASIN

11-2215. KINGS RIVER BELOW PINE FLAT DAM, CALIF.

LOCATION.--Lat 36°49'50", long 119°20'05", in NW¼ sec. 2, T.13 S., R.24 E., on right bank 3,200 ft downstream from Pine Flat Dam and 2.9 miles northeast of Piedra.

DRAINAGE AREA.--1,545 sq mi.

RECORDS AVAILABLE.--October 1953 to September 1968. Monthly and yearly discharges only and adjusted flow for some periods published in WSP 1735.

GAGE.--Digital water-stage recorder and concrete control. Datum of gage is 556.97 ft above mean sea level (levels by Corps of Engineers). Prior to Oct. 1, 1956, graphic water-stage recorder at site 0.2 mile downstream at datum 3.48 ft lower, Oct. 1, 1956, to Sept. 27, 1964, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--15 years, 2,076 cfs (1,503,000 acre-ft per year), adjusted for change in storage and evaporation.

EXTREMES.--Maximum discharge during year, 8,760 cfs June 21 (gage height, 7.41 ft); minimum daily, 55 cfs Dec. 6.

1953-68: Maximum discharge, 15,400 cfs July 3, 1967 (gage height, 10.05 ft); minimum, 1.1 cfs Feb. 26, 27, 1962.

REMARKS.--Records excellent. Flow regulated by Pine Flat Reservoir (see sta. no. 11-2210) and Wishon and Courtright Reservoirs (see sta. nos. 11-2145.5 and 11-2148). See schematic diagram for Kings River basin.

COOPERATION.--Sixteen discharge measurements furnished by Kings River Water Association.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,490	355	106	468	507	1,840	1,640	1,520	3,860	5,670	1,580	1,330
2	1,440	324	122	546	524	1,800	1,390	1,480	4,040	5,550	1,500	1,330
3	1,300	234	153	609	522	2,380	1,310	1,490	4,020	5,530	1,470	1,310
4	1,150	217	148	672	513	2,490	1,210	1,480	4,110	5,530	1,480	1,320
5	1,130	217	88	746	551	2,580	1,070	1,480	4,060	5,230	1,520	1,380
6	1,050	169	55	866	672	2,700	1,050	1,470	3,960	5,030	1,590	1,420
7	1,280	96	495	1,010	668	2,680	1,050	1,450	3,830	5,010	1,630	1,530
8	1,790	87	1,000	1,030	659	2,400	1,060	1,450	3,940	3,890	1,670	1,610
9	1,850	87	1,000	1,060	549	2,030	1,120	1,420	4,290	3,970	1,620	1,610
10	1,870	88	1,000	1,010	516	2,020	1,220	1,400	4,260	4,110	1,490	1,580
11	1,850	75	1,000	970	503	2,100	1,280	1,590	4,380	4,210	1,420	1,560
12	1,830	75	1,000	980	441	2,210	1,430	1,530	4,700	4,170	1,350	1,470
13	1,690	121	806	973	391	2,120	1,600	1,470	4,890	4,070	1,290	1,380
14	1,580	203	603	932	391	1,920	1,690	1,380	5,320	4,090	1,310	1,380
15	1,560	206	602	956	357	1,830	1,750	1,330	5,560	3,520	1,230	1,380
16	1,110	241	605	978	356	1,710	1,820	1,340	5,670	3,030	1,060	1,370
17	782	333	605	944	438	1,550	1,860	1,460	5,740	2,980	1,060	1,360
18	824	402	464	940	482	1,520	1,860	1,370	5,880	2,890	1,120	1,350
19	782	276	296	960	472	1,630	1,780	1,470	6,120	2,850	1,160	1,250
20	1,150	257	505	894	464	1,760	1,810	2,030	6,200	2,890	1,140	1,260
21	1,570	243	800	1,090	305	1,750	1,830	2,060	6,290	3,010	1,120	1,210
22	1,650	207	800	1,010	110	1,420	1,810	2,300	6,370	3,030	1,120	1,180
23	1,660	208	800	1,040	103	1,270	1,760	2,590	6,380	3,100	1,150	1,140
24	1,700	208	800	964	175	1,220	1,780	2,660	6,340	3,340	1,230	988
25	1,770	220	800	902	203	1,230	1,730	2,710	6,360	3,390	1,220	866
26	1,740	286	647	806	251	1,290	1,630	2,760	6,300	3,370	1,210	850
27	1,700	244	511	701	453	1,280	1,530	2,990	6,210	3,340	1,300	755
28	1,700	173	516	686	809	1,280	1,540	3,260	6,090	3,280	1,300	666
29	1,690	190	497	686	1,280	1,430	1,540	3,510	6,100	3,070	1,300	479
30	1,710	149	495	668	-----	1,590	1,570	3,560	5,960	2,920	1,240	308
31	1,700	-----	492	680	-----	1,740	-----	3,620	-----	1,790	1,370	-----
TOTAL	46,098	6,191	17,811	26,777	13,665	56,770	45,720	61,630	157,230	117,860	41,250	36,622
MEAN	1,487	206	575	864	471	1,831	1,524	1,988	5,241	3,802	1,331	1,221
MAX	1,870	402	1,000	1,090	1,280	2,700	1,860	3,620	6,380	5,670	1,670	1,610
MIN	782	75	55	468	103	1,220	1,050	1,330	3,830	1,790	1,060	308
Ac-ft	91,430	12,280	35,330	53,110	27,100	112,600	90,680	122,200	311,900	233,800	81,820	72,640
Mean a	414	417	585	543	924	1,145	2,346	3,989	2,297	639	292	107
Ac-ft a	25,450	24,840	35,970	33,410	53,130	70,390	139,600	245,300	136,700	39,290	17,970	6,360

Cal yr 1967 Total 1,431,123 Mean 3,921 Max 15,000 Min 34 Ac-ft 2,839,000 Mean a 4,141 Ac-ft a 2,998,000
Wtr yr 1968 Total 627,624 Mean 1,715 Max 6,380 Min 55 Ac-ft 1,245,000 Mean a 1,141 Ac-ft a 828,400

a Adjusted for change in contents in Wishon, Courtright, and Pine Flat Reservoirs, and evaporation from Pine Flat Reservoir.

TULARE LAKE BASIN

621

11-2217. MILL CREEK NEAR PIEDRA, CALIF.

LOCATION.--Lat 36°49'05", long 119°20'25", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.10, T.13 S., R.24 E., on left bank 150 ft upstream from road bridge, 0.7 mile upstream from mouth, and 2.3 miles east of Piedra.

DRAINAGE AREA.--120 sq mi.

RECORDS AVAILABLE.--October 1957 to September 1968 in reports of Geological Survey. November 1938 to September 1957 in reports of Kings River Water Association.

GAGE.--Graphic water-stage recorder and concrete control. Altitude of gage is 550 ft (from topographic map). Prior to July 14, 1958, at site 150 ft upstream at same datum.

AVERAGE DISCHARGE.--11 years, 31.0 cfs (22,440 acre-ft per year); median of yearly mean discharges, 10 cfs (7,200 acre-ft per year).

EXTREMES.--Maximum discharge during year, 56 cfs Feb. 18 (gage height, 2.83 ft); no flow for several months. 1957-68: Maximum discharge, 11,000 cfs Dec. 6, 1966 (gage height, 9.53 ft in gage well, 10.2 ft, from floodmarks); no flow for several months in most years.

REMARKS.--Records good. Some small diversions above station for irrigation. See schematic diagram for Kings River basin.

COOPERATION.--Two discharge measurements furnished by Kings River Water Association.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	2.1	31	15	31	17	19	6.6	0			
2	1.0	2.1	16	14	27	16	33	6.1	0			
3	1.0	2.1	13	14	26	16	26	5.6	0			
4	1.2	2.1	12	14	24	15	20	5.1	0			
5	1.2	2.1	22	13	23	15	19	4.6	0			
6	1.5	2.1	29	13	23	14	19	4.6	0			
7	1.5	2.4	18	13	20	15	16	4.6	0			
8	1.8	2.8	16	13	19	30	15	4.1	0			
9	1.5	2.8	14	12	17	41	14	4.1	.05			
10	1.2	2.8	13	15	19	27	13	4.1	.12			
11	1.2	3.2	12	35	19	23	13	3.6	0			
12	1.0	3.2	12	24	17	20	13	4.1	0			
13	1.0	3.2	14	20	17	23	12	6.1	0			
14	1.2	2.8	13	17	17	24	12	8.2	0			
15	1.2	2.8	12	18	15	20	11	10	0			
16	1.2	3.2	12	20	15	21	11	8.2	0			
17	1.2	3.6	12	18	27	44	11	6.1	0			
18	1.0	4.1	16	17	50	38	12	5.1	0			
19	1.0	9.4	31	16	36	31	11	4.6	0			
20	1.0	20	31	15	30	28	11	4.6	0			
21	1.2	12	20	15	28	26	10	4.1	0			
22	1.0	9.4	17	15	27	24	10	4.1	0			
23	1.2	8.6	16	14	24	23	9.4	4.1	0			
24	1.8	7.9	17	14	23	21	9.4	3.6	0			
25	2.1	7.2	20	13	21	21	9.4	3.2	0			
26	2.1	6.5	20	13	20	20	8.8	2.4	0			
27	2.1	6.5	20	16	19	20	8.2	2.4	0			
28	2.1	6.5	20	22	19	19	7.1	1.8	0			
29	2.4	7.2	18	21	17	17	6.6	1.0	0			
30	2.4	16	17	17	-----	16	6.6	.60	0			
31	2.4	-----	16	31	-----	15	-----	.20	-----			-----
TOTAL	44.9	166.7	550	527	670	700	396.5	137.60	0.17	0	0	0
MEAN	1.45	5.56	17.7	17.0	23.1	22.6	13.2	4.44	.006	0	0	0
MAX	2.4	20	31	35	50	44	33	10	.12	0	0	0
MIN	1.0	2.1	12	12	15	14	6.6	.20	0	0	0	0
AC-FT	89	331	1,090	1,050	1,330	1,390	786	273	.3	0	0	0

CAL YR 1967 TOTAL 30,992.40 MEAN 84.9 MAX 800 MIN 0 AC-FT 61,470
WTR YR 1968 TOTAL 3,192.87 MEAN 8.72 MAX 50 MIN 0 AC-FT 6,330

Peak discharge (base, 250 cfs).--No peak above base.

TULARE LAKE BASIN

11-2245. LOS GATOS CREEK ABOVE NUNEZ CANYON, NEAR COALINGA, CALIF.

LOCATION.--Lat 36°12'55", long 120°28'10", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.5, T.20 S., R.14 E., on right bank 50 ft downstream from highway bridge, 1.1 miles upstream from Nunez Canyon, 3.0 miles downstream from White Creek, and 8 miles northwest of Coalinga.

DRAINAGE AREA.--95.8 sq mi.

RECORDS AVAILABLE.--May 1945 to September 1968. Prior to October 1949 monthly discharge only, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Altitude of gage is 1,100 ft (from topographic map). Prior to Aug. 2, 1959, at site 100 ft downstream at same datum.

AVERAGE DISCHARGE.--23 years, 2.90 cfs (2,100 acre-ft per year); median of yearly mean discharges, 0.7 cfs (510 acre-ft per year).

EXTREMES.--Maximum discharge during year, 12 cfs Nov. 19, Dec. 5 (gage height, 4.32 ft); no flow for several months.

1949-68: Maximum discharge, 2,560 cfs Apr. 3, 1958, Feb. 9, 1962, from rating curve extended above 80 cfs on basis of contracted-opening measurement of maximum flow; maximum gage height, 7.61 ft in gage well, 9.29 ft from floodmarks Dec. 6, 1966; no flow for several months each year.

REMARKS.--Records good. Minor diversion for irrigation and stock ponds.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.96	.12	3.9	.68	.54	.24	.82	.02	.01			
2	.68	.12	2.2	.68	.44	.18	1.1	.02	.01			
3	.68	.09	1.6	.54	.44	.18	.68	.02	.01			
4	.68	.09	1.2	.54	.34	.18	.54	.02	.01			
5	.44	.15	4.2	.44	.34	.18	.44	.02	.01			
6	.44	.15	3.0	.44	.34	.18	.44	.02	.01			
7	.34	.15	3.6	.44	.34	.34	.44	.02	.01			
8	.24	.15	3.6	.44	.34	1.1	.34	.02	.01			
9	.18	.15	2.5	.54	.34	.54	.24	.02	0			
10	.18	.12	1.7	.54	.34	.44	.18	.01	0			
11	.18	.12	1.4	.54	.34	.34	.15	.02	0			
12	.18	.12	1.2	.54	.34	.34	.18	.02	0			
13	.15	.12	.96	.44	.44	.82	.18	.02	0			
14	.15	.12	.54	.44	.44	.68	.18	.02	0			
15	.15	.12	.44	.44	.44	.54	.15	.05	0			
16	.15	.12	.44	.34	.44	.54	.15	.05	0			
17	.15	.15	.34	.34	.54	.68	.15	.05	0			
18	.15	.24	.54	.34	.82	.54	.15	.03	0			
19	.15	5.2	.54	.34	.54	.44	.15	.03	0			
20	.15	4.8	.54	.34	.54	.44	.15	.03	0			
21	.15	2.2	.54	.34	.54	.34	.15	.03	0			
22	.12	1.4	.54	.34	.54	.34	.15	.05	0			
23	.12	.96	.54	.34	.44	.34	.15	.05	0			
24	.12	.82	.54	.34	.44	.34	.15	.05	0			
25	.12	.54	.54	.34	.44	.34	.12	.05	0			
26	.12	.34	.68	.44	.44	.24	.09	.03	0			
27	.15	.34	.68	.44	.44	.34	.07	.02	0			
28	.15	.34	.68	.44	.44	.34	.05	.02	0			
29	.15	.34	.68	.44	.34	.34	.03	.02	0			
30	.15	3.9	.68	.44	-----	.24	.03	.02	0			
31	.15	-----	.68	.68	-----	.24	-----	.02	-----			
TOTAL	7.88	23.58	41.22	13.96	12.74	12.36	7.80	0.87	0.08	0	0	0
MEAN	.25	.79	1.33	.45	.44	.40	.26	.028	.003	0	0	0
MAX	.96	5.2	4.2	.68	.82	1.1	1.1	.05	.01	0	0	0
MIN	.12	.09	.34	.34	.34	.18	.03	.01	0	0	0	0
AC-FT	16	47	82	28	25	25	15	1.7	.2	0	0	0

CAL YR 1967 TOTAL 2,603.48 MEAN 7.13 MAX 211 MIN 0 AC-FT 5,160
WTR YR 1968 TOTAL 120.49 MEAN .33 MAX 5.2 MIN 0 AC-FT 239

Peak discharge (base, 40 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

11-2260. NORTH FORK SAN JOAQUIN RIVER BELOW IRON CREEK, CALIF.

LOCATION.--Lat 37°36'50", long 119°14'00", in SE $\frac{1}{4}$ sec.4, T.4 S., R.25 E., on right bank 0.8 mile downstream from Iron Creek and 27 miles northeast of town of Bass Lake.

DRAINAGE AREA.--35.5 sq mi.

RECORDS AVAILABLE.--October 1920 to September 1928 (fragmentary prior to July 1921), October 1951 to September 1958 (no winter records), October 1958 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Altitude of gage is 6,800 ft (from topographic map). Prior to May 22, 1922, staff gages at approximately same site at different datums.

AVERAGE DISCHARGE.--17 years (1921-28, 1958-68), 109 cfs (78,910 acre-ft per year).

EXTREMES.--Maximum discharge during year, 750 cfs May 20 (gage height, 6.30 ft, from recorded range in stage); minimum daily, 6.6 cfs Nov. 12, 13.

1920-28, 1951-68: Maximum discharge recorded, 3,860 cfs July 24, 1956 (gage height, 8.15 ft), from rating curve extended above 1,100 cfs; minimum, 0.4 cfs Nov. 13, 1955, Jan. 17, 1963.

REMARKS.--Records good except for those periods of no gage-height record, which are fair. No storage or diversion above station. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and five discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	8.4	27	19	19	63	116	325	430	85	67	21
2	31	8.4	25	17	21	53	81	293	480	80	54	21
3	62	8.4	24	16	22	57	71	268	460	77	50	21
4	44	8.4	22	16	24	62	83	285	380	74	45	21
5	37	8.4	28	15	23	56	74	250	280	72	38	21
6	31	8.4	28	14	21	44	67	211	220	68	34	21
7	26	8.1	25	14	21	38	89	200	190	68	32	20
8	24	7.8	23	14	20	37	97	210	180	72	31	19
9	23	7.2	23	14	21	32	138	200	170	210	30	19
10	22	6.9	25	14	22	30	187	180	180	190	30	17
11	22	6.9	26	15	22	31	214	190	200	105	28	16
12	21	6.6	23	14	22	35	177	190	220	71	28	15
13	21	6.6	21	15	21	30	159	150	220	69	32	14
14	20	26	21	16	21	28	190	155	220	64	28	13
15	17	18	18	22	20	27	171	160	235	62	22	12
16	16	14	16	20	20	30	124	170	235	62	20	12
17	16	14	16	18	25	28	86	190	230	59	18	11
18	15	15	17	19	30	24	70	260	220	54	18	12
19	14	27	19	21	62	23	62	350	220	54	55	12
20	14	35	16	23	122	24	57	480	200	54	112	11
21	13	27	16	25	74	28	51	320	175	52	56	11
22	12	24	16	25	54	31	50	210	165	49	41	9.4
23	12	24	16	25	67	33	74	180	160	47	33	8.1
24	12	21	19	27	63	38	97	160	155	46	27	7.8
25	11	25	26	28	63	41	154	200	145	45	24	7.5
26	11	21	28	25	67	41	237	350	135	45	20	7.2
27	10	17	32	21	69	51	257	460	135	49	19	6.9
28	10	16	29	20	66	84	282	570	135	62	19	7.2
29	10	16	24	20	63	120	313	520	120	171	19	7.2
30	9.4	18	21	19	-----	134	325	450	90	136	22	7.2
31	8.7	-----	19	20	-----	150	-----	380	-----	79	22	-----
TOTAL	630.1	458.5	689	591	1,165	1,503	4,153	8,517	6,585	2,431	1,074	408.5
MEAN	20.3	15.3	22.2	19.1	40.2	48.5	138	275	220	78.4	34.6	13.6
MAX	62	35	32	28	122	150	325	570	480	210	112	21
MIN	8.7	6.6	16	14	19	23	50	150	90	45	18	6.9
AC-FT	1,250	909	1,370	1,170	2,310	2,980	8,240	16,890	13,060	4,820	2,130	810

CAL YR 1967 TOTAL 64,481.6 MEAN 177 MAX 1,270 MIN 6.6 AC-FT 127,900
WTR YR 1968 TOTAL 28,205.1 MEAN 77.1 MAX 570 MIN 6.6 AC-FT 55,940

Note.--No gage-height record May 7 to June 13.

11-2265. SAN JOAQUIN RIVER AT MILLER CROSSING, CALIF.

LOCATION.--Lat 37°30'35", long 119°11'50", in NE $\frac{1}{4}$ sec.11, T.5 S., R.25 E., on right bank at Miller Crossing, 2.4 miles downstream from North Fork San Joaquin River, 4.6 miles east of Clover Meadow ranger station, and 23 miles northeast of town of Bass Lake.

DRAINAGE AREA.--249 sq mi.

RECORDS AVAILABLE.--October 1921 to September 1928, October 1951 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1954, published as Middle Fork San Joaquin River at Miller Bridge.

GAGE.--Graphic water-stage recorder. Altitude of gage is 4,570 ft (from topographic map). Prior to Mar. 24, 1922, staff gage at same site and datum.

AVERAGE DISCHARGE.--24 years, 579 cfs (419,200 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,550 cfs May 28 (gage height, 14.73 ft); minimum daily, 41 cfs Sept. 28, 29.

1921-28, 1951-68: Maximum discharge, 16,600 cfs Dec. 23, 1955 (gage height, 21.28 ft), from rating curve extended above 5,100 cfs on basis of contracted-opening measurement of maximum flow; minimum, 19 cfs Nov. 17, 1961.

REMARKS.--Records good. No regulation or diversion above station. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and five discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	186	78	110	111	140	358	660	1,460	1,600	331	262	84
2	172	76	150	106	160	305	512	1,430	1,720	322	220	84
3	198	76	145	96	163	305	445	1,330	1,650	310	202	81
4	204	76	145	90	162	319	445	1,360	1,480	295	186	78
5	180	76	145	80	160	316	468	1,340	1,200	290	165	76
6	172	76	140	80	151	268	400	1,130	860	275	149	74
7	155	76	140	75	146	248	430	1,080	750	275	138	74
8	145	75	142	75	145	258	516	1,110	750	288	132	73
9	141	74	141	70	168	236	612	1,070	672	495	130	71
10	134	72	143	75	174	228	750	962	705	457	127	69
11	128	72	141	75	150	212	910	998	795	346	125	65
12	125	71	130	75	145	226	880	980	885	295	116	62
13	122	70	125	75	147	228	785	790	875	278	127	60
14	121	89	125	80	146	228	840	805	895	262	134	58
15	115	126	105	115	138	216	850	850	950	254	111	58
16	110	97	90	110	149	224	692	910	956	250	99	54
17	107	90	90	100	275	230	580	962	935	244	94	52
18	103	90	100	105	252	226	484	1,130	875	224	84	52
19	101	155	110	110	285	208	451	1,480	875	216	125	52
20	98	180	100	120	850	196	418	1,790	805	208	242	52
21	97	135	90	135	560	206	388	1,590	705	202	186	51
22	95	121	90	139	421	220	367	1,160	660	198	152	49
23	94	112	95	141	415	214	409	905	652	193	126	47
24	91	108	110	139	412	234	508	820	620	182	107	45
25	89	110	150	145	376	256	636	986	568	175	91	43
26	87	104	170	139	379	265	890	1,370	544	174	86	42
27	86	94	190	126	382	278	1,060	1,750	540	179	82	42
28	84	99	170	110	376	376	1,140	1,980	532	206	78	41
29	84	89	150	120	346	532	1,320	1,930	442	340	76	41
30	81	87	140	140	-----	624	1,430	1,680	367	442	78	42
31	79	-----	120	150	-----	672	-----	1,550	-----	295	82	-----
TOTAL	3,784	2,854	3,992	3,307	7,773	8,912	20,276	38,688	25,863	8,501	4,112	1,772
MEAN	122	95.1	129	107	268	287	676	1,248	862	274	133	59.1
MAX	204	180	190	150	850	672	1,430	1,980	1,720	495	262	84
MIN	79	70	90	70	138	196	367	790	367	174	76	41
AC-FT	7,510	5,660	7,920	6,560	15,420	17,680	40,220	76,740	51,300	16,860	8,160	3,510
CAL YR 1967	TOTAL 352,407		MEAN 965		MAX 6,270		MIN -		AC-FT 699,000			
WTR YR 1968	TOTAL 129,834		MEAN 355		MAX 1,980		MIN 41		AC-FT 257,500			

Peak discharge (base, 2,000 cfs).--May 20 (1900 hrs) 2,300 cfs (14.48 ft); May 28 (2000 hrs) 2,550 cfs (14.73 ft).

SAN JOAQUIN RIVER BASIN

11-2285. GRANITE CREEK NEAR CATTLE MOUNTAIN, CALIF.

LOCATION.--Lat 37°31'35", long 119°15'30", in NE¼ sec.5, T.5 S., R.25 E., on right bank 0.7 mile downstream from confluence of East and West Forks of Granite Creek, 1.6 miles northwest of Cattle Mountain, and 21 miles northeast of town of Bass Lake.

DRAINAGE AREA.--47.8 sq mi.

RECORDS AVAILABLE.--October 1921 to September 1928, May 1952 to September 1968 (no winter records). Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-tage recorder. Altitude of gage is 6,800 ft (from topographic map). Prior to May 14, 1922, staff gage at same site at different datum.

AVERAGE DISCHARGE.--7 years (1921-28), 110 cfs (79,640 acre-ft per year).

EXTREMES.--Maximum discharge recorded during year, 830 cfs Apr. 29 (gage height, 7.60 ft); minimum daily, 0.10 cfs Aug. 10-13, Sept. 16-26.

1921-28, 1952-68: Maximum discharge recorded, 3,140 cfs Dec. 23, 1964 (gage height, 9.49 ft), from rating curve extended above 1,100 cfs; no flow at times in 1924, 1926.

REMARKS.--Records good. No regulation or diversion above station. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and five discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	1.3				-	230	464	252	7.4	1.8	.80
2	5.0	1.3				-	147	408	255	6.4	1.8	1.8
3	7.4	1.3				-	114	393	220	5.7	1.2	2.4
4	12	1.3				-	116	408	173	5.0	1.0	1.3
5	10	1.3				-	125	372	137	4.3	.80	.90
6	10	1.3				-	103	278	88	4.3	.60	.80
7	8.3	1.3				-	123	290	84	5.7	.50	.70
8	6.7	1.3				-	165	306	85	5.0	.30	.60
9	5.7	1.3				-	225	278	76	5.7	.20	.50
10	5.4	1.3				-	303	212	79	10	.10	.50
11	4.7	1.3				-	363	222	85	6.7	.10	.30
12	4.3	1.2				-	336	202	84	4.7	.10	.20
13	4.0	1.3				-	298	141	79	3.7	.10	.20
14	3.7	3.7				-	309	157	72	3.2	.20	.20
15	3.2	8.3				-	298	218	74	3.2	.60	.20
16	3.2	6.0				-	238	250	69	2.9	.70	.10
17	3.2	5.0				-	185	282	65	2.6	.60	.10
18	2.9	5.0				-	139	327	55	2.1	.60	.10
19	2.6	11				-	128	399	51	1.8	1.2	.10
20	2.6	17				-	121	424	44	1.6	3.5	.10
21	2.6	13				-	116	330	35	1.3	4.7	.10
22	2.4	11				-	116	225	31	1.2	3.2	.10
23	2.6	9.5				-	161	163	28	1.1	2.9	.10
24	2.4	9.0				-	225	157	24	.90	2.4	.10
25	2.1	8.0				-	303	242	21	.80	1.6	.10
26	2.1	7.0				-	428	339	17	.70	1.2	.10
27	2.1	6.0				-	472	387	15	.60	1.2	.20
28	2.1	5.5				115	476	378	12	.50	1.0	.20
29	1.8	5.0				255	500	330	11	.50	.90	.20
30	1.6	6.0			-----	282	488	260	10	1.1	.80	.20
31	1.6	-----			-----	278	-----	255	-----	1.8	.70	-----
TOTAL	133.7	152.8	-	-	-	-	7,351	9,097	2,331	102.50	36.60	13.30
MEAN	4.31	5.09	-	-	-	-	245	293	77.7	3.31	1.18	.44
MAX	12	17	-	-	-	-	500	464	255	10	4.7	2.4
MIN	1.6	1.2	-	-	-	-	103	141	10	.50	.10	.10
AC-FT	265	303	-	-	-	-	14,580	18,040	4,620	203	73	26

SAN JOAQUIN RIVER BASIN

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11-2295. WARD TUNNEL INTAKE AT FLORENCE LAKE, CALIF.

LOCATION.--Lat 37°16'25", long 118°58'25", in NW¼ sec.1, T.8 S., R.27 E., in gatehouse at entrance to tunnel.

RECORDS AVAILABLE.--April 1925 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Published as Florence Lake tunnel at intake 1925-36 and as Ward tunnel at intake 1937-62.

GAGE.--Graphic water-stage recorder, concrete control, and Venturi meter. Datum of gage is 7,213.89 ft above mean sea level (levels by Southern California Edison Co.).

AVERAGE DISCHARGE.--43 years, 276 cfs (199,800 acre-ft per year).

EXTREMES.--1925-68: Maximum daily discharge, 1,990 cfs Apr. 30, 1926; no flow at times.

REMARKS.--Records excellent. Ward tunnel diverts from Florence Lake, a reservoir on South Fork San Joaquin River, to Huntington Lake for use in Big Creek powerplants. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record, one discharge measurement, and rating table for Venturi meter furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

REVISIONS (water year).--1967 report: 1965-66.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	573	343	57	50	51	99	187	268	31	497	606	326
2	569	342	72	47	54	90	163	101	30	495	598	324
3	568	340	82	43	54	88	145	49	296	493	640	319
4	566	337	79	42	55	87	140	145	416	489	664	316
5	577	335	72	42	54	90	144	155	419	486	550	331
6	588	334	68	40	53	86	129	158	425	484	331	343
7	584	331	73	40	51	79	127	160	423	482	329	339
8	580	327	73	39	50	77	129	163	421	482	329	335
9	577	326	71	39	50	76	148	166	421	504	327	331
10	588	323	65	39	52	72	177	169	419	514	326	345
11	591	319	64	40	49	71	225	173	419	512	323	348
12	588	316	60	42	51	78	241	175	419	510	323	343
13	582	313	44	44	49	72	241	178	419	512	323	335
14	579	310	40	44	48	73	236	178	419	508	323	343
15	575	400	44	48	45	75	258	178	417	506	321	355
16	600	493	49	54	47	79	241	178	417	502	318	345
17	607	500	53	52	51	74	210	178	419	499	316	348
18	466	500	53	50	63	81	177	180	421	495	315	339
19	350	502	54	49	76	77	157	183	421	493	313	398
20	348	497	61	48	122	72	140	186	421	491	312	351
21	347	333	68	48	144	72	127	188	421	486	312	339
22	347	171	68	48	118	77	115	191	421	480	312	329
23	343	497	65	48	120	72	120	99	421	471	307	144
24	340	495	64	48	123	73	136	48	488	471	304	56
25	339	491	63	48	113	79	172	44	529	480	302	40
26	335	484	64	48	107	82	270	40	527	486	301	32
27	334	466	64	46	102	85	371	40	525	486	298	27
28	332	343	64	44	101	100	459	38	525	489	295	24
29	331	109	61	49	98	131	468	36	525	577	290	23
30	342	30	54	50	-----	158	470	34	523	623	315	21
31	347	-----	52	49	-----	170	-----	32	-----	616	329	-----
TOTAL	14,793	10,907	1,921	1,418	2,151	2,695	6,323	4,111	12,398	15,619	11,252	7,849
MEAN	477	364	62.0	45.7	74.2	86.9	211	133	413	504	363	262
MAX	607	502	82	54	144	170	470	268	529	623	664	398
MIN	331	30	40	39	45	71	115	32	30	471	290	21
AC-FT	29,340	21,630	3,810	2,810	4,270	5,350	12,540	8,150	24,590	30,980	22,320	15,570
CAL YR 1967	TOTAL	156,391.5	MEAN	428	MAX	1,660	MIN	2.5	AC-FT	310,200		
WTR YR 1968	TOTAL	91,437	MEAN	250	MAX	664	MIN	21	AC-FT	181,400		

SAN JOAQUIN RIVER BASIN

11-2296. FLORENCE LAKE NEAR BIG CREEK, CALIF.

LOCATION.--Lat 37°16'25", long 118°58'20", in NW¼ sec.1, T.8 S., R.27 E., in gatehouse of Ward tunnel intake, near dam on South Fork San Joaquin River, 16 miles northeast of town of Big Creek.

DRAINAGE AREA.--171 sq mi.

RECORDS AVAILABLE.--November 1925 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Southern California Edison Co.).

EXTREMES.--Maximum contents during year, 45,900 acre-ft June 22-24; maximum elevation, 7,311.44 ft June 24; minimum contents, 299 acre-ft Dec. 14 (elevation, 7,225.18 ft).

1925-68: Maximum contents, 66,000 acre-ft July 3, 1932 (elevation, 7,329.14 ft); no available contents Oct. 2-4, 1926, Nov. 30 to Dec. 2, 1927.

NOTE.--Prior to 1960 maximum and minimum daily contents were published.

REMARKS.--Lake is formed by multiple-arch concrete dam; storage began in April 1925. Usable capacity, 64,400 acre-ft between elevations 7,220.9 (throat of Venturi tube in Ward tunnel intake) and 7,327.5 ft (top of spillway drum gates) above mean sea level. Additional storage of 168 acre-ft is not available for diversion. Water is diverted through Ward tunnel to Huntington Lake and used for power development in Big Creek plants. See schematic diagram of San Joaquin River basin. Figures given herein represent usable contents.

COOPERATION.--Record of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

7,220.9	0	7,235	1,770	7,260	11,600	7,290	32,000
7,222	63	7,240	2,980	7,265	14,600	7,300	39,900
7,224	201	7,245	4,670	7,270	17,800	7,310	48,300
7,227	495	7,250	6,650	7,275	21,100	7,320	57,300
7,230	887	7,255	8,950	7,280	24,600	7,330	66,800

CONTENTS, IN ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44,200	19,300	329	330	326	392	501	2,620	39,900	46,800	30,300	13,800
2	43,300	18,700	355	329	327	379	477	4,080	42,300	46,200	29,600	13,200
3	42,500	18,100	355	328	328	374	452	5,670	44,000	45,700	28,700	12,700
4	41,600	17,500	350	326	328	376	441	6,630	45,300	45,100	27,700	12,100
5	40,700	16,900	348	326	328	377	446	7,670	46,100	44,400	27,000	11,500
6	39,700	16,300	345	325	328	368	432	8,500	46,400	43,900	26,600	10,900
7	38,700	15,700	345	324	328	362	428	9,280	46,500	43,300	26,300	10,300
8	37,700	15,100	339	324	328	363	441	10,000	46,500	42,700	25,900	9,670
9	36,800	14,500	337	323	328	365	472	10,700	46,500	42,300	25,400	9,070
10	35,800	13,900	334	323	328	365	532	11,200	46,500	42,000	25,000	8,450
11	34,800	13,300	332	322	328	363	613	11,800	46,600	41,600	24,600	7,820
12	33,800	12,800	321	322	328	360	635	12,300	46,700	41,000	24,100	7,190
13	32,700	12,200	304	321	328	360	618	12,700	46,900	40,400	23,700	6,590
14	31,700	11,700	303	321	328	366	634	13,000	47,200	39,800	23,300	5,960
15	30,700	10,900	312	321	327	367	648	13,200	47,500	39,100	22,800	5,280
16	29,600	10,000	319	323	327	361	611	13,600	48,000	38,500	22,300	4,630
17	28,500	9,110	319	324	329	377	566	14,200	48,400	37,800	21,900	3,910
18	27,700	8,220	320	324	331	376	534	15,100	48,700	37,200	21,400	3,210
19	27,100	7,350	327	324	362	372	509	16,600	49,000	36,500	20,900	2,450
20	26,500	6,490	331	324	452	369	487	18,400	49,300	35,800	20,400	1,800
21	25,900	5,920	332	323	434	367	475	20,100	49,400	35,100	19,800	1,190
22	25,300	5,700	332	323	427	365	474	21,200	49,500	34,400	19,300	619
23	24,800	4,750	332	323	439	360	478	22,100	49,500	33,800	18,800	387
24	24,100	3,760	332	323	429	364	510	22,900	49,400	33,300	18,300	335
25	23,600	2,780	332	323	416	368	588	24,100	49,200	32,800	17,700	312
26	23,000	1,900	332	322	412	369	745	25,900	48,900	32,400	17,200	300
27	22,400	1,090	332	321	401	378	940	28,300	48,600	32,200	16,600	292
28	21,800	495	332	320	397	406	1,110	30,900	48,300	32,000	16,100	286
29	21,200	360	332	323	394	439	1,380	33,500	47,800	31,700	15,600	281
30	20,600	331	331	323	-----	461	1,750	35,700	47,300	31,300	15,000	279
31	19,900	-----	331	325	-----	493	-----	37,800	-----	30,900	14,400	-----
(a)	7,273.28	7,225.51	7,225.50	7,225.44	7,226.12	7,226.98	7,234.90	7,297.45	7,308.90	7,288.54	7,264.74	7,224.98
(b)	-25,100	-19,570	0	-6	+69	+99	+1,260	+36,050	+9,500	-16,400	-16,500	-14,120
MAX	44,200	19,300	355	330	452	493	1,750	37,800	49,500	46,800	30,300	13,800
MIN	19,900	331	303	320	326	360	428	2,620	39,900	30,900	14,400	279
CAL YR 1967	b	-27										
WTR YR 1968	b	-44,720										

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

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11-2300. SOUTH FORK SAN JOAQUIN RIVER NEAR FLORENCE LAKE, CALIF.

LOCATION.--Lat 37°16'20", long 118°57'50", in SE $\frac{1}{4}$ sec.36, T.7 S., R.27 E., on left bank just downstream from spillway of Florence Lake Dam and 6 miles upstream from Bear Creek.

DRAINAGE AREA.--171 sq mi.

RECORDS AVAILABLE.--October 1921 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1925, published as "near Lake Florence."

GAGE.--Graphic water-stage recorder, Parshall flume, and concrete control. Altitude of gage is 7,200 ft (from topographic map).

AVERAGE DISCHARGE.--47 years, 310 cfs (224,400 acre-ft per year), combined flow of South Fork San Joaquin River and Ward tunnel at intake.

EXTREMES.--Maximum discharge during year, 9.8 cfs July 6 (gage height, 9.10 ft); minimum daily, 2.5 cfs Nov. 29. 1921-68: Maximum discharge, 4,320 cfs June 6, 1940 (gage height, 15.38 ft); no flow at times.

REMARKS.--Records good. Flow regulated by Florence Lake beginning in 1925 (see sta. no. 11-2296) and by diversion into Ward tunnel (see sta. no. 11-2295). See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and five discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	3.8	3.3	3.3	3.3	3.3	3.4	4.4	7.0	7.3	6.7	5.8
2	4.2	2.9	3.3	3.3	3.3	3.3	3.3	4.7	7.1	7.2	6.7	5.8
3	4.2	2.9	3.3	3.3	3.3	3.3	3.3	4.9	7.2	7.2	6.7	5.7
4	5.0	2.9	3.3	3.1	3.3	3.3	3.3	5.0	7.2	7.2	6.6	5.7
5	5.7	2.9	3.3	3.3	3.3	3.3	3.4	5.1	7.3	7.2	6.5	5.6
6	5.4	3.3	3.3	3.3	3.3	3.3	3.3	5.2	7.3	7.3	6.5	5.6
7	5.3	3.6	3.3	3.3	3.3	3.3	3.3	5.2	7.3	7.2	6.5	5.5
8	5.2	3.6	3.3	3.3	3.3	3.4	3.3	5.3	7.1	7.2	6.5	5.5
9	5.2	3.5	3.3	3.3	3.3	3.3	3.3	5.4	6.3	7.2	6.5	5.4
10	5.2	3.5	3.3	3.3	3.3	3.3	3.3	5.4	6.0	7.2	6.4	5.3
11	5.2	3.5	3.3	3.3	3.3	3.3	3.3	5.5	6.0	7.1	6.4	5.3
12	5.1	3.5	3.3	3.3	3.3	3.3	3.3	5.5	6.0	7.1	6.4	4.9
13	5.2	3.4	3.3	3.3	3.3	3.3	3.3	5.6	6.0	7.1	6.4	4.5
14	5.2	3.4	3.3	3.3	3.3	3.3	3.4	5.6	6.0	7.1	6.4	4.5
15	5.2	3.4	3.3	3.4	3.3	3.3	3.4	5.6	6.0	7.0	6.4	4.4
16	5.1	3.3	3.3	3.3	3.3	3.3	3.3	5.6	6.0	7.0	6.4	4.3
17	5.1	3.3	3.3	3.3	3.3	3.4	3.3	5.6	6.0	7.0	6.3	4.2
18	5.1	3.4	3.3	3.3	3.3	3.3	3.3	5.6	6.1	7.0	6.3	4.2
19	5.1	3.4	3.3	3.3	3.5	3.3	3.3	5.8	6.1	6.8	6.3	4.1
20	5.1	3.2	3.3	3.3	3.9	3.3	3.3	6.0	6.1	6.8	6.2	4.0
21	5.0	3.2	3.3	3.3	3.5	3.3	3.3	6.0	6.1	6.8	6.2	3.9
22	5.0	3.1	3.3	3.3	3.6	3.3	3.3	6.1	6.1	6.8	6.2	3.7
23	5.2	3.1	3.3	3.3	3.6	3.3	3.3	6.1	6.1	6.8	6.2	3.5
24	5.3	3.0	3.3	3.3	3.5	3.3	3.6	6.1	6.1	6.8	6.1	3.4
25	5.1	2.9	3.3	3.3	3.4	3.3	4.0	6.2	6.1	6.8	6.1	3.4
26	5.1	2.9	3.3	3.3	3.4	3.3	4.0	6.3	6.8	6.7	6.1	3.4
27	5.1	2.7	3.3	3.3	3.4	3.3	4.1	6.4	7.3	6.7	6.1	3.4
28	5.1	2.6	3.3	3.3	3.4	3.3	4.2	6.5	7.3	6.8	6.0	3.4
29	5.1	2.5	3.3	3.3	3.3	3.3	4.2	6.6	7.3	7.0	6.0	3.3
30	5.1	2.9	3.3	3.3	-----	3.3	4.3	6.8	7.3	6.8	6.0	3.3
31	5.0	-----	3.3	3.3	-----	3.3	-----	6.8	-----	6.8	5.9	-----
TOTAL	157.1	95.6	102.3	102.2	97.9	102.5	104.7	176.9	196.6	217.0	196.0	135.0
MEAN	5.07	3.19	3.30	3.30	3.38	3.31	3.49	5.71	6.55	7.00	6.32	4.50
MAX	5.7	3.8	3.3	3.4	3.9	3.4	4.3	6.8	7.3	7.3	6.7	5.8
MIN	4.2	2.5	3.3	3.1	3.3	3.3	3.3	4.4	6.0	6.7	5.9	3.3
AC-FT	312	190	203	203	194	203	208	351	390	430	389	268

CAL YR 1967 TOTAL 54,041.1
WTR YR 1968 TOTAL 1,683.8

MEAN 148
MEAN 4.60

MAX 3,090
MAX 7.3

MIN 2.5
MIN 2.5

AC-FT 107,200
AC-FT 3,340

SAN JOAQUIN RIVER BASIN

11-2305. BEAR CREEK NEAR LAKE THOMAS A. EDISON, CALIF.

LOCATION.--Lat 37°20'20", long 118°58'20", in SW $\frac{1}{4}$ sec.12, T.7 S., R.27 E. (unsurveyed), on right bank 0.2 mile upstream from diversion dam, 1.7 miles upstream from mouth, 2.1 miles south of Lake Thomas A. Edison, and 2.4 miles northeast of Mono Hot Springs.

DRAINAGE AREA.--52.5 sq mi.

RECORDS AVAILABLE.--October 1921 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1954, published as "near Vermilion Valley."

GAGE.--Graphic water-stage recorder. Datum of gage is 7,366.94 ft above mean sea level (levels by Southern California Edison Co.).

AVERAGE DISCHARGE.--47 years, 87.3 cfs (63,200 acre-ft per year).

EXTREMES.--Maximum discharge during year, 420 cfs May 27 (gage height, 5.10 ft); minimum daily, 3.5 cfs Sept. 25-30.

1921-68: Maximum discharge, 1,680 cfs July 26, 1956 (gage height, 7.12 ft); minimum recorded, 1.2 cfs Sept. 29 to Oct. 5, 1924.

REMARKS.--Records good. No storage or diversion above station. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and 11 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	12	12	10	10	24	39	172	295	60	80	9.0
2	48	12	19	10	11	19	30	172	307	56	61	8.5
3	44	12	21	10	11	14	27	180	304	56	52	7.8
4	38	12	19	9.5	11	18	27	187	277	52	44	7.4
5	34	12	17	9.0	11	18	28	170	206	50	38	7.1
6	31	12	17	9.0	11	18	24	136	148	50	33	6.8
7	30	12	18	9.0	10	16	25	132	121	49	30	6.8
8	28	12	16	9.0	10	16	28	121	119	49	28	6.8
9	27	10	16	9.0	10	16	37	109	109	108	26	6.4
10	26	12	16	9.0	10	15	50	105	101	190	25	6.4
11	25	12	15	9.0	10	15	69	109	107	117	24	6.0
12	24	11	14	10	10	16	66	107	130	87	22	5.7
13	23	10	11	10	10	15	56	85	143	70	24	5.4
14	22	12	10	10	10	15	60	70	145	63	28	5.0
15	21	14	11	10	9.5	16	70	64	170	56	24	4.8
16	20	12	12	12	10	15	54	80	182	53	23	4.8
17	19	12	12	11	11	15	41	113	184	46	21	4.5
18	19	12	12	10	13	15	31	134	172	43	19	4.2
19	18	14	14	10	14	16	26	232	167	40	18	4.2
20	18	19	16	10	22	15	24	259	153	38	17	4.2
21	18	16	16	10	26	15	22	250	134	36	15	4.2
22	17	15	16	10	24	16	20	184	119	33	17	4.2
23	17	15	16	10	22	15	22	128	117	32	15	4.0
24	16	15	16	9.5	23	16	29	109	111	30	14	3.8
25	15	15	15	10	24	18	46	134	105	29	12	3.5
26	15	13	14	9.5	23	17	83	214	99	28	11	3.5
27	15	12	14	8.5	24	19	107	289	96	39	10	3.5
28	15	12	15	9.0	25	27	130	342	92	41	9.5	3.5
29	15	10	14	10	24	39	143	330	80	48	8.5	3.5
30	14	13	12	10	-----	38	172	304	66	92	8.2	3.5
31	13	-----	12	10	-----	45	-----	280	-----	103	8.5	-----
TOTAL	739	382	458	302.0	439.5	592	1,586	5,301	4,559	1,844	765.7	159.0
MEAN	23.8	12.7	14.8	9.74	15.2	19.1	52.9	171	152	59.5	24.7	5.30
MAX	54	19	21	12	26	45	172	342	307	190	80	9.0
MIN	13	10	10	8.5	9.5	14	20	64	66	28	8.2	3.5
AC-FT	1,470	758	908	599	872	1,170	3,150	10,510	9,040	3,660	1,520	315

CAL YR 1967 TOTAL 57,423 MEAN 157 MAX 1,090 MIN 10 AC-FT 113,900
WTR YR 1968 TOTAL 17,127.2 MEAN 46.8 MAX 342 MIN 3.5 AC-FT 33,970

Peak discharge (base, 440 cfs).--No peak above base.

11-2310. LAKE THOMAS A. EDISON NEAR BIG CREEK, CALIF.

LOCATION.--Lat 37°22'10", long 118°59'15", in sec.26, T.6 S., R.27 E. (unsurveyed), in outlet works of dam on Mono Creek at lower end of Vermilion Valley, 18.1 miles northeast of town of Big Creek.

DRAINAGE AREA.--90.0 sq mi.

RECORDS AVAILABLE.--October 1954 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Southern California Edison Co.).

EXTREMES.--Maximum contents during year, 121,000 acre-ft Oct. 1 (elevation, 7,640.33 ft); minimum, 47,200 acre-ft Sept. 30 (elevation, 7,595.17 ft).

1954-68: Maximum contents, 125,900 acre-ft Aug. 18, 1958 (elevation, 7,642.95 ft); minimum since appreciable storage was attained, 7,550 acre-ft Apr. 20, 1965 (elevation, 7,557.23 ft).

NOTE.--Prior to 1960, maximum and minimum daily contents were published.

REMARKS.--Lake is formed by earthfill dam; dam completed and storage began on Oct. 12, 1954. Usable capacity, 125,000 acre-ft between elevations 7,508.9 (invert of outlet works) and 7,642.5 ft (top of gates in service spillway) above mean sea level. Water is released for diversion to Ward tunnel via Mono Creek diversion works. See schematic diagram of San Joaquin River basin. Figures given herein represent usable contents.

COOPERATION.--Record of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

7,508.9	0	7,535	513	7,580	9,520	7,610	68,600
7,515	18	7,540	928	7,570	18,100	7,620	85,000
7,520	64	7,545	1,830	7,580	28,500	7,630	102,400
7,525	156	7,550	3,570	7,590	40,500	7,640	120,400
7,530	297	7,555	6,150	7,600	53,800	7,643	126,000

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120.9	108.1	91.0	66.5	61.6	59.4	57.7	62.6	81.9	93.4	87.4	68.1
2	120.8	107.5	90.3	65.7	61.6	59.3	57.7	63.2	82.9	93.2	87.6	67.3
3	120.6	106.8	89.6	65.0	61.5	59.3	57.7	63.8	83.8	93.1	87.7	66.6
4	120.4	106.1	88.9	64.5	61.4	59.2	57.7	64.4	84.7	92.9	87.7	65.9
5	120.3	105.4	88.2	64.3	61.3	59.2	57.7	64.9	85.3	92.7	87.6	65.2
6	120.1	104.7	87.4	64.2	61.2	59.1	57.7	65.4	85.8	92.6	86.9	64.5
7	120.0	103.9	86.7	64.1	61.1	59.1	57.7	65.8	86.3	92.3	86.2	63.8
8	119.9	103.2	86.0	64.0	61.0	59.0	57.7	66.4	86.7	92.2	85.6	63.0
9	119.7	102.5	85.2	63.9	60.9	58.9	57.7	66.8	87.0	92.2	84.9	62.3
10	119.6	101.7	84.4	63.8	60.8	58.8	57.8	67.2	87.4	92.5	84.2	61.6
11	119.4	101.0	83.6	63.7	60.6	58.7	57.9	67.6	87.8	92.6	83.5	61.0
12	119.2	100.3	82.7	63.6	60.5	58.7	58.0	68.1	88.2	92.5	82.7	60.3
13	119.0	99.5	81.8	63.5	60.4	58.7	58.0	68.5	88.6	92.4	82.1	59.5
14	118.8	98.9	80.9	63.4	60.3	58.6	58.2	68.9	89.1	92.2	81.4	58.8
15	118.6	98.3	80.1	63.4	60.2	58.5	58.4	69.2	89.5	92.1	80.7	58.1
16	118.4	97.9	79.3	63.3	60.1	58.5	58.6	69.5	90.1	91.9	80.1	57.4
17	118.3	97.6	78.5	63.2	60.1	58.4	58.8	70.0	90.5	91.7	79.3	56.7
18	117.8	97.3	77.8	63.0	60.0	58.3	58.9	70.5	91.0	91.4	78.6	56.0
19	117.1	97.0	77.0	62.9	59.9	58.2	59.1	71.3	91.4	91.2	77.8	55.4
20	116.4	96.6	76.2	62.8	60.0	58.2	59.2	72.2	91.9	90.9	77.1	54.6
21	115.7	96.1	75.1	62.7	59.9	58.1	59.3	73.0	92.3	90.7	76.4	53.9
22	115.1	95.6	74.4	62.6	59.9	58.0	59.5	73.7	92.6	90.4	75.7	53.1
23	114.4	95.2	73.6	62.5	59.8	57.9	59.6	74.1	92.9	89.9	74.9	52.4
24	113.8	94.9	72.9	62.4	59.8	57.8	59.8	74.5	93.2	89.5	74.3	51.6
25	113.0	94.5	72.1	62.3	59.7	57.8	60.0	75.1	93.4	88.9	73.5	50.9
26	112.3	94.1	71.3	62.2	59.7	57.7	60.3	76.0	93.5	88.3	72.7	50.1
27	111.6	93.7	70.5	62.2	59.6	57.6	60.6	77.0	93.6	87.7	71.9	49.4
28	110.9	93.1	69.8	62.0	59.5	57.6	61.0	78.1	93.7	87.1	71.1	48.6
29	110.2	92.5	69.0	61.9	59.5	57.6	61.5	79.2	93.6	86.8	70.3	47.9
30	109.5	91.8	68.1	61.8	-----	57.6	62.1	80.2	93.5	87.1	69.6	47.2
31	108.8	-----	67.3	61.8	-----	57.7	-----	81.0	-----	87.3	68.9	-----
(a)	7,633.62	7,623.95	7,609.15	7,605.53	7,603.98	7,602.74	7,605.74	7,617.62	7,624.97	7,621.35	7,610.16	7,595.17
(b)	-12,200	-17,000	-24,500	-5,500	-2,300	-1,800	+4,400	+18,900	+12,500	-6,200	-18,400	-21,700
MAX	120.9	108.1	91.0	66.5	61.6	59.4	62.1	81.0	93.7	93.4	87.7	68.1
MIN	108.8	91.8	67.3	61.8	59.5	57.6	57.7	62.6	81.9	86.8	68.9	47.2

CAL YR 1967 b +2,000
WTR YR 1968 b -73,800

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

SAN JOAQUIN RIVER BASIN

11-2315. MONO CREEK BELOW LAKE THOMAS A. EDISON, CALIF.

LOCATION.--Lat 37°21'40", long 118°59'25", in SW $\frac{1}{4}$ sec.35, T.6 S., R.27 E. (unsurveyed), on left bank 0.6 mile upstream from diversion dam, 1 mile downstream from Lake Thomas A. Edison, and 1.9 miles northeast of Mono Hot Springs.

DRAINAGE AREA.--92.5 sq mi.

RECORDS AVAILABLE.--October 1921 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1954, published as "near Vermilion Valley."

GAGE.--Graphic water-stage recorder. Altitude of gage is 7,400 ft (from topographic map).

AVERAGE DISCHARGE.--47 years, 148 cfs (107,100 acre-ft per year), adjusted for storage.

EXTREMES.--Maximum discharge during year, 460 cfs Aug. 27 (gage height, 6.48 ft); minimum daily, 11 cfs Aug. 1-4. 1921-68: Maximum discharge, 1,760 cfs June 2, 1938 (gage height, 8.62 ft); minimum daily, 0.3 cfs Nov. 11, 12, 1954.

REMARKS.--Records good. Flow regulated by Lake Thomas A. Edison beginning Oct. 12, 1954 (see sta. no. 11-2310). No diversion above station. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and twelve discharge measurements furnished by Southern California Edison Co. in connection with Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	356	415	435	92	92	88	13	15	166	11	395
2	107	348	410	430	92	92	88	13	15	160	11	395
3	120	352	410	430	92	92	88	13	15	160	11	405
4	120	361	410	309	92	92	88	14	15	172	11	405
5	120	352	410	90	92	92	88	14	15	185	126	415
6	100	356	410	90	92	90	88	14	15	166	366	390
7	110	370	410	90	92	90	88	14	15	192	375	385
8	120	370	410	90	92	90	88	14	15	166	370	385
9	112	375	415	90	92	90	88	15	15	154	370	410
10	110	375	430	92	92	90	88	15	15	16	370	400
11	110	390	445	92	92	90	88	15	15	89	390	361
12	112	375	455	92	92	90	88	15	15	128	390	366
13	122	395	455	92	92	90	88	15	15	122	380	425
14	117	385	455	92	92	90	88	15	15	166	380	385
15	130	287	455	92	92	90	45	15	15	156	366	356
16	102	208	455	92	92	90	13	15	15	156	375	385
17	97	198	455	92	92	90	13	15	15	169	415	390
18	250	201	455	92	92	90	13	15	15	182	375	390
19	334	208	455	92	92	90	13	15	15	178	390	346
20	338	195	455	92	92	90	13	15	15	198	410	385
21	356	277	450	92	92	90	13	15	15	198	405	380
22	338	259	450	92	92	90	13	15	15	195	400	390
23	352	201	450	92	92	90	13	15	15	269	400	395
24	348	208	450	92	92	90	13	15	15	269	346	405
25	352	205	445	92	92	90	13	15	53	352	440	405
26	356	215	440	92	92	90	13	15	74	380	425	400
27	361	241	440	92	92	88	13	15	100	366	440	400
28	361	281	435	92	92	88	13	15	97	348	425	400
29	352	400	435	92	92	88	13	15	128	184	425	400
30	352	415	435	92	-----	88	13	15	141	19	420	400
31	348	-----	435	92	-----	88	-----	15	-----	14	400	-----
TOTAL	6,714	9,159	13,535	4,078	2,668	2,790	1,472	454	953	5,675	10,418	11,749
MEAN	217	305	437	132	92.0	90.0	49.1	14.6	31.8	183	336	392
MAX	361	415	455	435	92	92	88	15	141	380	440	425
MIN	97	195	410	90	92	88	13	13	15	14	11	346
AC-FT	13,320	18,170	26,850	8,090	5,290	5,530	2,920	901	1,890	11,260	20,660	23,300
CAL YR 1967	TOTAL 90,833			MEAN 249		MAX 696		MIN 12		AC-FT 180,200		
WTR YR 1968	TOTAL 69,665			MEAN 190		MAX 455		MIN 11		AC-FT 138,200		

SAN JOAQUIN RIVER BASIN

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11-2325. JACKASS CREEK NEAR BASS LAKE, CALIF.

LOCATION.--Lat 37°29'20", long 119°18'10", in SW $\frac{1}{4}$ sec.13, T.5 S., R.24 E., on left bank 1.6 miles east of Jackass Meadow, 10 miles upstream from West Fork, and 18 miles northeast of town of Bass Lake.

DRAINAGE AREA.--12.1 sq mi.

RECORDS AVAILABLE.--October 1921 to September 1928, November 1951 to September 1968 (no winter records except water year 1963). Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1962, published as "near Jackass Meadow."

GAGE.--Graphic water-stage recorder. Altitude of gage is 6,900 ft (from topographic map). Prior to May 5, 1922, staff gage at same site and datum.

AVERAGE DISCHARGE.--8 years (1921-28, 1962-63), 21.2 cfs (15,350 acre-ft per year).

EXTREMES.--Maximum discharge recorded during year, 117 cfs Apr. 29 (gage height, 7.27 ft); no flow Aug. 9-12, Sept. 12-21, 25-27.
1921-28, 1951-68: Maximum discharge recorded, 786 cfs Dec. 23, 1955 (gage height, 11.37 ft); no flow at times.

REMARKS.--Records fair. No regulation or diversion above station. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and three discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.30	.07				-	61	92	19	.69	.15	.09
2	.25	.07				-	57	90	18	.55	.15	.15
3	.50	.07				-	46	87	16	.50	.10	.20
4	.69	.07				-	48	84	14	.40	.08	.10
5	.45	.07				-	51	76	13	.35	.07	.07
6	.40	.08				-	46	66	12	.30	.05	.06
7	.35	.08				-	52	61	13	.40	.04	.05
8	.30	.08				-	61	59	13	.50	.02	.04
9	.25	.08				-	68	58	10	.60	0	.04
10	.20	.08				-	78	55	8.4	.60	0	.04
11	.20	.08				-	90	53	7.1	.40	0	.02
12	.15	.08				-	88	50	6.8	.35	0	0
13	.15	.08				-	84	44	6.2	.30	.01	0
14	.15	.35				-	84	43	5.9	.30	.02	0
15	.10	.35				-	82	48	5.0	.25	.05	0
16	.10	.25				-	73	49	4.6	.25	.06	0
17	.10	.20				-	60	46	4.2	.20	.05	0
18	.10	.30				-	54	42	4.0	.20	.07	0
19	.09	1.4				-	48	42	4.2	.15	.10	0
20	.09	1.8				-	48	41	3.2	.15	.30	0
21	.09	1.6				-	46	38	2.8	.10	.40	0
22	.09	1.2				-	46	31	2.6	.10	.25	.02
23	.09	1.2				-	51	26	2.2	.09	.23	.02
24	.09	1.0				-	58	24	2.1	.08	.20	.01
25	.08	.96				-	70	23	1.8	.07	.15	0
26	.08	.87				-	87	26	1.4	.06	.10	0
27	.08	.78				-	93	28	1.3	.05	.09	0
28	.08	.78				49	95	29	1.0	.04	.08	.04
29	.08	.55				62	99	26	1.0	.07	.07	.02
30	.08	.40				70	96	23	.78	.10	.06	.01
31	.07	-----			-----	71	-----	20	-----	.15	.06	-----
TOTAL	5.83	14.98	-	-	-	-	2,020	1,480	204.58	8.35	3.01	0.98
MEAN	.19	.50	-	-	-	-	67.3	47.7	6.82	.27	.097	.033
MAX	.69	1.8	-	-	-	-	99	92	19	.69	.40	.20
MIN	.07	.07	-	-	-	-	46	20	.78	.04	0	0
AC-FT	12	30	-	-	-	-	4,010	2,940	406	17	6.0	1.9

SAN JOAQUIN RIVER BASIN

11-2345. CHIQUITO CREEK NEAR BASS LAKE, CALIF.

LOCATION.--Lat 37°24'45", long 119°22'50", in NE $\frac{1}{4}$ sec.18, T.6 S., R.24 E., on right bank 0.5 mile downstream from Beasore Creek, 0.6 mile southwest of Arnold Meadow, and 12 miles northeast of town of Bass Lake.

DRAINAGE AREA.--60.1 sq mi.

RECORDS AVAILABLE.--September 1921 to September 1928, November 1951 to September 1968 (no winter records 1952-54, 1956). Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1962, published as "near Arnold Meadow."

GAGE.--Graphic water-stage recorder. Altitude of gage is 4,800 ft (from topographic map). Prior to Apr. 30, 1922, staff gage at same site and datum.

AVERAGE DISCHARGE.--20 years (1921-28, 1954-55, 1956-68), 83.4 cfs (60,380 acre-ft per year).

EXTREMES.--Maximum discharge during year, 278 cfs Apr. 11 (gage height, 6.35 ft); minimum, 3.4 cfs Sept. 7-14, 1921-28, 1951-68: Maximum discharge, 8,630 cfs Dec. 23, 1955 (gage height, 16.38 ft), from rating curve extended above 1,100 cfs on basis of slope-area measurement of maximum flow; minimum, 1.2 cfs Sept. 7, 9, 1961.

REMARKS.--Records good except those for period of no gage-height record, which are poor. No regulation or diversion above station. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and nine discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	9.4	20	25	38	141	189	201	75	16	6.8	4.3
2	17	9.4	27	22	42	127	154	196	74	14	6.0	4.0
3	21	9.4	25	20	49	127	131	187	68	13	5.6	4.0
4	24	9.4	24	19	49	131	133	182	64	13	5.3	3.7
5	19	9.4	29	18	49	129	143	173	58	13	5.3	3.7
6	19	9.8	26	17	49	119	145	152	54	12	5.0	3.7
7	17	10	26	16	49	113	133	145	54	13	5.0	3.4
8	15	10	24	15	49	111	150	135	56	14	4.6	3.4
9	14	10	24	14	58	104	164	133	47	16	4.6	3.4
10	14	10	25	16	54	100	192	125	45	13	4.6	3.4
11	13	10	25	17	52	100	222	121	44	11	4.6	3.4
12	13	10	22	18	50	100	219	115	42	11	4.3	3.4
13	13	10	22	19	50	98	201	111	40	10	4.6	3.4
14	13	15	19	24	52	95	194	135	37	9.8	5.3	3.4
15	12	16	17	35	49	91	194	139	36	9.8	5.3	4.6
16	12	13	15	62	56	91	175	137	34	9.8	5.3	4.6
17	12	12	13	53	100	95	152	127	33	9.4	5.3	4.3
18	11	13	16	50	93	89	135	125	31	8.9	5.3	4.0
19	11	36	18	49	89	86	113	129	29	8.4	5.6	3.7
20	11	34	17	47	214	87	127	131	27	8.0	8.4	3.7
21	10	27	18	50	194	91	119	125	26	7.6	8.0	4.0
22	10	23	20	50	156	95	115	108	24	7.6	8.4	4.3
23	11	21	24	52	154	95	127	95	23	7.2	7.2	4.0
24	10	20	29	52	154	102	141	87	22	6.8	6.0	4.0
25	9.8	20	36	53	145	110	160	91	20	6.8	5.3	3.7
26	9.8	20	40	50	143	115	187	104	20	6.4	5.0	3.7
27	9.8	18	42	45	139	125	201	111	18	6.0	4.6	4.0
28	9.8	19	38	45	139	147	209	106	17	6.0	4.6	3.7
29	9.8	18	35	44	139	180	216	98	16	6.0	4.6	3.7
30	9.8	16	31	38	-----	199	209	86	16	6.4	4.3	4.0
31	9.4	-----	27	38	-----	199	-----	80	-----	7.2	4.0	-----
TOTAL	407.2	467.8	774	1,073	2,654	3,592	4,950	3,990	1,150	307.1	168.8	114.6
MEAN	13.1	15.6	25.0	34.6	91.5	116	165	129	38.3	9.91	5.45	3.82
MAX	24	36	42	62	214	199	222	201	75	16	8.4	4.6
MIN	9.4	9.4	13	14	38	86	113	80	16	6.0	4.0	3.4
AC-FT	808	928	1,540	2,130	5,260	7,120	9,820	7,910	2,280	609	335	227

CAL YR 1967 TOTAL 50,597.0 MEAN 139 MAX 850 MIN 9.4 AC-FT 100,400
 WTR YR 1968 TOTAL 19,648.5 MEAN 53.7 MAX 222 MIN 3.4 AC-FT 38,970

Peak discharge (base, 500 cfs).--No peak above base.

Note.--No gage-height record Dec. 13 to Jan. 15.

SAN JOAQUIN RIVER BASIN

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11-2347. MAMMOTH POOL RESERVOIR NEAR BIG CREEK, CALIF.

LOCATION.--Lat 37°19'45", long 119°19'15", in SW $\frac{1}{4}$ sec.11, T.7 S., R.24 E., in gatehouse of power tunnel intake near dam on San Joaquin River, 10 miles northwest of town of Big Creek.

DRAINAGE AREA.--995 sq mi.

RECORDS AVAILABLE.--October 1959 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Southern California Edison Co.).

EXTREMES.--Maximum contents during year, 87,100 acre-ft June 7 (elevation, 3,297.07 ft); minimum, 21,800 acre-ft Dec. 22 (elevation, 3,200.89 ft).
1959-68: Maximum contents, 125,500 acre-ft July 1, 2, 1967; maximum elevation, 3,335.00 ft July 2, 1967; minimum contents since appreciable storage was attained, 4,710 acre-ft Mar. 20, 1966 (elevation, 3,140.65 ft).

REMARKS.--Reservoir is formed by an earthfilled dam; storage began Oct. 8, 1959. Usable capacity, 119,900 acre-ft between elevations 3,100.00 (invert of power tunnel) and 3,330.00 ft (crest of spillway) above mean sea level. Additional storage of 2,780 acre-ft is not available for release. Water is diverted through tunnel for power development; water is returned to river 8.5 miles downstream from dam. See schematic diagram of San Joaquin River basin. Figures given herein represent usable contents.

COOPERATION.--Records of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

3,100	0	3,130	3,110	3,180	14,100	3,260	56,400
3,105	417	3,140	4,600	3,190	17,400	3,280	72,100
3,110	861	3,150	6,400	3,200	21,400	3,300	89,800
3,115	1,360	3,160	8,620	3,220	31,100	3,320	109,300
3,120	1,900	3,170	11,200	3,240	42,800	3,335	125,500

CONTENTS, IN ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46,500	30,200	23,400	26,200	25,900	14,900	7,600	22,400	80,400	79,900	54,400	30,800
2	46,000	29,500	23,300	26,100	26,000	14,000	6,210	26,100	82,300	79,100	53,500	30,500
3	46,200	29,100	23,200	25,900	26,700	13,300	5,490	29,600	84,300	78,400	52,500	30,000
4	46,200	28,800	23,200	25,600	27,500	12,700	5,390	33,000	85,600	77,800	51,000	29,400
5	46,000	28,500	23,600	25,400	27,700	12,000	5,330	36,300	86,300	76,900	50,000	29,000
6	45,500	28,100	23,600	25,300	27,900	11,200	6,600	38,900	86,600	76,100	48,900	28,100
7	45,200	27,800	23,800	25,200	28,000	10,200	6,560	41,100	86,400	75,400	47,800	27,700
8	44,800	27,700	23,700	25,100	28,100	9,550	6,340	43,500	86,000	74,100	46,600	27,300
9	44,100	27,500	23,700	24,900	28,300	8,640	6,290	45,800	85,500	73,500	45,400	26,500
10	43,700	27,200	23,800	24,900	28,800	7,600	6,640	47,600	85,300	72,900	44,300	25,700
11	43,400	26,700	23,700	24,800	29,200	6,510	6,680	49,400	85,100	72,500	43,200	24,800
12	42,800	26,900	23,600	24,400	28,600	5,790	6,810	51,300	85,100	72,000	42,000	24,500
13	42,100	26,500	23,400	24,000	27,800	5,740	6,410	52,300	85,300	70,900	40,800	24,400
14	41,400	26,200	23,300	23,900	27,000	5,690	6,030	52,700	85,400	69,900	39,700	24,100
15	40,700	26,000	23,100	24,300	26,100	5,620	5,960	53,200	85,500	69,100	38,500	23,800
16	40,100	25,600	23,100	24,700	25,400	5,580	5,380	54,000	86,000	68,400	37,600	23,500
17	39,500	25,400	22,900	24,900	25,500	5,540	5,330	54,800	86,300	67,600	36,300	23,300
18	38,800	25,100	22,700	25,000	25,400	5,490	5,200	56,000	86,400	66,500	35,100	23,000
19	38,200	25,200	22,400	25,000	25,200	5,460	5,120	58,100	86,500	65,500	34,100	22,700
20	37,500	25,200	22,100	25,100	27,700	5,390	4,980	60,800	86,300	64,500	34,100	22,400
21	36,800	25,100	21,900	25,700	28,600	5,270	5,200	63,300	86,000	63,600	34,000	22,100
22	36,200	25,000	21,800	25,700	27,100	5,450	5,200	64,500	86,000	62,600	33,900	21,800
23	35,900	24,800	22,200	25,800	25,500	5,180	5,110	64,800	85,400	61,600	33,700	21,500
24	35,200	24,600	22,700	25,900	24,000	5,140	5,920	64,900	84,900	60,700	33,500	21,200
25	34,500	24,400	23,300	26,000	22,200	5,080	5,700	65,100	84,300	59,800	33,200	20,900
26	33,900	24,200	23,700	26,100	21,200	4,980	7,370	66,500	83,600	58,700	32,900	20,700
27	33,200	24,000	24,000	26,400	19,300	4,940	9,130	68,900	82,900	57,600	32,500	20,500
28	33,000	23,800	24,300	27,000	17,400	5,060	11,200	71,900	82,200	57,400	32,200	20,400
29	32,300	23,800	24,600	27,000	15,400	5,260	14,700	74,700	81,400	56,300	31,900	20,200
30	31,600	23,600	25,100	26,600	-----	6,920	18,400	76,900	80,500	56,100	31,500	19,700
31	30,900	-----	25,600	26,400	-----	8,160	-----	78,600	-----	55,300	31,100	-----
(a)	3,219.67	3,205.00	3,209.32	3,210.98	3,184.20	3,158.07	3,192.61	3,287.57	3,289.75	3,258.50	3,220.02	3,195.97
(b)	-16,000	-7,300	+2,000	+800	-11,000	-7,240	+10,240	+60,200	+1,900	-25,200	-24,200	-11,400
MAX	46,500	30,200	25,600	27,000	28,200	14,900	18,400	78,600	86,600	79,900	54,400	30,800
MIN	30,900	23,600	21,800	23,900	15,400	4,940	4,980	22,400	80,400	55,300	31,100	19,700

CAL YR 1967 b -95,100
WTR YR 1968 b -27,200

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

SAN JOAQUIN RIVER BASIN

11-2347.6. SAN JOAQUIN RIVER ABOVE SHAKEFLAT CREEK, NEAR BIG CREEK, CALIF.

LOCATION.--Lat 37°19'05", long 119°19'40", in SW¼ sec.14, T.7 S., R.24 E., on right bank 1,500 ft upstream from Shakeflat Creek, 4,900 ft downstream from Mammoth Pool dam, and 10 miles northwest of town of Big Creek.

DRAINAGE AREA.--1,003 sq mi.

RECORDS AVAILABLE.--October 1959 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 2,865.50 ft above mean sea level (levels by Southern California Edison Co.).

EXTREMES.--Maximum discharge during year, 61 cfs Nov. 30 (gage height, 3.20 ft); minimum daily, 9.1 cfs

Mar. 25.

1959-68: Maximum discharge, 14,700 cfs July 10, 1967 (gage height, 16.96 ft); minimum daily, 0.3 cfs

Oct. 14, Dec. 5, 1959.

REMARKS.--Records good. Flow regulated by Mammoth Pool Reservoir (see sta. no. 11-2347). Flow partly regulated by Florence Lake (see sta. no. 11-2296), Lake Thomas A. Edison (see sta. no. 11-2310) and diversions through Ward tunnel (see sta. no. 11-2295) and through Mono-Bear conduit to Ward tunnel. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and 14 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	24	12	12	12	52	14	16	15	15	17	15
2	26	16	12	12	14	40	12	16	15	15	17	15
3	26	11	12	12	18	12	11	16	15	15	17	15
4	26	11	12	12	18	12	11	16	15	15	17	15
5	26	11	15	12	17	12	11	16	16	15	17	15
6	26	12	12	12	16	12	11	16	16	15	17	15
7	26	12	12	12	16	12	11	16	16	15	17	15
8	26	12	12	12	16	13	11	16	16	15	17	15
9	26	12	12	12	17	12	11	16	15	15	17	15
10	26	12	12	13	16	11	12	16	15	13	17	15
11	26	12	11	13	16	11	14	16	15	14	17	14
12	26	12	11	12	16	11	14	17	15	14	17	14
13	26	12	11	12	36	12	15	18	15	14	17	14
14	26	12	11	12	46	11	14	18	15	14	17	14
15	26	12	11	15	47	9.9	14	17	15	14	17	14
16	27	12	11	13	47	11	14	17	15	14	17	14
17	27	12	11	12	50	10	14	17	15	14	16	14
18	27	12	12	12	47	9.9	14	17	15	14	16	14
19	28	14	11	12	47	9.9	15	17	15	14	16	14
20	28	12	11	12	51	9.9	16	17	15	14	16	14
21	28	12	11	12	49	9.9	16	17	15	14	16	14
22	28	12	12	12	48	9.7	16	16	15	16	16	14
23	28	12	12	12	48	9.4	16	15	15	18	16	14
24	28	12	12	12	47	9.4	15	15	15	18	15	14
25	28	12	12	12	46	9.1	16	15	15	18	15	14
26	28	12	12	12	46	10	16	15	15	18	15	14
27	28	12	12	12	45	11	16	15	15	18	15	14
28	28	12	12	12	44	11	16	15	15	18	15	14
29	28	12	12	12	46	11	16	15	15	18	15	14
30	28	16	12	12	-----	11	17	15	15	18	15	14
31	28	-----	12	13	-----	11	-----	15	-----	17	15	-----
TOTAL	835	379	365	379	982	406.1	419	499	454	479	504	430
MEAN	26.9	12.6	11.8	12.2	33.9	13.1	14.0	16.1	15.1	15.5	16.3	14.3
MAX	28	24	15	15	51	52	17	18	16	18	17	15
MIN	26	11	11	12	12	9.1	11	15	15	13	15	14
AC-FT	1,660	752	724	752	1,950	805	831	990	901	950	1,000	853
CAL YR 1967	TOTAL	451,118	MEAN	1,236	MAX	13,200	MIN	11	AC-FT	894,800		
WTR YR 1968	TOTAL	6,131.1	MEAN	16.8	MAX	52	MIN	9.1	AC-FT	12,160		

SAN JOAQUIN RIVER BASIN

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11-2355. WARD TUNNEL OUTLET AT HUNTINGTON LAKE, CALIF.

LOCATION.--Lat 37°15'15", long 119°09'35", in SW $\frac{1}{4}$ sec.5, T.8 S., R.26 E., at tunnel outlet at east end of Huntington Lake, 6 miles northeast of Big Creek.

RECORDS AVAILABLE.--October 1927 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1962, published as Ward tunnel at outlet.

GAGE.--Graphic water-stage recorder until May 23, 1956, none thereafter. Datum of gage was 6,999.00 ft above mean sea level (levels by Southern California Edison Co.).

AVERAGE DISCHARGE.--41 years, 470 cfs (340,300 acre-ft per year).

EXTREMES.--1927-68: Maximum daily discharge, 2,080 cfs June 21, 1935; no flow at times in 1961, 1964-65.

REMARKS.--Records fair. Daily discharge computed as the sum of Ward tunnel at intake, Mono-Bear conduit, Camp Creek conduit, and corrected for change in contents of Portal Forebay. Tunnel diverts from Florence Lake to Huntington Lake, receives diversions from Bear and Mono Creeks and at times from several other small tributaries of South Fork San Joaquin River. See record for sta. no. 11-2295. Ward tunnel intake at Florence Lake.

COOPERATION.--Discharge of Camp Creek conduit and contents of Portal Forebay furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

REVISIONS (water years).--1967 report: 1965-66.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	736	711	459	497	156	218	316	541	346	714	703	738
2	726	704	502	489	172	198	294	356	395	710	651	726
3	733	706	514	485	160	197	260	219	646	707	708	730
4	725	712	509	412	161	200	267	405	743	711	692	736
5	732	701	501	158	148	203	266	388	662	720	698	734
6	720	713	506	161	145	197	253	362	502	708	729	737
7	724	706	494	134	155	188	240	338	560	713	724	738
8	728	720	500	140	154	192	253	324	564	705	726	724
9	725	704	504	141	161	178	291	316	553	739	722	746
10	724	712	512	150	156	179	331	316	543	737	729	732
11	717	723	526	144	159	178	384	326	549	726	727	732
12	724	704	530	159	155	186	417	322	571	706	725	696
13	727	720	512	143	153	179	377	297	584	712	726	780
14	727	709	506	149	152	180	406	275	585	727	730	722
15	717	702	512	153	136	183	437	286	607	717	728	732
16	722	723	518	161	164	187	334	283	619	710	724	732
17	723	711	522	158	156	182	274	320	623	722	734	732
18	735	714	522	155	158	189	235	394	612	719	717	732
19	693	717	524	154	185	186	214	464	615	719	720	738
20	722	722	534	153	264	179	188	489	583	708	729	738
21	712	645	536	153	254	180	172	531	572	728	722	730
22	702	421	536	153	238	186	159	424	557	716	728	730
23	712	715	533	153	244	180	166	248	554	744	730	582
24	704	720	532	153	235	182	191	211	641	796	688	484
25	706	713	525	153	244	190	248	206	687	860	728	476
26	706	714	520	159	219	192	371	286	738	884	736	416
27	710	729	520	143	221	196	530	418	665	890	729	440
28	708	699	516	148	209	219	633	445	723	886	737	430
29	698	556	512	154	229	264	648	418	733	817	730	414
30	708	459	503	161	-----	292	662	386	730	698	732	376
31	708	-----	501	148	-----	311	-----	352	-----	719	736	-----
TOTAL	22,254	20,605	15,941	5,974	5,343	6,171	9,817	10,946	18,062	23,068	22,338	19,753
MEAN	718	687	514	193	184	199	327	353	602	744	721	658
MAX	736	729	536	497	264	311	662	541	743	890	737	780
MIN	693	421	459	134	136	178	159	206	346	698	651	376
AC-FT	44,140	40,870	31,620	11,850	10,600	12,240	19,470	21,710	35,830	45,750	44,310	39,180
CAL YR 1967	TOTAL 252,856		MEAN 693		MAX 1,710		MIN 150		AC-FT 501,500			
WTR YR 1968	TOTAL 180,272		MEAN 493		MAX 890		MIN 134		AC-FT 357,600			

SAN JOAQUIN RIVER BASIN

11-2360. HUNTINGTON LAKE NEAR BIG CREEK, CALIF.

LOCATION.--Lat 37°14'05", long 119°12'40", in SW¼ sec.14, T.8 S., R.25 E., in gate tower of dam 1 on Big Creek, 2 miles northeast of town of Big Creek.

DRAINAGE AREA.--80.5 sq mi.

RECORDS AVAILABLE.--April 1913 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Southern California Edison Co.). Prior to June 19, 1920, staff gage at same site and datum.

EXTREMES.--Maximum contents during year, 88,600 acre-ft Nov. 3 (elevation, 6,949.60 ft); minimum, 49,600 acre-ft Feb. 19, 20; minimum elevation, 6,918.89 ft Feb. 20.

1913-68: Maximum contents, 90,500 acre-ft May 31, 1926 (elevation, 6,950.92 ft); minimum, 2,100 acre-ft Nov. 6, 1937 (elevation, 6,838.53 ft).

NOTE.--Prior to 1960, maximum and minimum daily contents were published.

REMARKS.--Lake is formed by four dams; storage began Apr. 11, 1913. Dams were raised in 1914 and again in 1917. Usable capacity, 89,200 acre-ft between elevations 6,819.9 (invert of outlet tunnel No. 1) and 6,950 ft (spillway crest at dam 1) above mean sea level. Additional storage of 600 acre-ft is not available for release. Huntington-Shaver conduit has diverted water from Huntington Lake to Shaver Lake since Apr. 21, 1928 (see sta. no. 11-2390.). Water is used for power development in Big Creek plants. Figures given herein represent usable contents. See schematic diagram of San Joaquin River basin.

COOPERATION.--Record of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

6,819.9	0	6,835	1,550	6,870	11,300	6,920	50,800
6,820	8	6,840	2,350	6,880	16,400	6,930	62,600
6,822	142	6,845	3,320	6,890	22,900	6,940	75,300
6,825	382	6,850	4,480	6,900	30,900	6,950	89,200
6,830	899	6,860	7,430	6,910	40,200	6,951	90,610

CONTENTS, IN ACRE-FT, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86,100	88,300	85,900	82,300	60,700	50,800	52,400	65,300	80,200	84,500	82,400	70,100
2	86,300	88,500	85,700	82,100	60,000	50,800	52,500	66,100	80,400	84,800	81,700	70,000
3	86,500	88,300	85,600	81,900	59,200	50,800	52,600	66,700	81,100	85,000	81,100	70,000
4	86,800	87,400	85,400	81,600	58,400	50,900	52,800	67,600	81,900	85,100	80,600	69,900
5	87,000	86,700	85,500	80,800	57,600	50,900	53,200	68,400	82,600	85,400	80,000	69,900
6	87,200	85,900	85,300	80,000	56,700	50,900	53,300	69,200	83,000	85,600	79,400	69,900
7	87,400	85,100	85,200	79,100	55,900	50,900	53,400	69,700	83,500	85,800	78,900	69,800
8	87,600	84,300	85,100	78,200	55,100	50,900	53,500	70,300	84,000	86,000	78,300	69,800
9	87,900	84,200	84,900	77,400	54,400	50,900	53,800	70,800	84,400	86,300	77,800	70,100
10	88,100	84,400	84,800	76,600	53,600	50,900	54,200	71,200	84,800	86,600	77,200	70,400
11	88,300	84,600	84,700	75,800	52,800	50,800	54,900	71,700	85,200	86,800	76,700	70,700
12	88,200	84,800	84,600	75,100	52,100	50,800	55,600	72,200	85,700	87,000	76,100	71,000
13	87,600	85,200	84,400	75,000	51,700	50,800	56,200	72,500	86,100	87,200	75,700	71,100
14	87,100	85,500	84,200	74,600	51,300	50,700	57,100	72,800	86,200	87,400	75,100	70,900
15	86,600	86,000	84,000	73,900	50,800	50,700	57,900	73,000	85,700	87,600	74,600	70,300
16	86,000	86,100	83,900	73,200	50,500	50,700	58,200	73,300	85,200	87,700	74,000	70,000
17	85,400	85,500	83,800	72,300	50,200	50,700	58,300	73,700	84,800	87,500	73,500	69,800
18	85,400	84,900	83,800	71,500	49,900	50,700	58,300	74,400	84,300	87,100	73,000	69,600
19	85,500	84,700	83,800	71,100	49,600	50,600	58,200	75,100	83,800	86,700	72,500	69,300
20	85,800	85,000	83,700	70,200	49,700	50,500	58,100	76,000	83,200	86,300	72,000	69,100
21	86,000	85,100	83,600	69,400	49,700	50,200	58,000	76,900	82,600	86,000	71,500	68,900
22	86,200	84,700	83,500	68,500	49,800	49,900	57,800	77,500	82,000	85,700	71,000	68,700
23	86,400	85,000	83,400	67,700	50,000	50,300	57,700	77,600	81,400	85,400	70,700	68,200
24	86,600	85,200	83,300	67,000	50,500	50,600	57,600	77,700	81,300	85,100	70,500	67,500
25	86,800	85,400	83,200	66,200	50,700	50,600	57,800	77,900	81,800	84,800	70,400	66,800
26	87,000	85,600	83,100	65,500	50,600	50,600	58,400	78,300	82,300	84,500	70,300	66,200
27	87,200	85,800	83,000	64,800	50,600	50,600	59,600	78,700	82,800	84,200	70,300	65,800
28	87,500	86,100	82,900	64,000	50,600	50,700	60,900	79,200	83,300	83,900	70,200	65,400
29	87,700	86,000	82,700	63,100	50,700	51,000	62,300	79,600	83,900	83,600	70,200	65,000
30	87,900	86,100	82,600	62,300	-----	51,400	64,000	79,900	84,300	83,300	70,100	64,500
31	88,100	-----	82,400	61,500	-----	51,900	-----	80,100	-----	83,000	70,100	-----
(a)	6,949.23	6,947.82	6,945.22	6,929.17	6,919.88	6,920.95	6,931.13	6,943.51	6,946.59	6,945.62	6,936.01	6,931.56
(b)	+2,300	-2,000	-3,700	-20,900	-10,800	+1,200	+12,100	+16,100	+4,200	-1,300	-12,800	-5,600
MAX	88,300	88,500	85,900	82,300	60,700	51,900	64,000	80,100	86,200	87,700	82,400	71,100
MIN	85,400	84,200	82,400	61,500	49,600	49,900	52,400	65,300	80,200	83,000	70,100	64,500

CAL YR 1967 b +15,000
WTR YR 1968 b -21,300

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

11-2370. BIG CREEK BELOW HUNTINGTON LAKE, CALIF.

LOCATION.--Lat 37°13'10", long 119°12'50", in NW¼ sec.23, T.8 S., R.25 E., on right bank 1,200 ft upstream from Grouse Creek and 1 mile downstream from Huntington Lake.

DRAINAGE AREA.--81.1 sq mi.

RECORDS AVAILABLE.--June 1925 to September 1968.

GAGE.--Graphic water-stage recorder, Parshall flume, and concrete control. Altitude of gage is 6,600 ft (from topographic map). Prior to Oct. 1, 1942, at datum 1.00 ft lower and from Oct. 1, 1942, to Sept. 30, 1948, at datum 1.00 ft higher.

EXTREMES.--Maximum discharge during year, 4.5 cfs Nov. 28 (gage height, 2.39 ft); minimum daily, 1.0 cfs Oct. 12, 13, Jan. 29 to Feb. 16.

1925-68: Maximum discharge, 2,040 cfs June 23, 1925 (gage height, 11.3 ft, present datum), siphon spillways operating at Huntington Lake; minimum daily recorded, 0.1 cfs Jan. 18-21, Aug. 21 to Sept. 24, Oct. 7-18, Dec. 5-16, 1931.

REMARKS.--Records good. Flow regulated by Huntington Lake beginning in 1913 (see sta. no. 11-2360). During most of year flow is diverted for power development at Big Creek powerhouse No. 1. See schematic diagram of San Joaquin River basin. Records of water temperatures for the water year 1968 are published in Part 2 of this report.

COOPERATION.--Gage-height record and one discharge measurement furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	2.2	2.4	1.2	1.0	1.6	1.6	2.5	2.4	2.4	2.3	2.4
2	2.2	2.2	2.4	1.2	1.0	1.5	1.6	2.4	2.3	2.3	2.4	2.4
3	2.2	2.3	2.5	1.1	1.0	1.5	1.6	2.5	2.4	2.2	2.3	2.4
4	2.2	2.2	2.4	1.1	1.0	1.5	1.6	2.4	2.3	2.3	2.3	2.4
5	2.2	2.2	2.5	1.1	1.0	1.5	1.7	2.4	2.3	2.3	2.3	2.4
6	2.3	2.2	2.5	1.1	1.0	1.4	1.6	2.4	2.3	2.2	2.2	2.4
7	2.2	2.2	2.4	1.1	1.0	1.4	1.6	2.4	2.4	2.2	2.1	2.4
8	2.2	2.2	2.4	1.1	1.0	1.4	1.6	2.5	2.4	2.3	2.1	2.4
9	2.2	2.3	2.4	1.1	1.0	1.3	1.6	2.5	2.4	2.2	2.2	2.4
10	2.2	2.2	2.4	1.1	1.0	1.3	1.6	2.5	2.3	2.2	2.2	2.4
11	1.7	2.2	2.4	1.1	1.0	1.3	1.6	2.4	2.4	2.2	2.2	2.4
12	1.0	2.2	2.3	1.1	1.0	1.3	1.6	2.5	2.3	2.2	2.2	2.5
13	1.0	2.4	2.3	1.1	1.0	1.3	1.6	2.6	2.3	2.3	2.3	2.4
14	1.6	2.3	2.3	1.1	1.0	1.3	2.2	2.6	2.2	2.2	2.2	2.4
15	2.2	2.3	2.3	1.5	1.0	1.3	2.5	2.5	2.3	2.3	2.2	2.4
16	2.2	2.3	1.9	1.2	1.0	1.3	2.7	2.4	2.4	2.2	2.2	2.3
17	2.2	2.3	1.1	1.1	1.4	1.2	2.6	2.4	2.3	2.2	2.3	2.3
18	2.2	2.4	1.2	1.1	1.3	1.2	2.6	2.4	2.2	2.2	2.2	2.3
19	2.2	2.8	1.2	1.1	1.3	1.2	2.6	2.4	2.3	2.3	2.3	2.4
20	2.2	2.4	1.2	1.1	2.6	1.2	2.5	2.4	2.4	2.2	2.3	2.4
21	2.2	2.4	1.2	1.1	1.9	1.3	2.4	2.4	2.3	2.2	2.4	2.4
22	2.2	2.3	1.2	1.1	1.8	1.3	2.5	2.4	2.2	2.1	2.4	2.4
23	2.3	2.3	1.2	1.1	1.8	1.3	2.4	2.4	2.4	2.2	2.4	2.4
24	2.2	2.4	1.2	1.1	1.7	1.3	2.4	2.4	2.6	2.3	2.4	2.4
25	2.2	2.3	1.2	1.1	1.7	1.4	2.4	2.3	2.6	2.3	2.3	2.4
26	2.3	2.3	1.2	1.1	1.7	1.4	2.4	2.3	2.6	2.4	2.3	2.4
27	2.2	2.3	1.2	1.1	1.7	1.5	2.5	2.3	2.5	2.2	2.4	2.4
28	2.2	2.5	1.2	1.1	1.7	1.5	2.4	2.3	2.4	2.2	2.4	2.1
29	2.2	2.4	1.2	1.0	1.7	1.6	2.4	2.3	2.4	2.2	2.4	2.1
30	2.2	2.4	1.2	1.0	-----	1.6	2.5	2.3	2.4	2.3	2.4	2.1
31	2.2	-----	1.2	1.0	-----	1.6	-----	2.4	-----	2.4	2.4	-----
TOTAL	65.0	69.4	55.7	34.5	38.3	42.8	62.9	74.9	71.0	69.7	71.0	70.9
MEAN	2.10	2.31	1.80	1.11	1.32	1.38	2.10	2.42	2.37	2.25	2.29	2.36
MAX	2.3	2.8	2.5	1.5	2.6	1.6	2.7	2.6	2.6	2.4	2.4	2.5
MIN	1.0	2.2	1.1	1.0	1.0	1.2	1.6	2.3	2.2	2.1	2.1	2.1
AC-FT	129	138	110	68	76	85	125	149	141	138	141	141

CAL YR 1967 TOTAL 1,103.1
WTR YR 1968 TOTAL 726.1

MEAN 3.02
MEAN 1.98

MAX 25
MAX 2.8

MIN 1.0
MIN 1.0

AC-FT 2,190
AC-FT 1,440

SAN JOAQUIN RIVER BASIN

11-2375. PITMAN CREEK BELOW TAMARACK CREEK, CALIF.

LOCATION.--Lat 37°11'55", long 119°12'45", in NW¼ sec.35, T.8 S., R.25 E., on right bank 0.8 mile downstream from confluence of Tamarack Creek and South Fork Tamarack Creek, 1.4 miles upstream from mouth, and 1.9 miles east of town of Big Creek.

DRAINAGE AREA.--22.9 sq mi.

RECORDS AVAILABLE.--October 1927 to September 1968. Records for water year 1928 incomplete, yearly estimate published in WSP 1315-A.

GAGE.--Graphic water-stage recorder, Parshall flume, and concrete control. Altitude of gage is 7,005 ft (from Southern California Edison Co. contour map). Prior to Sept. 29, 1940, at site 10 ft downstream at same datum.

AVERAGE DISCHARGE.--41 years, 38.1 cfs (27,580 acre-ft per year).

EXTREMES.--Maximum discharge during year, 148 cfs Apr. 28 (gage height, 4.72 ft); minimum daily, 0.17 cfs Sept. 27-29.

1927-68: Maximum discharge, 3,670 cfs Dec. 23, 1955 (gage height, 11.20 ft), from rating curve extended above 1,100 cfs on basis of slope-area measurement at gage height 10.77 ft; no flow Oct. 15-18, 1931.

REMARKS.--Records good. No diversion above station; practically all flow diverted below station to Huntington-Shaver conduit. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and four discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	1.1	1.0	1.9	2.9	28	48	113	25	2.9	.54	.24
2	3.0	1.1	1.1	1.9	2.9	23	44	108	23	2.7	.49	.22
3	2.7	1.0	1.6	1.7	2.9	23	37	106	22	2.6	.46	.22
4	2.5	1.0	1.4	1.4	2.9	24	39	103	20	2.3	.41	.22
5	2.4	1.1	1.4	1.4	2.9	23	42	92	19	2.1	.39	.20
6	2.3	1.1	1.4	1.4	2.9	21	37	75	18	2.0	.37	.20
7	2.2	1.1	1.4	1.2	2.9	19	40	68	20	2.7	.32	.19
8	2.1	1.0	1.4	1.2	2.9	19	49	65	22	2.8	.30	.19
9	1.9	1.0	1.4	1.2	2.9	18	60	66	18	4.0	.30	.19
10	1.8	1.0	1.4	1.2	3.2	16	76	62	16	2.9	.28	.19
11	1.7	1.0	1.6	1.2	3.2	16	88	60	15	2.1	.30	.19
12	1.6	1.0	1.6	1.4	2.9	16	92	58	14	1.8	.30	.19
13	1.6	1.0	1.2	1.4	2.9	15	86	51	13	1.6	.41	.19
14	1.5	1.6	1.2	1.4	2.9	14	89	54	11	1.6	.44	.19
15	1.4	1.7	1.2	1.8	2.9	14	84	56	10	1.5	.44	.19
16	1.4	1.4	1.2	3.8	2.9	12	73	55	9.4	1.4	.44	.20
17	1.4	1.3	1.0	4.4	3.5	14	63	56	8.6	1.3	.44	.20
18	1.3	1.6	1.2	3.2	5.9	13	54	59	8.3	1.2	.41	.19
19	1.3	3.8	1.2	2.9	5.5	12	53	61	7.6	1.1	.44	.19
20	1.3	4.2	1.2	2.9	8.9	12	52	60	6.9	1.0	.49	.19
21	1.3	3.0	1.4	2.9	14	13	48	58	6.2	.90	.62	.19
22	1.3	2.0	1.4	3.2	24	14	48	50	5.8	.81	.70	.20
23	1.3	1.8	1.7	3.2	24	14	52	41	5.4	.73	.64	.22
24	1.2	1.8	1.7	3.2	26	15	61	37	5.2	.67	.51	.22
25	1.2	1.8	1.9	3.5	24	18	75	37	4.9	.64	.39	.20
26	1.2	1.8	1.9	3.2	24	20	94	41	4.3	.62	.37	.19
27	1.2	1.8	2.2	2.9	26	25	109	41	3.9	.56	.35	.17
28	1.2	1.6	2.2	2.9	27	32	117	38	3.6	.59	.32	.17
29	1.2	1.4	2.2	3.2	28	45	120	35	3.4	.59	.30	.17
30	1.2	.90	2.2	2.9	-----	59	115	30	3.2	.56	.26	.19
31	1.1	-----	1.9	2.9	-----	62	-----	28	-----	.56	.24	-----
TOTAL	52.2	47.00	46.8	72.9	287.8	669	2,045	1,864	352.7	48.83	12.67	5.90
MEAN	1.68	1.57	1.51	2.35	9.92	21.6	68.2	60.1	11.8	1.58	.41	.20
MAX	3.4	4.2	2.2	4.4	28	62	120	113	25	4.0	.70	.24
MIN	1.1	.90	1.0	1.2	2.9	12	37	28	3.2	.56	.24	.17
AC-FT	104	93	93	145	571	1,330	4,060	3,700	700	97	25	12
CAL YR 1967	TOTAL 29,171.40		MEAN 79.9		MAX 560		MIN .90		AC-FT 57,860			
WTR YR 1968	TOTAL 5,504.80		MEAN 15.0		MAX 120		MIN .17		AC-FT 10,920			

Peak discharge (base, 200 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

641

11-2390. HUNTINGTON-SHAVER CONDUIT OUTLET NEAR SHAVER LAKE, CALIF.

LOCATION.--Lat 37°09'15", long 119°13'50", in NW¼ sec.15, T.9 S., R.25 E., on left bank at tunnel outlet, 2.3 miles northeast of Shaver Lake, and 3.5 miles south of town of Big Creek.

RECORDS AVAILABLE.--October 1928 to September 1968. Monthly discharge only for October 1928, published in WSP 1315-A. Prior to October 1962, published as Huntington-Shaver conduit at outlet.

GAGE.--Graphic water-stage recorder and concrete control. Altitude of gage is 6,680 ft (from topographic map).

AVERAGE DISCHARGE.--40 years, 217 cfs (157,100 acre-ft per year).

EXTREMES.--1928-68: Maximum daily discharge, 1,780 cfs June 3, 4, 1938; minimum daily, 0.90 cfs Sept. 8-11, 1955, Nov. 15, 19, 26, 27, 1966.

REMARKS.--Records good. Conduit diverts from Huntington Lake to Shaver Lake, with additions from Pitman Creek and seepage en route. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and 11 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	27	1.8	3.2	4.1	30	58	112	27	33	412	152
2	34	27	1.9	3.2	4.1	26	46	109	26	33	444	152
3	34	243	2.3	3.0	4.1	26	38	107	30	33	418	152
4	34	542	2.5	2.7	4.1	27	40	104	22	33	418	152
5	34	538	2.5	2.7	4.1	27	44	94	22	33	416	152
6	34	537	2.5	2.7	4.1	24	39	77	22	33	416	152
7	34	534	2.5	2.5	4.1	22	37	71	24	34	416	152
8	34	532	2.5	2.5	4.1	20	49	67	24	34	415	152
9	34	240	2.5	2.5	4.1	20	59	68	22	35	414	152
10	34	32	2.5	2.5	4.4	18	74	64	19	34	414	152
11	32	32	2.7	2.5	4.4	18	90	63	16	34	412	153
12	190	32	2.7	2.7	4.1	18	92	60	15	33	410	153
13	440	32	2.5	2.7	4.1	18	88	53	14	33	409	275
14	438	33	2.5	2.7	4.1	16	89	56	202	33	408	398
15	438	33	2.5	3.8	4.1	16	86	58	510	33	404	397
16	436	203	2.5	5.0	4.1	14	76	56	508	33	403	310
17	434	576	2.3	5.6	4.7	16	67	58	505	224	402	238
18	184	572	2.5	4.4	7.0	15	56	61	502	359	400	238
19	32	334	2.5	4.1	6.6	14	54	64	500	343	398	238
20	32	35	2.5	4.1	11	14	52	62	499	329	397	238
21	32	35	2.7	4.1	16	15	49	59	498	304	396	238
22	32	35	2.7	4.4	26	16	48	52	496	291	394	238
23	32	34	3.0	4.4	26	16	53	44	494	290	264	237
24	32	34	3.0	4.4	28	17	61	40	302	290	189	236
25	31	34	3.2	4.7	26	20	76	39	35	289	189	235
26	31	34	3.2	4.4	26	22	98	43	35	289	164	103
27	31	18	3.5	4.1	28	27	112	44	34	289	152	27
28	31	2.3	3.5	4.1	29	34	117	41	34	287	152	27
29	31	2.1	3.5	4.4	31	46	120	38	34	287	152	28
30	28	1.6	3.5	4.1	-----	59	115	34	34	286	152	28
31	27	-----	3.2	4.1	-----	63	-----	29	-----	286	152	-----
TOTAL	3,334	5,364.0	83.7	112.3	331.5	734	2,083	1,927	5,505	4,977	10,582	5,555
MEAN	108	179	2.70	3.62	11.4	23.7	69.4	62.2	184	161	341	185
MAX	440	576	3.5	5.6	31	63	120	112	510	359	444	398
MIN	27	1.6	1.8	2.5	4.1	14	37	29	14	33	152	27
AC-FT	6,610	10,640	166	223	658	1,460	4,130	3,820	10,920	9,870	20,990	11,020
CAL YR 1967	TOTAL 163,872.7		MEAN 449		MAX 1,650		MIN 1.6		AC-FT 325,000			
WTR YR 1968	TOTAL 40,588.5		MEAN 111		MAX 576		MIN 1.6		AC-FT 80,510			

SAN JOAQUIN RIVER BASIN

11-2395. SHAVER LAKE NEAR BIG CREEK, CALIF.

LOCATION.--Lat 37°08'40", long 119°18'10", in SE $\frac{1}{4}$ sec.13, T.9 S., R.24 E., near center of dam on Stevenson Creek, 6 miles southwest of town of Big Creek.

DRAINAGE AREA.--29.1 sq mi.

RECORDS AVAILABLE.--November 1909 to September 1968. Prior to January 1927, monthly contents only, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Southern California Edison Co.). Prior to Jan. 11, 1927, gage on rock-filled dam a short distance upstream at different datum.

EXTREMES.--Maximum contents during year, 114,300 acre-ft Oct. 1 (elevation, 5,360.03 ft); minimum, 10,100 acre-ft Sept. 14 (elevation, 5,281.70 ft).

1909-68: Maximum contents, 135,900 acre-ft July 5, 1946 (elevation, 5,370.25 ft); minimum, 26 acre-ft Jan. 29, 1927, during period of construction.

NOTE.--Prior to 1960, maximum and minimum daily contents were published.

REMARKS.--Storage began prior to 1905. Original lake formed by rock-filled dam (usable capacity, 5,500 acre-ft). Water diverted by Fresno Flume and Lumber Co.'s flumes Nos. 1 and 2 beginning prior to 1907 and discontinued July 7, 1920. Present lake formed by concrete-arch dam; dam completed Nov. 18, 1927. Usable capacity of present lake, 135,300 acre-ft between elevations 5,225 (trash-rack foundation) and 5,370 ft (crest of spillway) above mean sea level. Water is received from Pitman Creek (since Feb. 22, 1928) and Huntington Lake (since Apr. 21, 1928) through Huntington-Shaver conduit and released for power development in Big Creek plants. See schematic diagram of San Joaquin River basin. Figures given herein represent usable contents.

COOPERATION.--Record of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

5,225	0	5,250	700	5,280	9,190	5,330	60,900
5,230	42	5,255	1,250	5,290	15,600	5,340	76,700
5,235	97	5,260	2,070	5,300	24,000	5,350	94,600
5,240	191	5,265	3,210	5,310	34,500	5,360	114,200
5,245	379	5,270	4,750	5,320	46,800	5,371	137,600

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	113.3	86.1	66.6	35.0	24.7	24.2	28.2	34.4	38.7	35.8	19.1	13.0
2	112.3	85.1	65.6	33.9	24.5	24.4	28.4	34.6	38.7	35.2	18.9	13.3
3	111.2	84.4	64.5	32.8	24.5	24.5	28.6	34.8	38.8	34.6	18.5	13.1
4	110.2	84.4	63.5	31.9	24.6	24.6	28.7	35.1	38.8	34.0	18.5	12.8
5	109.2	84.4	62.7	31.3	24.5	24.7	29.0	35.3	38.9	33.4	18.2	12.6
6	108.2	84.4	61.7	30.8	24.3	24.9	29.1	35.5	38.5	32.8	17.9	12.4
7	107.1	84.8	60.7	30.3	24.1	25.0	29.3	35.6	38.2	32.2	17.7	12.7
8	106.1	85.2	59.7	29.7	24.0	25.2	29.5	35.8	38.2	31.6	17.4	13.0
9	105.1	85.1	58.7	29.1	23.9	25.3	29.7	35.9	38.3	31.0	16.9	12.5
10	104.1	84.1	57.7	28.6	23.9	25.4	29.9	36.1	37.9	30.5	16.6	11.9
11	103.1	83.1	56.6	27.9	24.0	25.5	30.2	36.2	37.6	29.9	16.3	11.3
12	102.3	82.1	55.6	27.5	23.8	25.6	30.4	36.4	37.2	29.3	16.0	10.7
13	102.1	81.1	54.5	27.2	23.7	25.8	30.7	36.6	36.6	28.9	15.8	10.2
14	101.8	80.0	53.4	26.9	23.6	25.8	30.9	36.7	36.3	28.4	15.5	10.2
15	101.6	79.0	52.4	26.6	23.4	25.9	31.2	36.9	37.0	27.9	15.2	10.5
16	101.3	78.3	51.4	26.6	23.3	26.1	31.4	37.0	37.3	27.3	15.0	10.6
17	101.1	78.2	50.3	26.4	23.5	26.2	31.6	37.2	37.6	26.7	14.6	10.6
18	100.4	78.3	49.5	26.3	23.6	26.3	31.7	37.3	37.9	26.2	14.3	10.5
19	99.4	78.3	48.5	26.1	23.5	26.4	31.9	37.5	38.3	25.8	14.0	10.6
20	98.3	77.4	47.4	26.0	23.7	26.5	32.0	37.6	38.6	25.3	13.7	10.4
21	97.3	76.4	46.4	26.0	23.8	26.6	32.2	37.7	39.1	24.8	13.4	10.7
22	96.3	75.4	45.3	25.9	24.0	26.7	32.3	37.9	39.6	24.3	13.1	11.1
23	95.3	74.4	44.3	25.7	24.1	26.8	32.5	38.0	39.9	23.7	12.7	11.4
24	94.3	73.4	43.2	25.5	24.0	26.8	32.6	38.0	39.9	23.2	13.1	11.7
25	93.2	72.4	42.2	25.4	24.2	27.0	32.8	38.1	39.3	22.6	13.4	11.8
26	92.2	71.5	41.2	25.2	24.1	27.1	33.1	38.2	38.7	22.2	13.3	11.6
27	91.2	70.4	40.1	25.2	24.1	27.2	33.3	38.3	38.1	21.6	13.1	11.3
28	90.2	69.4	39.1	25.2	24.1	27.3	33.6	38.4	37.4	21.1	12.8	11.3
29	89.1	68.4	38.1	25.1	24.1	27.5	33.9	38.5	36.8	20.6	12.6	10.9
30	88.1	67.6	37.0	24.9	-----	27.7	34.1	38.6	36.4	20.0	12.4	10.3
31	87.1	-----	36.0	24.8	-----	27.9	-----	38.6	-----	19.5	12.7	-----
(a)	5,345.96	5,334.35	5,311.32	5,300.86	5,300.12	5,303.97	5,309.72	5,313.54	5,311.65	5,294.90	5,285.86	5,282.04
(b)	-27,200	-19,500	-31,600	-11,200	-700	+3,800	+6,200	+4,500	-2,200	-16,900	-6,800	-2,400
MAX	113.3	86.1	66.6	35.0	24.7	27.9	34.1	38.6	39.9	35.8	19.1	13.3
MIN	87.1	67.6	36.0	24.8	23.3	24.2	28.2	34.4	36.3	19.5	12.4	10.2

CAL YR 1967 b -15,500
WTR YR 1968 b -104,000

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

643

11-2419.5. REDINGER LAKE NEAR AUBERRY, CALIF.

LOCATION.--Lat 37°08'40", long 119°27'00", in SW $\frac{1}{4}$ sec.15, T.9 S., R.23 E., on upstream face of dam No. 7 on San Joaquin River, 4.2 miles northeast of Auberry.

DRAINAGE AREA.--1,295 sq mi.

RECORDS AVAILABLE.--November 1950 to September 1968. Prior to October 1965, collected by Southern California Edison Co., available in files of California district office.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Southern California Edison Co.).

EXTREMES.--Maximum contents during year, 26,100 acre-ft Oct. 27 (elevation, 1,402.98 ft); minimum, 9,920 acre-ft Sept. 29 (elevation, 1,360.88 ft).
1950-68: Maximum contents, 26,100 acre-ft June 15, 1963, Oct. 29, 1964, Oct. 27, 1967; maximum elevation, 1,402.98 ft Oct. 27, 1967; minimum contents since appreciable storage was attained, 6,280 acre-ft Mar. 3, 1956 (elevation, 1,347.98 ft).

REMARKS.--Lake is formed by a concrete dam; storage began Nov. 19, 1950. Usable capacity, 26,119 acre-ft between elevations 1,320.0 (invert of tunnel) and 1,403.0 ft (top of radial gates). Additional storage of 8,914 acre-ft is not available for release. Water is used for power development in Big Creek powerhouse No. 4. See schematic diagram of San Joaquin River basin. Figures given herein represent usable contents.

COOPERATION.--Records of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

1,320	0	1,330	2,010	1,355	8,200	1,380	16,500
1,322	384	1,335	3,120	1,360	9,650	1,385	18,400
1,324	778	1,340	4,280	1,365	11,200	1,390	20,400
1,326	1,180	1,345	5,520	1,370	12,900	1,400	24,700
1,328	1,590	1,350	6,810	1,375	14,600	1,403	26,119

CONTENTS, IN ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11,300	25,200	25,000	25,000	25,300	25,000	23,700	25,700	25,700	25,200	25,200	25,500
2	12,500	25,200	25,000	25,000	25,200	24,900	23,700	25,700	25,600	25,100	25,200	25,500
3	12,800	25,100	25,000	25,000	25,300	24,700	23,800	25,700	25,600	25,100	25,200	25,500
4	13,900	25,000	24,900	25,200	25,100	24,700	23,400	25,700	25,600	25,000	25,300	25,500
5	14,600	25,000	25,000	25,200	25,200	24,600	22,700	25,700	25,600	25,100	25,300	25,500
6	15,600	25,000	25,000	25,200	25,200	24,700	22,200	25,700	25,600	25,000	25,400	25,600
7	16,700	25,000	25,000	25,300	25,200	24,800	22,900	25,700	25,700	25,000	25,400	25,100
8	17,700	25,100	25,000	25,400	25,200	24,800	24,100	25,800	25,600	25,600	25,400	24,300
9	19,100	25,100	25,000	25,400	25,200	24,800	24,700	25,800	25,600	25,600	25,500	24,200
10	20,300	25,100	25,000	25,400	25,400	24,800	24,600	25,700	25,700	25,900	25,400	24,100
11	21,100	25,200	25,000	25,200	25,400	24,600	24,700	25,800	25,700	25,700	25,200	24,200
12	22,300	25,300	25,000	25,400	25,300	24,800	24,700	25,700	25,700	25,700	25,300	23,500
13	23,500	25,000	24,900	25,100	25,400	24,800	24,600	25,700	25,700	25,600	25,300	22,800
14	24,400	25,000	24,900	25,100	25,400	24,700	24,500	25,700	25,600	25,700	25,400	22,200
15	25,400	25,400	25,000	25,400	25,500	24,600	24,500	25,600	25,600	25,700	25,500	21,400
16	25,400	25,500	24,900	25,500	25,400	24,600	24,700	25,700	25,700	25,300	25,300	20,600
17	25,300	25,400	25,000	25,600	24,700	24,400	24,500	25,700	25,700	25,300	25,500	19,800
18	25,300	25,400	24,900	25,500	25,100	24,200	24,500	25,700	25,600	25,300	25,400	19,100
19	25,300	25,100	24,800	25,400	25,000	24,200	24,500	25,700	25,700	25,300	25,400	18,200
20	25,400	25,100	25,000	25,000	25,000	24,300	24,400	25,700	25,600	25,300	25,500	17,400
21	25,400	25,100	25,100	25,200	24,700	24,700	24,500	25,700	25,600	25,300	25,500	16,700
22	25,400	25,000	25,100	25,200	24,600	24,700	24,500	25,700	25,100	25,300	25,600	16,000
23	25,400	25,100	25,100	25,100	24,700	24,700	24,400	25,700	25,000	25,300	25,600	15,200
24	25,600	25,100	25,000	25,300	24,700	24,300	24,100	25,700	25,100	25,300	25,600	14,500
25	25,500	25,100	25,000	25,300	24,800	24,300	24,300	25,700	25,000	25,200	25,500	13,700
26	25,600	25,100	25,000	25,200	24,700	24,200	25,200	25,700	25,100	25,300	25,500	13,100
27	25,500	25,100	25,000	25,200	24,900	24,100	25,400	25,700	25,100	25,300	25,500	12,300
28	25,400	25,000	25,000	25,200	24,900	23,800	25,600	25,700	25,100	24,900	25,500	10,900
29	25,300	24,700	25,000	25,300	24,900	24,300	25,700	25,700	25,000	25,100	25,500	10,100
30	25,300	24,700	25,000	25,300	-----	23,200	25,700	25,700	25,100	25,000	25,500	10,100
31	25,200	-----	25,000	25,100	-----	22,700	-----	25,700	-----	25,200	25,500	-----
(a)	1,400.89	1,399.91	1,400.46	1,400.76	1,400.35	1,395.40	1,402.12	1,402.07	1,400.72	1,400.99	1,401.62	1,361.46
(b)	+14,800	-500	+300	+100	-200	-2,200	+3,000	0	-600	+100	+300	-15,400
MAX	25,600	25,500	25,100	25,600	25,500	25,000	25,700	25,800	25,700	25,900	25,600	25,600
MIN	11,300	24,700	24,800	25,000	24,600	22,700	22,200	25,600	25,000	24,900	25,200	10,100

CAL YR 1967 b +200
WTR YR 1968 b -300

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

SAN JOAQUIN RIVER BASIN

11-2420. SAN JOAQUIN RIVER ABOVE WILLOW CREEK, NEAR AUBERRY, CALIF.

LOCATION.--Lat 37°08'40", long 119°27'00", in SW $\frac{1}{4}$ sec.15, T.9 S., R.23 E., on right bank 1,000 ft downstream from diversion dam, 0.4 mile upstream from Willow Creek, and 4.2 miles northeast of Auberry.

DRAINAGE AREA.--1,295 sq mi.

RECORDS AVAILABLE.--March 1951 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 1,175.54 ft above mean sea level (levels by Southern California Edison Co.).

AVERAGE DISCHARGE.--17 years, 386 cfs (279,500 acre-ft per year).

EXTREMES.--Maximum discharge during year, 70 cfs July 20 (gage height, 4.70 ft); minimum daily, 2.0 cfs Feb. 19-22.

1951-68: Maximum discharge, 73,200 cfs Dec. 23, 1955 (gage height, 54.2 ft, from floodmarks), from rating curve extended above 7,000 cfs on basis of computed flow over dam; no flow Sept. 25, 1951.

REMARKS.--Records good. Flow regulated by nine powerplants and six reservoirs with combined capacity of about 559,900 acre-ft. Conduit to powerhouse No. 4 diverts 1,000 ft above station. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and 16 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	16	7.1	9.0	4.6	2.4	4.1	10	16	21	22	21
2	15	16	9.8	9.3	6.0	2.4	3.7	10	16	21	22	21
3	15	16	9.8	9.8	6.2	2.5	3.7	11	16	21	22	21
4	15	16	9.8	11	6.2	2.5	3.7	11	17	21	22	22
5	15	16	6.1	11	6.3	2.5	3.7	11	18	21	22	22
6	16	16	5.3	11	6.3	2.5	3.7	12	18	21	22	22
7	16	16	11	11	6.3	2.5	3.7	12	18	21	22	21
8	16	16	13	11	6.3	2.5	3.7	12	15	21	22	21
9	16	16	13	11	6.3	2.5	3.7	13	17	21	22	21
10	16	16	13	11	4.9	2.5	3.7	13	17	21	22	21
11	16	16	13	5.0	4.9	2.5	3.7	14	17	21	22	21
12	16	16	13	9.5	5.7	2.5	3.7	13	17	21	22	21
13	16	16	14	9.6	6.4	2.5	3.7	13	17	21	22	21
14	16	14	13	9.6	5.6	2.5	3.7	4.3	18	20	22	21
15	16	15	13	7.1	4.8	2.5	3.7	4.4	18	20	22	22
16	16	15	14	4.2	7.0	2.6	3.7	5.0	18	20	22	22
17	16	15	14	4.6	4.6	2.5	3.7	6.0	18	20	22	21
18	16	15	14	6.8	2.1	2.5	3.6	8.7	19	20	22	21
19	16	14	14	9.8	2.0	2.5	3.9	10	19	21	22	21
20	16	5.6	8.1	9.8	2.0	3.2	4.9	11	19	23	22	21
21	16	5.7	11	10	2.0	3.4	4.9	11	19	22	22	21
22	16	7.3	13	10	2.0	3.3	4.9	11	20	22	22	21
23	16	11	13	10	2.6	3.3	5.5	11	20	22	22	22
24	16	13	13	10	2.6	3.4	7.5	12	20	22	22	22
25	16	13	13	10	2.6	3.3	7.7	12	20	22	22	22
26	16	13	8.8	10	2.5	3.3	7.7	12	20	22	22	22
27	16	13	7.4	9.5	2.5	3.3	7.7	12	21	22	22	22
28	16	13	7.5	8.0	2.5	3.4	7.8	14	21	22	22	22
29	16	13	7.5	10	2.4	4.3	9.9	14	21	22	21	22
30	16	6.6	8.1	10	-----	3.5	10	14	21	22	21	22
31	16	-----	8.3	6.1	-----	3.6	-----	15	-----	22	21	-----
TOTAL	491	410.2	338.6	284.7	126.2	88.7	149.3	342.4	551	659	679	643
MEAN	15.8	13.7	10.9	9.18	4.35	2.86	4.98	11.0	18.4	21.3	21.9	21.4
MAX	16	16	14	11	7.0	4.3	10	15	21	23	22	22
MIN	15	5.6	5.3	4.2	2.0	2.4	3.6	4.3	15	20	21	21
AC-FT	974	814	672	565	250	176	296	679	1,090	1,310	1,350	1,280
CAL YR 1967	TOTAL	500,416.2	MEAN	1.371	MAX	13,100	MIN	3.8	AC-FT	992,600		
WTR YR 1968	TOTAL	4,763.1	MEAN	13.0	MAX	23	MIN	2.0	AC-FT	9,450		

11-2424. NORTH FORK WILLOW CREEK NEAR SUGAR PINE, CALIF.

LOCATION.--Lat 37°23'50", long 119°33'55", in NE¼ sec.21, T.6 S., R.22 E., on right bank at road bridge 0.6 mile downstream from Soquel campground, 3.0 miles upstream from Chilkoot Creek, and 4.6 miles southeast of Sugar Pine.

DRAINAGE AREA.--16.9 sq mi.

RECORDS AVAILABLE.--August 1965 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 5,200 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 62 cfs Feb. 20 (gage height, 3.03 ft); minimum daily, 1.0 cfs Sept. 18, 19, 26-28.

1965-68; Maximum discharge, 1,600 cfs Dec. 6, 1966 (gage height, 5.90 ft), from rating curve extended above 250 cfs on basis of a step-backwater survey; minimum daily, 1.0 cfs Sept. 18, 19, 26-28, 1968.

REMARKS.--Records good. No storage above station. Madera irrigation district diverts up to 80 cfs through Soquel ditch to the Fresno River basin 2.2 miles upstream.

REVISIONS (water year).--1967 report: 1966(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	4.8	5.5	4.8	5.0	9.3	10	8.7	2.8	1.7	1.6	1.2
2	5.5	4.8	5.5	4.5	4.8	8.1	10	8.7	2.8	1.6	1.6	1.2
3	5.8	4.8	5.8	5.0	4.8	7.8	9.3	8.4	2.7	1.7	1.6	1.2
4	5.5	4.8	6.0	5.0	4.8	7.5	8.7	8.4	2.7	1.8	1.5	1.3
5	5.2	4.8	8.7	4.5	4.8	7.2	9.3	7.2	2.6	1.7	1.7	1.2
6	5.0	4.8	7.5	4.2	4.8	6.9	8.7	5.5	2.6	1.7	1.6	1.2
7	5.0	4.8	6.9	4.2	4.8	6.6	8.1	5.0	2.5	1.6	1.5	1.1
8	4.8	4.8	6.6	4.5	5.0	6.9	7.8	4.5	2.5	1.6	1.4	1.1
9	4.8	5.0	6.0	4.2	5.8	7.8	8.1	4.0	2.4	1.6	1.4	1.1
10	4.8	5.0	5.8	5.0	5.8	6.9	9.0	3.8	2.4	1.5	1.4	1.1
11	4.8	5.0	5.8	4.8	5.5	6.6	10	3.8	2.3	1.4	1.4	1.1
12	4.5	5.0	5.5	4.8	5.5	6.0	10	4.2	2.3	1.4	1.7	1.1
13	4.5	5.2	5.2	4.5	5.2	6.0	10	4.8	2.3	1.4	3.0	1.1
14	4.5	5.5	5.5	4.8	5.2	6.6	10	5.5	2.3	1.4	3.4	1.1
15	4.5	5.5	5.8	10	5.2	5.8	10	6.9	2.3	1.4	3.4	1.1
16	4.5	5.5	5.2	7.2	5.8	5.8	9.0	5.2	2.3	1.4	3.2	1.1
17	4.2	5.5	5.2	6.3	13	6.0	7.8	4.5	2.2	1.4	3.2	1.1
18	4.2	6.3	5.2	5.8	12	6.0	6.3	3.8	2.2	1.3	2.8	1.0
19	4.2	12	5.2	5.5	9.6	6.0	5.8	3.5	2.2	1.3	3.0	1.0
20	4.2	8.7	5.2	5.2	40	6.0	5.5	3.8	2.0	1.2	3.4	1.1
21	4.2	6.9	5.2	5.2	20	6.3	5.0	3.8	1.9	1.3	3.4	1.2
22	4.5	6.0	5.2	5.2	14	6.0	4.8	3.8	1.9	1.3	3.2	1.2
23	4.5	5.8	5.0	5.5	13	6.0	4.8	3.5	1.8	1.3	2.9	1.2
24	4.5	5.5	5.0	5.5	11	6.6	5.0	3.4	1.8	1.4	2.8	1.1
25	4.5	5.5	5.0	5.2	11	7.2	5.5	3.2	1.8	1.4	2.6	1.1
26	4.5	5.5	5.2	5.0	10	7.2	6.9	3.2	1.7	1.5	2.4	1.0
27	4.5	5.5	5.2	5.0	10	7.5	8.7	3.0	1.7	1.5	2.4	1.0
28	4.5	5.8	5.2	5.0	10	8.4	9.9	3.0	1.7	1.5	2.4	1.0
29	4.5	5.8	5.0	5.0	9.6	9.0	10	3.0	1.6	1.5	2.3	1.1
30	4.8	5.5	5.0	5.0	-----	9.3	9.6	2.9	1.7	1.5	2.0	1.3
31	4.8	-----	4.8	5.0	-----	9.3	-----	2.9	-----	1.6	1.4	-----
TOTAL	147.8	170.4	173.9	161.4	266.0	218.6	243.6	145.9	66.0	45.9	71.6	33.7
MEAN	4.77	5.68	5.61	5.21	9.17	7.05	8.12	4.71	2.20	1.48	2.31	1.12
MAX	7.5	12	8.7	10	40	9.3	10	8.7	2.8	1.8	3.4	1.3
MIN	4.2	4.8	4.8	4.2	4.8	5.8	4.8	2.9	1.6	1.2	1.4	1.0
AC-FT	293	338	345	320	528	434	483	289	131	91	142	67
(a)	287	158	337	365	544	833	1,380	1,400	649	243	46	75
CAL YR 1967	TOTAL 15,205.6			MEAN 41.7		MAX 335		MIN 3.8		AC-FT 30,160		
WTR YR 1968	TOTAL 1,744.8			MEAN 4.77		MAX 40		MIN 1.0		AC-FT 3,460		

Peak discharge (base, 100 cfs).--No peak above base.

a Diversion, in acre-feet, to Soquel ditch; furnished by Madera Irrigation District.

SAN JOAQUIN RIVER BASIN

11-2434. BASS LAKE NEAR BASS LAKE, CALIF.

LOCATION.--Lat 37°17'36", long 119°31'40", in NE $\frac{1}{4}$ sec.26, T.7 S., R.22 E., at outlet tower at dam on North Fork Willow Creek, 2.2 miles southeast of town of Bass Lake, and 5 miles north of town of North Fork.

DRAINAGE AREA.--50.4 sq mi.

RECORDS AVAILABLE.--January 1912 to September 1968. Bass Lake was formerly called Crane Valley Reservoir.

GAGE.--Graphic water-stage recorder. Datum of gage is mean sea level (levels by Pacific Gas and Electric Co.).

EXTREMES.--Maximum contents during year, 36,700 acre-ft June 19 (elevation, 3,368.46 ft); minimum, 19,140 acre-ft Jan. 26 (elevation, 3,349.28 ft).
1911-68: Maximum contents, 45,960 acre-ft June 17, 1923 (elevation, 3,376.8 ft); minimum, 35 acre-ft Nov. 19, 1953 (elevation, 3,270.2 ft).

REMARKS.--Reservoir formed by earth- and rock-fill dam; completed in 1901 and raised in 1910. Since 1910 usable contents 45,100 acre-ft between elevations, 3,280.22 (invert of outlet conduit No. 3) and 3,376.40 ft (top of spillway gates) above mean sea level. Additional storage of 300 acre-ft not available for release. Water is released through Crane Valley powerhouse below dam for use in three small powerhouses before being discharged into Kerckhoff Reservoir at Wishon powerhouse. Water diverted from South Fork Willow Creek via Browns Creek ditch into Bass Lake near left end of dam. Madera Irrigation District has water rights to divert up to 50 cfs from North Fork Willow Creek through Sequel ditch into Nelder Creek (Fresno River basin) during October and March to July each year. Chilkoot ditch can divert up to 7 cfs from Chilkoot Creek into North Fork Willow Creek just upstream from diversion dam from Oct. 1 to Aug. 1 each water year if available. See schematic diagram of San Joaquin River basin.

COOPERATION.--Record of contents furnished by Pacific Gas and Electric Co.

MONTH-END CONTENTS, IN ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

Date	Contents
Sept. 30.....	26,890
Oct. 31.....	22,430
Nov. 30.....	23,650
Dec. 31.....	19,260
Jan. 31.....	19,620
Feb. 29.....	24,320
Mar. 31.....	29,040
Apr. 30.....	33,320
May 31.....	36,120
June 30.....	36,470
July 31.....	35,300
Aug. 31.....	30,450
Sept. 30.....	25,460

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LOCATION.--Lat 37°17'25", long 119°31'45", in SE₄ sec.26, T.7 S., R.22 E., on left bank 1,000 ft downstream from Crane Valley powerhouse, and dam and 2.5 miles southeast of town of Bass Lake.

GAGE.--Digital water-stage recorder and concrete flume. Altitude of gage is 3,300 ft (from topographic map). Prior to May 13, 1965, graphic water-stage recorder at same site and datum.

EXTREMES.--1940-68: Maximum daily discharge, 167 cfs June 23, 24 1965; no flow at times.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	139		0	6.4	11	7.3	0	.80	.20	.40	.60	.50
2	139		0	0	.10	7.1	0	6.9	6.2	13	.60	6.7
3	139		0	8.0	7.7	1.1	0	.80	.10	.70	.60	85
4	138		0	.20	.10	7.3	0	2.2	6.5	10	.60	120
5	63		0	8.8	9.9	1.2	0	1.0	.60	.80	.50	120
6	137		0	.20	.10	7.3	0	.70	6.7	6.9	.50	57
7	137		48	.20	6.5	.90	0	.70	.70	.80	.80	.20
8	136		137	12	.10	.90	0	6.9	6.7	26	.60	12
9	136		140	0	3.3	7.5	0	.80	.70	42	.50	80
10	136		146	0	0	1.0	0	.80	6.5	37	9.2	120
11	136		147	99	6.2	1.0	0	6.7	.70	26	1.1	120
12	136		137	70	0	7.1	12	.50	.70	16	79	120
13	135		127	0	6.2	3.0	.30	.50	6.7	6.0	120	55
14	135		139	8.2	3.0	.90	.30	6.7	.70	.30	120	.20
15	153		141	96	0	6.7	.30	.70	6.5	71	119	6.5
16	65		146	142	6.2	.90	6.5	.70	.20	57	118	83
17	0		146	143	6.4	.80	7.1	6.7	13	.20	118	118
18	0		142	143	.10	6.9	.50	.40	.70	8.0	118	118
19	0		137	55	7.7	.90	6.5	6.5	6.7	.20	118	118
20	0		137	.10	0	6.9	.40	.40	.60	3.6	119	54
21	0		141	8.0	12	.70	.40	6.7	.70	8.2	119	.40
22	0		145	.10	.30	.70	6.7	.40	6.9	4.4	119	6.4
23	0		145	8.6	6.4	.70	.90	6.4	.80	.60	118	85
24	0		144	100	5.8	.70	.90	.30	6.9	16	118	120
25	0		139	144	1.3	.30	6.9	6.4	.80	1.1	119	120
26	0		116	53	7.3	0	.60	.10	7.3	1.1	120	120
27	0		114	2.6	1.2	0	.60	7.1	1.0	.50	120	138
28	0		140	1.9	7.3	0	.70	.10	6.7	0	120	147
29	0		97	12	1.0	0	6.9	12	.40	0	120	147
30	0		0	.30	-----	0	.80	0	6.5	0	119	147
31	0	-----	2.8	2.6	-----	0	-----	6.2	-----	1.0	54	-----
TOTAL	2,060	0	3,053.8	1,125.20	117.20	79.80	59.30	97.10	109.40	358.80	2,290.60	2,424.90
MEAN	66.5	0	98.5	36.3	4.04	2.57	1.98	3.13	3.65	11.6	73.9	80.8
MAX	153	0	147	144	12	7.5	12	12	13	71	120	147
MIN	0	0	0	0	0	0	0	0	.10	0	.50	.20
AC-FT	4,090	0	6,060	2,230	232	158	118	193	217	712	4,540	4,810
CAL YR 1967	TOTAL 40,912.09		MEAN 112		MAX 153		MIN 0		AC-FT 81,150			
WTR YR 1968	TOTAL 11,776.10		MEAN 32.2		MAX 153		MIN 0		AC-FT 23,360			

SAN JOAQUIN RIVER BASIN

11-2440. NORTH FORK WILLOW CREEK NEAR BASS LAKE, CALIF.

LOCATION.--Lat 37°17'20", long 119°31'45", in SE $\frac{1}{4}$ sec.26, T.7 S., R.22 E., on right bank 1,500 ft downstream from Bass Lake spillway, and 2.5 miles southeast of town of Bass Lake.

DRAINAGE AREA.--50.8 sq mi.

RECORDS AVAILABLE.--May 1940 to September 1968. Prior to October 1944, published as Willow Creek below Crane Valley Reservoir. October 1944 to September 1954, published as "below Crane Valley Reservoir."

GAGE.--Graphic water-stage recorder and, since Dec. 21, 1961, broad-crested weir with V-notch. Altitude of gage is 3,200 ft (from topographic map).

AVERAGE DISCHARGE.--28 years, 14.5 cfs (10,500 acre-ft per year).

EXTREMES.--Maximum discharge during year, 162 cfs Oct. 16, 17 (gage height, 3.48 ft); minimum daily, 0.30 cfs for many days.

1940-68: Maximum discharge, 847 cfs Feb. 11, 1941 (gage height, 5.85 ft); minimum daily, 0.1 cfs Nov. 13-16, 1940.

REMARKS.--Records good. Flow regulated by Bass Lake (see sta. no. 11-2434) and by diversion into Pacific Gas and Electric Co. conduit No. 3 near Bass Lake (see sta. no. 11-2435). At times in October and March to July, up to 50 cfs may be diverted through Soquel ditch into Nelder Creek in Fresno River basin. Brown's ditch diverted 12,640 acre-ft from South Fork Willow Creek into Bass Lake in 1968 water year. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and 10 discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.30	1.0	1.1	.70	.30	.30	1.1	.60	1.0	.70	.60	.40
2	.30	1.0	1.0	.70	.30	.30	1.1	.60	1.0	.70	.60	.30
3	.30	1.0	1.0	.60	.30	.30	1.0	.60	1.0	.70	.60	.40
4	.30	1.0	1.0	.60	.30	.30	1.0	.70	1.0	.70	.60	.40
5	46	1.0	1.9	.60	.30	.30	1.0	.70	.90	.70	.50	.40
6	.40	1.0	1.1	.60	.30	.30	1.0	.70	.80	.70	.50	.30
7	.40	1.0	.80	.60	.30	.30	1.1	.70	.90	.70	11	.30
8	.30	1.0	.60	.60	.30	.70	1.1	.70	.90	.70	.60	.30
9	.30	1.0	.60	.50	.30	.50	1.1	.70	.90	.70	.90	.30
10	.30	1.0	.60	.70	.30	.40	1.1	.70	.80	.70	1.1	.30
11	.30	1.0	.50	.60	.30	.30	1.1	.70	.80	.70	1.1	.30
12	.30	1.0	.50	.50	.30	.30	.70	.70	.80	.60	1.1	.30
13	.30	1.0	.50	.40	.30	.50	.50	1.0	.80	.60	1.2	.30
14	.30	1.0	.50	.40	.30	.40	.50	1.2	.80	.60	1.3	.30
15	.30	1.0	.50	.80	.30	.40	.50	1.1	.80	.60	.90	.30
16	95	1.0	.40	.60	.50	.60	.60	1.1	.80	.60	.50	.30
17	82	1.0	.40	.50	.70	.60	.60	1.1	.80	.60	.50	.30
18	1.4	1.0	.50	.50	1.0	.50	.60	1.1	.80	.60	.50	.30
19	1.2	1.2	.50	.40	1.4	.40	.60	1.1	.80	.50	.50	.30
20	1.3	1.1	.40	.40	1.8	.40	.60	1.1	.70	.50	.50	.40
21	1.3	1.0	.40	.40	1.6	.30	.60	1.1	.70	.50	.50	.40
22	1.3	1.0	.40	.30	1.5	.30	.60	1.0	.70	.50	.50	.40
23	1.3	1.0	.50	.30	1.4	.30	.60	1.0	.70	.50	.50	.40
24	1.1	.90	.60	.30	1.3	.30	.70	1.1	.70	.50	.50	.40
25	1.1	.90	.80	.30	1.2	.50	.70	1.1	.70	.50	.50	.40
26	1.1	.90	.70	.30	1.1	1.0	.70	1.1	.70	.50	.50	.40
27	1.1	.90	.70	.30	1.0	.90	.70	1.2	.70	.50	.40	.40
28	1.1	.90	.70	.30	.90	1.1	.60	1.4	.70	.50	.40	.40
29	1.1	1.0	.60	.30	.30	1.1	.60	1.4	.70	.50	.40	.40
30	1.1	1.4	.60	.30	-----	1.1	.60	1.7	.70	.50	.40	.40
31	1.0	-----	.70	.30	-----	.90	-----	1.2	-----	12	.40	-----
TOTAL	243.90	30.20	21.10	14.70	20.20	15.90	23.30	30.20	24.10	29.90	30.10	10.50
MEAN	7.87	1.01	.68	.47	.70	.51	.78	.97	.80	.96	.97	.35
MAX	95	1.4	1.9	.80	1.8	1.1	1.1	1.7	1.0	12	11	.40
MIN	.30	.90	.40	.30	.30	.30	.50	.60	.70	.50	.40	.30
AC-FT	484	60	42	29	40	32	46	60	48	59	60	21

CAL YR 1967 TOTAL 11,547.20 MEAN 31.6 MAX 670 MIN .30 AC-FT 22,900

WTR YR 1968 TOTAL 494.10 MEAN 1.35 MAX 95 MIN .30 AC-FT 980

Note.--No gage-height record Jan. 28 to Feb. 28.

SAN JOAQUIN RIVER BASIN

649

11-2465. WILLOW CREEK AT MOUTH, NEAR AUBERRY, CALIF.

LOCATION.--Lat 37°09'10", long 119°27'30", in NE¼ sec.16, T.9 S., R.23 E., on left bank 40 ft upstream from bridge, 0.4 mile upstream from mouth, 1.3 miles downstream from Whiskey Creek, and 4.3 miles northeast of Auberry.

DRAINAGE AREA.--130 sq mi.

RECORDS AVAILABLE.--January 1952 to September 1968.

GAGE.--Graphic water-stage recorder and, since Oct. 22, 1964, concrete control. Datum of gage is 1,174.69 ft above mean sea level (levels by Southern California Edison Co.).

AVERAGE DISCHARGE.--16 years, 51.0 cfs (36,920 acre-ft per year).

EXTREMES.--Maximum discharge during year, 251 cfs Feb. 20 (gage height, 7.13 ft); no flow Aug. 4-20, Aug. 26 to Sept. 30.
1952-68: Maximum discharge, 15,700 cfs Dec. 23, 1955 (gage height, 28.5 ft, from floodmarks), from rating curve extended above 4,700 cfs; no flow at times in 1955, 1959-62, 1964-66, 1968.

REMARKS.--Records good. Flow regulated by Bass Lake (see sta. no. 11-2434) and diversion into Pacific Gas and Electric Co. conduit No. 1. See schematic diagram of San Joaquin River basin. Records of water temperatures for the water year 1968 are published in Part 2 of this report.

COOPERATION.--Gage-height record and 15 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

REVISIONS (water year).--1963 report: 1956-58(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	2.2	9.8	7.2	15	27	35	14	7.6	1.3	.20	
2	3.3	2.2	7.8	7.1	15	24	36	13	7.2	1.2	.20	
3	3.3	2.3	7.7	6.5	16	24	32	13	7.0	1.1	.10	
4	3.8	2.3	7.2	6.5	15	24	30	13	6.7	1.4	0	
5	3.6	2.4	24	6.4	15	23	33	12	6.7	1.6	0	
6	5.1	2.4	13	6.7	14	22	32	12	7.1	1.4	0	
7	3.6	2.4	9.5	6.5	14	21	29	12	8.0	1.4	0	
8	3.3	2.4	9.2	6.5	14	30	28	12	9.3	1.5	0	
9	2.8	2.3	7.8	6.7	15	26	27	11	7.6	1.7	0	
10	2.6	2.5	7.2	10	16	22	27	11	6.8	1.3	0	
11	2.7	2.6	7.1	16	14	21	28	11	6.3	1.1	0	
12	2.5	2.6	7.1	12	14	21	28	12	5.8	1.0	0	
13	2.6	2.5	7.0	11	14	24	26	14	5.4	1.1	0	
14	2.7	5.0	5.6	10	16	22	24	26	4.9	1.0	0	
15	2.6	7.0	6.4	18	14	21	24	21	4.7	1.0	0	
16	2.1	7.1	6.3	20	14	24	23	21	4.4	1.0	0	
17	2.0	6.9	6.2	15	36	31	22	18	4.2	1.0	0	
18	2.1	4.5	7.7	13	42	26	20	15	4.0	1.0	0	
19	2.1	8.6	9.3	12	28	23	20	13	3.8	.80	0	
20	2.1	16	8.0	12	107	21	20	13	3.3	.50	0	
21	2.1	13	6.8	12	72	22	19	12	2.6	.40	.20	
22	2.2	10	7.2	12	44	21	18	12	2.4	.40	.60	
23	2.3	7.7	7.8	13	36	21	18	12	2.3	.20	.50	
24	2.4	7.2	8.5	12	34	21	17	12	2.1	.40	.40	
25	2.3	6.8	7.6	12	32	24	17	11	1.8	.40	.10	
26	2.2	6.5	11	12	30	24	17	10	1.7	.20	0	
27	2.2	6.3	28	14	29	23	16	10	1.5	.20	0	
28	2.3	5.8	11	12	29	25	15	9.2	1.5	.10	0	
29	2.4	6.2	9.0	12	28	26	15	8.5	1.5	.10	0	
30	2.5	13	8.3	12	-----	28	14	8.2	1.4	.10	0	
31	2.4	-----	7.7	19	-----	28	-----	8.0	-----	.10	0	-----
TOTAL	83.3	168.7	286.8	351.1	782	740	710	399.9	139.6	26.00	2.30	0
MEAN	2.69	5.62	9.25	11.3	27.0	23.9	23.7	12.9	4.65	.84	.074	0
MAX	5.1	16	28	20	107	31	36	26	9.3	1.7	.60	0
MIN	2.0	2.2	5.6	6.4	14	21	14	8.0	1.4	.10	0	0
AC-FT	165	335	569	696	1,550	1,470	1,410	793	277	52	4.6	0
CAL YR 1967	TOTAL	57,914.9	MEAN	159	MAX	1,590	MIN	2.0	AC-FT	114,900		
WTR YR 1968	TOTAL	3,689.70	MEAN	10.1	MAX	107	MIN	0	AC-FT	7,320		

SAN JOAQUIN RIVER BASIN

11-2470. SAN JOAQUIN RIVER BELOW KERCKHOFF POWERHOUSE, NEAR PRATHER, CALIF.

LOCATION.--Lat 37°04'45", long 119°33'35", in NW¼ sec.10, T.10 S., R.22 E., on left bank 1.1 miles downstream from Kerckhoff powerhouse, 1.4 miles upstream from Big Sandy Creek, and 3.8 miles southeast of Prather.

DRAINAGE AREA.--1,481 sq mi.

RECORDS AVAILABLE.--April 1910 to September 1914, December 1936 to December 1937, December 1942 to September 1968. Published as "near North Fork" 1910-14 and as "below Kerckhoff powerhouse" 1915-62.

GAGE.--Digital water-stage recorder. Datum of gage is 563.4 ft above mean sea level (levels by Bureau of Reclamation). Prior to Oct. 1, 1914, graphic water-stage recorder at site 11 miles upstream at different datum. Oct. 1, 1914, to Dec. 7, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--29 years (1910-14, 1943-68), 2,311 cfs (1,673,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4,310 cfs Feb. 23 (gage height, 16.13 ft); minimum daily, 435 cfs Mar. 19.

1910-14, 1936-37, 1942-68: Maximum discharge, 92,200 cfs Dec. 23, 1955 (gage height, 51.0 ft, from flood-marks), from rating curve extended above 20,000 cfs on basis of records for San Joaquin River above Willow Creek, near Auberry and Willow Creek at mouth, near Auberry; minimum daily, 24 cfs Sept. 26, 1966.

REMARKS.--Records excellent. Flow regulated by 12 powerplants and eight reservoirs with total usable capacity of 609,300 acre-ft. Earliest storage began in 1901 at Bass Lake (see sta. no. 11-2434). See records for Florence, Lake Thomas A. Edison, Mammoth Pool Reservoir, Huntington, Shaver, and Redinger Lakes, given elsewhere in this report. Backwater from Millerton Lake has affected record at times since November 1947, when spillway gates were installed at Friant Dam. See schematic diagram of San Joaquin River basin. Records of water temperatures for the water year 1968 are published in Part 2 of this report.

COOPERATION.--Gage-height record, telemark readings, and 11 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,630	1,720	1,550	1,220	1,370	2,030	1,530	1,170	1,780	1,710	1,970	680
2	1,370	1,750	1,600	1,420	1,260	1,350	2,630	1,210	1,720	1,710	1,880	883
3	1,370	1,570	1,510	1,510	1,100	1,940	2,310	1,180	1,750	1,710	1,890	1,260
4	1,320	1,480	1,550	1,570	742	1,950	1,470	1,180	1,720	1,710	1,970	984
5	1,130	1,530	1,700	1,200	861	2,010	1,860	1,170	1,770	1,710	1,850	1,280
6	1,330	1,510	1,570	1,260	1,090	1,580	1,440	1,170	1,740	1,700	2,010	1,500
7	1,480	1,310	1,520	1,230	1,100	1,570	1,180	1,170	1,760	1,700	1,790	1,760
8	1,120	1,140	1,600	1,170	1,160	1,660	1,170	1,170	1,790	1,700	1,990	1,040
9	1,220	1,200	1,680	1,320	1,150	1,580	1,380	1,170	1,720	1,700	1,960	1,060
10	1,200	1,450	1,590	1,340	1,180	1,620	1,790	1,170	1,720	1,700	1,920	1,460
11	1,230	1,550	1,700	1,550	1,090	1,560	2,440	1,170	1,720	1,710	1,940	1,480
12	1,270	1,140	1,670	1,480	902	1,350	2,480	1,170	1,720	1,700	1,990	1,660
13	1,220	1,500	1,630	1,210	1,400	1,220	2,480	1,280	1,780	1,700	2,040	1,510
14	1,430	1,600	1,630	1,020	1,400	1,090	2,410	1,810	1,780	1,700	2,040	1,710
15	1,390	1,210	1,620	1,090	1,400	1,150	2,400	1,890	1,830	1,700	2,010	1,490
16	1,690	1,350	1,670	1,090	1,470	1,140	2,470	1,830	1,710	1,700	2,010	1,700
17	1,740	1,490	1,710	1,200	1,610	1,370	2,110	1,690	1,580	2,060	2,020	1,420
18	1,640	1,540	1,770	1,300	1,960	1,060	1,820	1,790	1,760	1,890	2,030	1,700
19	1,720	1,600	1,870	1,250	1,520	435	1,700	1,740	1,850	1,990	1,940	1,510
20	1,790	1,580	1,820	1,100	1,740	951	1,710	1,760	1,810	1,890	1,800	1,540
21	1,700	1,650	1,690	1,210	1,740	976	1,440	1,780	1,800	1,910	1,530	1,540
22	1,790	1,570	1,660	725	2,560	913	1,250	1,760	1,700	1,910	1,520	1,210
23	1,240	1,630	1,480	1,060	2,530	1,080	1,470	1,760	1,870	1,930	1,570	1,270
24	1,460	1,460	1,520	1,090	2,340	1,030	1,390	1,750	1,810	1,940	1,130	1,410
25	1,270	1,530	1,450	1,080	2,290	998	1,880	1,700	1,730	1,930	884	1,500
26	1,580	1,520	1,560	1,150	2,240	1,220	1,360	1,670	1,760	1,930	1,280	1,430
27	1,630	1,490	1,570	1,190	2,460	1,220	1,700	1,770	1,750	1,930	1,260	1,450
28	1,600	1,510	1,580	1,090	2,520	1,330	1,690	1,740	1,720	1,820	1,300	1,420
29	1,630	1,460	1,490	672	2,550	1,220	1,330	1,750	1,760	1,760	1,160	1,540
30	1,750	1,730	1,330	1,090	-----	1,600	1,170	1,800	1,730	1,860	1,200	1,490
31	1,780	-----	1,270	1,400	-----	1,590	-----	1,610	-----	1,870	1,230	-----
TOTAL	45,720	44,770	49,560	37,287	46,735	41,793	53,460	46,980	52,640	55,880	53,114	41,887
MEAN	1,475	1,492	1,599	1,203	1,612	1,348	1,782	1,515	1,755	1,803	1,713	1,396
MAX	1,790	1,750	1,870	1,570	2,560	2,030	2,630	1,890	1,870	2,060	2,040	1,760
MIN	1,120	1,140	1,270	672	742	435	1,170	1,170	1,580	1,700	884	680
AC-FT	90,680	88,800	98,300	73,960	92,700	82,900	106,000	93,180	104,400	110,800	105,400	83,080
CAL YR 1967	TOTAL	1,524,810	MEAN	4,178	MAX	15,700	MIN	1,120	AC-FT	3,024,000		
WTR YR 1968	TOTAL	569,826	MEAN	1,557	MAX	2,630	MIN	435	AC-FT	1,130,000		

SAN JOAQUIN RIVER BASIN

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11-2495. MADERA CANAL AT FRIANT, CALIF.

LOCATION.--Lat 37°00'10", long 119°42'20", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.5, T.11 S., R.21 E., at Friant Dam 0.9 mile northeast of Friant.

RECORDS AVAILABLE.--October 1943 to September 1968. October 1954 to September 1966 published as Friant-Madera Canal at Friant.

GAGE.--Discharge computed on basis of valve openings in dam and head on valves. Prior to Oct. 1, 1948, graphic water-stage recorder at several sites at various datums. Oct. 1, 1948, to Sept. 30, 1949, graphic water-stage recorder at site 8.8 miles downstream.

AVERAGE DISCHARGE.--25 years, 261 cfs (189,000 acre-ft per year).

EXTREMES.--1943-68: Maximum daily discharge, 1,322 cfs June 27, 1964; no flow for several months in each year.

REMARKS.--Canal diverts from Millerton Lake (see sta. no. 11-2501.) at right end of Friant Dam for irrigation between San Joaquin and Fresno Rivers.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	506	198			0	493		0	389	871	428	227
2	499	198			0	315		0	431	866	441	226
3	492	198			0	315		0	453	861	440	224
4	484	198			0	315		0	527	885	438	200
5	476	198			0	280		0	560	935	436	0
6	440	219			0	261		0	558	951	434	0
7	418	231			0	260		0	534	966	452	0
8	413	230			30	282		0	521	970	460	0
9	408	253			82	185		0	520	924	457	0
10	404	266			76	135		0	547	649	455	0
11	399	266			188	136		0	561	553	474	0
12	430	266			248	136		0	580	549	484	0
13	436	266			193	136		0	588	544	512	0
14	412	240			342	136		61	642	562	501	0
15	400	209			438	160		122	670	569	508	0
16	398	168			308	185		132	705	544	509	0
17	428	101			216	191		170	806	531	335	0
18	479	0			215	191		187	936	514	281	0
19	496	0			214	191		230	1,010	504	267	0
20	465	0			250	159		262	1,030	504	258	0
21	414	0			446	0		302	1,020	504	256	0
22	393	0			510	0		318	979	503	268	0
23	371	0			323	0		318	959	501	264	0
24	341	0			230	0		275	927	499	261	0
25	340	0			250	0		252	907	480	257	0
26	325	0			259	0		252	927	468	254	0
27	315	0			454	0		252	927	465	251	0
28	235	0			1,040	0		251	916	463	248	0
29	202	0			1,130	0		269	892	426	237	0
30	200	0			-----	0		280	876	406	229	0
31	198	-----			-----	0	-----	280	-----	403	229	-----
TOTAL	12,217	3,705	0	0	7,442	4,462	0	4,213	21,898	19,370	11,324	877
MEAN	394	124	0	0	257	144	0	136	730	625	365	29.2
MAX	506	266	0	0	1,130	493	0	318	1,030	970	512	227
MIN	198	0	0	0	0	0	0	0	389	403	229	0
AC-FT	24,230	7,350	0	0	14,760	8,850	0	8,360	43,430	38,420	22,460	1,740
CAL YR 1967	TOTAL	212,083.00	MEAN	581	MAX	1,279	MIN	0	AC-FT	420,700		
WTR YR 1968	TOTAL	85,508.00	MEAN	234	MAX	1,130	MIN	0	AC-FT	169,600		

SAN JOAQUIN RIVER BASIN

11-2500. FRIANT-KERN CANAL AT FRIANT, CALIF.

LOCATION.--Lat 36°59'53", long 119°42'11", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.5, T.11 S., R.21 E., at Friant Dam 0.9 mile northeast of Friant.

RECORDS AVAILABLE.--March 1949 to September 1968.

GAGE.--Discharge computed on basis of valve openings in dam and head on valves. Prior to July 8, 1949, staff gages at various sites and datums. July 8 to Sept. 30, 1949, graphic water-stage recorder at site 0.25 mile downstream.

AVERAGE DISCHARGE.--19 years, 1,270 cfs (919,400 acre-ft per year).

EXTREMES.--1949-68: Maximum daily discharge, 4,564 cfs Apr. 17, 1962; no flow for several months in most years.

REMARKS.--Canal diverts from Millerton Lake (see sta. no. 11-2501.) at left end of Friant Dam for irrigation in upper San Joaquin Valley.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,530	1,470	375	505	1,100	1,500	928	955	1,570	1,800	1,830	984
2	3,580	1,380	359	501	1,100	1,330	755	1,000	1,730	1,670	1,680	1,020
3	3,510	1,330	353	511	1,100	1,430	705	961	1,670	1,640	1,560	1,070
4	3,590	1,200	358	520	1,160	1,530	783	950	1,630	1,560	1,680	1,100
5	3,580	1,180	362	504	1,210	1,550	740	1,080	1,800	1,460	1,880	1,090
6	3,440	1,200	325	458	1,430	1,590	704	1,180	1,780	1,440	2,000	1,010
7	2,970	1,200	306	476	1,610	1,740	734	1,150	1,620	1,660	2,100	915
8	2,340	1,180	292	531	1,920	1,520	753	1,110	1,560	1,830	2,130	1,080
9	2,310	1,140	283	591	2,070	1,190	803	995	1,710	1,990	1,740	1,260
10	2,210	1,070	287	621	2,060	929	877	817	2,060	2,220	1,630	1,470
11	2,130	979	290	690	2,110	978	908	722	2,230	2,290	1,620	1,500
12	2,060	981	285	693	2,250	1,010	843	793	2,260	2,230	1,600	1,500
13	1,600	996	282	695	2,470	991	788	805	2,250	2,280	1,460	1,460
14	1,530	972	285	615	2,580	909	920	749	2,170	2,330	1,380	1,300
15	1,500	951	325	595	2,640	808	1,000	759	2,160	2,200	1,300	1,110
16	2,050	952	687	754	2,710	754	1,010	709	2,250	1,900	1,130	963
17	2,270	899	688	806	2,660	780	1,030	1,000	2,150	1,350	1,010	928
18	2,300	859	665	861	2,630	772	1,010	1,150	1,850	1,340	1,220	883
19	2,310	846	637	912	2,690	748	917	1,270	2,020	1,270	1,440	900
20	1,880	655	502	938	2,830	747	846	1,350	1,990	1,160	1,700	861
21	1,520	664	491	1,010	3,160	729	887	1,350	1,700	1,400	1,850	812
22	1,540	549	473	1,070	3,270	662	937	1,350	1,520	1,540	2,000	856
23	1,540	505	476	1,100	3,510	652	950	1,350	1,590	1,620	1,920	882
24	1,520	480	479	1,180	3,560	721	952	1,300	1,660	1,800	1,740	889
25	1,450	443	493	1,240	3,640	750	939	1,250	1,720	1,870	1,810	899
26	1,400	450	501	1,290	3,790	752	856	1,350	1,880	1,910	1,930	865
27	1,350	474	505	1,280	3,840	755	798	1,430	1,920	1,910	1,870	761
28	1,310	494	508	1,280	3,210	765	801	1,510	1,860	1,940	1,760	711
29	1,340	449	510	1,250	2,670	760	829	1,580	1,730	1,910	1,460	739
30	1,420	393	513	1,220	-----	752	879	1,630	1,810	1,840	1,110	738
31	1,580	-----	515	1,170	-----	878	-----	1,580	-----	2,060	971	-----
TOTAL	66,660	26,341	13,410	25,867	70,980	30,982	25,882	35,185	55,850	55,420	50,511	30,556
MEAN	2,150	878	433	834	2,448	999	863	1,135	1,862	1,788	1,629	1,019
MAX	3,590	1,470	688	1,290	3,840	1,740	1,030	1,630	2,260	2,330	2,130	1,500
MIN	1,310	393	282	458	1,100	652	704	709	1,520	1,160	971	711
AC-FT	132,200	52,250	26,600	51,310	140,800	61,450	51,340	69,790	110,800	109,900	100,200	60,610
CAL YR 1967	TOTAL 794,284		MEAN 2,176		MAX 4,506		MIN 0		AC-FT 1,575,000			
WTR YR 1968	TOTAL 487,644		MEAN 1,332		MAX 3,840		MIN 282		AC-FT 967,200			

11-2501. MILLERTON LAKE AT FRIANT, CALIF.

LOCATION.--Lat 37°00'00", long 119°42'10", in SW $\frac{1}{4}$ sec.5, T.11 S., R.21 E., near center of Friant Dam on San Joaquin River, immediately upstream from Cottonwood Creek, and 0.9 mile northeast of Friant.

DRAINAGE AREA.--1,637 sq mi.

RECORDS AVAILABLE.--October 1941 to September 1968. Month-end contents only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Prior to May 29, 1944, staff gages on left bank at same datum.

EXTREMES.--Maximum contents during year, 288,900 acre-ft May 19-21, 25, 26 (elevation, 522.76 ft); minimum, 149,200 acre-ft Sept. 4, 5 (elevation, 474.76 ft).
1941-68: Maximum contents, 528,200 acre-ft June 20, 1963 (elevation, 579.56 ft); minimum since lake first filled, 133,700 acre-ft Nov. 3, 1959 (elevation, 467.84 ft).

REMARKS.--Reservoir is formed by gravity-type concrete dam with spillway near center, completed in December 1942. Control valves installed in February 1944, and spillway gates installed in November 1947. Usable capacity, 503,200 acre-ft between elevations 375.4 (invert of river outlet) and 578.0 ft (top of drum-type spillway gates) above mean sea level. Not available for release, 17,400 acre-ft. Millerton Lake is one of the storage units in Central Valley project. Records including extremes represent total contents at 2400 hours.

COOPERATION.--Records furnished by Bureau of Reclamation.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

400	36,400	500	215,600
420	57,000	520	279,400
440	83,300	540	353,000
460	117,500	560	436,500
480	161,700	580	530,400

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	234.9	172.4	198.9	265.3	283.8	220.9	233.1	279.7	286.5	226.1	178.7	151.3
2	229.6	172.6	201.1	266.9	284.1	220.3	236.8	279.9	285.4	224.1	117.9	150.3
3	224.4	172.5	203.2	268.7	283.9	220.6	239.9	280.1	284.2	222.2	177.4	149.9
4	219.0	172.4	205.4	270.7	283.1	220.6	241.1	280.3	283.0	220.4	176.6	149.2
5	213.3	172.6	208.1	271.9	282.4	220.9	243.2	280.3	281.5	218.6	175.5	149.2
6	208.1	172.6	210.4	273.4	281.7	220.3	244.5	280.1	279.9	216.9	174.3	150.0
7	204.4	172.3	212.6	274.8	280.5	219.4	245.3	279.8	278.7	214.7	172.6	151.4
8	200.9	171.7	215.0	275.8	278.9	219.2	246.1	279.7	277.8	212.2	171.0	151.1
9	197.8	171.1	217.8	277.3	276.9	219.5	247.1	279.9	276.5	209.4	170.2	150.6
10	194.9	171.1	220.2	278.7	275.0	220.6	248.7	280.4	274.3	206.8	169.6	150.2
11	192.2	171.5	222.8	280.3	272.5	221.4	251.6	281.0	271.9	204.2	168.9	150.0
12	189.6	171.3	225.4	281.7	269.2	221.7	254.6	281.6	269.4	201.8	168.3	150.1
13	188.0	171.5	227.9	282.7	266.6	222.1	257.7	282.3	267.0	199.2	168.1	150.1
14	186.6	172.1	230.4	283.4	268.5	222.1	260.4	284.0	264.6	196.6	168.0	150.6
15	185.4	172.1	232.8	284.2	260.2	222.4	263.1	285.6	262.3	194.2	167.9	151.2
16	183.9	172.3	234.5	284.9	257.1	222.9	265.7	287.5	259.6	192.4	168.3	152.3
17	182.0	173.1	236.4	285.6	254.8	223.7	267.7	288.1	256.5	192.2	169.2	153.0
18	179.7	174.4	238.4	286.2	253.1	224.0	269.0	288.8	254.1	192.0	169.8	154.2
19	177.5	175.7	240.6	286.7	250.4	223.0	270.4	288.9	251.7	192.0	169.9	155.2
20	176.1	177.3	243.1	287.0	247.8	222.9	271.8	288.9	249.1	192.1	169.4	156.3
21	175.5	179.1	245.4	287.2	244.1	223.5	272.8	288.9	247.1	191.8	167.9	157.4
22	175.0	180.9	247.6	286.6	241.8	223.8	273.2	288.8	245.2	191.1	166.2	157.9
23	173.8	182.9	249.5	286.3	239.2	224.7	273.9	288.7	243.5	190.2	164.7	158.4
24	173.5	184.6	251.4	286.0	236.5	225.1	274.5	288.8	241.8	189.1	162.8	159.1
25	173.0	186.6	253.3	285.6	233.5	225.5	275.9	288.9	239.7	187.8	160.2	160.0
26	172.9	188.5	255.3	285.2	230.1	226.4	276.6	288.9	237.5	186.5	158.2	160.8
27	172.7	190.4	257.2	284.9	226.7	227.2	277.8	288.8	235.0	185.2	156.3	161.8
28	172.6	192.2	259.2	284.4	223.3	228.3	279.0	288.6	232.6	183.9	154.7	163.0
29	172.6	194.1	261.0	283.1	220.8	229.2	279.5	288.2	230.5	182.3	153.4	164.4
30	172.6	196.7	262.5	282.9	-----	230.8	279.6	287.8	228.3	181.2	152.8	165.6
31	172.4	-----	263.9	283.2	-----	232.1	-----	287.1	-----	179.6	152.6	-----
(a)	484.25	493.36	515.43	521.13	501.75	505.46	520.09	522.24	504.24	487.05	476.19	481.58
(b)	-67,100	+24,300	+67,200	+19,300	-62,400	+11,300	+47,500	+7,500	-58,800	-48,700	-27,000	+13,000
(c)	1,040	440	270	310	330	760	1,400	2,150	2,700	2,520	1,820	1,410
MAX	234.9	196.7	263.9	287.2	284.1	232.1	279.6	288.9	286.5	226.1	178.7	165.6
MIN	172.4	171.1	198.9	265.3	220.8	219.2	233.1	279.7	228.3	179.6	152.6	149.2
CAL YR 1967		b	-70,800		MAX	524.1		MIN	171.1			
WTR YR 1968		b	-73,900		MAX	288.9		MIN	149.2			

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet.

SAN JOAQUIN RIVER BASIN

11-2510. SAN JOAQUIN RIVER BELOW FRIANT, CALIF.

LOCATION.--Lat 36°59'04", long 119°43'24", in SW $\frac{1}{4}$ sec.7, T.11 S., R.21 E., on left bank 0.5 mile west of Friant, 1.5 miles downstream from Cottonwood Creek, 2 miles downstream from Friant Dam, and at mile 268.1.

DRAINAGE AREA.--1,676 sq mi.

RECORDS AVAILABLE.--October 1907 to September 1968. Published as "near Pollasky" October 1907 to December 1908 and as "near Friant" January 1909 to September 1938. Monthly discharge only for October 1907 to November 1908, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is 294.00 ft above mean sea level (levels by Bureau of Reclamation). Oct. 18, 1907, to Nov. 9, 1913, staff gage at site 4.5 miles upstream at different datum. Nov. 10, 1913, to Sept. 30, 1938, graphic water-stage recorder at site 2.5 miles upstream at different datum.

AVERAGE DISCHARGE.--61 years, 2,321 cfs (1,680,000 acre-ft per year), including diversions to Madera Canal, 1944-68, Friant-Kern Canal, 1949-68, and adjusted for change in contents and evaporation from Millerton Lake 1941-68.

EXTREMES.--Maximum discharge during year, 220 cfs Apr. 28 (gage height, 2.74 ft); minimum daily, 30 cfs Dec. 8-14, Apr. 16, 17.

1907-41 (prior to regulation by Millerton Lake): Maximum discharge, 77,200 cfs Dec. 11, 1937 (gage height, 23.8 ft, site and datum then in use); minimum, 38 cfs (regulated) July 29, 1940.

1941-68: Maximum discharge, 11,200 cfs Jan. 23, 1943 (partially regulated, prior to installation of outlet gate), and 8,230 cfs May 23, 1967 (fully regulated) (gage height, 9.66 ft); minimum, 5.5 cfs Oct. 20, 1941.

REMARKS.--Records good. Flow regulated by Millerton Lake beginning in 1944 (see sta. no. 11-2501.) and by other reservoirs described in REMARKS for San Joaquin River below Kerckhoff powerhouse. Diversion for irrigation through Madera and Friant-Kern Canals (see sta. nos. 11-2495. and 11-2500.).

COOPERATION.--Three discharge measurements furnished by Bureau of Reclamation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	58	56	35	37	33	33	121	92	129	151	139
2	91	55	56	35	37	33	33	92	99	141	145	139
3	93	48	55	35	37	33	34	92	115	151	141	139
4	84	48	55	35	38	33	34	79	147	151	141	135
5	78	49	48	37	40	32	32	65	149	151	141	129
6	78	49	32	37	42	32	33	65	149	151	141	121
7	78	49	31	38	42	32	33	62	149	151	141	111
8	78	49	30	38	42	34	32	50	149	151	143	111
9	71	49	30	38	44	33	32	50	135	149	143	111
10	66	51	30	38	44	33	32	60	127	149	149	111
11	66	49	30	38	44	32	33	74	127	147	155	111
12	66	49	30	38	42	32	32	74	127	147	155	111
13	66	49	30	38	44	34	33	74	125	147	155	111
14	66	52	30	40	45	33	32	81	125	147	155	111
15	66	51	31	40	44	33	32	97	121	147	147	111
16	66	51	31	38	45	34	30	95	119	147	143	111
17	66	52	31	40	47	35	30	95	119	135	141	111
18	66	52	32	41	45	35	32	93	119	131	141	111
19	66	53	32	42	44	33	47	93	113	129	143	111
20	66	52	32	42	42	32	66	90	110	129	143	111
21	66	52	32	41	44	32	68	83	110	129	143	111
22	66	52	33	40	44	32	68	83	110	145	143	111
23	66	52	33	42	44	33	99	83	110	151	141	113
24	66	52	34	44	42	33	121	81	110	155	141	111
25	61	52	34	42	41	33	151	81	110	162	141	111
26	56	52	34	40	40	33	188	81	110	162	141	111
27	56	52	34	38	38	33	214	81	121	162	141	108
28	56	53	34	37	38	33	217	81	131	162	141	102
29	58	55	33	35	35	34	214	81	131	155	141	102
30	58	56	34	35	-----	33	190	77	131	151	139	104
31	58	-----	34	37	-----	33	-----	77	-----	151	139	-----
TOTAL	2,135	1,543	1,101	1,194	1,211	1,023	2,225	2,491	3,690	4,565	4,465	3,440
MEAN	68.9	51.4	35.5	38.5	41.8	33.0	74.2	80.4	123	147	144	115
MAX	93	58	56	44	47	35	217	121	149	162	155	139
MIN	56	48	30	35	35	32	30	50	92	129	139	102
AC-FT	4,230	3,060	2,180	2,370	2,400	2,030	4,410	4,940	7,320	9,050	8,860	6,820
Mean a	1,540	1,469	1,565	1,192	1,667	1,372	1,758	1,509	1,770	1,808	1,729	1,404
Ac-ft a	94,720	87,420	96,250	73,300	95,890	84,360	104,600	92,760	105,400	111,200	106,300	83,550

CAL YR 1967 TOTAL 638,479 MEAN 1,749 MAX 8,170 MIN 30 AC-FT 1,266,000 MEAN a 4,435 AC-FT a 3,211,000
WTR YR 1968 TOTAL 29,083 MEAN 79.5 MAX 217 MIN 30 AC-FT 57,690 MEAN a 1,565 AC-FT a 1,136,000

a Adjusted for change in contents and evaporation in Millerton Lake and for diversion to Madera and Friant-Kern Canals.

11-2533.1. CANTUA CREEK NEAR CANTUA CREEK, CALIF.

LOCATION.--Lat 36°24'00", long 120°25'55", in SE $\frac{1}{4}$ sec.34, T.17 S., R.14 E., on left bank 9.2 miles southwest of town of Cantua Creek and 19 miles north of Coalinga.

DRAINAGE AREA.--46.4 sq mi.

RECORDS AVAILABLE.--Water years 1958-66 (annual maximum), October 1966 to September 1968.

GAGE.--Graphic water-stage recorder and crest-stage gage. Altitude of gage is 680 ft (from topographic map). Prior to Sept. 16, 1966, crest-stage gage at datum 2.00 ft lower.

EXTREMES.--Maximum discharge during year, 9.1 cfs Apr. 1 (gage height, 1.86 ft); no flow for several months. 1958-68: Maximum discharge, 751 cfs Apr. 2, 1958 (gage height, 5.34 ft, from floodmarks), from rating curve extended above 40 cfs on basis of slope-area measurements at gage heights 2.67, 4.57, and 5.34 ft.

REMARKS.--Records good. Some small dams for stock use above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.17	1.8	.55	.91	.67	1.2	.14				
2	.10	.17	1.5	.67	.79	.67	3.0	.14				
3	.10	.20	1.1	.79	.67	.67	1.3	.10				
4	.12	.20	.90	.79	.67	.67	1.0	.04				
5	.12	.23	1.7	.91	.67	.67	.91	.04				
6	.12	.20	1.2	.91	.67	.67	.79	.04				
7	.12	.20	1.5	1.0	.67	1.0	.67	.04				
8	.12	.23	1.5	1.2	.67	2.0	.67	.04				
9	.12	.20	1.3	1.3	.67	1.3	.67	.02				
10	.12	.20	1.1	1.5	.67	1.2	.55	.03				
11	.12	.23	1.0	2.0	.67	1.0	.45	0				
12	.12	.23	.91	2.0	.55	.91	.45	.08				
13	.12	.20	.79	2.2	.79	1.8	.12	.14				
14	.12	.17	.67	2.2	1.2	1.7	.08	.17				
15	.12	.17	.55	2.2	.79	1.3	.14	.17				
16	.12	.20	.55	1.8	1.0	1.3	.10	.14				
17	.12	.20	.37	1.8	1.8	1.3	.06	.10				
18	.14	.27	.91	2.0	1.8	1.2	.08	.02				
19	.12	3.0	.91	1.8	1.3	1.0	.31	0				
20	.12	3.0	.79	1.7	1.0	.91	.31	0				
21	.14	1.7	.79	1.5	.91	.91	.31	0				
22	.17	1.2	.67	1.3	.91	.91	.27	0				
23	.14	1.0	.55	1.0	.79	.79	.27	0				
24	.17	.91	.55	.91	.79	.23	.27	0				
25	.17	.91	.67	.79	.79	.23	.27	0				
26	.17	.79	.67	.55	.79	.79	.23	0				
27	.17	.79	.55	.55	.79	.79	.20	0				
28	.17	.79	.55	.55	.79	.67	.20	0				
29	.17	.79	.55	.45	.79	.23	.17	0				
30	.17	3.0	.55	.37	-----	.20	.14	0				
31	.17	-----	.55	3.0	-----	.17	-----	0	-----			-----
TOTAL	4.17	21.55	27.70	40.29	25.31	27.86	15.19	1.45	0	0	0	0
MEAN	.13	.72	.89	1.30	.87	.90	.51	.047	0	0	0	0
MAX	.17	3.0	1.8	3.0	1.8	2.0	3.0	.17	0	0	0	0
MIN	.10	.17	.37	.37	.55	.17	.06	0	0	0	0	0
AC-FT	8.3	43	55	80	50	55	30	2.9	0	0	0	0

CAL YR 1967 TOTAL 1,345.82 MEAN 3.69 MAX 56 MIN 0 AC-FT 2,670
WTR YR 1968 TOTAL 163.52 MEAN .45 MAX 3.0 MIN 0 AC-FT 324

Peak discharge (base, 50 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

11-2555. PANOCHE CREEK BELOW SILVER CREEK, NEAR PANOCHE, CALIF.

LOCATION.--Lat 36°37'08", long 120°40'22", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.16, T.15 S., R.12 E., on right bank 1.1 miles downstream from Silver Creek, 9 miles east of Panoche, and 18 miles southwest of Mendota.

DRAINAGE AREA.--293 sq mi.

RECORDS AVAILABLE.--October 1949 to September 1953, October 1958 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 558.26 ft above mean sea level, datum of 1929.

AVERAGE DISCHARGE.--14 years, 1.71 cfs (1,240 acre-ft per year); median of yearly mean discharges, 0.6 cfs (430 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2.8 cfs Dec. 1 (gage height, 2.01 ft); no flow for several months. 1949-53, 1958-68: Maximum discharge, 3,160 cfs Jan. 12, 1952 (gage height, 7.05 ft from floodmarks), from rating curve extended above 870 cfs on basis of slope-area measurements at gage heights 6.25 and 7.01 ft; no flow for several months in each year.
Flood of Apr. 2, 1958, reached a stage of 7.01 ft (discharge, 5,090 cfs, by slope-area measurement).

REMARKS.--Records fair. Some small dams for stock use above station. Records of suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	1.9	.16	.98	.12	.43					
2		0	.69	.18	.57	.12	.68					
3		0	.36	.15	.43	.12	.78					
4		0	.22	.14	.29	.10	.43					
5		0	.10	.10	.25	.10	.25					
6		0	.10	.20	.29	.10	.22					
7		0	.10	.20	.25	.14	.22					
8		0	.10	.21	.25	.25	.18					
9		0	.10	.29	.20	.64	.08					
10		0	.10	.43	.25	.36	.10					
11		0	.05	.36	.25	.25	.08					
12		0	0	.36	.29	.20	.06					
13		0	0	.29	.36	.61	.06					
14		0	.01	.25	1.1	1.7	.06					
15		0	.01	.25	.78	.78	.05					
16		0	0	.22	.64	.64	.06					
17		0	.04	.18	.71	.57	.06					
18		0	.20	.20	.57	.43	.06					
19		.15	.29	.22	.36	.29	.06					
20		.93	.19	.20	.25	.25	.05					
21		.89	.09	.25	.16	.22	.05					
22		.20	.08	.22	.14	.20	.04					
23		.02	.10	.20	.12	.18	.04					
24		0	.12	.22	.10	.14	.04					
25		0	.14	.29	.10	.14	.03					
26		0	.16	.29	.12	.14	.03					
27		0	.12	.29	.12	.12	.02					
28		0	.12	.43	.12	.10	.01					
29		0	.12	.50	.12	.10	0					
30		.30	.08	.36	-----	.10	0					
31		-----	.12	.71	-----	.10	-----					
TOTAL	0	2.49	5.81	8.35	10.17	9.31	4.23	0	0	0	0	0
MEAN	0	.083	.19	.27	.35	.30	.14	0	0	0	0	0
MAX	0	.93	1.9	.71	1.1	1.7	.78	0	0	0	0	0
MIN	0	0	0	.10	.10	.10	0	0	0	0	0	0
AC-FT	0	4.9	12	17	20	18	8.4	0	0	0	0	0

CAL YR 1967 TOTAL 846.10 MEAN 2.32 MAX 116 MIN 0 AC-FT 1,680
WTR YR 1968 TOTAL 40.36 MEAN .11 MAX 1.9 MIN 0 AC-FT 80

Peak discharge (base, 50 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

657

11-2571. MIAMI CREEK NEAR OAKHURST, CALIF.

LOCATION.--Lat 37°23'37", long 119°39'12", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.22, T.6 S., R.21 E., on left bank 200 ft downstream from county road bridge, and 4.6 miles north of Oakhurst.

DRAINAGE AREA.--10.6 sq mi.

RECORDS AVAILABLE.--October 1960 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 3,500 ft (from topographic map). Prior to Nov. 1, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--8 years, 7.23 cfs (5,230 acre-ft per year).

EXTREMES.--Maximum discharge during year, 42 cfs Feb. 20 (gage height, 3.78 ft); minimum daily, 0.30 cfs Sept. 7-9.

1960-68: Maximum discharge, 804 cfs Feb. 1, 1963 (gage height, 9.08 ft); no flow for many days in most years.

REMARKS.--No known diversions above station.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

REVISIONS (water year).--1967 report: 1963(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	2.4	4.1	6.2	5.6	9.5	9.2	3.9	3.0	1.3	.50	.40
2	3.6	2.4	3.9	6.3	5.5	8.8	9.5	3.8	2.9	1.2	.60	.40
3	3.8	2.6	3.9	6.4	5.7	8.6	9.5	3.7	2.8	1.2	.70	.40
4	3.8	2.3	4.0	6.5	5.8	8.1	9.0	3.6	2.7	1.2	.70	.40
5	3.6	2.4	12	6.6	6.1	7.7	9.0	3.6	2.8	1.1	.70	.40
6	3.6	2.3	6.3	5.9	6.4	7.4	8.7	3.5	2.8	1.1	.70	.40
7	3.6	2.4	5.9	6.0	6.4	7.6	8.0	3.5	3.9	1.1	.60	.30
8	3.4	2.4	5.4	5.0	6.5	12	7.5	3.7	3.8	1.2	.70	.30
9	3.4	2.4	4.7	3.9	8.5	10	7.0	3.6	3.6	1.3	.60	.30
10	3.3	2.4	4.5	5.3	8.5	9.2	6.8	3.5	3.3	1.1	.60	.40
11	3.0	2.4	4.4	5.5	7.6	8.5	6.6	3.4	3.1	1.0	.60	.40
12	2.8	2.3	4.2	4.9	7.0	8.3	6.4	3.5	2.9	1.0	.60	.40
13	3.0	2.4	5.7	4.7	6.8	8.9	6.2	4.1	2.7	1.0	.80	.40
14	3.0	2.3	4.8	4.7	7.7	8.7	6.0	5.9	2.6	1.0	1.0	.40
15	3.0	2.3	4.1	8.6	7.3	8.6	5.8	6.0	2.4	1.1	.90	.40
16	3.0	2.6	3.9	7.9	7.8	9.6	5.8	5.2	2.2	1.1	.80	.50
17	2.8	2.6	3.9	6.8	21	9.9	5.9	4.3	2.1	1.0	.80	.40
18	2.7	3.1	3.6	6.0	17	9.5	5.4	3.9	1.9	1.0	.80	.40
19	2.7	5.2	4.4	5.4	13	9.2	5.2	3.9	.90	.90	.80	.40
20	2.8	5.3	4.8	5.2	30	9.0	5.2	3.9	1.8	.90	1.0	.50
21	2.7	4.1	4.9	5.2	21	8.9	5.0	3.9	1.7	.80	1.0	.60
22	2.7	3.9	5.0	5.4	16	8.7	4.9	3.9	1.7	.80	.90	.80
23	2.8	3.7	5.1	5.5	14	8.4	4.8	3.9	1.6	.80	.80	.50
24	2.7	3.5	5.2	5.7	13	8.6	4.7	3.9	1.6	.80	1.7	.40
25	2.7	3.4	5.4	5.6	12	8.9	4.6	3.7	.90	.80	1.0	.40
26	2.6	3.3	5.5	5.5	11	8.7	4.6	3.6	1.4	.80	.60	.40
27	2.6	3.2	5.6	5.6	11	8.2	4.4	3.5	1.3	.80	.60	.40
28	2.7	3.3	5.7	5.8	10	8.3	4.1	3.3	1.3	.70	.60	.50
29	2.7	3.3	5.9	6.2	9.8	8.4	4.0	3.1	1.3	.70	.60	.40
30	2.6	4.3	6.0	5.0	-----	8.2	4.0	3.0	1.3	.80	.50	.40
31	2.6	-----	6.1	5.5	-----	7.9	-----	3.0	-----	.70	.40	-----
TOTAL	93.7	90.5	158.9	178.8	308.0	272.3	187.8	119.3	68.30	30.30	23.20	12.70
MEAN	3.02	3.02	5.13	5.77	10.6	8.78	6.26	3.85	2.28	.98	.75	.42
MAX	3.8	5.3	12	8.6	30	12	9.5	6.0	3.9	1.3	1.7	.80
MIN	2.6	2.3	3.6	3.9	5.5	7.4	4.0	3.0	.90	.70	.40	.30
AC-FT	186	180	315	355	611	540	373	237	135	60	46	25

CAL YR 1967 TOTAL 5,458.6 MEAN 15.0 MAX 147 MIN 2.3 AC-FT 10,830
WTR YR 1968 TOTAL 1,543.80 MEAN 4.22 MAX 30 MIN .30 AC-FT 3,060

SAN JOAQUIN RIVER BASIN

11-2575. FRESNO RIVER NEAR KNOWLES, CALIF.

LOCATION.--Lat 37°14'15", long 119°46'25", in NW $\frac{1}{4}$ sec.15, T.8 S., R.20 E., on left bank at Fresno Crossing, 0.1 mile downstream from Bean Gulch, and 6 miles northeast of Knowles.

DRAINAGE AREA.--133 sq mi.

RECORDS AVAILABLE.--September 1911 to December 1913, November 1915 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 1,086.4 ft above mean sea level (river-profile survey). Prior to June 13, 1930, staff gage 10 ft upstream and June 13, 1930, to Jan. 13, 1931, graphic water-stage recorder at site 40 ft upstream at datum 0.34 ft lower. Jan. 13, 1931, to Oct. 24, 1963, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--53 years (1911-12, 1916-68), 77.3 cfs (56,000 acre-ft per year); median of yearly mean discharges, 60 cfs (43,400 acre-ft per year).

EXTREMES.--Maximum discharge during year, 245 cfs Feb. 20 (gage height, 2.12 ft); minimum daily, 0.09 cfs Aug. 10.

1911-13, 1915-68: Maximum discharge, 13,300 cfs Dec. 23, 1955 (gage height, 11.52 ft), from rating curve extended above 2,500 cfs on basis of slope-area measurement of maximum flow; no flow at times in some years.

REMARKS.--Records good. Diversions for irrigation of 160 acres above station. Diversions into Fresno River basin above station up to 50 cfs at times since 1897 from San Joaquin River basin and up to 60 cfs at times since 1888 from Merced River basin, for irrigation downstream from station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	11	34	29	48	69	93	86	34	8.2	1.0	.53
2	11	13	27	28	46	66	116	86	32	7.6	.83	.55
3	14	13	26	28	48	63	99	82	30	6.4	.71	.28
4	19	13	25	24	46	60	87	81	29	4.9	.66	.28
5	19	13	47	23	45	63	82	81	28	5.3	.42	.95
6	17	13	63	24	44	60	83	76	29	4.9	.39	1.4
7	17	13	36	26	44	62	78	69	33	4.4	.16	.94
8	17	13	34	26	43	111	75	66	47	5.2	.20	1.2
9	15	13	34	26	49	112	74	60	38	6.0	.14	.78
10	14	13	31	30	63	82	75	55	33	5.4	.09	.90
11	14	13	30	51	50	73	77	55	30	4.3	1.4	.77
12	14	13	30	41	46	69	79	57	29	3.5	.52	.62
13	14	13	25	34	44	93	77	60	26	2.7	.76	.75
14	14	13	16	32	48	94	76	83	24	2.3	.83	.82
15	15	17	21	45	47	84	75	79	22	2.1	.83	1.1
16	15	18	25	81	45	88	74	73	21	2.1	.74	1.2
17	15	17	25	54	102	114	75	64	21	1.7	.71	1.2
18	14	17	32	43	131	100	71	60	21	1.4	.61	1.3
19	14	28	28	38	91	88	75	57	19	.98	1.6	.85
20	14	46	29	35	160	83	73	57	18	.69	.99	.76
21	13	33	26	34	156	83	71	55	18	.57	.77	1.1
22	13	26	30	33	118	81	67	54	17	.29	1.8	.99
23	14	24	31	33	100	79	61	53	16	.62	1.9	1.3
24	14	24	31	33	93	76	62	50	16	.42	1.8	1.2
25	14	23	33	33	86	77	63	47	15	.50	1.2	.77
26	13	23	33	35	81	77	63	44	11	.46	.71	.75
27	13	23	33	37	77	76	65	43	10	1.1	1.2	.55
28	13	22	33	35	75	76	70	43	9.0	.95	1.5	1.6
29	13	22	33	33	72	80	70	40	8.8	1.3	.83	1.3
30	13	33	32	36	-----	83	85	37	8.3	1.1	1.2	1.6
31	13	-----	30	56	-----	83	-----	37	-----	.43	.68	-----
TOTAL	444	576	963	1,116	2,098	2,505	2,291	1,890	693.1	87.81	27.18	28.34
MEAN	14.3	19.2	31.1	36.0	72.3	80.8	76.4	61.0	23.1	2.83	.88	.94
MAX	19	46	63	81	160	114	116	86	47	8.2	1.9	1.6
MIN	11	11	16	23	43	60	61	37	8.3	.29	.09	.28
AC-FT	881	1,140	1,910	2,210	4,160	4,970	4,540	3,750	1,370	174	54	56

CAL YR 1967 TOTAL 59,599.4 MEAN 163 MAX 1,270 MIN 7.0 AC-FT 118,200
WTR YR 1968 TOTAL 12,719.43 MEAN 34.8 MAX 160 MIN .09 AC-FT 25,230

Peak discharge (base, 590 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

659

11-2577. PICAYUNE CREEK NEAR COARSEGOLD, CALIF.

LOCATION.--Lat 37°13'15", long 119°42'25", in NW¼SW¼ sec.20, T.8 S., R.21 E., at culvert on State Highway 41, 3.0 miles south of Coarsegold.

DRAINAGE AREA.--8.17 sq mi.

RECORDS AVAILABLE.--Water years 1960-64 (annual maximum), October 1964 to September 1968 (discontinued as a continuous record station; converted to a crest-stage partial record station).

GAGE.--Graphic water-stage recorder, crest-stage gages, and tipping-bucket rain gage. Altitude of gage is 1,860 ft (from topographic map). Sept. 21, 1959, to Sept. 11, 1964, crest-stage gage at same site and datum.

EXTREMES.--Maximum discharge during year, 9.2 cfs Mar. 8 (gage height, 1.95 ft); no flow for several months. 1960-68: Maximum discharge, 393 cfs Apr. 18, 1967 (gage height, 6.91 ft), from rating curve extended above 70 cfs on basis of computation of flow through culvert at gage heights 5.84 and 6.91 ft; no flow for several months each year.

REMARKS.--Records good. No regulation or diversion above station. Rainfall records for the 1968 water year are not published because of intermittent recorder malfunction.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	0	.68	.20	1.3	.09				
2			0	0	.36	.20	2.6	.06				
3			0	0	.20	.17	1.5	.06				
4			0	0	.17	.17	1.0	.06				
5			.06	0	.14	.17	.84	.06				
6			0	0	.14	.17	.84	.06				
7			0	0	.14	.42	.68	.06				
8			0	0	.14	4.3	.52	.06				
9			0	0	.17	1.6	.52	.06				
10			0	.10	.36	1.0	.36	.06				
11			0	.14	.20	.68	.36	.06				
12			0	.06	.17	.52	.36	.06				
13			0	.03	.14	3.9	.36	.11				
14			0	.03	.17	2.1	.36	.83				
15			0	.06	.17	1.3	.20	.20				
16			0	.09	.17	2.2	.20	.14				
17			0	.03	2.8	2.5	.20	.12				
18			0	.03	1.3	1.5	.17	.12				
19			0	.03	.84	1.3	.17	.12				
20			0	.03	2.5	1.2	.14	.12				
21			0	.03	2.0	1.0	.14	.09				
22			0	.03	1.2	.84	.12	.09				
23			0	.03	.84	.68	.12	.09				
24			0	.03	.68	.52	.12	.06				
25			0	.03	.52	.52	.12	.06				
26			0	.03	.52	.52	.12	.03				
27			0	.06	.36	.52	.12	0				
28			0	.12	.36	.36	.09	0				
29			0	.12	.20	.36	.09	0				
30			0	.28	-----	.36	.09	0				
31	-----		0	2.7	-----	.20	-----	0	-----			-----
TOTAL	0	0	0.06	4.09	17.64	31.48	13.81	2.93	0	0	0	0
MEAN	0	0	.002	.13	.61	1.02	.46	.095	0	0	0	0
MAX	0	0	.06	2.7	2.8	4.3	2.6	.83	0	0	0	0
MIN	0	0	0	0	.14	.17	.09	0	0	0	0	0
AC-FT	0	0	.1	8.1	35	62	27	5.8	0	0	0	0

CAL YR 1967 TOTAL 2,547.26 MEAN 6.98 MAX 185 MIN 0 AC-FT 5,050
WTR YR 1968 TOTAL 70.01 MEAN .19 MAX 4.3 MIN 0 AC-FT 139

Peak discharge (base, 40 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

11-2580. FRESNO RIVER NEAR DAULTON, CALIF.

LOCATION.--Lat 37°05'50", long 119°53'20", in NW¼ sec.3, T.10 S., R.19 E., on left bank 0.5 mile downstream from Willow Creek, and 5.3 miles southeast of Daulton.

DRAINAGE AREA.--258 sq mi.

RECORDS AVAILABLE.--October 1941 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 382.4 ft above mean sea level (levels by Corps of Engineers). October 1941 to Sept. 27, 1946, graphic water-stage recorder at site 300 ft downstream and Sept. 28, 1946, to Sept. 28, 1949, graphic water-stage recorder at present site, at datum 3.37 ft higher. Sept. 29, 1949, to Mar. 19, 1963, graphic water-stage recorder at datum 1.00 ft higher. Mar. 20, 1963, to Sept. 27, 1963, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--27 years, 99.0 cfs (71,870 acre-ft per year); median of yearly mean discharges, 72 cfs (52,100 acre-ft per year).

EXTREMES.--Maximum discharge during year, 273 cfs Feb. 21 (gage height, 2.86 ft); no flow for many days.

1941-68: Maximum discharge, 17,500 cfs Dec. 23, 1955 (gage height, 12.64 ft, present datum), from rating curve extended above 6,400 cfs; no flow at times in most years.

Flood of Mar. 3, 1938, reached a discharge of 15,000 cfs (furnished by Bureau of Reclamation).

REMARKS.--Records good. No diversion for irrigation between this station and station near Knowles. Some regulation at low flow by mining operations above station. See REMARKS for station near Knowles.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.4	12	31	32	71	80	78	80	38	6.0		
2	8.8	11	22	27	59	74	117	81	35	6.6		
3	8.2	11	19	29	51	69	116	78	35	6.0		
4	9.5	11	20	32	53	68	98	72	31	4.5		
5	12	9.9	27	28	55	66	86	70	28	2.9		
6	12	10	65	27	57	67	82	71	32	2.5		
7	14	9.8	40	24	58	64	77	71	32	2.5		
8	14	10	34	28	53	85	74	69	34	1.9		
9	14	10	29	29	51	155	72	64	39	1.5		
10	14	9.5	27	34	70	109	72	55	37	3.0		
11	13	9.6	25	48	72	87	74	57	30	2.9		
12	13	8.6	28	50	66	78	78	63	26	1.7		
13	14	9.6	27	43	53	95	78	68	24	.92		
14	13	11	23	41	55	131	75	84	23	.56		
15	12	12	19	38	64	101	72	86	22	.46		
16	11	14	21	75	62	95	67	80	20	.34		
17	11	12	25	69	72	142	67	78	20	.23		
18	11	13	24	51	172	130	68	70	21	.10		
19	11	15	33	44	132	107	69	65	21	0		
20	10	26	32	40	143	96	68	62	20	0		
21	9.0	29	30	41	233	91	69	63	18	0		
22	9.1	20	29	45	168	91	66	59	17	1.9		
23	9.0	15	31	40	132	88	60	52	17	0		
24	9.4	13	33	39	118	78	61	55	15	0		
25	9.0	15	35	37	109	76	62	49	13	0		
26	8.3	15	35	38	97	78	62	48	13	0		
27	7.4	16	33	47	93	78	66	45	9.3	0		
28	7.4	18	34	52	91	76	70	41	8.6	0		
29	7.9	19	36	40	88	72	66	36	7.2	0		
30	9.1	26	39	37	-----	72	70	35	7.8	0		
31	11	-----	38	58	-----	74	-----	38	-----	0		-----
TOTAL	331.5	421.0	944	1,263	2,598	2,773	2,240	1,945	693.9	46.51	0	0
MEAN	10.7	14.0	30.5	40.7	89.6	89.5	74.7	62.7	23.1	1.50	0	0
MAX	14	29	65	75	233	155	117	86	39	6.6	0	0
MIN	7.4	8.6	19	24	51	64	60	35	7.2	0	0	0
AC-FT	658	835	1,870	2,510	5,150	5,500	4,440	3,860	1,380	92	0	0

CAL YR 1967 TOTAL 85,453.6 MEAN 234 MAX 2,900 MIN 4.1 AC-FT 169,500
WTR YR 1968 TOTAL 13,255.91 MEAN 36.2 MAX 233 MIN 0 AC-FT 26,290

Peak discharge (base, 600 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

661

11-2589. WEST FORK CHOWCHILLA RIVER NEAR MARIPOSA, CALIF.

LOCATION.--Lat 37°25'15", long 119°52'25", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.10, T.6 S., R.19 E., on left bank 15 ft downstream from bridge on Indian Peak Road, 0.5 mile downstream from Humbug Creek, and 6.7 miles southeast of Mariposa.

DRAINAGE AREA.--33.6 sq mi.

RECORDS AVAILABLE.--October 1957 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 1,680 ft (from topographic map).

AVERAGE DISCHARGE.--11 years, 15.7 cfs (11,370 acre-ft per year); median of yearly mean discharges, 10 cfs (7,600 acre-ft per year).

EXTREMES.--Maximum discharge during year, 92 cfs Feb. 17 (gage height, 4.16 ft); no flow for many days.

1957-68: Maximum discharge, 3,590 cfs Apr. 3, 1958 (gage height, 8.67 ft), from rating curve extended above 1,800 cfs; no flow for many days in each year.

REMARKS.--No known diversions above station.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	4.6	2.1	8.0	6.6	10	1.8	.40			
2		0	2.3	2.0	5.5	6.1	12	1.7	.40			
3		0	1.8	2.0	5.3	5.7	7.0	1.7	.30			
4		0	1.5	1.8	4.6	5.5	6.3	1.6	.30			
5		0	9.0	1.8	4.1	5.1	6.3	1.7	.30			
6		0	5.3	1.8	3.8	4.9	5.9	1.6	.40			
7		.10	3.2	1.8	3.5	5.1	5.5	1.5	.70			
8		.10	2.7	1.8	3.2	19	5.3	1.4	.90			
9		.10	2.1	1.7	6.3	11	4.9	1.3	1.0			
10		.10	1.8	4.6	10	7.5	4.6	1.3	.70			
11		.10	1.7	7.8	5.9	6.3	4.6	1.3	.40			
12		.10	1.6	3.8	4.6	6.1	4.4	2.0	.30			
13		.10	1.4	2.8	4.2	14	4.2	4.1	.20			
14		.10	1.3	2.6	7.3	10	4.1	9.1	.20			
15		.20	1.3	8.0	5.5	8.0	3.9	4.1	.10			
16		.20	1.3	5.9	5.9	10	3.8	2.8	.10			
17		.20	1.3	3.6	50	20	3.9	2.1	.10			
18		.20	2.5	3.1	29	13	3.6	1.8	0			
19		.70	3.1	2.7	12	10	3.3	1.8	0			
20		.80	2.7	2.6	37	9.1	3.3	1.7	0			
21		1.1	2.1	2.2	28	8.3	3.2	1.4	0			
22		.80	1.9	2.1	16	7.8	2.9	1.2	0			
23		.80	2.0	1.9	11	7.3	2.8	1.2	0			
24		.80	2.2	1.9	9.4	6.8	2.8	1.2	0			
25		.80	2.6	1.9	8.5	6.8	2.8	1.1	0			
26		.80	2.3	1.9	7.8	6.6	2.7	1.0	0			
27		.80	2.9	2.6	7.3	6.1	2.7	.90	0			
28		.70	2.9	2.9	6.8	5.9	2.5	.70	0			
29		1.0	2.7	2.2	6.8	5.7	2.2	.50	0			
30		5.3	2.5	3.1	-----	5.5	2.1	.30	0			
31		-----	2.3	14	-----	5.1	-----	.40	-----			-----
TOTAL	0	16.00	78.9	101.0	317.3	254.9	133.6	56.30	6.80	0	0	0
MEAN	0	.53	2.55	3.26	10.9	8.22	4.45	1.82	.23	0	0	0
MAX	0	5.3	9.0	14	50	20	12	9.1	1.0	0	0	0
MIN	0	0	1.3	1.7	3.2	4.9	2.1	.30	0	0	0	0
AC-FT	0	32	157	200	629	506	265	112	13	0	0	0
CAL YR 1967	TOTAL	12,929.60	MEAN	35.4	MAX	723	MIN	0	AC-FT	25,650		
WTR YR 1968	TOTAL	964.80	MEAN	2.64	MAX	50	MIN	0	AC-FT	1,910		

SAN JOAQUIN RIVER BASIN

11-2590. CHOWCHILLA RIVER AT BUCHANAN DAMSITE, NEAR RAYMOND, CALIF.

LOCATION.--Lat 37°13'02", long 119°59'03", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.22, T.8 S., R.18 E., on right bank 1.9 miles upstream from Raynor Creek and 4.3 miles west of Raymond.

DRAINAGE AREA.--235 sq mi.

RECORDS AVAILABLE.--October 1921 to September 1923, October 1930 to September 1968. Prior to Oct. 1, 1962, published as "at Buchanan damsite."

GAGE.--Digital water-stage recorder. Datum of gage is 407.30 ft above mean sea level, adjustment of 1912 (levels by Merced Irrigation District). Graphic water-stage recorder October 1921 to September 1923 at site 2.5 miles upstream at different datum and October 1930 to September 1963, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--40 years (1921-23, 1930-68), 96.2 cfs (69,650 acre-ft per year); median of yearly mean discharges, 76 cfs (55,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 292 cfs Feb. 18 (gage height, 3.91 ft); no flow for several months. 1921-23, 1930-68: Maximum discharge, 30,000 cfs Dec. 23, 1955 (gage height, 16.50 ft), from rating curve extended above 6,000 cfs on basis of slope-area measurement at gage height 15.06 ft; no flow for part of each year except 1937-38, 1940-43.

REMARKS.--Records excellent. No storage or large diversion above station. Records of chemical analyses for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	4.5	41	22	54	41	37	14	4.1			
2	2.4	4.6	30	21	41	39	71	13	3.6			
3	2.5	4.4	22	20	37	36	64	13	3.2			
4	2.9	4.4	19	19	37	34	48	12	3.0			
5	3.2	4.5	22	18	35	33	42	11	2.9			
6	4.4	4.6	73	18	33	31	41	11	3.1			
7	4.3	4.8	39	18	31	32	39	11	3.4			
8	4.0	5.0	30	17	29	63	36	11	3.9			
9	3.8	5.0	27	17	33	123	34	10	6.9			
10	3.5	5.0	22	20	57	69	31	10	6.9			
11	3.2	5.1	20	38	50	53	29	9.6	5.4			
12	3.0	5.4	19	40	38	47	28	11	4.4			
13	2.9	5.8	18	30	34	60	27	13	3.6			
14	2.9	5.8	16	26	34	85	26	21	2.9			
15	2.9	5.8	14	30	38	66	25	37	2.5			
16	2.9	6.2	14	47	36	61	24	25	2.2			
17	3.0	7.1	14	39	76	89	24	17	1.9			
18	2.9	7.4	16	31	207	98	24	14	1.6			
19	2.9	15	33	27	97	78	23	12	1.3			
20	2.9	27	35	25	113	66	22	11	1.0			
21	3.0	21	26	24	170	58	22	11	.84			
22	3.1	15	21	23	126	53	21	9.8	.64			
23	3.3	13	20	22	88	50	20	9.7	.48			
24	3.5	12	21	22	72	47	19	9.4	.36			
25	4.0	11	23	21	63	45	18	8.8	.25			
26	4.2	11	25	21	58	44	18	8.2	.12			
27	4.4	11	27	21	53	42	17	7.5	.07			
28	4.2	11	27	24	48	39	16	6.7	0			
29	4.2	11	26	24	44	37	15	5.9	0			
30	4.4	19	25	22	-----	36	15	5.2	0			
31	4.4	-----	23	38	-----	34	-----	4.6	-----			-----
TOTAL	105.5	272.4	788	785	1,832	1,689	876	373.4	70.56	0	0	0
MEAN	3.40	9.08	25.4	25.3	63.2	54.5	29.2	12.0	2.35	0	0	0
MAX	4.4	27	73	47	207	123	71	37	6.9	0	0	0
MIN	2.3	4.4	14	17	29	31	15	4.6	0	0	0	0
AC-FT	209	540	1,560	1,560	3,630	3,350	1,740	741	140	0	0	0

CAL YR 1967 TOTAL 69,337.72 MEAN 190 MAX 2,380 MIN .38 AC-FT 137,500
 WTR YR 1968 TOTAL 6,791.86 MEAN 18.6 MAX 207 MIN 0 AC-FT 13,470

Peak discharge (base, 770 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

663

11-2602. BEAR CREEK NEAR CATHEYS VALLEY, CALIF.

LOCATION.--Lat 37°28'40", long 120°06'45", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.21, T.5 S., R.17 E., on downstream side of bridge, 0.9 mile upstream from Raster Gulch, and 3.3 miles north of town of Catheys Valley.

DRAINAGE AREA.--24.9 sq mi.

RECORDS AVAILABLE.--January 1958 to September 1968. Prior to October 1963, published as "near Cathay."

GAGE.--Graphic water-stage recorder. Altitude of gage is 1,210 ft (from topographic map).

AVERAGE DISCHARGE.--10 years, 11.4 cfs (8,250 acre-ft per year); median of yearly mean discharges, 8.0 cfs (5,800 acre-ft per year).

EXTREMES.--Maximum discharge during year, 269 cfs Feb. 17 (gage height, 5.22 ft); no flow for several months. 1958-68: Maximum discharge, 2,520 cfs Feb. 1, 1963 (gage height, 10.07 ft), from rating curve extended above 1,500 cfs; no flow for many days in each year.

REMARKS.--No known diversion or regulation above station.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

REVISIONS (water years).--1965 report: 1958(M), 1962(M), 1963.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	.80	11	2.9	3.0	.30	.10			
2			0	.80	6.3	2.7	8.1	.30	.10			
3			0	.60	4.3	2.3	4.6	.30	.10			
4			0	.60	3.4	2.1	3.4	.30	0			
5			0	.60	2.7	1.9	2.9	.20	0			
6			0	.50	2.3	1.7	2.6	.20	0			
7			0	.50	2.1	1.4	2.2	.20	0			
8			0	.50	1.8	8.7	1.9	.20	0			
9			0	.50	2.1	10	1.8	.20	0			
10			0	.90	2.4	5.5	1.6	.20	0			
11			0	2.2	2.1	4.1	1.5	.20	0			
12			0	3.7	1.8	3.4	1.3	.20	0			
13			0	2.6	1.7	32	1.2	.20	0			
14			0	2.1	1.5	36	1.1	.30	0			
15			0	3.9	1.4	13	1.0	.20	0			
16			0	6.3	1.6	13	.90	.30	0			
17			0	3.7	102	40	.80	.30	0			
18			0	2.7	63	23	.80	.30	0			
19			0	2.4	16	12	.70	.30	0			
20			0	2.2	86	8.8	.60	.20	0			
21			.40	2.1	111	6.5	.60	.20	0			
22			.50	2.1	40	5.5	.50	.20	0			
23			.50	1.9	18	4.6	.50	.20	0			
24			.50	1.9	11	3.7	.50	.20	0			
25			.60	1.8	7.4	3.4	.40	.20	0			
26			1.2	1.7	6.0	3.0	.40	.20	0			
27			1.3	1.7	5.0	2.7	.40	.10	0			
28			1.3	2.2	4.1	2.4	.40	.10	0			
29			1.2	2.7	3.6	2.3	.40	.10	0			
30			1.0	2.1	-----	2.2	.40	.10	0			
31		-----	.90	12	-----	2.1	-----	.10	-----			-----
TOTAL	0	0	9.40	70.30	521.6	262.9	46.50	6.60	0.30	0	0	0
MEAN	0	0	.30	2.27	18.0	8.48	1.55	.21	.010	0	0	0
MAX	0	0	1.3	12	111	40	8.1	.30	.10	0	0	0
MIN	0	0	0	.50	1.4	1.4	.40	.10	0	0	0	0
AC-FT	0	0	19	139	1,030	521	92	13	.6	0	0	0
CAL YR 1967	TOTAL	7,844.60	MEAN	21.5	MAX	595	MIN	0	AC-FT	15,560		
WTR YR 1968	TOTAL	917.60	MEAN	2.51	MAX	111	MIN	0	AC-FT	1,820		

SAN JOAQUIN RIVER BASIN

11-2602.25. BURNS CREEK AT HORNITOS, CALIF.

LOCATION.--Lat 37°29'45", long 120°14'17", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.17, T.5 S., R.16 E., on right bank 0.3 mile south of Hornitos, and 12.4 miles upstream from Burns Dam.

DRAINAGE AREA.--26.7 sq mi.

RECORDS AVAILABLE.--October 1964 to September 1968. December 1958 to September 1964 in reports of California Department of Water Resources.

GAGE.--Graphic water-stage recorder. Altitude of gage is 780 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 188 cfs Feb. 21 (gage height, 4.13 ft); no flow for many days.
1964-68: Maximum discharge, 5,900 cfs Jan. 6, 1965 (gage height, 9.30 ft), from rating curve extended above 400 cfs on basis of slope-conveyance computation at gage height 10.66 ft; no flow for many days in each year.
Flood of Feb. 15, 1962, reached a stage of 10.66 ft (discharge, 9,200 cfs), from rating curve extended above 400 cfs on basis of slope-conveyance computation of maximum flow.

REMARKS.--There is no known diversion above station.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	.10	.10	1.0	1.4	1.6	.10				
2		0	.10	.20	.90	1.2	4.6	.10				
3		0	.10	.20	.80	1.0	1.8	.10				
4		0	.10	.20	.80	.90	1.0	.10				
5		0	.10	.20	.80	.90	.90	.10				
6		0	.10	.20	.70	.90	.80	.10				
7		0	.10	.20	.50	1.0	.70	.10				
8		0	.10	.20	.50	30	.60	.10				
9		0	.10	.20	.60	6.7	.60	.10				
10		0	.10	.40	.70	3.1	.50	.10				
11		0	.10	.50	.60	2.2	.40	.10				
12		0	.10	.40	.50	1.8	.40	.10				
13		0	.10	.30	.60	26	.40	.10				
14		0	.10	.30	.60	13	.40	.10				
15		0	.10	1.0	.60	5.6	.40	.10				
16		0	.10	.80	.70	9.4	.30	.10				
17		0	.10	.60	35	14	.30	.10				
18		0	.20	.40	12	6.2	.20	.10				
19		.10	.20	.40	5.6	3.4	.20	.10				
20		0	.10	.40	27	2.5	.20	.10				
21		0	.10	.40	46	2.0	.20	.10				
22		0	.10	.40	12	1.6	.20	.10				
23		0	.10	.40	6.7	1.4	.20	0				
24		0	.10	.40	4.6	1.0	.20	0				
25		0	.10	.40	3.1	1.0	.20	0				
26		0	.10	.40	2.5	1.0	.10	0				
27		0	.10	.50	2.2	.90	.10	0				
28		0	.10	.50	2.0	.90	.10	0				
29		0	.10	.50	1.8	.70	.10	0				
30		.10	.10	.70	-----	.70	.10	0				
31		-----	.10	2.0	-----	.60	-----	0	-----			-----
TOTAL	0	0.20	3.30	13.80	171.40	143.00	17.80	2.20	0	0	0	0
MEAN	0	.007	.11	.45	5.91	4.61	.59	.071	0	0	0	0
MAX	0	.10	.20	2.0	46	30	4.6	.10	0	0	0	0
MIN	0	0	.10	.10	.50	.60	.10	0	0	0	0	0
AC-FT	0	.4	6.6	27	340	284	35	4.4	0	0	0	0
CAL YR 1967	TOTAL	5,138.70		MEAN	14.1	MAX	510	MIN	0	AC-FT	10,190	
WTR YR 1968	TOTAL	351.70		MEAN	.96	MAX	46	MIN	0	AC-FT	698	

SAN JOAQUIN RIVER BASIN

665

11-2604.8. MARIPOSA CREEK NEAR CATHEYS VALLEY, CALIF.

LOCATION.--Lat 37°23'55", long 120°00'10", in SW¼NE¼ sec.21, T.6 S., R.18 E., on downstream side of bridge on White Rock Road, 0.3 mile downstream from China Gulch, and 5.7 miles southeast of town of Catheys Valley.

DRAINAGE AREA.--65.7 sq mi.

RECORDS AVAILABLE.--October 1958 to September 1968. Prior to October 1963, published as "near Cathay."

GAGE.--Graphic water-stage recorder. Altitude of gage is 1,230 ft (from topographic map).

AVERAGE DISCHARGE.--10 years, 22.1 cfs (16,000 acre-ft per year); median of yearly mean discharges, 13 cfs (9,400 acre-ft per year).

EXTREMES.--Maximum discharge during year, 377 cfs Feb. 17 (gage height, 5.76 ft); no flow for several months. 1958-68: Maximum discharge, 5,290 cfs Feb. 1, 1963 (gage height, 10.69 ft); no flow for many days in each year.

Flood of Apr. 3, 1958, reached a stage of 11.62 ft (discharge, 7,180 cfs).

REMARKS.--Probably minor diversions above the station for irrigation.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	17	4.2	23	12	13	2.8	.40			
2		0	7.1	4.0	15	13	23	2.5	.30			
3		0	4.9	3.8	12	12	13	2.2	.30			
4		0	4.0	3.7	10	11	10	2.1	.30			
5		0	15	3.7	9.2	10	9.5	2.1	.20			
6		0	12	3.7	8.4	8.4	8.9	2.1	.20			
7		0	8.1	3.5	7.6	8.9	8.1	2.0	.20			
8		0	8.4	3.5	7.1	50	7.8	1.9	.20			
9		0	6.6	3.5	13	35	7.3	1.8	.30			
10		0	5.3	7.8	19	19	6.8	1.6	.30			
11		0	4.7	16	13	15	6.4	1.6	.30			
12		0	4.4	9.5	11	13	6.2	2.4	.20			
13		.40	4.0	7.3	10	43	5.7	3.7	.20			
14		1.4	3.7	6.6	9.8	48	5.7	8.1	.20			
15		1.7	3.5	14	8.9	30	5.5	4.7	.20			
16		1.8	3.5	13	10	28	5.3	3.5	.20			
17		1.9	3.4	9.8	165	50	5.3	2.8	.20			
18		2.1	6.2	8.1	93	41	5.1	2.4	.10			
19		12	12	7.1	38	30	4.7	2.0	0			
20		7.3	10	6.4	102	24	4.4	1.8	0			
21		3.7	7.1	5.9	111	20	4.4	1.7	0			
22		2.6	6.4	5.7	61	18	4.2	1.3	0			
23		2.2	5.9	5.3	38	16	4.0	1.2	0			
24		2.0	5.9	5.3	28	14	4.0	1.2	0			
25		2.0	6.2	5.3	23	13	3.8	1.2	0			
26		2.0	6.2	5.1	19	13	3.8	1.0	0			
27		1.9	6.2	6.2	17	12	3.7	.90	0			
28		1.9	5.5	8.4	15	11	3.4	.80	0			
29		2.1	5.1	6.4	13	10	3.0	.70	0			
30		13	4.7	6.8	-----	9.5	2.9	.50	0			
31		-----	4.5	45	-----	8.9	-----	.50	-----			
TOTAL	0	62.00	207.5	244.6	910.0	646.7	198.9	65.10	4.30	0	0	0
MEAN	0	2.07	6.69	7.89	31.4	20.9	6.63	2.10	.14	0	0	0
MAX	0	13	17	45	165	50	23	8.1	.40	0	0	0
MIN	0	0	3.4	3.5	7.1	8.4	2.9	.50	0	0	0	0
AC-FT	0	123	412	485	1,800	1,280	395	129	8.5	0	0	0
CAL YR 1967	TOTAL	16,974.00	MEAN	46.5	MAX	911	MIN	0	AC-FT	33,670		
WTR YR 1968	TOTAL	2,339.10	MEAN	6.39	MAX	165	MIN	0	AC-FT	4,640		

SAN JOAQUIN RIVER BASIN

11-2610. SALT SLOUGH NEAR LOS BANOS, CALIF.

LOCATION.--Lat 37°09'35", long 120°48'45", in Sanjon de Santa Rita Grant, on left bank at San Luis Ranch, 600 yards downstream from confluence with Mud Slough, and 7.0 miles north of Los Banos.

RECORDS AVAILABLE.--October 1940 to September 1968 (discontinued). Monthly discharge only for October to December 1940, published in WSP 1315-A.

GAGE.--Digital water-stage recorder. Datum of gage is 70.60 ft above mean sea level (levels by Bureau of Reclamation). Prior to Apr. 15, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--28 years, 195 cfs (141,200 acre-ft per year).

EXTREMES.--Maximum discharge during year, 296 cfs Mar. 15, 16 (gage height, 5.18 ft); minimum daily, 27 cfs Oct. 14.

1940-68: Maximum daily discharge, 2,420 cfs Mar. 9, 1941; minimum daily, 4.0 cfs Oct. 27, 1961, and Oct. 20, 1964.

REMARKS.--Records good. Flow regulated by irrigation operations above station. Salt Slough is a continuation of Pick Anderson Slough system.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	113	56	141	59	109	139	180	112	60	95	155	121
2	149	57	152	61	114	137	233	117	67	76	147	114
3	185	55	158	63	119	135	252	120	90	70	117	118
4	154	52	162	62	119	155	253	121	81	73	99	103
5	132	55	159	61	121	194	231	134	73	71	124	92
6	112	57	149	65	109	188	205	138	76	74	135	109
7	87	56	146	65	114	180	198	136	87	69	118	135
8	96	61	144	79	129	194	172	120	94	75	110	128
9	80	69	133	93	121	234	153	109	100	96	105	124
10	56	65	126	99	117	224	136	113	98	110	96	123
11	43	66	119	98	124	206	136	119	95	116	117	98
12	45	63	113	89	127	213	139	123	83	106	121	95
13	30	65	112	91	129	222	165	126	81	103	136	85
14	27	60	115	100	123	263	139	136	81	106	134	89
15	54	58	115	104	119	277	165	147	77	101	116	88
16	74	68	115	113	118	289	171	150	86	85	109	86
17	80	65	114	113	148	289	162	129	89	63	138	94
18	70	62	116	118	183	282	173	128	86	63	105	94
19	66	63	119	128	183	248	168	118	91	66	137	89
20	63	63	121	132	166	204	156	121	88	81	166	86
21	54	65	116	131	164	185	160	128	87	81	160	95
22	60	66	112	129	158	188	161	101	81	77	155	100
23	61	66	97	122	159	204	165	92	70	68	134	116
24	61	71	86	121	157	201	153	76	71	65	144	127
25	67	84	86	120	161	197	144	97	71	61	141	100
26	67	85	85	115	166	197	137	92	59	76	157	84
27	66	95	82	113	155	188	135	90	48	100	167	91
28	58	128	79	112	147	174	134	75	48	122	147	108
29	57	119	76	106	142	161	130	58	54	160	131	116
30	51	121	51	101	-----	168	121	50	67	178	124	122
31	53	-----	58	104	-----	162	-----	50	-----	173	120	-----
TOTAL	2,371	2,116	3,557	3,067	4,001	6,298	5,027	3,426	2,339	2,860	4,065	3,130
MEAN	76.5	70.5	115	98.9	138	203	168	111	78.0	92.3	131	104
MAX	185	128	162	132	183	289	253	150	100	178	167	135
MIN	27	52	51	59	109	135	121	50	48	61	96	84
AC-FT	4,700	4,200	7,060	6,080	7,940	12,490	9,970	6,800	4,640	5,670	8,060	6,210
CAL YR 1967	TOTAL 63,180			MEAN 173		MAX 403	MIN 27	AC-FT 125,300				
WTR YR 1968	TOTAL 42,257			MEAN 115		MAX 289	MIN 27	AC-FT 83,820				

SAN JOAQUIN RIVER BASIN

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11-2615. SAN JOAQUIN RIVER AT FREMONT FORD BRIDGE, CALIF.

LOCATION.--Lat 37°18'35", long 120°55'45", in Orestimba Grant, on left bank 30 ft downstream from Fremont Ford Bridge, 2.1 miles downstream from Salt Slough, 4.5 miles west of Stevenson, and 6.7 miles upstream from Merced River.

DRAINAGE AREA.--7,615 sq mi (revised).

RECORDS AVAILABLE.--March 1937 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Digital water-stage recorder. Datum of gage is at mean sea level. March 1937 to Oct. 1, 1959, at datum 3.77 ft below mean sea level. Prior to June 9, 1965, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--31 years, 760 cfs (550,200 acre-ft per year).

EXTREMES.--Maximum discharge during year, 474 cfs Mar. 19 (elevation, 57.15 ft); minimum daily, 83 cfs July 26. 1944-68: Maximum discharge, 5,910 cfs Apr. 6, 1968 (elevation, 67.37 ft, present datum); minimum, 9.5 cfs Oct. 30, 1960.

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, ground-water withdrawals, diversions for irrigation, and imported water from Delta-Mendota Canal (see sta. no. 11-3130.). During periods of high flow, water bypasses this station through Mud Slough; low flows consist mainly of return water from irrigated areas. Stage affected at times by backwater from the Merced River. See REMARKS for stations upstream.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	331	100	380	155	183	234	202	202	114	113	162	209
2	351	100	403	153	180	236	244	183	115	116	159	223
3	397	103	404	146	182	326	321	175	120	98	160	214
4	430	100	402	134	202	249	385	178	120	88	136	195
5	410	98	393	122	204	224	385	181	120	85	129	180
6	376	95	386	113	192	223	318	206	125	84	161	175
7	335	96	348	108	176	213	272	194	120	91	162	180
8	294	85	352	151	170	223	256	171	120	94	149	187
9	296	86	362	230	168	239	234	158	135	95	127	193
10	275	97	356	267	159	297	209	158	150	105	120	226
11	246	99	337	266	153	338	183	164	145	125	131	226
12	234	99	267	266	152	357	181	214	140	135	146	226
13	202	95	241	241	155	373	168	288	135	116	147	217
14	197	93	232	221	161	391	186	317	130	127	167	215
15	189	88	232	221	158	379	202	316	130	132	167	215
16	204	84	213	226	159	388	218	319	130	116	186	201
17	216	96	199	219	168	428	204	274	140	95	199	220
18	204	98	190	202	196	447	212	231	130	87	202	220
19	187	112	199	188	322	463	219	211	125	85	180	207
20	179	129	259	185	402	428	205	233	126	85	208	193
21	180	175	347	178	408	377	210	215	120	91	200	176
22	191	186	340	172	413	330	229	219	115	97	201	179
23	174	212	309	175	427	310	211	194	104	93	202	184
24	194	225	259	182	391	307	219	187	96	87	209	220
25	186	252	227	183	341	257	186	175	98	89	229	206
26	175	277	207	182	295	230	189	191	90	83	226	170
27	163	290	204	175	289	224	194	198	85	91	232	151
28	136	297	203	166	266	216	206	191	87	114	230	140
29	133	317	192	161	246	204	229	156	88	130	234	132
30	123	341	182	154	-----	190	209	136	90	167	233	126
31	109	-----	162	168	-----	184	-----	119	-----	175	209	-----
TOTAL	7,317	4,525	8,787	5,710	6,918	9,285	6,886	6,354	3,543	3,289	5,603	5,806
MEAN	236	151	283	184	239	300	230	205	118	106	181	194
MAX	430	341	404	267	427	463	385	319	150	175	234	226
MIN	109	84	162	108	152	184	168	119	85	83	120	126
AC-FT	14,510	8,980	17,430	11,330	13,720	18,420	13,660	12,600	7,030	6,520	11,110	11,520
CAL YR 1967	TOTAL 485,334		MEAN 1,330		MAX 5,360		MIN 84		AC-FT 962,600			
WTR YR 1968	TOTAL 74,023		MEAN 202		MAX 463		MIN 83		AC-FT 146,800			

SAN JOAQUIN RIVER BASIN

11-2645. MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CALIF.
(Hydrologic bench-mark station)

LOCATION.--Lat 37°43'54", long 119°33'28", on right bank 10 ft downstream from footbridge at Happy Isles, 0.4 mile downstream from Illilouette Creek, and 2.0 miles southeast of Yosemite National Park headquarters.

DRAINAGE AREA.--181 sq mi.

RECORDS AVAILABLE.--August 1915 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 4,016.58 ft above mean sea level, datum of 1929. Prior to Nov. 2, 1916, staff gage at datum 0.55 ft lower.

AVERAGE DISCHARGE.--53 years, 337 cfs (244,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,480 cfs May 29 (gage height, 5.42 ft); minimum daily, 2.6 cfs Sept. 30.

1915-68: Maximum discharge, 9,860 cfs Dec. 23, 1955 (gage height, 12.73 ft), from rating curve extended above 4,000 cfs on basis of contracted-opening measurements at gage heights 10.4 and 11.55 ft; minimum, 1.5 cfs Sept. 30, 1926.

REMARKS.--Records excellent. One cfs diverted from Illilouette Creek above station for Yosemite Valley water supply. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	13	28	42	46	177	396	982	982	132	75	9.9
2	51	12	34	37	49	154	298	1,010	1,050	123	67	10
3	50	12	39	31	51	148	242	952	1,100	118	56	11
4	52	12	44	32	51	150	235	905	910	116	48	11
5	50	12	50	30	52	152	256	905	760	110	42	11
6	48	12	45	28	51	139	228	735	514	108	37	11
7	44	12	47	27	49	127	222	685	392	104	33	10
8	39	13	46	28	48	125	245	690	356	108	29	10
9	36	13	46	28	53	114	314	700	304	120	26	10
10	32	13	48	28	54	105	432	559	298	127	25	9.9
11	31	13	49	26	55	102	568	564	342	108	24	9.3
12	29	13	43	28	53	105	595	559	392	95	24	8.8
13	27	13	31	28	52	105	523	440	428	90	28	8.2
14	25	15	31	28	51	100	500	416	416	90	27	7.4
15	23	17	34	65	46	97	546	428	474	86	27	6.8
16	23	17	31	64	51	98	460	460	505	84	23	6.1
17	22	18	29	48	65	102	376	582	518	80	21	5.4
18	21	20	31	45	79	98	301	705	460	75	18	4.7
19	20	40	33	42	97	93	277	920	448	68	18	4.3
20	19	35	33	43	280	90	259	1,060	416	65	17	4.3
21	18	34	33	47	265	92	235	1,120	342	62	17	4.1
22	17	31	36	48	205	97	218	840	301	59	18	4.0
23	17	29	36	49	225	96	238	586	307	56	18	4.0
24	16	28	39	50	232	101	304	469	283	53	17	3.8
25	16	26	44	54	200	111	384	528	253	50	17	3.4
26	15	25	51	54	195	117	613	840	232	47	15	3.2
27	15	24	54	49	184	127	825	1,080	225	46	13	3.1
28	14	25	56	41	184	169	890	1,260	220	48	12	2.9
29	14	25	53	48	177	259	982	1,280	193	55	11	2.7
30	14	26	48	46	-----	345	1,020	1,110	156	67	9.9	2.6
31	13	-----	46	46	-----	370	-----	952	-----	78	10	-----
TOTAL	866	598	1,268	1,260	3,200	4,265	12,982	24,322	13,577	2,628	822.9	202.9
MEAN	27.9	19.9	40.9	40.6	110	138	433	785	453	84.8	26.5	6.76
MAX	55	40	56	65	280	370	1,020	1,280	1,100	132	75	11
MIN	13	12	28	26	46	90	218	416	156	46	9.9	2.6
AC-FT	1,720	1,190	2,520	2,500	6,350	8,460	25,750	48,240	26,930	5,210	1,630	402

CAL YR 1967 TOTAL 209,073 MEAN 573 MAX 3,900 MIN 12 AC-FT 414,700
WTR YR 1968 TOTAL 65,991.8 MEAN 180 MAX 1,280 MIN 2.6 AC-FT 130,960

Peak discharge (base, 1,900 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

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11-2665. MERCED RIVER AT POHONO BRIDGE, NEAR YOSEMITE, CALIF.

LOCATION.--Lat 37°43'01", long 119°39'55", on left bank 150 ft upstream from Pohono Bridge, 0.4 mile upstream from Artist Creek, and 4.8 miles southwest of Yosemite National Park Headquarters.

DRAINAGE AREA.--321 sq mi.

RECORDS AVAILABLE.--October 1916 to September 1968. Monthly discharge only for October and November 1916, published in WSP 1315-A.

GAGE.--Digital water-stage recorder. Datum of gage is 3,861.66 ft above mean sea level, datum of 1929. Prior to Sept. 5, 1918, graphic water-stage recorder, at datum 1.8 ft higher. Sept. 5, 1918, to Sept. 30, 1955, graphic water-stage recorder, at datum 1.0 ft higher. Oct. 1, 1955, to Oct. 8, 1964, graphic water-stage recorder at present datum.

AVERAGE DISCHARGE.--52 years, 591 cfs (427,900 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,020 cfs Apr. 30 (gage height, 6.13 ft); minimum daily, 13 cfs Sept. 30.

1916-68: Maximum discharge, 23,400 cfs Dec. 23, 1955 (gage height, 21.52 ft from floodmarks in well), from rating curve extended above 16,300 cfs on basis of computation of flow over diversion dam for Yosemite powerhouse, 1 mile downstream at gage heights 20.1 and 20.98 ft, present datum; minimum, 3.3 cfs Sept. 29, Oct. 1, 1924.

REMARKS.--Records excellent. No diversions between stations at Happy Isles Bridge and Pohono Bridge. One cfs sewage effluent returns between stations (see REMARKS for sta. no. 11-2645.).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	37	54	85	103	441	871	1,740	1,310	192	92	23
2	88	36	56	78	113	378	656	1,780	1,370	175	87	22
3	87	36	64	70	120	362	535	1,680	1,400	167	77	22
4	89	35	73	68	122	374	520	1,620	1,200	161	68	22
5	88	35	92	65	123	378	569	1,620	1,040	150	63	22
6	85	35	79	64	119	337	499	1,320	801	147	58	22
7	82	35	85	61	115	306	501	1,230	667	153	53	21
8	77	35	81	61	113	303	561	1,210	639	148	49	21
9	72	35	81	64	126	280	697	1,230	541	156	46	21
10	68	35	85	64	124	255	903	1,060	507	167	43	20
11	65	35	85	66	123	245	1,110	1,040	532	147	43	20
12	62	35	83	66	123	254	1,140	1,030	571	128	42	20
13	58	35	47	68	122	249	1,050	874	590	120	44	19
14	55	36	63	70	119	233	1,010	841	565	117	44	19
15	52	39	70	134	110	230	1,080	883	604	116	44	19
16	51	40	66	155	120	236	955	908	626	112	42	18
17	49	40	61	123	155	229	785	1,030	628	107	38	17
18	48	44	63	116	188	226	655	1,150	581	102	35	17
19	47	63	66	113	222	216	625	1,440	552	94	34	16
20	45	68	65	114	673	209	601	1,600	521	90	35	16
21	44	62	63	118	655	215	537	1,720	449	85	34	16
22	44	59	66	124	521	232	507	1,340	401	82	34	16
23	43	55	70	125	557	222	553	1,000	396	78	34	15
24	42	53	72	126	582	242	677	838	373	74	32	15
25	41	51	79	132	494	270	799	844	339	71	31	15
26	40	49	90	127	487	275	1,110	1,170	312	68	30	15
27	40	47	103	119	456	302	1,410	1,460	296	65	29	14
28	39	49	108	95	455	396	1,570	1,720	285	65	27	14
29	38	49	104	105	437	596	1,740	1,750	264	70	26	14
30	38	52	96	108	-----	783	1,800	1,530	224	79	24	13
31	37	-----	92	105	-----	816	-----	1,310	-----	90	23	-----
TOTAL	1,805	1,315	2,362	2,989	7,777	10,090	26,026	39,968	18,584	3,576	1,361	544
MEAN	58.2	43.8	76.2	96.4	268	325	868	1,289	619	115	43.9	18.1
MAX	91	68	108	155	673	816	1,800	1,780	1,400	192	92	23
MIN	37	35	47	61	103	209	499	838	224	65	23	13
AC-FT	3,580	2,610	4,680	5,930	15,430	20,010	51,620	79,280	36,860	7,090	2,700	1,080

CAL YR 1967 TOTAL 369,340

MEAN 1,012

MAX 6,140

MIN 35

AC-FT 732,600

WTR YR 1968 TOTAL 116,397

MEAN 318

MAX 1,800

MIN 13

AC-FT 230,900

Peak discharge (base, 2,900 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

11-2673. SOUTH FORK MERCED RIVER AT WAWONA, CALIF.

LOCATION.--Lat 37°32'20", long 119°39'40", in SW¼ sec.34, T.4 S., R.21 E., on left bank in Yosemite National Park, 1,000 ft downstream from highway bridge at Wawona, and 1,200 ft upstream from Big Creek.

DRAINAGE AREA.--100 sq mi.

RECORDS AVAILABLE.--October 1958 to September 1968 (discontinued).

GAGE.--Digital water-stage recorder. Altitude of gage is 4,030 ft (from topographic map). Prior to June 2, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--10 years, 174 cfs (126,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,050 cfs Apr. 28 (gage height, 4.57 ft); minimum daily, 1.6 cfs for several days in September.
1958-68: Maximum discharge, 9,030 cfs Dec. 23, 1964 (gage height, 9.83 ft in gage well, 10.5 ft outside, from floodmarks); minimum, 0.6 cfs Sept. 5, 1960.
Flood of Dec. 23, 1955, reached a stage of 12 ft from floodmarks (discharge, 15,000 cfs).

REMARKS.--Records good except those for periods of no gage-height record, which are fair. Diversion of 0.5 cfs above station for town of Wawona. Small amount diverted above station during summer for irrigation of Wawona Golf Course.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	6.4	25	27	41	172	328	540	228	15	3.4	1.9
2	11	5.9	22	24	38	140	225	550	223	13	3.3	1.8
3	12	5.9	25	24	42	138	180	500	205	12	3.3	1.8
4	14	5.9	26	23	43	142	184	510	168	11	3.3	1.9
5	15	5.9	70	22	45	138	209	500	148	10	3.1	1.7
6	13	6.2	50	22	43	120	172	400	112	9.5	3.0	1.7
7	12	6.3	35	21	42	110	175	360	110	9.0	2.7	1.7
8	11	6.3	36	24	42	118	214	350	120	10	2.5	1.6
9	10	6.3	31	28	57	103	256	360	100	11	2.5	1.6
10	9.4	6.3	29	33	50	94	350	290	90	17	2.5	1.6
11	8.8	6.3	28	28	45	92	430	300	90	13	2.4	1.6
12	8.2	6.3	27	26	43	95	440	280	90	9.7	1.9	1.6
13	8.0	6.4	22	25	43	95	400	250	86	8.3	1.9	1.6
14	8.0	8.5	18	72	44	89	370	240	77	7.7	2.0	1.7
15	7.6	9.2	24	80	39	84	400	289	80	6.9	2.0	1.7
16	7.3	8.3	25	70	46	90	350	333	75	6.6	2.0	1.6
17	7.3	7.8	22	60	94	92	300	359	71	6.4	2.1	1.6
18	7.3	13	25	50	90	84	250	399	61	5.9	2.1	1.6
19	7.0	36	26	46	90	81	230	468	57	5.5	2.1	1.6
20	6.6	27	25	44	307	80	220	487	52	5.2	2.3	1.6
21	6.6	24	24	45	237	84	210	444	43	5.0	2.6	1.7
22	6.6	20	27	44	179	90	190	332	39	4.8	2.5	1.9
23	6.6	18	30	45	203	84	220	248	37	4.4	2.5	1.6
24	6.6	17	34	45	203	93	250	221	32	4.1	2.5	1.6
25	6.6	16	36	47	175	105	300	255	29	3.8	2.4	1.6
26	6.6	16	38	45	171	108	400	346	26	3.8	2.2	1.6
27	6.6	17	39	38	170	128	540	386	23	3.8	2.1	1.6
28	6.6	17	37	36	180	185	570	375	21	3.5	2.0	1.6
29	6.6	19	36	36	173	287	600	331	18	3.4	2.0	1.7
30	6.6	28	34	38	-----	337	560	272	17	3.4	1.9	1.6
31	6.6	-----	31	48	-----	322	-----	233	-----	3.4	2.0	-----
TOTAL	268.1	382.2	957	1,216	2,975	3,980	9,523	11,208	2,528	236.1	75.1	50.0
MEAN	8.65	12.7	30.9	39.2	103	128	317	362	84.3	7.62	2.42	1.67
MAX	15	36	70	80	307	337	600	550	228	17	3.4	1.9
MIN	6.6	5.9	18	21	38	80	172	221	17	3.4	1.9	1.6
AC-FT	532	758	1,900	2,410	5,900	7,890	18,890	22,230	5,010	468	149	99

CAL YR 1967 TOTAL 123,191.3 MEAN 338 MAX 2,210 MIN 5.9 AC-FT 244,300

WTR YR 1968 TOTAL 33,398.5 MEAN 91.3 MAX 600 MIN 1.6 AC-FT 66,240

Peak discharge (base, 1,200 cfs).--No peak above base.

Note.--No gage-height record Nov. 20 to Jan. 2, Apr. 10 to May 14.

SAN JOAQUIN RIVER BASIN

671

11-2680. SOUTH FORK MERCED RIVER NEAR EL PORTAL, CALIF.

LOCATION.--Lat 37°39'05", long 119°53'05", in NW¼NE¼ sec.29, T.3 S., R.19 E., on right bank 1,400 ft upstream from mouth, and 6.2 miles west of El Portal.

DRAINAGE AREA.--241 sq mi.

RECORDS AVAILABLE.--November 1950 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 1,400 ft (from topographic map). Prior to Dec. 9, 1963, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--17 years, 329 cfs (238,200 acre-ft per year); median of yearly mean discharges, 270 cfs (195,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,080 cfs Apr. 29 (gage height, 7.85 ft); minimum daily, 5.0 cfs Sept. 10, 11.

1950-68: Maximum discharge, 46,500 cfs Dec. 23, 1955 (gage height, 18.70 ft), from rating curve extended above 8,000 cfs on basis of slope-area measurement at gage height 17.63 ft; minimum, 2.2 cfs Aug. 26, 27, 1961.

REMARKS.--Records excellent. Big Creek ditch diverts up to 60 cfs at times into Fresno River basin. Diversion of 0.5 cfs at Wawona for domestic use and irrigation of golf course.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	29	63	72	102	302	507	714	267	30	8.4	6.2
2	40	28	57	69	105	267	390	749	257	27	8.4	6.2
3	40	28	63	66	122	251	319	672	248	26	8.0	5.9
4	46	28	63	58	120	251	315	679	209	26	7.7	5.6
5	47	27	190	59	118	245	340	679	185	23	7.7	5.6
6	45	28	122	60	117	225	312	502	154	21	7.4	5.9
7	43	29	89	59	113	209	299	465	141	20	7.1	5.6
8	41	29	92	58	109	248	315	445	170	19	6.8	5.3
9	38	29	77	60	139	231	362	465	141	21	6.8	5.3
10	36	28	71	74	170	200	465	382	122	23	6.5	5.0
11	34	28	70	95	134	190	582	399	118	27	6.2	5.0
12	32	27	69	77	120	190	594	382	117	24	6.2	5.3
13	32	27	58	72	113	195	524	326	113	20	6.5	5.3
14	32	27	39	70	122	193	496	308	102	18	7.1	5.3
15	32	33	59	180	117	190	546	340	102	18	8.4	5.6
16	31	35	62	231	115	195	455	390	97	18	8.8	5.6
17	30	33	54	149	270	225	390	395	92	17	8.4	5.9
18	30	33	61	118	308	217	326	417	83	16	8.0	5.9
19	29	77	63	105	234	203	305	485	77	15	8.8	5.6
20	29	107	61	99	594	195	295	496	71	15	9.2	5.3
21	29	69	55	97	558	195	276	518	65	14	10	5.3
22	29	55	62	102	417	198	260	399	59	13	11	5.6
23	30	49	69	104	378	188	282	308	54	12	11	6.5
24	30	45	78	102	395	190	340	273	52	12	11	7.1
25	30	44	89	100	340	206	404	276	48	11	9.6	7.1
26	29	43	97	99	326	211	558	354	43	10	8.4	6.5
27	29	43	97	99	308	225	728	399	40	9.6	8.0	5.9
28	29	43	95	81	315	270	735	417	37	8.4	7.7	5.9
29	29	43	92	87	305	358	805	382	34	8.0	7.4	5.6
30	29	71	83	93	-----	470	784	322	31	8.0	7.1	5.6
31	30	-----	77	109	-----	450	-----	276	-----	8.0	6.8	-----
TOTAL	1,051	1,215	2,377	2,904	6,684	7,383	13,309	13,614	3,329	538.0	250.4	172.5
MEAN	33.9	40.5	76.7	93.7	230	238	444	439	111	17.4	8.08	5.75
MAX	47	107	190	231	594	470	805	749	267	30	11	7.1
MIN	29	27	39	58	102	188	260	273	31	8.0	6.2	5.0
AC-FT	2,080	2,410	4,710	5,760	13,260	14,640	26,400	27,000	6,600	1,070	497	342

CAL YR 1967 TOTAL 219,503 MEAN 601 MAX 5,320 MIN 27 AC-FT 435,400
WTR YR 1968 TOTAL 52,826.9 MEAN 144 MAX 805 MIN 5.0 AC-FT 104,800

Peak discharge (base, 2,000 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

11-2682. MERCED RIVER NEAR BRICEBURG, CALIF.

LOCATION.--Lat 37°38'06", long 119°56'00", in NW¼NE¼ sec.36, T.3 S., R.18 E., on left bank 150 ft upstream from Feliciana Creek, and 2.8 miles northeast of Briceburg.

DRAINAGE AREA.--691 sq mi.

RECORDS AVAILABLE.--September 1965 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 1,194.98 ft above mean sea level.

EXTREMES.--Maximum discharge during year, 3,280 cfs Apr. 30 (gage height, 7.69 ft); minimum daily, 27 cfs Sept. 30.

1965-68: Maximum discharge, 21,500 cfs Dec. 6, 1966 (gage height, 17.79 ft); minimum daily, 27 cfs Sept. 30, 1968.

REMARKS.--Records good. No regulation. Small diversions above station (see REMARKS for sta. no. 11-2680.).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	150	79	170	198	245	845	1,530	2,720	1,640	250	103	39
2	146	76	141	188	265	750	1,210	2,730	1,670	225	102	35
3	145	76	152	174	270	708	971	2,580	1,740	212	96	33
4	152	75	160	160	275	708	950	2,500	1,510	204	86	33
5	152	74	299	160	280	708	999	2,490	1,310	196	79	33
6	148	74	260	160	270	648	929	2,010	1,070	182	74	32
7	141	75	210	154	265	590	887	1,850	852	184	69	32
8	134	75	220	150	260	636	950	1,800	880	182	65	32
9	127	75	196	156	300	595	1,130	1,830	738	186	61	32
10	121	74	190	178	295	525	1,450	1,610	666	198	58	30
11	116	74	190	210	295	495	1,820	1,560	666	200	56	30
12	111	73	188	180	290	500	1,900	1,530	696	176	55	30
13	108	73	160	176	290	515	1,710	1,350	720	160	55	29
14	105	74	108	174	299	490	1,640	1,230	696	152	58	29
15	102	78	150	314	287	490	1,780	1,360	708	148	60	29
16	96	82	160	466	278	500	1,600	1,430	738	143	60	29
17	90	82	145	344	520	545	1,340	1,520	738	139	59	29
18	96	81	158	290	642	540	1,120	1,650	708	132	55	29
19	90	162	168	266	545	505	1,060	1,980	648	124	53	29
20	89	215	162	258	1,400	480	1,020	2,170	620	116	53	29
21	86	170	150	258	1,480	480	929	2,410	565	110	54	29
22	86	145	154	266	1,180	495	873	1,920	495	103	56	28
23	86	132	170	269	1,080	480	936	1,460	466	99	55	29
24	86	124	186	272	1,170	490	1,120	1,220	453	93	54	29
25	85	119	200	272	1,030	530	1,310	1,190	411	89	51	30
26	84	116	215	272	971	555	1,760	1,540	379	85	49	29
27	84	113	230	275	915	585	2,260	1,880	352	81	48	29
28	82	114	238	238	915	696	2,420	2,180	334	78	45	28
29	81	116	235	250	894	964	2,720	2,220	320	79	44	28
30	80	166	222	255	-----	1,330	2,790	1,980	290	82	43	27
31	80	-----	204	250	-----	1,380	-----	1,690	-----	90	41	-----
TOTAL	3,339	3,062	5,791	7,233	17,206	19,758	43,114	57,590	23,079	4,498	1,897	909
MEAN	108	102	187	233	593	637	1,437	1,858	769	145	61.2	30.3
MAX	152	215	299	466	1,480	1,380	2,790	2,730	1,740	250	103	39
MIN	80	73	108	150	245	480	873	1,190	290	78	41	27
AC-FT	6,620	6,070	11,490	14,350	34,130	39,190	85,520	114,200	45,780	8,920	3,760	1,800
CAL YR 1967	TOTAL 676,298		MEAN 1,853		MAX 11,200		MIN 73		AC-FT 1,341,000			
WTR YR 1968	TOTAL 187,476		MEAN 512		MAX 2,790		MIN 27		AC-FT 371,900			

Peak discharge (base, 5,000 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

673

11-2693. MAXWELL CREEK AT COULTERVILLE, CALIF.

LOCATION.--Lat 37°42'58", long 120°11'20", in SE¼ sec.34, T.2 S., R.16 E., on Dogtown road bridge, 0.4 mile downstream from Cuneo Creek, and 0.5 mile northeast of Coulterville.

DRAINAGE AREA.--17.0 sq mi.

RECORDS AVAILABLE.--October 1959 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 1,740 ft (from topographic map).

AVERAGE DISCHARGE.--9 years, 6.55 cfs (4,740 acre-ft per year).

EXTREMES.--Maximum discharge during year, 347 cfs Mar. 8 (gage height, 4.75 ft); no flow for many days.
1959-68: Maximum discharge, 1,770 cfs Dec. 22, 1964 (gage height, 5.71 ft), from rating curve extended above 720 cfs; no flow for many days in each year.

REMARKS.--No diversion or storage above station.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

REVISIONS (water years).--1965 report: 1960(M), 1962(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.80	2.6	1.4	2.4	1.9	2.8	1.9	1.3			
2	.10	.70	1.9	1.3	1.8	1.9	2.6	1.9	1.4			
3	.20	.70	1.8	1.1	1.5	1.9	2.4	1.6	1.3			
4	.20	.70	1.9	1.0	1.4	2.1	2.1	1.6	1.1			
5	.20	.90	4.9	1.0	1.3	2.2	1.9	1.6	1.4			
6	.20	1.0	3.0	1.0	1.3	2.1	1.8	1.5	1.5			
7	.20	.90	4.1	.90	1.1	2.6	1.6	1.5	1.8			
8	.20	.80	3.2	.90	1.1	87	1.8	1.6	1.4			
9	.30	.90	2.4	.90	1.3	16	1.8	1.5	1.3			
10	.30	.90	2.2	1.9	1.4	7.8	1.8	1.5	1.0			
11	.30	.80	2.1	1.9	1.3	5.4	1.8	1.6	.80			
12	.30	.80	1.9	1.4	1.1	4.6	1.8	2.1	.80			
13	.30	.90	1.8	1.1	1.3	30	1.8	2.2	.50			
14	.40	1.1	1.8	1.1	1.3	18	1.6	3.0	.50			
15	.30	1.0	1.8	3.2	1.1	9.8	1.8	2.4	.50			
16	.40	.90	1.6	1.9	1.5	13	1.8	2.2	.40			
17	.40	.90	1.5	1.5	21	25	1.8	1.9	.40			
18	.40	1.1	2.2	1.3	8.9	15	1.6	1.9	.30			
19	.50	1.9	2.6	1.1	3.6	9.3	1.6	1.9	.30			
20	.50	1.8	2.1	1.1	30	6.4	1.8	1.8	.20			
21	.50	1.5	1.8	1.1	25	5.2	1.8	1.8	.20			
22	.50	1.4	1.8	1.0	8.9	4.1	1.8	1.9	.10			
23	.50	1.4	1.6	.90	4.6	3.6	1.8	1.8	.20			
24	.50	1.4	1.6	.90	3.2	3.4	1.8	1.8	.20			
25	.70	1.0	1.8	.90	2.8	3.0	1.8	1.8	.10			
26	.70	.90	1.6	.90	2.4	2.8	1.8	1.8	.10			
27	.70	.90	1.6	1.0	2.4	2.6	1.8	1.8	.10			
28	.80	1.0	1.5	1.1	2.2	2.6	1.8	1.6	0			
29	.70	1.3	1.5	1.0	2.1	2.6	1.8	1.5	0			
30	.70	4.1	1.3	1.4	-----	2.4	1.8	1.5	0			
31	.70	-----	1.3	4.6	-----	2.2	-----	1.5	-----			-----
TOTAL	12.80	34.40	64.8	41.80	139.3	296.5	56.0	56.0	19.20	0	0	0
MEAN	.41	1.15	2.09	1.35	4.80	9.56	1.87	1.81	.64	0	0	0
MAX	.80	4.1	4.9	4.6	30	87	2.8	3.0	1.8	0	0	0
MIN	.10	.70	1.3	.90	1.1	1.9	1.6	1.5	0	0	0	0
AC-FT	25	68	129	83	276	588	111	111	38	0	0	0
CAL YR 1967	TOTAL	5,642.30	MEAN	15.5	MAX	496	MIN	0	AC-FT	11,190		
WTR YR 1968	TOTAL	720.80	MEAN	1.97	MAX	87	MIN	0	AC-FT	1,430		

SAN JOAQUIN RIVER BASIN

11-2695. LAKE McCURE AT EXCHEQUER, CALIF.

LOCATION.--Lat 37°35'02", long 120°16'09", in NW¼SE¼ sec.13, T.4 S., R.15 E., on left end of New Exchequer Dam on Merced River, 0.9 mile east of Exchequer, and 5.5 miles northeast of Merced Falls.

DRAINAGE AREA.--1,037 sq mi.

RECORDS AVAILABLE.--April 1926 to September 1930 (daily gage heights; also summary of yearly contents in WSP 881), October 1930 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Merced Irrigation District). Prior to Oct. 1, 1964, indicator in powerhouse at same datum. Oct. 1, 1964, to July 31, 1966, staff gage at center of upstream face of dam at same datum.

EXTREMES.--Maximum contents during year, 714,900 acre-ft Oct. 1 (elevation, 817.3 ft); minimum, 355,300 acre-ft Sept. 30 (elevation, 732.2 ft).

1926-68: Maximum contents, 991,600 acre-ft June 28, 30, July 1, 2, 1967 (elevation, 862.3 ft); practically no storage at times in 1926, 1930-31, 64-65 when reservoir was drained for inspection or construction.

REMARKS.--Reservoir is formed by a rockfill dam with a reinforced concrete face, completed in March 1967. Dam is downstream from and connected to the original concrete arch and gravity-type dam which was completed in April 1926. Usable capacity, 1,024,000 acre-ft between elevations 440.0 (invert entrance to outlet tunnel) and 867.0 ft (top of spillway gates). Dead storage, 300 acre-ft. Water is released through a series of powerplants down the Merced River to a diversion dam for Merced Irrigation District's main canal. Records including extremes represent total contents at 2400 hours.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

700	263,000	780	534,500
720	317,800	820	729,600
750	415,900	860	975,700

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	714.9	658.0	643.5	622.9	614.2	641.0	649.0	658.5	678.5	618.1	508.6	417.3
2	711.7	658.5	642.5	621.9	613.3	642.0	650.0	660.5	678.5	614.7	505.3	414.8
3	709.0	658.5	643.0	621.0	614.2	641.5	651.0	661.5	679.0	610.9	502.8	412.7
4	707.4	658.5	642.0	620.5	613.8	641.0	650.5	664.6	678.5	606.6	499.5	409.1
5	705.3	658.5	641.5	619.5	613.8	641.0	650.5	667.1	678.5	604.3	496.2	406.6
6	703.1	658.5	641.0	618.1	612.8	640.5	652.0	667.7	677.4	601.4	492.9	404.1
7	701.0	659.0	640.5	617.1	610.4	640.0	653.0	667.1	675.9	598.6	489.3	401.7
8	698.9	659.0	640.0	616.2	608.0	643.0	652.0	667.1	673.8	594.4	485.6	400.3
9	696.8	659.0	640.0	616.6	604.3	644.5	651.5	666.6	672.3	591.1	482.4	397.1
10	695.2	659.5	640.0	617.1	602.8	645.0	652.0	666.6	671.2	586.9	478.8	394.7
11	692.5	659.5	640.0	616.2	603.3	644.0	653.5	665.6	668.2	583.2	476.4	393.0
12	691.0	659.0	638.5	615.2	603.8	643.5	653.5	667.1	665.6	579.5	473.3	390.5
13	688.9	659.0	637.1	615.7	604.3	644.0	654.5	666.1	664.1	576.3	469.7	388.5
14	686.8	652.5	635.1	616.2	605.2	644.0	655.5	665.6	662.1	573.1	466.6	385.4
15	685.2	653.0	634.1	616.6	605.7	644.5	656.5	666.1	660.5	569.1	463.1	385.4
16	683.6	653.0	632.6	616.2	606.6	645.5	656.5	666.1	659.5	565.4	460.0	383.7
17	681.0	653.5	632.2	617.1	609.0	647.5	654.5	666.1	657.5	562.3	457.2	380.0
18	679.0	653.5	632.6	616.2	610.9	648.5	654.5	667.7	655.5	558.7	454.6	377.6
19	676.9	654.0	631.7	615.7	612.3	647.5	652.5	669.7	652.5	555.6	451.5	375.3
20	674.8	653.5	630.7	616.6	616.2	647.0	651.5	670.2	650.5	551.6	448.4	373.6
21	672.8	651.5	629.7	616.6	620.5	648.0	650.5	672.3	647.5	548.5	445.4	371.6
22	671.2	650.0	628.3	616.2	623.4	647.5	648.5	673.3	644.5	545.4	443.2	369.3
23	668.7	650.0	628.3	615.7	626.3	647.5	648.0	673.3	642.0	541.5	440.1	367.0
24	666.6	648.0	628.7	616.2	629.2	648.0	647.5	672.3	639.0	538.0	437.5	365.4
25	664.1	648.5	628.3	616.2	631.7	648.0	646.5	672.3	635.6	534.1	435.7	362.7
26	662.1	648.5	627.8	614.7	633.6	647.5	646.5	672.8	633.1	530.6	433.4	360.5
27	660.0	647.0	626.3	615.7	635.6	647.5	648.5	674.3	630.2	526.8	431.2	359.2
28	658.5	645.5	625.3	616.2	637.6	647.5	651.0	676.4	626.8	523.3	428.6	357.6
29	657.5	644.5	624.4	615.2	639.0	646.5	653.5	677.4	623.9	519.5	425.3	355.9
30	658.0	644.5	623.9	615.2	-----	647.0	656.5	677.9	621.0	515.7	422.0	355.3
31	658.0	-----	623.4	615.2	-----	647.0	-----	678.5	-----	511.9	419.5	-----
(a)	806.4	803.8	799.4	797.7	802.6	804.2	806.1	810.4	798.9	774.7	751.0	732.2
(b)	-60,200	-13,000	-21,600	-8,200	+23,800	+8,000	+9,500	+22,000	-57,500	-109,100	-92,400	-64,200
MAX	714,900	659,500	643,500	622,900	639,000	648,500	656,500	678,500	679,000	618,100	508,600	417,300
MIN	657,500	644,500	623,400	614,700	602,800	640,000	649,000	658,500	621,000	511,900	419,500	355,300
CAL YR 1967	b +233,500					MAX 991,600	MIN 390,500					
WTR YR 1968	b -362,900					MAX 714,300	MIN 355,300					

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11-2709. MERCED RIVER BELOW MERCED FALLS DAM, NEAR SNELLING, CALIF.

LOCATION.--Lat 37°31'15", long 120°19'55", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.4, T.5 S., R.15 E., on right bank 0.15 mile south of Merced Falls, 0.25 mile downstream from Merced Falls Dam, and 5.5 miles east of Snelling.

DRAINAGE AREA.--1,061 sq mi.

RECORDS AVAILABLE.--April 1901 to September 1968. Records for water years 1914-16 incomplete, yearly estimates published in WSP 1315-A. Published as "near Merced Falls" 1901-13; 1923-26, as "at Exchequer" 1916-64, and as "at Merced Falls" 1965. Records at present site are about equivalent when adjusted for diversion to North Side Canal and change in contents of Lake McClure.

GAGE.--Digital water-stage recorder. Datum of gage is 310.55 ft above mean sea level. Apr. 6, 1901, to Nov. 30, 1913, staff gage at site 2 miles upstream at different datum. Nov. 22, 1915, to Apr. 28, 1922, staff gage and Apr. 29 to Oct. 24, 1922, graphic water-stage recorder at site 8 miles upstream at different datum. Oct. 25, 1922, to Sept. 30, 1964, graphic water-stage recorder at site 7 miles upstream at different datum.

AVERAGE DISCHARGE.--67 years, 1,320 cfs (955,600 acre-ft per year), adjusted for diversion to North Side Canal and change in contents of Lake McClure since 1965.

EXTREMES.--Maximum discharge during year, 3,240 cfs Jan. 31 (gage height, 8.28 ft); minimum daily, 79 cfs Oct. 30.

1901-13, 1915-26 (prior to regulation by Lake McClure): Maximum discharge observed, 47,700 cfs Jan. 31, 1911 (gage height, 23.3 ft, site and datum then in use); no flow for part of Nov. 21, 1901.

1927-68: Maximum discharge, 46,200 cfs Dec. 4, 1950 (gage height, 22.6 ft from floodmarks, site and datum then in use), from rating curve extended above 13,000 cfs on basis of computation of peak flow over dam; minimum daily, 3.4 cfs Mar. 5, 1966.

REMARKS.--Records good. Merced Falls Dam diverts water to North Side Canal to irrigate 4,100 acres below station. Flow regulated by Exchequer powerplant and Lake McClure since 1926 (see sta. no. 11-2695.).

COOPERATION.--One discharge measurement furnished by Merced Irrigation District.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,340	99	590	600	548	106	1,160	1,670	1,580	1,770	1,700	1,250
2	1,290	139	574	599	774	87	856	1,660	1,550	1,820	1,650	1,290
3	1,250	142	564	576	796	370	858	1,620	1,570	1,830	1,630	1,280
4	1,220	132	588	587	805	603	850	1,630	1,570	1,810	1,630	1,280
5	1,180	135	586	585	482	605	825	1,640	1,580	1,820	1,630	1,280
6	1,160	288	585	486	607	743	824	1,720	1,600	1,820	1,630	1,220
7	1,150	427	585	581	1,410	763	944	1,740	1,580	1,820	1,630	1,210
8	1,120	474	584	767	1,500	618	1,010	1,740	1,590	1,830	1,640	1,220
9	1,120	481	584	581	1,500	601	1,120	1,730	1,620	1,830	1,640	1,140
10	1,120	316	592	342	1,300	611	1,340	1,660	1,670	1,830	1,630	1,070
11	1,120	214	577	581	443	606	1,400	1,640	1,690	1,860	1,650	1,040
12	1,120	207	586	354	100	623	1,420	1,640	1,690	1,870	1,600	1,050
13	1,110	205	596	83	109	608	1,440	1,550	1,670	1,870	1,590	1,020
14	1,120	203	603	92	110	606	1,490	1,490	1,670	1,830	1,520	1,010
15	1,120	187	583	345	100	595	1,610	1,420	1,670	1,830	1,490	1,020
16	1,100	180	580	408	100	573	1,720	1,390	1,660	1,820	1,440	1,030
17	1,040	174	582	409	100	508	1,650	1,380	1,680	1,810	1,420	1,000
18	1,100	174	588	420	101	508	1,620	1,380	1,700	1,820	1,410	1,000
19	1,100	172	589	341	99	508	1,600	1,360	1,750	1,820	1,390	1,010
20	1,110	250	592	95	102	510	1,590	1,370	1,740	1,850	1,360	1,030
21	1,100	567	583	99	107	565	1,620	1,370	1,750	1,870	1,350	1,020
22	1,100	591	590	310	99	603	1,530	1,350	1,780	1,860	1,330	1,010
23	1,100	581	587	408	96	605	1,450	1,370	1,790	1,840	1,330	994
24	1,090	568	584	406	95	605	1,440	1,370	1,790	1,830	1,330	981
25	1,090	568	593	405	94	666	1,490	1,380	1,830	1,860	1,330	968
26	1,080	580	584	343	99	767	1,480	1,400	1,850	1,820	1,300	944
27	1,080	576	596	84	102	864	1,470	1,400	1,850	1,820	1,300	951
28	1,090	583	588	102	102	896	1,490	1,450	1,810	1,820	1,310	949
29	377	583	580	457	110	1,030	1,560	1,480	1,790	1,830	1,290	952
30	79	377	589	428	-----	1,190	1,650	1,500	1,780	1,820	1,270	971
31	94	-----	570	638	-----	1,320	-----	1,540	-----	1,830	1,290	-----
TOTAL	32,270	10,173	18,152	12,512	11,990	19,863	40,507	47,040	50,850	56,760	45,710	32,190
MEAN	1,041	339	586	404	413	641	1,350	1,517	1,695	1,831	1,475	1,073
MAX	1,340	591	603	767	1,500	1,320	1,720	1,740	1,850	1,870	1,700	1,290
MIN	79	99	564	83	94	87	824	1,350	1,550	1,770	1,270	944
AC-FT	64,010	20,180	36,000	24,820	23,780	39,400	80,340	93,300	100,900	112,600	90,660	63,850
(a)	1,920	161	0	101	14	387	2,610	4,030	3,930	4,400	4,040	3,310
Mean b	93.2	123	234	272	827	777	1,554	1,941	795	128	37.4	49.7
Ac-ft b	5,730	7,340	14,400	16,720	47,590	47,790	92,450	119,300	47,330	7,900	2,300	2,960

CAL YR 1967 TOTAL 670,744 MEAN 1,838 MAX 9,160 MIN 16 AC-FT 1,330,000 MEAN b 2,189 AC-FT b 1,585,000
WTR YR 1968 TOTAL 378,017 MEAN 1,033 MAX 1,870 MIN 79 AC-FT 749,800 MEAN b 567 AC-FT b 411,800

a Diversion, in acre-feet, to North Side Canal, furnished by Merced Irrigation District.
b Adjusted for change in contents in Lake McClure and diversion to North Side Canal.

SAN JOAQUIN RIVER BASIN

11-2712.9. MERCED RIVER AT SHAFFER BRIDGE, NEAR CRESSEY, CALIF.

LOCATION.--Lat 37°27'16", long 120°36'28", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.36, T.5 S., R.12 E., near center of span on downstream side of county road bridge, 0.6 mile upstream from Dry Creek, and 4.0 miles northeast of Cressey.

DRAINAGE AREA.--1,117 sq mi.

RECORDS AVAILABLE.--October 1965 to September 1968 (low flow only).

GAGE.--Graphic water-stage recorder. Datum of gage is 116.79 ft above mean sea level.

REMARKS.--Records good. Most water released from Lake McClure (see sta. nos. 11-2695 and 11-2709) is diverted upstream into the Main Canal of Merced Irrigation District. Flow past station consists of releases from diversion dam, irrigation return flow, and tributary inflow. No records computed above 200 cfs.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	105	-	-	-	125	114	69	78	73	38	50
2	89	97	-	-	-	135	122	71	71	47	58	50
3	105	102	-	-	-	111	111	76	73	38	64	42
4	94	145	-	-	-	97	97	66	59	40	75	37
5	111	132	-	-	-	92	97	69	75	48	73	35
6	116	125	-	-	-	114	85	73	75	41	60	46
7	102	-	-	-	-	125	82	69	115	30	75	69
8	87	-	-	-	-	142	85	89	125	33	59	44
9	78	-	-	-	-	169	78	89	101	33	38	60
10	71	-	-	-	-	135	69	85	105	26	37	73
11	62	-	-	-	-	129	62	80	79	23	31	59
12	64	-	-	-	-	125	73	87	54	24	33	44
13	67	190	-	-	194	142	78	97	83	33	39	36
14	67	183	-	200	155	148	87	87	54	50	40	34
15	62	186	-	180	145	135	92	111	43	60	54	38
16	67	176	-	-	145	129	69	108	41	49	44	43
17	-	169	-	-	166	152	62	102	47	59	50	42
18	-	162	-	-	162	145	73	97	38	71	46	33
19	-	172	-	-	152	114	58	97	40	73	58	30
20	-	176	-	-	162	111	60	94	38	99	60	29
21	-	180	-	197	166	129	62	89	46	97	62	32
22	-	-	-	162	166	132	78	76	54	115	59	41
23	-	-	-	-	155	125	69	73	58	75	85	52
24	-	-	-	-	135	125	57	76	52	71	95	62
25	-	-	-	-	105	125	55	69	38	67	85	53
26	-	-	-	-	116	125	55	57	36	54	79	52
27	-	-	-	-	119	129	53	62	41	43	95	53
28	-	-	-	194	122	114	52	67	39	38	52	37
29	-	-	-	152	122	97	52	73	46	32	37	30
30	-	-	-	-	-----	92	55	71	54	39	52	38
31	138	-----	-	-	-----	100	-----	78	-----	41	56	-----
TOTAL	-	-	-	-	-	3,868	2,242	2,507	1,858	1,622	1,789	1,344
MEAN	-	-	-	-	-	125	74.7	80.9	61.9	52.3	57.7	44.8
MAX	-	-	-	-	-	169	122	111	125	115	95	73
MIN	-	-	-	-	-	92	52	57	36	23	31	29
AC-FT	-	-	-	-	-	7,670	4,450	4,970	3,690	3,220	3,550	2,670
(a)	40,590	5,280	2,640	0	0	32,630	73,740	83,090	91,310	92,030	76,240	56,710

a Diversion in acre-feet, to Main Canal near diversion dam, near Merced Falls; furnished by Merced Irrigation District.

SAN JOAQUIN RIVER BASIN

677

11-2713.2. DRY CREEK NEAR SNELLING, CALIF.

LOCATION.--Lat 37°33'17", long 120°27'48", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.30, T.4 S., R.14 E., on left bank 650 ft downstream from Fields Road, and 3.8 miles northwest of Snelling.

DRAINAGE AREA.--67.6 sq mi.

RECORDS AVAILABLE.--October 1966 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 230 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 1,080 cfs Mar. 16 (gage height, 8.34 ft); no flow for several months.
1966-68: Maximum discharge, 4,930 cfs Apr. 21, 1967 (gage height, 14.79 ft); no flow for several months each year.

REMARKS.--Records good. Small weir upstream from gage regulates storage for stock pond and irrigation pumping.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	.07	.54	.13	.18	1.0	.11	.01				
2	2.8	.06	.82	.11	.22	.82	.09	0				
3	1.2	.06	.82	.11	.22	.54	.06	0				
4	.22	.06	1.2	.13	.18	.54	.05	0				
5	.09	.05	1.2	.13	.15	.43	.04	0				
6	.07	.05	.67	.13	.13	.27	.03	0				
7	.05	.05	.67	.13	.11	.27	.03	0				
8	.05	.03	.54	.13	.09	68	.02	0				
9	.05	.03	.34	.13	.13	26	.02	0				
10	.05	.03	.43	.18	.13	9.9	.02	0				
11	.04	.03	.54	.18	.13	5.4	.01	0				
12	.05	.03	.27	.18	.13	3.5	.01	0				
13	.05	.03	.22	.18	.13	4.0	0	0				
14	.04	.03	.18	.18	.13	14	0	0				
15	.03	.03	.18	.43	.11	9.1	0	0				
16	.03	.02	.18	.34	.11	157	0	0				
17	.03	.02	.18	.27	43	88	0	0				
18	.03	.02	.22	.22	32	24	0	0				
19	.02	.03	.27	.18	9.3	12	0	0				
20	.02	.03	.27	.15	115	7.9	0	0				
21	.02	.03	.27	.13	97	4.5	0	0				
22	1.1	.11	.22	.11	31	3.2	0	0				
23	5.0	.27	.18	.09	13	2.5	0	0				
24	4.5	.27	.18	.09	7.6	1.9	0	0				
25	4.2	.27	.18	.09	4.8	1.4	.05	0				
26	3.0	.27	.18	.07	3.2	1.0	.13	0				
27	.82	.27	.15	.07	2.5	.67	.05	0				
28	.15	.27	.15	.06	1.9	.54	.03	0				
29	.18	.27	.13	.06	1.4	.43	.03	0				
30	.22	.43	.13	.07	-----	.34	.02	0				
31	.11	-----	.13	.13	-----	.18	-----	0	-----			-----
TOTAL	27.72	3.22	11.64	4.59	363.98	449.33	0.80	0.01	0	0	0	0
MEAN	.89	.11	.38	.15	12.6	14.5	.027	.0003	0	0	0	0
MAX	5.0	.43	1.2	.43	115	157	.13	.01	0	0	0	0
MIN	.02	.02	.13	.06	.09	.18	0	0	0	0	0	0
AC-FT	55	6.4	23	9.1	722	891	1.6	.02	0	0	0	0
CAL YR 1967	TOTAL	11,317.08	MEAN	31.0	MAX	1,290	MIN	0	AC-FT	22,450		
WTR YR 1968	TOTAL	861.29	MEAN	2.35	MAX	157	MIN	0	AC-FT	1,710		

PEAK DISCHARGE (BASE, 50 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
02-17	1730	5.38	137	03-08	1230	6.09	278
02-20	0730	6.37	356	03-16	2000	8.34	1,080
02-21	1200	6.03	262				

SAN JOAQUIN RIVER BASIN

11-2725. MERCED RIVER NEAR STEVINSON, CALIF.

LOCATION.--Lat 37°22'15", long 120°55'45", in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.36, T.6 S., R.9 E., on right bank 5 miles upstream from mouth, and 6 miles northwest of Stevinson.

DRAINAGE AREA.--1,273 sq mi.

RECORDS AVAILABLE.--October 1940 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is at mean sea level. October 1940 to Aug. 16, 1955, graphic water-stage recorder at datum 55.74 ft higher, Aug. 16, 1955, to Sept. 30, 1959, graphic water-stage recorder at datum 54.74 ft higher, and Oct. 1, 1959, to Apr. 16, 1965, graphic water-stage recorder at present datum.

AVERAGE DISCHARGE.--28 years, 664 cfs (480,700 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,360 cfs Feb. 10 (elevation, 61.25 ft); minimum daily, 70 cfs July 12.

1940-68: Maximum discharge, 13,600 cfs Dec. 5, 1950 (elevation, 73.79 ft, present datum); no flow July 19 to Aug. 21, 1961, result of temporary dam below station.

REMARKS.--Records good. Practically entire flow is diverted above station for irrigation of 120,000 acres; some return flow enters above station. Flow regulated by Lake McClure (see sta. no. 11-2695.).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	297	331	375	588	532	213	208	147	130	128	96	129
2	304	285	333	591	522	217	255	143	120	116	103	144
3	287	255	373	607	636	215	255	153	125	117	115	148
4	287	241	372	604	699	204	232	161	120	124	122	156
5	297	253	362	607	726	200	218	157	125	134	134	149
6	316	245	370	606	648	188	185	176	120	105	127	153
7	319	241	390	586	505	195	174	164	120	116	117	150
8	337	270	406	564	948	230	184	165	125	130	111	170
9	308	352	473	660	1,280	264	172	179	130	104	130	166
10	307	402	520	692	1,340	268	170	177	135	103	123	165
11	314	408	532	615	1,270	259	157	185	135	92	133	173
12	299	339	529	500	768	244	151	188	130	70	129	164
13	274	295	531	542	500	241	132	199	130	84	119	164
14	257	278	543	435	364	254	141	186	125	101	113	167
15	288	255	562	349	304	263	168	200	123	105	127	147
16	286	260	554	320	282	269	158	210	128	96	122	141
17	258	255	551	396	277	273	141	205	134	90	137	135
18	346	251	549	438	278	330	116	195	107	96	133	134
19	635	249	559	452	277	279	143	180	106	105	155	146
20	893	251	557	455	295	253	148	180	97	126	155	142
21	939	243	554	394	293	244	156	180	108	124	153	153
22	961	243	551	320	335	236	163	175	106	145	155	155
23	972	310	549	290	335	231	157	165	99	125	160	160
24	981	343	557	351	295	233	157	160	118	110	153	176
25	879	345	549	410	264	236	166	150	105	107	158	158
26	831	353	553	412	232	207	176	150	89	106	173	154
27	832	358	560	430	215	196	158	155	92	96	153	140
28	828	358	552	388	209	206	148	150	81	103	139	138
29	830	366	559	311	206	208	149	140	90	114	133	155
30	754	374	555	283	-----	197	148	130	108	109	127	154
31	440	-----	561	396	-----	195	-----	130	-----	109	121	-----
TOTAL	16,156	9,009	15,541	14,592	14,835	7,248	5,086	5,235	3,461	3,390	4,126	4,586
MEAN	521	300	501	471	512	234	170	169	115	109	133	153
MAX	981	408	562	692	1,340	330	255	210	135	145	173	176
MIN	257	241	333	283	206	188	116	130	81	70	96	129
AC-FT	32,040	17,870	30,830	28,940	29,420	14,380	10,090	10,380	6,860	6,720	8,180	9,100
CAL YR 1967	TOTAL 393,835		MEAN 1,079		MAX 6,480		MIN 91		AC-FT 781,200			
WTR YR 1968	TOTAL 103,265		MEAN 282		MAX 1,340		MIN 70		AC-FT 204,800			

11-2730. MERCED RIVER SLOUGH NEAR NEWMAN, CALIF.

LOCATION.--Lat 37°21'36", long 121°57'37", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.3, T.7 S., R.9 W., on left bank 0.1 mile downstream from bridge, 0.2 mile downstream from head of slough between Merced and San Joaquin Rivers, and 5 miles northeast of Newman.

RECORDS AVAILABLE.--October 1941 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level. Prior to July 31, 1948, at datum 56.44 ft higher and Aug. 1 1948, to Sept. 30, 1959, at datum 54.36 ft higher.

AVERAGE DISCHARGE.--27 years, 56.6 cfs (40,980 acre-ft per year).

EXTREMES.--No flow during year.

1941-68: Maximum daily discharge, 7,770 cfs Apr. 6, 1958; no flow for several months in each year.

REMARKS.--No flow since Sept. 14, 1967. Sloughs flow from Merced River to San Joaquin River, bypassing the gaging station on San Joaquin River near Newman. Flow at times consists of return flow from irrigated fields. Records include flow in South Slough.

SAN JOAQUIN RIVER BASIN

11-2740. SAN JOAQUIN RIVER NEAR NEWMAN, CALIF.

LOCATION.--Lat 37°21'02", long 120°58'34", in SW¼ sec.3, T.7 S., R.9 E., on left bank 300 ft downstream from bridge on Hills Ferry road, 500 ft downstream from Merced River, and 3.5 miles northeast of Newman.

DRAINAGE AREA.--9,520 sq mi (revised).

RECORDS AVAILABLE.--April 1912 to September 1968. Prior to Oct. 1, 1937, and subsequent to Oct. 1, 1943, flow that bypassed station at discharges above 9,000 cfs not included in records.

GAGE.--Digital water-stage recorder. Datum of gage is at mean sea level. Prior to Mar. 3, 1931, staff gage at various sites within 240 ft of bridge, and Mar. 3, 1931, to Sept. 30, 1959, graphic water-stage recorder within 300 ft of bridge at datum 47.31 ft higher. Oct. 1, 1959, to Aug. 9, 1960, graphic water-stage recorder at site 70 ft upstream at present datum. Aug. 10, 1960, to July 16, 1965, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--56 years, 2,023 cfs (1,465,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,680 cfs Feb. 10 (elevation, 52.41 ft); minimum daily, 167 cfs June 28.

1912-68: Maximum discharge (river only), 21,600 cfs Apr. 6, 1958 (elevation, 65.56 ft, present datum); river and Merced River Slough, 33,000 cfs Mar. 7, 1938 (elevation, 65.81 ft, present datum); minimum, 15 cfs Aug. 9, 10, 1924.

Flood of Jan. 2, 1868, reached a stage of 21.7 ft from floodmarks; flood of February 1886, reached a stage of 19.8 ft from floodmarks; and flood of 1911 reached a stage of 19 ft from floodmarks. All stages referred to datum in use from 1931 to 1959. Discharges unknown.

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, ground-water withdrawals, diversions for irrigation, and imported water; low flows consist mainly of return water from irrigated areas. Record for Merced River Slough (see sta. no. 11-2730.) shows flow bypassing station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	663	515	1,000	854	838	537	425	386	246	233	300	394
2	697	444	993	911	893	527	550	366	248	225	300	433
3	720	405	1,030	886	974	612	629	370	275	223	300	433
4	769	382	1,040	1,010	1,070	544	730	368	267	210	300	400
5	767	392	1,000	1,040	1,120	488	724	382	278	218	320	375
6	734	399	988	1,030	1,070	465	618	425	254	194	318	383
7	711	405	973	1,000	840	465	526	406	262	208	319	363
8	679	408	967	1,060	1,170	525	520	384	258	226	295	379
9	638	490	1,040	1,170	1,560	587	472	393	292	205	288	383
10	623	561	1,070	1,310	1,660	674	451	380	315	194	275	431
11	604	595	1,070	1,240	1,650	708	415	407	295	216	283	439
12	583	537	998	1,110	1,240	717	402	428	294	224	302	450
13	530	468	926	1,140	865	731	375	533	260	214	296	429
14	494	450	898	1,010	660	757	380	563	267	231	298	439
15	505	453	911	881	557	777	425	596	262	241	330	394
16	537	463	899	818	519	773	409	621	254	229	365	389
17	515	475	879	867	534	833	398	547	289	203	392	392
18	556	482	870	905	579	902	373	528	252	199	413	399
19	772	508	880	889	695	904	404	475	226	209	401	399
20	1,030	540	935	880	857	817	407	484	231	230	440	395
21	1,120	617	1,050	813	887	747	389	447	228	236	450	396
22	1,160	631	1,060	707	937	671	428	442	236	257	426	404
23	1,160	716	1,020	650	967	624	400	412	226	254	435	404
24	1,190	769	966	691	891	618	411	382	224	208	417	464
25	1,140	770	913	772	791	580	387	369	219	200	460	451
26	1,050	775	882	777	682	505	401	374	192	198	471	400
27	1,050	792	897	781	631	454	412	381	192	187	451	350
28	1,020	808	900	737	598	442	395	362	167	222	426	325
29	1,010	854	883	617	558	451	410	315	187	250	411	343
30	977	916	863	558	-----	420	387	279	195	290	402	322
31	669	-----	836	672	-----	408	-----	271	-----	320	364	-----
TOTAL	24,673	17,020	29,637	27,786	26,293	19,263	13,653	13,076	7,391	6,954	11,248	11,958
MEAN	796	567	956	896	907	621	455	422	246	224	363	399
MAX	1,190	916	1,070	1,310	1,660	904	730	621	315	320	471	464
MIN	494	382	836	558	519	408	373	271	167	187	275	322
AC-FT	48,940	33,760	58,780	55,110	52,150	38,210	27,080	25,940	14,660	13,790	22,310	23,720

CAL YR 1967 TOTAL 1,188,307 MEAN 3,256 MAX 15,400 MIN 382 AC-FT 2,357,000
WTR YR 1968 TOTAL 208,952 MEAN 571 MAX 1,660 MIN 167 AC-FT 414,500

11-2745. ORESTIMBA CREEK NEAR NEWMAN, CALIF.

LOCATION.--Lat 37°19'09", long 121°07'12", on line between secs.17 and 20, T.7 S., R.8 E., at left bank pier of county road bridge, 3 miles downstream from Oso Creek, and 5 miles west of Newman.

DRAINAGE AREA.--134 sq mi.

RECORDS AVAILABLE.--January 1932 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 188.86 ft above mean sea level, adjustment of 1929. Prior to Oct. 1, 1958, at site 120 ft downstream at datum 3.00 ft higher.

AVERAGE DISCHARGE.--36 years, 14.4 cfs (10,430 acre-ft per year); median of yearly mean discharges, 7.6 cfs (5,500 acre-ft per year).

EXTREMES.--No flow during year.

1932-68: Maximum discharge, 10,200 cfs Apr. 2, 1958 (gage height, 6.57 ft, site and datum then in use), from rating curve extended above 5,000 cfs; no flow for several months in each year.

REMARKS.--No flow since July 13, 1967. No storage or diversion except for minor stock ponds.

CAL YR 1967	TOTAL	9,962.9	MEAN	27.3	MAX	1,580	MIN	0	AC-FT	19,760
WTR YR 1968	TOTAL	0	MEAN	0	MAX	0	MIN	0	AC-FT	0

Peak discharge (base, 50 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

11-2746. DEL PUERTO CREEK TRIBUTARY NO. 1 NEAR PATTERSON, CALIF.

LOCATION.--Lat 37°24'15", long 121°26'10", in NE¼NW¼ sec.21, T.6 S., R.5 E., at culvert on county road, 300 ft upstream from Del Puerto Creek, and 17.5 miles southwest of Patterson.

DRAINAGE AREA.--0.71 sq mi.

RECORDS AVAILABLE.--Water years 1959-63 (annual maximum), October 1963 to September 1968.

GAGE.--Graphic water-stage recorder, crest-stage gage, and tipping-bucket rain gage. Altitude of gage is 1,760 ft (from topographic map). Oct. 2, 1958, to Oct. 22, 1963, crest-stage gage at same site at datum 85.20 ft lower.

EXTREMES.--Maximum discharge during year, 2.1 cfs Jan. 30 (gage height, 7.51 ft); no flow for most of year. 1958-68: Maximum discharge, 20 cfs Feb. 1, 1963 (gage height, 8.53 ft, present datum), from rating curve extended above 7 cfs on basis of computations of flow through culvert at gage heights 8.36, 8.50, 8.85, and 9.40 ft; no flow for most of each year.

REMARKS.--Records fair. No regulation or diversion above station. Monthly precipitation, in inches, is as follows: November, 1.2; December, 1.9; January, 3.4; February, 1.0; March, 1.9; April, 0.5; August, 0.5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

		Jan. 30.....	0.52			
		31.....	.17			
Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet	
January 1968.....	0.69	0.52	0	0.022	1.4	
Calendar year 1967.....	41.10	4.6	0	.11	82	
Water year 1967-68.....	.69	.52	0	.002	1.4	

Note.--Flow occurred only on days listed above.

SAN JOAQUIN RIVER BASIN

683

11-2746.3. DEL PUERTO CREEK NEAR PATTERSON, CALIF.

LOCATION.--Lat 37°29'15", long 121°12'25", in SE¼NW¼ sec.21, T.5 S., R.7 E., on left bank 1.0 mile upstream from Delta-Mendota Canal crossing, and 4.4 miles west of Patterson.

DRAINAGE AREA.--73.1 sq mi.

RECORDS AVAILABLE.--October 1958 to May 1965 (maximums only), June 1965 to September 1968.

GAGE.--Graphic water-stage recorder and concrete control. Altitude of gage is 200 ft (from topographic map). Prior to June 1965, crest-stage gage at site 1.0 mile downstream at different datum.

EXTREMES.--Maximum discharge during year, 75 cfs Jan. 31 (gage height, 2.48 ft); no flow for several months. 1958-68: Maximum discharge, 1,800 cfs Feb. 16, 1959 (gage height, 14.68 ft, site and datum then in use), from rating curve extended above 690 cfs; no flow for several months in each year.

REMARKS.--Records good except those for period of no gage-height record, which are fair. Some stock ponds and small diversions above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	.78	6.8	1.4	1.0	.08				
2			0	.94	4.9	1.4	1.6	.08				
3			0	.78	4.1	1.3	1.6	.08				
4			0	.78	3.1	1.3	1.3	.08				
5			0	.78	2.7	1.3	1.1	.08				
6			0	.78	2.2	1.1	.94	.06				
7			0	.78	2.0	1.4	.78	.06				
8			0	.78	1.8	4.3	.64	.06				
9			0	.78	2.0	3.6	.50	.06				
10			0	.94	1.8	2.4	.38	.06				
11			0	1.1	1.8	2.0	.38	.06				
12			0	.94	1.8	1.4	.28	.06				
13			0	1.1	1.8	1.8	.28	.06				
14			0	1.1	1.8	2.2	.28	.08				
15			0	1.1	1.6	2.2	.21	.08				
16			0	1.3	2.0	2.2	.17	.06				
17			0	1.3	3.1	2.4	.17	.04				
18			0	1.1	3.8	2.4	.14	.02				
19			.50	1.1	3.4	2.2	.14	.02				
20			1.3	1.1	2.9	2.0	.14	.04				
21			1.1	1.1	2.7	1.8	.11	.04				
22			.94	1.1	2.4	1.8	.11	.06				
23			.94	.94	2.2	1.8	.11	.04				
24			.94	.94	2.2	1.6	.11	.02				
25			.94	1.1	2.0	1.6	.11	.02				
26			.94	.94	1.8	1.6	.08	0				
27			.94	.94	1.8	1.4	.08	0				
28			.78	.78	1.6	1.3	.08	0				
29			.78	.64	1.6	1.1	.08	0				
30			.78	3.4	-----	.94	.11	0				
31		-----	.64	30	-----	.94	-----	0	-----			-----
TOTAL	0	0	11.52	61.24	73.7	56.18	13.01	1.40	0	0	0	0
MEAN	0	0	.37	1.98	2.54	1.81	.43	.045	0	0	0	0
MAX	0	0	1.3	30	6.8	4.3	1.6	.08	0	0	0	0
MIN	0	0	0	.64	1.6	.94	.08	0	0	0	0	0
AC-FT	0	0	23	121	146	111	26	2.8	0	0	0	0

CAL YR 1967 TOTAL 2,819.32 MEAN 7.72 MAX 247 MIN 0 AC-FT 5,590
WTR YR 1968 TOTAL 217.05 MEAN .59 MAX 30 MIN 0 AC-FT 431

Peak discharge (base, 50 cfs).--Jan. 31 (0100 hrs) 75 cfs (2.48 ft).

Note.--No gage-height record Nov. 14 to Dec. 20.

SAN JOAQUIN RIVER BASIN

11-2747.1. MACLURE CREEK BELOW MACLURE GLACIER, NEAR TUOLUMNE MEADOWS, CALIF.
(International hydrological decade station)

LOCATION.--Lat 37°45'09", long 119°16'52", in T.2 S., R.24 E., in middle of stream 650 ft above large unnamed lake, 2.3 miles upstream from mouth, and 9.3 miles south of Tuolumne Meadows, Yosemite National Park.

DRAINAGE AREA.--0.37 sq mi.

RECORDS AVAILABLE.--May 1967 to September 1968 (no winter records).

GAGE.--Graphic water-stage recorder and artificial control. Altitude of gage is 11,520 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 6.9 cfs June 27 (gage height, 1.73 ft); minimum daily discharge recorded, 0.01 cfs Oct. 31.

1967-68: Maximum discharge, 28 cfs July 28, 1967 (gage height, 2.64 ft); possibility of no flow during winter months each year.

REMARKS.--Records fair. No storage or diversion above station. This station measures the outflow from Maclure Glacier in Yosemite National Park.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6							-	2.7	3.1	3.2	2.2
2	1.4							-	3.3	3.4	4.0	2.2
3	1.2							-	3.5	3.2	4.3	2.2
4	.98							-	2.9	3.7	3.8	2.4
5	.82							-	1.5	3.9	3.4	2.5
6	.71							-	.70	3.7	3.4	2.5
7	.57							-	.60	3.8	3.4	2.6
8	.48							-	.60	4.2	3.4	2.7
9	.40							-	.64	4.3	3.4	2.8
10	.32							-	.70	3.6	3.2	2.6
11	.30							-	.83	3.7	3.1	2.4
12	.30							-	1.2	4.4	3.1	2.2
13	.30							-	1.7	4.4	2.6	1.8
14	.30							-	2.4	4.5	1.7	1.6
15	.29							-	3.3	4.8	1.4	1.4
16	.26							-	3.6	4.8	1.4	1.4
17	.24							-	3.8	4.5	1.4	1.5
18	.21							-	4.2	4.7	1.4	1.6
19	.19							-	4.5	4.8	1.3	1.5
20	.17							-	4.2	4.7	1.1	1.2
21	.16							-	3.8	4.7	.96	.99
22	.14							-	4.2	4.6	.87	.87
23	.12							-	4.7	4.6	.76	.76
24	.10							.09	4.1	4.5	.70	.70
25	.09							.08	4.1	4.6	.70	.70
26	.07							.28	4.4	4.6	.70	.68
27	.05							.66	5.1	4.6	.74	.70
28	.03							1.3	4.8	5.6	.96	.72
29	.02							2.2	3.6	5.6	1.6	.72
30	.02							2.0	3.0	4.6	2.2	.66
31	.01	-----			-----		-----	2.1	-----	3.5	2.2	-----
TOTAL	11.85							-	88.67	133.7	66.39	48.80
MEAN	.38							-	2.96	4.31	2.14	1.63
MAX	1.6							-	5.1	5.6	4.3	2.8
MIN	.01							-	.60	3.1	.70	.66
AC-FT	.24							-	176	265	132	97

CAL YR 1967	TOTAL	-	MEAN	-	MAX	-	MIN	-	AC-FT	-
WTR YR 1968	TOTAL	-	MEAN	-	MAX	-	MIN	-	AC-FT	-

Peak discharge (base, 10 cfs).--No peak above base.

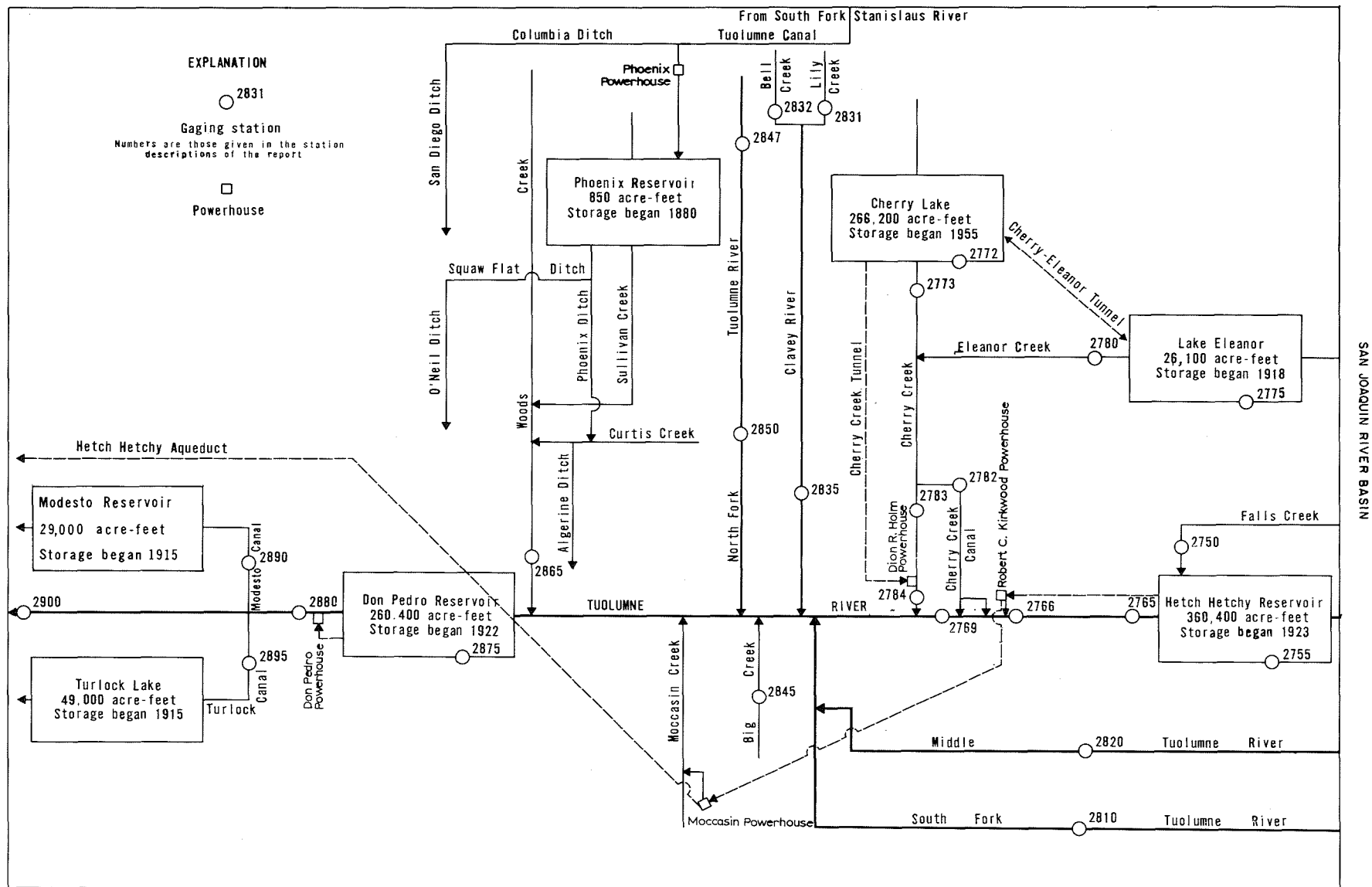


FIGURE 4.--Schematic diagram showing diversions and storage in Tuolumne River basin.

SAN JOAQUIN RIVER BASIN

11-2750. FALLS CREEK NEAR HETCH HETCHY, CALIF.

LOCATION.--Lat 37°58'15", long 119°45'45", in SE $\frac{1}{4}$ sec.3, T.1 N., R.20 E., on right bank in Yosemite National Park, 0.2 mile upstream from Wampana Falls, 0.6 mile upstream from mouth, and 2 miles northeast of Hetch Hetchy.

DRAINAGE AREA.--46.0 sq mi.

RECORDS AVAILABLE.--October 1915 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Prior to Oct. 1, 1918, published as "near Sequoia."

GAGE.--Graphic water-stage recorder. Altitude of gage is 5,350 ft (from topographic map).

AVERAGE DISCHARGE.--53 years, 141 cfs (102,100 acre-ft per year).

EXTREMES.--Maximum discharge during year, 755 cfs May 29 (gage height, 5.37 ft); minimum daily, 0.02 cfs Sept. 30.

1915-68: Maximum discharge, 6,660 cfs Nov. 19, 1950, Dec. 23, 1955 (gage height, 9.0 ft, from floodmarks), from rating curve extended above 2,500 cfs on basis of velocity-area studies; no flow at times in many summers.

REMARKS.--Records good. No regulation or diversion above station. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and eight discharge measurements furnished by city and county of San Francisco.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	1.1	19	27	44	136	275	493	437	39	6.1	5.3
2	5.5	1.1	21	25	52	120	220	520	479	35	7.1	5.0
3	6.1	1.1	23	24	59	115	151	532	524	32	6.9	4.2
4	8.5	1.1	24	22	56	113	134	496	462	29	6.1	3.7
5	12	1.0	28	20	52	112	147	482	394	28	5.5	3.4
6	11	1.0	28	19	46	99	125	370	240	27	4.9	2.9
7	10	.92	28	18	44	91	120	318	170	25	4.2	2.6
8	8.5	.88	29	17	41	93	136	355	141	25	3.5	2.2
9	7.3	.84	30	15	51	96	172	391	129	30	3.2	1.9
10	6.5	.84	29	18	50	83	238	302	155	32	2.6	1.6
11	5.7	.79	29	19	46	74	308	312	208	28	2.3	1.4
12	5.0	.75	25	14	44	72	325	308	245	23	2.2	1.2
13	4.5	.75	24	20	42	70	290	235	235	19	3.3	.97
14	4.1	.84	22	23	38	75	290	202	208	18	3.8	.84
15	3.7	.97	20	126	34	73	318	212	228	17	4.5	.70
16	3.3	1.1	17	79	41	73	258	230	232	15	4.7	.64
17	3.1	2.1	14	53	119	72	190	280	235	14	4.1	.55
18	2.8	7.2	18	43	108	78	140	355	202	12	3.3	.47
19	2.7	26	20	40	137	73	129	476	195	11	3.4	.36
20	2.5	19	18	43	479	73	127	548	188	9.8	31	.30
21	2.3	15	20	46	379	76	115	620	136	9.0	45	.24
22	2.3	12	21	47	248	80	104	421	120	8.2	30	.19
23	2.2	10	25	47	248	78	120	262	118	7.5	23	.16
24	2.1	9.8	30	46	240	86	151	192	115	6.9	18	.12
25	1.9	9.5	38	46	200	96	190	222	102	6.3	14	.10
26	1.8	9.2	44	43	182	93	285	355	84	5.9	11	.08
27	1.7	9.0	46	43	165	93	346	465	76	5.5	9.2	.06
28	1.6	9.8	44	43	155	117	370	580	68	5.3	8.0	.05
29	1.5	10	37	40	143	170	440	635	56	5.2	6.9	.04
30	1.4	17	33	38	-----	225	504	536	46	5.2	5.9	.02
31	1.3	-----	28	42	-----	225	-----	437	-----	5.3	5.0	-----
TOTAL	138.6	180.68	832	1,146	3,543	3,130	6,718	12,142	6,228	539.1	288.7	41.29
MEAN	4.47	6.02	26.8	37.0	122	101	224	392	208	17.4	9.31	1.38
MAX	12	26	46	126	479	225	504	635	524	39	45	5.3
MIN	1.3	.75	14	14	34	70	104	192	46	5.2	2.2	.02
AC-FT	275	358	1,650	2,270	7,030	6,210	13,320	24,080	12,350	1,070	573	82

CAL YR 1967 TOTAL 76,145.38 MEAN 209 MAX 1,370 MIN .75 AC-FT 151,000
WTR YR 1968 TOTAL 34,927.37 MEAN 95.4 MAX 635 MIN .02 AC-FT 69,280

Peak discharge (base, 900 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

687

11-2755. HETCH HETCHY RESERVOIR AT HETCH HETCHY, CALIF.

LOCATION.--Lat 37°56'55", long 119°47'10", in NW¼ sec.16, T.1 N., R.20 E., near center of O'Shaughnessy Dam on Tuolumne River at Hetch Hetchy in Yosemite National Park, 1.5 miles downstream from Falls Creek.

DRAINAGE AREA.--455 sq mi.

RECORDS AVAILABLE.--May 1923 to September 1968. Prior to October 1930 month-end contents, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by city and county of San Francisco). Prior to Oct. 1, 1927, staff gage at same site and datum.

EXTREMES.--Maximum contents during year, 307,000 acre-ft Oct. 1 (elevation, 3,778.2 ft); minimum, 100,700 acre-ft Mar. 28 (elevation, 3,643.3 ft).

1923-68: Maximum contents, 369,100 acre-ft Dec. 3, 1950 (elevation, 3,810.4 ft); no contents at times in 1929-31.

REMARKS.--Reservoir is formed by concrete gravity-type dam, completed to crest elevation 3,726.5 ft in 1923 and raised to 3,812.0 ft in 1937; storage began Apr. 6, 1923. Ten-foot drum gates were installed on spillway in 1949. Usable capacity, 360,400 acre-ft between elevations, 3,512.0 (somewhat above bottom outlet) and 3,806.0 ft (top of drum-type spillway gates) above mean sea level. Water is diverted from reservoir through tunnel to Robert C. Kirkwood powerplant 15 miles downstream where flow is diverted from powerplant tailrace in a closed conduit through Hetch Hetchy aqueduct to Moccasin Creek powerplant with flow in excess of aqueduct capacity being spilled to river. At Moccasin Creek diversion dam, water re-enters Hetch Hetchy aqueduct and flows into Crystal Springs Reservoir, which supplies city of San Francisco. Surplus water is spilled into Don Pedro Reservoir at Red Mountain Bar. Flow down river is for State Department of Fish and Game and Raker Act requirements. Hetch Hetchy Reservoir is main storage unit of Hetch Hetchy water-supply system for San Francisco. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record furnished by city and county of San Francisco.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

3,512	0	3,540	8,700	3,640	97,000	3,740	238,900
3,513	51	3,560	22,900	3,660	119,900	3,760	273,700
3,515	154	3,580	39,500	3,680	146,200	3,780	310,400
3,520	410	3,600	57,400	3,700	175,000	3,800	348,600
3,530	3,300	3,620	76,500	3,720	206,000	3,810.4	369,100

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	305.7	258.4	213.7	171.3	127.8	117.1	103.5	135.8	251.8	292.8	257.3	212.1
2	304.2	256.8	211.9	169.5	126.7	116.7	104.1	140.8	257.3	291.8	255.9	210.6
3	302.7	255.2	210.5	167.6	125.7	116.3	104.2	145.4	263.1	290.9	254.7	209.2
4	301.1	253.5	209.2	166.1	124.6	116.0	104.3	149.8	267.8	290.0	253.1	207.9
5	299.6	251.2	208.4	164.5	123.5	115.7	104.3	154.1	271.2	289.1	251.8	206.5
6	298.3	249.5	207.0	162.7	122.5	115.3	104.3	157.1	273.0	287.8	250.4	205.1
7	296.8	248.3	205.8	161.1	122.1	114.8	104.1	159.8	274.4	286.9	249.0	203.6
8	295.2	246.6	204.6	159.2	120.3	114.3	104.1	162.9	275.3	286.0	247.4	202.4
9	293.7	245.0	203.2	157.8	119.4	113.5	104.4	165.8	275.8	285.3	246.1	200.9
10	292.4	243.7	201.7	156.1	118.5	112.8	105.4	168.3	276.9	284.5	244.0	199.5
11	290.7	242.3	200.5	154.7	117.6	111.8	107.1	170.9	278.6	283.6	242.1	198.1
12	289.3	240.9	198.6	153.0	116.6	111.1	108.9	173.1	280.5	282.3	240.8	196.5
13	288.0	239.4	196.8	151.5	115.6	110.5	110.3	174.7	282.2	281.3	239.2	195.3
14	286.4	237.9	195.3	150.1	114.6	110.0	111.9	176.1	284.0	280.4	237.5	193.7
15	284.9	236.2	193.7	149.4	113.5	109.1	113.7	177.4	285.8	279.1	236.0	192.4
16	283.1	234.8	192.3	148.4	112.5	108.6	114.8	179.3	288.0	277.8	234.3	191.1
17	281.8	233.3	191.0	147.2	111.9	107.9	114.8	181.5	289.8	276.6	233.2	189.7
18	280.5	232.0	189.4	145.7	111.4	107.2	115.0	184.7	291.3	275.5	232.2	188.2
19	278.9	231.0	187.8	144.4	110.9	106.6	115.2	189.7	292.8	274.1	230.8	187.0
20	277.5	229.7	186.2	143.2	113.8	105.6	115.2	196.0	293.7	272.8	229.2	185.6
21	275.8	228.2	184.9	142.2	115.0	105.0	115.1	202.2	294.2	271.6	228.0	184.3
22	274.2	226.8	183.7	140.7	115.6	104.3	114.8	205.8	294.6	270.1	226.3	182.8
23	272.8	225.3	182.3	139.4	116.4	103.6	114.6	208.1	295.0	268.9	224.8	181.1
24	271.2	224.0	180.9	138.0	117.0	102.8	114.9	209.5	295.2	267.5	223.8	179.6
25	270.0	222.7	179.9	136.6	117.2	102.3	115.5	211.3	295.2	266.2	223.0	178.0
26	268.4	221.1	178.6	135.4	117.3	101.6	117.2	215.5	295.2	264.8	221.4	176.5
27	267.0	219.7	177.4	134.3	117.3	101.0	119.8	221.1	295.0	263.4	219.9	175.0
28	264.8	218.3	176.2	133.0	117.3	100.7	123.0	228.2	294.8	262.4	218.4	173.5
29	263.1	216.6	175.0	131.7	117.2	100.9	126.8	235.7	294.2	261.2	217.0	172.0
30	261.3	215.2	173.8	130.4	-----	101.6	131.3	241.4	293.7	259.8	215.5	170.6
31	259.8	-----	172.5	128.9	-----	102.4	-----	246.6	-----	258.5	213.7	-----
(a)	3,752.1	3,725.7	3,698.3	3,667.0	3,657.7	3,644.8	3,668.9	3,744.5	3,771.0	3,751.4	3,724.8	3,697.0
(b)	-47,200	-44,600	-42,700	-43,600	-11,700	-14,800	+28,900	+115,300	+47,100	-35,200	-44,800	-43,100
MAX	305.7	258.4	213.7	171.3	127.8	117.1	103.5	246.6	295.2	292.8	257.3	212.1
MIN	259.8	215.2	172.5	128.9	110.9	100.7	103.5	135.8	251.8	258.5	213.7	170.6

CAL YR 1967 b -46,400
WTR YR 1968 b -136,400

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

SAN JOAQUIN RIVER BASIN

11-2765. TUOLUMNE RIVER NEAR HETCH HETCHY, CALIF.

LOCATION.--Lat 37°56'15", long 119°47'50", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.17, T.1 N., R.20 E., in Yosemite National Park, on left bank 1 mile downstream from O'Shaughnessy Dam at Hetch Hetchy and 2.5 miles downstream from Falls Creek.

DRAINAGE AREA.--457 sq mi.

RECORDS AVAILABLE.--October 1910 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Published as "at Hetch Hetchy damsite, near Sequoia" 1910-14 and as "below Hetch Hetchy damsite, near Sequoia" 1915-18.

GAGE.--Graphic water-stage recorder. Altitude of gage is 3,430 ft (from topographic map). Prior to Jan. 1, 1915, at site 1 mile upstream, at damsite, at different datum.

AVERAGE DISCHARGE.--57 years (1910-67), 999 cfs (723,200 acre-ft per year), prior to diversion to Robert C. Kirkwood powerplant and Hetch Hetchy aqueduct.

EXTREMES.--Maximum discharge during year, 1,010 cfs Aug. 11 (gage height, 6.79 ft); minimum daily, 8.3 cfs Mar. 13.

1910-68: Maximum discharge, 12,900 cfs June 1, 1943 (gage height, 13.90 ft); minimum daily, 1.3 cfs Nov. 2, 3, 1923.

REMARKS.--Records excellent. Flow regulated by Hetch Hetchy Reservoir beginning in April 1923 (see sta. no. 11-2755). Flow diverted above station through tunnel to Robert C. Kirkwood powerplant and Hetch Hetchy aqueduct beginning April 26, 1967. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and 21 discharge measurements furnished by city and county of San Francisco.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	42	40	41	36	42	46	64	63	64	72	54
2	39	42	191	193	36	82	44	75	64	64	72	54
3	39	42	234	327	45	200	44	75	64	64	71	54
4	33	252	41	165	237	41	44	76	64	64	70	54
5	37	696	44	45	38	43	44	77	64	64	72	47
6	34	206	40	217	36	42	100	78	64	64	73	36
7	105	42	41	339	36	42	219	79	65	64	73	34
8	517	39	40	167	36	45	43	79	107	64	73	34
9	39	39	166	44	39	186	44	75	189	64	74	34
10	40	39	245	44	78	339	44	71	66	63	454	34
11	40	39	168	42	185	148	44	114	66	70	498	34
12	40	39	373	42	46	29	45	241	66	71	149	34
13	40	39	177	189	46	8.3	45	64	54	70	150	34
14	39	39	164	245	45	17	45	66	48	70	152	34
15	39	42	278	46	45	43	46	66	62	70	153	34
16	39	40	44	44	46	49	296	66	63	70	153	34
17	39	39	43	42	123	53	269	66	64	70	135	32
18	39	39	165	42	47	50	34	66	64	70	127	32
19	39	42	361	42	47	47	34	66	64	69	125	32
20	39	39	162	41	225	46	35	67	64	69	125	32
21	143	38	44	41	164	45	35	68	64	69	123	32
22	260	39	44	41	42	43	35	69	111	69	105	32
23	42	41	43	41	43	80	35	69	206	69	98	32
24	41	41	43	40	41	181	34	69	64	69	98	32
25	41	41	43	39	43	44	33	126	64	68	95	32
26	41	42	44	39	44	43	40	211	64	68	89	31
27	41	40	44	39	42	44	44	69	64	72	74	31
28	329	40	43	39	42	45	44	70	64	73	73	31
29	637	39	42	39	42	45	44	70	64	72	73	31
30	336	252	42	38	-----	45	44	66	64	74	73	31
31	42	-----	41	38	-----	45	-----	62	-----	74	66	-----
TOTAL	3,268	2,449	3,490	2,791	1,975	2,212.3	1,953	2,580	2,254	2,115	3,838	1,082
MEAN	105	81.6	113	90.0	68.1	71.4	65.1	83.2	75.1	68.2	124	36.1
MAX	637	696	373	339	237	339	296	241	206	74	498	54
MIN	33	38	40	38	36	8.3	33	62	48	63	66	31
AC-FT	6,480	4,860	6,920	5,540	3,920	4,390	3,870	5,120	4,470	4,200	7,610	2,150
CAL YR 1967	TOTAL 337,673		MEAN 925		MAX 6,140		MIN 32		AC-FT 669,800			
WTR YR 1968	TOTAL 30,007.3		MEAN 82.0		MAX 696		MIN 8.3		AC-FT 59,520			

11-2769. TUOLUMNE RIVER BELOW EARLY INTAKE, NEAR MATHER, CALIF.

LOCATION.--Lat 37°52'50", long 119°58'10", in SW $\frac{1}{4}$ sec.2, T.1 S., R.18 E., on left bank 0.6 mile upstream from Cherry Creek, 0.7 mile downstream from Robert C. Kirkwood powerplant and Hetch Hetchy aqueduct, and 6.3 miles west of Mather.

DRAINAGE AREA.--487 sq mi.

RECORDS AVAILABLE.--October 1966 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 2,200 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 1,180 cfs Apr. 17 (gage height, 5.30 ft); minimum daily, 24 cfs Aug. 18, 1960-68; Maximum discharge, 6,180 cfs July 5, 1967 (gage height, 8.43 ft); minimum daily, 13 cfs Nov. 18, 19, 25-27, 1966, Feb. 1, 1967.

REMARKS.--Records good. Flow regulated by Hetch Hetchy Reservoir (see sta. no. 11-2755) and Robert C. Kirkwood powerplant beginning April 26, 1967. Water is diverted to Hetch Hetchy aqueduct from the tailrace of the powerplant through a closed conduit. Flow in excess of aqueduct capacity is diverted to river. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and seven discharge measurements furnished by city and county of San Francisco.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	79	127	96	102	81	96	69	58	61	77	79
2	91	71	76	183	100	59	102	100	63	55	76	67
3	84	73	229	367	103	113	99	93	71	56	70	66
4	97	60	114	299	138	54	91	79	72	50	70	66
5	90	372	104	192	127	43	90	82	71	56	76	67
6	95	389	104	133	98	43	83	92	71	49	82	60
7	84	100	108	249	93	46	176	92	71	33	81	50
8	216	91	98	395	92	68	106	91	67	41	82	48
9	124	81	77	196	96	89	87	83	130	61	83	48
10	96	86	184	186	116	150	84	75	83	61	174	48
11	118	65	131	180	134	280	84	77	71	61	203	47
12	103	66	139	178	115	91	83	157	65	67	280	54
13	97	77	321	106	99	72	78	82	70	67	39	54
14	87	75	105	240	97	61	78	72	54	61	43	50
15	59	82	228	256	106	67	83	70	50	68	45	48
16	98	88	140	197	106	92	55	69	61	66	46	47
17	106	84	73	188	207	127	544	70	69	67	65	49
18	98	73	98	192	185	137	100	62	70	66	24	69
19	97	84	214	191	131	124	87	61	70	69	150	53
20	68	90	310	108	258	116	77	65	69	56	196	55
21	58	81	114	110	380	110	77	65	71	33	194	55
22	201	91	91	187	155	106	86	65	67	37	185	54
23	111	83	96	188	146	96	64	59	135	63	164	66
24	73	88	82	189	154	138	61	56	77	66	52	64
25	71	68	88	191	116	118	56	49	63	69	25	64
26	71	72	108	186	131	100	56	129	61	68	113	64
27	71	92	111	113	127	98	53	69	61	62	133	64
28	91	92	107	109	124	96	36	54	60	38	86	58
29	332	92	107	185	120	96	72	55	56	36	82	57
30	416	252	96	188	-----	87	68	51	56	69	108	64
31	92	-----	79	197	-----	84	-----	50	-----	73	99	-----
TOTAL	3,547	3,197	4,059	5,975	3,956	3,042	2,912	2,343	2,113	1,785	3,203	1,735
MEAN	114	107	131	193	136	98.1	97.1	75.6	70.4	57.6	103	57.8
MAX	416	389	321	395	380	280	544	157	135	73	280	79
MIN	52	60	73	96	92	43	36	49	50	33	24	47
AC-FT	7,040	6,340	8,050	11,850	7,850	6,030	5,780	4,650	4,190	3,540	6,350	3,440
CAL YR 1967	TOTAL 308,027		MEAN 844		MAX 5,780		MIN 13		AC-FT 611,000			
WTR YR 1968	TOTAL 37,867		MEAN 103		MAX 544		MIN 24		AC-FT 75,110			

SAN JOAQUIN RIVER BASIN

11-2772. CHERRY LAKE NEAR HETCH HETCHY, CALIF.

LOCATION.--Lat 37°58'30", long 119°53'45", in NW¼ sec.5, T.1 N., R.19 E., on upstream face of Cherry Valley Dam on Cherry Creek, 4.2 miles upstream from Eleanor Creek, 7 miles north of Early Intake, and 7.3 miles northwest of Hetch Hetchy.

DRAINAGE AREA.--117 sq mi.

RECORDS AVAILABLE.--August 1956 to September 1968. Prior to October 1959, published as Lake Lloyd near Hetch Hetchy.

GAGE.--Staff gage read once daily. Datum of gage is at mean sea level (levels by city and county of San Francisco).

EXTREMES.--Maximum contents during year, 221,500 acre-ft June 4, 5 (elevation, 4,672.5 ft); minimum, 80,000 acre-ft Sept. 30 (elevation, 4,575.9 ft).

1956-68: Maximum contents, 269,300 acre-ft July 1-3, 1957 (elevation, 4,700.6 ft); minimum, 30 acre-ft Dec. 5, 1964 (elevation, 4,438.0 ft).

REMARKS.--Reservoir is formed by a rock-fill dam completed in 1956; storage began in December 1955. Usable capacity, 268,810 acre-ft between elevations 4,430 (bottom of sluice gates) and 4,700 ft (top of spillway gates) above mean sea level. Additional storage of 20 acre-ft is not available for release. Water is released down Cherry Creek for power development and domestic supply as part of Hetch Hetchy system of city and county of San Francisco. Unmeasured diversion from Lake Eleanor into Cherry Lake began Mar. 6, 1960. Diversion from Cherry Lake through tunnel to Cherry powerhouse near mouth of Cherry Creek began on Aug. 1, 1960. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record furnished by city and county of San Francisco.

CAPACITY TABLE (ELEVATION, IN FEET, AND USABLE CONTENTS, IN ACRE-FEET)

4,440	0	4,490	3,020	4,560	60,800	4,640	169,700
4,450	75	4,500	6,030	4,580	85,100	4,660	201,100
4,460	250	4,510	11,700	4,600	111,800	4,680	234,100
4,470	675	4,520	19,700	4,620	139,900	4,700	268,800
4,480	1,530	4,540	38,900				

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 0800 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	213.5	185.5	180.2	-	165.2	168.9	171.1	194.3	220.2	197.1	165.5	126.4
2	213.0	185.0	180.4	179.8	164.4	-	172.0	195.8	220.5	196.0	164.6	-
3	211.8	184.3	180.5	178.7	163.6	169.2	172.2	197.4	221.2	194.7	163.3	123.5
4	210.5	183.5	180.5	177.9	163.2	170.0	172.3	199.2	221.5	192.5	162.3	121.8
5	209.6	183.0	181.2	177.0	163.0	170.0	172.6	201.4	221.5	-	161.7	120.3
6	208.3	182.7	181.2	176.2	162.3	170.0	172.8	202.9	221.2	191.6	160.6	118.7
7	207.1	181.9	181.6	175.6	161.5	169.8	173.1	203.4	220.4	190.4	159.6	117.2
8	206.1	181.0	181.8	175.4	160.9	169.7	174.2	204.0	219.4	189.5	158.4	115.6
9	205.3	180.5	181.9	174.7	160.2	169.8	174.3	204.8	218.3	188.5	157.3	-
10	204.0	179.6	182.1	173.6	159.6	169.8	175.1	205.3	217.4	187.4	156.2	112.2
11	202.7	-	182.2	173.1	159.6	170.3	176.5	205.7	216.6	186.3	155.0	110.6
12	-	179.0	182.4	172.3	-	170.0	177.4	206.3	215.9	185.5	154.0	108.9
13	200.3	179.0	182.4	171.6	159.0	169.7	178.4	207.3	215.3	185.0	152.8	107.3
14	199.0	178.2	182.4	171.1	158.4	169.4	179.8	207.4	214.6	184.1	151.7	105.8
15	198.1	177.6	182.1	171.4	158.1	169.1	181.6	207.4	214.0	183.6	150.5	104.1
16	197.6	177.9	182.1	171.4	157.5	168.8	182.6	207.8	213.1	182.6	149.3	102.5
17	196.3	178.2	182.2	170.9	157.2	168.9	183.2	207.9	212.8	181.6	148.1	100.7
18	195.1	178.5	182.4	170.3	157.9	169.5	183.0	208.4	212.2	180.5	146.7	98.9
19	193.9	178.8	182.7	169.7	158.5	169.2	183.0	209.6	-	179.6	145.3	97.5
20	193.0	179.3	182.7	169.1	161.5	-	183.2	211.5	210.2	178.5	144.3	95.9
21	192.4	179.5	182.9	168.9	162.1	168.2	183.6	213.5	209.2	177.4	142.9	94.2
22	191.9	179.6	182.9	169.1	-	167.9	184.6	214.8	208.1	176.4	141.5	92.7
23	191.9	-	183.0	168.6	164.1	167.6	184.6	215.1	206.8	175.3	140.2	91.4
24	191.2	179.8	183.0	168.2	165.3	167.7	184.4	214.9	205.7	174.0	138.8	89.8
25	190.3	179.8	-	167.7	166.4	168.2	184.9	214.8	204.4	172.8	137.2	88.0
26	186.6	179.8	-	165.8	167.4	167.9	185.7	215.4	202.9	172.0	135.6	86.6
27	189.0	179.8	182.6	165.3	167.7	167.6	186.9	217.0	201.6	170.9	134.2	84.9
28	188.2	179.9	183.0	165.0	168.2	167.6	-	217.9	200.1	169.7	132.5	83.3
29	187.7	179.9	181.2	165.3	168.5	167.7	190.6	219.0	199.0	168.6	131.0	81.7
30	187.1	180.1	180.4	166.2	-----	168.3	192.5	219.7	197.9	167.6	129.5	80.0
31	186.3	-----	179.8	165.5	-----	169.4	-----	220.0	-----	166.5	128.0	-----
(a)	4,650.7	4,646.7	4,646.5	4,637.2	4,639.2	4,639.8	4,654.6	4,671.6	4,658.0	4,637.9	4,611.6	4,575.9
(b)	-28,100	-6,200	-300	-14,300	+3,000	+900	+25,800	+27,500	-22,100	-31,400	-38,500	-48,000
MAX	213.5	185.5	183.0	179.8	168.5	170.3	192.6	220.0	221.5	197.1	165.5	126.4
MIN	186.3	177.6	179.8	165.0	157.2	167.6	171.1	194.3	197.9	166.5	128.0	80.0

CAL YR 1967

b +59,900

WTR YR 1968

b -134,400

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

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11-2773. CHERRY CREEK BELOW CHERRY VALLEY DAM, NEAR HETCH HETCHY, CALIF.

LOCATION.--Lat 37°58'04", long 119°54'59", in SW $\frac{1}{4}$ sec.5, T.1 N., R.19 E, on right bank 0.7 mile downstream from Cherry Valley Dam, 3.5 miles upstream from Eleanor Creek, 6.7 miles north of Early Intake, and 7.2 miles west of Hetch Hetchy.

DRAINAGE AREA.--118 sq mi.

RECORDS AVAILABLE.--November 1956 to September 1968.

GAGE.--Graphic water-stage recorder and concrete control. Datum of gage is 4,337.08 ft above mean sea level (levels by city and county of San Francisco).

EXTREMES.--Maximum discharge during year, 1,390 cfs Dec. 14 (gage height, 7.60 ft); minimum daily, 4.8 cfs May 29, 30.
1956-68: Maximum discharge, 3,830 cfs Apr. 25, 1958 (gage height, 9.95 ft); minimum daily, 1.6 cfs Apr. 10, 1957.

REMARKS.--Records good. Flow regulated by Cherry Lake (see sta. no. 11-2772). Diversion between Lake Eleanor and Cherry Lake began Mar. 6, 1960. Diversion from Cherry Lake to Cherry powerhouse began Aug. 1, 1960. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and seven discharge measurements furnished by city and county of San Francisco.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	5.5	5.7	5.5	6.0	7.2	6.3	5.0	5.3	10	16	16
2	6.6	5.5	5.7	5.5	6.0	6.9	6.0	5.0	5.3	18	16	16
3	6.0	5.5	5.7	5.5	6.0	6.9	6.0	5.3	5.3	17	16	16
4	6.0	5.5	5.7	5.5	6.0	6.9	6.0	5.3	5.3	17	16	17
5	5.7	5.5	7.7	5.5	6.0	6.3	6.3	5.3	5.5	17	16	17
6	5.7	5.5	6.3	5.5	6.0	5.7	6.0	5.3	5.5	17	16	17
7	5.7	5.5	6.3	5.5	6.0	6.0	6.0	5.3	5.5	17	16	17
8	5.7	5.5	6.0	5.5	6.0	6.9	5.7	5.3	5.5	17	16	16
9	5.7	5.5	6.0	5.5	6.3	6.3	5.5	5.3	5.3	16	16	16
10	5.5	5.5	5.7	6.0	6.3	6.3	5.5	5.3	5.3	16	16	16
11	5.5	5.5	5.7	5.7	6.3	6.0	5.5	5.3	5.3	16	16	16
12	5.5	5.5	5.7	5.5	6.3	6.0	5.3	5.5	5.3	16	16	16
13	5.5	5.5	5.7	5.5	6.3	6.3	5.3	5.7	5.3	16	16	16
14	5.5	5.5	258	5.5	6.3	6.0	5.3	5.7	5.3	16	16	16
15	5.5	5.5	6.0	7.2	6.3	6.0	5.3	5.5	5.3	16	18	17
16	5.5	5.5	5.7	6.3	6.9	6.6	5.3	5.5	5.3	16	16	17
17	5.5	5.5	5.5	6.3	9.7	6.3	5.3	5.3	5.3	16	16	17
18	5.5	5.7	6.0	6.0	8.3	6.3	5.5	5.3	5.3	16	16	16
19	5.5	6.3	5.7	6.0	8.3	6.3	5.5	5.3	5.3	16	16	16
20	5.5	5.7	5.7	5.7	12	6.3	5.5	5.3	5.0	16	16	16
21	5.5	5.5	5.7	5.7	10	6.3	5.5	5.3	5.0	16	16	17
22	5.5	5.5	5.5	5.7	9.3	6.3	5.5	5.3	5.0	16	16	18
23	5.5	5.5	5.7	5.7	8.6	6.3	5.5	5.3	5.3	16	16	17
24	5.5	5.5	5.5	5.7	8.3	6.3	5.5	5.0	5.5	16	16	17
25	5.5	5.5	5.7	5.7	8.0	6.3	5.5	5.0	5.3	16	16	17
26	5.5	5.5	5.5	5.7	7.7	6.3	5.5	5.0	5.3	16	16	17
27	5.5	5.5	5.5	6.3	7.7	6.0	5.3	5.0	5.3	16	16	17
28	5.5	5.5	5.5	6.0	7.4	6.0	5.3	5.0	5.3	16	16	17
29	5.5	5.7	5.5	6.0	7.4	5.7	5.3	4.8	5.3	16	16	17
30	5.5	6.0	5.5	6.3	-----	5.7	5.0	4.8	5.3	16	16	10
31	5.5	-----	5.5	6.0	-----	5.7	-----	5.0	-----	16	16	-----
TOTAL	180.1	166.9	431.6	180.0	211.7	194.4	167.0	162.3	159.1	498	498	491
MEAN	5.81	5.56	13.9	5.81	7.30	6.27	5.57	5.24	5.30	16.1	16.1	16.4
MAX	12	6.3	258	7.2	12	7.2	6.3	5.7	5.5	18	18	18
MIN	5.5	5.5	5.5	5.5	6.0	5.7	5.0	4.8	5.0	10	16	10
AC-FT	357	331	856	357	420	386	331	322	316	988	988	974
CAL YR 1967	TOTAL 19,898.8		MEAN 54.5		MAX 1,170		MIN 5.0		AC-FT 39,470			
WTR YR 1968	TOTAL 3,340.1		MEAN 9.13		MAX 258		MIN 4.8		AC-FT 6,620			

SAN JOAQUIN RIVER BASIN

11-2775. LAKE ELEANOR NEAR HETCH HETCHY, CALIF.

LOCATION.--Lat 37°58'30", long 119°52'45", in NW¼ sec.3, T.1 N., R.19 E., on downstream side of dam on Eleanor Creek, 720 ft from left bank, 1.7 miles upstream from Miguel Creek, and 5.5 miles northwest of Hetch Hetchy.

DRAINAGE AREA.--78.1 sq mi.

RECORDS AVAILABLE.--June 1918 to September 1968. Prior to October 1930, published in WSP 1315-A. Published as "near Sequoia" 1919-20.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by city and county of San Francisco). Prior to Oct. 1, 1927, staff gage on upstream side of dam at same site and datum.

EXTREMES.--Maximum contents during year, 27,300 acre-ft May 15 (elevation, 4,661.2 ft); minimum, not determined.

1919-68: Maximum contents, 31,000 acre-ft Dec. 11, 1937, from capacity table then in use (elevation, 4,663.4 ft); no usable contents at times in 1921, 1929-30, 1956-60.

REMARKS.--Reservoir is formed by multiple-arch dam completed in 1918; storage began June 23, 1918. Usable capacity, 26,100 acre-ft between elevations 4,620.9 (natural outlet of old lake) and 4,660.0 ft (top of 5-foot flashboards) above mean sea level. Water is released down Eleanor Creek for power development and domestic supply as part of Hetch Hetchy system of city and county of San Francisco. Figures given herein represent usable contents. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record furnished by city and county of San Francisco.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

4,626.2	639	4,634	4,700	4,644	11,900	4,654	20,600
4,627	996	4,636	5,960	4,646	13,500	4,656	22,400
4,628	1,480	4,638	7,330	4,648	15,300	4,658	24,300
4,630	2,450	4,640	8,710	4,650	17,000	4,660	26,100
4,632	3,580	4,642	10,300	4,652	18,800	4,663	29,100

CONTENTS, IN ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25,500	19,300	14,200	15,300	8,360	12,800	12,900	23,500	26,600	25,900	10,100	639
2	25,400	19,000	14,300	15,100	8,230	12,800	13,300	24,400	26,600	25,500	9,660	-
3	25,400	18,500	14,400	14,800	8,020	12,800	13,500	25,200	26,500	25,000	9,020	-
4	25,400	18,100	14,500	14,600	7,880	12,800	13,500	26,000	26,500	24,700	8,430	-
5	25,400	17,600	14,700	14,200	7,680	12,800	13,700	26,700	26,300	24,300	7,950	-
6	25,400	17,300	14,800	13,900	7,470	12,700	13,800	27,100	26,100	23,800	7,400	-
7	25,400	16,800	15,000	13,500	7,260	12,500	14,000	27,200	26,100	23,300	6,920	-
8	25,400	16,500	15,100	13,200	6,990	12,600	14,100	27,200	26,000	22,800	6,300	-
9	25,400	16,000	15,200	12,900	6,850	12,500	14,600	27,200	25,900	22,300	5,750	-
10	25,400	15,700	15,300	12,600	6,640	12,400	15,100	27,200	25,800	21,900	5,160	-
11	25,300	15,300	15,300	12,300	6,370	12,300	15,800	27,100	25,900	21,300	4,650	-
12	25,300	15,000	15,400	12,000	6,160	12,200	16,400	27,100	26,100	20,900	4,140	-
13	25,300	14,700	15,400	11,600	5,890	12,100	16,800	27,100	26,400	20,300	3,580	-
14	25,300	14,300	15,400	11,300	5,540	12,000	17,300	27,200	26,700	19,900	3,070	-
15	25,200	14,000	15,300	11,800	5,160	11,800	17,800	27,300	26,900	19,300	2,620	-
16	25,200	13,800	15,300	11,900	4,990	11,700	18,200	27,200	27,200	18,800	2,160	-
17	25,200	13,500	15,300	11,800	5,540	11,600	18,300	27,200	27,200	18,300	1,870	-
18	25,100	13,500	15,300	11,600	5,890	11,500	18,400	27,200	27,200	17,800	1,620	-
19	24,800	13,500	15,400	11,300	6,370	11,400	18,500	27,200	27,200	17,300	1,480	-
20	24,400	13,700	15,400	11,100	8,950	11,300	18,500	27,200	27,100	16,700	1,330	-
21	23,900	13,800	15,400	10,900	10,400	11,100	18,600	27,100	27,100	16,200	1,290	-
22	23,400	13,900	15,400	10,700	10,900	11,000	18,600	26,900	27,100	15,700	1,240	-
23	23,100	13,900	15,500	10,500	11,500	10,900	18,700	26,600	27,100	15,200	1,140	-
24	22,600	13,900	15,800	10,200	12,000	10,900	19,000	26,400	27,100	14,600	1,090	-
25	22,200	14,000	16,000	10,100	12,200	10,900	19,200	26,300	27,100	14,100	996	-
26	21,800	14,000	16,100	9,740	12,400	10,900	19,900	26,300	27,100	13,500	950	-
27	21,300	14,000	16,100	9,580	12,500	10,900	20,500	26,500	27,100	12,900	906	-
28	21,000	14,000	16,000	9,340	12,700	10,900	21,100	26,600	26,800	12,400	817	-
29	20,500	14,100	16,000	9,100	12,800	11,300	22,000	26,700	26,500	11,900	817	-
30	20,100	14,100	15,700	8,870	-----	12,000	22,800	26,700	26,200	11,300	728	-
31	19,800	-----	15,500	8,570	-----	12,400	-----	26,600	-----	10,800	683	-----
(a)	4,653.1	4,646.7	4,648.3	4,639.8	4,645.1	4,644.6	4,656.4	4,660.5	4,660.1	4,642.6	4,626.3	4,604.7
(b)	-5,700	-5,700	+1,400	-6,930	+4,230	-400	+10,400	+3,800	-400	-15,400	-10,117	-
MAX	25,500	19,300	16,100	15,300	12,800	12,800	22,800	27,300	27,200	25,900	10,100	-
MIN	19,800	13,500	14,200	8,570	4,990	10,900	12,900	23,500	25,800	10,800	683	-

CAL YR 1967 b +12,040
WTR YR 1968 b -

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

Note.--No reliable capacity table Sept. 2-30.

11-2780. ELEANOR CREEK NEAR HETCH HETCHY, CALIF.

LOCATION.--Lat 37°58'10", long 119°52'50", in SW $\frac{1}{4}$ sec. 3, T.1 N., R.19 E., in Yosemite National Park, on right bank 0.5 mile downstream from Lake Eleanor Dam, 1.1 miles upstream from Miguel Creek, and 5.5 miles northwest of Hetch Hetchy.

DRAINAGE AREA.--78.4 sq mi.

RECORDS AVAILABLE.--October 1909 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Published as "near Sequoia" 1910-18.

GAGE.--Graphic water-stage recorder and concrete control. Altitude of gage is 4,500 ft (from topographic map). November 1909 to November 1915, staff gage and graphic water-stage recorder at site 1 mile upstream at different datum.

AVERAGE DISCHARGE.--50 years (1909-59), 223 cfs (161,400 acre-ft per year), prior to diversion to Cherry Lake.

EXTREMES.--Maximum discharge during year, 594 cfs May 21 (gage height, 4.44 ft); minimum daily, 3.2 cfs Sept. 30. 1909-68: Maximum discharge, 11,700 cfs Nov. 19, 1950 (gage height, 14.95 ft), from rating curve extended above 2,000 cfs on basis of velocity-area studies; no flow at times in 1910, 1930-31, 1933, 1956.

REMARKS.--Records good. Flow regulated by Lake Eleanor beginning in 1918 (see sta. no. 11-2775). Diversion from Lake Eleanor to Cherry Lake began in March 1960. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and 11 discharge measurements furnished by city and county of San Francisco.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	12	5.1	5.9	5.4	5.6	5.9	6.2	316	14	15	13
2	9.3	12	5.1	5.6	6.2	5.1	5.9	9.9	308	16	15	13
3	7.4	11	5.1	5.6	6.2	5.1	6.2	7.4	312	15	15	13
4	6.2	11	5.4	5.6	5.6	5.1	6.2	30	304	14	14	13
5	6.2	11	6.8	5.4	5.6	5.1	6.5	82	277	13	14	13
6	8.3	11	5.6	5.4	5.6	5.1	6.5	168	242	15	14	13
7	12	12	5.9	5.4	5.9	5.1	6.5	268	210	16	14	13
8	11	12	5.9	5.4	5.6	5.9	6.2	296	188	16	14	13
9	11	12	5.6	5.4	6.5	6.2	5.6	329	166	16	15	13
10	11	12	5.6	5.6	5.6	5.6	4.1	316	145	15	15	13
11	11	12	5.6	5.6	5.1	5.6	4.1	316	60	15	14	13
12	11	11	5.6	5.1	4.8	5.6	4.8	304	11	15	14	13
13	11	11	5.6	5.4	4.8	5.9	5.1	316	15	15	14	13
14	11	11	5.6	5.6	5.1	5.9	5.1	329	13	15	14	13
15	11	11	5.6	8.5	5.1	5.6	5.4	375	11	16	14	13
16	11	11	5.6	6.2	6.2	6.2	5.1	425	24	16	13	13
17	11	12	5.6	5.9	9.3	6.5	4.4	395	90	16	14	13
18	11	12	5.9	5.6	6.2	6.5	4.6	347	124	16	14	13
19	11	12	5.9	5.6	5.9	6.2	5.1	356	110	15	14	13
20	12	12	6.2	5.6	9.6	5.9	5.1	440	99	15	14	13
21	12	12	6.5	5.6	7.4	5.6	5.4	526	87	15	15	13
22	11	12	6.2	5.6	6.8	5.6	5.1	460	77	15	14	13
23	11	12	6.8	5.6	6.8	5.6	5.1	385	70	15	14	13
24	11	12	7.1	5.6	6.5	5.6	5.1	308	64	15	14	13
25	10	12	6.2	5.9	6.5	5.4	4.8	256	57	15	14	11
26	11	12	6.2	5.6	6.5	5.4	5.4	242	52	15	14	5.9
27	11	12	6.5	5.6	6.2	5.6	4.8	259	48	15	14	4.6
28	11	7.1	6.2	5.6	6.2	5.9	5.1	296	48	15	14	4.1
29	11	5.1	6.2	5.6	6.2	5.9	5.1	342	21	15	13	3.4
30	12	5.1	5.9	5.6	-----	5.9	5.4	356	11	15	13	3.2
31	12	-----	5.9	5.9	-----	5.9	-----	338	-----	15	13	-----
TOTAL	330.4	332.3	183.0	176.6	179.4	176.2	159.7	8,883.5	3,560	469	436	344.2
MEAN	10.7	11.1	5.90	5.70	6.19	5.68	5.32	287	119	15.1	14.1	11.5
MAX	14	12	7.1	8.5	9.6	6.5	6.5	526	316	16	15	13
MIN	6.2	5.1	5.1	5.1	4.8	5.1	4.1	6.2	11	13	13	3.2
AC-FT	655	659	363	350	356	349	317	17,620	7,060	930	865	683
CAL YR 1967	TOTAL 47,872.3		MEAN 131		MAX 1,510		MIN 3.2		AC-FT 94,950			
WTR YR 1968	TOTAL 15,230.3		MEAN 41.6		MAX 526		MIN 3.2		AC-FT 30,210			

SAN JOAQUIN RIVER BASIN

11-2782. CHERRY CREEK CANAL NEAR EARLY INTAKE, CALIF.

LOCATION.--Lat 37°53'36", long 119°57'15", in S $\frac{1}{2}$ sec.36, T.1 N., R.18 E., on left bank 1.3 miles northeast of Early Intake and 10 miles southwest of Hetch Hetchy.

RECORDS AVAILABLE.--April 1956 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 2,700 ft (from topographic map).

EXTREMES.--1956-68: Maximum daily discharge, 194 cfs July 30, 1959; no flow June 19, 20, 23, 1964.

REMARKS.--Records good. Canal diverts from left bank of Cherry Creek in SW $\frac{1}{4}$ sec.31, T.1 N., R.19 E., for domestic use at Early Intake and occasional power development at Early Intake powerhouse as part of Hetch Hetchy system of city and county of San Francisco. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and six discharge measurements furnished by city and county of San Francisco.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	13	7.7	7.2	7.0	8.0	8.3	7.7	7.9	6.8	7.2	7.0
2	14	13	7.7	7.2	7.0	8.0	8.3	7.7	7.9	6.6	7.2	7.0
3	14	13	7.7	7.2	7.0	8.0	8.3	7.7	7.9	6.6	7.3	7.0
4	14	13	7.7	7.2	7.0	8.0	8.3	7.6	7.9	6.6	7.3	7.0
5	14	13	7.7	7.2	7.0	8.0	8.3	7.9	7.9	6.6	7.3	7.0
6	11	13	7.7	7.2	7.0	8.0	8.3	8.0	7.9	6.6	7.3	7.0
7	12	13	7.7	7.2	7.0	8.0	8.3	8.4	7.9	6.6	7.5	7.0
8	14	13	7.7	7.0	7.0	8.2	8.3	8.6	7.9	6.6	7.5	7.0
9	14	13	7.7	7.0	7.2	8.2	8.2	8.6	7.9	6.6	7.5	7.0
10	14	13	7.7	7.2	7.2	8.2	8.2	8.2	7.9	6.6	7.6	7.0
11	14	13	7.7	7.2	7.2	8.2	7.7	8.0	5.9	6.6	7.6	7.0
12	14	13	7.7	6.6	7.2	8.2	7.6	7.9	1.7	6.6	7.6	6.9
13	13	13	4.2	6.3	7.2	8.2	7.6	8.0	6.9	6.6	7.6	6.9
14	12	13	7.0	6.3	7.2	8.2	7.6	8.0	7.2	6.6	7.6	6.9
15	12	13	7.2	6.6	7.2	8.2	7.6	8.0	7.2	6.8	7.5	6.9
16	12	13	7.2	6.8	18	8.3	7.6	8.0	7.2	6.5	7.3	6.9
17	12	13	7.0	6.8	30	8.3	7.6	8.0	7.3	6.3	7.0	6.9
18	12	13	7.0	6.8	30	8.3	7.6	8.0	7.3	6.5	7.0	6.9
19	12	13	6.9	6.8	21	8.2	7.6	8.0	7.3	6.5	7.0	6.9
20	12	13	6.9	6.8	8.7	8.2	7.6	8.2	7.3	6.6	7.0	6.9
21	12	12	7.0	6.8	8.7	8.2	7.6	8.2	7.0	6.6	7.0	6.9
22	12	13	7.0	6.8	8.6	8.2	7.6	8.2	7.0	6.8	6.9	6.9
23	13	13	7.0	6.8	8.3	8.2	7.6	8.0	6.9	6.8	6.9	6.9
24	13	13	7.0	6.8	8.2	8.2	7.6	8.0	7.0	6.9	6.9	6.9
25	13	13	7.0	6.9	8.0	8.2	7.6	8.0	6.9	6.9	6.9	6.9
26	13	13	7.2	6.9	8.0	8.2	7.6	8.0	6.9	7.0	6.9	6.9
27	13	13	7.2	7.0	8.0	8.2	7.6	8.0	6.9	7.0	6.9	6.9
28	13	13	7.2	7.0	8.0	8.2	7.6	8.0	7.0	7.0	6.9	6.9
29	13	13	7.2	7.0	8.0	8.2	7.6	8.0	7.0	7.0	7.0	6.9
30	13	9.4	7.2	7.0	-----	8.2	7.6	8.0	6.8	7.0	7.0	6.9
31	13	-----	7.2	7.0	-----	8.2	-----	8.0	-----	7.2	7.0	-----
TOTAL	401	385.4	224.0	214.6	287.9	253.1	234.9	248.9	213.7	208.0	223.2	208.1
MEAN	12.9	12.8	7.23	6.92	9.93	8.16	7.83	8.03	7.12	6.71	7.20	6.94
MAX	14	13	7.7	7.2	30	8.3	8.3	8.6	7.9	7.2	7.6	7.0
MIN	11	9.4	4.2	6.3	7.0	8.0	7.6	7.6	1.7	6.3	6.9	6.9
AC-FT	795	764	444	426	571	502	466	494	424	413	443	413
CAL YR 1967	TOTAL 3,741.2		MEAN 10.2		MAX 37		MIN 3.1		AC-FT 7,420			
WTR YR 1968	TOTAL 3,102.8		MEAN 8.48		MAX 30		MIN 1.7		AC-FT 6,150			

11-2783. CHERRY CREEK NEAR EARLY INTAKE, CALIF.

LOCATION.--Lat 37°53'40", long 119°57'42", in SE $\frac{1}{4}$ sec.35, T.1 N., R.18 E., on right bank 1.2 miles upstream from mouth, 1.3 miles north of Early Intake, and 10.3 miles southwest of Hetch Hetchy.

DRAINAGE AREA.--226 sq mi.

RECORDS AVAILABLE.--May 1956 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 2,272.00 ft above sea level (levels by city and county of San Francisco).

EXTREMES.--Maximum discharge during year, 1,330 cfs Dec. 14 (gage height, 7.32 ft); minimum daily, 2.9 cfs Oct. 5.

1956-68: Maximum discharge, 16,500 cfs Feb. 1, 1963 (gage height, 14.50 ft), from rating curve extended above 4,600 cfs; minimum daily, 0.30 cfs Apr. 5, 6, 1964.

REMARKS.--Records good. Flow regulated by Cherry Lake (see sta. no. 11-2772) and Lake Eleanor (see sta. no. 11-2775). Cherry Creek Canal diverts about 1.0 mile upstream from station (see sta. no. 11-2782). Diversion from Cherry Lake to Cherry powerhouse began Aug. 1, 1960. Water is returned to creek 1.2 miles below station. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and 10 discharge measurements furnished by city and county of San Francisco.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	7.2	11	8.1	12	32	29	12	356	9.7	23	21
2	9.5	7.1	8.7	8.0	13	29	34	15	345	22	22	21
3	6.9	6.9	8.3	7.6	17	27	33	13	345	24	22	21
4	4.4	6.1	8.7	6.9	14	26	30	22	342	23	22	22
5	2.9	6.1	31	7.4	14	24	28	93	325	22	21	22
6	4.1	6.0	15	8.0	14	23	28	192	295	21	21	22
7	9.3	6.2	13	7.8	14	23	26	318	258	24	21	23
8	7.1	6.4	13	7.6	15	39	24	342	233	25	21	23
9	6.7	6.4	12	7.6	20	41	22	365	207	25	22	23
10	6.6	6.4	9.5	12	28	37	20	359	185	23	22	22
11	6.6	6.2	8.9	12	21	31	19	356	124	23	21	25
12	6.6	6.2	8.7	9.5	20	29	19	353	18	23	21	25
13	6.7	6.2	9.2	9.1	20	35	18	359	13	23	24	25
14	6.7	6.9	293	9.1	20	35	18	371	17	23	22	24
15	6.6	6.7	15	33	19	35	17	401	12	23	22	24
16	6.4	6.2	8.3	24	12	42	16	442	13	24	21	25
17	6.4	6.1	7.6	16	65	50	16	420	86	24	21	25
18	6.2	7.2	9.3	13	53	45	15	386	157	23	22	25
19	6.2	20	9.7	12	33	44	15	389	146	23	23	24
20	6.1	11	8.1	11	178	43	15	452	131	23	24	22
21	6.1	8.9	6.7	11	123	44	14	522	110	23	23	23
22	6.9	8.5	8.3	11	90	44	14	484	97	23	24	23
23	6.1	8.3	8.5	11	72	43	14	414	86	22	23	25
24	6.4	8.3	8.9	11	60	40	13	356	77	23	22	24
25	6.1	8.1	9.3	10	50	39	13	310	67	23	22	23
26	5.4	8.1	9.9	10	44	36	13	292	61	23	22	23
27	6.1	8.1	9.7	12	41	33	12	305	55	22	22	23
28	6.1	9.5	9.3	12	37	31	12	332	52	23	22	23
29	6.1	4.2	8.7	11	34	29	12	371	39	23	22	23
30	6.0	8.8	8.5	11	-----	28	12	386	11	22	21	23
31	6.9	-----	8.3	14	-----	26	-----	374	-----	23	21	-----
TOTAL	216.2	228.3	604.1	353.7	1,153	1,083	571	9,806	4,263	700.7	682	697
MEAN	6.97	7.61	19.5	11.4	39.8	34.9	19.0	316	142	22.6	22.0	23.2
MAX	26	20	293	33	178	50	34	522	356	25	24	25
MIN	2.9	4.2	6.7	6.9	12	23	12	12	11	9.7	21	21
AC-FT	429	453	1,200	702	2,290	2,150	1,130	19,450	8,460	1,390	1,350	1,380
CAL YR 1967	TOTAL 80,203.6		MEAN 220		MAX 1,880		MIN 2.9		AC-FT 159,100			
WTR YR 1968	TOTAL 20,358.0		MEAN 55.6		MAX 522		MIN 2.9		AC-FT 40,380			

SAN JOAQUIN RIVER BASIN

11-2784. CHERRY CREEK BELOW DION R. HOLM POWERHOUSE, NEAR MATHER, CALIF.

LOCATION.--Lat 37°53'25", long 119°58'10", in NW $\frac{1}{4}$ sec.2, T.1 S., R.18 E., on left bank 600 ft upstream from mouth, 0.5 mile downstream from powerhouse, 1.2 miles northwest of Early Intake, and 5.3 miles west of Mather.

DRAINAGE AREA.--234 sq mi.

RECORDS AVAILABLE.--March 1963 to September 1968. Prior to October 1965, published as "below Cherry power-house, near Mather."

GAGE.--Digital water-stage recorder. Altitude of gage is 2,150 ft (from topographic map). Prior to May 26, 1966, graphic water-stage recorder at same site and datum.

EXTREMES.--Maximum discharge during year, 1,460 cfs May 21 (gage height, 9.18 ft); minimum daily, 6.6 cfs Nov. 29.

1963-68: Maximum discharge, 8,530 cfs Dec. 24, 1964 (gage height, 13.55 ft), from rating curve extended above 1,700 cfs; minimum daily, 3.6 cfs Oct. 26, 27, 1964.

REMARKS.--Records good. Flow regulated by Cherry Lake (see sta. no. 11-2772) and Lake Eleanor (see sta. no. 11-2775). Cherry Creek Canal (see sta. no. 11-2782) diverts about 2 miles upstream from station. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and 11 discharge measurements furnished by city and county of San Francisco.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	170	539	11	225	647	599	526	549	1,220	761	766	595
2	617	543	9.3	629	722	420	533	554	1,040	774	761	768
3	611	549	66	670	642	189	523	554	1,200	783	761	766
4	602	412	9.1	667	477	604	523	389	1,200	781	559	769
5	601	305	26	635	716	604	523	199	1,150	775	761	765
6	612	533	15	543	715	604	364	709	1,040	779	762	765
7	488	537	12	267	719	604	169	846	993	688	764	761
8	293	543	13	626	726	618	519	874	963	785	762	769
9	602	542	10	615	721	434	518	901	943	787	764	763
10	606	546	82	639	539	250	519	895	917	785	766	766
11	603	132	42	640	367	613	514	710	864	783	760	765
12	606	132	124	634	610	609	510	485	767	455	763	761
13	606	542	11	552	611	615	353	899	768	698	766	761
14	504	555	220	278	606	617	119	912	768	521	770	765
15	162	15	82	657	605	618	503	943	755	705	765	766
16	604	7.2	9.6	651	609	433	537	987	622	733	766	763
17	578	6.9	8.9	634	635	170	507	961	827	722	763	764
18	573	7.5	12	637	359	624	502	740	897	758	762	761
19	584	17	73	638	631	626	502	486	878	753	763	762
20	552	12	9.6	553	777	627	344	998	871	780	761	763
21	445	9.3	8.2	223	715	625	110	1,070	850	773	764	761
22	163	9.0	28	632	677	626	506	1,030	830	766	763	600
23	544	8.9	42	589	660	432	511	960	812	778	760	763
24	540	8.8	42	586	564	204	509	902	818	778	761	763
25	535	8.7	42	592	314	622	513	662	717	776	766	761
26	536	8.7	596	588	631	617	503	426	805	777	767	763
27	540	8.5	660	503	629	615	348	914	795	775	766	766
28	444	9.4	649	179	624	613	219	1,160	793	778	765	771
29	388	6.6	655	583	622	612	500	1,210	801	776	761	771
30	556	14	551	583	-----	419	496	1,240	617	780	763	765
31	547	-----	247	586	-----	146	-----	1,220	-----	780	765	-----
TOTAL	15,802	6,555.5	4,359.7	17,034	17,870	16,009	13,323	25,379	26,521	23,143	23,466	22,602
MEAN	510	219	141	549	616	516	444	819	884	747	757	753
MAX	617	555	660	670	777	627	537	1,240	1,220	787	770	771
MIN	162	6.6	8.2	179	314	146	110	199	617	455	559	595
AC-FT	31,340	13,300	8,650	33,790	35,440	31,750	26,430	50,340	52,600	45,900	46,540	44,830
CAL YR 1967	TOTAL	253,339.2	MEAN	694	MAX	2,450	MIN	6.6	AC-FT	502,500		
WTR YR 1968	TOTAL	212,064.2	MEAN	579	MAX	1,240	MIN	6.6	AC-FT	420,600		

SAN JOAQUIN RIVER BASIN

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11-2810. SOUTH FORK TUOLUMNE RIVER NEAR OAKLAND RECREATION CAMP, CALIF.

LOCATION.--Lat 37°49'16", long 120°00'48", in SE $\frac{1}{4}$ sec. 29, T.1 S., R.18 E., on right bank 75 ft downstream from highway bridge on Big Oak Flat Road, 0.5 mile southwest of Oakland Recreation Camp, and 0.6 mile upstream from Middle Tuolumne River.

DRAINAGE AREA.--87.0 sq mi.

RECORDS AVAILABLE.--March 1923 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 2,800 ft (from topographic map). Prior to Nov. 22, 1931, at site 50 ft upstream at same datum.

AVERAGE DISCHARGE.--45 years, 90.7 cfs (65,660 acre-ft per year).

EXTREMES.--Maximum discharge during year, 339 cfs Feb. 20 (gage height, 3.83 ft); minimum daily, 2.2 cfs July 13. 1923-68: Maximum discharge, 11,900 cfs Dec. 23, 1955 (gage height, 10.9 ft, from floodmarks), from rating curve extended above 1,300 cfs on basis of slope-area measurements at gage heights 7.48 and 10.9 ft; minimum, 0.3 cfs Aug. 23, 1934.

REMARKS.--Records good. No storage or diversion above station. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and 10 discharge measurements furnished by city and county of San Francisco.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	16	23	24	34	85	122	131	46	13	5.0	4.2
2	18	13	21	24	36	77	111	133	43	13	4.8	4.1
3	20	14	22	22	37	73	94	133	41	13	4.5	4.1
4	22	15	24	23	37	72	90	126	38	13	4.4	4.5
5	20	15	92	24	39	72	92	116	36	13	4.5	4.1
6	20	14	38	23	40	68	87	101	36	12	4.5	4.0
7	19	15	38	22	41	68	83	95	35	12	4.5	3.9
8	18	15	34	22	43	88	85	85	42	12	4.5	3.8
9	18	15	27	22	62	78	94	90	36	12	4.4	3.8
10	18	15	25	37	68	68	113	86	33	11	4.3	3.7
11	17	15	24	36	53	63	126	87	30	10	4.3	3.8
12	17	14	23	29	48	62	126	86	28	3.2	2.8	3.8
13	17	13	15	26	45	70	118	82	26	2.2	3.7	3.9
14	17	11	18	26	43	67	116	80	25	7.8	5.8	3.9
15	16	12	23	78	43	65	118	80	24	8.5	5.8	4.0
16	16	12	23	72	95	76	114	85	65	9.1	5.7	4.2
17	16	12	22	48	139	84	94	86	22	8.6	6.0	4.2
18	16	13	25	40	111	108	87	83	11	8.3	5.4	4.0
19	16	31	25	37	83	85	84	86	12	7.2	6.0	3.9
20	16	35	23	34	248	70	86	85	12	7.2	8.2	3.8
21	15	23	21	35	190	69	83	82	12	7.0	8.6	4.1
22	16	21	24	36	139	68	79	73	12	6.9	9.1	4.5
23	16	20	24	37	134	66	81	64	13	6.6	8.3	4.6
24	16	19	24	36	127	66	89	59	13	6.5	7.0	4.6
25	16	19	25	36	109	69	100	59	13	6.3	6.0	4.4
26	14	18	26	36	100	69	117	63	14	6.1	5.6	4.2
27	14	18	28	34	95	69	126	65	15	6.0	5.1	4.0
28	14	19	28	28	93	72	130	64	14	5.7	5.1	3.9
29	15	20	27	29	87	85	132	60	14	5.4	5.1	3.9
30	15	30	25	35	-----	102	138	54	14	5.3	4.8	3.9
31	15	-----	25	34	-----	102	-----	49	-----	5.1	4.4	-----
TOTAL	521	522	842	1,045	2,419	2,336	3,115	2,628	775	263.0	168.2	121.8
MEAN	16.8	17.4	27.2	33.7	83.4	75.4	104	84.8	25.8	8.48	5.43	4.06
MAX	22	35	92	78	248	108	138	133	65	13	9.1	4.6
MIN	14	11	15	22	34	62	79	49	11	2.2	2.8	3.7
AC-FT	1,030	1,040	1,670	2,070	4,800	4,630	6,180	5,210	1,540	522	334	242
CAL YR 1967	TOTAL 63,732		MEAN 175		MAX 2,230		MIN 11		AC-FT 126,400			
WTR YR 1968	TOTAL 14,756.0		MEAN 40.3		MAX 248		MIN 2.2		AC-FT 29,270			

Peak discharge (base, 900 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

11-2820. MIDDLE TUOLUMNE RIVER AT OAKLAND RECREATION CAMP, CALIF.

LOCATION.--Lat 37°49'40", long 120°00'40", in NW¼ Sec.28, T.1 S., R.18 E., on left bank 1,000 ft downstream from Oakland Recreation Camp, 0.5 mile upstream from South Fork Tuolumne River, and 4 miles east of Buck Meadows Post Office.

DRAINAGE AREA.--73.5 sq mi.

RECORDS AVAILABLE.--October 1916 to September 1968. Monthly discharge only for October 1916, published in WSP 1315-A. Published as Middle Fork of Tuolumne River near Buck Meadows 1917-32 and as "near Buck Meadows" 1933-40.

GAGE.--Graphic water-stage recorder. Altitude of gage is 2,800 ft (from topographic map).

AVERAGE DISCHARGE.--52 years, 73.0 cfs (52,850 acre-ft per year).

EXTREMES.--Maximum discharge during year, 213 cfs May 2 (gage height, 3.48 ft); minimum daily, 0.60 cfs Sept. 13, 14, 19, 20.

1916-68: Maximum discharge, 4,920 cfs Dec. 23, 1955 (gage height, 11.75 ft from flood profile, 11.05 ft from floodmarks inside gage well), from rating curve extended above 1,400 cfs on basis of slope-area measurement of maximum flow; no flow Sept. 4-14, 1924, Aug. 12 to Oct. 5, 1931, Sept. 11-17, 1934, Sept. 7-14, 1961.

REMARKS.--Records good. No regulation; small diversion above station for irrigation. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and nine discharge measurements furnished by city and county of San Francisco.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	5.0	8.8	11	16	52	88	168	67	9.6	1.8	1.8
2	11	4.9	8.2	11	18	48	80	176	63	9.2	1.8	1.0
3	10	4.9	9.6	9.8	20	45	72	171	59	8.8	1.7	.90
4	11	4.9	10	9.8	20	45	67	168	52	8.3	2.0	.90
5	11	4.9	34	10	20	45	68	168	48	7.7	1.6	.80
6	9.8	4.9	14	9.8	21	44	67	145	48	7.0	1.6	.80
7	9.2	4.9	15	9.8	22	42	65	138	47	6.4	1.6	.80
8	8.8	4.9	13	9.8	22	54	68	142	58	7.9	1.6	.80
9	8.2	4.9	10	10	29	45	75	145	48	8.3	1.2	.80
10	7.6	4.9	11	16	32	39	88	138	42	8.1	1.1	.70
11	7.6	4.9	9.8	14	26	38	104	143	38	7.0	1.1	.70
12	7.3	4.7	9.4	12	24	38	107	134	36	6.1	1.1	.70
13	7.1	4.9	5.8	12	22	44	105	120	34	5.4	1.5	.60
14	6.9	5.4	5.8	12	23	40	107	107	32	5.1	1.8	.60
15	6.5	5.7	9.4	28	22	40	111	111	30	4.6	1.9	.80
16	6.2	6.4	10	32	22	50	107	120	28	4.5	2.6	.80
17	6.4	7.3	9.6	28	51	57	95	125	26	4.4	2.6	.80
18	5.8	7.1	10	23	45	51	85	132	25	4.1	2.5	.80
19	5.8	16	10	20	38	45	82	143	20	3.8	2.6	.60
20	5.7	16	10	18	107	43	79	140	20	3.7	3.0	.60
21	5.5	12	11	17	105	42	76	140	17	3.3	2.8	.80
22	5.5	10	11	17	79	41	74	121	17	2.8	3.2	.80
23	5.5	8.6	11	17	74	40	76	103	16	2.8	3.7	.90
24	5.5	8.2	11	17	74	39	86	95	16	2.8	3.2	.90
25	5.5	7.8	11	17	68	43	95	96	14	2.4	2.0	1.0
26	5.4	7.6	11	16	63	43	114	103	13	2.0	1.7	.90
27	5.4	7.3	12	16	59	43	136	104	12	2.0	1.5	.90
28	5.4	7.8	12	11	55	46	145	103	12	2.0	1.4	.80
29	5.4	8.6	12	17	52	62	162	94	11	2.1	1.3	.80
30	5.4	12	12	19	-----	74	171	80	10	2.1	1.2	.80
31	5.2	-----	11	20	-----	74	-----	72	-----	2.0	1.1	-----
TOTAL	224.6	217.4	348.4	490.0	1,229	1,452	2,855	3,945	959	156.3	59.8	24.90
MEAN	7.25	7.25	11.2	15.8	42.4	46.8	95.2	127	32.0	5.04	1.93	.83
MAX	13	16	34	32	107	74	171	176	67	9.6	3.7	1.8
MIN	5.2	4.7	5.8	9.8	16	38	65	72	10	2.0	1.1	.60
AC-FT	445	431	691	972	2,440	2,880	5,660	7,820	1,900	310	119	49

CAL YR 1967 TOTAL 51,199.2 MEAN 140 MAX 846 MIN 4.7 AC-FT 101,600
WTR YR 1968 TOTAL 11,961.40 MEAN 32.7 MAX 176 MIN .60 AC-FT 23,730

Peak discharge (base, 370 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

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11-2831. LILY CREEK NEAR PINECREST, CALIF.

LOCATION.--Lat 38°08'40", long 119°54'05", in T.3 N., R.19 E., on left bank 1,500 ft downstream from Mud Lake, and 5.7 miles southeast of Pinecrest.

DRAINAGE AREA.--11.9 sq mi.

RECORDS AVAILABLE.--July 1964 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 6,990 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 576 cfs Feb. 20 (gage height, 6.88 ft); minimum daily, 0.03 cfs Sept. 29.

1964-68: Maximum discharge, 1,700 cfs Dec. 23, 1964 (gage height, 10.77 ft), from rating curve extended above 200 cfs; minimum daily, 0.03 cfs Sept. 29, 1968.

Flood of Feb. 1, 1963, reached a stage of 11.7 ft from floodmarks (discharge, 2,030 cfs).

REMARKS.--Records good except those for the winter periods, which are poor. Small regulation by Y-Meadow Reservoir (capacity, 180 acre-ft). No diversions above station. See schematic diagram for Tuolumne River basin. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.26	.20	2.0	9.0	10	56	94	148	61	.88	.15	.10
2	.28	.20	2.0	7.0	11	44	54	157	64	.88	.13	.10
3	.91	.20	2.0	5.0	18	47	42	156	59	.80	.12	.10
4	.56	.20	2.5	4.5	21	52	49	138	56	.68	.11	.10
5	.42	.22	5.6	4.2	20	49	54	119	38	.62	.10	.10
6	.36	.24	8.0	4.2	15	37	42	92	23	.50	.10	.08
7	.33	.22	6.5	4.5	13	31	52	94	21	.46	.09	.08
8	.30	.22	6.5	4.8	13	29	72	98	20	.42	.09	.08
9	.30	.22	6.2	5.1	13	28	95	90	21	.39	.10	.08
10	.28	.22	6.4	5.3	14	25	126	77	25	.36	.09	.07
11	.28	.22	8.2	8.0	12	25	132	79	24	.33	.08	.07
12	.26	.22	7.5	5.6	12	25	118	82	23	.33	.09	.05
13	.26	.22	7.0	5.1	12	22	102	58	19	.30	.22	.05
14	.26	1.7	6.5	5.6	11	22	111	61	16	.28	.18	.04
15	.24	.88	6.0	4.2	10	19	110	80	16	.28	.15	.06
16	.24	.42	5.5	5.8	11	16	82	91	14	.22	.13	.05
17	.24	.36	5.1	22	24	22	58	99	12	.20	.13	.05
18	.24	.46	5.0	17	123	19	45	94	9.9	.16	.13	.05
19	.24	1.7	4.9	16	101	18	52	110	8.2	.16	.86	.05
20	.24	2.5	4.8	18	250	19	53	132	6.4	.15	3.1	.05
21	.24	1.5	4.7	22	140	23	48	114	5.3	.15	.56	.07
22	.24	1.0	4.6	21	100	25	46	68	4.3	.14	.36	.08
23	.24	.96	4.5	20	160	23	68	43	3.6	.14	.24	.08
24	.24	1.0	5.4	19	100	27	83	35	2.7	.14	.18	.08
25	.22	1.2	8.8	18	80	34	110	59	2.2	.14	.15	.06
26	.20	1.3	19	18	70	29	138	84	1.7	.13	.13	.05
27	.20	1.3	21	14	65	38	151	94	1.4	.13	.12	.05
28	.20	1.4	21	12	60	64	164	98	1.2	.13	.12	.04
29	.22	1.4	16	9.0	60	90	169	85	1.1	.13	.12	.03
30	.20	1.4	14	9.0	-----	98	153	71	1.0	.13	.11	.05
31	.20	-----	11	9.0	-----	94	-----	64	-----	.16	.11	-----
TOTAL	8.90	23.28	238.2	421.9	1,549	1,150	2,673	2,870	561.0	9.92	8.35	2.00
MEAN	.29	.78	7.68	13.6	53.4	37.1	89.1	92.6	18.7	.32	.27	.067
MAX	.91	2.5	21	58	250	98	169	157	64	.88	3.1	.10
MIN	.20	.20	2.0	4.2	10	16	42	35	1.0	.13	.08	.03
AC-FT	18	46	472	837	3,070	2,280	5,300	5,690	1,110	20	17	4.0
CAL YR 1967	TOTAL	20,959.88	MEAN	57.4	MAX	574	MIN	.20	AC-FT	41,570		
WTR YR 1968	TOTAL	9,515.55	MEAN	26.0	MAX	250	MIN	.03	AC-FT	18,870		

PEAK DISCHARGE (BASE, 160 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
02-18	0400	4.67	173	04-28	2000	5.33	280
02-20	1000	6.88	576	05-20	2100	4.88	206
04-10	2000	4.90	209				

SAN JOAQUIN RIVER BASIN

11-2832. BELL CREEK NEAR PINECREST, CALIF.

LOCATION.--Lat 38°09'45", long 119°56'35", in NE¼ sec.36, T.4 N., R.18 E., on right bank 1,400 ft downstream from Bell Meadows, and 3 miles southeast of Pinecrest.

DRAINAGE AREA.--9.11 sq mi.

RECORDS AVAILABLE.--September 1963 to September 1968.

AVERAGE DISCHARGE.--5 years, 25.8 cfs (18,680 acre-ft per year).

GAGE.--Graphic water-stage recorder. Altitude of gage is 6,450 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 195 cfs Feb. 20 (gage height, 4.63 ft); maximum gage height 4.92 ft (backwater from ice); minimum daily, 0.03 cfs Sept. 16.

1963-68: Maximum discharge, 934 cfs Dec. 23, 1964 (gage height, 7.54 ft), from rating curve extended above 160 cfs on basis of slope-area measurement at gage height 8.79 ft; no flow at times in most years. Flood of Feb. 1, 1963, reached a stage of 8.79 ft from floodmarks (discharge, 1,410 cfs), from slope-area measurement of maximum flow.

REMARKS.--Records excellent except those for the winter period, which are fair. No storage or diversion above station. See schematic diagram for Tuolumne River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.36	.24	.70	1.9	2.6	28	57	87	42	2.4	.33	.21
2	.39	.24	.90	1.5	2.9	25	37	87	43	2.1	.24	.08
3	1.5	.24	1.1	1.2	3.3	27	32	86	39	2.0	.22	.06
4	1.7	.24	1.2	1.0	4.5	28	36	84	36	1.8	.22	.06
5	.90	.24	1.3	1.0	3.8	27	36	75	28	1.8	.20	.05
6	.68	.24	1.9	1.1	3.0	21	32	64	20	1.4	.18	.04
7	.54	.24	1.8	1.2	2.9	19	38	62	19	1.5	.16	.04
8	.45	.24	2.0	1.2	2.7	17	46	62	19	1.4	.16	.04
9	.36	.24	2.2	1.1	2.8	15	58	59	17	1.4	.16	.04
10	.33	.24	2.3	1.1	2.7	15	72	54	19	1.2	.14	.04
11	.30	.24	2.9	1.2	2.6	15	80	51	18	1.1	.14	.04
12	.30	.24	2.8	1.1	2.7	14	73	55	17	1.0	.16	.04
13	.27	.24	2.7	1.1	2.7	14	69	44	15	1.0	.36	.04
14	.27	.57	2.6	1.2	3.0	13	75	43	14	.95	.22	.04
15	.24	1.8	2.5	6.3	2.9	12	72	54	14	.90	.20	.04
16	.24	.72	2.5	12	2.7	11	60	60	14	.85	.20	.03
17	.24	.48	2.4	5.0	4.8	17	46	61	12	.76	.18	.04
18	.24	.42	2.2	3.1	8.8	14	40	59	10	.72	.18	.04
19	.24	1.4	2.0	3.4	13	11	40	63	9.5	.60	.56	.04
20	.24	2.4	1.7	3.9	108	13	38	70	7.9	.57	3.8	.04
21	.24	2.5	1.5	5.2	66	15	36	65	7.0	.54	1.1	.05
22	.27	1.6	1.3	4.1	53	16	36	49	6.4	.48	.76	.05
23	.24	1.2	1.4	4.1	80	15	43	37	5.5	.45	.51	.05
24	.24	1.0	1.8	4.8	57	20	52	34	4.8	.39	.33	.05
25	.22	1.0	2.2	5.0	44	22	64	41	3.9	.36	.20	.04
26	.22	.85	3.8	3.5	40	20	77	50	3.7	.33	.16	.04
27	.24	.72	6.6	3.0	35	26	83	54	3.2	.27	.14	.05
28	.24	.68	6.2	3.0	30	38	86	57	2.9	.27	.14	.05
29	.24	.64	4.2	2.3	30	54	92	55	2.7	.27	.10	.04
30	.24	.60	2.9	2.0	-----	62	89	47	2.5	.27	.10	.05
31	.24	-----	2.2	3.0	-----	56	-----	43	-----	.36	.08	-----
TOTAL	12.42	21.70	73.80	90.6	617.4	700	1,695	1,812	456.0	29.44	11.63	1.52
MEAN	.40	.72	2.38	2.92	21.3	22.6	56.5	58.5	15.2	.95	.38	.051
MAX	1.7	2.5	6.6	12	108	62	92	87	43	2.4	3.8	.21
MIN	.22	.24	.70	1.0	2.6	11	32	34	2.5	.27	.08	.03
AC-FT	25	43	146	180	1,220	1,390	3,360	3,590	904	58	23	3.0

CAL YR 1967 TOTAL 13,852.92 MEAN 38.0 MAX 267 MIN .22 AC-FT 27,480
WTR YR 1968 TOTAL 5,521.51 MEAN 15.1 MAX 108 MIN .03 AC-FT 10,950

Peak discharge (base, 125 cfs).--Feb. 20 (0700 hrs) 195 cfs (4.63 ft); Apr. 28 (1930 hrs) 125 cfs (4.13 ft).

SAN JOAQUIN RIVER BASIN

701

11-2835. CLAVEY RIVER NEAR BUCK MEADOWS, CALIF.

LOCATION.--Lat 37°54'00", long 120°04'15", in SE¼NE¼ sec.35, T.1 N., R.17 E., on right bank 300 ft upstream from Forest Service road bridge, 1.7 miles downstream from Quilty Creek, and 6 miles north of Buck Meadows Post Office.

DRAINAGE AREA.--144 sq mi.

RECORDS AVAILABLE.--October 1959 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 2,374.08 ft above mean sea level. Prior to Aug. 16, 1966, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--9 years, 216 cfs (156,400 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,270 cfs Feb. 20 (gage height, 9.02 ft); minimum daily, 6.0 cfs Sept. 28, 29.
1959-68: Maximum discharge, 19,200 cfs Feb. 1, 1963 (gage height, 21.40 ft), from rating curve extended above 2,000 cfs on basis of slope-area measurement of maximum flow; minimum, 3.4 cfs Sept. 7, 8, 1961.

REMARKS.--Records excellent. No storage or diversion above station. See schematic diagram for Tuolumne River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	20	33	47	75	352	533	420	173	26	13	9.3
2	26	20	31	43	85	309	455	420	173	25	12	9.4
3	45	20	34	37	92	301	379	422	169	24	11	8.0
4	35	20	37	39	97	302	381	401	153	24	11	7.7
5	31	20	129	37	101	302	398	379	142	23	10	7.7
6	30	20	60	37	100	274	366	325	116	22	10	7.5
7	28	20	62	36	98	255	360	299	110	21	9.8	7.0
8	27	20	56	37	99	288	386	301	104	21	9.4	6.7
9	27	20	47	36	119	272	421	298	96	21	9.2	6.6
10	26	19	44	49	125	245	476	270	95	20	9.0	6.7
11	26	19	43	46	113	231	522	265	95	19	8.8	6.8
12	24	19	42	43	105	230	505	281	91	18	9.0	6.8
13	24	19	28	42	104	228	456	294	85	18	11	6.6
14	24	23	35	42	101	228	446	263	78	18	13	6.5
15	23	26	41	149	96	211	465	306	74	18	12	6.7
16	23	24	39	163	105	233	425	331	71	17	11	6.8
17	23	24	34	129	308	235	352	334	66	17	11	6.6
18	22	23	37	97	338	236	305	296	61	16	10	6.4
19	22	54	38	84	296	219	301	306	55	16	11	6.2
20	22	47	36	78	888	214	302	311	51	15	22	6.2
21	21	35	36	80	812	227	288	338	46	14	21	6.6
22	22	30	36	85	571	243	269	267	43	14	20	7.0
23	22	28	38	88	589	236	287	205	40	13	16	7.2
24	22	26	41	87	569	256	318	175	38	13	13	7.0
25	21	25	45	88	448	284	332	177	35	13	13	6.7
26	21	25	51	87	414	284	382	219	32	13	12	6.4
27	21	25	53	82	403	295	434	235	30	12	11	6.2
28	21	26	56	66	383	334	441	245	28	12	10	6.0
29	21	28	62	73	359	412	462	238	27	12	9.7	6.0
30	21	38	58	72	-----	497	457	208	27	12	9.2	6.2
31	20	-----	51	64	-----	477	-----	181	-----	12	8.5	-----
TOTAL	767	763	1,433	2,143	7,993	8,710	11,904	9,010	2,404	539	366.6	207.5
MEAN	24.7	25.4	46.2	69.1	276	281	397	291	80.1	17.4	11.8	6.92
MAX	45	54	129	163	888	497	533	422	173	26	22	9.4
MIN	20	19	28	36	75	211	269	175	27	12	8.5	6.0
AC-FT	1,520	1,510	2,840	4,250	15,850	17,280	23,610	17,870	4,770	1,070	727	412

CAL YR 1967 TOTAL 144,666 MEAN 396 MAX 3,520 MIN 19 AC-FT 286,900
WTR YR 1968 TOTAL 46,240.1 MEAN 126 MAX 888 MIN 6.0 AC-FT 91,720

Peak discharge (base, 1,400 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

11-2845. BIG CREEK NEAR GROVELAND, CALIF.

LOCATION.--Lat 37°51'28", long 120°12'02", in NE $\frac{1}{4}$ sec.15, T.1 S., R.16 E., on right bank 0.5 mile downstream from unnamed tributary, and 2.0 miles northeast of Groveland.

DRAINAGE AREA.--24.7 sq mi.

RECORDS AVAILABLE.--October 1931 to September 1933, July 1959 to September 1968.

GAGE.--Digital water-stage recorder and concrete control. Altitude of gage is 2,450 ft (from topographic map). Prior to Oct. 10, 1963, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--11 years, 10.1 cfs (7,310 acre-ft per year); median of yearly mean discharges, 8.8 cfs (6,400 acre-ft per year).

EXTREMES.--Maximum discharge during year, 113 cfs Mar. 8 (gage height, 2.92 ft); no flow for several months. 1931-33, 1959-68: Maximum discharge, 4,530 cfs Feb. 1, 1963 (gage height, 7.71 ft), from rating curve extended above 1,500 cfs on basis of slope-area measurement of maximum flow; no flow for several months each year.

Flood of December 1955 reached a stage of 7.6 ft from floodmarks (discharge, 4,300 cfs).

REMARKS.--Records excellent. No storage or diversion above station. See schematic diagram for Tuolumne River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	1.1	1.1	7.3	2.9	6.1	1.5	.53			
2		0	.53	1.0	6.9	2.7	6.7	1.4	.44			
3		0	.42	.92	7.6	2.4	4.4	1.3	.36			
4		0	.43	.86	5.5	2.2	3.7	1.3	.32			
5		0	7.2	.84	4.4	2.1	3.6	1.4	.29			
6		0	1.5	.83	3.9	2.1	3.2	1.4	.30			
7		0	3.6	.82	3.5	3.1	3.0	1.4	.41			
8		0	1.9	.86	2.9	4.8	2.7	1.3	.40			
9		0	1.1	.97	4.0	1.9	2.5	1.3	.33			
10		0	.85	8.5	4.3	10	2.4	1.3	.25			
11		0	.75	7.3	3.1	7.7	2.5	1.3	.22			
12		0	.66	3.2	2.6	6.5	2.4	2.2	.19			
13		0	.63	2.3	2.6	23	2.3	3.4	.14			
14		0	.57	2.0	3.2	20	2.2	5.4	.13			
15		0	.58	12	2.5	12	2.1	2.9	.10			
16		0	.56	6.0	3.7	20	2.1	2.2	.07			
17		0	.56	3.3	28	43	2.0	1.9	.04			
18		0	.92	2.4	23	28	1.9	1.7	.03			
19		.25	1.1	2.0	11	16	1.9	1.6	.03			
20		.44	1.1	1.7	30	12	1.9	1.6	.02			
21		.28	.88	1.6	26	9.7	1.8	1.5	.01			
22		.18	.86	1.4	16	8.5	1.7	1.5	0			
23		.15	.93	1.3	10	7.2	1.7	1.5	0			
24		.15	1.0	1.2	8.1	6.4	1.8	1.4	0			
25		.15	1.2	1.2	6.2	5.7	1.8	1.3	0			
26		.17	1.3	1.2	4.9	5.2	1.8	1.1	0			
27		.21	1.4	1.7	4.2	4.6	1.7	1.0	0			
28		.30	1.3	1.7	3.6	4.1	1.6	.89	0			
29		.56	1.2	1.6	3.2	3.8	1.6	.73	0			
30		2.6	1.1	7.7	-----	3.5	1.5	.65	0			
31		-----	1.1	13	-----	3.3	-----	.61	-----			
TOTAL	0	5.44	38.33	92.50	242.2	344.7	76.6	49.98	4.61	0	0	0
MEAN	0	.18	1.24	2.98	8.35	11.1	2.55	1.61	.15	0	0	0
MAX	0	2.6	7.2	13	30	48	6.7	5.4	.53	0	0	0
MIN	0	0	.42	.82	2.5	2.1	1.5	.61	0	0	0	0
AC-FT	0	11	76	183	480	684	152	99	9.1	0	0	0

CAL YR 1967 TOTAL 8,407.27 MEAN 23.0 MAX 887 MIN 0 AC-FT 16,680
WTR YR 1968 TOTAL 854.36 MEAN 2.33 MAX 48 MIN 0 AC-FT 1,690

Peak discharge (base, 220 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

703

11-2847. NORTH FORK TUOLUMNE RIVER NEAR LONG BARN, CALIF.

LOCATION.--Lat 38°05'55", long 120°06'00", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.22, T.3 N., R.17 E., on right bank 0.6 mile upstream from small tributary, 1.5 miles east of Long Barn, and 3.8 miles upstream from Wrights Creek.

DRAINAGE AREA.--23.1 sq mi.

RECORDS AVAILABLE.--August 1962 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 4,650 ft (from topographic map). Prior to June 9, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--6 years, 26.2 cfs (18,970 acre-ft per year).

EXTREMES.--Maximum discharge during year, 178 cfs Jan. 15 (gage height, 4.19 ft); minimum daily, 0.27 cfs Aug. 11.

1962-68: Maximum discharge, 1,570 cfs Feb. 1, 1963 (gage height, 7.23 ft), from rating curve extended above 650 cfs on basis of slope-area measurement at gage height 9.8 ft; minimum daily, 0.2 cfs Sept. 18-25, 1962.

Flood of Dec. 23, 1955, reached a stage of 9.8 ft from floodmarks (discharge, 2,560 cfs by slope-area measurement).

REMARKS.--Records excellent except those for the winter period, which are fair. No storage or diversions above station. See schematic diagram for Tuolumne River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	1.7	3.0	4.5	7.2	35	54	26	6.5	1.8	.71	.60
2	1.9	1.7	2.7	4.7	8.0	32	47	24	6.0	1.7	.53	.40
3	3.5	1.7	2.5	4.4	8.6	30	43	23	5.9	1.7	.43	.35
4	2.7	1.6	3.8	4.4	8.8	29	41	23	5.7	1.6	.42	.43
5	2.3	1.7	13	4.3	9.0	28	43	22	5.6	1.7	.40	.49
6	2.2	1.7	7.3	4.2	9.2	26	40	20	5.7	1.6	.35	.48
7	2.1	1.6	5.0	4.1	9.0	26	38	18	6.3	1.5	.31	.46
8	2.0	1.6	4.7	4.1	10	33	37	16	5.9	1.5	.31	.44
9	1.9	1.6	4.9	4.0	15	30	37	15	5.3	1.5	.28	.45
10	1.9	1.6	5.2	4.2	16	26	39	14	4.9	1.4	.28	.42
11	1.8	1.6	5.1	4.6	14	23	41	14	4.6	1.3	.27	.48
12	1.8	1.6	5.0	3.9	13	22	41	17	4.3	1.3	.30	.48
13	1.8	1.6	5.1	3.7	12	24	39	19	4.1	1.2	.63	.44
14	1.8	2.7	5.3	3.8	11	23	38	21	3.9	1.2	.71	.39
15	1.7	2.4	4.5	113	10	22	37	19	3.7	1.2	.62	.43
16	1.7	2.1	6.1	86	15	23	36	18	3.3	1.2	.57	.42
17	1.7	1.9	5.6	59	49	25	33	17	2.8	.97	.54	.43
18	1.6	2.3	4.7	74	42	26	30	15	3.2	.90	.51	.38
19	1.7	6.8	5.6	35	36	25	28	15	3.0	.82	1.2	.38
20	1.7	4.3	4.5	11	110	27	26	14	2.9	.78	2.2	.41
21	1.7	3.1	4.0	6.0	93	25	24	13	2.7	.74	1.5	.46
22	1.7	2.6	3.8	5.8	67	26	23	13	2.6	.68	1.2	.52
23	1.7	2.4	3.8	10	66	25	22	12	2.4	.66	.86	.53
24	1.7	2.4	3.8	11	59	26	22	11	2.4	.65	.71	.52
25	1.7	2.2	4.5	7.0	51	28	22	10	2.3	.61	.64	.51
26	1.7	2.2	5.3	5.8	47	28	24	9.7	2.1	.60	.61	.49
27	1.7	2.2	5.8	6.2	45	28	25	9.1	2.0	.60	.54	.45
28	1.7	2.4	6.6	6.4	41	31	26	8.5	1.9	.54	.49	.44
29	1.7	2.6	6.6	6.8	38	36	26	7.9	1.9	.52	.45	.44
30	1.7	3.2	8.0	6.9	-----	42	26	7.2	1.9	.51	.47	.48
31	1.7	-----	5.8	6.6	-----	43	-----	6.9	-----	.68	.96	-----
TOTAL	58.3	69.1	161.6	515.4	919.8	873	1,008	478.3	115.8	33.66	20.00	13.60
MEAN	1.88	2.30	5.21	16.6	31.7	28.2	33.6	15.4	3.86	1.09	.65	.45
MAX	3.5	6.8	13	113	110	43	54	26	6.5	1.8	2.2	.60
MIN	1.6	1.6	2.5	3.7	7.2	22	22	6.9	1.9	.51	.27	.35
AC-FT	116	137	321	1,020	1,820	1,730	2,000	949	230	67	40	27

CAL YR 1967 TOTAL 16,561.2 MEAN 45.4 MAX 452 MIN 1.6 AC-FT 32,850
WTR YR 1968 TOTAL 4,266.56 MEAN 11.7 MAX 113 MIN .27 AC-FT 8,460

Peak discharge (base, 150 cfs).--Jan. 15 (1115 hrs) 178 cfs (4.19 ft).

SAN JOAQUIN RIVER BASIN

11-2865. WOODS CREEK NEAR JACKSONVILLE, CALIF.

LOCATION.--Lat 37°51'30", long 120°23'45", in SE $\frac{1}{4}$ sec.11, T.1 S., R.14 E., on right bank 200 ft downstream from Blue Gulch, 1.5 miles upstream from mouth, and 1.5 miles northwest of Jacksonville.

DRAINAGE AREA.--97.2 sq mi.

RECORDS AVAILABLE.--October 1925 to September 1968 (discontinued).

GAGE.--Digital water-stage recorder. Datum of gage is 653.65 ft above mean sea level. Prior to Oct. 1, 1947, graphic water-stage recorder at datum 2.00 ft higher. Oct. 1, 1947, to Oct. 11, 1963, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--43 years, 60.0 cfs (43,440 acre-ft per year); median of yearly mean discharges, 49 cfs (35,500 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,910 cfs Feb. 20 (gage height, 7.39 ft); minimum daily, 0.02 cfs July 20.

1925-68: Maximum discharge, 14,400 cfs Dec. 23, 1955 (gage height, 14.66 ft), from rating curve extended above 4,600 cfs on basis of slope-area measurement of maximum flow; no flow for parts of most years.

REMARKS.--Records good except those for periods of no gage-height record, which are poor. At times less than 10 cfs from Tuolumne Canal (see sta. no. 11-2975.) is discharged into Woods Creek above the station. See schematic diagram for Tuolumne River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	5.4	33	15	115	35	40	8.3	9.8	.54	.20	.50
2	1.9	4.6	20	15	80	33	70	7.2	9.5	.53	.20	.50
3	21	4.4	15	15	109	31	40	7.1	8.5	.63	.20	.50
4	8.4	4.2	13	13	70	29	38	7.9	7.9	.55	.20	.50
5	6.3	4.2	58	12	57	28	36	8.6	9.1	.58	.20	.50
6	5.4	5.4	30	13	46	27	33	9.0	10	.45	.20	.50
7	5.7	6.3	54	13	38	35	32	8.8	11	.35	.20	.50
8	4.8	5.9	50	14	34	400	32	9.8	13	.30	.20	.50
9	3.8	5.7	25	17	40	200	32	11	14	.24	.20	.50
10	3.4	6.0	19	36	47	100	29	11	8.5	.21	.20	.60
11	3.3	6.6	18	64	34	80	25	11	6.4	.16	.20	.60
12	3.0	6.8	17	29	31	70	23	12	9.0	.11	.25	.60
13	3.0	7.2	15	24	41	140	21	16	8.2	.10	.20	.70
14	3.3	8.5	16	21	68	120	19	46	7.6	.09	.20	.71
15	3.6	9.6	16	152	40	100	17	27	6.0	.07	.20	.68
16	5.4	9.6	16	62	36	150	17	27	6.0	.06	.20	.69
17	4.6	9.7	15	35	327	350	17	38	6.3	.05	.20	.61
18	3.0	14	26	27	204	250	16	34	6.8	.04	.20	.71
19	2.7	49	33	24	81	150	14	23	5.8	.03	.20	.45
20	3.0	28	24	22	790	100	15	23	3.7	.02	.80	.60
21	3.3	20	20	22	545	90	14	22	2.3	.03	.70	.61
22	3.3	15	19	22	217	75	14	21	1.7	.09	.70	.53
23	3.3	13	18	21	114	65	14	21	1.4	.12	.60	.47
24	3.4	13	20	20	81	55	13	20	1.2	.14	.60	.42
25	3.8	13	24	19	65	50	12	20	1.0	.18	.60	.34
26	3.8	13	24	19	56	45	11	19	1.0	.17	.60	.34
27	3.4	13	24	24	49	40	9.9	18	1.0	.19	.50	.33
28	6.3	29	40	31	43	36	9.8	16	.73	.19	.50	.33
29	8.8	12	21	29	38	34	8.5	14	.61	.20	.50	.22
30	8.1	30	17	130	-----	32	7.9	13	.56	.20	.50	.23
31	18	-----	16	341	-----	30	-----	11	-----	.20	.50	-----
TOTAL	163.0	372.1	756	1,301	3,496	2,980	680.1	540.7	178.60	6.82	10.95	15.27
MEAN	5.26	12.4	24.4	42.0	121	96.1	22.7	17.4	5.95	.22	.35	.51
MAX	21	49	58	341	790	400	70	46	14	.63	.80	.71
MIN	1.9	4.2	13	12	31	27	7.9	7.1	.56	.02	.20	.22
AC-FT	323	738	1,500	2,580	6,930	5,910	1,350	1,070	354	14	22	30

CAL YR 1967 TOTAL 35,703.79 MEAN 97.8 MAX 2,100 MIN .27 AC-FT 70,820
WTR YR 1968 TOTAL 10,500.54 MEAN 28.7 MAX 790 MIN .02 AC-FT 20,830

Peak discharge (base, 900 cfs).--Jan. 30 (2345 hrs) 1,130 cfs (6.22 ft); Feb. 20 (0715 hrs) 1,910 cfs (7.39 ft).

Note.--No gage-height record Mar. 4 to Apr. 3, July 29 to Sept. 13.

11-2875. DON PEDRO RESERVOIR NEAR LA GRANGE, CALIF.

LOCATION.--Lat 37°42'48", long 120°24'14", in SW $\frac{1}{4}$ sec.35, T.2 S., R.14 E., 300 ft from left bank on upstream face of Don Pedro Dam on Tuolumne River, 1 mile downstream from Rogers Creek, and 5.5 miles upstream from La Grange.

DRAINAGE AREA.--1,530 sq mi.

RECORDS AVAILABLE.--September 1923 to September 1968. 1923-24 (year-end contents only) and October 1924 to September 1930 month-end contents, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Turlock Irrigation District). Prior to Feb. 1, 1941, staff gage at same site and datum.

EXTREMES.--Maximum contents during year, 209,400 acre-ft Apr. 12, 13 (elevation, 578.6 ft); minimum, 65,500 acre-ft Dec. 26 (elevation, 511.0 ft).

1924-68: Maximum contents, 292,100 acre-ft June 13, 1937 (elevation, 606.1 ft); minimum, 29,200 acre-ft Sept. 1-3, 5, 1934; minimum elevation, 475.0 ft Sept. 1, 2, 1934.

REMARKS.--Reservoir is formed by concrete gravity-type dam, completed Jan. 1, 1923; storage began Nov. 14, 1922. Total capacity, 290,400 acre-ft at elevation 605.55 ft (top of drum type spillway gates), of which 30,000 acre-ft below elevation 476 ft (mutually agreed-upon minimum) is not available for release. Water passes through powerplant at dam and down Tuolumne River to La Grange Dam, 4 miles downstream, where it is diverted into Turlock and Modesto Canals for irrigation. This reservoir is operated jointly by Turlock and Modesto Irrigation Districts. Figures given herein represent total contents. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record furnished by Turlock and Modesto Irrigation Districts.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

476	30,000	510	64,200	550	135,800	590	242,400
480	33,000	520	78,100	560	159,900	600	272,900
490	41,900	530	94,100	570	185,600	607	295,000
500	52,200	540	113,500	580	213,400		

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	158.9	136.0	94.1	70.7	130.7	185.1	201.2	179.8	172.8	155.2	114.5	77.1
2	156.7	134.2	93.6	71.1	132.3	186.4	202.4	178.2	174.3	154.5	112.2	76.7
3	155.2	132.8	93.4	72.4	134.6	187.0	203.2	176.7	175.1	153.5	109.7	76.0
4	154.0	131.2	92.2	73.8	137.4	187.5	203.8	174.6	176.7	152.8	106.9	75.7
5	153.5	130.4	91.4	74.8	139.6	187.8	204.9	172.3	177.7	151.6	104.4	75.1
6	153.0	129.6	90.2	76.4	141.7	188.1	205.7	170.2	178.0	150.6	102.0	74.8
7	152.8	128.2	88.3	77.9	144.1	188.1	206.8	168.4	178.0	149.6	99.6	77.3
8	152.5	126.6	87.0	78.7	146.2	187.8	207.1	166.9	178.0	148.4	97.4	79.5
9	151.8	125.0	86.1	80.2	148.6	189.4	207.7	165.4	177.7	147.4	95.4	80.7
10	150.6	123.4	85.3	82.2	151.1	190.8	208.3	163.9	177.7	146.0	93.4	81.3
11	148.6	121.7	83.2	84.2	153.3	191.1	208.8	161.9	177.2	144.6	91.9	81.7
12	146.7	119.5	81.1	85.9	155.5	191.6	209.4	159.9	176.7	142.9	90.7	82.2
13	144.6	117.3	78.6	87.7	157.4	192.1	208.5	158.9	175.9	141.5	89.7	82.9
14	144.3	115.6	76.4	89.3	159.9	193.0	208.0	159.4	174.8	140.0	88.5	84.3
15	145.0	114.1	74.6	90.4	161.9	193.5	207.7	160.4	173.3	138.6	87.4	84.9
16	144.8	112.0	73.4	95.0	163.9	194.9	207.7	160.9	172.0	137.7	86.2	85.3
17	145.5	110.3	72.0	97.4	169.0	197.6	208.0	161.4	170.2	136.3	85.1	84.9
18	146.2	108.9	70.1	99.8	174.3	197.9	206.6	161.9	169.0	133.9	83.2	84.5
19	146.7	108.1	69.0	100.3	177.7	197.4	204.6	163.4	167.4	132.6	82.3	84.7
20	147.4	106.5	68.5	104.4	184.0	196.3	202.6	163.4	166.4	130.9	82.2	85.1
21	148.2	104.9	67.8	107.1	188.9	195.7	199.8	164.4	165.2	130.0	82.0	85.9
22	149.1	103.8	67.0	108.7	189.7	196.3	197.4	165.2	164.4	128.4	81.9	86.4
23	148.6	103.6	66.6	110.8	189.4	197.1	195.2	165.4	163.4	127.3	81.7	86.7
24	147.7	102.4	66.3	113.0	189.7	197.6	193.2	165.7	162.4	126.1	81.4	87.4
25	146.0	101.7	65.9	115.4	188.9	197.9	191.1	165.9	160.4	124.8	80.5	87.8
26	143.8	101.3	65.8	117.7	188.1	198.2	189.2	166.4	159.7	123.4	79.9	88.3
27	143.1	99.4	66.9	120.1	187.5	198.2	187.3	165.9	158.7	122.5	79.8	88.8
28	142.4	98.1	68.0	121.9	186.7	199.3	184.8	166.4	157.9	121.2	79.6	89.7
29	141.0	96.5	69.0	123.2	185.4	199.5	183.0	167.9	157.4	119.5	78.7	90.5
30	139.8	95.0	70.0	125.7	-----	200.4	181.4	170.0	156.5	117.7	77.6	91.4
31	137.7	-----	70.7	129.6	-----	201.2	-----	171.5	-----	116.4	77.4	-----
(a)	550.8	530.5	514.8	547.3	569.9	575.7	568.4	564.6	558.6	541.4	519.5	528.4
(b)	-23,200	-42,700	-24,300	+58,900	+55,800	+15,800	-19,800	-9,900	-15,000	-40,100	-39,000	+14,000
MAX	158.9	136.0	94.1	129.6	189.7	201.2	209.4	179.8	178.0	155.2	114.5	91.4
MIN	137.7	95.0	65.8	70.7	130.7	185.1	181.4	158.9	156.5	116.4	77.4	74.8

CAL YR 1967 b -1,700
WTR YR 1968 b -69,500

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

SAN JOAQUIN RIVER BASIN

11-2880. TUOLUMNE RIVER ABOVE LA GRANGE DAM, NEAR LA GRANGE, CALIF.

LOCATION.--Lat 37°42'35", long 120°24'45", in NE¼ sec.3, T.3'S., R.14 E., on left bank 0.5 mile downstream from Don Pedro Dam, 3.5 miles upstream from La Grange Dam, and 5 miles upstream from La Grange.

DRAINAGE AREA.--1,532 sq mi.

RECORDS AVAILABLE.--August 1895 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Published as "at La Grange," 1895-1912, as "near La Grange" or "at La Grange Dam, near La Grange," 1913-17. August 1895 to September 1917 at La Grange Dam, 3.5 miles downstream, records equivalent if flow of Sierra and San Francisco Power Co.'s canal (abandoned in 1926) and Modesto and Turlock Canals are added to flow at La Grange Dam.

GAGE.--Digital water-stage recorder. Altitude of gage is 330 ft (from topographic map). Prior to Mar. 31, 1908, and Sept. 25 to Dec. 5, 1908, staff gage at site 5 miles downstream below point of re-entrance of Sierra and San Francisco Power Co.'s canal, at different datum. Apr. 1 to Sept. 24, 1908, and Dec. 5, 1908, to Feb. 29, 1916, staff gage at site 3.5 miles downstream at La Grange Dam, diversion point of Turlock and Modesto Canals, at different datum. Mar. 1, 1916 to Dec. 20, 1962, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--72 years (1896-1968), 2,522 cfs (1,826,000 acre-ft per year), adjusted for Hetch Hetchy diversion to San Francisco.

EXTREMES.--Maximum discharge during year, 3,540 cfs Feb. 24 (gage height, 10.13 ft); minimum daily, 132 cfs Sept. 8.

1895-1968: Maximum discharge, 61,000 cfs Dec. 8, 1950 (gage height, 43.8 ft); minimum daily, 2.1 cfs Dec. 27, 1922.

REMARKS.--Records excellent. Flow regulated by Don Pedro powerplant, Don Pedro Reservoir (see sta. no. 11-2875), Hetch Hetchy Reservoir (see sta. no. 11-2755), Cherry Lake (see sta. no. 11-2772), and Lake Eleanor (see sta. no. 11-2775). Tuolumne Canal (see sta. no. 11-2975) diverts water from the Stanislaus River basin into the Tuolumne River basin for power, irrigation, and domestic supply in the vicinity of Sonora upstream from station. Diversion through Hetch Hetchy aqueduct to San Francisco began Oct. 19, 1934; an average of 254 cfs was diverted during 1968 water year. See schematic diagram of Tuolumne River basin.

COOPERATION.--Eight discharge measurements furnished by city and county of San Francisco.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,930	2,110	1,540	837	1,420	2,210	1,790	2,640	1,280	1,820	2,140	1,480
2	2,040	2,360	1,250	1,070	1,270	1,920	1,470	2,640	923	1,700	2,330	1,480
3	1,970	2,070	1,010	1,170	849	1,840	1,360	2,650	1,550	1,750	2,490	1,660
4	1,780	2,010	1,400	1,220	701	1,970	1,430	2,650	1,180	1,680	2,490	1,420
5	1,490	1,740	1,410	1,330	920	1,840	1,330	2,650	1,310	1,990	2,420	1,530
6	1,440	2,040	1,500	906	894	1,810	1,150	2,640	1,600	1,730	2,370	1,370
7	1,310	2,130	1,580	838	795	1,750	863	2,630	1,710	1,700	2,390	182
8	1,130	2,150	1,580	1,190	870	1,690	1,420	2,640	1,760	1,760	2,380	132
9	1,680	2,160	1,240	1,090	845	1,520	1,490	2,640	1,720	1,880	2,240	577
10	2,080	2,160	1,080	915	696	1,340	1,620	2,640	1,800	1,960	2,230	958
11	2,300	2,080	1,740	947	639	1,860	1,600	2,650	1,810	1,950	2,230	1,000
12	2,440	1,920	1,870	869	699	1,820	1,550	2,640	1,810	1,900	2,040	1,050
13	2,360	2,080	2,100	804	814	1,700	2,200	2,420	1,820	1,800	1,890	903
14	1,560	2,130	1,900	813	701	1,600	1,820	1,670	2,000	1,800	1,890	551
15	855	2,100	1,750	836	674	1,560	1,640	1,670	2,010	1,820	1,900	896
16	1,180	1,760	1,510	850	781	1,460	1,820	1,780	1,980	1,810	1,910	1,050
17	1,140	1,610	1,330	842	385	1,220	1,840	1,750	2,230	1,880	1,900	1,400
18	1,110	1,480	1,570	831	282	2,050	2,440	1,520	2,220	2,090	1,910	1,420
19	1,140	1,400	1,200	813	606	2,540	2,500	1,020	2,160	2,120	1,760	1,040
20	1,140	1,810	1,170	646	1,580	2,540	2,510	1,710	2,020	1,790	1,510	975
21	916	1,650	1,170	242	2,650	2,220	2,520	1,600	1,990	1,760	1,540	991
22	768	1,320	1,010	836	3,130	1,640	2,550	1,640	1,880	1,950	1,520	981
23	1,440	948	859	802	3,020	1,390	2,560	1,680	1,830	1,900	1,510	972
24	1,930	1,380	857	742	2,750	1,270	2,580	1,690	2,110	1,810	1,500	967
25	2,200	1,180	856	743	2,740	1,630	2,570	1,340	2,260	1,860	1,510	1,050
26	2,330	1,040	872	679	2,530	1,670	2,580	1,150	1,760	1,900	1,510	1,030
27	1,750	1,690	869	624	2,580	1,640	2,590	1,880	1,880	1,830	1,480	1,000
28	1,700	1,480	880	618	2,610	1,720	2,630	1,760	1,700	1,820	1,510	880
29	2,130	1,710	852	866	2,590	1,670	2,620	1,430	1,660	2,080	1,800	915
30	2,270	1,680	850	871	-----	1,460	2,630	916	1,670	2,110	1,970	866
31	2,340	-----	841	650	-----	1,220	-----	1,230	-----	1,910	1,500	-----
TOTAL	51,849	53,378	39,646	26,490	41,021	53,770	59,673	61,566	53,633	57,860	59,770	30,726
MEAN	1,673	1,779	1,279	855	1,415	1,735	1,989	1,986	1,788	1,866	1,928	1,024
MAX	2,440	2,360	2,100	1,330	3,130	2,540	2,630	2,650	2,260	2,120	2,490	1,660
MIN	768	948	841	242	282	1,220	863	916	923	1,680	1,480	132
AC-FT	102,800	105,900	78,640	52,540	81,360	106,700	118,400	122,100	106,400	114,800	118,600	60,940
CAL YR 1967	TOTAL	1,265,566	MEAN	3,467	MAX	10,500	MIN	701	AC-FT	2,510,000		
WTR YR 1968	TOTAL	589,382	MEAN	1,610	MAX	3,130	MIN	132	AC-FT	1,169,000		

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LOCATION.--Lat 37°40'04", long 120°27'26", in SW $\frac{1}{4}$ sec.17, T.3 S., R.14 E., on right bank 0.5 mile northeast of La Grange and 1 mile downstream from intake at La Grange Dam.

RECORDS AVAILABLE.--April 1903 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Digital water-stage recorder and since Mar. 19, 1963, V-notch sharp-crested weir. Datum of gage is 272.4 ft above mean sea level (levels by Modesto Irrigation District). Prior to July 1904, staff gage at approximately present site at different datum. July 1904 to March 1920, staff gage in concrete well 0.9 mile upstream and 460 ft below intake, set by water surface elevation to read same as previous gage. March 1920 to February 1924, staff gage and February 1924 to March 1932, graphic water-stage recorder, 0.9 mile upstream and 500 ft below intake at different datum. March 1932 to May 23, 1963, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--65 years, 396 cfs (286,700 acre-ft per year).

EXTREMES.--1903-68: Maximum daily discharge, 1,820 cfs July 1, 1935; no flow at times.

REMARKS.--Records excellent. Canal diverts from right bank of Tuolumne River at La Grange Dam for irrigation in Modesto and Waterford Irrigation Districts. See schematic diagram of Tuolumne River basin.

COOPERATION.--Ten discharge measurements furnished by city and county of San Francisco.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	738	4.4	.49	.43	381	.05	574	905	541	716	694	465
2	759	2.6	.48	.44	725	.05	489	905	527	720	703	465
3	749	.31	.48	.42	281	.05	488	908	593	729	749	445
4	763	.31	.50	.42	155	.05	515	908	664	721	764	414
5	748	.32	.66	.43	63	.05	551	908	690	744	761	413
6	757	.33	.49	.42	.20	.05	558	900	698	732	720	383
7	761	.34	.61	.42	.07	.05	560	863	701	726	659	154
8	701	.34	.50	.42	.07	.05	580	852	706	727	657	121
9	734	.34	.49	.42	.07	180	586	854	693	735	642	252
10	731	.35	.50	.54	.07	306	588	854	675	740	634	410
11	739	.36	.51	.40	.07	310	576	856	612	738	633	421
12	721	.41	.49	.41	.07	310	590	855	624	742	638	391
13	709	.42	.44	.41	.07	309	618	837	608	734	636	379
14	747	.44	.43	.43	.07	308	602	681	616	734	636	260
15	718	.43	.43	.61	118	307	646	610	612	736	637	386
16	754	.44	.44	.41	336	307	690	575	617	709	639	390
17	709	.44	.46	.43	198	302	662	540	627	693	638	382
18	670	.56	.49	.43	192	307	765	551	629	706	640	385
19	677	.67	.45	.42	197	309	842	521	621	705	621	363
20	636	.45	.45	.41	610	308	850	550	617	683	608	358
21	585	.45	.44	.26	1,220	306	848	545	636	691	577	334
22	572	.45	.45	.37	587	295	868	546	634	701	528	325
23	612	.46	.45	.41	237	279	895	550	632	700	516	312
24	626	.48	.44	.41	235	264	898	557	633	704	505	281
25	630	.49	.44	.39	235	285	898	549	563	704	506	263
26	633	.48	.44	.39	88	423	904	546	612	705	488	262
27	609	.49	.43	.43	3.8	547	906	545	646	701	495	264
28	605	.50	.43	.38	1.8	637	909	535	671	691	472	267
29	224	.65	.42	.55	.05	637	896	506	679	707	514	264
30	4.8	.67	.42	.94	-----	656	902	503	695	707	566	269
31	4.7	-----	.42	.42	-----	603	-----	533	-----	699	469	-----
TOTAL	19,626.5	19.38	14.57	13.67	5,864.41	8,495.40	21,254	21,348	19,072	22,180	18,945	10,078
MEAN	633	.65	.47	.44	202	274	708	689	636	715	611	336
MAX	763	4.4	.66	.94	1,220	656	909	908	706	744	764	465
MIN	4.7	.31	.42	.26	.05	.05	488	503	527	683	469	121
AC-FT	38,930	38	29	27	11,630	16,850	42,160	42,340	37,830	43,990	37,580	19,990
CAL YR 1967	TOTAL 178,769.15		MEAN 490		MAX 1,580	MIN .20		AC-FT 354,600				
WTR YR 1968	TOTAL 146,910.93		MEAN 401		MAX 1,220	MIN .05		AC-FT 291,400				

SAN JOAQUIN RIVER BASIN

11-2895. TURLOCK CANAL NEAR LA GRANGE, CALIF.

LOCATION.--Lat 37°40'00", long 120°26'25", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.21, T.3 S., R.14 E., on right bank 2,400 ft downstream from intake at La Grange Dam and 1.2 miles east of La Grange.

RECORDS AVAILABLE.--October 1898 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Digital water-stage recorder and concrete control. Altitude of gage is 265 ft (from topographic map). July 1, 1899 to Sept. 14, 1915, staff gage at different sites and datums near canal intake. Sept. 15, 1915 to Apr. 15, 1924, staff gage and Apr. 16, 1924, to winter of 1936-37, graphic water-stage recorder, both at present site at datum 0.25 ft higher. Winter of 1936-37 to Dec. 20, 1962, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--70 years, 592 cfs (428,600 acre-ft per year).

EXTREMES.--1898-1968: Maximum daily discharge, 2,280 cfs June 12, 1949; no diversion for irrigation during some periods in some years. Prior to 1939, unmeasured small discharge during winter called zero.

REMARKS.--Records excellent. Canal diverts from left bank of Tuolumne River at La Grange Dam for irrigation in Turlock Irrigation District and to supply town of La Grange. During fall and winter some unmeasured flow is diverted from canal at tunnel 0.3 mile above gage, passed through La Grange powerplant and returned to river. See schematic diagram of Tuolumne River basin.

COOPERATION.--Nine discharge measurements furnished by city and county of San Francisco.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,190	4.8	3.2	1.8	295	688	1,220	1,730	741	1,100	1,450	1,010
2	1,290	4.8	3.2	1.9	422	843	984	1,730	396	976	1,630	1,010
3	1,220	4.7	3.1	2.0	568	568	877	1,740	957	1,020	1,740	1,210
4	954	4.7	3.1	2.0	546	14	911	1,740	520	964	1,730	1,010
5	562	4.7	2.8	1.9	544	6.3	783	1,740	622	1,250	1,660	1,120
6	565	4.8	2.6	1.8	565	6.3	593	1,740	897	997	1,650	991
7	551	4.8	2.5	1.8	560	6.3	303	1,770	1,010	975	1,730	28
8	425	4.8	2.4	1.8	575	6.3	839	1,790	1,050	1,030	1,720	11
9	947	4.8	2.4	1.8	560	5.9	907	1,790	1,030	1,140	1,600	325
10	1,350	4.8	2.5	1.8	581	5.6	1,030	1,790	1,130	1,220	1,600	548
11	1,560	4.8	2.5	1.7	561	5.9	1,020	1,790	1,200	1,210	1,600	581
12	1,720	4.8	2.5	1.6	231	5.6	957	1,790	1,190	1,160	1,400	659
13	1,650	4.8	2.5	1.6	14	5.6	1,580	1,580	1,210	1,070	1,250	524
14	548	4.8	2.5	1.7	14	5.3	1,220	986	1,380	1,070	1,250	291
15	5.4	4.8	2.4	1.8	13	5.3	994	1,060	1,400	1,080	1,260	510
16	6.1	4.6	2.4	1.7	14	5.4	1,130	1,210	1,360	1,100	1,270	659
17	5.8	4.4	2.4	1.6	12	5.2	1,180	1,210	1,600	1,190	1,260	1,020
18	5.7	4.4	2.5	1.6	11	5.2	1,680	965	1,590	1,380	1,270	1,040
19	5.6	4.1	2.4	1.6	11	259	1,660	500	1,540	1,410	1,140	679
20	5.6	4.1	2.6	1.6	13	406	1,660	1,160	1,400	1,110	899	617
21	5.1	4.1	2.5	7.2	15	404	1,670	1,060	1,330	1,070	962	657
22	4.8	3.9	2.5	2.4	15	484	1,680	1,090	1,220	1,250	996	656
23	5.2	3.7	2.3	2.6	15	603	1,670	1,130	1,170	1,200	997	660
24	5.3	3.7	2.3	2.5	15	596	1,680	1,130	1,480	1,110	1,000	686
25	5.2	3.7	2.3	2.5	14	604	1,670	790	1,700	1,160	1,000	784
26	5.2	3.5	2.3	2.3	294	610	1,680	604	1,150	1,190	1,020	769
27	4.7	3.7	2.2	2.3	505	743	1,680	1,340	1,230	1,130	983	737
28	4.5	3.7	2.0	2.4	514	883	1,720	1,220	1,030	1,130	1,040	613
29	4.9	3.7	1.8	2.4	513	758	1,720	927	986	1,370	1,290	651
30	4.8	3.4	1.9	2.4	-----	804	1,730	413	979	1,400	1,400	597
31	4.8	-----	1.8	2.3	-----	612	-----	693	-----	1,210	1,030	-----
TOTAL	14,620.7	130.4	76.4	66.4	8,010	9,959.2	38,428	40,208	34,498	35,672	40,827	20,653
MEAN	472	4.35	2.46	2.14	276	321	1,281	1,297	1,150	1,151	1,317	688
MAX	1,720	4.8	3.2	7.2	581	883	1,730	1,790	1,700	1,410	1,740	1,210
MIN	4.5	3.4	1.8	1.6	11	5.2	303	413	396	964	899	11
AC-FT	29,000	259	152	132	15,890	19,750	76,220	79,750	68,430	70,750	80,980	40,960
CAL YR 1967	TOTAL 291,026.5		MEAN 797		MAX 2,220		MIN 1.8		AC-FT 577,200			
WTR YR 1968	TOTAL 243,149.1		MEAN 664		MAX 1,790		MIN 1.6		AC-FT 482,300			

SAN JOAQUIN RIVER BASIN

709

11-2900. TUOLUMNE RIVER AT MODESTO, CALIF.

LOCATION.--Lat 37°37'38", long 120°59'20", in SW $\frac{1}{4}$ sec.33, T.3 S., R.9 E., on left bank at bridge on U.S. Highway 99 in Modesto and 0.2 mile downstream from Dry Creek.

DRAINAGE AREA.--1,884 sq mi.

RECORDS AVAILABLE.--1878-84, 1891-94, 1897 (gage heights only), January 1895 to December 1896, April 1940 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Digital water-stage recorder. Datum of gage is at mean sea level, unadjusted (levels by Modesto Irrigation District). Prior to July 11, 1947, graphic water-stage recorder at site 1,700 ft downstream at same datum, July 11, 1947, to Nov. 16, 1953, graphic water-stage recorder at site 1,000 ft downstream at same datum, Nov. 16, 1953, to July 15, 1964, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--29 years (1895-96, 1940-68), 1,416 cfs (1,025,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 3,430 cfs Feb. 23 (elevation, 45.10 ft); minimum daily, 149 cfs July 30.

1895-96, 1940-68: Maximum discharge observed, 57,000 cfs Dec. 9, 1950 (elevation, 69.19 ft); minimum, 85 cfs Oct. 25, 1961.

REMARKS.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by reservoirs and powerplants above station. In addition to diversions into Modesto and Turlock Canals (see sta. nos. 11-2890 and 11-2895), there are diversions for irrigation of about 1,300 acres between station above LaGrange Dam and at Modesto. See REMARKS for sta. no. 11-2880 for Tuolumne River above LaGrange Dam. Records of water temperatures for the 1968 water year are published in Part 2 of this report. See schematic diagram for Tuolumne River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	395	2,430	1,750	1,020	1,010	2,100	455	237	203	194	182	209
2	368	2,240	1,700	1,020	1,000	1,900	578	230	190	178	183	203
3	354	2,310	1,520	1,200	513	1,600	373	237	187	174	167	201
4	355	2,160	1,350	1,320	372	1,100	311	235	190	186	171	196
5	347	2,140	1,460	1,380	280	1,850	310	246	205	182	181	204
6	428	1,930	1,500	1,490	396	1,950	311	247	221	210	175	203
7	490	2,150	1,600	1,160	511	2,000	323	227	200	187	172	207
8	438	2,230	1,700	1,050	473	2,050	331	226	209	194	166	196
9	381	2,210	1,700	1,300	481	2,000	275	217	211	198	182	189
10	338	2,220	1,550	1,310	513	1,850	270	218	213	219	178	184
11	338	2,220	1,400	1,150	394	1,500	270	210	208	196	173	186
12	322	2,160	1,600	1,140	340	1,720	260	218	216	202	186	183
13	322	2,080	1,800	1,080	557	1,750	260	225	194	204	173	182
14	345	2,160	1,950	1,020	961	1,650	255	222	196	204	172	198
15	545	2,190	1,950	1,040	945	1,590	260	230	194	200	184	203
16	525	2,140	1,850	1,040	833	1,580	255	238	191	193	183	207
17	637	1,940	1,700	1,060	744	1,730	260	232	201	162	183	200
18	714	1,780	1,600	1,060	598	1,640	255	233	197	160	182	188
19	750	1,670	1,750	1,050	595	2,160	260	244	187	173	203	190
20	775	1,680	1,450	1,030	618	2,220	255	227	194	163	200	191
21	812	1,680	1,390	945	1,420	2,100	260	219	187	163	198	188
22	750	1,680	1,370	512	2,010	1,780	255	227	188	188	205	189
23	575	1,600	1,230	907	2,490	1,290	257	244	180	177	209	192
24	928	1,500	1,070	1,010	2,700	928	255	225	189	170	191	198
25	1,440	1,500	1,040	970	2,500	770	265	235	176	171	212	188
26	1,730	1,450	1,040	958	2,500	979	258	232	182	169	220	193
27	1,880	1,400	1,060	912	2,250	971	274	221	176	157	212	201
28	1,380	1,500	1,060	863	2,200	762	244	216	189	159	213	213
29	1,340	1,600	1,060	835	2,150	572	253	218	182	159	205	209
30	2,070	1,700	1,040	1,090	-----	597	246	217	203	149	204	211
31	2,350	-----	1,030	1,170	-----	452	-----	206	-----	154	205	-----
TOTAL	24,422	57,650	45,270	33,092	32,354	47,141	8,694	7,059	5,859	5,595	5,870	5,902
MEAN	788	1,922	1,460	1,067	1,116	1,521	290	228	195	180	189	197
MAX	2,350	2,430	1,950	1,490	2,700	2,220	578	247	221	219	220	213
MIN	322	1,400	1,030	512	280	452	244	206	176	149	166	182
AC-FT	48,440	114,300	89,790	65,640	64,170	93,500	17,240	14,000	11,620	11,100	11,640	11,710
CAL YR 1967	TOTAL 890,212		MEAN 2,439		MAX 7,860		MIN 248		AC-FT 1,766,000			
WTR YR 1968	TOTAL 278,908		MEAN 762		MAX 2,700		MIN 149		AC-FT 553,200			

Note.--No gage-height record Nov. 20 to Dec. 18 and Feb. 24 to Mar. 11.

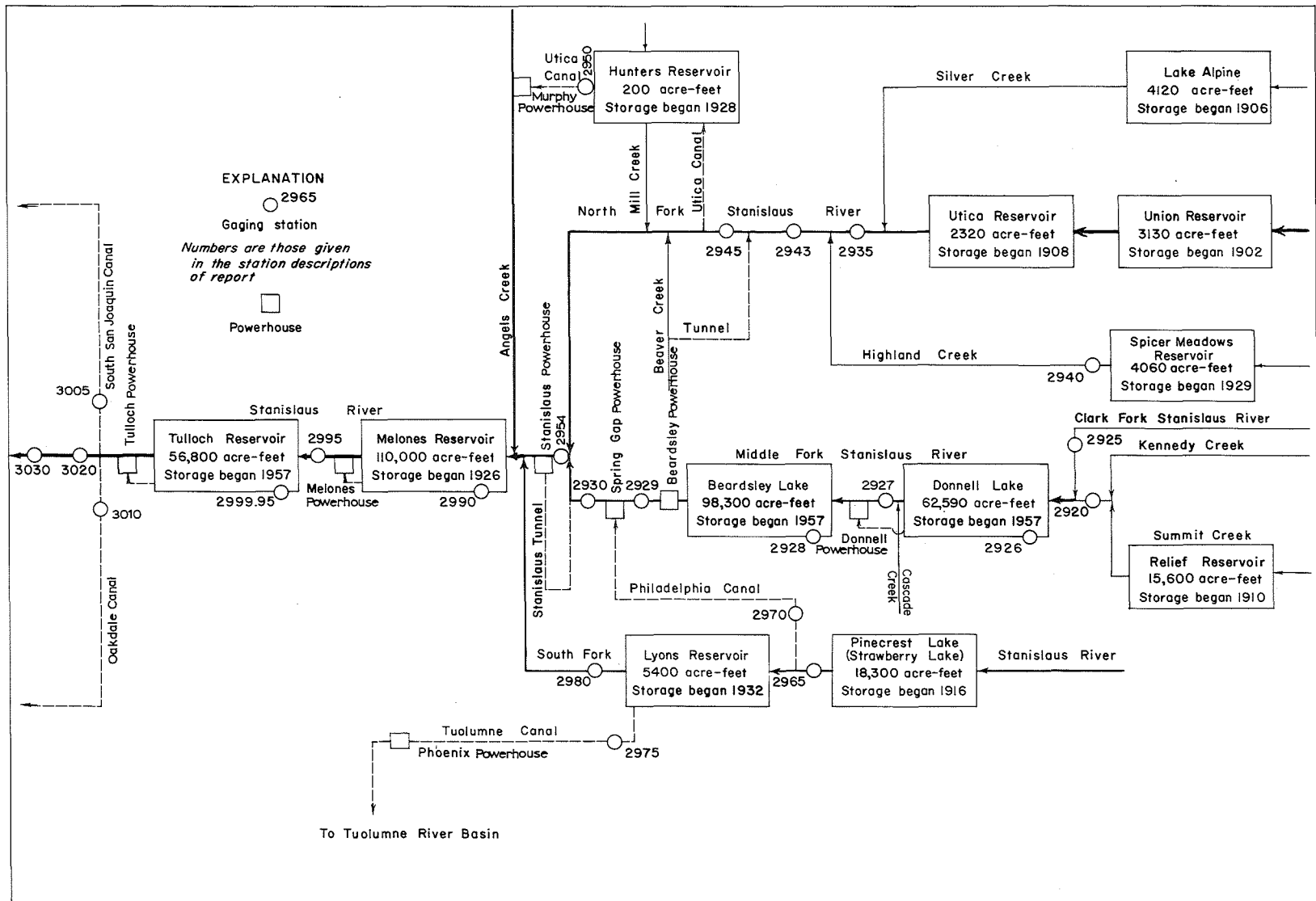


FIGURE 5.—Schematic diagram showing diversions and storage in Stanislaus River basin.

11-2920. MIDDLE FORK STANISLAUS RIVER AT KENNEDY MEADOWS, NEAR DARDANELLE, CALIF.

LOCATION.--Lat 38°17'50", long 119°44'25", in NE¼ sec.11, T.5 N., R.20 E., on right bank at upper end of Kennedy Meadows, 1.3 miles upstream from Deadman Creek, 1.6 miles downstream from Relief Reservoir, and 5.8 miles southwest of Dardanelle.

DRAINAGE AREA.--47.5 sq mi.

RECORDS AVAILABLE.--October 1938 to September 1968. Records for water year 1946 incomplete, yearly estimate published in WSP 1315-A. Prior to October 1962, published as "at Kennedy Meadows."

GAGE.--Graphic water-stage recorder. Datum of gage is 6,320.1 ft above mean sea level (river-profile survey).

AVERAGE DISCHARGE.--30 years, 133 cfs (96,290 acre-ft per year), unadjusted.

EXTREMES.--Maximum discharge during year, 666 cfs Oct. 5 (gage height, 4.99 ft); minimum daily, 10 cfs Jan. 8, 9.

1938-68: Maximum discharge recorded, 1,700 cfs Nov. 20, 1950 (gage height, 6.66 ft); minimum daily recorded, 7.2 cfs Feb. 11, 1948.

REMARKS.--Records good. Flow regulated by Relief Reservoir (usable capacity, 15,600 acre-ft). Contents of Relief Reservoir were 4,200 acre-ft on Sept. 30, 1967, and zero acre-ft on Sept. 30, 1968. No diversion above station. See schematic diagram of Stanislaus River basin.

COOPERATION.--Gage-height record and 11 discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	308	19	22	16	20	47	72	149	501	110	54	134
2	330	19	21	15	19	45	61	159	570	103	47	132
3	358	19	21	13	19	45	56	175	590	102	48	236
4	490	19	20	12	20	46	56	175	543	101	70	424
5	650	19	19	12	19	45	56	157	433	100	93	462
6	594	19	21	11	19	42	53	128	262	88	92	452
7	543	19	21	11	19	40	53	132	200	88	91	436
8	456	19	20	10	19	40	56	274	180	88	90	424
9	132	19	19	10	21	38	65	328	197	88	89	397
10	38	18	19	11	20	35	81	278	236	86	89	430
11	34	18	19	11	19	34	95	290	292	80	88	430
12	32	18	17	11	18	34	97	282	312	78	88	412
13	32	18	18	11	17	32	93	230	260	76	120	394
14	31	25	17	12	15	32	94	197	268	67	148	376
15	31	21	15	14	14	30	100	186	340	53	145	406
16	23	20	13	16	14	30	92	204	364	52	143	406
17	22	19	13	15	15	30	80	244	355	51	141	330
18	22	21	14	14	22	29	70	290	328	50	141	30
19	21	23	16	14	33	28	66	427	320	50	162	18
20	21	21	14	15	78	28	63	418	270	48	200	18
21	21	20	13	17	54	28	59	391	226	46	172	17
22	21	19	13	19	50	28	55	222	230	43	162	17
23	21	19	13	20	63	29	58	192	228	40	154	16
24	21	19	15	21	57	30	61	198	186	40	151	15
25	21	19	19	20	53	32	69	240	193	39	148	15
26	21	19	20	20	51	35	85	328	197	38	145	15
27	20	18	21	17	51	35	99	459	195	38	141	15
28	20	20	21	16	50	43	110	606	178	38	140	15
29	20	21	20	17	49	56	131	614	145	39	138	15
30	19	20	20	19	-----	63	148	522	119	38	138	15
31	19	-----	17	21	-----	68	-----	470	-----	45	137	-----
TOTAL	4,392	587	551	461	918	1,177	2,334	8,965	8,718	2,003	3,765	6,502
MEAN	142	19.6	17.8	14.9	31.7	38.0	77.8	289	291	64.6	121	217
MAX	650	25	22	21	78	68	148	614	590	110	200	462
MIN	19	18	13	10	14	28	53	128	119	38	47	15
AC-FT	8,710	1,160	1,090	914	1,820	2,330	4,630	17,780	17,290	3,970	7,470	12,900
CAL YR 1967	TOTAL 76,650		MEAN 210		MAX 1,250		MIN 13		AC-FT 152,000			
WTR YR 1968	TOTAL 40,373		MEAN 110		MAX 650		MIN 10		AC-FT 80,080			

SAN JOAQUIN RIVER BASIN

11-2925. CLARK FORK STANISLAUS RIVER NEAR DARDANELLE, CALIF.

LOCATION (revised).--Lat 38°21'50", long 119°52'13", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.22, T.6 N., R.19 E., on right bank 0.5 mile upstream from mouth, and 2.6 miles northwest of Dardanelle.

DRAINAGE AREA.--67.5 sq mi.

RECORDS AVAILABLE.--October 1950 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 5,507.3 ft above mean sea level (river-profile survey).

AVERAGE DISCHARGE.--18 years, 146 cfs (105,700 acre-ft per year); median of yearly mean discharges, 122 cfs (88,300 acre-ft per year).

EXTREMES.--Maximum discharge during year, 815 cfs May 28 (gage height, 6.20 ft); minimum daily, 17 cfs Jan. 11. 1950-68: Maximum discharge, 4,350 cfs Nov. 20, 1950 (gage height, 11.88 ft), from rating curve extended above 1,100 cfs on basis of slope-area measurement of maximum flow; minimum, 11 cfs Apr. 3, 1958.

REMARKS.--Records excellent except those for the winter period, which are fair. No storage or diversion above station. See schematic diagram for Stanislaus River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	31	33	26	32	110	162	345	491	102	40	24
2	44	31	34	23	32	101	133	355	539	96	35	24
3	62	31	35	20	33	101	121	332	518	89	34	23
4	51	31	35	18	34	104	126	358	482	86	33	22
5	48	31	41	18	34	104	130	355	385	83	31	22
6	45	31	43	18	34	94	118	310	310	81	30	21
7	44	31	48	18	34	90	121	308	279	81	30	21
8	42	31	48	18	34	89	130	328	255	77	29	21
9	41	31	49	18	37	83	151	320	248	74	29	21
10	40	31	50	18	35	78	182	288	268	70	29	21
11	39	31	50	17	34	77	210	285	301	64	28	21
12	39	30	38	19	34	74	210	281	304	62	28	21
13	38	31	32	20	35	74	206	240	290	60	36	21
14	37	37	33	21	34	69	215	226	306	58	31	21
15	37	34	35	80	34	68	227	230	318	57	30	21
16	37	31	33	41	34	69	208	250	318	53	29	20
17	37	31	32	33	41	67	180	270	301	50	28	20
18	36	37	34	35	45	65	165	299	290	47	28	20
19	36	45	36	32	54	63	159	372	270	45	45	20
20	35	39	36	34	195	63	155	473	238	42	53	20
21	35	35	37	35	132	67	147	449	220	42	35	21
22	35	31	39	35	99	69	139	352	216	40	36	21
23	35	33	42	35	146	68	147	290	199	39	34	21
24	34	33	46	36	135	73	159	272	183	38	30	21
25	34	32	47	37	112	77	179	308	164	36	28	21
26	33	31	49	36	111	74	219	375	154	36	27	20
27	33	31	52	31	112	79	238	467	143	36	26	20
28	33	31	44	30	114	99	258	557	127	36	26	20
29	32	31	35	30	111	133	311	557	114	37	25	21
30	32	33	37	31	-----	155	338	506	102	36	24	22
31	31	-----	29	32	-----	159	-----	479	-----	40	25	-----
TOTAL	1,198	977	1,227	895	1,951	2,696	5,444	10,837	8,333	1,793	972	633
MEAN	38.6	32.6	39.6	28.9	67.3	87.0	181	350	278	57.8	31.4	21.1
MAX	62	45	52	80	195	159	338	557	539	102	53	24
MIN	31	30	29	17	32	63	118	226	102	36	24	20
AC-FT	2,380	1,940	2,430	1,780	3,870	5,350	10,800	21,490	16,530	3,560	1,930	1,260
CAL YR 1967	TOTAL 79,839		MEAN 219		MAX 1,380		MIN 29		AC-FT 158,400			
WTR YR 1968	TOTAL 36,956		MEAN 101		MAX 557		MIN 17		AC-FT 73,300			

Peak discharge (base, 600 cfs).--May 20 (2100 hrs) 654 cfs (5.77 ft); May 28 (2100 hrs) 815 cfs (6.20 ft).

11-2926. DONNELL LAKE NEAR DARDANELLE, CALIF.

LOCATION.--Lat 38°19'46", long 119°57'37", in SE $\frac{1}{4}$ sec.35, T.6 N., R.18 E., on left bank in hoist house of Donnell Dam on Middle Fork Stanislaus River, 1.2 miles downstream from Niagara Creek, and 6.9 miles west of Dardanelle.

DRAINAGE AREA.--230 sq mi.

RECORDS AVAILABLE.--October 1957 to September 1968. Prior to October 1962, published as Donnell's Reservoir near Dardanelle.

GAGE.--Graphic water-stage recorder. Datum of gage is 4.84 ft above mean sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

EXTREMES.--Maximum contents during year, 64,300 acre-ft May 28 (gage height, 4,915.9 ft); minimum, 9,610 acre-ft Jan. 19 (gage height, 4,755.5 ft).

1957-68: Maximum contents, 64,900 acre-ft May 8, 1963 (gage height, 4,917.3 ft); minimum since reservoir first filled, 4,800 acre-ft Apr. 19, 1965 (gage height, 4,735.3 ft).

REMARKS.--Lake is formed by concrete arch-type dam completed in 1957. Usable capacity, 62,590 acre-ft between gage heights 4,720.0 (minimum operating head) and 4,917.0 ft (top of spillway gates). Lake is for power and conservation storage. Water passes through a 7.2-mile tunnel to a powerplant and down the Middle Fork Stanislaus River to Beardsley Lake (see sta. no. 11-2928.). Records including extremes represent total contents, at 2400 hours of which 2,150 acre-ft is below minimum operating head. See schematic diagram for Stanislaus River basin.

CAPACITY TABLE (GAGE HEIGHT, IN FEET, AND CONTENTS, IN ACRE-FT)

4,735	4,730	4,790	19,100
4,740	5,830	4,800	22,100
4,750	8,220	4,820	28,400
4,760	10,800	4,850	38,700
4,770	13,400	4,880	49,800
4,780	16,200	4,917.3	64,900

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47.8	42.6	29.5	16.4	10.1	23.1	39.2	47.4	64.1	62.2	58.4	53.0
2	47.3	42.7	29.6	15.6	10.1	23.8	40.1	48.4	64.2	62.2	57.9	53.3
3	46.9	42.8	29.8	14.8	10.2	24.4	40.7	49.8	64.2	62.1	58.0	52.8
4	47.0	42.9	29.1	14.0	10.2	25.0	41.0	50.8	64.0	62.5	58.1	52.8
5	47.4	42.6	28.3	13.2	10.4	25.6	41.3	51.7	63.9	62.1	57.8	52.8
6	47.8	41.4	27.5	13.4	10.2	26.0	42.1	52.4	64.0	62.5	57.3	52.8
7	48.9	41.1	26.8	13.5	10.3	26.5	43.0	52.9	63.9	62.9	56.9	53.7
8	49.9	40.3	25.9	12.7	10.4	27.0	43.1	53.7	63.7	62.9	56.4	54.5
9	49.4	39.6	26.0	11.8	10.6	27.6	43.5	54.6	63.6	62.6	56.0	54.5
10	48.5	38.8	26.2	11.3	10.6	28.0	43.6	55.2	63.8	62.4	56.2	54.5
11	47.7	38.9	25.4	10.6	10.8	28.3	44.0	55.9	64.1	62.4	56.4	54.5
12	46.8	39.0	24.6	10.3	10.9	28.7	44.3	56.5	64.1	62.3	55.8	54.4
13	45.9	38.3	23.8	10.4	11.0	29.1	44.6	57.0	64.2	62.6	55.4	54.3
14	46.0	37.6	22.9	10.6	11.2	29.3	45.0	57.7	64.1	62.9	55.4	55.0
15	46.2	36.8	22.2	10.5	11.5	29.5	45.3	58.1	64.2	62.7	55.0	55.8
16	45.2	36.1	22.4	10.6	11.5	30.0	45.4	58.6	64.2	62.5	54.8	56.6
17	44.3	35.4	22.5	10.3	11.9	30.4	45.4	59.2	64.1	62.2	55.1	57.0
18	43.4	35.5	21.7	9.90	12.3	30.7	45.2	60.0	64.1	61.8	55.4	56.3
19	42.4	35.7	21.0	9.61	12.7	31.0	44.9	61.3	64.2	61.4	55.2	55.2
20	41.4	35.0	20.2	9.79	14.3	31.3	44.6	63.0	64.2	61.6	55.0	54.3
21	41.5	34.3	19.4	9.97	15.6	31.6	44.3	64.2	64.2	61.8	54.8	54.4
22	41.6	33.6	18.6	9.90	16.4	31.9	43.8	64.1	64.2	61.3	54.6	54.4
23	41.7	33.5	18.7	9.84	17.6	32.3	43.6	64.1	64.2	60.9	54.3	53.5
24	41.8	32.8	18.8	9.92	18.7	32.7	43.3	64.2	64.0	60.6	54.6	53.1
25	41.9	32.9	19.0	9.90	19.7	33.1	43.3	64.2	63.9	60.2	54.9	52.3
26	42.0	33.0	18.2	9.87	20.3	33.5	43.7	64.2	63.6	60.0	54.6	51.5
27	42.1	32.3	17.5	10.1	21.2	33.9	44.0	64.2	63.3	60.2	54.1	50.8
28	42.2	31.8	16.8	10.2	21.8	34.6	44.6	64.3	63.1	60.3	53.5	50.8
29	42.3	30.9	16.0	10.3	22.4	35.5	45.4	64.1	62.7	59.9	53.0	50.8
30	42.4	30.3	16.2	10.0	-----	36.7	46.4	63.9	62.4	59.4	52.4	50.0
31	42.5	-----	16.3	10.0	-----	38.0	-----	64.1	-----	58.9	52.7	-----
(a)	4,860.6	4,825.6	4,780.3	4,757.1	4,801.1	4,848.0	4,871.0	4,915.5	4,911.4	4,902.9	4,887.5	4,880.6
(b)	-5,900	-12,200	-14,000	-6,300	+12,400	+15,600	+8,400	+17,700	-1,700	-3,500	-6,200	-2,700
MAX	49,900	42,900	29,800	16,400	22,400	38,000	46,400	64,300	64,200	62,900	58,400	57,000
MIN	41,400	30,300	16,000	9,610	10,100	23,100	39,200	47,400	62,400	58,900	52,400	50,000

CAL YR 1967
WTR YR 1968

b -22,300
b +1,600

MAX 64,200
MAX 64,300

MIN 12,000
MIN 9,610

a Gage height, in feet, at end of month.
b Change of contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11-2927. MIDDLE FORK STANISLAUS RIVER AT HELLS HALF ACRE BRIDGE, NEAR PINECREST, CALIF.

LOCATION.--Lat 38°14'49", long 120°01'51", in SW¹/₄NE¹/₄ sec.31, T.5 N., R.18 E., on left bank 200 ft upstream from Donnell powerhouse, 800 ft downstream from Hells Half Acre Bridge, 1.1 miles upstream from Cow Creek, and 4.7 miles northwest of Pinecrest.

DRAINAGE AREA.--287 sq mi.

RECORDS AVAILABLE.--February 1956 to September 1968. Prior to October 1965, published as Middle Fork Stanislaus River at Hells Half Acre Bridge.

GAGE.--Graphic water-stage recorder. Datum of gage is 3,418.31 ft above mean sea level (river-profile survey). Prior to Aug. 9, 1961, at site 1,600 ft upstream at different datum.

AVERAGE DISCHARGE.--12 years, 232 cfs (168,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,600 cfs May 29 (gage height, 7.38 ft); minimum daily, 11 cfs Dec. 14.

1956-68: Maximum discharge, 10,200 cfs Dec. 24, 1964 (gage height, 13.64 ft in gage well, 14.2 ft outside, from floodmarks), from rating curve extended above 2,100 cfs on basis of computation of peak inflow to Beardsley Lake at 12.20 ft; minimum, 3.3 cfs Nov. 9, 10, 1957.

Maximum stage known since at least 1905, 23 ft Dec. 23, 1955, from floodmarks at present site (discharge, 26,600 cfs by slope-area measurement).

REMARKS.--Records good. Flow regulated by Relief Reservoir since 1909 (capacity, 15,600 acre-ft), by Donnell Lake (see sta. no. 11-2926.), and by diversion around station through Donnell powerhouse. See schematic diagram for Stanislaus River basin. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	32	21	19	26	170	276	205	755	33	30	34
2	30	30	20	18	29	155	226	197	928	33	30	34
3	37	21	20	18	33	152	205	192	994	32	42	34
4	36	20	20	18	33	154	207	190	856	36	42	39
5	36	20	33	18	33	155	215	172	650	36	42	39
6	35	20	22	17	33	141	197	152	247	36	42	39
7	35	16	23	17	36	132	204	137	116	37	42	39
8	35	15	21	17	37	143	213	131	60	36	42	39
9	35	15	20	17	43	128	226	127	53	36	42	39
10	34	15	20	20	45	120	250	120	50	36	42	39
11	34	16	20	19	40	115	261	115	47	35	42	34
12	34	16	19	17	39	112	254	129	220	35	42	34
13	34	16	16	17	40	115	242	133	218	35	42	34
14	33	20	11	17	37	105	242	130	130	35	35	34
15	33	20	20	64	36	102	244	147	254	34	35	34
16	33	19	19	65	38	111	228	154	306	34	35	34
17	33	19	18	41	101	111	197	150	313	34	34	34
18	33	20	20	32	123	102	179	137	215	34	35	35
19	33	26	20	29	104	99	174	133	199	33	38	35
20	33	22	18	28	454	99	172	130	78	33	43	35
21	32	20	18	28	330	106	164	379	53	33	38	35
22	32	20	18	29	249	112	154	580	76	33	37	35
23	32	19	18	30	292	111	158	250	100	32	36	35
24	32	19	20	30	251	120	165	184	40	32	36	35
25	32	19	22	30	210	134	172	202	30	32	36	35
26	32	19	24	30	199	134	188	446	36	32	35	34
27	32	19	24	28	194	139	195	770	35	31	35	34
28	32	20	23	28	185	164	197	1,020	35	31	35	34
29	32	20	22	27	174	210	207	1,250	34	31	35	34
30	32	24	20	28	-----	243	207	1,010	34	31	35	34
31	32	-----	19	28	-----	255	-----	660	-----	31	34	-----
TOTAL	1,028	597	629	824	3,444	4,249	6,219	9,732	7,162	1,042	1,169	1,063
MEAN	33.2	19.9	20.3	26.6	119	137	207	314	239	33.6	37.7	35.4
MAX	37	32	33	65	454	255	276	1,250	994	37	43	39
MIN	30	15	11	17	26	99	154	115	30	31	30	34
AC-FT	2,040	1,180	1,250	1,630	6,830	8,430	12,340	19,300	14,210	2,070	2,320	2,110
CAL YR 1967	TOTAL 191,618		MEAN 525		MAX 4,510		MIN 11		AC-FT 380,100			
WTR YR 1968	TOTAL 37,158		MEAN 102		MAX 1,250		MIN 11		AC-FT 73,700			

11-2928. BEARDSLEY LAKE NEAR STRAWBERRY, CALIF.

LOCATION.--Lat 38°12'17", long 120°04'31", in NW¼ sec.14, T.4 N., R.17 E., in hoist house of Beardsley Dam on Middle Fork Stanislaus River, 2.4 miles upstream from Spring Gap powerhouse, 3.9 miles west of Strawberry, and 4.7 miles west of Pinecrest.

DRAINAGE AREA.--309 sq mi.

RECORDS AVAILABLE.--June 1957 to September 1968. Prior to October 1960, published as Lake Hartley near Strawberry.

GAGE.--Graphic water-stage recorder. Datum of gage is 7.84 ft above mean sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

EXTREMES.--Maximum contents during year, 97,800 acre-ft June 29 (gage height, 3,397.0 ft); minimum, 26,600 acre-ft Feb. 18, 19 (gage height, 3,276.1 ft).

1957-68: Maximum contents, 98,700 acre-ft June 27, 1957 (gage height, 3,398.2 ft); minimum since reservoir first filled, 20,000 acre-ft Jan. 27, 28, 1962 (gage height, 3,261.3 ft).

REMARKS.--Reservoir is formed by rockfill, earth-core dam completed in 1957. Capacity, 98,500 acre-ft between gage heights 3,145.0 (tunnel invert) and 3,398.0 ft (top of spillway gates). No dead storage. Reservoir is used for power and conservation storage. Water passes through powerplant and down Middle Fork Stanislaus River to Melones Reservoir (see sta. no. 11-2990.). Records including extremes represent total contents at 2400 hours. See schematic diagram for Stanislaus River basin.

CAPACITY TABLE (GAGE HEIGHT, IN FEET, AND CONTENTS, IN ACRE-FT)

3,261	19,900	3,350	66,400
3,290	33,100	3,370	79,200
3,320	48,800	3,398	98,500

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90.4	69.0	55.1	43.9	31.1	30.2	31.2	61.3	93.7	97.4	80.9	66.1
2	90.5	67.8	54.3	44.0	30.8	30.2	31.5	61.9	95.9	97.0	80.6	65.2
3	90.6	66.6	53.3	44.3	30.3	30.2	31.8	62.4	97.7	96.7	79.8	64.8
4	90.4	65.5	53.3	44.2	29.8	30.1	32.4	62.9	97.5	95.9	78.9	64.7
5	90.2	64.6	53.4	44.1	29.6	30.3	33.2	63.6	97.7	95.9	78.5	64.6
6	90.0	64.8	53.5	43.1	29.2	30.3	33.2	64.1	97.4	95.1	78.2	64.6
7	88.8	64.2	53.5	42.2	28.9	30.4	33.3	64.7	97.5	94.2	77.8	63.6
8	87.7	63.9	53.6	42.1	28.5	30.4	34.1	65.4	97.6	93.8	77.5	62.8
9	87.5	63.5	52.8	42.1	28.2	30.4	34.8	66.1	97.7	93.6	77.2	62.7
10	87.3	63.2	51.8	42.6	28.0	30.3	36.2	66.8	97.7	93.3	76.3	62.8
11	87.1	62.0	51.8	42.2	27.7	30.3	37.6	67.5	97.7	92.8	75.4	62.6
12	86.9	60.9	51.9	41.8	27.5	30.3	39.1	68.2	97.7	92.3	75.2	62.6
13	86.7	60.8	51.7	40.8	27.3	30.3	40.3	68.9	97.5	91.3	74.8	62.6
14	85.5	60.7	51.6	39.7	27.1	30.3	41.7	69.2	97.4	90.4	74.4	61.7
15	84.2	60.8	51.6	39.7	26.9	30.3	43.2	69.9	97.6	89.7	74.5	60.9
16	84.0	60.8	50.8	38.9	26.8	30.3	44.4	70.6	97.6	89.4	74.1	59.9
17	83.8	60.7	50.3	38.4	26.7	30.2	45.7	71.3	97.6	89.0	73.1	59.3
18	83.6	59.7	49.9	38.0	26.6	30.2	46.8	71.9	97.5	88.6	72.1	59.2
19	83.4	58.8	49.9	37.7	26.6	30.1	48.0	72.7	97.7	88.2	71.8	59.5
20	83.2	58.7	49.9	36.7	27.4	30.1	49.2	73.5	97.7	87.2	71.6	59.5
21	82.0	58.6	49.9	35.8	28.0	30.0	50.3	74.4	97.6	86.3	71.3	58.7
22	80.8	58.5	49.9	35.2	28.4	30.1	51.5	76.0	97.6	86.2	71.1	57.7
23	79.6	57.8	48.9	34.5	28.9	30.0	52.7	77.0	97.7	85.7	70.7	57.8
24	78.3	57.6	48.1	33.6	29.1	29.8	53.7	77.2	97.7	85.5	69.8	57.2
25	77.1	56.6	47.0	33.4	29.2	29.9	54.9	78.7	97.6	84.6	68.9	57.1
26	76.0	55.5	47.0	33.1	29.5	30.0	56.0	80.0	97.6	84.0	68.5	57.0
27	74.8	55.3	46.9	32.7	29.6	30.0	57.2	82.0	97.7	83.1	68.3	57.0
28	73.7	55.2	46.9	32.1	29.8	30.1	58.3	84.6	97.7	82.2	68.3	56.0
29	72.5	55.1	46.9	31.8	30.0	30.3	59.5	87.4	97.8	81.8	68.2	55.1
30	71.3	55.1	45.9	31.7	-----	30.4	60.7	89.9	97.7	81.5	68.0	55.1
31	70.1	-----	45.0	31.4	-----	30.4	-----	91.7	-----	81.2	67.1	-----
(a)	3,356.0	3,331.2	3,313.0	3,286.4	3,283.5	3,284.4	3,340.6	3,388.4	3,396.9	3,373.1	3,351.1	3,331.1
(b)	-20,200	+15,000	-10,100	-13,600	-1,400	+400	+30,300	+31,000	+6,000	-16,500	-14,100	-12,000
MAX	90,600	69,000	55,100	44,300	31,100	30,400	60,700	91,700	97,800	97,400	80,900	66,100
MIN	70,100	55,100	45,000	31,400	26,600	29,800	31,200	61,300	93,700	81,200	67,100	55,100
CAL YR 1967		b	-14,200			MAX	97,800		MIN	45,000		
WTR YR 1968		b	-35,200			MAX	97,800		MIN	26,600		

a Gage height, in feet, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11-2929. MIDDLE FORK STANISLAUS RIVER BELOW BEARDSLEY DAM, CALIF.

LOCATION.--Lat 38°11'36", long 120°05'53", in NW $\frac{1}{4}$ sec.22, T.4 N., R.17 E., on right bank 0.5 mile downstream from Beardsley powerhouse afterbay dam, 1.5 miles downstream from Beardsley Dam, and 5.7 miles west of Pinecrest.

DRAINAGE AREA.--316 sq mi.

RECORDS AVAILABLE.--December 1956 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 3,044.7 ft above mean sea level (river-profile survey).

AVERAGE DISCHARGE.--11 years, 575 cfs (416,300 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,760 cfs June 4 (gage height, 7.30 ft); minimum daily, 107 cfs Apr. 2.
1956-68: Maximum discharge, 5,860 cfs May 23, 1958 (gage height, 10.48 ft); minimum daily, 3.0 cfs Oct. 10, 11, 1958.

REMARKS.--Records good. No diversion above station. Flow regulated by Relief Reservoir (capacity, 15,600 acre-ft), Donnell Lake since April 1957 (see sta. no. 11-2926.), and by Beardsley Lake since January 1957 (see sta. no. 11-2928.). See schematic diagram for Stanislaus River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	600	604	462	490	284	200	114	512	479	493	520	512
2	596	604	458	486	275	200	107	508	479	468	516	512
3	600	600	458	322	278	198	202	512	811	448	504	512
4	600	596	454	490	281	200	204	544	1,700	451	496	512
5	600	596	454	490	284	198	204	544	1,260	448	508	493
6	604	596	454	490	275	200	204	516	1,090	448	508	482
7	604	592	458	490	281	198	202	468	805	451	508	482
8	612	592	454	490	281	200	235	451	715	451	504	482
9	616	592	458	490	260	200	257	454	710	448	508	482
10	620	592	462	271	200	200	260	451	725	451	504	479
11	620	592	458	482	200	202	260	451	652	461	512	479
12	624	588	458	482	200	200	260	451	904	482	500	479
13	624	548	458	490	202	200	260	451	953	472	493	482
14	629	454	458	486	202	200	260	448	854	479	490	482
15	638	437	458	486	202	204	257	448	826	482	319	482
16	638	458	458	490	202	200	260	448	975	482	512	482
17	638	479	458	486	204	200	226	444	975	476	524	482
18	638	490	454	482	206	202	260	448	936	476	524	479
19	638	496	454	472	204	202	257	451	770	479	520	479
20	638	493	454	476	204	200	257	451	735	482	520	479
21	638	490	468	472	204	200	257	448	701	458	500	479
22	638	486	490	490	202	200	257	451	604	465	486	479
23	634	482	490	490	202	198	260	454	584	479	500	476
24	629	490	490	404	200	200	260	468	612	479	508	479
25	629	496	493	268	200	198	260	479	588	479	512	479
26	624	500	490	278	202	198	260	482	576	479	512	479
27	620	532	490	281	200	198	262	479	576	476	516	482
28	616	462	490	278	202	200	262	417	552	468	512	479
29	612	458	490	281	200	200	260	482	520	479	516	479
30	612	462	479	281	-----	200	369	479	504	493	516	482
31	608	-----	482	281	-----	200	-----	479	-----	512	512	-----
TOTAL	19,237	15,857	14,492	13,145	6,537	6,196	7,253	14,569	23,171	14,595	15,580	14,546
MEAN	621	529	467	424	225	200	242	470	772	471	503	485
MAX	638	604	493	490	284	204	369	544	1,700	512	524	512
MIN	596	437	454	268	200	198	107	417	479	448	319	476
AC-FT	38,160	31,450	28,740	26,070	12,970	12,290	14,390	28,900	45,960	28,950	30,900	28,850
CAL YR 1967	TOTAL 363,913			MEAN 997	MAX 5,580	MIN 126	AC-FT 721,800					
WTR YR 1968	TOTAL 165,178			MEAN 451	MAX 1,700	MIN 107	AC-FT 327,600					

SAN JOAQUIN RIVER BASIN

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11-2935. NORTH FORK STANISLAUS RIVER BELOW SILVER CREEK, CALIF.

LOCATION.--Lat 38°26'22", long 120°00'53", in SE $\frac{1}{4}$ sec.20, T.7 N., R.18 E., on right bank 100 ft downstream from Silver Creek, and 5.6 miles northeast of Big Meadow.

DRAINAGE AREA.--27.8 sq mi.

RECORDS AVAILABLE.--October 1952 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 6,677.3 ft above mean sea level (river-profile survey).

AVERAGE DISCHARGE.--16 years, 71.0 cfs (51,400 acre-ft per year).

EXTREMES.--Maximum discharge during year, 334 cfs May 1 (gage height, 6.22 ft); minimum daily, 5.4 cfs Aug. 17. 1952-68: Maximum discharge, 2,780 cfs Dec. 24, 1964 (gage height, 11.16 ft from floodmarks), from rating curve extended above 500 cfs; minimum daily, 0.3 cfs Oct. 10, 1958. Flood of Nov. 20, 1950, reached a stage of 11.17 ft, from Pacific Gas and Electric Co. recorder chart (discharge, 2,790 cfs).

REMARKS.--Records fair. Flow regulated by Lake Alpine, Union, and Utica Reservoirs (combined capacity, 9,600 acre-ft). No diversion above station. See schematic diagram of Stanislaus River basin.

COOPERATION.--Gage-height record and seven discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	7.0	67	16	15	47	208	312	102	6.2	6.3	6.1
2	62	7.1	67	15	14	39	129	300	101	5.8	6.2	6.1
3	63	7.6	66	15	21	43	101	300	98	5.7	6.2	6.1
4	39	7.5	65	13	20	45	116	290	84	5.5	6.1	6.1
5	29	7.5	63	10	18	41	131	264	68	5.5	6.4	6.1
6	59	7.5	60	10	16	31	110	213	50	5.5	6.2	6.1
7	59	7.6	52	9.7	16	26	122	192	41	5.5	6.1	6.1
8	59	7.6	40	9.3	15	24	146	203	37	5.6	6.1	6.1
9	61	7.6	35	9.2	15	22	189	205	35	5.6	6.1	6.1
10	64	7.6	34	9.3	15	21	240	178	34	5.8	6.1	15
11	66	7.6	35	9.9	15	19	258	180	35	5.7	6.0	31
12	67	7.7	34	10	15	20	240	205	36	5.8	5.7	31
13	67	7.7	34	10	15	18	221	184	34	5.9	5.7	31
14	68	9.2	34	11	14	17	226	186	31	5.7	5.6	31
15	67	7.6	27	23	14	16	236	187	30	5.7	5.5	31
16	67	19	18	28	14	16	200	198	28	5.8	5.5	31
17	67	43	15	23	22	17	140	205	28	5.8	5.4	31
18	67	43	15	18	34	16	108	202	26	5.8	5.5	31
19	67	45	15	17	37	16	110	221	23	5.8	7.5	31
20	66	44	15	18	152	16	119	236	21	5.7	5.9	31
21	42	44	15	19	140	16	115	236	18	5.7	5.9	31
22	7.2	43	15	18	101	17	104	177	16	5.8	6.3	32
23	7.1	43	15	19	121	18	120	125	14	6.3	5.7	32
24	7.1	42	16	20	106	19	149	100	13	6.3	6.1	32
25	7.1	42	18	19	85	21	177	108	11	6.3	6.0	34
26	7.1	42	20	17	70	25	223	137	10	6.3	6.0	34
27	7.0	45	22	16	57	43	236	155	9.5	6.3	6.0	34
28	7.1	67	23	15	56	94	238	173	8.6	6.2	6.1	34
29	7.0	68	20	13	56	183	264	163	7.6	6.2	6.1	34
30	7.0	68	19	13	-----	223	294	137	6.7	6.2	6.1	34
31	7.1	-----	17	13	-----	211	-----	112	-----	6.3	6.1	-----
TOTAL	1,335.8	812.4	991	466.4	1,289	1,380	5,270	6,084	1,056.4	182.3	186.5	710.9
MEAN	43.1	27.1	32.0	15.0	44.4	44.5	176	196	35.2	5.88	6.02	23.7
MAX	68	68	67	28	152	223	294	312	102	6.3	7.5	34
MIN	7.0	7.0	15	9.2	14	16	101	100	6.7	5.5	5.4	6.1
AC-FT	2,650	1,610	1,970	925	2,560	2,740	10,450	12,070	2,100	362	370	1,410

CAL YR 1967 TOTAL 37,700.2 MEAN 103 MAX 674 MIN 7.0 AC-FT 74,780

WTR YR 1968 TOTAL 19,764.7 MEAN 54.0 MAX 312 MIN 5.4 AC-FT 39,200

Peak discharge (base, 300 cfs).--Apr. 10 (1800 hrs) 318 cfs (6.14 ft); May 1 (0030 hrs) 334 cfs (6.22 ft).

Note.--No gage-height record Aug. 29 to Sept. 30.

SAN JOAQUIN RIVER BASIN

11-2940. HIGHLAND CREEK BELOW SPICER MEADOWS RESERVOIR, CALIF.

LOCATION.--Lat 38°23'50", long 119°59'30", in SW $\frac{1}{4}$ sec.3, T.6 N., R.18 E., on right bank just downstream from Spicer Meadows Reservoir dam, 5.5 miles upstream from mouth, and 7 miles east of Big Meadow.

DRAINAGE AREA.--42.4 sq mi.

RECORDS AVAILABLE.--October 1952 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 6,374.8 ft above mean sea level (river-profile survey).

AVERAGE DISCHARGE.--16 years, 116 cfs (83,980 acre-ft per year).

EXTREMES.--Maximum discharge during year, 618 cfs May 20 (gage height, 5.29 ft); minimum daily, 0.90 cfs Jan. 11. 1952-68: Maximum discharge, 9,860 cfs Jan. 31, 1963 (gage height, 11.88 ft), from rating curve extended above 1,200 cfs; no flow Sept. 28 to Dec. 1, Dec. 4-6, 1964.
Flood of Nov. 20, 1950, reached a stage of 11.50 ft, from Pacific Gas and Electric Co. recorder chart (discharge, 8,800 cfs).

REMARKS.--Records good. Flow regulated by Spicer Meadows Reservoir (capacity, 4,060 acre-ft). See schematic diagram of Stanislaus River basin.

COOPERATION.--Gage-height record and seven discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	2.9	1.6	1.5	1.5	179	309	447	290	35	12	25
2	4.7	2.9	1.6	1.2	1.6	150	204	435	298	39	12	24
3	4.9	2.9	1.5	1.1	1.7	158	166	429	286	44	12	27
4	5.1	2.9	1.5	1.1	1.7	166	180	447	264	44	12	28
5	5.1	2.8	1.5	1.0	1.7	169	208	411	214	43	14	27
6	5.2	2.9	1.4	.95	1.7	136	172	345	155	43	14	27
7	5.2	2.8	1.4	.95	1.6	124	187	333	137	42	14	26
8	5.2	2.4	1.4	.95	1.6	126	218	351	123	42	14	25
9	5.2	2.0	1.3	.95	1.7	103	270	345	119	47	15	24
10	5.2	1.9	1.3	.95	1.8	93	342	309	123	50	15	21
11	4.5	1.9	1.4	.90	1.9	85	387	315	130	50	15	18
12	4.0	1.9	1.4	.95	1.8	82	366	339	128	38	15	10
13	4.0	2.0	1.3	.95	2.0	88	342	294	118	28	15	4.6
14	4.0	2.0	1.2	1.0	4.0	73	357	276	110	28	16	4.1
15	4.0	2.0	1.1	2.2	14	69	372	284	110	27	16	4.1
16	9.0	2.0	1.1	1.9	25	76	321	312	106	27	16	4.0
17	12	2.0	1.0	1.6	65	71	246	330	102	27	16	2.6
18	12	2.0	1.0	1.5	75	66	204	336	89	26	15	1.9
19	12	2.1	1.1	1.4	115	62	196	396	85	26	15	1.9
20	11	2.0	1.1	1.5	514	61	196	478	71	25	15	1.8
21	6.2	2.0	1.1	1.6	333	72	191	447	61	25	15	1.8
22	3.1	1.5	1.2	1.6	226	81	179	336	57	22	16	1.7
23	3.1	1.2	1.2	1.7	336	80	198	260	52	19	18	1.4
24	3.1	1.1	1.3	1.7	274	95	234	232	44	15	20	1.7
25	3.1	1.0	1.5	1.8	210	110	274	260	40	13	20	1.8
26	3.2	.94	1.6	1.8	204	100	345	300	36	13	23	1.8
27	3.2	1.5	1.8	1.7	200	111	369	357	32	13	27	1.8
28	3.2	1.8	1.9	1.6	196	164	390	399	39	12	26	1.8
29	3.2	1.8	1.8	1.5	182	254	450	390	37	12	25	1.5
30	3.2	1.7	1.7	1.6	-----	298	462	327	36	12	25	1.4
31	3.0	-----	1.6	1.5	-----	292	-----	298	-----	12	25	-----
TOTAL	164.6	60.84	42.9	42.65	2,995.3	3,794	8,335	10,818	3,492	899	528	323.7
MEAN	5.31	2.03	1.38	1.38	103	122	278	349	116	29.0	17.0	10.8
MAX	12	2.9	1.9	2.2	514	298	462	478	298	50	27	28
MIN	3.0	.94	1.0	.90	1.5	61	166	232	32	12	12	1.4
AC-FT	326	121	85	85	5,940	7,530	16,530	21,460	6,930	1,780	1,050	642
CAL YR 1967	TOTAL 66,692.44		MEAN 183		MAX 1,300	MIN .94		AC-FT 132,300				
WTR YR 1968	TOTAL 31,495.99		MEAN 86.1		MAX 514	MIN .90		AC-FT 62,470				

PEAK DISCHARGE (BASE, 500 CFS)

DATE	TIME	G.H.T.	DISCHARGE	DATE	TIME	G.H.T.	DISCHARGE
02-20	0700	5.12	578	05-20	2000	5.29	618
04-29	2230	5.18	602	05-28	2200	5.02	510

11-2945. NORTH FORK STANISLAUS RIVER NEAR AVERY, CALIF.

LOCATION.--Lat 38°14'45", long 120°17'20", in NE $\frac{1}{4}$ sec.35, T.5 N., R.15 E., on right bank 700 ft upstream from intake of Utica Canal, 3.3 miles upstream from Beaver Creek, and 5.1 miles northeast of Avery.

DRAINAGE AREA.--163 sq mi.

RECORDS AVAILABLE.--July 1914 to September 1925, November 1928 to September 1968. Yearly discharge only for some years, published in WSP 1315-A.

GAGE.--Digital water-stage recorder. Datum of gage is 3,388.3 ft above mean sea level (river-profile survey). Prior to September 1922, staff gage at same site at datum 0.05 ft lower. September 1922 to Nov. 30, 1966, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--51 years, 410 cfs (296,800 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,220 cfs Feb. 20 (gage height, 6.24 ft); minimum daily, 20 cfs Nov. 4, 12, 13.

1914-22, 1928-68: Maximum discharge, 36,000 cfs Jan. 31, 1963 (gage height, 15.00 ft from floodmarks), from rating curve extended above 14,000 cfs on basis of slope-area measurement at gage height 13.8 ft; minimum daily, 5.5 cfs Dec. 6, 7, 1929.

REMARKS.--Records good. Flow regulated at low and medium stages by Lake Alpine, Spicer Meadows, Union and Utica Reservoirs (combined capacity, 13,600 acre-ft). Diversion of a maximum of 10 cfs during summer from Beaver Creek into river above station. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	21	86	44	88	610	1,150	1,260	499	62	29	37
2	84	21	81	40	68	506	828	1,250	492	61	27	37
3	131	21	85	37	82	506	640	1,180	495	63	25	36
4	94	20	85	39	97	524	644	1,210	444	66	25	37
5	70	21	145	37	95	547	777	1,160	385	65	24	39
6	53	21	99	33	91	458	631	982	304	64	23	38
7	83	21	102	31	95	406	674	886	273	64	25	37
8	82	21	73	30	97	422	782	897	247	63	25	36
9	81	21	59	29	118	379	925	908	230	61	25	35
10	82	21	61	39	119	338	1,120	823	220	64	24	35
11	83	21	58	36	108	312	1,240	797	224	66	25	32
12	85	20	57	32	105	302	1,160	870	226	65	25	35
13	85	20	39	34	120	307	1,100	828	215	57	28	36
14	84	28	38	35	126	292	1,100	787	198	46	29	38
15	83	33	37	171	112	266	1,160	854	191	46	28	38
16	83	29	40	215	119	292	1,070	875	184	45	28	37
17	85	24	34	122	319	278	833	870	177	44	27	36
18	91	63	34	88	468	271	648	823	163	44	27	36
19	91	88	34	76	371	258	627	892	152	43	43	36
20	90	82	33	71	1,700	253	657	976	140	42	64	35
21	89	73	32	75	1,290	285	631	1,030	123	41	41	35
22	70	68	31	81	988	319	570	833	110	40	34	36
23	34	65	33	86	1,120	309	598	627	101	39	33	35
24	26	64	38	85	1,050	343	720	513	93	33	31	34
25	24	63	47	85	797	403	823	499	82	33	35	34
26	23	62	60	81	739	385	1,000	578	76	28	35	35
27	23	57	77	75	683	382	1,080	644	71	27	35	35
28	22	63	74	66	670	539	1,070	729	65	26	40	36
29	22	83	64	62	610	875	1,200	744	68	26	40	36
30	22	91	54	84	-----	1,070	1,270	644	65	26	38	37
31	21	-----	48	118	-----	1,050	-----	535	-----	30	37	-----
TOTAL	2,076	1,306	1,838	2,137	12,445	13,487	26,728	26,504	6,313	1,480	975	1,079
MEAN	67.0	43.5	59.3	68.9	429	435	891	855	210	47.7	31.5	36.0
MAX	131	91	145	215	1,700	1,070	1,270	1,260	499	66	64	39
MIN	21	20	31	29	68	253	570	499	65	26	23	32
AC-FT	4,120	2,590	3,650	4,240	24,680	26,750	53,010	52,570	12,520	2,940	1,930	2,140

CAL YR 1967 TOTAL 228,408 MEAN 626 MAX 4,770 MIN 20 AC-FT 453,000
WTR YR 1968 TOTAL 96,368 MEAN 263 MAX 1,700 MIN 20 AC-FT 191,100

Peak discharge (base, 2,000 cfs).--Feb. 20 (0745 hrs) 2,220 cfs (6.24 ft).

SAN JOAQUIN RIVER BASIN

11-2954. STANISLAUS RIVER NEAR HATHAWAY PINES, CALIF.

LOCATION.--Lat 38°08'29", long 120°22'19", in NW¼SW¼ sec.6, T.3 N., R.15 E., on right bank 1,000 ft. upstream from Stanislaus powerhouse, and 3.6 miles south of Hathaway Pines.

DRAINAGE AREA.--629 sq mi.

RECORDS AVAILABLE.--July 1967 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 1,030.00 ft above mean sea level (levels by Pacific Gas and Electric Co.).

EXTREMES (river only).--Maximum discharge during year, 3,460 cfs Feb. 20 (gage height, 11.93 ft); minimum daily, 19 cfs Aug. 17.
(combined).--Maximum discharge during year, 3,810 cfs Feb. 20; minimum daily, 350 cfs Feb. 16.

REMARKS.--Records excellent. Many diversions above station for hydro-electric powerplants. Small diversions for domestic water supply. Stanislaus tunnel diverts from left bank of Middle Fork Stanislaus River 13.7 miles upstream from station in SE¼ sec.24, T.4 N., R.16 E., to Stanislaus powerplant 1,000 ft downstream from station. See schematic diagram of Stanislaus River basin. For records of combined discharge of river and tunnel, see following page.

COOPERATION.--Records of diversion to Stanislaus powerplant furnished by Pacific Gas and Electric Co.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	174	172	66	62	134	736	1,410	1,370	442	49	30	33
2	174	170	59	62	107	616	1,040	1,350	425	43	36	33
3	245	180	56	61	101	594	784	1,260	439	36	41	33
4	262	176	55	52	103	603	760	1,340	1,610	28	29	35
5	242	164	211	55	108	640	871	1,280	1,160	30	24	46
6	212	166	115	55	110	558	742	1,080	941	31	31	40
7	184	168	111	51	111	500	742	864	608	33	35	35
8	184	170	88	50	118	524	871	832	432	33	35	35
9	190	172	62	50	136	484	1,070	838	408	33	36	33
10	196	176	56	57	170	432	1,320	754	404	31	36	33
11	198	172	55	65	141	384	1,510	715	369	28	34	32
12	198	157	52	56	133	369	1,380	760	482	32	37	31
13	200	155	42	57	144	384	1,300	784	626	35	30	30
14	202	87	32	61	154	375	1,270	710	544	31	27	31
15	205	63	48	246	136	357	1,380	814	446	31	24	32
16	476	61	51	333	130	351	1,280	838	567	35	22	32
17	680	53	48	178	551	418	969	820	621	35	19	32
18	670	52	53	124	784	397	766	754	594	28	28	31
19	675	96	55	94	554	345	710	814	414	29	36	31
20	567	96	54	78	2,400	342	685	927	351	37	61	31
21	665	63	54	75	2,020	342	665	1,020	324	36	56	31
22	660	55	56	77	1,490	390	630	808	220	29	38	31
23	522	52	55	89	1,490	375	660	630	160	24	24	33
24	190	46	59	92	1,460	404	766	508	166	28	29	33
25	202	53	61	88	1,080	465	832	446	152	32	28	33
26	200	62	63	82	962	500	990	500	118	34	28	33
27	200	81	74	87	878	488	1,130	554	95	31	28	33
28	188	76	78	77	844	603	1,110	635	90	27	29	36
29	180	53	88	76	754	941	1,280	655	69	21	31	35
30	180	68	72	76	-----	1,250	1,360	585	62	24	32	34
31	176	-----	70	82	-----	1,260	-----	488	-----	26	33	-----
TOTAL	9,497	3,315	2,099	2,748	17,303	16,427	30,283	25,733	13,339	980	1,007	1,001
MEAN	306	111	67.7	88.6	597	530	1,009	830	445	31.6	32.5	33.4
MAX	680	180	211	333	2,400	1,260	1,510	1,370	1,610	49	61	46
MIN	174	46	32	50	101	342	630	446	62	21	19	30
AC-FT	18,840	6,580	4,160	5,450	34,320	32,580	60,070	51,040	26,460	1,940	2,000	1,990

CAL YR 1967 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1968 TOTAL 123,732 MEAN 338 MAX 2,400 MIN 19 AC-FT 245,400

STANISLAUS RIVER BASIN

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11-2954. STANISLAUS RIVER NEAR HATHAWAY PINES, CALIF.--Continued

Combined discharge, in cubic feet per second, of Stanislaus River and Stanislaus powerplant at Stanislaus,
near Hathaway Pines, Calif., water year October 1967 to September 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	722	707	589	596	450	989	1,610	1,920	982	587	578	571
2	722	705	574	592	418	864	1,170	1,900	963	580	581	571
3	793	715	573	428	418	839	1,040	1,800	980	547	584	571
4	808	710	572	584	421	854	1,020	1,880	2,160	533	569	572
5	787	698	741	582	427	888	1,130	1,820	1,700	526	565	583
6	757	700	636	582	416	805	1,000	1,620	1,480	527	571	578
7	727	702	635	578	417	748	1,000	1,400	1,150	529	575	572
8	729	704	609	577	423	774	1,150	1,360	972	530	575	572
9	733	706	583	577	443	734	1,380	1,360	948	530	576	568
10	741	710	580	435	394	679	1,630	1,270	944	530	574	570
11	743	704	578	515	362	629	1,820	1,230	907	531	572	567
12	741	689	566	596	352	617	1,690	1,270	1,020	577	575	568
13	743	687	556	597	367	634	1,610	1,300	1,160	581	567	567
14	745	617	547	599	377	625	1,590	1,230	1,080	577	564	566
15	746	592	566	783	356	611	1,690	1,330	983	576	386	569
16	672	579	568	868	350	604	1,590	1,350	1,100	578	552	567
17	686	590	566	712	798	672	1,240	1,330	1,160	576	568	569
18	671	593	573	658	1,030	651	1,070	1,260	1,130	569	574	568
19	783	634	573	626	788	600	1,020	1,320	952	569	581	568
20	1,040	633	572	610	2,700	598	978	1,440	889	577	602	566
21	1,240	598	571	605	2,320	600	940	1,540	862	573	596	566
22	1,240	589	590	609	1,780	646	903	1,320	758	563	561	566
23	1,090	586	589	626	1,770	629	934	1,140	698	573	551	568
24	730	578	594	604	1,730	660	1,040	1,030	704	574	569	563
25	742	585	596	378	1,340	723	1,110	983	690	577	573	563
26	740	592	600	377	1,220	757	1,270	1,040	656	577	573	563
27	738	611	611	383	1,140	744	1,410	1,100	633	572	573	565
28	725	605	613	370	1,100	860	1,380	1,120	628	554	570	568
29	717	573	622	385	1,010	1,200	1,560	1,200	607	539	574	570
30	717	597	599	389	-----	1,510	1,720	1,120	600	553	572	569
31	711	-----	597	396	-----	1,510	-----	1,020	-----	571	573	-----
TOTAL	24,479	19,289	18,339	17,217	25,117	24,254	38,695	42,003	29,496	17,356	17,574	17,064
MEAN	790	643	592	555	866	782	1,290	1,355	983	560	567	569
MAX	1,240	715	741	868	2,700	1,510	1,820	1,920	2,160	587	602	583
MIN	671	573	547	370	350	598	903	983	600	526	386	563
AC-FT	48,550	38,260	36,370	34,150	49,820	48,110	76,750	83,310	58,500	34,430	34,860	33,850
CAL YR 1967	TOTAL	-	MEAN	-	MAX	-	MIN	-	AC-FT	-		
WTR YR 1968	TOTAL	290,883	MEAN	795	MAX	2,700	MIN	350	AC-FT	577,000		

SAN JOAQUIN RIVER BASIN

11-2965. SOUTH FORK STANISLAUS RIVER AT STRAWBERRY, CALIF.

LOCATION.--Lat 38°11'51", long 120°00'27", in SW $\frac{1}{4}$ sec.16, T.4 N., R.18 E., on right bank 0.3 mile downstream from bridge on State Highway 108 at Strawberry, 0.6 mile downstream from Herring Creek, and 1.2 miles downstream from Pinecrest Lake.

DRAINAGE AREA.--44.8 sq mi.

RECORDS AVAILABLE.--October 1911 to January 1917, August 1938 to September 1968. Monthly discharge only for October 1913 and yearly estimates for 1912-13, published in WSP 1315-A. Published as "near Confidence", 1911-13.

GAGE.--Digital water-stage recorder. Datum of gage is 5,235.1 ft above mean sea level (river-profile survey). October 1911 to January 1917, staff gage at site 1 mile downstream at different datum. Aug. 19, 1938, to Feb. 26, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--35 years (1911-16, 1938-68), 126 cfs (91,220 acre-ft per year).

EXTREMES.--Maximum discharge during year, 655 cfs May 20 (gage height, 4.38 ft); minimum daily, 21 cfs Dec. 22-28, Jan. 7-13.

1911-17, 1938-68: Maximum discharge, 3,900 cfs Nov. 21, 1950 (gage height, 9.25 ft), from rating curve extended above 1,100 cfs on basis of contracted-opening measurement of maximum flow at bridge 0.3 mile below station; minimum, 1.3 cfs Nov. 22, 23, 1946.

REMARKS.--Records good. Flow regulated at low and medium stages by Pinecrest Lake beginning in 1916 (capacity, 18,300 acre-ft). No diversion above station. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	62	50	23	32	53	68	165	344	35	27	27
2	66	60	49	23	33	50	49	173	362	35	27	27
3	67	60	49	23	33	51	50	223	353	36	27	27
4	66	62	49	23	33	54	57	383	314	35	27	78
5	67	62	50	24	28	54	60	368	251	35	27	110
6	68	62	49	23	24	52	54	330	161	35	27	108
7	68	62	49	21	25	50	58	288	130	36	27	108
8	67	62	49	21	25	50	70	336	100	36	27	108
9	67	62	49	21	26	47	85	371	115	36	27	100
10	67	62	49	21	26	47	107	344	141	35	27	108
11	67	62	43	21	25	52	117	344	152	35	27	108
12	67	60	36	21	25	54	114	317	148	34	27	112
13	67	62	36	21	25	53	103	246	132	34	28	112
14	66	62	36	22	25	52	108	217	118	35	29	112
15	66	53	36	26	26	54	115	230	115	35	32	112
16	66	36	35	26	26	57	95	273	112	38	32	110
17	64	36	35	24	28	58	75	317	105	34	32	110
18	66	35	35	24	29	57	66	353	87	35	31	110
19	66	35	35	23	29	56	66	405	77	34	31	108
20	66	34	35	22	58	57	63	504	63	34	30	108
21	66	33	27	22	56	58	59	508	53	35	30	108
22	66	33	21	22	63	59	59	347	47	35	31	107
23	66	33	21	23	66	58	71	244	42	35	30	107
24	66	33	21	23	68	59	82	175	36	35	30	107
25	66	33	21	24	64	63	101	214	33	35	29	105
26	66	33	21	23	60	60	127	359	30	34	28	107
27	66	33	21	22	57	60	141	453	27	29	27	108
28	66	33	21	27	56	64	153	497	30	26	27	107
29	66	33	22	32	54	67	169	477	33	26	27	110
30	64	41	22	33	-----	67	163	408	34	26	27	108
31	64	-----	22	33	-----	63	-----	359	-----	26	27	-----
TOTAL	2,052	1,429	1,094	737	1,125	1,736	2,705	10,228	3,745	1,044	882	2,977
MEAN	66.2	47.6	35.3	23.8	38.8	56.0	90.2	330	125	33.7	28.5	99.2
MAX	68	62	50	33	68	67	169	508	362	38	32	112
MIN	64	33	21	21	24	47	49	165	27	26	27	27
AC-FT	4,070	2,830	2,170	1,460	2,230	3,440	5,370	20,290	7,430	2,070	1,750	5,900
CAL YR 1967	TOTAL 67,902			MEAN 186		MAX 1,150		MIN 21		AC-FT 134,700		
WTR YR 1968	TOTAL 29,754			MEAN 81.3		MAX 508		MIN 21		AC-FT 59,020		

SAN JOAQUIN RIVER BASIN

723

11-2970. PHILADELPHIA CANAL NEAR STRAWBERRY, CALIF.

LOCATION.--Lat 38°10'40", long 120°02'45", in NW¼ sec.30, T.4 N., R.18 E., on right bank 250 ft downstream from diversion dam on South Fork Stanislaus River, and 2.8 miles southwest of Strawberry.

RECORDS AVAILABLE.--October 1939 to September 1968.

GAGE.--Digital water-stage recorder and concrete control. Datum of gage is 4,960 ft above mean sea level (river-profile survey). Prior to Dec. 20, 1966, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--29 years, 42.6 cfs (30,840 acre-ft per year).

EXTREMES.--1939-68: Maximum daily discharge, 64 cfs in 1941, 1961-63, 1965; no flow at times in some years.

REMARKS.--Records excellent. Canal diverts from right bank of South Fork Stanislaus River for power development in Spring Gap powerplant of Pacific Gas and Electric Co.; tailrace empties into Middle Fork Stanislaus River above station at Sand Bar Flat. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	60	31	11	31	53	60	57	59	30	19	10
2	61	60	31	11	31	52	56	59	60	30	20	10
3	61	60	31	12	31	53	54	61	60	31	20	10
4	61	60	31	5.3	31	55	58	59	60	31	20	25
5	61	60	31	.28	26	56	59	58	60	30	20	40
6	62	60	31	.21	20	55	58	58	59	30	20	40
7	61	60	31	.21	19	53	59	56	59	30	20	40
8	61	60	31	.68	20	52	62	57	58	30	20	40
9	61	60	31	2.8	21	52	62	58	60	30	20	39
10	61	60	31	15	21	50	62	59	61	30	20	40
11	61	60	28	21	21	53	62	59	60	30	20	40
12	61	60	23	21	21	55	60	59	59	30	20	40
13	61	60	26	19	21	55	60	59	59	30	20	41
14	61	60	35	18	21	54	60	59	59	30	20	41
15	60	53	30	18	21	55	61	60	59	30	9.5	41
16	61	33	30	18	21	55	59	60	60	30	10	40
17	60	35	30	18	22	55	59	60	60	30	10	40
18	61	33	30	18	22	55	59	60	59	30	10	40
19	61	31	30	18	22	55	61	59	59	30	10	40
20	61	31	30	17	32	55	43	60	56	30	10	40
21	61	31	24	16	47	55	31	63	52	30	10	40
22	60	31	11	16	50	55	30	59	47	30	10	40
23	61	31	11	16	52	55	31	58	42	30	10	40
24	61	31	11	16	53	58	31	58	34	30	10	40
25	61	31	11	16	53	60	31	60	31	30	10	40
26	61	31	11	16	52	60	31	62	27	30	10	40
27	61	31	11	16	52	60	31	61	25	24	10	40
28	61	31	11	22	52	60	31	61	26	20	10	40
29	61	31	11	31	52	60	48	60	29	20	10	40
30	61	31	11	31	-----	61	58	60	29	20	10	40
31	61	-----	11	30	-----	60	-----	59	-----	20	10	-----
TOTAL	1,889	1,366	736	470.48	938	1,722	1,527	1,838	1,528	886	448.5	1,097
MEAN	60.9	45.5	23.7	15.2	32.3	55.5	50.9	59.3	50.9	28.6	14.5	36.6
MAX	62	60	35	31	53	61	62	63	61	31	20	41
MIN	60	31	11	.21	19	50	30	56	25	20	9.5	10
AC-FT	3,750	2,710	1,460	933	1,860	3,420	3,030	3,650	3,030	1,760	890	2,180
CAL YR 1967	TOTAL 18,610.20			MEAN 51.0		MAX 62		MIN 0		AC-FT 36,910		
WTR YR 1968	TOTAL 14,445.98			MEAN 39.5		MAX 63		MIN .21		AC-FT 28,650		

SAN JOAQUIN RIVER BASIN

11-2975. TUOLUMNE CANAL NEAR LONG BARN, CALIF.

LOCATION.--Lat 38°05'35", long 120°10'03", in SW $\frac{1}{4}$ sec.24, T.3 N., R.16 E., on left bank 300 ft downstream from intake, 350 ft downstream from Lyons Reservoir on South Fork Stanislaus River, 2 miles west of Long Barn, and 15 miles northeast of Sonora.

RECORDS AVAILABLE.--October 1937 to September 1968.

GAGE.--Digital water-stage recorder and concrete control. Datum of gage is 4,110.0 ft above mean sea level (river-profile survey). Prior to June 1938, graphic water-stage recorder at site 200 ft downstream at different datum. June 1938 to Dec. 15, 1966, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--31 years, 25.0 cfs (18,100 acre-ft per year).

EXTREMES.--1937-68: Maximum daily discharge, 56 cfs May 30, 1963; no flow at times in some years.

REMARKS.--Records excellent. Canal diverts from left bank of South Fork Stanislaus River into Tuolumne River basin for power and domestic supply in vicinity of Sonora. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	15	25	15	25	15	26	37	41	33	44	30
2	28	15	25	15	25	15	26	49	41	36	44	30
3	26	15	25	15	25	15	26	50	41	34	44	30
4	25	15	17	15	25	15	26	52	42	34	44	31
5	24	15	18	15	19	15	26	49	43	35	45	33
6	24	17	17	15	15	15	26	48	46	34	44	33
7	24	20	25	16	15	15	26	49	49	34	44	32
8	24	20	14	15	15	15	26	43	46	34	44	32
9	24	20	16	15	15	15	26	39	36	34	45	33
10	21	23	16	16	15	15	24	37	44	34	45	33
11	20	25	15	15	15	15	20	38	47	34	44	34
12	20	25	14	15	15	15	20	38	43	37	44	35
13	20	25	14	15	15	25	20	38	42	40	44	35
14	20	25	18	15	15	26	21	38	41	39	44	34
15	20	25	20	15	15	26	20	39	44	41	41	34
16	20	25	21	15	15	26	20	40	41	43	38	34
17	15	25	20	15	16	26	20	40	44	43	39	34
18	11	25	20	15	16	26	20	39	38	43	39	34
19	11	25	20	15	15	26	20	39	29	42	37	34
20	15	8.1	20	15	15	26	20	39	27	42	36	35
21	16	0	20	15	15	26	20	40	29	42	33	35
22	16	0	20	15	15	26	20	39	29	42	30	35
23	16	0	20	15	15	26	21	40	29	42	30	35
24	15	0	20	15	16	26	20	41	29	42	30	35
25	15	0	20	15	15	26	20	42	29	42	30	34
26	15	0	17	16	15	26	20	41	29	44	30	35
27	15	0	15	25	15	26	20	40	29	44	30	34
28	15	8.1	15	25	15	26	20	39	29	44	30	34
29	15	13	15	25	15	26	20	39	29	44	30	34
30	15	23	15	25	-----	26	20	38	29	44	30	34
31	15	-----	15	25	-----	26	-----	39	-----	44	30	-----
TOTAL	590	452.2	572	518	482	673	660	1,279	1,115	1,220	1,182	1,005
MEAN	19.0	15.1	18.5	16.7	16.6	21.7	22.0	41.3	37.2	39.4	38.1	33.5
MAX	30	25	25	25	25	26	26	52	49	44	45	35
MIN	11	0	14	15	15	15	20	37	27	33	30	30
AC-FT	1,170	897	1,130	1,030	956	1,330	1,310	2,540	2,210	2,420	2,340	1,990
CAL YR 1967	TOTAL	10,934.2		MEAN	30.0	MAX	54	MIN	0	AC-FT	21,690	
WTR YR 1968	TOTAL	9,748.2		MEAN	26.6	MAX	52	MIN	0	AC-FT	19,340	

SAN JOAQUIN RIVER BASIN

725

11-2980. SOUTH FORK STANISLAUS RIVER NEAR LONG BARN, CALIF.

LOCATION.--Lat 38°05'33", long 120°10'02", in SW $\frac{1}{4}$ sec.24, T.3 N., R.16 E., on left bank 600 ft downstream from Lyons Dam, 2 miles west of Long Barn, and 15 miles northeast of Sonora.

DRAINAGE AREA.--66.9 sq mi.

RECORDS AVAILABLE.--October 1937 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Digital water-stage recorder and masonry control. Datum of gage is 4,073.4 ft above mean sea level (river-profile survey). Prior to Jan. 26, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--31 years, 84.8 cfs (61,390 acre-ft per year).

EXTREMES.--Maximum discharge during year, 546 cfs May 30 (gage height, 4.21 ft); minimum daily, 1.1 cfs Nov. 24. 1937-68: Maximum discharge, 4,900 cfs Nov. 21, 1950 (gage height, 9.3 ft), from rating curve extended above 1,100 cfs on basis of computation of maximum flow over Lyons Dam; no flow at times in 1937-39, 1952.

REMARKS.--Records good. Flow regulated by Lyons Reservoir (capacity, 5,400 acre-ft) and Pinecrest Lake (capacity, 18,300 acre-ft). Tuolumne Canal (see sta. no. 11-2975.) diverts at Lyons Dam; other diversions, see schematic diagram of Stanislaus River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	2.1	1.9	1.9	2.1	1.9	2.1	2.3	221	1.9	2.1	2.6
2	2.1	2.1	2.3	1.7	2.1	2.1	2.1	2.3	238	2.3	2.1	2.6
3	2.1	2.1	2.1	2.1	1.9	2.1	2.1	30	248	2.1	2.1	2.6
4	2.1	2.1	2.1	2.1	1.9	2.1	2.1	257	209	1.9	2.1	2.6
5	2.1	2.1	2.1	2.1	2.1	2.1	2.1	277	154	2.1	2.1	2.6
6	2.1	2.1	2.1	1.7	2.1	2.1	2.1	183	58	2.3	2.1	2.6
7	2.1	2.1	2.3	1.9	2.3	2.1	2.1	198	27	2.6	2.1	2.6
8	2.1	2.1	1.9	2.1	2.3	2.3	2.1	172	13	2.6	2.1	2.3
9	2.1	2.1	1.9	2.3	2.3	1.9	2.1	268	12	2.3	2.1	2.3
10	2.1	2.1	1.9	2.6	2.1	1.9	2.1	229	23	2.1	2.1	2.3
11	2.1	2.1	2.1	2.1	2.1	2.1	2.1	240	40	2.1	2.1	2.3
12	2.3	2.1	2.1	2.1	2.1	3.0	2.1	207	45	1.9	2.1	2.3
13	2.3	2.1	2.1	1.9	2.1	3.0	2.1	183	37	2.1	2.1	2.3
14	2.3	2.1	2.6	1.9	2.1	2.1	2.1	111	21	2.1	2.1	2.3
15	2.3	2.1	2.1	2.3	2.1	2.1	2.1	111	17	1.9	2.1	2.3
16	2.1	2.1	2.1	2.1	2.1	2.1	2.1	166	11	1.9	2.1	2.3
17	2.1	2.1	1.9	2.1	2.3	2.1	2.3	192	7.2	2.1	2.1	2.3
18	2.1	2.1	1.9	2.1	2.1	2.1	2.1	213	3.9	2.1	2.1	2.3
19	2.1	2.1	1.9	2.1	2.1	2.1	2.1	291	2.6	2.1	2.1	2.3
20	2.1	2.1	2.1	2.1	2.1	2.1	2.1	344	1.9	8.2	2.1	2.3
21	2.1	1.9	2.1	2.1	2.1	2.1	2.1	467	1.9	7.2	2.6	2.3
22	2.1	1.4	2.1	1.9	1.9	2.1	2.1	296	2.1	2.3	2.6	2.3
23	2.1	1.3	2.1	2.1	1.9	2.1	2.1	127	2.1	1.9	2.6	2.3
24	2.1	1.1	1.9	2.1	2.1	2.1	2.1	63	2.3	2.1	2.6	2.3
25	2.1	1.3	1.7	2.1	2.1	2.1	2.1	76	2.3	2.1	2.6	2.3
26	2.1	1.3	2.3	2.1	2.1	2.1	2.1	211	2.1	2.1	2.6	2.3
27	2.1	1.3	2.3	2.1	1.9	2.1	1.9	326	2.1	2.1	2.6	2.3
28	2.1	2.1	2.1	2.1	1.7	2.1	1.9	384	2.1	2.1	2.6	2.3
29	2.1	1.7	2.1	2.1	1.7	2.1	1.9	379	2.1	2.1	2.6	2.3
30	2.1	1.3	2.1	2.1	-----	2.1	1.9	362	2.1	2.1	2.6	2.3
31	2.1	-----	2.1	2.1	-----	2.1	-----	215	-----	2.1	2.6	-----
TOTAL	65.9	56.7	64.4	64.2	59.9	66.5	62.4	6,582.6	1,410.8	76.9	70.6	71.1
MEAN	2.13	1.89	2.08	2.07	2.07	2.15	2.08	212	47.0	2.48	2.28	2.37
MAX	2.3	2.1	2.6	2.6	2.3	3.0	2.3	467	248	8.2	2.6	2.6
MIN	2.1	1.1	1.7	1.7	1.7	1.9	1.9	2.3	1.9	1.9	2.1	2.3
AC-FT	131	112	128	127	119	132	124	13,060	2,800	153	140	141
CAL YR 1967	TOTAL	56,705.4	MEAN	155	MAX	1,250	MIN	1.1	AC-FT	112,500		
WTR YR 1968	TOTAL	8,652.0	MEAN	23.6	MAX	467	MIN	1.1	AC-FT	17,160		

SAN JOAQUIN RIVER BASIN

11-2990. MELONES RESERVOIR AT MELONES DAM, CALIF.

LOCATION.--Lat 37°57'15", long 120°30'45", near center of sec.11, T.1 N., R.13 E., at gate tower near left bank at Melones Dam on Stanislaus River, 0.1 mile downstream from Bear Creek, and 7.5 miles southwest of Sonora.

DRAINAGE AREA.--904 sq mi.

RECORDS AVAILABLE.--1926 (year-end content only, published in WSP 1315-A), June 1927 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Pacific Gas and Electric Co.). Prior to Feb. 28, 1961, staff gage at same site and datum.

EXTREMES.--Maximum contents during year, 112,200 acre-ft Mar. 27, 28 (elevation, 734.8 ft); minimum, 6,250 acre-ft Oct. 19 (elevation, 627.2 ft).

1927-68: Maximum contents observed, 115,800 acre-ft May 27, 1951 (elevation, 736.7 ft); minimum observed, 3,220 acre-ft Dec. 7, 1957 (elevation, 613.5 ft).

REMARKS.--Reservoir is formed by concrete overflow dam; storage began Aug. 21, 1926; dam completed in December 1926. Capacity for power development 1 mile below dam is 106,100 acre-ft between elevations 628.0 (minimum operating level) and 735.0 ft (top of drum-type spillway gates) above mean sea level; usable capacity for irrigation, 110,000 acre-ft between elevation 610.0 (floor of outlet tunnel) and 735.0 ft above mean sea level. Figures given herein represent total contents, of which 2,630 acre-ft is not available for release. Released water flows down Stanislaus River to Tulloch Reservoir (see sta. no. 11-2999.95). See schematic diagram of Stanislaus River basin.

COOPERATION.--Record of elevation furnished by Oakdale Irrigation District. Capacity table furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

610	2,630	635	8,750	660	21,500	700	59,100
615	3,500	640	10,700	665	25,000	710	72,200
620	4,480	645	12,900	670	28,900	720	86,900
625	5,650	650	15,400	680	37,600	730	103,500
630	7,070	655	18,300	690	47,600	736.7	115,800

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.2	22.8	19.9	16.5	25.7	76.1	110.8	99.7	110.0	93.6	49.5	10.7
2	13.3	22.9	19.9	16.3	26.0	78.4	110.6	100.2	109.7	92.2	48.0	10.7
3	12.6	22.9	19.8	16.2	26.4	80.4	109.5	100.7	109.1	91.0	46.3	10.8
4	12.0	22.8	19.6	15.6	26.7	82.3	108.6	101.6	110.4	89.7	44.8	10.8
5	11.5	22.7	19.8	15.4	26.9	84.7	108.0	102.6	110.9	88.5	43.2	10.9
6	10.9	22.7	19.9	15.3	27.1	86.5	106.9	103.1	110.9	87.2	41.7	11.0
7	10.9	22.7	20.2	15.2	27.5	88.3	105.8	103.1	110.4	86.2	40.2	11.0
8	11.1	22.7	20.2	15.1	27.9	90.7	105.3	103.3	109.3	85.0	38.5	10.9
9	11.4	22.6	20.2	15.1	28.0	92.8	105.5	103.3	107.8	83.6	36.9	10.9
10	11.7	22.6	20.0	15.1	28.4	94.6	105.5	103.1	106.6	82.4	35.5	10.8
11	11.9	22.6	19.9	14.9	28.6	96.3	106.0	103.5	105.1	81.2	33.7	10.7
12	12.2	22.5	19.7	15.2	28.7	98.0	106.6	104.0	104.0	79.9	32.0	10.7
13	12.0	22.5	19.4	15.5	29.0	99.7	107.1	104.9	104.0	78.7	30.4	10.8
14	11.4	22.3	19.3	16.0	29.1	101.6	108.0	105.6	104.0	77.7	28.6	10.9
15	11.1	22.1	18.9	16.8	29.6	103.0	108.9	106.7	103.8	77.0	26.8	11.0
16	10.6	21.8	18.6	18.0	30.4	104.9	109.7	107.6	103.8	75.7	24.9	11.0
17	8.75	21.6	18.4	18.9	32.8	107.3	109.1	108.6	103.8	74.1	23.2	10.9
18	7.42	21.2	18.3	19.6	35.9	109.1	108.0	109.5	103.8	72.2	21.5	10.8
19	6.25	21.2	18.3	20.1	37.7	109.7	107.3	110.6	103.8	70.5	20.1	10.8
20	6.71	21.2	18.0	20.8	44.1	110.0	106.0	111.3	103.3	69.0	18.5	10.8
21	8.39	21.1	17.9	21.2	50.5	110.8	104.7	111.9	102.6	67.9	16.9	10.8
22	10.5	20.9	17.7	21.7	54.8	110.9	103.5	112.0	101.9	65.7	15.2	10.8
23	12.3	20.8	17.6	22.1	58.4	111.3	102.1	111.7	101.1	64.1	13.7	10.8
24	14.1	20.5	17.3	22.6	62.2	111.5	101.1	110.8	100.4	62.5	13.0	10.8
25	15.7	20.4	17.1	23.2	64.9	111.9	100.7	109.7	100.1	60.8	12.6	10.9
26	17.5	20.2	17.0	23.3	67.4	112.0	99.9	108.7	98.9	59.1	12.4	10.8
27	19.0	20.1	17.0	23.4	69.7	112.2	99.6	108.6	98.0	57.2	12.1	10.8
28	20.6	20.0	16.9	23.5	71.9	111.7	99.4	109.1	96.8	55.8	11.9	10.8
29	22.2	20.0	16.9	23.6	74.1	110.9	99.2	110.0	95.7	54.3	10.7	10.8
30	22.9	20.0	16.8	24.4	-----	110.9	99.4	110.8	94.6	52.7	11.3	10.8
31	22.9	-----	16.7	25.2	-----	110.9	-----	110.4	-----	51.1	11.1	-----
(a)	662.0	657.7	652.2	665.3	711.3	734.1	727.6	733.8	724.8	693.1	640.9	640.3
(b)	+7,400	-2,900	-3,300	+8,500	+48,800	+36,800	-11,500	+11,000	-15,800	-43,500	-40,000	-300
MAX	22.9	22.9	20.2	25.2	74.1	112.2	110.8	112.0	110.9	93.6	49.5	11.0
MIN	6.25	20.0	16.7	14.9	25.7	76.1	99.2	99.7	94.6	51.1	10.7	10.7

CAL YR 1967
WTR YR 1968

b -47,700
b -4,700

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

SAN JOAQUIN RIVER BASIN

727

11-2999.95. TULLOCH RESERVOIR NEAR KNIGHTS FERRY, CALIF.

LOCATION.--Lat 37°52'34", long 120°36'12", in SW $\frac{1}{4}$ sec.1, T.1 S., R.12 E., in center of dam on Stanislaus River 1.9 miles upstream from Goodwin Dam, and 5.3 miles northeast of Knights Ferry.

DRAINAGE AREA.--980 sq mi.

RECORDS AVAILABLE.--November 1957 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

EXTREMES.--Maximum contents during year, 66,800 acre-ft Apr. 16, 17, May 14, 15 (elevation, 509.9 ft); minimum, 30,800 acre-ft Sept. 30 (elevation, 471.7 ft).

1957-68: Maximum contents, 69,500 acre-ft Jan. 7, 1965 (elevation, 512.0 ft); minimum, 4,580 acre-ft Oct. 3, 1960 (elevation, 404.0 ft).

REMARKS.--Reservoir is formed by gravity-type concrete dam completed in October 1957. Usable capacity, 56,840 acre-ft between elevations 431.0 (normal minimum water surface) and 511.0 ft (top of radial gates) above mean sea level. Dead storage, 11,560 acre-ft. Reservoir is used for conservation and power. Water passes down Stanislaus River, some first passing through powerplant at dam. Part of flow is diverted at Goodwin dam to Oakdale Canal (see sta. no. 11-3010) and South San Joaquin Canal (see sta. no. 11-3005). Records including extremes represent total contents at 2400 hours. See schematic diagram for Stanislaus River basin.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

404	4,580	460	23,600
411	6,020	475	33,100
420	8,200	490	45,300
430	11,100	512	69,500
445	16,400		

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51.8	45.0	52.5	47.5	47.4	63.3	66.7	64.5	65.1	66.3	64.9	49.3
2	52.5	45.9	52.1	47.3	47.8	63.3	66.7	64.6	65.1	66.5	64.7	47.7
3	53.1	46.8	51.8	46.9	48.8	63.3	66.7	64.9	65.0	66.5	64.6	46.0
4	53.6	47.8	51.5	46.6	49.3	63.0	66.7	65.0	65.0	66.5	64.4	44.6
5	53.8	48.6	51.3	46.4	50.1	63.0	66.6	65.2	65.1	66.6	64.2	43.7
6	54.0	49.5	50.9	46.1	50.5	63.0	66.6	65.4	65.2	66.7	64.0	42.9
7	53.7	50.4	50.7	45.7	51.5	62.8	66.6	65.6	65.5	66.5	63.8	42.1
8	53.2	51.3	50.5	45.2	52.1	63.4	66.5	66.0	65.6	66.5	63.6	41.3
9	52.7	52.3	50.2	44.9	52.8	63.5	65.8	66.5	65.7	66.6	63.5	40.6
10	51.9	53.0	50.0	44.6	53.4	63.4	65.6	66.6	65.8	66.6	63.5	39.8
11	51.2	53.9	50.8	44.3	54.0	63.4	65.6	66.7	66.0	66.6	63.4	39.0
12	50.5	54.8	52.4	44.2	54.7	63.5	65.8	66.7	66.5	66.7	63.4	38.2
13	50.2	55.7	52.4	44.2	55.7	63.4	66.3	66.7	66.6	66.7	63.4	37.1
14	50.1	56.5	52.0	44.4	56.4	63.5	66.5	66.8	66.5	66.5	63.4	36.3
15	49.6	57.2	51.8	44.8	56.5	63.4	66.5	66.8	66.3	66.1	63.3	35.4
16	49.4	57.6	51.5	44.9	56.7	64.0	66.8	66.7	66.2	66.1	63.3	34.8
17	50.1	57.3	51.2	44.4	57.7	64.4	66.8	66.5	66.2	66.1	63.2	34.4
18	50.4	56.9	51.1	43.5	58.2	64.9	66.7	66.2	66.3	66.1	63.2	33.9
19	50.3	56.6	50.9	42.7	58.4	65.8	66.6	66.0	66.3	66.1	62.9	33.6
20	48.9	56.3	50.6	41.9	59.8	66.6	66.6	65.8	66.5	66.1	62.9	33.1
21	47.7	56.0	50.4	41.0	60.8	66.5	66.5	65.8	66.5	66.0	62.7	32.7
22	47.3	55.6	50.1	40.7	61.3	66.5	66.5	65.7	66.6	66.0	62.6	32.3
23	46.9	55.2	49.8	40.8	61.6	66.6	66.3	65.7	66.6	65.8	62.2	31.9
24	46.2	54.9	49.6	41.0	61.8	66.6	66.1	66.1	66.6	65.8	61.1	31.5
25	45.6	54.6	49.4	41.4	62.3	66.6	65.4	66.5	66.2	65.7	59.6	31.3
26	45.0	54.1	49.1	42.0	62.6	66.7	65.1	66.8	66.2	65.6	58.2	31.2
27	44.4	53.8	48.8	42.7	63.0	66.7	65.0	66.7	66.3	65.5	56.7	31.2
28	43.8	53.5	48.6	43.4	63.0	66.7	64.7	66.3	66.3	65.4	55.2	31.0
29	43.2	53.1	48.4	44.0	63.5	66.7	64.7	65.7	66.3	65.2	53.8	30.9
30	43.2	52.8	48.1	45.4	-----	66.7	64.5	65.2	66.3	65.2	52.4	30.8
31	44.1	-----	47.8	46.5	-----	66.7	-----	65.1	-----	65.0	50.8	-----
(a)	488.6	497.6	492.6	491.2	507.2	509.8	508.0	508.5	509.5	508.4	495.7	471.7
(b)	-7,300	+8,700	-5,000	-1,300	+17,000	+3,200	-2,200	+600	+1,200	-1,300	-14,200	-20,000
MAX	54,000	57,600	52,500	47,500	63,500	66,700	66,800	66,800	66,600	66,700	64,900	49,300
MIN	43,200	45,000	47,800	40,700	47,400	62,800	64,500	64,500	65,000	65,000	50,800	30,800
CAL YR 1967		b	-1,500			MAX	67,100	MIN	40,400			
WTR YR 1968		b	-20,600			MAX	66,800	MIN	30,800			

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

SAN JOAQUIN RIVER BASIN

11-3005. SOUTH SAN JOAQUIN CANAL NEAR KNIGHTS FERRY, CALIF.

LOCATION.--Lat 37°51'10", long 120°38'15", in sec.15, T.1 S., R.12 E., on left bank 0.8 mile downstream from headgate at Goodwin Dam, and 3 miles upstream from Knights Ferry.

RECORDS AVAILABLE.--May 1914 to September 1968. Monthly and yearly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 334.18 ft above mean sea level (levels by Oakdale Irrigation District). Prior to Mar. 12, 1915, staff gage 100 ft downstream. Mar. 12, 1915, to July 1, 1921, staff gage at present site and datum.

AVERAGE DISCHARGE.--54 years, 412 cfs (298,300 acre-ft per year).

EXTREMES.--1914-68: Maximum discharge, 1,330 cfs May 2, 1962; no flow at times each year except 1951.

REMARKS.--Records excellent. Canal diverts from right bank of Stanislaus River at Goodwin Dam for irrigation in Oakdale and South San Joaquin Irrigation Districts. See schematic diagram for Stanislaus River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	660	34	0	.60	1.5	.30	70	1,160	1,030	732	995	991
2	597	34	0	.60	.80	.40	402	1,090	1,030	732	997	993
3	525	35	0	.60	.70	.40	694	1,080	1,060	732	997	995
4	516	35	0	.60	.70	.30	805	1,080	1,110	732	997	760
5	518	35	.18	.70	.60	.50	960	1,080	1,110	734	997	676
6	518	35	0	.70	.60	.40	1,000	1,080	1,110	734	995	672
7	517	35	0	.70	.60	.60	1,030	1,070	1,110	734	994	675
8	516	35	0	.70	.60	.70	1,030	995	1,110	735	994	676
9	553	36	0	.70	.60	.60	1,040	958	1,110	734	993	678
10	618	35	0	.90	.60	.60	1,050	911	1,110	735	993	680
11	611	36	.14	.80	.60	.60	1,080	895	1,110	738	993	685
12	611	36	.06	.70	5.7	.60	1,090	897	904	738	994	689
13	612	36	0	.50	8.3	.50	1,080	792	825	739	994	692
14	661	36	0	.50	7.9	.60	1,110	710	826	742	994	693
15	691	14	0	.50	6.5	.60	1,120	710	823	742	994	692
16	689	.10	0	.50	.90	.70	1,130	707	823	850	995	606
17	688	.10	0	293	1.0	.60	1,120	755	770	934	994	491
18	684	.30	.25	524	1.0	.50	1,110	769	725	935	991	490
19	684	.10	.05	524	.90	.50	1,120	769	728	963	993	486
20	636	.10	0	524	1.2	.40	1,130	962	728	993	994	489
21	246	.10	0	525	1.0	.50	1,130	1,150	729	995	995	487
22	14	.10	0	245	.90	1.4	1,150	1,150	729	995	994	483
23	27	.10	0	4.5	.90	2.8	1,190	1,140	729	995	993	480
24	32	.10	0	6.0	1.6	2.8	1,220	1,040	731	997	991	399
25	32	.10	0	13	.90	39	1,220	1,020	734	997	994	283
26	22	.10	0	14	.90	65	1,220	1,020	735	997	994	284
27	16	.10	0	16	.80	299	1,210	1,020	735	997	997	284
28	34	.10	0	14	.20	368	1,210	1,020	735	995	993	284
29	34	.20	28	14	.20	0	1,200	1,020	734	995	988	284
30	34	.10	60	15	-----	0	1,180	1,030	731	995	988	283
31	34	-----	25	7.1	-----	0	-----	1,030	-----	995	990	-----
TOTAL	12,630	508.80	113.68	2,748.90	48.70	788.90	31,101	30,110	26,474	26,661	30,805	17,360
MEAN	407	17.0	3.67	88.7	1.68	25.4	1,037	971	882	860	994	579
MAX	691	36	60	525	8.3	368	1,220	1,160	1,110	997	997	995
MIN	14	.10	0	.50	.20	0	70	707	725	732	988	283
AC-FT	25,050	1,010	225	5,450	97	1,560	61,690	59,720	52,510	52,880	61,100	34,430
CAL YR 1967	TOTAL 186,602.28		MEAN 511		MAX 1,310		MIN 0		AC-FT 370,100			
WTR YR 1968	TOTAL 179,349.98		MEAN 490		MAX 1,220		MIN 0		AC-FT 355,700			

SAN JOAQUIN RIVER BASIN

729

11-3010. OAKDALE CANAL NEAR KNIGHTS FERRY, CALIF.

LOCATION.--Lat 37°51'30", long 120°38'00", in SE $\frac{1}{4}$ sec.10, T.1 S., R.12 E., on left bank 1,835 ft downstream from headgate at Goodwin Dam, and 4 miles upstream from Knights Ferry.

RECORDS AVAILABLE.--May 1914 to September 1968. Records for water years 1933-36 incomplete, monthly and yearly estimates published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Altitude of gage is 350 ft (from topographic map). Prior to Apr. 29, 1916, staff gage at site 1,000 ft upstream at different datum. Apr. 29, 1916, to July 3, 1925, staff gage and July 4, 1925, to Apr. 3, 1949, graphic water-stage recorder, at present site at datum 0.18 ft higher.

AVERAGE DISCHARGE.--54 years, 152 cfs (110,000 acre-ft per year).

EXTREMES.--1914-68: Maximum daily discharge, 556 cfs July 8-11, 1967; no flow at times in each year.

REMARKS.--Records excellent. Canal diverts water from left bank of Stanislaus River at Goodwin Dam for irrigation in Oakdale Irrigation District. See schematic diagram for Stanislaus River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	407	.58	.51	4.7	0	0	228	457	440	396	399	401
2	389	.58	.45	4.7	0	0	.15	462	440	396	400	401
3	322	.66	.40	4.7	0	0	.08	466	457	396	400	402
4	328	.66	.45	4.7	0	0	0	467	472	396	400	402
5	375	.66	.45	4.7	0	0	20	470	472	396	399	304
6	382	2.7	.45	4.7	0	0	172	475	472	397	399	289
7	386	5.9	.45	4.7	6.0	.03	191	477	471	397	398	296
8	386	6.7	.45	2.0	12	.48	361	477	472	396	398	296
9	385	6.7	.45	0	12	.20	425	472	472	396	399	296
10	380	9.1	.45	0	12	.15	447	469	472	397	399	297
11	379	16	.40	0	12	.20	500	470	472	397	400	297
12	394	16	.09	0	12	.20	348	463	397	398	400	298
13	405	16	0	0	12	.25	.10	406	379	398	400	297
14	416	16	0	0	11	.25	.03	391	383	398	400	298
15	425	18	0	0	11	.20	.02	391	384	398	400	297
16	423	24	0	0	4.6	.46	71	390	384	397	400	298
17	430	24	0	0	.15	.35	467	428	384	396	400	305
18	474	24	.03	0	.10	.25	519	433	385	395	400	315
19	481	24	0	0	.06	.20	527	432	386	396	401	313
20	484	6.3	6.6	0	.45	.15	527	494	386	398	402	315
21	177	.58	9.9	0	.35	.10	527	538	386	398	402	316
22	1.0	.45	6.2	0	.20	.10	528	539	386	399	402	314
23	.94	.40	4.7	0	.10	.10	528	523	386	399	402	313
24	.84	.40	4.7	0	.10	.10	521	457	389	399	401	317
25	.74	.40	4.7	0	.06	.10	515	445	391	399	402	322
26	.66	.40	4.7	0	.03	51	513	447	391	399	402	324
27	.58	.40	4.3	0	.03	197	513	448	391	399	403	324
28	.58	.45	4.3	0	.03	264	508	447	391	399	402	324
29	.58	.51	4.3	0	.03	361	459	447	394	399	401	323
30	.58	.51	4.3	.18	-----	396	459	445	396	399	401	323
31	.58	-----	4.3	.15	-----	397	-----	440	-----	399	400	-----
TOTAL	8,235.08	223.04	68.03	35.23	106.29	1,669.87	9,874.38	14,166	12,481	12,322	12,412	9,617
MEAN	266	7.43	2.19	1.14	3.67	53.9	329	457	416	397	400	321
MAX	484	24	9.9	4.7	12	397	528	539	472	399	403	402
MIN	.58	.40	0	0	0	0	0	390	379	395	398	289
AC-FT	16,330	442	135	70	211	3,310	19,590	28,100	24,760	24,440	24,620	19,080
CAL YR 1967	TOTAL 84,136.85		MEAN 231		MAX 556		MIN 0		AC-FT 166,900			
WTR YR 1968	TOTAL 81,209.92		MEAN 222		MAX 539		MIN 0		AC-FT 161,100			

SAN JOAQUIN RIVER BASIN

11-3020. STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CALIF.

LOCATION.--Lat 37°51'01", long 120°38'13", in N $\frac{1}{2}$ sec.15, T.1 S., R.12 E., on right bank 0.1 mile upstream from Owl Creek, 1.0 mile downstream from Goodwin Dam, and 3 miles northeast of Knights Ferry.

DRAINAGE AREA.--986 sq mi.

RECORDS AVAILABLE.--February 1957 to September 1968. Records equivalent to those published as Stanislaus River at Knights Ferry, 1903-14, and as Stanislaus River near Knights Ferry, 1915-32, if adjusted for diversions in Stanislaus and San Joaquin Water Company's canal, and Oakdale and South San Joaquin canals.

GAGE.--Graphic water-stage recorder. Datum of gage is 252.83 ft above mean sea level.

AVERAGE DISCHARGE.--11 years, 634 cfs (459,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,730 cfs Apr. 1 (gage height, 10.81 ft); minimum daily, 1.7 cfs Sept. 26-30.

1957-68: Maximum discharge, 40,200 cfs Dec. 24, 1964 (gage height, 28.85 ft in gage well, 31.2 ft outside, from floodmarks), from rating curve extended above 14,000 cfs; minimum daily, 0.3 cfs Sept. 13, 14, Oct. 1, 1960.

Flood of Dec. 23, 1955, reached a peak discharge of 62,900 cfs (gage height, 37.7 ft from floodmarks), by computation of flow over Goodwin Dam.

REMARKS.--Records good. Flow regulated by reservoirs and powerplants at Donnell, Beardsley Lake, Melones, Tulloch, and several smaller reservoirs above station. South San Joaquin Canal (see sta. no. 11-3005.) and Oakdale Canal (see sta. no. 11-3010.) divert at Goodwin Dam 1.0 mile upstream. See schematic diagram for Stanislaus River basin. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	256	854	812	131	101	1,370	5.5	3.1	1.8	3.0	3.0
2	15	252	854	812	129	74	1,280	5.4	3.1	2.0	3.0	3.0
3	14	252	854	812	135	70	910	5.4	3.1	2.0	3.0	3.0
4	13	259	854	812	121	65	798	5.4	3.4	2.0	3.0	3.0
5	14	259	854	812	142	72	656	5.4	3.6	2.0	3.0	2.4
6	14	233	854	812	127	66	460	5.0	3.6	2.0	3.0	2.0
7	14	233	833	812	138	61	408	5.0	3.6	2.0	3.1	2.0
8	14	259	819	812	129	68	194	5.0	3.4	2.0	3.1	2.0
9	15	256	819	812	133	63	90	4.8	3.4	2.1	3.1	2.0
10	15	245	819	819	133	59	54	4.4	3.4	2.1	3.1	2.0
11	16	252	628	812	133	65	71	4.2	3.4	2.1	3.1	2.0
12	17	256	116	562	131	63	24	3.9	2.8	2.2	3.1	2.0
13	18	256	231	395	127	59	8.6	3.6	2.1	2.2	3.1	2.0
14	18	256	812	395	119	68	8.4	3.3	2.1	2.2	3.1	2.0
15	19	333	819	400	123	65	8.1	3.0	2.1	2.4	3.1	2.0
16	19	385	819	404	129	70	8.4	3.0	2.0	2.4	3.1	2.0
17	19	868	819	391	131	65	12	3.1	2.0	2.8	3.1	1.8
18	41	854	826	327	131	60	12	3.1	2.0	2.8	3.1	2.0
19	130	861	819	323	131	61	12	3.1	2.0	3.0	3.3	2.0
20	206	868	812	319	138	231	12	3.6	2.0	3.0	3.3	1.8
21	215	882	805	312	135	680	12	5.2	2.0	3.0	3.1	1.8
22	218	875	805	319	131	644	10	5.4	2.0	3.0	3.1	1.8
23	230	875	805	391	138	716	7.9	5.2	2.0	3.0	3.1	1.8
24	262	868	805	379	133	734	7.9	4.1	2.0	3.0	3.1	1.8
25	259	868	805	308	135	722	7.7	3.8	2.0	3.0	3.1	1.8
26	266	868	805	145	135	650	7.4	3.6	2.0	3.0	3.1	1.7
27	270	868	805	129	133	335	7.2	3.6	2.0	3.0	3.0	1.7
28	256	868	805	125	123	678	7.2	3.4	1.8	3.0	3.0	1.7
29	252	854	784	125	129	1,310	5.9	3.4	1.8	3.0	3.0	1.7
30	245	854	752	125	-----	1,280	5.7	3.4	1.8	3.0	3.0	1.7
31	245	-----	784	123	-----	1,270	-----	3.1	-----	3.0	3.0	-----
TOTAL	3,364	16,373	23,875	14,936	3,803	10,525	6,475.4	129.4	75.6	78.1	95.4	61.5
MEAN	109	546	770	482	131	340	216	4.17	2.52	2.52	3.08	2.05
MAX	270	882	854	819	142	1,310	1,370	5.5	3.6	3.0	3.3	3.0
MIN	13	233	116	123	119	59	5.7	3.0	1.8	1.8	3.0	1.7
AC-FT	6,670	32,480	47,360	29,630	7,540	20,880	12,840	257	150	155	189	122
CAL YR 1967	TOTAL 623,238		MEAN 1,708		MAX 8,660		MIN 13		AC-FT 1,236,000			
WTR YR 1968	TOTAL 79,791.4		MEAN 218		MAX 1,370		MIN 1.7		AC-FT 158,300			

11-3030. STANISLAUS RIVER AT RIPON, CALIF.

LOCATION.--Lat 37°43'47", long 121°06'34", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.29, T.2 S., R.8 E., on left bank 15 ft downstream from railroad bridge, 1.1 miles southeast of Ripon, and 15 miles upstream from mouth.

DRAINAGE AREA.--1,075 sq mi.

RECORDS AVAILABLE.--October 1940 to September 1968. April to September 1940 in reports of California Department of Water Resources.

GAGE.--Digital water-stage recorder. Datum of gage is 0.72 ft above mean sea level, datum of 1929, adjustment of 1959. October 1940 to Nov. 17, 1953, graphic water-stage recorder at site 100 ft upstream at same datum. Nov. 18, 1953, to June 9, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--28 years, 1,010 cfs (731,200 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,530 cfs Apr. 2 (gage height, 43.69 ft); minimum daily, 87 cfs July 19.

1940-68: Maximum discharge, 62,500 cfs Dec. 24, 1955 (gage height, 63.25 ft); minimum, 40 cfs July 21, 1961.

Flood of Feb. 12, 1938, reached a stage of 64.4 ft from floodmarks.

REMARKS.--Records good. Flow regulated by reservoirs and powerplants above station (see REMARKS for sta. no. 11-3020). South San Joaquin and Oakdale Canals (see sta. nos. 11-3005 and 11-3010) divert at Goodwin Dam 34 miles upstream. Diversions for irrigation of 57,250 acres in vicinity of Oakdale area. See schematic diagram for Stanislaus River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	535	384	937	856	401	251	1,350	175	126	108	98	130
2	548	383	931	881	321	243	1,450	178	135	119	100	135
3	568	379	929	879	289	222	1,380	188	130	104	97	122
4	595	384	929	884	284	208	1,080	173	120	102	116	128
5	542	393	941	885	273	202	995	168	125	108	143	143
6	543	390	942	886	273	199	889	168	158	103	146	136
7	529	383	940	883	268	199	732	152	128	109	126	118
8	561	373	934	882	269	223	684	149	155	112	110	107
9	590	374	905	885	262	325	605	145	151	96	100	102
10	453	380	899	893	260	262	435	149	133	99	98	97
11	384	385	899	907	260	216	371	144	129	95	100	103
12	362	386	799	892	258	203	316	151	124	90	95	112
13	393	384	515	773	258	202	292	153	147	113	106	108
14	382	386	387	584	255	204	261	181	140	112	95	96
15	390	388	728	562	246	266	242	165	127	110	107	98
16	378	392	844	567	242	305	236	144	156	92	97	109
17	384	455	863	546	255	397	208	141	141	90	104	111
18	439	738	882	537	274	421	206	146	128	90	111	121
19	486	832	893	480	285	319	199	142	131	87	115	123
20	544	870	888	464	260	286	210	138	110	94	117	133
21	632	892	882	451	339	276	221	140	106	105	110	126
22	657	907	881	441	341	629	217	153	110	102	138	155
23	547	913	883	442	296	756	207	159	148	91	132	151
24	461	915	883	496	270	902	199	177	138	104	126	152
25	455	916	879	484	262	962	190	147	119	94	122	137
26	447	915	878	464	257	915	188	146	128	97	125	140
27	457	918	878	362	256	853	171	146	130	106	126	133
28	488	922	880	311	255	696	189	126	104	116	122	146
29	453	923	879	295	248	741	216	123	97	109	118	150
30	414	933	869	296	-----	1,210	177	135	98	106	114	131
31	402	-----	840	355	-----	1,290	-----	128	-----	107	118	-----
TOTAL	15,019	18,193	26,617	19,523	8,017	14,383	14,116	4,730	3,872	3,170	3,532	3,753
MEAN	484	606	859	630	276	464	471	153	129	102	114	125
MAX	657	933	942	907	401	1,290	1,450	188	158	119	146	155
MIN	362	373	387	295	242	199	171	123	97	87	95	96
AC-FT	29,790	36,090	52,790	38,720	15,900	28,530	28,000	9,380	7,680	6,290	7,010	7,440
CAL YR 1967	TOTAL 703,505			MEAN 1,927		MAX 7,730	MIN 198	AC-FT 1,395,000				
WTR YR 1968	TOTAL 134,925			MEAN 369		MAX 1,450	MIN 87	AC-FT 267,600				

SAN JOAQUIN RIVER BASIN

11-3035. SAN JOAQUIN RIVER NEAR VERNALIS, CALIF.
(International hydrological decade station)

LOCATION.--Lat 37°40'34", long 121°15'55", in El Pescadero Grant, on left bank 12 ft downstream from Durham Ferry highway bridge, 2.6 miles downstream from Stanislaus River, and 3.2 miles northeast of Vernalis. Prior to Dec. 1, 1967, at site 120 ft upstream.

DRAINAGE AREA.--13,540 sq mi.

RECORDS AVAILABLE.--July 1922 to September 1968 (1922-23 and 1925-29, low-water records only).

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level. July 1922 to September 1946, at various sites on or within 100 ft of Durham Ferry bridge. Prior to Apr. 1, 1931, at different datum. Apr. 1, 1931, to Sept. 30, 1959, at datum 5.06 ft above mean sea level and 8.4 ft above datum of Corps of Engineers. Oct. 1, 1959, to Nov. 30, 1967, at site 120 ft upstream at present datum.

AVERAGE DISCHARGE.--40 years (1924, 1929-68), 4,357 cfs (3,154,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4,250 cfs Feb. 24 (elevation, 15.26 ft); minimum daily, 453 cfs July 20.

1922-68: Maximum discharge recorded, 79,000 cfs Dec. 9, 1950 (elevation, 32.81 ft, present datum), including flow through breaks in levee; minimum, 19 cfs Aug. 10, 1961.

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation; low flows consist mainly of return flow from irrigated areas. Records of chemical analyses, water temperatures, and suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,460	3,740	3,930	3,120	2,560	3,420	2,620	798	549	517	549	898
2	2,470	3,660	3,970	3,130	2,510	3,300	2,930	780	601	469	577	898
3	2,500	3,500	3,860	3,170	2,420	2,910	3,060	816	650	477	581	857
4	2,530	3,430	3,710	3,280	2,200	2,620	2,750	826	593	485	646	834
5	2,570	3,350	3,620	3,400	2,140	2,840	2,570	920	589	485	708	803
6	2,600	3,270	3,790	3,500	2,100	3,020	2,440	975	646	485	682	857
7	2,660	3,190	3,820	3,540	2,170	3,020	2,130	930	654	469	646	893
8	2,700	3,320	3,890	3,330	2,110	3,190	1,900	911	632	469	618	965
9	2,720	3,360	3,890	3,300	2,150	3,250	1,680	870	704	465	589	980
10	2,450	3,430	3,870	3,500	2,410	3,370	1,440	848	749	469	610	893
11	2,260	3,500	3,710	3,570	2,540	2,980	1,240	893	690	469	677	852
12	2,180	3,530	3,640	3,480	2,480	2,840	1,120	970	623	469	677	916
13	2,190	3,460	3,740	3,400	2,290	3,000	1,100	1,040	593	489	641	935
14	2,180	3,350	3,640	3,190	2,210	3,040	1,100	1,140	628	525	636	945
15	2,200	3,440	3,740	3,010	2,240	3,000	1,160	1,120	610	585	618	1,000
16	2,380	3,470	3,930	2,910	2,130	3,090	1,000	1,040	581	569	623	1,030
17	2,350	3,420	3,880	2,840	2,020	3,140	906	995	641	549	610	960
18	2,360	3,350	3,770	2,820	1,950	3,360	930	960	589	501	754	935
19	2,420	3,450	3,720	2,800	1,910	3,310	844	950	577	457	812	884
20	2,570	3,470	3,720	2,740	1,900	3,680	830	995	493	453	834	875
21	2,760	3,490	3,570	2,700	2,110	3,750	862	902	553	469	893	893
22	2,990	3,700	3,570	2,560	2,880	3,770	945	875	529	561	985	925
23	3,070	3,620	3,580	2,320	3,360	3,620	940	844	585	553	1,020	975
24	2,940	3,470	3,450	2,470	4,100	3,350	945	893	641	513	950	980
25	3,030	3,350	3,330	2,530	4,120	3,160	980	884	549	481	950	980
26	3,320	3,510	3,260	2,540	3,980	3,000	925	844	489	497	1,040	1,010
27	3,590	3,420	3,230	2,500	3,830	2,920	880	875	501	521	1,040	1,070
28	3,660	3,430	3,250	2,400	3,590	2,690	955	794	533	533	980	1,020
29	3,420	3,730	3,230	2,300	3,470	2,260	980	700	485	573	1,030	1,030
30	3,300	3,780	3,210	2,290	-----	2,370	902	654	489	529	960	1,050
31	3,660	-----	3,160	2,510	-----	2,620	-----	581	-----	505	880	-----
TOTAL	84,490	104,190	112,680	91,150	75,880	95,890	43,064	27,623	17,746	15,591	23,816	28,143
MEAN	2,725	3,473	3,635	2,940	2,617	3,093	1,435	891	592	503	768	938
MAX	3,660	3,780	3,970	3,570	4,120	3,770	3,060	1,140	749	585	1,040	1,070
MIN	2,180	3,190	3,160	2,290	1,900	2,260	830	581	485	453	549	803
AC-FT	167,600	206,700	223,500	180,800	150,500	190,200	85,420	54,790	35,200	30,920	47,240	55,820

CAL YR 1967 TOTAL 2,895,190 MEAN 7,932 MAX 25,900 MIN 1,800 AC-FT 5,743,000
WTR YR 1968 TOTAL 720,263 MEAN 1,968 MAX 4,120 MIN 453 AC-FT 1,429,000

SAN JOAQUIN RIVER BASIN

733

11-3080. SOUTH FORK CALAVERAS RIVER NEAR SAN ANDREAS, CALIF.

LOCATION.--Lat 38°08'40", long 120°39'50", in NW $\frac{1}{4}$ sec.4, T.3 N., R.12 E., on right bank 0.1 mile downstream from San Antonio Creek, and 3.7 miles south of San Andreas.

DRAINAGE AREA.--118 sq mi.

RECORDS AVAILABLE.--April 1950 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 860 ft (from topographic map). Prior to Feb. 13, 1952, staff gage at same site and datum. Feb. 13, 1952, to May 19, 1964, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--18 years, 75.2 cfs (54,440 acre-ft per year); median of yearly mean discharges, 47 cfs (34,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,460 cfs Jan. 30 (gage height, 4.75 ft); no flow for many days. 1950-68: Maximum discharge, 17,600 cfs Dec. 23, 1955 (gage height, 10.29 ft), from rating curve extended above 5,700 cfs on basis of slope-area measurement of maximum flow; no flow at times in most years.

REMARKS.--Records good. Some small diversions for irrigation above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	4.2	18	14	124	52	56	13	5.2	.90		
2	5.4	4.0	15	14	79	48	67	11	5.1	.78		
3	18	3.8	12	13	72	44	49	9.0	5.1	.74		
4	13	4.1	12	14	56	41	43	11	5.0	.71		
5	7.6	4.2	42	13	48	38	40	11	4.9	.70		
6	6.9	4.2	42	12	44	36	38	11	5.3	.76		
7	6.2	4.2	37	12	42	38	35	11	5.8	.72		
8	5.5	4.2	37	13	41	371	33	11	5.8	.69		
9	5.2	4.3	24	13	43	160	32	10	5.1	.69		
10	5.0	4.3	21	31	53	95	30	9.9	4.8	.64		
11	5.0	4.4	16	58	45	73	29	9.7	4.5	.53		
12	4.8	4.4	15	38	41	61	28	10	4.2	.35		
13	4.8	4.4	16	28	57	136	27	12	4.0	.21		
14	4.6	5.4	16	24	73	99	25	22	3.7	.14		
15	4.5	6.1	14	56	53	77	24	19	3.4	.07		
16	4.3	6.3	14	63	54	136	23	15	3.2	.03		
17	4.2	5.4	12	50	553	220	22	13	3.1	0		
18	4.2	9.0	20	89	306	134	21	12	2.9	0		
19	4.2	13	35	32	147	100	20	11	2.7	0		
20	4.2	16	26	30	597	84	19	10	2.5	0		
21	4.3	9.6	19	26	592	74	17	10	2.4	0		
22	4.3	6.9	16	24	301	67	17	10	2.3	0		
23	4.4	6.4	15	24	185	61	18	9.6	2.3	0		
24	4.4	6.3	16	23	137	57	17	9.9	1.7	0		
25	4.4	6.3	15	21	107	55	17	9.3	1.7	0		
26	4.4	6.5	16	20	88	53	17	8.6	1.5	0		
27	4.4	6.8	16	23	75	49	15	7.9	1.5	0		
28	4.4	6.6	16	23	66	46	15	7.4	1.3	0		
29	4.4	7.6	15	19	58	45	14	6.0	1.2	0		
30	4.4	13	16	200	-----	43	13	6.0	1.1	0		
31	4.3	-----	16	351	-----	41	-----	5.5	-----	0		-----
TOTAL	169.5	191.9	620	1,321	4,137	2,634	821	331.8	103.3	8.66	0	0
MEAN	5.47	6.40	20.0	42.6	143	85.0	27.4	10.7	3.44	.28	0	0
MAX	18	16	42	351	597	371	67	22	5.8	.90	0	0
MIN	3.8	3.8	12	12	41	36	13	5.5	1.1	0	0	0
AC-FT	336	381	1,230	2,620	8,210	5,220	1,630	658	205	17	0	0

CAL YR 1967 TOTAL 48,682.2 MEAN 133 MAX 2,260 MIN 2.8 AC-FT 96,560
WTR YR 1968 TOTAL 10,338.16 MEAN 28.2 MAX 597 MIN 0 AC-FT 20,510

Peak discharge (base, 1,000 cfs).--Jan. 30 (2100 hrs) 1,460 cfs (4.75 ft); Feb. 17 (1500 hrs) 1,280 cfs (4.53 ft).

SAN JOAQUIN RIVER BASIN

11-3080. NORTH FORK CALAVERAS RIVER NEAR SAN ANDREAS, CALIF.

LOCATION.--Lat 38°13'05", long 120°41'55", in NW¼ sec.7, T.4 N., R.12 E., on right bank 0.5 mile upstream from Chile Gulch, and 1.8 miles northwest of San Andreas.

DRAINAGE AREA.--85.2 sq mi.

RECORDS AVAILABLE.--March 1950 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 750 ft (from topographic map). Prior to Feb. 14, 1952, staff gage at same site and datum. Feb. 14, 1952, to July 8, 1964, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--18 years, 46.4 cfs (33,590 acre-ft per year); median of yearly mean discharges, 31 cfs (22,400 acre-ft per year).

EXTREMES.--Maximum discharge during year, 688 cfs Feb. 20 (gage height, 5.66 ft); no flow for several months. 1950-68: Maximum discharge, 6,200 cfs Dec. 23, 1955 (gage height, 12.52 ft), from rating curve extended above 3,900 cfs; no flow at times in most years.

REMARKS.--Records good except those for period of no gage-height record, which are fair. Small diversions above station for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	6.4	28	10	75	28	30	9.3	4.8			
2	9.7	6.2	21	9.5	84	26	46	9.4	4.1			
3	36	6.2	23	9.5	150	24	30	9.0	4.4			
4	16	6.9	58	9.4	82	22	26	8.9	4.8			
5	9.8	7.0	69	8.8	54	19	23	9.0	4.7			
6	6.7	6.8	62	8.6	42	19	22	8.9	5.2			
7	5.9	7.0	58	8.8	36	20	21	8.7	6.8			
8	5.5	7.4	56	9.2	29	83	20	10	7.3			
9	5.5	7.4	22	11	29	110	20	10	6.5			
10	5.5	7.6	18	35	32	67	19	9.3	5.1			
11	5.6	7.9	15	66	26	43	18	9.0	4.8			
12	5.3	8.4	15	31	24	36	18	9.5	4.1			
13	5.1	8.1	15	22	21	54	18	14	3.1			
14	5.3	14	13	20	20	66	17	20	2.9			
15	4.8	14	13	136	19	46	16	15	2.9			
16	5.4	9.8	12	82	20	62	16	12	2.5			
17	5.2	8.9	17	41	157	245	16	10	1.5			
18	5.2	11	27	27	169	137	15	9.9	1.3			
19	5.2	30	35	22	72	82	14	10	1.4			
20	5.1	26	19	19	345	58	14	9.8	.85			
21	4.9	16	14	18	322	46	14	8.3	.95			
22	6.0	12	11	16	182	40	13	8.1	.78			
23	6.1	10	11	15	109	36	13	8.3	.66			
24	6.5	9.5	11	14	79	33	13	8.9	1.2			
25	6.5	9.4	11	14	58	30	12	8.7	.79			
26	5.8	9.4	11	14	46	30	11	8.6	.39			
27	6.0	9.7	11	17	38	27	11	7.7	.22			
28	6.0	12	11	18	33	26	11	6.4	.12			
29	6.4	18	11	17	30	25	9.6	5.7	.04			
30	6.5	33	11	40	-----	24	8.9	5.6	.04			
31	6.4	-----	11	106	-----	23	-----	5.4	-----			-----
TOTAL	227.8	346.0	720	874.8	2,383	1,587	535.5	293.4	84.24	0	0	0
MEAN	7.35	11.5	23.2	28.2	82.2	51.2	17.9	9.46	2.81	0	0	0
MAX	36	33	69	136	345	245	46	20	7.3	0	0	0
MIN	4.8	6.2	11	8.6	19	19	8.9	5.4	.04	0	0	0
AC-FT	452	686	1,430	1,740	4,730	3,150	1,060	582	167	0	0	0

CAL YR 1967 TOTAL 28,933.97 MEAN 79.3 MAX 1,400 MIN .42 AC-FT 57,390
WTR YR 1968 TOTAL 7,051.74 MEAN 19.3 MAX 345 MIN 0 AC-FT 13,990

Peak discharge (base, 1,300 cfs).--No peak above base.

Note.--No gage-height record Nov. 27 to Jan. 10.

11-3087. NEW HOGAN RESERVOIR NEAR VALLEY SPRINGS, CALIF.

LOCATION.--Lat 38°09'00", long 120°48'45", in SW¼SW¼ sec.31, T.4 N., R.11 E., in control house at New Hogan Dam on the Calaveras River, 3.0 miles south of Valley Springs.

DRAINAGE AREA.--362 sq mi.

RECORDS AVAILABLE.--December 1963 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

EXTREMES.--Maximum contents during year, 214,500 acre-ft Feb. 21 (elevation, 685.00 ft); minimum, 142,800 acre-ft Sept. 30 (elevation, 661.51 ft).

1963-68: Maximum contents, 241,200 acre-ft Apr. 18, 1967 (elevation, 692.53 ft); minimum since initial season of normal operation, 9,360 acre-ft Oct. 27, 1964 (elevation, 516.81 ft).

REMARKS.--Reservoir is formed by an earthfill dam and four earthfill dikes. Storage began Dec. 20, 1963. Total capacity, 323,900 acre-ft between elevations 534.5 (invert of outlet valve) and 713.0 ft (top of spillway gates). Elevation of spillway crest is 679.5 ft. No dead storage. The reservoir is operated for flood control according to existing downstream channel conditions. Reservoir releases limited, insofar as possible, to amounts that will not cause flows greater than 6,000 cfs at Bellota. Records including extremes show contents at 2400 hours.

COOPERATION.--Records furnished by Corps of Engineers.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

545	722	600	27,300
550	1,240	610	39,200
555	1,960	630	70,500
560	2,950	650	113,200
570	6,140	670	167,000
580	11,100	700	269,700
590	18,000		

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	197.0	196.2	195.5	197.1	204.2	202.9	201.1	198.9	189.8	177.8	163.9	150.8
2	197.2	196.1	195.6	197.0	204.6	203.1	201.4	198.4	189.5	177.3	163.5	150.5
3	197.2	196.0	195.6	197.1	205.1	203.3	201.6	198.0	189.3	176.9	163.1	150.2
4	197.3	195.8	195.7	197.2	205.4	203.4	201.8	197.7	189.0	176.5	162.8	149.8
5	197.2	195.7	195.9	197.2	205.6	203.5	201.9	197.4	188.6	176.0	162.3	149.4
6	197.1	195.6	195.9	197.3	205.8	203.6	201.9	197.3	188.3	175.5	162.0	149.1
7	197.0	195.6	196.3	197.3	205.9	203.9	202.1	197.0	188.1	175.0	161.7	148.8
8	196.9	195.5	196.3	197.3	206.1	205.5	202.1	196.7	187.8	174.5	161.2	148.5
9	196.8	195.4	196.4	197.3	206.2	206.4	202.2	196.3	187.6	174.1	160.8	148.1
10	196.7	195.3	196.5	197.7	206.5	206.9	202.2	195.9	187.2	173.6	160.4	147.7
11	196.7	195.3	196.5	197.9	206.6	207.2	202.3	195.6	186.7	173.2	160.0	147.4
12	196.6	195.3	196.5	198.0	206.7	207.4	202.3	195.1	186.2	172.7	159.5	147.1
13	196.6	195.1	196.5	198.2	206.8	208.1	202.3	195.0	185.9	172.2	159.1	146.8
14	196.5	195.3	196.5	198.3	207.0	208.4	202.3	194.7	185.4	171.8	158.6	146.5
15	196.4	195.3	196.4	198.9	207.1	208.7	202.2	194.4	185.0	171.2	158.0	146.2
16	196.4	195.2	196.4	199.4	207.4	208.2	202.2	194.1	184.7	170.8	157.5	146.0
17	196.4	195.1	196.5	199.6	209.1	207.8	202.1	193.9	184.4	170.4	156.9	145.6
18	196.4	195.2	196.7	199.7	210.4	206.5	202.1	193.7	184.1	170.0	156.5	145.1
19	196.3	195.3	196.6	199.8	211.3	204.3	202.0	193.4	183.7	169.5	156.0	144.9
20	196.3	195.3	196.7	200.0	213.6	202.0	201.7	193.1	183.3	169.1	155.5	144.6
21	196.3	195.4	196.7	200.0	214.5	200.0	201.5	192.8	182.8	168.7	154.9	144.4
22	196.3	195.4	196.8	200.1	212.3	199.2	201.4	192.5	182.2	168.3	154.5	144.3
23	196.3	195.3	196.8	200.2	209.5	199.4	201.3	192.2	181.8	167.9	154.1	144.1
24	196.3	195.3	196.8	200.2	206.4	199.6	201.1	191.9	181.3	167.6	153.7	143.9
25	196.3	195.3	196.8	200.3	203.1	199.8	200.7	191.7	180.8	167.0	153.4	143.7
26	196.3	195.2	196.9	200.4	202.0	200.0	200.4	191.5	180.3	166.5	153.1	143.5
27	196.3	195.2	196.9	200.4	202.2	200.2	200.2	191.3	179.7	165.9	152.7	143.3
28	196.2	195.2	197.0	200.4	202.5	200.4	199.9	191.0	179.2	165.6	152.3	143.1
29	196.2	195.3	197.0	200.4	202.8	200.5	199.6	190.7	178.7	165.1	151.9	143.0
30	196.2	195.5	197.0	202.0	-----	200.6	199.2	190.4	178.3	164.7	151.5	142.8
31	196.2	-----	197.1	203.6	-----	200.8	-----	190.0	-----	164.3	151.2	-----
(a)	679.47	679.23	679.74	681.73	681.48	680.88	680.40	677.53	673.74	669.10	664.53	661.51
(b)	-0.9	-0.7	+1.6	+6.5	-0.8	-2.0	-1.6	-9.2	-11.7	-14.0	-13.1	-8.4
(c)	1,537	615	432	338	384	809	1,362	1,661	2,276	2,598	2,055	1,820
MAX	197.3	196.2	197.1	203.6	214.5	208.7	202.3	198.9	189.8	177.8	163.9	150.8
MIN	196.2	195.1	195.5	197.0	202.0	199.2	199.2	190.0	178.3	164.3	151.2	142.8
CAL YR 1967			b +31.7			MAX 241.2			MIN 165.5			
WTR YR 1968			b -54.3			MAX 214.5			MIN 142.8			

a Elevation, in feet, at end of month.

b Change in contents, in thousands of acre-feet.

c Evaporation in acre-feet.

SAN JOAQUIN RIVER BASIN

11-3089. CALAVERAS RIVER BELOW NEW HOGAN DAM, NEAR VALLEY SPRINGS, CALIF.

LOCATION.--Lat 38°08'53", long 120°49'26", in NE¼ sec.1, T.3 N., R.10 E., on right bank at county road bridge, 0.5 mile upstream from Cosgrove Creek, 0.8 mile downstream from New Hogan Dam, and 3.0 miles south of Valley Springs.

DRAINAGE AREA.--363 sq mi.

RECORDS AVAILABLE.--January 1961 to September 1968. Published as "below Hogan Dam" 1961-63 and as "below New Hogan Dam" 1964.

GAGE.--Digital water-stage recorder and concrete control. Datum of gage is 519.8 ft above mean sea level (levels by Corps of Engineers). Auxiliary staff gage 300 ft downstream at different datum used May 1, 1962, to Jan. 26, 1963. Prior to Aug. 2, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--7 years, 203 cfs (147,000 acre-ft per year), adjusted for change in contents and evaporation from New Hogan Reservoir.

EXTREMES.--Maximum discharge during year, 1,990 cfs Feb. 22-24 (gage height, 3.69 ft); minimum daily, 0.30 cfs Oct. 18-20.

1961-68: Maximum discharge, 7,020 cfs Feb. 1, 1963 (gage height, 6.76 ft); no flow for many days in most years.

REMARKS.--Records good. Flow regulated by New Hogan Reservoir (see sta. no. 11-3087.). Some seepage of North Fork Stanislaus River water enters basin from diversion canals and reservoirs, normally not over 1.5 cfs. Small diversions above station for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	21	26	25	35	36	35	208	125	192	190	147
2	1.6	50	26	25	35	36	35	208	125	192	169	147
3	1.4	62	26	25	35	36	35	183	125	192	146	147
4	21	75	26	25	35	36	35	151	140	192	146	147
5	46	62	26	25	35	36	35	125	145	202	146	147
6	46	35	26	25	35	36	35	72	123	220	146	147
7	46	35	28	25	35	36	35	114	126	220	146	147
8	46	35	28	25	35	43	35	178	122	220	161	147
9	46	35	29	25	35	36	35	198	122	203	182	147
10	33	35	29	25	35	36	35	190	159	190	174	147
11	21	35	28	23	35	36	42	175	236	192	174	147
12	22	35	24	24	35	36	50	175	206	192	174	133
13	22	35	26	24	35	36	50	175	180	192	195	122
14	17	35	26	24	35	36	50	188	180	192	234	124
15	.90	35	26	24	35	75	50	171	180	192	244	124
16	.40	35	26	25	36	675	50	159	148	192	244	124
17	.40	35	26	26	36	1,000	50	150	130	192	244	146
18	.30	35	26	26	36	1,120	50	132	142	179	225	163
19	.30	35	26	26	36	1,480	90	142	170	169	217	128
20	.30	33	26	26	214	1,490	147	152	216	169	245	92
21	.40	26	26	26	1,190	1,360	103	164	236	169	248	43
22	.40	26	26	26	1,970	587	70	159	236	169	222	43
23	.40	26	26	26	1,980	35	79	159	207	169	179	54
24	.40	26	26	26	1,970	35	144	150	204	178	147	73
25	.60	26	26	28	1,970	35	204	130	236	203	147	79
26	.60	26	25	35	776	35	186	108	236	225	147	90
27	.60	26	25	35	34	35	149	127	235	227	165	75
28	.60	26	25	35	34	35	149	147	221	190	194	46
29	.50	26	25	35	34	35	179	160	192	190	185	46
30	.50	26	25	35	-----	35	208	165	192	190	169	46
31	.50	-----	25	35	-----	35	-----	142	-----	190	147	-----
TOTAL	378.50	1,053	810	840	10,841	8,613	2,450	4,857	5,295	5,984	5,752	3,368
MEAN	12.2	35.1	26.1	27.1	374	278	81.7	157	177	193	186	112
MAX	46	75	29	35	1,980	1,490	208	208	236	227	248	163
MIN	.30	21	24	23	34	35	35	72	122	169	146	43
AC-FT	751	2,090	1,610	1,670	21,500	17,080	4,860	9,630	10,500	11,870	11,410	6,680
Mean a	22.6	33.6	59.2	138	366	258	77.6	34.0	18.2	7.61	5.94	1.68
Ac-ft a	1,390	2,000	3,640	8,510	21,080	15,890	4,620	2,090	1,080	468	365	100

CAL YR 1967 TOTAL 113,683.90 MEAN 311 MAX 4,720 MIN 0.30 AC-FT 225,500 MEAN a 378 AC-FT a 273,800
WTR YR 1968 TOTAL 50,241.50 MEAN 137 MAX 1,980 MIN .30 AC-FT 99,650 MEAN a 84.3 AC-FT a 61,230

a Adjusted for change in contents and evaporation from New Hogan Reservoir.

SAN JOAQUIN RIVER BASIN

737

11-3090. COSGROVE CREEK NEAR VALLEY SPRINGS, CALIF.

LOCATION.--Lat 38°08'10", long 120°50'05", in SE $\frac{1}{4}$ sec.35, T.4 N., R.10 E., on right bank 0.4 mile upstream from mouth and 2.7 miles south of Valley Springs.

DRAINAGE AREA.--21.1 sq mi.

RECORDS AVAILABLE.--October 1929 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 547.8 ft above mean sea level, datum of 1929. Prior to Mar. 17, 1930, staff gage at site a quarter of a mile downstream at different datum.

AVERAGE DISCHARGE.--39 years, 7.32 cfs (5,300 acre-ft per year); median of yearly mean discharges, 5.3 cfs (3,800 acre-ft per year).

EXTREMES.--Maximum discharge during year, 705 cfs Jan. 30 (gage height, 5.21 ft); no flow for several months. 1929-68: Maximum discharge, 3,240 cfs Dec. 23, 1955 (gage height, 8.96 ft), from rating curve extended above 1,400 cfs on basis of slope-area measurement of maximum flow; no flow for several months in each year.

REMARKS.--Records excellent. No storage or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	.12	0	18	3.8	1.4	.10				
2		0	.06	0	10	3.4	2.6	.06				
3		0	.06	0	6.6	2.8	1.9	.05				
4		0	.12	0	5.6	2.6	1.9	.06				
5		0	.26	0	4.9	2.6	1.9	.05				
6		0	.14	0	4.2	2.2	1.8	.05				
7		0	.30	0	3.8	3.0	1.0	.03				
8		0	.26	0	3.4	99	.93	.06				
9		0	.14	0	3.0	24	1.4	.38				
10		0	.10	.08	3.0	11	1.2	.05				
11		0	.08	.10	2.8	6.4	1.0	.04				
12		0	.06	.75	2.4	4.9	1.1	.03				
13		0	.05	.54	2.2	6.2	.75	.05				
14		0	.02	.48	2.0	5.2	.48	.18				
15		0	.02	24	1.8	4.2	.43	.06				
16		0	.01	6.2	2.4	14	.38	.04				
17		0	.01	3.6	39	20	.34	.02				
18		0	.05	2.4	14	8.0	.30	.02				
19		0	.12	1.8	7.2	5.2	.26	0				
20		0	.12	1.4	121	4.0	.26	0				
21		0	.10	1.2	152	3.4	.26	0				
22		0	.06	1.1	31	3.0	.18	0				
23		0	.05	.83	18	2.8	.14	0				
24		0	.05	.75	12	2.4	.14	0				
25		0	.05	.75	8.0	2.2	.14	0				
26		0	.05	.75	6.2	2.2	.14	0				
27		0	.03	.93	5.4	1.9	.10	0				
28		0	.02	.93	4.6	1.6	.10	0				
29		0	.02	.75	4.2	1.4	.08	0				
30		.04	.01	157	-----	1.3	.10	0				
31		-----	0	78	-----	1.1	-----	0	-----			-----
TOTAL	0	0.04	2.54	284.34	498.7	255.8	22.71	1.33	0	0	0	0
MEAN	0	.001	.082	9.17	17.2	8.25	.76	.043	0	0	0	0
MAX	0	.04	.30	157	152	99	2.6	.38	0	0	0	0
MIN	0	0	0	0	1.8	1.1	.08	0	0	0	0	0
AC-FT	0	.08	5.0	564	989	507	45	2.6	0	0	0	0

CAL YR 1967 TOTAL 5,514.08 MEAN 15.1 MAX 454 MIN 0 AC-FT 10,940

WTR YR 1968 TOTAL 1,065.46 MEAN 2.91 MAX 157 MIN 0 AC-FT 2,110

Peak discharge (base, 500 cfs).--Jan. 30 (2000 hrs) 705 cfs (5.21 ft); Feb. 21 (0700 hrs) 625 cfs (5.05 ft).

SAN JOAQUIN RIVER BASIN

11-3120. BEAR CREEK NEAR LOCKEFORD, CALIF.

LOCATION.--Lat 38°09'15", long 121°08'15", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.31, T.4 N., R.8 E., on right bank 15 ft downstream from county road bridge and 0.8 mile southeast of Lockeford.

DRAINAGE AREA.--47.6 sq mi.

RECORDS AVAILABLE.--October 1930 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. October 1926 to November 1930 at site 3 miles downstream; records not equivalent.

GAGE.--Digital water-stage recorder and low water concrete control. Datum of gage is 80.68 ft above mean sea level (levels by Corps of Engineers). Prior to Aug. 2, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--38 years, 11.3 cfs (8,180 acre-ft per year); median of yearly mean discharges, 7.9 cfs (5,700 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,090 cfs Jan. 31 (gage height, 13.09 ft); no flow for many days. 1930-68: Maximum discharge, 2,930 cfs Apr. 3, 1958 (gage height, 15.13 ft); no flow for several months in most years.

REMARKS.--Records good. No storage or diversion above station. Occasionally water is released from East Bay Municipal Utility District aqueduct into Bear Creek above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.82	.12	.03	0	40	2.8	1.6	.90	.53	1.7	.96	2.2
2	.63	.15	.02	0	18	2.3	.86	.51	.40	1.1	1.2	1.0
3	.67	.26	.03	0	10	1.8	.80	.51	1.4	.60	1.2	.71
4	.50	5.5	.04	0	6.6	1.4	.60	.23	1.0	.60	.34	.34
5	2.6	6.2	1.3	0	4.7	1.1	.43	1.0	.46	.23	.50	.51
6	1.1	4.3	.94	0	3.6	.87	.36	1.1	.60	.43	.62	.79
7	.65	2.2	1.5	0	2.9	2.3	.43	1.3	.17	.70	.60	.88
8	.47	8.1	1.7	0	2.4	474	.36	1.4	.36	1.2	.64	.69
9	.61	9.2	1.8	0	2.0	90	.29	1.2	.49	.80	1.0	.45
10	.47	6.3	.68	0	1.7	32	.07	.60	.46	.80	1.4	2.4
11	.24	2.5	.24	2.4	1.4	16	.18	.90	.28	1.6	1.4	2.0
12	.17	.46	.09	2.4	1.2	8.7	.29	.29	1.2	.60	.90	.85
13	.15	.18	.05	.94	1.0	15	.11	.43	.92	.43	.56	1.1
14	.31	.20	.03	.44	1.0	45	.18	1.0	1.4	.90	.13	.31
15	.35	.08	.02	33	.79	20	.70	1.3	1.1	.80	.24	1.2
16	.28	.04	.01	7.7	1.4	115	.43	1.9	.80	.60	.78	1.3
17	.35	2.2	.01	2.6	95	174	.23	1.3	.60	.70	1.5	.67
18	.22	1.8	.03	1.2	50	42	.07	.90	.51	.72	1.1	.68
19	.86	1.2	.01	.64	16	20	.29	1.0	.80	.66	1.2	.48
20	.73	1.7	0	.32	96	11	.60	.43	1.3	1.6	.85	2.9
21	.49	1.4	0	.21	235	7.5	1.1	.70	2.2	1.3	1.6	2.3
22	.41	.72	0	.14	65	6.4	1.2	.51	.90	1.4	1.5	.86
23	.28	.27	0	.11	27	5.4	1.2	.80	1.8	.36	.58	1.0
24	.16	.14	0	.08	15	4.2	.67	.60	1.2	.29	.62	.91
25	.21	.08	0	.07	9.3	3.5	.40	1.7	.18	.18	.44	1.0
26	1.1	.05	0	.05	6.7	2.7	.14	1.2	.36	.34	.36	.86
27	1.5	.04	0	.05	5.2	2.3	.23	.68	.70	.59	.58	.71
28	1.4	.03	0	.04	4.1	1.6	.23	.56	.60	.62	.69	.53
29	.58	.03	0	.04	3.4	1.4	.23	.24	.70	.83	.71	.74
30	.32	.04	0	187	-----	.95	1.3	.44	.70	.90	.78	2.0
31	.22	-----	0	486	-----	.67	-----	.54	-----	1.6	2.7	-----
TOTAL	18.85	55.49	8.53	725.43	726.39	1,111.89	15.58	26.17	24.12	25.18	27.68	32.37
MEAN	.61	1.85	.28	23.4	25.0	35.9	.52	.84	.80	.81	.89	1.08
MAX	2.6	9.2	1.8	486	235	474	1.6	1.9	2.2	1.7	2.7	2.9
MIN	.15	.03	0	0	.79	.67	.07	.23	.17	.18	.13	.31
AC-FT	37	110	17	1,440	1,440	2,210	31	52	48	50	55	64
CAL YR 1967	TOTAL 7,998.87		MEAN 21.9		MAX 1,020		MIN 0		AC-FT 15,870			
WTR YR 1968	TOTAL 2,797.68		MEAN 7.64		MAX 486		MIN 0		AC-FT 5,550			

PEAK DISCHARGE (BASE, 220 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-31	0200	13.09	1,090	03-08	1100	12.38	942
02-21	1230	9.40	462	03-16	2215	9.70	497

11-3130. DELTA-MENDOTA CANAL AT TRACY PUMPING PLANT, NEAR TRACY, CALIF.

LOCATION.--Lat 37°47'45", long 121°35'05", in SW¼SW¼ sec.31, T.1 S., R.4 E., at Tracy pumping plant at intake to canal, 6 miles southeast of Byron, and 10 miles northwest of Tracy.

RECORDS AVAILABLE.--June 1951 to September 1968. Prior to October 1959, published as "near Tracy."

GAGE.--Graphic water-stage recorder on forebay, pressure gages on pump discharge lines, and operating time of pumps. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

AVERAGE DISCHARGE.--17 years, 1,668 cfs (1,208,000 acre-ft per year).

EXTREMES.--1951-68: Maximum daily discharge, 4,934 cfs July 13, 1961, June 27, Sept. 1, 1968; no flow for many days in most years.

REMARKS.--Discharge computed from records of operation of pumps. Water is diverted from Sacramento-San Joaquin Delta by way of Old River and a dredged channel to the Tracy Pumping Plant where it is lifted 200 ft into canal. Water, less intermediate diversions, flows into Mendota Pool on San Joaquin River to replace water diverted at Friant Dam. The canal is a part of the Central Valley project. Records of chemical analyses for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Records furnished by Bureau of Reclamation and rounded to meet Geological Survey editorial procedures.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,890	864	321	0	1,340	1,660	3,260	4,430	3,650	4,900	4,470	4,930
2	2,890	867	284	0	1,470	2,050	3,450	4,440	3,650	4,700	4,470	4,930
3	2,750	1,010	284	0	1,360	3,380	3,440	4,450	3,700	4,700	4,490	3,730
4	2,600	870	575	0	1,890	1,760	3,420	4,430	3,860	4,800	4,400	868
5	2,130	869	576	0	1,040	2,660	3,430	4,900	3,890	4,680	4,400	866
6	1,990	867	573	0	1,210	3,170	3,430	4,410	3,870	4,700	4,390	1,170
7	2,200	867	464	0	1,500	2,530	4,890	4,410	3,850	4,710	4,300	4,040
8	2,200	755	428	0	1,500	3,150	3,230	4,420	4,130	4,710	4,270	4,040
9	2,140	861	212	0	1,500	3,180	3,420	4,430	4,140	4,720	4,310	4,680
10	2,070	1,060	140	0	1,500	4,920	3,420	4,400	4,140	4,650	4,310	1,190
11	2,200	3,220	320	0	2,450	3,270	3,410	4,420	4,210	4,800	4,310	4,530
12	1,800	3,230	609	0	1,500	2,920	3,430	4,880	4,430	4,820	4,310	1,180
13	2,270	1,070	608	0	1,500	3,220	3,930	4,420	4,420	4,910	3,850	1,520
14	1,950	321	642	0	1,870	3,350	4,900	4,360	4,420	4,900	2,710	3,820
15	1,720	1,090	997	0	2,050	3,230	3,940	4,130	4,130	4,730	2,540	4,910
16	1,720	962	1,500	0	2,230	3,250	3,950	4,130	3,870	4,700	3,520	4,440
17	1,170	997	1,720	0	1,550	4,830	3,940	3,970	3,870	4,510	3,530	4,410
18	1,090	964	209	70	2,080	3,060	3,930	4,190	3,940	4,380	3,780	3,950
19	1,090	965	568	931	1,870	3,150	3,860	4,770	3,880	4,330	3,680	3,950
20	1,100	900	468	1,470	1,980	3,150	3,490	4,110	4,140	4,370	3,950	3,950
21	1,100	759	533	863	2,040	3,100	3,490	3,930	4,190	4,760	3,950	3,930
22	1,070	754	534	2,230	2,960	3,150	3,530	3,930	4,270	4,910	3,910	4,890
23	997	717	213	1,720	929	3,440	4,100	4,180	4,310	4,910	4,570	3,910
24	865	642	0	1,790	1,240	4,900	4,380	4,390	4,390	4,900	4,910	3,920
25	717	571	0	1,920	2,630	3,250	4,390	4,240	4,460	4,900	4,900	3,920
26	716	572	102	2,200	1,140	3,430	4,240	4,880	4,530	4,900	4,890	3,930
27	716	572	104	1,740	2,600	3,400	3,550	2,650	4,930	4,910	4,890	3,930
28	717	573	176	1,520	1,870	3,420	3,360	1,730	4,930	4,900	4,890	3,950
29	723	573	107	938	1,100	3,420	3,490	1,980	4,910	4,890	2,030	4,460
30	716	574	0	1,150	-----	3,430	4,430	4,910	4,900	4,670	857	3,960
31	864	-----	0	1,250	-----	4,920	-----	4,210	-----	4,500	1,180	-----
TOTAL	49,171	28,916	13,267	19,792	49,899	101,750	113,130	129,130	126,010	146,870	120,967	107,904
MEAN	1,586	964	428	638	1,721	3,282	3,771	4,165	4,200	4,738	3,902	3,597
MAX	2,890	3,230	1,720	2,230	2,960	4,920	4,900	4,910	4,930	4,910	4,910	4,930
MIN	716	321	0	0	929	1,660	3,230	1,730	3,650	4,330	857	866
AC-FT	97,530	57,350	26,310	39,260	98,970	201,800	224,400	256,100	249,900	291,300	239,900	214,000
CAL YR 1967	TOTAL	629,700.00	MEAN	1,725	MAX	4,552	MIN	0	AC-FT	1,249,000		
WTR YR 1968	TOTAL	1,006,806.00	MEAN	2,751	MAX	4,930	MIN	0	AC-FT	1,997,000		

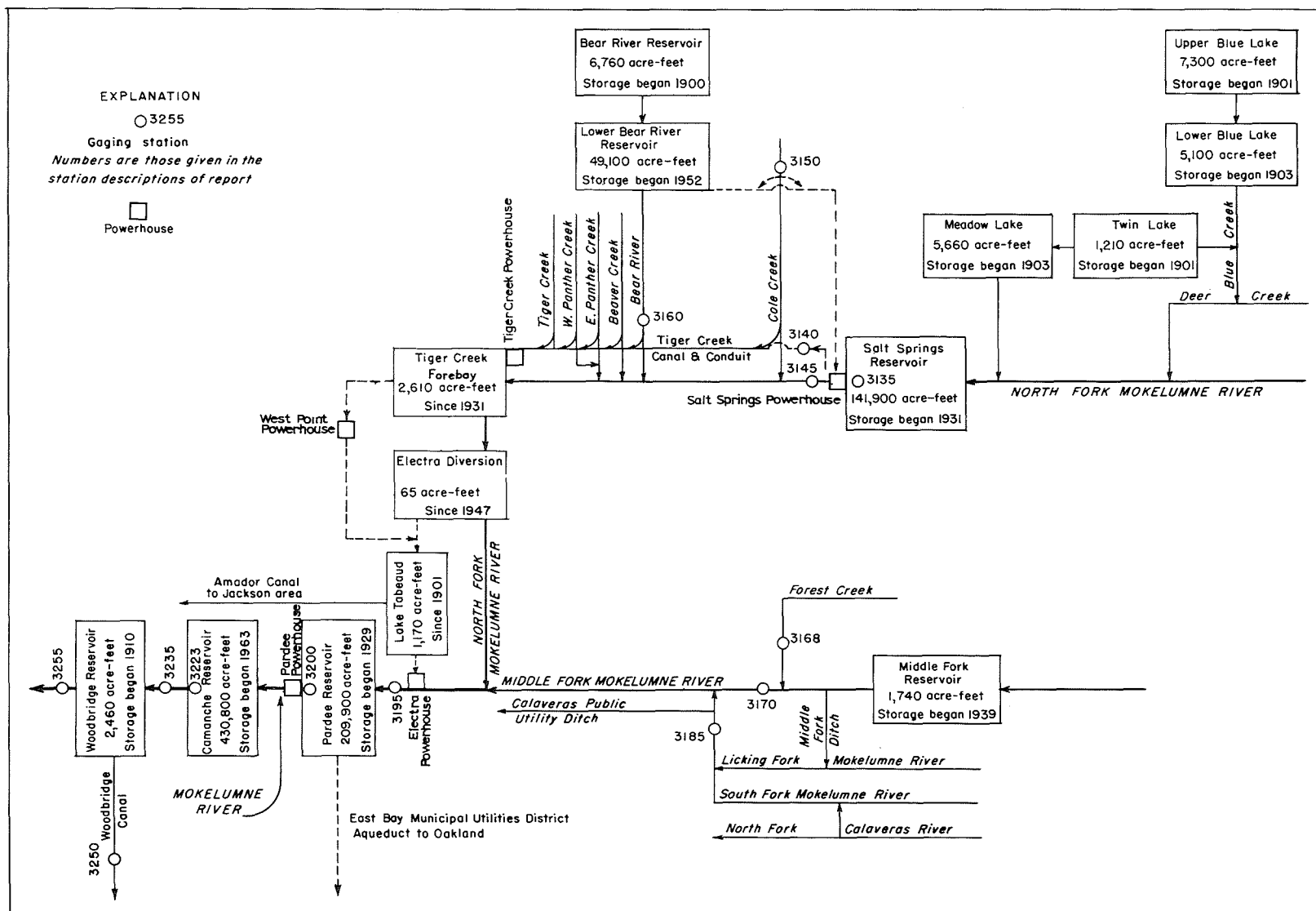


FIGURE 6.—Schematic diagram showing diversions and storage in Mokelumne River basin.

11-3135. SALT SPRINGS RESERVOIR NEAR WEST POINT, CALIF.

LOCATION.--Lat 38°30'00", long 120°12'55", in SE¼ sec.33, T.8 N., R.16 E., at right end of Salt Springs Dam on North Fork Mokelumne River, 2 miles upstream from Cole Creek, and 18 miles northeast of West Point.

DRAINAGE AREA.--169 sq mi.

RECORDS AVAILABLE.--March 1931 to September 1968. Prior to October 1964, records published as usable contents.

GAGE.--Staff gage read once daily. Datum of gage is at mean sea level (levels by Pacific Gas and Electric Co.).

EXTREMES.--Maximum contents observed during year, 129,900 acre-ft June 5-7 (elevation, 3,945.3 ft); minimum, 3,750 acre-ft Feb. 13 (elevation, 3,721.5 ft).

1931-68: Maximum contents observed, 141,900 acre-ft for several days in June or July each year 1948-54, 1956-58, 1960, 1962-63, 1965, 1967 (elevation, 3,958.0 ft); no contents at times in 1932-33, 1945, 1962.

REMARKS.--Reservoir is formed by concrete-faced, rock-fill dam, completed in 1931; storage began in March 1931. Capacity, 141,900 acre-ft between elevations 3,667.75 (outlet drain) and 3,958.0 ft (top of radial gates) above mean sea level. Storage of 1,860 acre-ft is available for release to river only. Water is released through powerhouse just below dam and discharged into Tiger Creek powerhouse conduit (see sta. no. 11-3140.). Figures given herein represent total contents. See schematic diagram of Mokelumne River basin.

COOPERATION.--Record of contents furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

3,667.75	45	3,740.0	7,320
3,700.0	1,250	3,750.0	9,800
3,705.0	1,680	3,760.0	12,700
3,710.0	2,200	3,780.0	19,600
3,715.0	2,810	3,800.0	28,000
3,720.0	3,520	3,850.0	54,900
3,725.0	4,320	3,900.0	90,800
3,730.0	5,230	3,958.0	141,900
3,735.0	6,230		

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 1700 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105.9	86.0	59.6	34.6	9.82	21.1	32.6	66.9	126.2	124.1	109.0	89.4
2	105.2	85.4	58.9	33.6	9.12	21.7	33.4	69.7	127.2	123.3	108.6	88.4
3	104.9	84.7	57.8	32.6	8.32	22.1	33.9	72.0	128.3	122.5	108.1	87.6
4	104.8	83.6	56.9	31.9	7.42	22.5	34.2	74.7	129.2	121.8	107.5	86.9
5	104.3	82.5	56.4	30.9	6.57	23.0	34.7	77.3	129.9	121.4	107.1	86.5
6	103.9	81.5	56.0	30.0	6.13	23.3	35.3	79.6	129.9	120.9	106.5	85.6
7	103.2	80.7	55.5	29.0	5.88	23.5	35.8	81.2	129.9	120.5	105.9	84.7
8	102.6	79.9	55.0	28.1	5.52	23.8	36.5	83.3	129.7	119.9	105.4	84.7
9	102.0	79.0	54.0	27.2	5.06	24.1	37.1	85.4	129.5	119.4	105.4	83.9
10	101.3	78.2	53.2	26.6	4.91	24.2	38.2	87.2	129.3	118.7	104.2	83.3
11	100.6	77.2	52.3	25.7	4.34	24.3	39.9	89.2	129.2	118.1	104.2	82.7
12	99.9	76.1	51.5	24.7	3.84	24.7	41.7	91.4	129.2	117.8	103.4	82.1
13	99.1	75.0	50.6	23.8	3.75	24.8	43.2	93.0	129.0	117.1	102.9	81.6
14	98.5	74.4	49.5	22.8	3.83	25.1	44.5	94.3	128.8	117.2	102.3	80.9
15	97.7	73.8	48.7	22.3	3.84	25.5	46.2	95.6	128.6	116.5	101.7	80.1
16	97.0	72.9	47.8	21.9	3.86	25.8	47.6	96.8	128.1	115.9	101.1	79.1
17	96.3	72.1	46.8	21.5	4.17	26.1	48.8	98.2	127.8	115.6	100.6	78.4
18	95.6	71.1	45.9	20.6	4.80	26.4	49.2	99.7	127.7	115.1	100.6	77.8
19	94.8	70.2	45.1	19.6	5.17	26.7	50.3	101.9	127.7	114.7	99.5	77.1
20	94.2	69.3	44.3	18.7	7.70	26.9	51.3	104.5	127.7	113.9	99.1	76.4
21	93.7	68.7	43.5	17.9	10.2	27.3	52.1	107.7	127.8	113.2	98.6	75.4
22	93.7	67.9	42.6	17.1	11.9	27.6	52.6	109.9	127.7	112.5	98.1	74.3
23	93.2	66.8	42.4	16.4	13.4	27.3	53.3	111.2	127.6	112.0	97.2	73.3
24	92.4	65.9	41.6	15.8	15.6	27.2	54.1	112.2	127.4	111.6	96.2	72.6
25	91.6	64.8	40.8	15.0	16.9	27.2	55.1	113.6	127.2	111.3	95.1	72.0
26	90.8	63.8	40.0	14.2	18.0	27.3	56.4	115.8	126.8	111.1	94.2	71.4
27	90.0	62.8	39.2	13.3	18.9	27.7	57.9	117.3	126.6	110.5	93.4	70.7
28	89.2	62.0	38.6	12.5	19.7	28.1	59.5	119.6	126.2	110.8	92.8	70.2
29	88.3	61.2	37.6	12.0	20.4	28.9	61.7	121.8	125.6	110.1	92.1	69.5
30	87.6	60.4	36.5	11.4	-----	30.0	64.1	123.6	124.9	109.7	91.4	68.8
31	86.8	-----	35.6	10.6	-----	31.3	-----	125.4	-----	109.5	90.5	-----
(a)	3,894.9	3,858.6	3,815.8	3,753.0	3,782.1	3,807.0	3,864.0	3,940.4	3,939.9	3,922.5	3,899.6	3,870.8
(b)	-19,700	-26,400	-24,800	-25,000	+9,800	+10,900	+32,800	+61,300	-500	-15,400	-19,000	-21,700
MAX	105.9	86.0	59.6	34.6	20.4	31.3	64.1	125.4	129.9	124.1	109.0	89.4
MIN	86.8	60.4	35.6	10.6	3.75	21.1	32.6	66.9	124.9	109.5	90.5	68.8

CAL YR 1967 b +18,200
WTR YR 1968 b -37,700

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

SAN JOAQUIN RIVER BASIN

11-3140. TIGER CREEK POWERHOUSE CONDUIT BELOW SALT SPRINGS DAM, CALIF.

LOCATION.--Lat 38°29'47", long 120°13'04", in SW¼ sec.33, T.8 N., R.16 E., on left bank 1,000 ft downstream from Salt Springs Dam and powerhouse.

RECORDS AVAILABLE.--June 1931 to September 1968.

GAGE.--Digital water-stage recorder and concrete control. Altitude of gage is 3,620 ft (from topographic map). Auxiliary staff gages in stilling wells upstream and downstream from control. Prior to Nov. 16, 1966, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--37 years, 329 cfs (238,200 acre-ft per year).

EXTREMES.--1931-68: Maximum daily discharge, 577 cfs June 22, 1945; no flow at times in some years.

REMARKS.--Records excellent. Conduit conveys water of North Fork Mokelumne River from tailrace of Salt Springs powerhouse to forebay of Tiger Creek powerhouse. Since December 1952, records include Bear River diversion to Salt Springs powerhouse. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	533	547	545	541	524	444	284	342	544	542	505	503
2	530	547	538	541	503	462	400	403	545	542	448	503
3	509	549	536	490	485	476	402	405	544	421	349	521
4	527	549	536	492	468	486	403	405	544	313	349	499
5	474	549	539	511	448	489	330	405	544	353	463	415
6	529	549	539	524	436	489	200	405	542	317	498	460
7	529	545	539	526	417	490	200	403	542	317	490	258
8	524	544	539	521	405	479	334	403	542	417	489	179
9	526	549	539	409	409	479	405	403	542	532	482	503
10	526	545	539	530	369	472	405	405	542	533	274	503
11	523	539	542	529	346	379	403	328	545	518	214	503
12	524	539	541	529	356	311	330	163	545	512	512	503
13	520	539	495	517	255	352	200	5.4	545	291	512	505
14	511	538	536	517	193	326	200	9.1	547	218	514	226
15	503	533	538	517	172	326	333	7.9	547	539	511	545
16	505	529	509	517	193	326	403	7.6	547	547	512	552
17	499	529	492	514	194	326	403	7.6	547	545	93	552
18	492	524	520	509	196	326	400	7.6	547	539	228	550
19	480	520	539	533	194	326	329	7.6	549	539	552	550
20	476	518	538	532	258	326	199	7.6	549	544	552	550
21	112	433	512	533	334	325	200	7.6	550	542	447	550
22	125	520	486	530	375	355	334	7.6	545	536	547	541
23	538	520	482	448	388	400	405	7.6	547	529	552	536
24	549	530	479	471	382	399	405	7.6	545	518	552	536
25	549	538	474	530	393	363	405	7.6	545	508	552	536
26	549	542	508	529	415	238	405	7.6	545	505	552	536
27	553	545	539	527	426	198	266	417	544	506	550	533
28	553	545	539	526	441	189	200	545	539	222	544	527
29	547	545	539	524	441	194	201	545	541	515	539	523
30	549	545	541	526	-----	201	201	544	544	503	526	502
31	549	-----	541	524	-----	201	-----	545	-----	503	505	-----
TOTAL	15,413	16,044	16,279	15,967	10,416	11,153	9,585	7,172.0	16,344	14,466	14,413	14,700
MEAN	497	535	525	515	359	360	320	231	545	467	465	490
MAX	553	549	545	541	524	490	405	545	550	547	552	552
MIN	112	433	474	409	172	189	199	5.4	539	218	93	179
AC-FT	30,570	31,820	32,290	31,670	20,660	22,120	19,010	14,230	32,420	28,690	28,590	29,160
CAL YR 1967	TOTAL 177,099.7		MEAN 485		MAX 564		MIN 7.8		AC-FT 351,300			
WTR YR 1968	TOTAL 161,952.0		MEAN 442		MAX 553		MIN 5.4		AC-FT 321,200			

SAN JOAQUIN RIVER BASIN

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11-3145. NORTH FORK MOKELUMNE RIVER BELOW SALT SPRINGS DAM, CALIF.

LOCATION.--Lat 38°29'37", long 120°13'12", in NE¼NW¼ sec.4, T.7 N., R.16 E., on left bank 0.3 mile downstream from Salt Springs Dam, and 1.3 miles upstream from Cole Creek.

DRAINAGE AREA.--170 sq mi.

RECORDS AVAILABLE.--September 1926 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Published as "above Moore Creek" 1926-30.

GAGE.--Digital water-stage recorder. Altitude of gage is 3,590 ft (from topographic map). Prior to Sept. 12, 1928, graphic water-stage recorder at site 100 ft upstream and Sept. 12, 1928, to Sept. 23, 1940, graphic water-stage recorder at present site, at datum 2.0 ft higher. Sept. 24, 1940 to Sept. 30, 1964, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--42 years, 460 cfs (333,000 acre-ft per year), combined flow of North Fork Mokelumne River and Tiger Creek powerhouse conduit minus Bear River-Cole Creek diversion.

EXTREMES.--Maximum discharge during year, 330 cfs May 13 (gage height, 3.46 ft); minimum daily, 4.2 cfs Jan. 3, 5-7.

1926-68: Maximum discharge, 16,000 cfs Nov. 21, 1950 (gage height, 17.20 ft), from rating curve extended above 3,900 cfs on basis of computations of flow over dam and discharge through powerhouse; minimum daily, 0.3 cfs Mar. 31, Apr. 1, 1931.

REMARKS.--Records good. Flow regulated by Salt Springs Reservoir since 1931 (see sta. no. 11-3135.). Diversion from Bear River and Cole Creek to Salt Springs powerhouse averaged 114 cfs during 1968 water year. Diversion above station through Tiger Creek powerhouse conduit (see sta. no. 11-3140.). See schematic diagram of Mokelumne River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101	39	89	4.5	5.0	6.3	6.6	8.8	15	16	13	10
2	91	9.6	91	4.5	5.6	6.3	6.6	9.2	16	16	13	10
3	46	77	88	4.2	7.0	6.3	6.6	9.2	16	16	13	10
4	74	112	92	4.5	7.3	6.3	6.6	10	17	16	13	10
5	84	58	54	4.2	7.3	6.3	6.6	10	17	15	13	10
6	98	66	4.5	4.2	6.6	6.3	6.3	11	17	15	13	10
7	97	104	4.5	4.2	6.0	6.3	6.3	11	17	15	13	10
8	100	114	50	4.5	5.6	7.0	6.3	11	17	15	13	11
9	121	115	72	4.5	6.3	7.0	6.6	11	17	15	13	11
10	128	115	74	5.6	6.0	6.6	6.6	12	17	15	13	11
11	128	116	91	6.0	5.6	6.3	6.6	12	16	15	13	11
12	127	116	101	6.3	5.3	6.3	6.6	119	16	15	12	10
13	122	116	84	6.6	6.0	7.0	6.6	190	16	15	12	10
14	125	98	94	6.6	6.0	6.6	6.3	315	16	15	12	11
15	131	96	107	8.0	5.6	6.3	5.6	315	16	15	12	10
16	131	112	44	7.3	6.0	7.3	4.5	248	16	15	12	10
17	147	125	4.8	6.3	7.3	7.7	4.8	217	16	14	13	10
18	160	133	66	6.3	7.0	7.3	4.8	217	16	14	12	10
19	171	52	102	6.6	7.3	7.0	4.8	219	16	14	12	10
20	174	89	101	5.3	12	7.0	5.0	221	16	14	12	9.6
21	42	141	70	5.3	11	6.6	5.0	219	16	14	11	9.6
22	28	119	4.5	5.6	9.6	6.3	5.0	215	16	14	11	9.6
23	111	46	4.5	6.0	8.4	6.3	4.8	223	16	14	11	10
24	102	91	4.5	6.0	7.7	6.3	5.0	178	16	14	11	10
25	101	112	4.5	6.3	7.3	6.3	5.0	115	16	14	11	9.6
26	101	112	4.5	6.3	7.0	6.0	5.0	115	16	14	11	9.6
27	100	111	4.8	6.0	7.0	6.0	5.0	26	16	14	10	9.6
28	98	112	4.8	5.6	6.6	6.0	5.0	14	16	14	10	9.6
29	101	115	4.8	5.3	6.3	6.0	5.3	14	16	14	10	9.6
30	94	100	4.5	5.3	-----	6.0	6.3	15	16	13	10	9.6
31	87	-----	4.5	5.0	-----	6.0	-----	15	-----	13	11	-----
TOTAL	3,321	2,921.6	1,529.7	172.9	201.7	201.3	172.1	3,325.2	486	452	369	301.4
MEAN	107	97.4	49.3	5.58	6.96	6.49	5.74	107	16.2	14.6	11.9	10.0
MAX	174	141	107	8.0	12	7.7	6.6	315	17	16	13	11
MIN	28	9.6	4.5	4.2	5.0	6.0	4.5	8.8	15	13	10	9.6
AC-FT	6,590	5,790	3,030	343	400	399	341	6,600	964	897	732	598
CAL YR 1967	TOTAL	145,019.4	MEAN	397	MAX	4,660	MIN	4.4	AC-FT	287,600		
WTR YR 1968	TOTAL	13,453.9	MEAN	36.8	MAX	315	MIN	4.2	AC-FT	26,690		

SAN JOAQUIN RIVER BASIN

11-3150. COLE CREEK NEAR SALT SPRINGS DAM, CALIF.

LOCATION.--Lat 38°31'26", long 120°12'28", in SE $\frac{1}{4}$ sec.21, T.8 N., R.16 E., on right bank 1.8 miles north of Salt Springs Dam, 3.4 miles upstream from mouth, and 6.3 miles southwest of Mokelumne Peak.

DRAINAGE AREA.--20.4 sq mi.

RECORDS AVAILABLE.--July 1927 to November 1942, October 1943 to September 1968. Prior to October 1958, published as Cold Creek near Mokelumne Peak. October 1958 to September 1962, published as "near Mokelumne Peak."

GAGE.--Graphic water-stage recorder. Altitude of gage is 5,970 ft (from topographic map).

AVERAGE DISCHARGE.--40 years, 62.5 cfs (45,250 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,290 cfs Feb. 20 (gage height, 5.55 ft); minimum daily, 0.18 cfs Sept. 19.

1927-68: Maximum discharge, 6,140 cfs Dec. 23, 1964 (gage height, 10.21 ft), from rating curve extended above 900 cfs on basis of slope-area measurement at gage height 9.69 ft; no flow for many days in some years.

REMARKS.--Records good. Occasional pumping for domestic use in summer home tract began in September 1961. See schematic diagram of Mokelumne River basin.

COOPERATION.--Gage-height record and six discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.39	.37	4.9	9.5	20	98	147	204	61	1.4	.33	.28
2	.59	.39	4.4	8.5	21	80	90	206	61	1.2	.33	.28
3	3.1	.37	5.3	7.5	22	84	77	230	53	1.2	.33	.26
4	8.9	.39	6.5	7.0	21	88	90	212	45	1.0	.30	.26
5	2.7	.39	8.0	6.2	19	87	93	170	37	.89	.26	.24
6	2.0	.41	7.0	5.5	18	66	74	137	29	.78	.24	.24
7	1.6	.39	7.5	5.5	18	55	90	137	28	.74	.22	.22
8	1.1	.39	7.0	5.3	20	53	117	144	28	.67	.22	.22
9	.89	.39	7.0	5.1	22	48	146	146	22	.60	.20	.22
10	.74	.39	7.5	4.7	26	45	193	151	21	.56	.20	.22
11	.67	.39	8.0	4.7	22	41	184	134	20	.52	.20	.19
12	.60	.39	9.0	4.9	22	37	172	131	19	.52	.20	.19
13	.52	.39	8.5	5.1	16	35	155	100	18	.48	.22	.19
14	.52	.63	8.0	6.5	13	32	170	105	16	.48	.22	.19
15	.45	.60	7.0	4.5	12	32	170	116	16	.48	.24	.20
16	.41	.48	6.5	30	11	32	132	114	13	.48	.24	.20
17	.39	.52	6.2	25	25	41	92	120	11	.48	.24	.20
18	.41	.74	6.0	17	40	33	77	137	9.0	.45	.26	.19
19	.41	1.7	5.3	16	90	30	84	151	8.5	.41	.89	.18
20	.41	1.7	4.6	16	731	32	87	162	6.8	.39	1.1	.19
21	.45	2.7	3.8	17	272	39	83	144	6.0	.48	.71	.22
22	.48	2.2	3.6	18	172	41	77	100	5.1	.48	.67	.22
23	.52	1.4	4.2	19	295	41	92	70	4.4	.45	.45	.22
24	.48	1.1	5.5	20	180	51	111	62	3.8	.45	.39	.22
25	.45	1.0	8.0	21	131	62	136	87	3.2	.41	.35	.22
26	.41	1.0	10	21	124	48	170	101	2.7	.39	.33	.20
27	.39	1.0	14	20	122	56	178	112	2.3	.37	.30	.20
28	.45	1.0	17	19	112	98	200	110	2.0	.30	.30	.20
29	.45	1.1	14	18	101	151	229	96	1.7	.28	.30	.24
30	.45	3.1	12	18	-----	160	210	76	1.5	.28	.30	.28
31	.39	-----	10	19	-----	162	-----	65	-----	.30	.28	-----
TOTAL	31.72	27.02	236.3	445.0	2,698	1,958	3,926	4,030	555.0	17.92	10.82	6.58
MEAN	1.02	.90	7.62	14.4	93.0	63.2	131	130	18.5	.58	.35	.22
MAX	8.9	3.1	17	45	731	162	229	230	61	1.4	1.1	.28
MIN	.39	.37	3.6	4.7	11	30	74	62	1.5	.28	.20	.18
AC-FT	63	54	469	883	5,350	3,880	7,790	7,990	1,100	36	21	13

CAL YR 1967 TOTAL 32,752.84 MEAN 89.7 MAX 772 MIN .30 AC-FT 64,960
 WTR YR 1968 TOTAL 13,942.36 MEAN 38.1 MAX 731 MIN .18 AC-FT 27,650

Peak discharge (base, 500 cfs).--Feb. 20 (0600 hrs) 1,290 cfs (5.55 ft).

11-3160. BEAR RIVER NEAR SALT SPRINGS DAM, CALIF.

LOCATION.--Lat 38°29'37", long 120°17'18", in NW¼ sec.2, T.7 N., R.15 E., on right bank 200 ft upstream from diversion to Tiger Creek powerhouse conduit and highway bridge, 1.5 miles upstream from mouth, and 4 miles west of Salt Springs Dam.

DRAINAGE AREA.--48.0 sq mi.

RECORDS AVAILABLE.--October 1951 to September 1968.

GAGE.--Digital water-stage recorder and broad-crested weir. Altitude of gage is 3,710 ft (from topographic map). Prior to Sept. 30, 1964, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--17 years, 57.3 cfs (41,480 acre-ft per year).

EXTREMES.--Maximum discharge during year, 221 cfs Feb. 20 (gage height, 2.04 ft); minimum daily, 2.6 cfs Nov. 5-13.

1951-68: Maximum discharge, 11,000 cfs Dec. 24, 1964 (gage height, 10.11 ft in gage well, 11.8 ft from flood profile), from rating curve extended above 560 cfs on basis of slope-area measurements of maximum flow; minimum daily, 1.0 cfs Aug. 23-28, 1961.

Flood in November 1950 reached a stage of 11.2 ft, from floodmarks (discharge, 10,000 cfs).

REMARKS.--Records good. Flow regulated by Bear River Reservoir since 1900 (capacity, 6,760 acre-ft) and Lower Bear River Reservoir since December 1952 (capacity, 49,100 acre-ft). Water diverted for power from Lower Bear River Reservoir through tunnel to Salt Springs powerhouse on North Fork Mokelumne River since December 1952. Water diverted occasionally from Cole Creek into Lower Bear River Reservoir. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	5.0	4.9	4.5	6.6	40	46	14	7.0	5.8	4.5	4.4
2	11	5.0	4.6	4.4	9.0	38	38	13	7.0	5.3	4.4	4.4
3	14	4.6	4.4	4.1	10	35	37	12	7.0	5.3	4.4	4.4
4	6.1	2.7	5.0	3.9	9.0	35	35	12	7.0	5.3	4.4	4.4
5	5.9	2.6	11	4.0	9.0	33	33	11	6.6	5.4	4.3	4.3
6	5.8	2.6	5.4	5.9	9.6	30	32	11	7.0	5.6	4.3	4.3
7	5.6	2.6	5.4	3.8	10	29	30	11	8.0	5.6	4.3	4.3
8	5.6	2.6	5.0	3.8	9.6	32	29	11	7.0	5.5	4.3	4.3
9	5.5	2.6	5.1	4.0	15	29	29	10	6.6	5.4	4.3	4.3
10	5.5	2.6	5.5	5.3	12	26	30	10	6.6	5.1	4.9	4.3
11	5.5	2.6	5.1	4.9	11	25	29	9.6	6.5	4.9	6.1	4.3
12	5.5	2.6	4.5	4.9	10	23	27	10	6.5	4.9	5.9	4.4
13	5.4	2.6	3.1	4.9	10	26	26	12	6.5	4.9	4.6	4.4
14	5.4	5.0	3.5	5.6	9.6	23	25	14	6.3	4.9	4.3	4.4
15	5.4	3.4	3.6	37	9.0	22	25	12	6.3	4.9	4.3	4.4
16	5.4	3.1	3.7	17	12	23	22	11	6.3	4.9	4.4	4.4
17	5.4	3.0	3.6	8.5	51	23	21	10	6.2	4.7	4.3	4.3
18	5.4	4.4	3.6	7.0	33	21	19	10	6.1	4.7	4.4	4.3
19	5.3	7.0	3.7	6.5	38	21	18	9.6	5.9	4.7	7.5	4.1
20	5.3	4.0	3.7	6.6	136	21	18	9.6	5.5	4.7	5.5	4.3
21	5.3	3.5	3.7	7.0	120	22	17	9.6	5.4	4.7	4.9	4.3
22	5.3	3.3	4.0	8.5	86	22	16	9.0	6.2	4.6	5.0	4.1
23	5.3	3.3	5.3	8.5	95	22	15	9.0	6.2	4.5	4.6	4.1
24	5.3	3.1	5.8	8.0	76	23	14	9.0	6.2	4.5	4.5	4.1
25	5.1	3.1	6.5	8.0	62	27	14	9.0	6.1	4.5	4.5	4.1
26	5.1	3.1	6.5	7.5	58	27	15	8.5	6.1	4.5	4.4	4.1
27	5.1	3.1	6.3	7.5	55	27	15	8.5	6.1	4.5	4.6	4.1
28	5.1	4.6	5.9	7.0	49	30	14	8.5	6.1	4.5	4.5	4.1
29	5.1	3.9	5.4	6.5	44	37	14	7.5	6.1	4.4	4.5	4.1
30	5.1	4.9	5.0	9.0	-----	42	14	7.5	5.9	4.4	4.5	4.1
31	5.0	-----	4.6	12	-----	40	-----	7.5	-----	4.6	4.4	-----
TOTAL	181.3	106.5	153.4	236.1	1,064.4	874	717	316.4	192.3	152.2	145.8	127.9
MEAN	5.85	3.55	4.95	7.62	36.7	28.2	23.9	10.2	6.41	4.91	4.70	4.26
MAX	14	7.0	11	37	136	42	46	14	8.0	5.8	7.5	4.4
MIN	5.0	2.6	3.1	3.8	6.6	21	14	7.5	5.4	4.4	4.3	4.1
AC-FT	360	211	304	468	2,110	1,730	1,420	628	381	302	289	254
CAL YR 1967	TOTAL 21,323.2		MEAN 58.4		MAX 772		MIN 2.6		AC-FT 42,290			
WTR YR 1968	TOTAL 4,267.3		MEAN 11.7		MAX 136		MIN 2.6		AC-FT 8,460			

SAN JOAQUIN RIVER BASIN

11-3168. FOREST CREEK NEAR WILSEYVILLE, CALIF.

LOCATION.--Lat 38°24'10", long 120°26'45", in SW $\frac{1}{4}$ sec.4, T 6 N., R.14 E., on left bank 1.0 mile downstream from Lion Creek, 1.8 miles upstream from mouth, and 4 miles northeast of Wilseyville.

DRAINAGE AREA.--20.8 sq mi.

RECORDS AVAILABLE.--July 1960 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 2,950 ft (from topographic map). Prior to July 13, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--8 years, 21.8 cfs (15,780 acre-ft per year).

EXTREMES.--Maximum discharge during year, 146 cfs Feb. 20 (gage height, 4.38 ft); minimum daily, 1.5 cfs Aug. 11. 1960-68: Maximum discharge, 1,770 cfs Dec. 24, 1964 (gage height, 7.68 ft), from rating curve extended above 500 cfs on basis of slope-area measurement at gage height 7.41 ft; minimum, 0.6 cfs Aug. 24, 25, 1961.

REMARKS.--Records good. No regulation. Minor diversions above station for irrigation and domestic use. See schematic diagram for Mokelumne River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	5.4	7.4	8.3	13	34	35	15	6.7	3.9	2.9	2.9
2	11	5.2	6.7	8.0	16	32	33	14	7.1	4.2	2.7	3.0
3	13	5.2	7.0	8.4	17	30	31	14	7.5	4.6	2.7	3.2
4	9.0	5.5	8.0	8.7	16	28	30	14	8.1	4.5	2.5	3.2
5	8.0	5.5	23	8.5	15	29	29	13	8.4	3.9	2.7	2.8
6	7.6	5.7	11	8.2	15	28	27	13	8.5	3.7	2.5	3.1
7	7.2	5.7	12	8.0	16	28	26	12	8.5	3.8	2.6	3.1
8	6.7	5.7	10	7.9	16	35	25	12	8.2	3.9	2.6	2.9
9	6.5	5.8	9.1	8.0	18	34	25	12	7.9	3.5	2.5	3.0
10	6.4	5.9	8.6	12	18	30	24	11	7.7	3.8	2.3	3.0
11	6.0	5.7	8.4	10	17	28	25	10	7.3	3.5	1.5	3.1
12	5.8	5.7	7.7	8.6	16	26	24	11	7.1	3.5	2.0	3.1
13	5.7	5.8	5.9	8.6	16	29	24	15	7.0	3.3	2.8	3.0
14	6.0	8.0	9.1	8.8	14	28	23	16	6.2	3.3	3.3	3.0
15	6.0	7.0	11	34	14	27	23	15	6.1	3.4	3.5	3.0
16	6.0	6.5	9.2	20	15	30	22	13	6.1	3.8	3.7	3.1
17	6.0	6.5	8.6	15	34	35	22	13	5.7	3.8	3.5	2.9
18	5.9	7.4	8.4	12	35	35	21	12	5.6	3.4	3.7	2.8
19	5.8	12	8.8	12	32	33	20	12	5.1	3.4	5.3	2.8
20	5.7	8.5	8.3	11	100	31	20	11	5.3	3.2	6.2	3.0
21	5.8	7.4	8.1	11	86	31	19	11	5.2	2.9	4.8	3.0
22	6.0	6.6	8.4	11	67	30	18	11	5.4	1.8	6.3	2.8
23	5.9	6.5	8.5	11	64	29	18	11	5.3	2.3	4.8	2.7
24	5.9	6.3	9.4	11	58	28	18	11	5.0	2.3	4.4	2.6
25	5.7	6.2	9.4	11	50	29	17	10	4.7	2.3	4.4	2.5
26	5.6	6.2	9.2	11	45	29	17	10	4.3	2.3	4.2	2.3
27	5.6	6.1	9.3	11	42	28	17	9.9	4.3	2.5	4.2	2.3
28	5.6	6.8	9.0	10	39	28	15	9.5	4.5	2.5	4.2	2.3
29	5.6	6.8	8.6	10	37	29	15	9.2	4.7	2.5	3.5	2.3
30	5.5	7.5	8.5	9.3	-----	30	15	9.1	4.4	2.6	2.3	2.3
31	5.4	-----	8.3	10	-----	31	-----	7.8	-----	3.2	2.5	-----
TOTAL	204.8	195.1	284.9	342.3	941	932	678	367.5	187.9	101.6	107.1	85.1
MEAN	6.61	6.50	9.19	11.0	32.4	30.1	22.6	11.9	6.26	3.28	3.45	2.84
MAX	13	12	23	34	100	35	35	16	8.5	4.6	6.3	3.2
MIN	5.4	5.2	5.9	7.9	13	26	15	7.8	4.3	1.8	1.5	2.3
AC-FT	406	387	565	679	1,870	1,850	1,340	729	373	202	212	169

CAL YR 1967 TOTAL 13,601.5 MEAN 37.3 MAX 303 MIN 5.2 AC-FT 26,980
WTR YR 1968 TOTAL 4,427.3 MEAN 12.1 MAX 100 MIN 1.5 AC-FT 8,780

Peak discharge (base, 120 cfs).--Feb. 20 (0230 hrs) 146 cfs (4.38 ft).

11-3170. MIDDLE FORK MOKELUMNE RIVER AT WEST POINT, CALIF.

LOCATION.--Lat 38°23'23", long 120°31'32", in SE¼NE¼ sec.10, T.6 N., R.13 E., on right bank 200 ft downstream from highway bridge, 0.6 mile south of West Point, and 4.5 miles upstream from South Fork Mokelumne River.

DRAINAGE AREA.--68.4 sq mi.

RECORDS AVAILABLE.--October 1911 to September 1968. Monthly discharge only for October 1911, published in WSP 1315-A.

GAGE.--Digital water-stage recorder. Altitude of gage is 2,450 ft (from topographic map). Prior to Oct. 6, 1926, staff gage at site 1,200 ft upstream at different datum. Oct. 6, 1926, to Aug. 18, 1928, staff gage at present site and datum. Aug. 19, 1928, to Sept. 20, 1967, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--57 years, 59.0 cfs (42,710 acre-ft per year).

EXTREMES.--Maximum discharge during year, 379 cfs Feb. 20 (gage height, 3.28 ft); minimum daily, 2.5 cfs Aug. 11.

1911-68: Maximum discharge, 4,320 cfs Dec. 23, 1955 (gage height, 8.98 ft); no flow Aug. 23 to Sept. 14, 1931, Sept. 9, 1934.

REMARKS.--Records good. Flow slightly regulated by Middle Fork Reservoir (capacity, 1,740 acre-ft), 6 miles above station, since January 1940. Several small diversions above station. Water diverted at times 4 miles above station to South Fork Mokelumne River via Middle Fork ditch (capacity, 15 cfs) and Licking Fork Mokelumne River. See schematic diagram for Mokelumne River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	14	20	19	35	95	107	46	23	8.2	6.6	4.8
2	31	13	18	20	42	89	99	46	23	7.5	5.2	6.1
3	52	13	19	20	51	84	91	46	24	9.3	5.9	6.0
4	36	13	19	20	46	79	86	41	24	12	5.0	5.5
5	43	13	59	20	43	76	83	28	19	10	3.1	5.2
6	45	13	34	20	43	73	80	28	25	6.4	3.2	5.1
7	21	13	46	20	42	72	77	28	23	7.0	4.0	4.6
8	17	14	39	21	41	103	75	28	21	7.5	3.4	4.2
9	18	14	33	21	45	100	73	26	17	8.4	3.2	4.6
10	19	13	32	36	47	85	72	25	11	11	2.8	4.6
11	19	13	30	29	42	76	71	24	9.8	12	2.5	5.0
12	18	13	28	24	40	72	70	24	8.9	13	4.4	5.2
13	21	13	22	23	39	85	69	37	7.6	11	5.3	5.2
14	22	17	20	23	38	84	67	47	6.6	7.6	6.7	5.2
15	14	15	13	83	36	78	65	40	9.1	8.1	6.6	5.3
16	14	14	12	52	39	96	64	35	13	7.8	6.8	5.8
17	14	14	12	40	89	123	60	32	12	8.0	6.5	5.8
18	14	15	12	35	87	108	57	31	18	7.9	5.7	5.8
19	14	27	14	33	74	99	56	29	4.6	7.1	7.6	5.9
20	14	18	13	31	230	91	54	28	8.5	7.7	9.9	6.2
21	14	16	13	30	179	88	51	26	8.9	8.6	8.0	6.4
22	14	16	14	29	136	85	52	26	7.6	6.2	9.0	6.3
23	14	16	15	30	136	82	53	26	8.3	8.2	7.8	5.0
24	14	15	17	29	176	81	54	25	7.7	9.3	7.0	5.2
25	14	14	18	28	151	83	50	24	8.1	9.5	6.5	4.9
26	14	14	17	28	133	86	48	25	7.6	8.1	6.3	4.8
27	14	14	18	28	120	81	46	25	7.4	5.6	5.8	4.6
28	14	15	18	27	110	81	45	24	7.4	5.0	5.2	4.6
29	14	17	18	26	101	84	45	24	7.8	5.4	5.0	4.6
30	14	22	17	31	-----	90	46	25	8.6	5.6	3.4	5.0
31	14	-----	17	32	-----	95	-----	25	-----	6.3	3.6	-----
TOTAL	624	451	677	908	2,391	2,704	1,966	944	387.5	255.3	172.0	157.5
MEAN	20.1	15.0	21.8	29.3	82.4	87.2	65.5	30.5	12.9	8.24	5.55	5.25
MAX	52	27	59	83	230	123	107	47	25	13	9.9	6.4
MIN	14	13	12	19	35	72	45	24	4.6	5.0	2.5	4.2
AC-FT	1,240	895	1,340	1,800	4,740	5,360	3,900	1,870	769	506	341	312

CAL YR 1967 TOTAL 40,880 MEAN 112 MAX 897 MIN 12 AC-FT 81,080
WTR YR 1968 TOTAL 11,637.3 MEAN 31.8 MAX 230 MIN 2.5 AC-FT 23,080

Peak discharge (base, 400 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

11-3185. SOUTH FORK MOKELUMNE RIVER NEAR WEST POINT, CALIF.

LOCATION.--Lat 38°22'06", long 120°32'40", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.16, T.6 N., R.13 E., on right bank 500 ft upstream from highway bridge, 2.4 miles southwest of West Point, and 2.5 miles upstream from mouth.

DRAINAGE AREA.--75.1 sq mi.

RECORDS AVAILABLE.--October 1933 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 1,950 ft (from topographic map). October 1933 to Sept. 19, 1957, graphic water-stage recorder at site 1,100 ft downstream at different datum. Sept. 19, 1957, to Jan. 15, 1964, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--35 years, 81.9 cfs (59,290 acre-ft per year); median of yearly mean discharges, 71 cfs (51,400 acre-ft per year).

EXTREMES.--Maximum discharge during year, 430 cfs Feb. 20 (gage height, 4.73 ft); minimum daily, 6.7 cfs Sept. 30.

1933-68: Maximum discharge, 6,920 cfs Dec. 23, 1955 (gage height, 14.8 ft from floodmarks, site and datum then in use), from rating curve extended above 1,800 cfs on basis of slope-area measurement of maximum flow; no flow Aug. 6, 7, Aug. 12 to Sept. 26, 1934.

REMARKS.--Records good. Several small diversions above station for domestic use and for irrigation of about 100 acres. Diversions into South Fork Mokelumne River basin above station at times from North Fork Calaveras River and from Middle Fork Mokelumne River for use below station. See schematic diagram for Mokelumne River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	22	32	28	51	95	117	44	23	13	9.2	7.7
2	30	22	27	27	63	89	106	43	23	13	7.7	7.2
3	61	22	26	27	70	83	101	42	22	11	8.5	7.0
4	38	21	28	28	61	81	97	40	23	11	8.1	7.2
5	33	21	90	29	60	79	94	39	23	11	7.8	7.2
6	32	22	45	30	61	75	90	39	24	11	7.3	7.3
7	30	22	57	28	59	77	87	38	25	9.8	7.5	7.4
8	28	22	43	26	57	116	84	38	26	11	7.2	7.2
9	27	22	34	26	61	105	83	37	23	11	6.9	7.4
10	27	22	32	57	63	88	82	35	23	11	7.2	7.7
11	25	21	30	46	56	80	81	35	23	10	7.4	7.6
12	24	21	29	35	53	76	79	38	22	9.8	7.5	7.5
13	24	21	23	32	51	94	76	46	21	9.4	7.4	7.7
14	25	27	39	32	49	87	74	56	20	9.7	7.6	7.3
15	25	25	37	116	46	80	72	48	20	9.4	7.1	8.3
16	25	23	28	76	52	114	70	43	19	9.0	7.6	8.2
17	25	23	27	55	143	140	68	40	18	9.0	7.7	7.3
18	24	24	32	45	140	112	66	38	18	8.9	7.9	7.3
19	24	47	32	40	107	98	64	37	17	8.8	10	6.9
20	24	32	28	37	315	90	62	36	15	8.9	15	7.3
21	24	26	27	36	289	87	59	34	14	9.3	12	7.8
22	23	24	28	36	218	86	56	32	15	9.0	11	8.0
23	24	24	28	36	194	84	55	31	15	8.8	11	8.2
24	24	23	28	35	171	84	55	30	14	8.8	10	8.5
25	24	23	30	34	145	86	54	29	15	8.7	9.8	7.7
26	23	23	33	34	130	86	51	28	14	7.7	9.7	8.0
27	23	23	34	36	119	84	49	28	14	7.6	9.7	7.3
28	23	25	34	34	109	85	46	27	13	7.5	9.2	7.3
29	23	27	32	33	101	90	45	26	13	7.7	9.2	6.8
30	23	37	30	55	-----	98	43	25	13	8.0	8.7	6.7
31	22	-----	29	51	-----	100	-----	23	-----	8.6	7.6	-----
TOTAL	826	737	1,052	1,240	3,094	2,829	2,166	1,125	568	297.4	270.5	225.0
MEAN	26.6	24.6	33.9	40.0	107	91.3	72.2	36.3	18.9	9.59	8.73	7.50
MAX	61	47	90	116	315	140	117	56	26	13	15	8.5
MIN	19	21	23	26	46	75	43	23	13	7.5	6.9	6.7
AC-FT	1,640	1,460	2,090	2,460	6,140	5,610	4,300	2,230	1,130	590	537	446

CAL YR 1967 TOTAL 47,675 MEAN 131 MAX 1,050 MIN 19 AC-FT 94,560
WTR YR 1968 TOTAL 14,429.9 MEAN 39.4 MAX 315 MIN 6.7 AC-FT 28,620

Peak discharge (base, 500 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

749

11-3195. MOKELUMNE RIVER NEAR MOKELUMNE HILL, CALIF.

LOCATION.--Lat 38°18'46", long 120°43'09", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.1, T.5 N., R.11 E., on downstream side of bridge, 1.2 miles northwest of Mokelumne Hill, and 8 miles downstream from confluence of North and South Forks of Mokelumne River.

DRAINAGE AREA.--544 sq mi.

RECORDS AVAILABLE.--January to June 1901, May 1903 to December 1904, October 1927 to September 1968. Yearly estimate only for water year 1928 (incomplete), published in WSP 1315-A. Published as "at Electra" 1901, 1903-4.

GAGE.--Digital water-stage recorder. Datum of gage is 589.88 ft above mean sea level (levels by California Division of Highways). Jan. 1 to June 30, 1901, and May 11, 1903, to Dec. 31, 1904, staff gage at site 3 miles upstream at different datum. Nov. 10, 1927, to Aug. 26, 1952, graphic water-stage recorder at site 40 ft upstream at present datum. Aug. 27, 1952, to Apr. 2, 1965, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--42 years (1903-4, 1927-68), 951 cfs (688,500 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,410 cfs Feb. 20 (gage height, 5.44 ft); minimum daily, 97 cfs Aug. 11.

1901, 1903-4, 1927-68: Maximum discharge, 33,700 cfs Dec. 3, 1950 (gage height, 18.5 ft); minimum observed, 5 cfs Aug. 13-15, 17, 18, 1904.

REMARKS.--Records excellent. Flow regulated by Salt Springs Reservoir beginning in 1931 (see sta. no. 11-3135.), several smaller reservoirs, and four powerplants. Diversion above station for irrigation and domestic use. See schematic diagram for Mokelumne River basin. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	671	726	726	606	645	938	715	588	668	524	612	536
2	669	679	654	555	730	828	955	581	563	561	530	563
3	704	618	684	590	591	698	770	660	620	617	410	574
4	685	496	648	467	673	806	921	558	603	342	300	553
5	693	602	707	621	707	916	657	494	646	429	466	518
6	653	627	734	621	596	775	766	627	663	330	435	351
7	710	681	744	563	542	669	282	609	673	300	490	288
8	696	640	767	541	692	1,030	811	595	690	430	585	224
9	566	576	624	500	563	849	681	471	571	461	406	499
10	681	722	747	466	564	934	749	547	694	640	432	577
11	610	566	689	693	476	793	667	475	583	536	97	480
12	630	658	674	650	580	590	820	325	726	602	475	463
13	623	700	598	617	397	770	534	370	594	252	574	588
14	661	676	659	612	289	700	542	527	630	222	510	312
15	627	642	662	848	363	613	571	464	632	546	612	428
16	631	763	684	818	338	730	749	615	560	658	495	572
17	698	600	425	680	657	813	608	331	703	546	265	675
18	661	730	613	679	877	817	713	375	562	558	131	566
19	633	723	599	736	451	572	676	294	573	475	624	605
20	610	676	662	668	1,720	729	394	357	610	658	624	712
21	323	652	710	636	1,660	687	409	348	664	442	629	598
22	198	699	633	587	1,380	757	552	349	647	607	437	683
23	570	549	467	631	1,180	740	668	312	488	552	634	501
24	717	580	509	453	1,350	684	621	424	570	602	590	596
25	592	652	531	619	1,160	629	449	198	644	546	461	523
26	701	668	583	602	950	717	522	128	543	470	629	663
27	631	606	605	634	878	533	587	400	540	348	676	491
28	709	692	646	623	821	567	422	721	634	166	590	555
29	630	664	506	517	894	540	380	577	563	515	475	542
30	646	762	672	776	-----	550	289	658	622	658	634	491
31	576	-----	575	676	-----	536	-----	551	-----	366	475	-----
TOTAL	19,405	19,625	19,737	19,285	22,724	22,510	18,480	14,529	18,479	14,959	15,303	15,727
MEAN	626	654	637	622	784	726	616	469	616	483	494	524
MAX	717	763	767	848	1,720	1,030	955	721	726	658	676	712
MIN	198	496	425	453	289	533	282	128	488	166	97	224
AC-FT	38,490	38,930	39,150	38,250	45,070	44,650	36,650	28,820	36,650	29,670	30,350	31,190

CAL YR 1967 TOTAL 532,721 MEAN 1,460 MAX 6,260 MIN 198 AC-FT 1,057,000
WTR YR 1968 TOTAL 220,763 MEAN 603 MAX 1,720 MIN 97 AC-FT 437,900

SAN JOAQUIN RIVER BASIN

11-3200. PARDEE RESERVOIR NEAR VALLEY SPRINGS, CALIF.

LOCATION.--Lat 38°15'30", long 120°51'00", in N½SW¼ sec.26, T.5 N., R.10 E., at Pardee Dam on the Mokelumne River, 4.5 miles north of Valley Springs.

DRAINAGE AREA.--578 sq mi.

RECORDS AVAILABLE.--March 1929 to September 1930 (lake elevation only), October 1930 to September 1933, published in reports of the Geological Survey. October 1933 to September 1961 in files of East Bay Municipal Utility District. October 1961 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by East Bay Municipal Utility District).

EXTREMES.--Maximum contents during year, 209,100 acre-ft June 17 (elevation, 567.27 ft); minimum, 179,500 acre-ft Sept. 27, 30 (elevation, 553.42 ft).
1929-68: Maximum contents, 219,300 acre-ft Dec. 23, 1955 (elevation, 571.72 ft); minimum, 49,000 acre-ft Aug. 31, 1931 (elevation, 457.6 ft).

REMARKS.--Reservoir is formed by a curved concrete gravity dam, completed in 1929; storage began Mar. 9, 1929. Usable capacity, 194,100 acre-ft between elevations 393.50 (diversion tunnel invert) and 567.65 ft (spillway crest) above mean sea level. Dead storage, 15,800 acre-ft. Water is released from reservoir for municipal use in the area on the east side of San Francisco Bay. Small intermittent diversions are made to Jackson Valley Irrigation District. Records, including extremes, represent total contents at 2400 hours. See schematic diagram for Mokelumne River basin.

COOPERATION.--Records furnished by East Bay Municipal Utility District.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

523	125,100
530	136,500
540	153,800
550	172,700
560	193,200
570	215,300
580	239,100

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	193.1	185.3	191.5	187.3	191.6	206.1	190.8	203.3	203.0	208.3	199.4	187.7
2	193.0	185.6	191.0	187.0	192.3	206.0	191.6	203.4	203.5	208.2	199.0	188.1
3	193.1	185.5	191.9	186.8	192.9	205.6	192.5	203.5	203.8	208.2	198.5	187.7
4	193.5	186.0	192.1	186.3	193.8	205.2	193.5	204.0	204.0	207.7	198.3	187.2
5	193.6	186.7	192.4	186.1	194.5	204.9	193.9	204.4	204.3	207.3	197.7	186.6
6	193.7	186.6	192.8	186.8	194.9	204.3	194.8	204.6	204.6	207.2	197.2	185.8
7	194.0	186.5	193.1	187.4	195.2	203.6	194.7	204.6	205.0	206.6	196.7	185.6
8	194.2	186.6	193.2	187.1	195.8	203.9	195.5	204.8	205.7	206.2	196.4	185.2
9	194.2	186.5	192.7	186.7	196.2	203.5	196.1	204.6	206.1	205.9	195.8	184.7
10	194.3	186.6	193.7	186.3	196.7	203.2	196.6	204.6	206.5	205.9	195.2	184.3
11	194.2	186.4	193.3	186.3	197.1	202.7	197.1	204.9	206.7	205.6	194.6	183.6
12	194.0	186.4	192.8	186.2	197.6	201.8	197.8	204.9	207.1	205.4	194.0	183.0
13	193.8	186.5	192.2	186.9	197.7	201.2	198.3	204.6	207.4	204.6	193.7	182.5
14	193.7	186.6	191.8	187.8	197.4	200.5	198.8	204.6	207.7	204.3	193.2	182.4
15	193.5	187.0	191.3	188.1	197.3	199.5	199.0	204.4	208.2	204.0	192.9	182.6
16	193.3	187.8	190.9	188.4	197.3	199.3	199.7	204.5	208.7	204.1	192.5	182.2
17	193.1	187.7	191.2	188.4	198.3	199.1	200.0	204.1	209.1	203.7	191.6	181.9
18	193.1	188.6	190.7	188.3	199.5	198.8	200.5	204.2	208.7	203.5	191.0	181.4
19	192.8	189.8	190.1	188.4	200.0	198.0	201.0	204.2	208.6	203.1	190.8	181.1
20	192.7	189.9	189.7	189.2	202.9	197.6	201.2	203.8	208.5	203.0	190.6	180.9
21	191.9	189.8	189.3	189.9	204.8	197.1	201.4	203.4	208.5	203.1	190.4	181.3
22	190.8	189.8	188.8	189.7	205.5	196.7	201.6	202.9	208.4	203.0	189.8	181.8
23	190.3	190.4	187.9	189.6	205.7	196.2	202.1	202.5	208.8	202.6	189.6	181.1
24	190.2	190.2	188.4	189.1	206.3	195.6	202.5	202.2	208.7	202.4	189.2	180.8
25	189.5	191.0	189.0	188.9	206.5	195.0	202.6	202.0	208.7	202.2	189.4	180.3
26	189.0	191.8	188.3	188.8	206.4	194.4	202.8	201.5	208.5	201.7	189.2	180.1
27	188.3	191.6	187.8	189.6	206.4	193.6	203.3	201.2	208.3	201.1	189.0	179.5
28	187.7	191.6	187.3	190.3	206.2	192.7	203.5	201.5	208.3	200.6	188.7	179.8
29	187.0	191.6	186.5	189.8	206.2	191.9	203.5	201.6	208.1	200.4	188.2	180.1
30	186.3	191.8	186.1	190.9	-----	191.0	203.2	202.3	208.6	200.3	188.0	179.5
31	185.5	-----	186.7	191.1	-----	190.2	-----	202.3	-----	199.7	187.5	-----
(a)	556.37	559.37	556.93	559.01	565.96	558.61	564.64	564.22	567.06	563.01	557.31	553.44
(b)	-7,900	+6,300	-5,100	+4,400	+15,100	-15,900	+13,000	-900	+6,300	-9,000	-12,200	-8,000
(c)	636	278	238	170	139	380	705	983	1,300	1,464	1,149	933
(d)	6,640	17,010	17,640	17,460	15,700	17,780	18,030	19,290	18,460	21,440	22,040	21,160
MAX	194.3	191.8	193.7	191.1	206.5	206.1	203.5	204.9	209.1	208.3	199.4	188.1
MIN	185.5	185.3	186.1	186.1	191.6	190.2	190.8	201.2	203.0	199.7	187.5	179.5

CAL YR 1967	b -5,700	MAX 211.4	MIN 147.5
WTR YR 1968	b -14,000	MAX 209.1	MIN 179.5

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet.

d Diversions, in acre-feet, from Pardee Reservoir to East Bay Municipal Utility District and to Jackson Valley Irrigation District.

SAN JOAQUIN RIVER BASIN

751

11-3223. CAMANCHE RESERVOIR NEAR CLEMENTS, CALIF.

LOCATION.--Lat 38°13'31", long 121°01'17", in SE¼ sec.6, T.4 N., R.9 E., at Camanche Dam on the Mokelumne River, 4.3 miles northeast of Clements.

DRAINAGE AREA.--621 sq mi.

RECORDS AVAILABLE.--December 1963 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by East Bay Municipal Utility District).

EXTREMES.--Maximum contents during year, 322,400 acre-ft Oct. 1 (elevation, 220.23 ft); minimum, 219,100 acre-ft Sept. 29 (elevation, 202.92 ft).

1963-68: Maximum contents, 425,700 acre-ft July 14, 1967 (elevation, 234.82 ft); minimum after initial season of operation, 68,700 acre-ft Sept. 5, 11, 18, 1966 (elevation, 164.97 ft).

REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 18, 1963. Usable capacity, 430,300 acre-ft between elevations 104.00 (invert of emergency valve release) and 235.50 ft (spillway crest) above mean sea level. Dead storage, 534 acre-ft. Camanche Reservoir provides holdover storage to meet downstream water requirements and flood control on the Mokelumne River. Records, including extremes, represent total contents at 2400 hours. See schematic diagram for Mokelumne River basin.

COOPERATION.--Records furnished by East Bay Municipal Utility District.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

120	4,970	170	82,600
130	13,600	190	156,200
140	25,000	220	320,900
150	38,900	235.5	430,900
160	57,100		

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	322.4	273.7	275.5	294.5	305.5	301.1	314.1	296.8	277.1	257.1	238.3	224.8
2	320.9	271.7	276.4	295.1	305.6	300.8	315.1	296.2	276.2	256.7	237.8	223.9
3	319.3	270.6	276.4	295.4	305.3	300.6	314.4	295.7	275.5	256.1	237.4	223.7
4	317.8	269.5	276.8	296.0	305.0	300.4	314.1	294.7	274.8	255.7	236.3	223.6
5	316.1	268.7	277.3	296.5	304.6	300.0	313.7	293.8	274.1	255.1	235.9	223.6
6	314.5	268.3	277.8	296.0	304.5	299.9	313.3	293.2	273.4	254.3	235.4	223.7
7	313.0	268.3	278.2	295.6	304.5	300.0	312.8	292.7	272.7	253.6	235.0	223.0
8	311.3	268.7	278.9	296.0	304.2	300.7	312.4	292.1	271.6	252.9	234.5	222.2
9	309.9	268.7	279.9	297.0	304.1	300.5	312.0	291.6	270.6	252.3	234.1	222.2
10	308.2	268.8	279.7	297.9	303.6	300.2	311.7	291.1	269.9	251.7	233.8	222.2
11	306.6	268.8	280.6	298.3	303.2	300.1	311.1	290.2	269.2	251.3	232.8	222.2
12	304.9	268.8	281.5	299.0	303.1	300.1	310.6	289.1	268.6	250.8	232.3	222.3
13	303.4	268.6	282.3	298.6	302.9	300.1	309.8	288.6	267.8	250.2	231.9	222.4
14	301.6	269.2	283.1	298.9	302.7	300.5	309.1	288.2	267.2	249.1	231.5	221.8
15	300.2	269.4	284.0	299.4	302.7	301.7	308.5	287.8	266.1	248.6	231.1	221.0
16	298.5	269.3	284.9	299.8	302.7	302.9	307.8	287.3	265.1	248.1	230.8	220.9
17	297.0	269.9	284.6	300.2	302.7	303.9	307.1	287.0	264.4	247.6	230.5	221.0
18	295.3	269.8	285.8	300.7	302.4	304.7	306.5	286.0	264.1	247.1	229.5	221.1
19	293.7	270.2	286.7	301.3	302.5	305.5	305.9	285.0	263.8	246.6	229.3	221.1
20	292.1	270.8	287.7	300.9	302.6	306.4	305.0	284.5	263.4	246.1	228.9	221.1
21	290.4	271.5	288.6	300.6	303.0	307.1	304.1	284.1	262.9	245.0	228.6	220.4
22	289.0	272.0	289.6	301.0	302.9	307.9	303.3	283.5	262.5	244.5	228.4	219.7
23	287.4	271.7	290.8	301.3	302.6	308.8	302.6	282.9	262.1	244.0	228.2	219.8
24	286.0	272.2	290.6	301.8	302.4	309.7	302.0	282.6	261.1	243.3	227.9	219.9
25	284.5	272.0	290.4	302.2	302.2	310.4	301.3	281.8	260.5	242.8	227.0	220.1
26	283.0	271.8	291.3	302.7	302.0	311.3	300.6	280.9	260.2	242.2	226.7	220.2
27	281.5	272.3	292.2	302.3	301.8	312.4	299.7	280.4	259.7	241.7	226.5	220.3
28	280.0	273.0	293.3	301.8	301.9	313.4	298.7	280.1	259.2	240.6	226.3	219.7
29	278.4	273.8	294.3	302.2	301.5	312.5	298.0	279.5	258.6	239.9	226.1	219.1
30	276.9	274.5	295.2	304.6	-----	314.2	297.2	278.6	257.7	239.4	225.9	219.2
31	275.4	-----	294.9	305.6	-----	315.5	-----	278.1	-----	238.8	225.7	-----
(a)	212.79	212.64	215.96	217.64	216.99	219.17	216.32	213.23	209.81	206.51	204.14	202.94
(b)	-48,700	-900	+20,400	+10,700	-4,100	+14,000	-18,300	-19,100	-20,400	-18,900	-13,100	-6,500
(c)	2,140	820	753	764	541	1,403	3,249	3,699	4,789	5,002	3,829	3,317
MAX	322.4	274.5	295.2	305.6	305.6	315.5	315.1	296.8	277.1	257.1	238.3	224.8
MIN	275.4	268.3	275.5	294.5	301.5	299.9	297.2	278.1	257.7	238.8	225.7	219.1
CAL YR 1967		b +182,500			MAX 425.7			MIN 112.1				
WTR YR 1968		b -104,900			MAX 322.4			MIN 219.1				

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet.

SAN JOAQUIN RIVER BASIN

11-3235. MOKELUMNE RIVER BELOW CAMANCHE DAM, CALIF.

LOCATION.--Lat 38°13'15", long 121°02'20", in NW¼NW¼ sec.7, T.4 N., R.9 E., on left bank 0.7 mile downstream from Murphy Creek, 1.0 mile downstream from Camanche Dam, and 3.4 miles northeast of Clements.

DRAINAGE AREA.--627 sq mi.

RECORDS AVAILABLE.--October 1904 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A and 1735. Prior to October 1961, published as "near Clements."

GAGE.--Digital water-stage recorder. Datum of gage is 82.91 ft above mean sea level. Oct. 28, 1904, to Apr. 18, 1926, staff gage at bridge 3.3 miles downstream at datum 13.82 ft lower. Apr. 19, 1926, to Apr. 8, 1931, graphic water-stage recorder, 75 ft downstream from bridge at datum 15.82 ft lower, Apr. 9, 1931, to Sept. 30, 1961, graphic water-stage recorder 700 ft upstream from bridge at datum 15.75 ft lower, and Oct. 1, 1961, to June 17, 1964, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--24 years (1904-28), 1,111 cfs (804,300 acre-ft per year); 39 years (1929-68), 814 cfs (589,300 acre-ft per year), adjusted for change in contents and evaporation from Camanche Reservoir since 1963. Storage and diversion by East Bay Municipal Utility District began in March 1929.

EXTREMES.--Maximum discharge during year, 1,580 cfs Oct. 10-14, 16, 17, 19 (gage height, 6.30 ft); minimum daily, 109 cfs Nov. 16-18, 20-28.
1904-68: Maximum discharge, 28,800 cfs Nov. 21, 1950 (gage height, 24.40 ft, site and datum then in use); no flow July 9, Aug. 15, 20-23, 1924.

REMARKS.--Records good. Flow regulated by Camanche Reservoir beginning December 1963 (see sta. no. 11-3223), Salt Springs Reservoir beginning March 1931 (see sta. no. 11-3135), Pardee Reservoir beginning March 1929 (see sta. no. 11-3200), several smaller reservoirs, and four powerplants. East Bay Municipal Utility District aqueducts are the largest of several diversions above the station. Maximum capacity is 511 cfs with Pardee Reservoir full. Records of water temperatures and suspended-sediment loads for the water year 1968 are published in Part 2 of this report. See schematic diagram for Mokelumne River basin.

COOPERATION.--Eighteen discharge measurements and temperature record furnished by the East Bay Municipal Utility District.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,450	1,540	119	119	201	917	313	464	438	500	520	428
2	1,450	1,370	119	159	198	916	296	463	440	500	519	428
3	1,450	995	119	196	198	916	246	465	450	500	515	427
4	1,450	562	119	196	198	917	248	467	459	500	518	379
5	1,450	376	121	196	198	917	251	468	473	500	520	354
6	1,470	373	119	195	198	916	243	468	482	500	520	356
7	1,460	373	120	195	198	918	246	463	477	505	498	353
8	1,460	373	119	195	198	954	246	459	477	505	482	354
9	1,460	373	119	195	198	924	246	460	477	505	482	363
10	1,520	373	119	199	198	919	319	459	477	500	482	349
11	1,580	373	119	195	196	918	365	459	477	500	482	340
12	1,570	373	119	195	195	919	365	459	477	500	482	342
13	1,570	373	119	195	196	783	365	460	477	500	475	350
14	1,570	282	119	196	196	562	365	459	482	500	468	350
15	1,570	110	119	202	195	330	364	458	482	500	467	334
16	1,570	109	119	198	197	240	365	459	482	500	468	350
17	1,570	109	119	196	202	237	367	454	482	500	468	332
18	1,570	109	120	195	198	228	396	450	482	500	468	337
19	1,570	112	119	195	198	226	419	450	482	515	460	352
20	1,560	109	119	195	215	225	419	450	482	515	450	353
21	1,560	109	119	195	583	225	419	448	482	520	450	350
22	1,560	109	119	197	935	225	419	450	482	520	437	334
23	1,560	109	119	195	931	225	419	450	482	515	426	321
24	1,550	109	119	195	931	225	438	445	482	515	427	320
25	1,550	109	119	195	929	225	450	441	486	520	428	309
26	1,550	109	119	195	929	225	441	441	500	515	428	324
27	1,560	109	119	195	927	225	459	441	500	515	428	314
28	1,550	109	117	195	928	228	459	441	500	520	428	320
29	1,550	111	119	195	929	228	464	441	500	525	428	314
30	1,540	115	119	243	-----	228	464	441	500	520	428	320
31	1,540	-----	119	217	-----	228	-----	441	-----	520	428	-----
TOTAL	47,390	9,865	3,691	6,024	11,993	16,369	10,876	14,074	14,369	15,750	14,480	10,457
MEAN	1,529	329	119	194	414	528	363	454	479	508	467	349
MAX	1,580	1,540	121	243	935	954	464	468	500	525	520	428
MIN	1,450	109	117	119	195	225	243	441	438	500	426	309
AC-Ft	94,000	19,570	7,320	11,950	23,790	32,470	21,570	27,920	28,500	31,240	28,720	20,740
Mean a	772	328	463	381	352	779	110	204	217	282	318	295
Ac-ft a	47,440	19,490	28,470	23,410	20,230	47,870	6,520	12,520	12,890	17,340	19,450	17,560

Cal yr 1967 Total 372,663 Mean 1,021 Max 3,110 Min 59 Ac-ft 739,200 Mean a 1,311 Ac-ft a 949,000
Wtr yr 1968 Total 175,338 Mean 479 Max 1,580 Min 109 Ac-ft 347,800 Mean a 376 Ac-ft a 273,200

a Adjusted for change in contents and evaporation from Camanche Reservoir.

SAN JOAQUIN RIVER BASIN

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11-3250. WOODBRIDGE CANAL AT WOODBRIDGE, CALIF.

LOCATION.--Lat 38°09'07", long 121°18'00", in SE¼ sec.34, T.4 N., R.6 E., on right bank at Woodbridge at point of diversion.

RECORDS AVAILABLE.--April 1926 to September 1968.

GAGE.--Graphic differential water-stage recorder and gate-opening recorder. Datum of gage is 32.18 ft above mean sea level (levels by East Bay Municipal Utility District). Prior to Mar. 15, 1931, water-stage recorder at site 0.2 mile downstream at different datum.

AVERAGE DISCHARGE.--42 years, 135 cfs (97,740 acre-ft per year).

EXTREMES.--1926-68: Maximum daily discharge, 482 cfs July 8, 1953; no flow for part of each year.

REMARKS.--Records good. Discharge computed from records of gate openings and effective head as shown by recorders. Canal diverts from Woodbridge Reservoir on Mokelumne River for irrigation south and west of Woodbridge. See schematic diagram for Mokelumne River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	172					0	90	309	273	315	340	268
2	165					0	93	314	276	316	337	262
3	165					0	97	311	278	312	337	268
4	172					0	97	307	284	306	331	259
5	172					0	94	310	294	304	336	247
6	172					0	96	320	310	306	339	229
7	167					20	100	320	315	307	335	215
8	161					47	108	304	323	305	314	204
9	159					47	144	283	323	306	304	206
10	158					40	172	276	331	297	302	203
11	170					40	186	276	330	293	301	185
12	174					30	194	273	326	294	308	190
13	174					30	206	274	326	293	311	201
14	170					20	212	290	338	293	307	210
15	167					20	234	289	344	297	304	214
16	167					10	232	294	338	297	300	220
17	159					10	228	293	338	297	304	224
18	158					0	229	291	339	305	307	221
19	146					0	256	283	339	308	304	218
20	143					0	267	290	331	316	302	209
21	137					10	264	297	317	316	292	207
22	143					10	264	296	306	321	286	204
23	151					20	263	300	302	326	283	203
24	154					20	263	301	309	335	280	195
25	162					30	264	295	309	328	280	191
26	172					40	264	294	311	318	282	184
27	172					50	279	301	311	316	282	176
28	162					60	291	303	307	316	281	166
29	146					75	308	301	305	327	279	162
30	124				-----	91	309	296	304	335	278	161
31	40	-----			-----	94	-----	281	-----	338	271	-----
TOTAL	4,854	0	0	0	0	814	6,104	9,172	9,437	9,643	9,417	6,302
MEAN	157	0	0	0	0	26.3	203	296	315	311	304	210
MAX	174	0	0	0	0	94	309	320	344	338	340	268
MIN	40	0	0	0	0	0	90	273	273	293	271	161
AC-FT	9,630	0	0	0	0	1,610	12,110	18,190	18,720	19,130	18,680	12,500
CAL YR 1967	TOTAL 51,192.00		MEAN 140		MAX 388	MIN 0		AC-FT 101,500				
WTR YR 1968	TOTAL 55,743.00		MEAN 152		MAX 344	MIN 0		AC-FT 110,600				

SAN JOAQUIN RIVER BASIN

11-3255. MOKELUMNE RIVER AT WOODBRIDGE, CALIF.

LOCATION.--Lat 38°09'31", long 121°18'09", in NW¼NE¼ sec.34, T.4 N., R.6 E., on right bank at Woodbridge, 0.35 mile downstream from county highway bridge, and 0.4 mile downstream from dam and canal intake of Woodbridge Irrigation District. Prior to July 25, 1968, on left bank at site 125 ft downstream.

DRAINAGE AREA.--861 sq mi.

RECORDS AVAILABLE.--May 1924 to September 1968 (low-water records only 1924-25).

GAGE.--Graphic water-stage recorder. Datum of gage is 14.9 ft above mean sea level (levels by East Bay Municipal Utility District). May 1924 to July 1928, 100 ft downstream from bridge at datum 4 ft higher; July 1928 to March 1931, 400 ft downstream from bridge at same datum; March 1931 to July 25, 1968, 0.3 mile downstream from bridge at same datum.

AVERAGE DISCHARGE.--39 years (1929-68), since start of diversion through East Bay Municipal Utility District aqueduct, 610 cfs (441,600 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,170 cfs Oct. 31 (gage height, 15.05 ft); minimum daily, 29 cfs June 22, Sept. 14, 15, 17.

1924-68: Maximum discharge, 27,000 cfs Nov. 22, 1950 (gage height, 29.58 ft), from rating curve extended above 6,200 cfs on basis of contracted-opening measurement of maximum flow; minimum daily, 1.4 cfs Sept. 19, 20, 22, 1927.

REMARKS.--Records good. Concerning regulation and diversions see REMARKS for Mokelumne River below Camanche Dam; between Woodbridge and Camanche Dam there are many additional diversions for irrigation, including Woodbridge Canal (see sta. no. 11-3250.). See schematic diagram for Mokelumne River basin. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Six discharge measurements furnished by East Bay Municipal Utility District.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,090	1,550	87	75	176	852	107	42	32	40	40	34
2	1,100	1,420	88	75	160	854	175	42	32	38	39	36
3	1,100	1,160	88	115	155	858	137	42	33	36	40	42
4	1,100	817	91	150	154	860	108	42	34	37	40	42
5	1,090	477	103	153	152	858	104	43	35	37	44	35
6	1,100	408	98	154	150	395	106	43	35	36	42	33
7	1,110	387	92	153	150	600	103	42	36	37	41	32
8	1,120	375	89	152	156	804	74	41	36	39	38	30
9	1,120	366	86	152	150	792	54	39	36	39	36	30
10	1,120	358	85	163	148	788	50	37	36	38	36	30
11	1,200	355	84	157	148	790	50	36	35	37	36	30
12	1,210	354	84	153	146	790	53	36	35	38	40	30
13	1,200	369	82	152	146	802	59	36	35	39	40	30
14	1,190	363	83	153	145	585	59	37	34	40	39	29
15	1,200	237	83	165	145	418	54	37	35	40	36	29
16	1,200	142	84	156	153	246	49	38	34	41	36	30
17	1,220	132	84	152	156	201	49	37	33	41	38	29
18	1,220	120	90	150	149	179	50	36	32	40	42	32
19	1,250	116	86	150	147	164	49	36	32	38	55	33
20	1,240	106	83	150	157	159	46	37	32	37	50	33
21	1,250	99	83	150	172	125	47	38	31	38	46	40
22	1,250	95	82	150	628	128	47	37	29	40	48	46
23	1,240	99	82	149	808	141	46	36	30	40	41	55
24	1,230	101	80	150	830	144	44	36	33	40	38	46
25	1,210	93	79	152	838	147	43	35	34	38	39	41
26	1,180	86	79	152	842	147	40	35	35	35	39	40
27	1,180	85	78	150	846	153	40	34	36	32	36	40
28	1,190	85	76	152	846	111	40	35	36	32	36	40
29	1,210	86	74	150	846	79	41	34	36	36	36	40
30	1,280	92	74	185	-----	77	42	33	37	38	35	40
31	1,660	-----	74	216	-----	82	-----	33	-----	39	34	-----
TOTAL	37,060	10,533	2,611	4,636	9,699	13,329	1,966	1,165	1,019	1,176	1,236	1,077
MEAN	1,195	351	84.2	150	334	430	65.5	37.6	34.0	37.9	39.9	35.9
MAX	1,660	1,550	103	216	846	860	175	43	37	41	55	55
MIN	1,090	85	74	75	145	77	40	33	29	32	34	29
AC-FT	73,510	20,890	5,180	9,200	19,240	26,440	3,900	2,310	2,020	2,330	2,450	2,140
CAL YR 1967	TOTAL 272,643		MEAN 747		MAX 2,870	MIN 29		AC-FT 540,800				
WTR YR 1968	TOTAL 85,507		MEAN 234		MAX 1,660	MIN 29		AC-FT 169,600				

SAN JOAQUIN RIVER BASIN

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11-3263. DRY CREEK ABOVE SUTTER CREEK, NEAR IONE, CALIF.

LOCATION.--Lat 38°24'54", long 120°54'18", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.32, T.7 N., R.10 E., on right bank 1,000 ft downstream from bridge on State Highway 104, and 4.6 miles northeast of Ione.

DRAINAGE AREA.--70.9 sq mi.

RECORDS AVAILABLE.--February 1960 to September 1968. Prior to October 1961, published as "near Ione."

GAGE.--Digital water-stage recorder. Altitude of gage is 500 ft (from topographic map). Prior to Dec. 27, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--8 years, 33.1 cfs (23,960 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,120 cfs Jan. 30 (gage height, 6.72 ft); no flow for many days.
1960-68: Maximum discharge, 7,300 cfs Jan. 6, 1965 (gage height, 11.30 ft), from rating curve extended above 1,800 cfs on basis of slope-area measurement of maximum flow; no flow for many days in each year.

REMARKS.--No known regulation or diversion above station.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

REVISIONS (water year).--1965 report: 1963(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	24	9.8	175	45	37	7.5	2.6			
2		0	13	9.5	120	41	47	7.1	2.3			
3		0	11	8.7	110	36	33	6.5	2.0			
4		1.4	20	8.3	82	33	28	6.3	1.9			
5		2.2	87	8.3	65	31	26	7.0	1.9			
6		2.6	38	8.2	56	29	25	6.9	2.1			
7		2.9	35	8.2	48	32	23	6.4	2.4			
8		3.2	34	8.1	42	157	21	6.2	2.5			
9		3.6	21	8.2	39	98	20	5.8	2.3			
10		4.1	16	45	42	72	18	5.8	2.0			
11		4.4	13	59	35	58	18	6.1	1.6			
12		4.5	11	32	32	50	17	6.2	1.5			
13		4.9	8.7	23	29	84	15	11	2.0			
14		6.5	7.4	19	27	107	15	21	1.1			
15		6.0	7.3	162	26	88	14	11	.90			
16		4.0	6.8	88	28	137	14	8.4	.60			
17		3.4	6.6	51	76	199	14	7.1	.40			
18		3.7	15	37	84	136	13	6.2	.20			
19		57	21	30	62	102	12	5.8	.10			
20		17	18	25	316	82	12	5.7	0			
21		7.6	15	22	342	69	12	5.8	0			
22		5.3	13	20	216	61	11	5.5	0			
23		4.6	12	17	170	54	11	5.4	0			
24		4.3	12	16	132	49	11	5.3	0			
25		4.1	13	16	101	46	10	5.4	0			
26		4.1	14	15	82	43	9.9	5.1	0			
27		4.2	14	21	68	39	9.4	4.3	0			
28		5.1	13	21	58	35	9.0	3.8	0			
29		5.6	12	18	50	33	8.4	3.4	0			
30		23	11	378	-----	31	7.6	3.2	0			
31		-----	10	391	-----	28	-----	2.8	-----			-----
TOTAL	0	199.3	552.8	1,583.3	2,713	2,105	521.3	204.0	30.40	0	0	0
MEAN	0	6.64	17.8	51.1	93.6	67.9	17.4	6.58	1.01	0	0	0
MAX	0	57	87	391	342	199	47	21	2.6	0	0	0
MIN	0	0	6.6	8.1	26	28	7.6	2.8	0	0	0	0
AC-FT	0	395	1,100	3,140	5,380	4,180	1,030	405	60	0	0	0
CAL YR 1967	TOTAL	26,713.80	MEAN	73.2	MAX	1,730	MIN	0	AC-FT	52,990		
WTR YR 1968	TOTAL	7,909.10	MEAN	21.6	MAX	391	MIN	0	AC-FT	15,690		

SAN JOAQUIN RIVER BASIN

11-3270. SUTTER CREEK NEAR SUTTER CREEK, CALIF.

LOCATION.--Lat 38°23'45", long 120°46'50", in SE $\frac{1}{4}$ sec.5, T.6 N., R.11 E., on left bank 1.3 miles east of town of Sutter Creek.

DRAINAGE AREA.--48.1 sq mi.

RECORDS AVAILABLE.--October 1935 to December 1941, March 1960 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Digital water-stage recorder. Altitude of gage is 1,220 ft (from topographic map). Prior to Oct. 29, 1937, staff gage 15 ft downstream at datum 4.00 ft lower. Oct. 29, 1937, to Dec. 7, 1938, staff gage at present site at datum 4.00 ft lower. Dec. 8, 1938, to December 1941 and March 1960 to Jan. 4, 1966, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--14 years (1935-41, 1960-68), 30.2 cfs (21,860 acre-ft per year).

EXTREMES.--Maximum discharge during year, 312 cfs Feb. 20 (gage height, 2.27 ft); no flow for many days. 1935-41, 1960-68: Maximum discharge, 5,770 cfs Jan. 31, 1963 (gage height, 6.27 ft), from rating curve extended above 900 cfs on basis of slope-area measurement at gage height 4.77 ft; no flow at times in each year except 1938 and 1941.

REMARKS.--Small diversion above station for irrigation.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	3.2	20	12	47	27	33	15	4.6	.90		
2	2.4	3.1	12	11	44	25	39	16	4.5	.80		
3	12	2.8	11	10	66	24	27	10	4.4	.80		
4	5.7	3.1	11	9.9	60	22	24	11	4.6	.60		
5	4.1	3.4	60	9.9	53	21	22	10	4.6	.50		
6	3.6	3.4	24	9.8	51	20	21	9.8	5.1	.30		
7	3.3	3.3	43	9.7	46	21	21	9.6	5.7	.20		
8	3.3	3.4	30	9.4	42	68	20	9.2	5.7	0		
9	3.0	3.7	18	9.3	41	56	19	9.0	4.9	0		
10	3.3	3.7	14	41	44	41	18	9.0	4.5	0		
11	3.0	3.8	12	41	34	33	18	8.8	4.0	0		
12	2.9	3.8	10	23	30	30	17	9.3	3.6	0		
13	2.8	4.0	9.7	18	27	50	16	11	3.4	0		
14	2.9	5.6	8.9	16	25	67	16	16	3.2	0		
15	2.8	6.5	9.1	79	23	54	16	11	3.0	0		
16	2.7	5.2	8.7	52	24	69	15	10	2.7	0		
17	2.7	4.9	8.3	32	94	104	15	9.4	2.5	0		
18	2.7	5.5	12	24	91	78	15	8.9	2.3	0		
19	2.7	41	13	20	65	64	14	8.6	2.1	0		
20	2.7	16	11	17	193	54	14	8.6	1.9	0		
21	2.8	9.1	9.6	16	166	47	13	8.4	1.6	0		
22	2.9	7.3	9.6	14	111	41	13	8.2	1.5	0		
23	3.0	6.6	9.9	14	87	36	13	8.1	1.4	0		
24	3.2	6.3	11	13	70	33	13	7.9	1.4	0		
25	3.3	6.1	13	13	58	31	13	7.8	1.3	0		
26	3.3	6.1	15	12	47	31	14	7.3	1.2	0		
27	3.1	6.1	16	14	40	28	12	6.8	1.1	0		
28	3.1	7.2	16	14	34	25	12	6.3	1.0	0		
29	3.2	7.8	16	13	30	24	14	5.9	.90	0		
30	3.2	24	14	46	-----	23	17	5.6	.80	0		
31	3.2	-----	13	60	-----	21	-----	4.9	-----	0		
TOTAL	104.4	216.0	488.8	683.0	1,743	1,268	534	287.4	89.50	4.10	0	0
MPAN	3.37	7.20	15.8	22.0	60.1	40.9	17.8	9.27	2.98	.13	0	0
MAX	12	41	60	79	193	104	39	16	5.7	.90	0	0
MIN	1.5	2.8	8.3	9.3	23	20	12	4.9	.80	0	0	0
AG-FT	207	428	970	1,350	3,460	2,520	1,060	570	178	8.1	0	0

CAL YR 1967 TOTAL 17,790.1 MEAN 48.7 MAX 673 MIN 1.1 AC-FT 35,290
 WTR YR 1968 TOTAL 5,418.20 MEAN 14.8 MAX 193 MIN 0 AC-FT 10,750

SAN JOAQUIN RIVER BASIN

757

11-3295. DRY CREEK NEAR GALT, CALIF.

LOCATION.--Lat 38°14'44", long 121°13'03", in NE¼ sec.32, T.5 N., R.7 E., on left bank of main channel 35 ft downstream from county road bridge, 2 miles downstream from Coyote Creek, and 4 miles east of Galt.

DRAINAGE AREA.--329 sq mi.

RECORDS AVAILABLE.--October 1926 to September 1933, October 1944 to September 1968. Monthly figures only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is 52.83 ft above mean sea level (levels by East Bay Municipal Utility District). Dec. 4, 1926, to Sept. 30, 1933, at site 4 miles downstream at different datum. Oct. 1, 1944, to Sept. 30, 1945, at site across channel at datum 3.00 ft higher. Oct. 1, 1945, to June 15, 1966, across channel at same datum.

AVERAGE DISCHARGE.--31 years, 107 cfs (77,460 acre-ft per year); median of yearly mean discharges, 64 cfs (46,300 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,520 cfs Jan. 31 (gage height, 13.17 ft); no flow for many days. 1926-33, 1944-68: Maximum discharge, 24,000 cfs Apr. 3, 1958 (gage height, 15.28 ft); no flow for several days in each year.

REMARKS.--Records fair except those for June 16 to Sept. 16, which are poor. Many small diversions above station for irrigation. Total storage of many small reservoirs, 1,000 acre-ft and total number of acres irrigated, approximately 500.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	3.7	7.6	455	166	68	39	8.3	3.8	5.3	4.7
2	0	0	18	5.8	336	155	101	38	6.1	2.7	6.3	2.8
3	0	0	10	4.9	314	145	108	20	.82	3.4	8.4	3.4
4	3.3	0	8.9	4.2	290	140	99	10	.44	4.0	5.8	4.1
5	1.7	0	37	3.8	264	131	74	10	.49	2.2	6.6	4.1
6	.03	0	110	3.2	200	77	60	11	5.0	.01	5.8	3.8
7	0	0	43	2.8	173	63	55	10	6.8	0	3.2	3.4
8	0	0	62	2.4	157	601	52	20	7.2	0	4.0	2.9
9	0	0	41	2.4	111	418	47	17	7.6	.81	1.4	2.5
10	0	0	27	3.6	96	295	45	15	8.1	2.8	2.7	1.8
11	.02	0	20	105	89	235	52	13	4.7	.76	5.4	1.0
12	0	0	15	70	75	145	81	12	4.8	.18	4.5	.16
13	0	0	12	44	62	176	67	13	5.4	1.4	5.5	.30
14	0	0	8.2	35	54	396	63	26	1.1	.29	4.6	.78
15	0	0	4.7	146	48	256	60	33	1.8	.17	1.1	2.1
16	0	0	1.6	266	48	287	56	29	3.1	.94	.39	.09
17	0	0	2.2	124	132	523	54	24	2.4	3.7	.35	0
18	0	0	1.1	88	274	368	53	23	4.2	4.4	.31	0
19	0	0	4.2	72	182	236	61	30	4.1	3.9	1.5	0
20	0	0	17	62	758	190	57	44	3.0	1.5	7.8	0
21	0	4.5	13	56	956	162	52	40	1.5	.02	5.8	0
22	0	.64	11	47	593	140	52	38	.31	0	6.5	0
23	0	0	8.2	42	408	124	50	31	.43	0	5.4	0
24	0	0	7.9	40	370	112	48	20	4.2	0	4.1	0
25	0	0	7.8	39	320	111	58	21	3.4	0	3.2	0
26	0	0	8.4	38	279	124	49	14	4.2	0	1.8	0
27	0	0	9.5	38	161	126	47	8.2	3.4	1.8	4.0	0
28	0	0	11	46	166	119	43	8.4	3.2	3.5	5.9	0
29	0	0	10	43	173	87	40	7.5	3.2	8.2	2.8	0
30	0	0	8.9	127	-----	75	38	7.4	3.4	8.2	3.4	0
31	0	-----	7.8	1,510	-----	68	-----	6.5	-----	5.6	6.1	-----
TOTAL	5.05	5.14	550.1	3,078.7	7,544	6,251	1,790	639.0	112.69	64.28	129.95	37.93
MEAN	.16	.17	17.7	99.3	260	202	59.7	20.6	3.76	2.07	4.19	1.26
MAX	3.3	4.5	110	1,510	956	601	108	44	8.3	8.2	8.4	4.7
MIN	0	0	1.1	2.4	48	63	38	6.5	.31	0	.31	0
AC-FT	10	10	1,090	6,110	14,960	12,400	3,550	1,270	224	128	258	75

CAL YR 1967 TOTAL 77,866.59 MEAN 213 MAX 6,550 MIN 0 AC-FT 154,400
WTR YR 1968 TOTAL 20,207.84 MEAN 55.2 MAX 1,510 MIN 0 AC-FT 40,080

Peak discharge (base, 1,500 cfs).--Jan. 31 (0600 hrs) 2,520 cfs (13.17 ft).

SAN JOAQUIN RIVER BASIN

11-3330. CAMP CREEK NEAR SOMERSET, CALIF.

LOCATION.--Lat 38°39'26", long 120°39'46", in SW¼ sec.4, T.9 N., R.12 E., on right bank 0.2 mile upstream from mouth, 1.3 miles northeast of Somerset, and 5.6 miles south of Camino.

DRAINAGE AREA.--62.6 sq mi.

RECORDS AVAILABLE.--February to May 1924 (published as "near Pleasant Valley"), October 1954 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 1,820 ft (from topographic map). Feb. 1 to May 31, 1924, staff gage at site 0.2 mile upstream at different datum. October 1954 to Jan. 16, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--14 years (1954-68), 71.9 cfs (52,050 acre-ft per year), adjusted for storage, diversion, and evaporation from Jenkinson Lake.

EXTREMES.--Maximum discharge during year, 266 cfs Feb. 20 (gage height, 4.13 ft); minimum daily, 2.5 cfs Sept. 28-30.

1924, 1954-68: Maximum discharge, 6,040 cfs Dec. 23, 1964 (gage height, 12.50 ft); minimum, 0.5 cfs Aug. 1-3, 1961.

REMARKS.--Records good. Flow partly regulated since January 1955 by Jenkinson Lake (usable capacity, 40,570 acre-ft). Water is released from Jenkinson Lake through Camino conduit for irrigation and domestic supply in North Fork Cosumnes and South Fork American River basins. Some water is released from Jenkinson Lake down Camp Creek for irrigation downstream from station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	6.0	7.0	4.4	10	11	140	25	4.0	3.3	15	2.9
2	9.0	5.9	4.9	4.2	13	9.9	148	18	4.0	3.9	15	2.9
3	29	5.8	4.6	3.8	20	9.0	134	12	4.0	6.6	15	2.8
4	16	5.7	7.0	4.0	18	8.5	122	9.3	3.9	6.6	15	2.7
5	11	5.0	26	3.8	16	8.1	115	7.5	3.9	6.6	15	2.7
6	9.7	3.4	10	3.7	17	7.7	108	6.1	4.3	6.2	13	2.8
7	9.0	3.2	10	3.8	16	7.9	100	4.7	5.6	6.0	9.1	2.7
8	8.2	3.0	9.0	3.7	15	17	95	4.3	5.9	5.9	9.0	2.7
9	7.4	3.0	6.2	3.9	18	21	93	4.3	4.7	8.7	8.9	2.6
10	7.0	3.0	5.2	12	18	14	91	4.2	4.2	18	11	2.6
11	7.0	3.1	4.8	11	14	12	93	4.2	4.1	17	15	2.6
12	6.7	2.9	4.5	6.5	12	11	92	4.4	4.0	15	15	2.6
13	6.7	2.9	3.6	5.6	11	17	87	6.7	3.9	19	13	2.6
14	6.7	5.5	3.1	6.0	9.9	25	83	9.2	3.8	20	7.6	2.6
15	6.5	4.4	4.2	43	9.1	24	80	6.0	3.8	20	9.2	2.6
16	6.3	3.2	3.7	25	9.3	27	75	4.8	3.8	20	14	2.6
17	6.3	3.0	3.7	13	24	38	70	4.4	3.7	19	12	2.6
18	6.3	3.3	4.5	9.1	21	32	60	4.2	3.6	17	7.1	2.6
19	6.3	14	4.8	7.3	19	25	60	4.1	3.5	17	8.5	2.6
20	6.3	6.4	4.5	6.3	169	25	56	4.2	3.7	17	12	2.6
21	6.0	3.8	4.1	5.8	140	61	49	4.5	3.7	17	6.8	2.6
22	6.1	3.2	4.0	5.3	55	84	44	4.5	3.5	16	5.4	2.6
23	6.3	3.1	4.4	5.0	42	90	40	4.4	3.5	16	5.1	2.6
24	6.3	3.0	5.2	4.8	38	95	39	4.4	3.4	18	4.5	2.6
25	6.3	3.0	5.9	4.5	24	101	34	4.4	3.5	21	4.0	2.6
26	6.2	3.0	6.5	4.6	19	113	30	4.3	3.6	21	3.7	2.6
27	6.0	3.1	6.4	5.7	16	106	29	4.2	3.6	21	3.6	2.6
28	6.0	4.2	6.1	5.3	14	102	28	4.0	3.5	20	3.5	2.5
29	6.2	4.3	5.6	5.0	12	108	29	3.9	3.5	20	3.4	2.5
30	6.2	8.3	5.2	9.4	-----	116	29	3.9	3.4	18	3.3	2.5
31	6.0	-----	4.6	11	-----	123	-----	3.9	-----	15	3.1	-----
TOTAL	244.1	131.7	189.3	246.5	819.3	1,449.1	2,253	194.0	117.6	455.8	285.8	79.1
MEAN	7.87	4.39	6.11	7.95	28.3	46.7	75.1	6.26	3.92	14.7	9.22	2.64
MAX	29	14	26	43	169	123	148	25	5.9	21	15	2.9
MIN	5.1	2.9	3.1	3.7	9.1	7.7	28	3.9	3.4	3.3	3.1	2.5
AC-FT	484	261	375	489	1,630	2,870	4,470	385	233	904	567	157
(a)	-1,394	-553	-21	+1,040	+6,599	+3,925	-136	-785	-2,768	-6,075	-4,111	-2,581
(b)	1,271	937	1,024	518	325	275	600	2,791	3,311	5,934	3,878	2,287
(c)	90	52	8	21	20	63	173	222	283	322	213	198
Mean d	7.33	11.7	22.6	33.7	149	116	85.9	42.4	17.8	17.6	8.90	1.03
Ac-ft d	451	697	1,390	2,070	8,570	7,130	5,110	2,610	1,060	1,080	547	61

CAL YR 1967 TOTAL 36,781.2 MEAN 101 MAX 994 MIN 2.9 AC-FT 72,950 MEAN d 128 AC-FT d 93,020
WTR YR 1968 TOTAL 6,465.3 MEAN 17.7 MAX 169 MIN 2.5 AC-FT 12,820 MEAN d 42.4 AC-FT d 30,780

a Change in contents, in acre-feet, in Jenkinson Lake furnished by Bureau of Reclamation.

b Diversion, in acre-feet, from Jenkinson Lake, furnished by Bureau of Reclamation.

c Evaporation, in acre-feet, from Jenkinson Lake, furnished by Bureau of Reclamation.

d Adjusted for change in contents, evaporation and diversion from Jenkinson Lake.

Note.--For months when inflow to the lake was small and other quantities were large, discordant figures of net runoff may appear.

SAN JOAQUIN RIVER BASIN

759

11-3335. NORTH FORK COSUMNES RIVER NEAR EL DORADO, CALIF.

LOCATION.--Lat 38°35'20", long 120°50'38", in SW $\frac{1}{4}$ sec.35, T.9 N., R.10 E., on downstream side of left abutment of county road bridge, 0.8 mile north of Nashville, 2.6 miles upstream from mouth, and 6 miles south of El Dorado.

DRAINAGE AREA.--205 sq mi.

RECORDS AVAILABLE.--August 1911 to December 1941, October 1948 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 840 ft (from topographic map). Prior to October 1933, staff gage at site 1.5 miles upstream at different datum. October 1933 to December 1941, graphic water-stage recorder at site 1,000 ft upstream at different datum. December 1941 to June 10, 1969, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--50 years, 198 cfs (143,300 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,380 cfs Feb. 20 (gage height, 6.27 ft); minimum daily, 1.8 cfs Aug. 31.

1911-41, 1948-68: Maximum discharge, 15,800 cfs Dec. 23, 1955 (gage height, 14.8 ft), from rating curve extended above 7,500 cfs on basis of slope-area measurement of maximum flow; no flow for part of 1924, 1926, 1931, 1933-34.

REMARKS.--Records fair. Flow partly regulated since January 1955 by Jenkinson Lake (usable capacity, 40,570 acre-ft). Camino conduit above the station diverts water out of the basin (see REMARKS for sta. no. 11-3330. Camp Creek near Somerset). Numerous small diversions above station for irrigation and domestic use.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	33	51	38	96	218	377	123	34	23	43	2.3
2	25	33	38	37	88	202	404	119	31	20	42	2.2
3	75	36	39	35	119	190	365	111	28	34	40	2.2
4	54	36	49	29	105	170	332	106	28	34	48	2.2
5	38	35	145	30	94	164	314	102	27	35	40	2.2
6	31	36	83	32	89	160	296	95	31	34	38	2.4
7	26	31	68	31	85	154	278	88	40	34	33	2.5
8	24	33	69	32	82	220	266	80	43	35	27	3.3
9	24	31	49	33	82	242	255	79	40	37	27	3.3
10	23	31	43	58	99	196	252	76	34	36	27	4.7
11	22	33	39	84	83	172	255	74	23	40	33	7.5
12	20	34	38	53	74	160	250	73	22	42	39	7.8
13	19	34	35	44	68	208	238	83	21	41	40	5.3
14	21	41	22	43	64	308	228	116	21	52	34	4.0
15	21	48	31	232	63	248	222	92	22	60	29	3.4
16	21	39	40	174	61	293	212	79	23	62	36	3.5
17	22	36	37	102	142	383	200	71	24	61	44	4.0
18	19	38	44	70	196	293	186	65	23	54	24	3.3
19	22	70	47	55	145	245	176	62	21	43	45	2.6
20	22	59	43	49	1,050	220	172	62	20	42	59	3.0
21	24	38	41	44	957	225	160	62	16	41	29	3.5
22	24	33	38	41	643	248	148	63	23	40	9.4	5.0
23	25	31	38	39	542	250	142	56	71	41	6.5	6.5
24	27	31	40	39	482	258	138	55	89	40	4.8	7.2
25	28	22	43	38	383	263	135	53	77	43	3.6	7.5
26	30	28	46	38	350	299	131	54	49	43	2.5	7.9
27	31	28	49	44	308	299	131	49	43	43	2.3	7.5
28	30	34	49	44	269	284	128	45	30	44	2.0	6.8
29	31	35	48	39	238	299	128	43	22	43	2.0	6.5
30	33	51	43	148	-----	326	127	39	25	43	1.9	5.6
31	34	-----	39	156	-----	341	-----	34	-----	43	1.8	-----
TOTAL	866	1,098	1,484	1,931	7,057	7,538	6,646	2,309	1,001	1,283	813.8	135.7
MEAN	27.9	36.6	47.9	62.3	243	243	222	74.5	33.4	41.4	26.3	4.52
MAX	75	70	145	232	1,050	383	404	123	89	62	59	7.9
MIN	19	22	22	29	61	154	127	34	16	20	1.8	2.2
AC-FT	1,720	2,180	2,940	3,830	14,000	14,950	13,180	4,580	1,990	2,540	1,610	269

CAL YR 1967 TOTAL 118,959.0 MEAN 326 MAX 2,610 MIN 7.8 AC-FT 236,000
WTR YR 1968 TOTAL 32,162.5 MEAN 87.9 MAX 1,050 MIN 1.8 AC-FT 63,790

Peak discharge (base, 1,800 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

11-3342. MIDDLE FORK COSUMNES RIVER NEAR SOMERSET, CALIF.

LOCATION.--Lat 38°37'29", long 120°42'02", in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.19, T.9 N., R.12 E., on left bank 1,000 ft downstream from county road bridge, 0.2 mile downstream from Perry Creek, and 1.8 miles southwest of Somerset.

DRAINAGE AREA.--107 sq mi.

RECORDS AVAILABLE.--October 1957 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 1,647.95 ft above mean sea level, datum of 1929.

AVERAGE DISCHARGE.--11 years, 137 cfs (99,180 acre-ft per year); median of yearly mean discharges, 94 cfs (68,100 acre-ft per year).

EXTREMES.--Maximum discharge during year, 930 cfs Feb. 20 (gage height, 7.56 ft); minimum daily, 6.8 cfs Sept. 29, 30.

1957-68: Maximum discharge, 11,800 cfs Feb. 1, 1963 (gage heights, 16.20 ft in gage well, 18.4 ft from floodmarks), from rating curve extended above 2,500 cfs on basis of computation of maximum flow over dam; minimum, 1.7 cfs probably Sept. 11, 1961.

Flood of Dec. 23, 1955, reached a stage of 18.1 ft from floodmarks (discharge, 11,600 cfs).

REMARKS.--Records good. No storage above station. Small diversion above station into South Fork Cosumnes River basin through Garabaldi ditch for irrigation and industrial use.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	18	28	28	82	269	316	153	55	17	15	7.9
2	22	18	26	27	107	248	287	152	53	17	14	7.7
3	75	18	26	26	104	234	260	148	49	17	13	7.7
4	34	18	28	25	85	224	246	148	48	16	13	7.7
5	28	18	90	25	78	218	240	144	46	15	13	7.4
6	25	17	68	24	77	204	227	135	49	13	13	7.2
7	23	17	57	25	77	199	218	125	51	12	13	7.4
8	23	17	45	26	78	252	215	121	51	12	13	7.4
9	22	17	32	28	95	233	215	119	45	12	13	7.2
10	22	18	31	55	112	202	216	115	40	11	12	7.4
11	22	18	29	62	97	185	225	114	38	11	12	7.4
12	22	18	21	45	91	177	220	110	38	11	12	7.4
13	21	18	17	37	88	222	211	121	35	11	12	7.7
14	21	28	21	35	86	220	204	130	33	13	13	7.7
15	20	31	40	172	81	195	204	120	31	13	14	7.7
16	20	23	38	140	84	236	197	112	29	14	14	7.7
17	19	22	29	90	224	242	182	101	29	14	14	7.2
18	19	23	31	60	258	213	169	96	27	13	14	7.4
19	19	62	30	49	225	195	163	94	26	13	16	7.7
20	18	38	29	47	668	185	156	92	25	12	30	7.7
21	18	26	28	48	676	183	148	92	24	12	22	7.7
22	19	24	28	51	568	183	144	89	23	11	22	7.7
23	19	23	29	52	557	183	138	85	22	11	20	7.2
24	19	23	31	52	502	190	138	80	22	11	19	7.0
25	19	23	32	51	418	200	138	76	21	11	15	7.0
26	19	23	34	51	375	215	144	74	19	10	14	7.0
27	19	23	34	52	342	213	147	70	18	10	13	7.2
28	18	24	34	49	311	222	147	67	17	10	13	7.2
29	18	25	32	48	289	246	152	64	17	12	12	6.8
30	18	27	29	105	-----	276	153	61	17	12	11	6.8
31	18	-----	31	77	-----	276	-----	59	-----	12	9.8	-----
TOTAL	697	698	1,058	1,662	6,835	6,740	5,820	3,267	998	389	453.8	222.2
MEAN	22.5	23.3	34.1	53.6	236	217	194	105	33.3	12.5	14.6	7.41
MAX	75	62	90	172	676	276	316	153	55	17	30	7.9
MIN	18	17	17	24	77	177	138	59	17	10	9.8	6.8
AC-FT	1,380	1,380	2,100	3,300	13,560	13,370	11,540	6,480	1,980	772	900	441

CAL YR 1967 TOTAL 90,079 MEAN 247 MAX 2,120 MIN 17 AC-FT 178,700
WTR YR 1968 TOTAL 28,840.0 MEAN 78.8 MAX 676 MIN 6.8 AC-FT 57,200

Peak discharge (base, 700 cfs).--Feb. 20 (0830 hrs) 930 cfs (7.56 ft).

11-3343. SOUTH FORK COSUMNES RIVER NEAR RIVER PINES, CALIF.

LOCATION.--Lat 38°33'25", long 120°47'32", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.8, T.8 N., R.11 E., on left bank 2.4 miles upstream from mouth, and 2.7 miles west of River Pines.

DRAINAGE AREA.--64.3 sq mi.

RECORDS AVAILABLE.--October 1957 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 1,220 ft (from topographic map). Prior to Apr. 1, 1964, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--11 years, 40.6 cfs (29,390 acre-ft per year); median of yearly mean discharges, 22 cfs (15,900 acre-ft per year).

EXTREMES.--Maximum discharge during year, 502 cfs Feb. 20 (gage height, 3.18 ft); no flow for many days during July to September.

1957-68: Maximum discharge, 5,540 cfs Feb. 1, 1963 (gage height, 10.90 ft), from rating curve extended above 1,900 cfs on basis of slope-area measurement at gage height 9.90 ft; no flow at times in most years.

REMARKS.--Records good. Amount of water imported from Middle Fork Cosumnes River through Garabaldi ditch has been negligible because of leakage in the ditch.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	3.2	18	13	66	45	52	15	5.5	.51	0	.15
2	2.4	3.2	12	12	82	41	44	14	5.5	.54	0	.13
3	14	3.1	11	10	87	37	38	13	5.5	.49	0	.11
4	7.5	3.1	14	10	67	34	34	12	5.5	.46	0	.08
5	5.2	3.1	66	10	60	31	32	12	5.5	.39	0	.06
6	4.6	3.2	31	10	59	30	31	12	5.9	.32	0	.04
7	4.1	3.2	29	10	58	30	29	11	7.4	.22	0	.02
8	3.7	3.2	29	10	57	83	27	11	8.0	.18	0	0
9	3.4	3.2	20	11	61	81	25	11	6.4	.16	0	0
10	3.2	3.5	16	44	68	61	24	10	5.7	.15	0	0
11	3.2	3.5	14	52	55	50	23	10	5.3	.14	0	0
12	3.1	3.6	13	28	47	44	22	10	4.9	.13	0	0
13	3.1	7.2	10	22	42	82	22	14	4.5	.10	0	0
14	3.1	7.1	8.4	20	38	129	22	19	4.3	.11	0	0
15	3.0	8.0	10	155	35	95	20	14	3.7	.10	0	0
16	2.9	6.1	9.9	87	36	147	19	12	3.3	.14	0	0
17	2.8	5.4	9.0	51	113	203	19	12	2.8	.11	0	0
18	2.8	6.2	11	37	124	143	18	10	2.7	.10	0	0
19	2.8	34	13	29	86	113	19	10	2.3	.26	0	0
20	2.8	17	12	25	331	92	15	10	2.1	.17	0	0
21	2.8	10	10	22	286	80	14	9.6	2.0	.23	0	0
22	3.0	7.9	10	21	187	71	14	9.6	1.8	.18	0	0
23	3.1	7.2	10	19	172	65	14	9.3	1.6	.15	0	0
24	3.3	6.8	11	18	129	59	14	9.3	1.5	.12	0	0
25	3.3	6.6	12	17	99	55	14	8.9	1.2	.07	0	0
26	3.3	6.4	13	17	80	53	14	7.7	.95	.03	0	0
27	3.3	6.5	14	19	68	46	15	7.1	.80	0	0	0
28	3.2	7.9	15	18	59	42	15	6.4	.75	0	0	0
29	3.3	8.4	14	16	51	40	16	5.7	.63	0	.13	0
30	3.3	19	14	125	-----	38	16	5.5	.60	0	.19	0
31	3.2	-----	13	105	-----	34	-----	5.5	-----	0	.18	-----
TOTAL	114.4	216.8	492.3	1,043	2,703	2,154	681	326.6	108.63	5.56	0.50	0.59
MEAN	3.69	7.23	15.9	33.6	93.2	69.5	22.7	10.5	3.62	.18	.016	.020
MAX	14	34	66	155	331	203	52	19	8.0	.54	.19	.15
MIN	1.6	3.1	8.4	10	35	30	14	5.5	.60	0	0	0
AC-FT	227	430	976	2,070	5,360	4,270	1,350	648	215	11	1.0	1.2

CAL YR 1967 TOTAL 29,287.8 MEAN 80.2 MAX 1,220 MIN 1.3 AC-FT 58,090
WTR YR 1968 TOTAL 7,846.38 MEAN 21.4 MAX 331 MIN 0 AC-FT 15,560

Peak discharge (base, 600 cfs).--No peak above base.

SAN JOAQUIN RIVER BASIN

11-3350. COSUMNES RIVER AT MICHIGAN BAR, CALIF.

LOCATION.--Lat 38°30'00", long 121°02'45", in SE $\frac{1}{4}$ sec.36, T.8 N., R.8 E., on downstream side of midstream pier of highway bridge at Michigan Bar, 5.5 miles southwest of Latrobe, and 12 miles downstream from confluence of North and Middle Fork Cosumnes River.

DRAINAGE AREA.--536 sq mi.

RECORDS AVAILABLE.--October 1907 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is 168.09 ft above mean sea level, datum of 1929. Prior to July 10, 1930, staff gage at same site and datum.

AVERAGE DISCHARGE.--61 years, 475 cfs (343,900 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4,220 cfs Feb. 20 (gage height, 6.56 ft); minimum daily, 7.0 cfs Sept. 23, 30.

1907-68: Maximum discharge, 42,000 cfs Dec. 23, 1955 (gage height, 14.59 ft); no flow for parts of many years.

Flood in March 1907 reached a stage of 16.3 ft (discharge unknown).

REMARKS.--Records good. Flow partly regulated by Jenkinson Lake (usable capacity, 40,570 acre-ft). Camino conduit above the station diverts water out of the basin (see REMARKS for sta. no. 11-3330.). Numerous small diversions above station for irrigation and domestic use. Records of chemical analyses, water temperatures, and suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	36	136	95	620	613	738	282	102	39	49	14
2	32	35	97	93	472	557	860	278	100	39	50	12
3	76	35	82	88	557	526	738	270	95	40	51	12
4	155	36	116	79	460	502	669	262	90	43	47	12
5	90	38	385	75	390	472	634	258	88	44	46	12
6	71	36	340	77	360	448	599	243	86	43	44	11
7	62	36	204	79	340	442	564	229	95	42	43	10
8	57	34	240	84	322	897	538	215	97	42	40	9.7
9	53	35	171	86	318	797	526	208	95	46	38	10
10	49	35	136	133	390	606	514	198	77	44	39	10
11	46	34	120	350	345	508	520	190	73	50	38	9.4
12	42	35	105	208	306	466	514	187	66	53	42	10
13	40	36	90	155	286	585	502	201	66	51	46	11
14	40	41	66	139	274	950	478	294	62	62	46	10
15	40	61	53	743	262	770	472	240	54	77	41	10
16	39	71	66	788	258	887	448	215	51	77	40	10
17	38	54	86	448	556	1,330	420	194	51	77	42	9.7
18	36	50	98	306	928	932	390	177	51	70	44	8.8
19	36	145	113	243	804	746	360	168	46	54	40	9.1
20	36	206	113	212	3,290	648	350	168	42	53	54	9.1
21	36	110	100	194	3,150	606	335	164	42	51	66	8.5
22	38	75	93	177	2,120	606	318	164	41	50	44	8.5
23	36	62	88	171	1,660	592	302	155	39	51	32	7.0
24	38	59	93	168	1,510	585	294	146	70	53	27	8.2
25	38	56	93	161	1,140	592	294	144	68	53	22	7.9
26	36	53	100	155	970	634	286	141	59	54	19	7.9
27	36	53	113	174	833	627	286	133	44	54	17	8.2
28	36	56	113	184	738	606	282	126	46	54	16	8.2
29	35	62	113	161	676	627	286	118	39	53	16	7.6
30	35	90	107	1,200	-----	676	290	113	38	53	16	7.0
31	36	-----	100	1,470	-----	690	-----	107	-----	53	14	-----
TOTAL	1,467	1,765	3,930	8,696	24,335	20,523	13,807	5,988	1,973	1,625	1,169	288.8
MEAN	47.3	58.8	127	281	839	662	460	193	65.8	52.4	37.7	9.63
MAX	155	206	385	1,470	3,290	1,330	860	294	102	77	66	14
MIN	29	34	53	75	258	442	282	107	38	39	14	7.0
AC-FT	2,910	3,500	7,800	17,250	48,270	40,710	27,390	11,880	3,910	3,220	2,320	573
CAL YR 1967	TOTAL 289,749		MEAN 794		MAX 6,860		MIN 29		AC-FT 574,700			
WTR YR 1968	TOTAL 85,566.8		MEAN 234		MAX 3,290		MIN 7.0		AC-FT 169,700			

Peak discharge (base, 4,000 cfs).--Feb. 20 (0900 hrs) 4,220 cfs (6.56 ft).

SAN JOAQUIN RIVER BASIN

763

11-3357. DEER CREEK NEAR SLOUGHHOUSE, CALIF.

LOCATION.--Lat 38°33'06", long 121°06'30", in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.16, T.8 N., R.8 E., on right bank 0.2 mile upstream from bridge on Scott Road, 0.4 mile upstream from Little Deer Creek, and 5.9 miles northeast of Sloughhouse.

DRAINAGE AREA.--46.0 sq mi.

RECORDS AVAILABLE.--November 1959 to September 1966, October 1967 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 160 ft (from topographic map). Prior to Dec. 23, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--7 years, 20.7 cfs (14,990 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,720 cfs Feb. 20 (gage height, 9.46 ft); no flow for several months. 1959-66, 1967-68: Maximum discharge, 6,560 cfs Oct. 13, 1962 (gage height, 12.86 ft from floodmarks), from rating curve extended above 2,200 cfs; no flow for several months in each year.

REMARKS.--No known regulation or diversion above station.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			5.0	1.9	46	10	11	2.4				
2			4.4	1.9	28	9.9	15	2.3				
3			2.5	1.9	23	8.6	12	2.2				
4			4.4	1.7	18	7.8	9.9	2.0				
5			41	1.6	15	7.9	9.2	2.2				
6			15	1.6	12	7.4	8.7	2.5				
7			11	1.6	11	7.8	7.9	2.3				
8			17	1.7	9.9	123	7.3	1.9				
9			6.3	1.9	9.0	40	7.0	1.4				
10			4.3	15	8.8	21	6.7	1.1				
11			3.4	34	8.3	16	6.6	1.0				
12			3.0	12	7.6	14	5.6	1.2				
13			2.4	7.4	7.4	29	5.4	2.0				
14			2.2	6.2	6.9	39	5.2	5.0				
15			2.2	125	5.7	31	4.9	7.0				
16			2.2	56	5.5	213	4.9	4.0				
17			2.2	22	82	139	4.9	2.7				
18			2.8	13	52	53	4.5	2.1				
19			3.6	9.7	92	34	4.5	1.8				
20			4.5	8.1	654	25	4.3	1.4				
21			3.3	7.2	321	21	4.4	1.0				
22			2.7	6.3	85	18	4.2	1.1				
23			2.5	5.7	68	16	4.0	1.1				
24			2.2	5.2	45	15	4.0	.90				
25			2.2	4.9	28	.13	3.8	1.3				
26			2.2	4.9	20	13	3.6	1.4				
27			2.2	4.5	16	11	3.4	1.4				
28			2.1	4.4	14	10	3.2	1.0				
29			1.9	4.1	12	9.7	2.9	.40				
30			1.9	340	-----	9.4	2.7	.10				
31		-----	1.9	246	-----	9.3	-----	0	-----			-----
TOTAL	0	0	164.5	957.4	1,711.1	981.8	181.7	58.20	0	0	0	0
MEAN	0	0	5.31	30.9	59.0	31.7	6.06	1.88	0	0	0	0
MAX	0	0	41	340	654	213	15	7.0	0	0	0	0
MIN.	0	0	1.9	1.6	5.5	7.4	2.7	0	0	0	0	0
AC-FT	0	0	326	1,900	3,390	1,950	360	115	0	0	0	0
CAL YR 1967	TOTAL -		MEAN -		MAX -		MIN -		AC-FT -			
WTR YR 1968	TOTAL 4,054.70		MEAN 11.1		MAX 654		MIN 0		AC-FT 8,040			

SAN JOAQUIN RIVER BASIN

11-3360. COSUMNES RIVER AT MCCONNELL, CALIF.

LOCATION.--Lat 38°21'29", long 121°20'34", in sec.20, T.6 N., R.6 E., on downstream side of bridge on U.S. Highway 99, 0.2 mile south of McConnell, 1 mile downstream from Deer Creek, and 7 miles north of Galt.

DRAINAGE AREA.--724 sq mi.

RECORDS AVAILABLE.--October 1941 to September 1968. Monthly figures only for some periods, published in WSP 1315-A. Gage heights only during high-water periods 1931-40, in reports of California Department of Water Resources.

GAGE.--Graphic water-stage recorder. Gage is set to datum of Corps of Engineers.

AVERAGE DISCHARGE.--27 years, 535 cfs (387,300 acre-ft per year); median of yearly mean discharges, 390 cfs (282,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4,940 cfs Feb. 20 (gage height, 39.57 ft); no flow for many days. 1943-68: Maximum discharge, 54,000 cfs Dec. 23, 1955 (gage height, 46.26 ft), from rating curve extended above 36,000 cfs; no flow for parts of each year. Flood of Feb. 23, 24, 1936, reached a stage of 45.94 ft (discharge unknown).

REMARKS.--Records good. Diversions for irrigation of 2,100 acres between stations at Michigan Bar and at McConnell.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	1.8	78	68	1,060	630	633	235	53	0		
2	0	3.3	99	65	532	580	792	232	49	0		
3	0	9.4	73	65	507	524	704	228	45	0		
4	52	8.0	84	60	462	482	630	216	25	0		
5	91	9.8	127	53	375	450	580	209	28	0		
6	53	11	405	50	321	429	546	200	28	0		
7	40	9.8	216	53	302	408	510	190	32	0		
8	32	9.4	186	52	282	737	479	179	36	0		
9	26	8.0	171	58	261	1,080	459	169	32	0		
10	24	7.2	122	65	276	712	450	159	25	0		
11	28	6.6	98	190	308	535	447	155	17	0		
12	15	5.8	89	232	264	456	453	147	16	0		
13	12	9.8	82	146	240	456	438	149	16	0		
14	10	12	73	118	223	840	417	200	14	0		
15	9.4	17	49	249	209	860	408	240	10	0		
16	11	33	43	934	207	772	399	192	8.5	0		
17	11	40	62	566	264	1,850	381	167	7.0	5.0		
18	8.9	27	71	340	947	1,260	342	151	0	2.0		
19	6.6	28	82	244	792	872	318	138	0	4.0		
20	6.6	135	91	198	3,000	704	305	131	0	1.0		
21	5.8	125	84	173	4,310	605	297	120	0	3.0		
22	8.0	70	74	155	3,250	580	282	116	0	2.0		
23	8.4	46	68	146	1,920	566	266	113	0	0		
24	8.0	35	65	138	1,850	549	252	99	0	0		
25	8.4	34	66	132	1,350	542	244	96	0	0		
26	7.1	32	71	127	1,080	566	237	87	0	0		
27	9.4	30	74	125	904	574	232	86	0	0		
28	8.4	30	79	144	792	556	232	79	0	0		
29	8.4	35	81	140	708	546	232	73	0	0		
30	8.0	49	81	185	-----	580	237	70	0	0		
31	5.8	-----	76	2,200	-----	622	-----	59	-----	0		-----
TOTAL	522.2	877.9	3,120	7,471	26,996	20,923	12,202	4,685	441.5	17.0	0	0
MEAN	16.8	29.3	101	241	931	675	407	151	14.7	.55	0	0
MAX	91	135	405	2,200	4,310	1,850	792	240	53	5.0	0	0
MIN	0	1.8	43	50	207	408	232	59	0	0	0	0
AC-FT	1,040	1,740	6,190	14,820	53,550	41,500	24,200	9,290	876	34	0	0

CAL YR 1967 TOTAL 304,930.10 MEAN 835 MAX 14,300 MIN 0 AC-FT 604,800
WTR YR 1968 TOTAL 77,255.60 MEAN 211 MAX 4,310 MIN 0 AC-FT 153,200

Peak discharge (base, 3,600 cfs).--Feb. 20 (2200 hrs) 4,940 cfs (39.57 ft).

SAN JOAQUIN RIVER BASIN

765

11-3365.8. MORRISON CREEK NEAR SACRAMENTO, CALIF.

LOCATION.--Lat 38°29'55", long 121°27'06", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.32, T.8 N., R.5 E., on right bank 750 ft upstream from Florin Road, 1.6 miles upstream from Elder Creek, and 2 miles south of Sacramento city limits.

DRAINAGE AREA.--48.6 sq mi.

RECORDS AVAILABLE.--July 1959 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 7.60 ft above mean sea level, datum of 1929. Prior to June 29, 1960, graphic water-stage recorder at site 650 ft downstream at datum 1.55 ft higher. June 29, 1960, to Sept. 12, 1965, graphic water-stage recorder at site 475 ft upstream at datum 2.71 ft higher.

AVERAGE DISCHARGE.--9 years, 15.3 cfs (11,080 acre-ft per year).

EXTREMES.--Maximum discharge during year, 394 cfs Feb. 21 (gage height, 3.90 ft); minimum daily, 0.65 cfs Nov. 26.

1959-68: Maximum discharge, 1,500 cfs Jan. 21, 1967 (gage height, 7.36 ft), from rating curve extended above 560 cfs on basis of float measurement by Corps of Engineers at gage height 7.09 ft; no flow at times in 1960, 1962, 1965.

REMARKS.--Records fair prior to July 2, poor thereafter. No regulation or diversion above station. Summer flow is sustained by waste water from domestic and industrial use.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	7.3	5.8	3.4	19	8.4	20	6.4	3.8	5.6	3.7	.85
2	6.1	5.0	1.3	5.2	17	6.2	10	6.6	2.3	5.3	4.2	.91
3	5.2	4.6	2.2	5.6	8.6	5.0	5.9	6.6	3.2	4.7	2.7	3.8
4	5.4	3.6	28	5.6	5.4	7.0	5.7	3.8	5.4	4.3	1.5	5.9
5	12	3.4	38	5.4	7.6	6.8	6.1	4.5	5.3	6.0	4.1	6.2
6	6.1	7.6	6.3	3.1	7.3	7.1	3.0	7.4	4.3	6.3	7.1	6.1
7	5.2	12	25	2.4	6.5	25	2.8	6.7	9.3	4.9	7.9	3.4
8	4.0	15	15	5.6	6.1	44	5.4	6.2	4.0	3.2	6.9	2.7
9	5.2	9.0	6.1	6.8	5.8	19	5.8	5.9	2.9	2.9	8.1	6.5
10	5.4	5.0	4.2	80	3.9	8.7	5.4	5.7	4.6	3.9	5.0	8.9
11	5.6	1.2	6.1	23	3.7	9.9	5.8	3.5	5.4	2.6	3.2	7.6
12	5.8	.95	5.8	9.3	5.8	39	2.7	2.5	5.6	3.8	5.2	6.4
13	3.8	2.4	5.2	4.8	6.1	78	1.8	9.7	5.5	2.9	6.4	6.7
14	2.4	11	5.2	39	6.4	42	1.9	12	5.7	1.7	5.9	3.8
15	3.6	2.8	5.6	71	6.1	23	4.3	6.2	3.8	3.5	5.7	2.6
16	5.8	2.1	4.4	22	28	45	4.9	5.2	3.6	3.7	5.0	5.5
17	5.8	1.7	4.0	10	47	35	4.3	5.5	5.0	3.9	1.7	6.5
18	5.6	.79	14	7.6	18	17	4.9	3.8	6.3	4.7	.98	6.5
19	6.1	.95	7.6	7.3	37	11	5.2	3.3	6.2	6.0	1.6	5.6
20	5.2	3.3	6.3	4.4	121	9.7	2.4	4.8	5.7	3.2	2.4	5.0
21	4.2	3.1	6.3	3.3	125	8.1	1.6	5.9	5.9	1.8	3.6	2.3
22	3.6	3.0	4.2	5.2	45	7.9	4.7	5.9	4.4	4.3	4.0	2.1
23	4.2	1.2	3.3	5.8	28	5.5	5.6	5.8	3.7	5.5	3.6	5.3
24	37	.79	3.0	5.6	18	4.4	4.6	5.6	5.5	4.2	1.2	7.6
25	149	.79	2.8	5.6	11	5.8	4.7	3.9	8.1	3.9	.66	6.9
26	131	.65	5.6	5.6	11	6.2	4.2	3.9	7.5	4.0	2.8	6.2
27	25	3.3	6.1	3.3	9.9	5.8	2.3	7.9	7.6	2.4	3.3	5.0
28	11	1.9	5.8	3.1	8.1	5.7	2.4	9.0	7.7	2.1	3.4	2.4
29	7.8	21	8.1	8.4	7.5	6.0	5.5	9.1	4.9	2.3	4.2	1.5
30	8.1	25	5.6	219	-----	3.6	6.0	6.4	4.3	4.9	4.2	6.0
31	7.8	-----	4.2	73	-----	3.4	-----	5.3	-----	3.9	1.8	-----
TOTAL	496.6	160.42	251.1	659.4	629.8	509.2	149.9	185.0	157.5	122.4	122.04	146.76
MEAN	16.0	5.35	8.10	21.3	21.7	16.4	5.00	5.97	5.25	3.95	3.94	4.89
MAX	149	25	38	219	125	78	20	12	9.3	6.3	8.1	8.9
MIN	2.4	.65	1.3	2.4	3.7	3.4	1.6	2.5	2.3	1.7	.66	.85
AC-FT	985	318	498	1,310	1,250	1,010	297	367	312	243	242	291

CAL YR 1967 TOTAL 9,220.92 MEAN 25.2 MAX 991 MIN .65 AC-FT 18,290
WTR YR 1968 TOTAL 3,590.12 MEAN 9.81 MAX 219 MIN .65 AC-FT 7,120

PEAK DISCHARGE (BASE, 170 CFS)							
DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
10-26	1000	2.88	203	02-19	2345	3.45	302
01-10	0745	3.38	288	02-21	0415	3.90	394
01-14	2300	3.34	281	03-13	1500	3.17	251
01-30	0700	3.81	374				

SAN JOAQUIN RIVER BASIN

11-3370. CONTRA COSTA CANAL NEAR OAKLEY, CALIF.

LOCATION.--Lat 37°59'45", long 121°42'00", in NE¼ sec.25, T.2 N., R.2 E., at Pumping Plant No. 1, 0.7 mile east of Oakley, and 2.6 miles northwest of Knightsen.

RECORDS AVAILABLE.--February 1950 to September 1968.

GAGE.--Recording flow meters on pumps. Prior to Jan. 1, 1953, graphic water-stage recorder at site 3.2 miles downstream at datum 121.72 ft above mean sea level (levels by Bureau of Reclamation).

AVERAGE DISCHARGE.--18 years, 83.9 cfs (60,740 acre-ft per year).

EXTREMES.--1950-68: Maximum daily discharge, 245 cfs June 26, 1968; minimum daily, 8.0 cfs Jan. 12, 1952.

REMARKS.--Water is diverted from Sacramento-San Joaquin Delta by way of Old River, Rock Slough, and a dredged channel. A series of four pumping plants lifts the water 115 ft into the canal. Water is used for municipal, agricultural, and industrial purposes. The canal is a part of the Central Valley project.

COOPERATION.--Records of daily discharge furnished by Bureau of Reclamation and rounded to meet Geological Survey editorial procedures.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114	106	83	72	96	38	90	182	223	232	223	186
2	113	109	82	74	96	41	95	191	216	226	214	166
3	108	110	77	81	91	35	100	205	220	219	216	171
4	108	106	84	77	88	34	96	198	214	205	226	182
5	101	95	77	79	89	34	102	199	213	206	222	183
6	94	95	76	107	82	39	94	195	208	217	211	186
7	91	105	78	107	82	40	90	211	216	221	212	185
8	88	99	89	115	81	36	110	200	210	232	218	188
9	86	99	94	109	73	38	109	201	219	231	209	188
10	94	101	90	103	64	38	104	152	208	238	198	190
11	90	102	94	97	53	40	124	111	206	232	196	189
12	96	90	86	110	55	42	142	108	220	212	188	197
13	106	91	90	100	55	46	112	103	221	219	190	195
14	97	90	97	97	59	49	129	107	223	213	195	192
15	98	89	92	86	61	54	140	118	222	203	190	105
16	100	90	85	90	55	53	140	133	218	207	188	187
17	106	90	82	92	56	53	140	122	221	234	186	203
18	101	87	79	94	56	56	130	122	223	236	184	213
19	112	82	79	87	32	58	135	123	218	235	177	202
20	107	87	78	84	25	51	142	131	235	239	176	190
21	106	85	68	82	35	55	150	142	225	227	182	197
22	106	89	67	84	42	56	145	146	233	230	184	195
23	105	86	71	84	44	58	145	147	234	227	161	201
24	104	84	69	84	44	50	147	148	239	228	163	203
25	97	84	55	88	45	45	159	141	243	218	173	180
26	98	85	62	88	46	46	165	140	245	222	176	185
27	99	78	63	90	48	53	171	146	241	230	177	181
28	105	77	73	90	48	63	165	166	240	236	180	179
29	107	80	85	102	46	90	164	197	231	228	186	181
30	107	82	72	84	-----	102	172	214	228	220	203	159
31	98	-----	77	89	-----	100	-----	222	-----	221	208	-----
TOTAL	3,142	2,753	2,454	2,826	1,747	1,593	3,907	4,921	6,713	6,944	6,012	5,559
MEAN	101	91.8	79.2	91.2	60.2	51.4	130	159	224	224	194	185
MAX	114	110	97	115	96	102	172	222	245	239	226	213
MIN	86	77	55	72	25	34	90	103	206	203	161	105
AC-FT	6,230	5,460	4,870	5,610	3,470	3,160	7,750	9,760	13,320	13,770	11,920	11,030
CAL YR 1967	TOTAL 35,091		MEAN 96.1		MAX 144		MIN 49		AC-FT 69,600			
WTR YR 1968	TOTAL 48,571		MEAN 133		MAX 245		MIN 25		AC-FT 96,340			

SAN JOAQUIN RIVER BASIN

767

11-3375. MARSH CREEK NEAR BYRON, CALIF.

LOCATION.--Lat 37°52'25", long 121°43'35", in Los Meganos Grant, on right bank 40 ft downstream from highway bridge on Marsh Creek road, 1.2 miles upstream from Marsh Creek Dam, and 5.0 miles west of Byron, Contra Costa County.

DRAINAGE AREA.--42.6 sq mi.

RECORDS AVAILABLE.--February 1953 to September 1968.

GAGE.--Graphic water-stage recorder and concrete control. Datum of gage is 177.87 ft above mean sea level, datum of 1929.

AVERAGE DISCHARGE.--15 years, 7.67 cfs (5,550 acre-ft per year); median of yearly mean discharges, 1.7 cfs (1,200 acre-ft per year).

EXTREMES.--Maximum discharge during year, 115 cfs Jan. 30 (gage height, 3.97 ft); no flow for several months. 1953-68: Maximum discharge, 3,880 cfs Jan. 31, 1963 (gage height, 11.62 ft), from rating curve extended above 880 cfs on basis of slope-area measurement at gage height 10.90 ft; maximum gage height, 12.98 ft Dec. 23, 1955; no flow for several months in each year.

REMARKS.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	0	18	2.9	3.7					
2			0	0	11	2.7	4.5					
3			0	0	8.3	2.1	3.5					
4			2.5	0	6.6	2.0	2.9					
5			1.5	0	5.5	1.9	2.4					
6			0	0	4.9	2.0	2.5					
7			0	0	4.5	2.3	2.5					
8			0	0	3.9	4.8	1.8					
9			0	0	3.2	2.9	2.0					
10			0	1.5	3.2	1.9	1.8					
11			0	1.8	2.9	1.7	1.7					
12			0	.84	2.9	2.4	1.6					
13			0	.67	2.5	11	1.2					
14			0	.76	2.1	7.2	1.4					
15			0	3.0	2.0	5.8	1.2					
16			0	2.0	3.1	8.8	1.2					
17			0	1.1	6.3	10	1.1					
18			0	.84	6.6	7.5	1.0					
19			0	.78	5.8	6.3	1.0					
20			0	.78	9.8	5.3	.91					
21			0	.78	11	5.1	.91					
22			0	.84	9.7	4.9	.84					
23			0	.98	7.7	4.5	.78					
24			0	1.2	6.6	4.1	.91					
25			0	1.6	5.8	2.7	.84					
26			0	1.6	4.7	3.4	.72					
27			0	1.7	4.1	3.5	.53					
28			0	1.9	3.7	3.2	.26					
29			0	1.9	3.2	2.9	.02					
30			0	68	-----	2.9	0					
31		-----	0	48	-----	3.4	-----		-----			-----
TOTAL	0	0	4.0	142.57	169.6	132.1	45.72	0	0	0	0	0
MEAN	0	0	.13	4.60	5.85	4.26	1.52	0	0	0	0	0
MAX	0	0	2.5	68	18	11	4.5	0	0	0	0	0
MIN	0	0	0	0	2.0	1.7	0	0	0	0	0	0
AC-FT	0	0	7.9	283	336	262	91	0	0	0	0	0

CAL YR 1967 TOTAL 6,552.20 MEAN 18.0 MAX 679 MIN 0 AC-FT 13,000
WTR YR 1968 TOTAL 493.99 MEAN 1.35 MAX 68 MIN 0 AC-FT 980

Peak discharge (base, 140 cfs).--No peak above base.

SACRAMENTO RIVER BASIN

11-3414. SACRAMENTO RIVER NEAR MOUNT SHASTA, CALIF.

LOCATION.--Lat 41°15'56", long 122°18'32", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.33, T.40 N., R.4 W., on left bank 200 ft upstream from Stink Creek, 0.3 mile upstream from Southern Pacific Railroad bridge, and 3.3 miles south of Mount Shasta.

DRAINAGE AREA.--134 sq mi.

RECORDS AVAILABLE.--October 1959 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 2,800 ft (from topographic map). Prior to July 1, 1966, graphic water-stage recorder at site 500 ft upstream at datum 4.26 ft higher.

AVERAGE DISCHARGE.--9 years, 235 cfs (170,100 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,140 cfs Feb. 23 (gage height, 4.90 ft); minimum daily, 46 cfs Sept. 8-10.
1959-68: Maximum discharge, 12,200 cfs Dec. 22, 1964 (gage height, 12.6 ft from floodmarks, present site and datum), from slope-area measurement of maximum flow; minimum, 37 cfs Sept. 6, 1962.

REMARKS.--Records good except those for Feb. 24 to Apr. 26, which are fair. No diversions or regulation above station. See schematic diagram for Pit and McCloud River basins. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	68	79	97	135	515	434	384	215	78	55	52
2	127	68	82	92	141	482	377	376	219	77	54	50
3	92	68	87	86	153	452	322	401	205	75	53	49
4	74	69	146	86	153	443	306	476	204	75	52	48
5	77	70	131	85	148	496	304	452	437	74	51	47
6	73	72	99	81	154	414	287	373	300	71	51	47
7	71	70	92	80	165	352	282	359	236	69	50	47
8	69	75	87	79	166	309	285	357	203	67	53	46
9	68	78	84	81	163	276	307	374	180	64	52	46
10	68	75	83	80	168	244	365	377	163	64	51	46
11	66	72	82	82	173	226	453	381	157	65	50	47
12	66	71	81	81	180	228	456	362	148	65	49	47
13	66	73	78	104	189	226	380	349	143	66	50	48
14	66	158	77	437	177	254	348	289	139	66	52	51
15	66	97	78	595	188	278	346	261	131	66	52	50
16	65	82	80	340	239	356	319	256	126	61	52	49
17	65	77	82	241	425	276	302	261	120	59	52	49
18	65	76	81	193	323	233	286	275	113	57	52	50
19	65	76	80	172	454	214	278	417	110	57	66	51
20	65	72	79	163	621	205	263	542	108	57	74	50
21	68	72	79	176	918	182	246	428	105	56	66	50
22	72	71	79	192	900	177	232	377	101	56	61	52
23	71	69	81	198	1,030	176	242	326	99	56	58	52
24	69	69	85	200	855	186	249	297	96	56	55	50
25	68	69	96	209	732	273	259	318	93	55	55	49
26	68	68	115	189	690	280	262	291	88	55	55	48
27	68	69	155	169	649	263	309	292	86	55	56	48
28	68	76	164	153	588	273	316	298	83	55	54	48
29	68	78	136	151	539	312	356	289	83	56	53	48
30	68	79	101	156	-----	372	405	257	80	55	51	48
31	68	-----	101	142	-----	407	-----	225	-----	56	51	-----
TOTAL	2,181	2,287	2,960	5,190	11,416	9,380	9,576	10,720	4,571	1,944	1,686	1,463
MEAN	70.4	76.2	95.5	167	394	303	319	346	152	62.7	54.4	48.8
MAX	127	158	164	595	1,030	515	456	542	437	78	74	52
MIN	51	68	77	79	135	176	232	225	80	55	49	46
AC-FT	4,330	4,540	5,870	10,290	22,640	18,600	18,990	21,260	9,070	3,860	3,340	2,900
CAL YR 1967	TOTAL 94,920		MEAN 260		MAX 1,510		MIN 49		AC-FT 188,300			
WTR YR 1968	TOTAL 63,374		MEAN 173		MAX 1,030		MIN 46		AC-FT 125,700			

Peak discharge (base, 1,500 cfs).--No peak above base.

SACRAMENTO RIVER BASIN

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11-3420. SACRAMENTO RIVER AT DELTA, CALIF.

LOCATION.--Lat 40°56'20", long 122°24'55", in NW¼ sec.35, T.36 N., R.5 W., on left bank 0.2 mile downstream from Dog Creek, 0.6 mile southeast of Delta, and 2.8 miles south of Lamoine.

DRAINAGE AREA.--425 sq mi.

RECORDS AVAILABLE.--October 1944 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is 1,075.00 ft above mean sea level (levels by Bureau of Reclamation).

AVERAGE DISCHARGE.--24 years, 1,139 cfs (824,600 acre-ft per year).

EXTREMES.--Maximum discharge during year, 9,080 cfs Feb. 21 (gage height, 10.50 ft); minimum daily, 178 cfs Sept. 28-30.

1944-68: Maximum discharge, 38,800 cfs Dec. 22, 1964 (gage height, 20.10 ft), from rating curve extended above 19,000 cfs on basis of slope-area measurement at gage heights, 19.50 ft, in gage well, 20.0 ft, from floodmarks; minimum, 141 cfs Sept. 3-5, 1950.

REMARKS.--Records excellent. No regulation. Some minor diversions for irrigation above station. See schematic diagram for Pit and McCloud River basins. Records of chemical analyses and water temperatures for the water year 1968 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	221	236	303	433	585	2,130	1,670	1,110	565	269	212	195
2	459	236	371	403	753	1,960	1,480	1,080	560	260	221	195
3	415	236	433	371	962	1,810	1,350	1,080	550	257	208	190
4	288	239	961	355	968	1,710	1,280	1,140	520	254	200	188
5	288	245	982	347	1,020	1,820	1,230	1,110	890	251	198	188
6	278	242	495	331	1,220	1,630	1,190	968	742	245	195	185
7	267	242	460	323	1,400	1,490	1,150	890	600	239	192	188
8	260	270	391	323	1,390	1,340	1,140	872	540	236	195	185
9	257	278	367	363	1,430	1,230	1,190	884	500	233	200	182
10	254	254	359	371	1,410	1,140	1,310	896	470	227	192	185
11	251	251	363	347	1,390	1,090	1,490	914	452	224	190	185
12	248	248	351	331	1,350	1,240	1,460	884	436	227	188	188
13	248	251	331	470	1,280	1,260	1,260	884	416	227	188	188
14	242	522	307	1,910	1,150	1,540	1,200	797	404	227	200	195
15	242	355	303	3,190	1,170	1,670	1,200	731	392	227	208	195
16	242	292	303	1,970	1,380	2,960	1,150	698	373	224	202	190
17	242	270	307	1,320	3,930	2,430	1,050	698	362	221	198	190
18	242	267	331	1,020	3,340	1,860	1,000	698	352	218	198	190
19	239	264	303	848	3,890	1,560	974	797	345	212	236	190
20	242	254	292	792	5,200	1,420	938	1,280	338	210	310	192
21	245	251	292	896	7,710	1,330	896	956	334	210	292	192
22	254	248	288	1,020	6,580	1,280	860	878	320	208	245	192
23	251	245	299	986	7,360	1,240	860	780	314	205	230	192
24	248	242	335	932	5,620	1,210	848	731	306	202	218	190
25	245	242	415	926	4,080	1,420	836	824	300	202	212	185
26	242	239	550	842	3,300	1,390	878	731	289	200	218	185
27	242	245	742	758	2,900	1,280	962	704	282	198	215	182
28	242	257	775	714	2,600	1,280	974	692	275	198	210	178
29	239	339	676	720	2,300	1,400	1,020	676	272	198	205	178
30	236	343	535	670	-----	1,510	1,120	632	272	198	198	178
31	239	-----	470	616	-----	1,550	-----	590	-----	198	195	-----
TOTAL	8,108	8,103	13,690	24,898	77,668	48,180	33,966	26,605	12,771	6,905	6,569	5,636
MEAN	262	270	442	803	2,678	1,554	1,132	858	426	223	212	188
MAX	459	522	982	3,190	7,710	2,960	1,670	1,280	890	269	310	195
MIN	221	236	288	323	585	1,090	836	590	272	198	188	178
AC-FT	16,080	16,070	27,150	49,380	154,100	95,560	67,370	52,770	25,330	13,700	13,030	11,180
CAL YR 1967	TOTAL 460,478		MEAN 1,262		MAX 11,000	MIN 221		AC-FT 913,300				
WTR YR 1968	TOTAL 273,099		MEAN 746		MAX 7,710	MIN 178		AC-FT 541,700				

Peak discharge (base, 8,000 cfs).--Feb. 21 (0530 hrs) 9,080 cfs (10.50 ft).

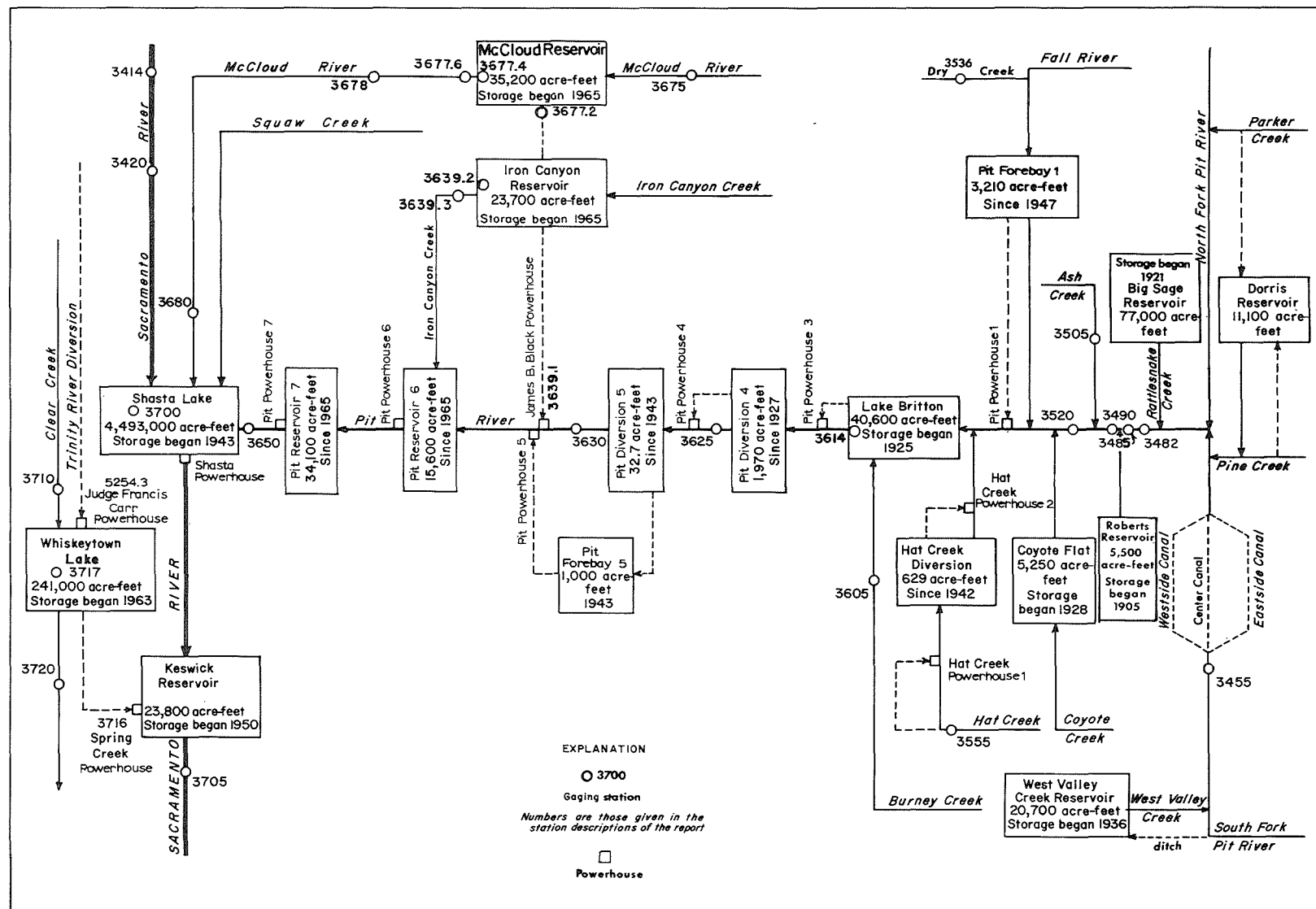


FIGURE 7.--Schematic diagram showing diversions and storage in Pit and McCloud river basins.

11-3455. SOUTH FORK PIT RIVER NEAR LIKELY, CALIF.

LOCATION.--Lat 41°13'51", long 120°26'10", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.11, T.39 N., R.13 E., on left bank 100 ft downstream from highway bridge, 1.4 miles downstream from West Valley Creek, and 3.5 miles east of Likely.

DRAINAGE AREA.--247 sq mi.

RECORDS AVAILABLE.--October 1928 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is 4,508 ft above mean sea level. Prior to Oct. 1, 1931, at site 1,000 ft downstream at different datum.

AVERAGE DISCHARGE.--40 years, 72.9 cfs (52,780 acre-ft per year).

EXTREMES.--Maximum discharge during year, 206 cfs Aug. 19 (gage height, 3.29 ft); maximum gage height, 3.52 ft Dec. 17 (backwater from ice); minimum daily, 9.0 cfs Mar. 24.

1928-68: Maximum discharge, 1,520 cfs Apr. 27, 1932 (gage height, 5.55 ft); minimum, 0.2 cfs Feb. 3, 1941.

REMARKS.--Records excellent except those for the winter period, which are fair. Flow regulated by West Valley Creek Reservoir beginning in May 1937 (usable capacity, 21,000 acre-ft). Diversions for irrigation of about 3,800 acres above station. See schematic diagram for Pit and McCloud River basins. Records of chemical analyses for the 1968 water year are published in Part 2 of this report.

REVISIONS (water years).--1965 report: 1932, 1938(M), 1952(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	25	27	25	27	57	30	122	69	87	129	34
2	47	25	26	23	29	37	34	126	93	85	129	34
3	54	26	28	21	34	20	29	130	99	84	129	34
4	51	27	29	22	36	18	24	130	118	83	127	31
5	52	27	29	23	39	18	23	134	154	81	124	34
6	53	27	26	20	48	16	45	124	137	85	121	34
7	35	27	32	26	55	15	63	122	96	87	121	36
8	26	26	25	30	53	14	66	119	109	83	119	34
9	25	26	23	36	60	15	66	116	96	79	119	32
10	24	27	23	37	65	36	82	110	88	79	118	37
11	22	26	22	30	62	36	110	113	85	78	115	70
12	17	26	21	28	58	20	139	121	82	75	115	69
13	16	26	20	32	53	12	126	116	82	73	116	66
14	20	26	21	38	47	12	126	84	77	75	126	66
15	24	27	18	44	47	11	139	69	67	75	127	63
16	23	27	19	40	44	10	132	56	72	72	130	63
17	22	26	20	37	53	11	116	64	103	73	137	62
18	22	27	23	34	64	15	110	88	118	75	132	62
19	23	35	24	32	64	12	115	82	118	73	139	64
20	22	30	25	32	127	14	108	102	113	72	136	66
21	23	29	26	29	103	13	105	115	110	90	76	70
22	27	27	27	28	129	13	99	137	139	134	79	67
23	26	27	29	27	148	9.9	106	121	166	130	61	69
24	25	27	29	26	137	9.0	106	87	166	130	50	70
25	25	26	29	24	96	12	101	61	124	132	47	70
26	25	24	28	23	78	12	97	53	88	132	46	69
27	26	24	29	22	71	10	97	66	84	129	43	67
28	26	27	29	21	63	10	93	72	87	127	42	65
29	26	27	26	21	58	10	106	75	88	127	42	64
30	26	29	26	23	-----	14	113	75	88	148	37	64
31	25	-----	30	25	-----	17	-----	62	-----	150	35	-----
TOTAL	903	806	789	879	1,948	528.9	2,706	3,052	3,116	3,003	3,067	1,666
MEAN	29.1	26.9	25.5	28.4	67.2	17.1	90.2	98.5	104	96.9	98.9	55.5
MAX	54	35	32	44	148	57	139	137	166	150	139	70
MIN	16	24	18	20	27	9.0	23	53	67	72	35	31
AC-FT	1,790	1,600	1,560	1,740	3,860	1,050	5,370	6,050	6,180	5,960	6,080	3,300
CAL YR 1967	TOTAL 29,518.0		MEAN 80.9		MAX 483		MIN 3.0		AC-FT 58,550			
WTR YR 1968	TOTAL 22,463.9		MEAN 61.4		MAX 166		MIN 9.0		AC-FT 44,560			

SACRAMENTO RIVER BASIN

11-3482. PIT RIVER NEAR ALTURAS, CALIF.

LOCATION.--Lat 41°29'00", long 120°37'46", in NW¼NE¼ sec.18, T.42 N., R.12 E., on left bank 500 ft downstream from Noble Creek and 4.7 miles west of Alturas.

DRAINAGE AREA.--1,080 sq mi, excluding Goose Lake basin.

RECORDS AVAILABLE.--September 1965 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 4,330 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 1,460 cfs Feb. 22 (gage height, 8.60 ft); minimum daily, 22 cfs Sept. 6.

1965-68: Maximum discharge, 3,070 cfs Jan. 29, 1967 (gage height, 12.91 ft), from rating curve extended above 1,500 cfs; minimum daily, 4.1 cfs Oct. 20, 21, 1966.

REMARKS.--Records good except those for period Nov. 26 to Feb. 5, which are poor. Flow regulated by many small reservoirs (total capacity, 144,000 acre-ft). Diversions for irrigation of 23,000 acres above station. See schematic diagram for Pit and McCloud River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	72	37	68	40	45	187	73	54	63	78	111	36
2	73	37	75	40	48	170	71	62	60	80	106	36
3	78	40	92	39	53	150	88	92	58	60	104	37
4	88	41	155	38	70	135	88	98	56	54	100	36
5	99	41	100	38	93	124	84	102	73	50	94	33
6	80	43	73	39	176	121	86	128	168	56	51	22
7	76	47	63	41	204	121	92	119	223	51	48	23
8	95	50	57	46	202	113	92	113	202	44	44	24
9	48	48	54	53	208	106	82	104	183	45	44	24
10	41	48	52	59	231	98	90	90	143	45	48	25
11	42	47	49	45	262	104	92	65	124	43	56	24
12	44	47	47	38	239	106	82	73	104	50	58	24
13	44	47	44	80	193	88	73	117	90	48	60	24
14	43	45	42	150	145	80	56	229	84	44	65	74
15	44	44	40	270	127	80	50	208	84	48	68	84
16	50	44	40	262	118	76	56	152	63	37	70	88
17	42	45	42	255	166	78	58	113	62	36	70	90
18	42	48	47	175	506	90	66	76	63	35	70	88
19	52	64	43	140	468	86	70	71	63	34	102	92
20	47	70	39	118	1,090	74	65	88	65	34	113	92
21	43	114	41	106	1,000	78	80	106	73	33	102	94
22	52	133	43	98	1,240	88	146	146	65	33	132	98
23	40	78	47	93	1,320	88	150	217	57	34	141	56
24	38	68	45	88	1,220	80	148	254	56	42	130	44
25	40	78	43	68	991	71	135	280	102	51	106	44
26	42	73	42	48	705	76	143	206	115	65	80	44
27	43	70	41	44	372	80	119	154	96	106	65	43
28	41	72	40	43	275	76	94	84	82	115	54	43
29	37	77	40	42	229	73	63	98	73	106	44	45
30	37	71	39	42	-----	70	45	94	73	106	40	46
31	37	-----	39	44	-----	71	-----	74	-----	113	36	-----
TOTAL	1,650	1,767	1,682	2,682	11,996	3,038	2,637	3,867	2,823	1,776	2,412	1,533
MEAN	53.2	58.9	54.3	86.5	414	98.0	87.9	125	94.1	57.3	77.8	51.1
MAX	99	133	155	270	1,320	187	150	280	223	115	141	98
MIN	37	37	39	38	45	70	45	54	56	33	36	22
AC-FT	3,270	3,500	3,340	5,320	23,790	6,030	5,230	7,670	5,600	3,520	4,780	3,040
CAL YR 1967	TOTAL 68,929		MEAN 189		MAX 2,010		MIN 30		AC-FT 136,700			
WTR YR 1968	TOTAL 37,863		MEAN 103		MAX 1,320		MIN 22		AC-FT 75,100			

Note.--No gage-height record Nov. 26 to Jan. 17.

SACRAMENTO RIVER BASIN

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11-3485. PIT RIVER NEAR CANBY, CALIF.

LOCATION.--Lat 41°24'22", long 120°55'36", in NW¼SW¼ sec.10, T.41 N., R.9 E., on right bank at lower end of Warm Spring Valley, 4 miles southwest of Canby.

DRAINAGE AREA.--1,431 sq mi, excluding Goose Lake basin.

RECORDS AVAILABLE.--January 1904 to December 1905, May 1929 to September 1968 (1929-31 incomplete).

GAGE.--Digital water-stage recorder. Datum of gage is 4,266 ft above mean sea level. January 1904, to December 1905 staff gage and May 6, 1929, to Sept. 30, 1931, graphic water-stage recorder, at site 100 ft upstream at different datum. Oct. 1, 1931, to June 2, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--38 years (1905, 1931-68), 229 cfs (165,800 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,370 cfs Feb. 21 (gage height, 6.40 ft); minimum daily, 7.8 cfs July 30.

1904-5, 1929-68: Maximum discharge observed, 13,000 cfs Mar. 8, 1904 (gage height, 15.0 ft, site and datum then in use); minimum, 0.1 cfs Apr. 29, Aug. 5, Sept. 18, 1934, Aug. 18-21, 1935.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by many small reservoirs (total capacity now, about 144,000 acre-ft). Diversions for irrigation of about 39,000 acres above station. See schematic diagram for Pit and McCloud River basins. Records of chemical analyses, water temperatures, and suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	49	80	44	68	382	98	78	86	50	12	45
2	96	49	73	46	81	323	100	52	66	62	10	40
3	100	49	78	44	100	285	103	44	55	53	15	38
4	92	49	88	42	132	244	114	65	46	60	26	35
5	93	51	167	41	190	225	117	91	64	92	30	26
6	128	52	108	40	288	219	113	111	116	60	31	34
7	111	56	97	39	355	206	112	104	161	46	92	31
8	92	56	91	49	390	192	117	113	199	51	91	29
9	96	65	87	59	409	176	111	100	238	41	72	27
10	79	63	83	68	441	159	94	96	241	35	45	25
11	57	61	79	64	535	148	88	57	193	32	33	24
12	52	59	73	62	503	147	95	79	98	30	27	22
13	50	88	66	62	425	155	95	110	57	16	33	18
14	50	72	60	64	326	128	71	143	52	24	39	14
15	50	63	55	90	243	119	57	187	53	26	48	13
16	50	62	52	250	211	115	58	256	48	27	65	13
17	53	60	53	419	267	123	53	206	29	27	66	13
18	54	63	54	474	650	128	49	164	16	14	111	12
19	51	71	55	379	1,070	130	15	120	53	11	104	12
20	53	77	57	291	1,420	116	46	101	60	8.9	149	13
21	57	86	61	214	2,100	103	20	101	50	9.6	148	24
22	55	137	66	204	2,200	106	29	96	39	11	127	27
23	53	147	73	213	2,220	116	30	82	41	8.4	131	13
24	54	100	62	197	2,000	109	56	125	20	15	147	107
25	51	86	56	165	1,660	106	57	355	22	37	143	102
26	50	87	59	148	1,310	105	60	398	23	17	130	115
27	59	114	62	115	960	110	102	327	28	10	109	72
28	58	79	55	89	605	107	200	223	19	11	89	40
29	55	76	50	77	454	101	221	158	34	11	75	34
30	51	85	46	62	-----	99	138	62	62	7.8	61	29
31	49	-----	41	63	-----	97	-----	91	-----	9.3	52	-----
TOTAL	2,097	2,212	2,187	4,174	21,613	4,879	2,619	4,295	2,278	913.0	2,311	1,047
MEAN	67.6	73.7	70.5	135	745	157	87.3	139	75.0	29.5	74.5	34.9
MAX	128	147	167	474	2,220	382	221	398	241	92	149	115
MIN	49	49	41	39	68	97	15	44	16	7.8	10	12
AC-FT	4,160	4,390	4,340	8,280	42,870	9,680	5,190	8,520	4,520	1,810	4,580	2,080
CAL YR 1967	TOTAL 95,558		MEAN 262		MAX 3,310		MIN 14		AC-FT 189,500			
WTR YR 1968	TOTAL 50,625.0		MEAN 138		MAX 2,220		MIN 7.8		AC-FT 100,400			

SACRAMENTO RIVER BASIN

11-3490. PIT RIVER NEAR LOOKOUT, CALIF.

LOCATION (revised).--Lat 41°19'27", long 121°07'36", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.11, T.40 N., R.7 E., on right bank 0.2 mile downstream from unnamed tributary, and 8.2 miles north of Lookout.

DRAINAGE AREA.--1,585 sq mi, excluding Goose Lake basin.

RECORDS AVAILABLE.--January 1929 to September 1931, August 1958 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 4,160 ft (from topographic map). January 1929 to September 1931, graphic water-stage recorder at site approximately 2.5 miles downstream at different datum.

AVERAGE DISCHARGE.--12 years, 228 cfs (165,100 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4,640 cfs Feb. 23 (gage height, 16.57 ft); minimum daily, 12 cfs Aug. 1.

1929-31, 1958-68: Maximum discharge, 8,170 cfs Oct. 14, 1962 (gage height, 19.39 ft from floodmarks in gage well); no flow Aug. 29, 1931.

REMARKS.--Records good except those for the winter period, which are poor. Flow regulated by many small reservoirs. Diversions for irrigation of 41,000 acres above station. See schematic diagram for Pit and McCloud River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	47	89	56	121	650	170	130	102	60	12	56
2	103	48	73	54	150	545	173	75	85	54	14	49
3	118	48	95	45	187	480	163	56	65	67	14	44
4	101	48	90	42	215	424	169	58	59	54	12	43
5	96	51	144	44	265	401	176	84	59	79	24	38
6	112	52	156	42	335	384	170	118	81	86	28	33
7	134	53	104	44	400	331	163	114	150	58	34	38
8	107	58	84	49	508	297	160	122	178	49	97	37
9	95	57	80	56	542	265	160	122	230	52	89	34
10	101	65	75	69	590	243	143	107	234	41	69	33
11	72	61	71	68	665	224	121	109	216	35	43	31
12	55	62	66	66	704	220	138	66	155	33	33	30
13	52	68	63	65	623	239	130	134	82	32	27	28
14	50	89	59	67	482	256	114	144	60	21	34	25
15	51	70	56	80	352	254	93	186	57	25	40	22
16	51	63	54	160	297	248	76	224	56	28	53	20
17	51	62	52	330	352	299	78	231	47	30	77	20
18	53	62	53	420	850	301	71	186	34	30	76	20
19	52	73	60	330	1,510	254	59	154	24	21	120	19
20	48	78	64	300	2,380	226	37	118	64	16	135	19
21	53	82	70	240	3,220	199	58	113	62	15	163	20
22	55	100	70	215	3,810	187	36	118	52	14	146	29
23	53	166	65	215	4,170	184	42	109	41	14	134	34
24	52	129	60	173	3,820	188	46	108	42	14	147	22
25	52	97	58	162	2,950	196	70	244	28	18	154	122
26	48	92	59	140	2,270	199	66	357	27	31	146	98
27	48	88	62	128	1,720	186	77	341	28	21	132	98
28	61	124	59	113	1,100	184	154	252	30	16	105	66
29	56	82	55	102	782	179	226	198	25	14	88	44
30	52	85	52	96	-----	177	198	138	44	14	75	38
31	49	-----	53	106	-----	173	-----	61	-----	13	63	-----
TOTAL	2,189	2,260	2,251	4,077	35,370	8,593	3,537	4,577	2,417	1,055	2,384	1,210
MEAN	70.6	75.3	72.6	132	1,220	277	118	148	80.6	34.0	76.9	40.3
MAX	134	166	156	420	4,170	650	226	357	234	86	163	122
MIN	48	47	52	42	121	173	36	56	24	13	12	19
AC-FT	4,340	4,480	4,460	8,090	70,160	17,040	7,020	9,080	4,790	2,090	4,730	2,400
CAL YR 1967	TOTAL 123,995		MEAN 340		MAX 5,040		MIN 19		AC-FT 245,900			
WTR YR 1968	TOTAL 69,920		MEAN 191		MAX 4,170		MIN 12		AC-FT 138,700			

11-3505. ASH CREEK AT ADIN, CALIF.

LOCATION.--Lat 41°11'54", long 120°56'32", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.21, T.39 N., R.9 E., on left bank 300 ft upstream from highway bridge at Adin, and 0.4 mile upstream from Butte Creek.

DRAINAGE AREA.--258 sq mi.

RECORDS AVAILABLE.--March 1904 to December 1905, October 1928 to November 1932, October 1957 to September 1968. Records of daily discharge for Oct. 19-31, 1928, are in error and should not be used.

GAGE.--Graphic water-stage recorder. Altitude of gage is 4,190 ft (estimated on basis of bench-mark 300 ft downstream). Prior to Sept. 12, 1957, graphic water-stage recorder or staff gage at sites within 1 mile of present site, at different datums.

AVERAGE DISCHARGE.--16 years (1904-5, 1928-32, 1957-68), 65.7 cfs (47,560 acre-ft per year); median of yearly mean discharges, 51 cfs (36,900 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,200 cfs Feb. 20 (gage height, 10.22 ft); minimum daily, 9.1 cfs June 26, July 3, 11.

1904-5, 1928-32, 1957-68: Maximum discharge, 2,880 cfs Oct. 13, 1962 (gage height, 14.40 ft); no flow for part of Aug. 26, 1962.

REMARKS.--Small diversions above station for irrigation. See schematic diagram for Pit and McCloud River basins.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

REVISIONS (water years).--1966 report: 1958(M), 1960(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	29	30	32	21	139	57	27	14	14	18	24
2	24	30	29	27	23	122	57	25	20	9.7	19	24
3	34	30	29	19	58	111	51	25	21	9.1	20	21
4	30	30	34	21	103	103	51	22	20	19	20	18
5	34	29	46	26	98	107	59	20	35	15	21	21
6	34	29	34	23	179	98	56	18	45	16	21	22
7	29	29	34	30	148	89	50	22	36	16	22	22
8	29	29	30	41	129	82	47	16	29	16	21	20
9	28	30	27	38	144	72	48	14	26	17	21	14
10	30	31	24	38	166	66	50	14	27	14	21	14
11	30	30	21	17	151	62	55	20	16	9.1	21	14
12	25	29	18	35	135	58	54	36	20	13	17	16
13	28	28	15	46	111	64	47	56	27	15	19	16
14	27	29	13	44	84	69	45	48	21	18	21	19
15	26	28	11	131	86	62	45	41	19	16	21	23
16	28	30	11	105	77	66	45	34	19	19	24	21
17	32	29	12	73	172	82	41	29	19	18	24	17
18	29	29	13	46	285	77	45	25	13	16	24	20
19	29	43	14	38	322	68	40	27	16	16	37	20
20	28	32	15	36	780	61	36	29	21	16	35	21
21	31	30	15	46	882	56	36	19	16	16	32	22
22	31	29	16	64	807	54	33	34	16	16	27	23
23	29	29	17	69	920	49	32	42	14	16	25	22
24	27	29	18	69	694	48	31	40	14	16	24	22
25	29	28	19	56	454	62	31	44	9.7	17	22	22
26	29	28	20	32	289	54	29	36	9.1	17	23	22
27	29	28	21	20	212	53	29	30	16	17	24	21
28	31	29	22	22	179	50	29	26	13	17	24	22
29	30	31	24	21	156	50	27	25	13	17	23	21
30	30	31	25	20	-----	53	25	24	13	17	23	20
31	29	-----	26	24	-----	55	-----	18	-----	18	24	-----
TOTAL	897	895	683	1,309	7,865	2,242	1,281	886	597.8	485.9	718	604
MEAN	28.9	29.8	22.0	42.2	271	72.3	42.7	28.6	19.9	15.7	23.2	20.1
MAX	34	43	46	131	920	139	59	56	45	19	37	24
MIN	18	28	11	17	21	48	25	14	9.1	9.1	.17	14
AC-FT	1,780	1,780	1,350	2,600	15,600	4,450	2,540	1,760	1,190	964	1,420	1,200

CAL YR 1967 TOTAL 40,254 MEAN 110 MAX 940 MIN 11 AC-FT 79,840
WTR YR 1968 TOTAL 18,463.7 MEAN 50.4 MAX 920 MIN 9.1 AC-FT 36,620

SACRAMENTO RIVER BASIN

777

11-3536. DRY CREEK NEAR DANA, CALIF.

LOCATION.--Lat 41°08'21", long 121°38'24", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.8, T.38 N., R.3 E., at culvert on State Highway 89, 4.5 miles northwest of Dana.

DRAINAGE AREA.--6.46 sq mi.

RECORDS AVAILABLE.--July 1962 to September 1966 (annual maximum), October 1966 to September 1968.

GAGE.--Graphic water-stage recorder with recording rain-gage attachment, and crest-stage gage. Altitude of gage is 4,040 ft (from topographic map). Prior to Oct. 1, 1966, crest-stage gages at same site and datum.

EXTREMES.--Maximum discharge during year, 30 cfs Feb. 23 (gage height, 3.20 ft); maximum gage height, 3.79 ft Jan. 18 (backwater from ice); no flow for several months.

1963-68: Maximum discharge, 702 cfs Dec. 22, 1964 (gage height, 10.69 ft), from rating curve extended above 120 cfs on basis of computation of flow through culvert at gage heights 5.02 and 10.69 ft; no flow for several months each year.

REMARKS.--Records fair. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				0	.38	14	25	6.9	3.1	.56	.08	
2				0	.44	12	22	7.0	3.0	.56	.06	
3				0	.56	12	19	7.1	2.9	.50	.05	
4				0	.76	13	18	7.2	2.9	.44	.03	
5				0	.70	17	18	6.5	3.0	.44	.02	
6				0	.63	15	17	6.0	3.2	.44	.01	
7				0	.63	13	16	5.6	2.6	.40	0	
8				0	.63	12	15	5.3	2.4	.38	0	
9				0	.70	10	16	5.0	2.2	.36	0	
10				0	.70	9.3	17	4.8	2.0	.34	0	
11				0	.76	8.7	19	4.9	2.0	.36	0	
12				0	.82	8.7	18	5.2	1.9	.40	0	
13				0	.82	8.0	16	4.6	1.8	.32	0	
14				2.3	.82	8.0	14	4.0	1.8	.28	0	
15				2.6	.76	9.1	14	3.9	1.6	.26	0	
16				2.4	.76	11	13	3.8	1.5	.26	0	
17				2.0	1.8	9.1	12	3.8	1.4	.26	0	
18				1.5	3.9	7.6	10	4.0	1.3	.26	0	
19				.82	4.5	7.3	10	5.4	1.2	.26	0	
20				.70	6.7	7.1	9.5	8.4	1.1	.21	0	
21				.63	20	7.1	9.1	5.6	1.0	.18	0	
22				.50	21	7.3	8.7	5.6	.96	.18	0	
23				.44	27	8.4	8.4	5.4	.89	.18	0	
24				.50	24	9.8	8.0	4.9	.82	.16	0	
25				.50	18	19	7.6	4.9	.82	.16	0	
26				.50	19	18	7.4	4.5	.76	.16	0	
27				.44	17	17	7.2	4.0	.70	.14	0	
28				.44	15	18	7.1	3.9	.70	.14	0	
29				.44	15	20	7.0	3.6	.63	.14	0	
30				.44	-----	22	6.9	3.5	.63	.12	0	
31		-----		.44	-----	25	-----	3.3	-----	.10	0	-----
TOTAL	0	0	0	17.59	203.77	383.5	395.9	158.6	50.81	8.95	0.25	0
MEAN	0	0	0	.57	7.03	12.4	13.2	5.12	1.69	.29	.008	0
MAX	0	0	0	2.6	27	25	25	8.4	3.2	.56	.08	0
MIN	0	0	0	0	.38	7.1	6.9	3.3	.63	.10	0	0
AC-FT	0	0	0	35	404	761	785	315	101	18	.5	0
(a)	.58	1.58	-	-	5.44	3.77	-	-	1.15	-	1.12	0
CAL YR 1967	TOTAL 2,096.40		MEAN 5.74		MAX 56	MIN 0		AC-FT 4,160				
WTR YR 1968	TOTAL 1,219.37		MEAN 3.33		MAX 27	MIN 0		AC-FT 2,420				

a Precipitation, in inches (some precipitation falling as snow may not be included).

SACRAMENTO RIVER BASIN

11-3555. HAT CREEK NEAR HAT CREEK, CALIF.

LOCATION.--Lat 40°41'12", long 121°25'25", in SE $\frac{1}{4}$ sec.28, T.33 N., R.5 E., on right bank 0.8 mile northeast of Old Station Post Office and 8 miles southeast of Hat Creek Post Office.

DRAINAGE AREA.--162 sq mi; hydrologic drainage boundary uncertain owing to ground-water exchange.

RECORDS AVAILABLE.--July 1926 to September 1929, April 1930 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 4,300 ft (from topographic map). July 1926 to April 1928 at site 0.5 mile upstream at different datum. May 1928 to July 1965 at site 80 ft upstream at datum 2.76 ft higher.

AVERAGE DISCHARGE.--41 years, 134 cfs (97,010 acre-ft per year).

EXTREMES.--Maximum discharge during year, 223 cfs Feb. 23 (gage height, 3.39 ft); minimum daily, 113 cfs Sept. 27.

1926-68: Maximum discharge, 3,320 cfs 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 cfs on basis of slope-area measurement of maximum flow; minimum, 67 cfs Sept. 7, 1934.

REMARKS.--Records excellent. Diversions for irrigations of 260 acres above station. See schematic diagram for Pit and McCloud River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	135	135	130	132	128	155	149	163	176	127	130	116
2	149	135	132	130	134	153	148	164	183	129	130	117
3	149	135	134	126	136	152	144	167	184	128	130	117
4	144	135	134	129	136	152	146	172	181	126	130	117
5	143	134	130	130	137	154	146	168	180	127	129	117
6	142	135	128	128	137	150	144	158	177	127	129	116
7	142	135	131	130	137	149	144	157	171	126	129	115
8	141	136	126	131	136	149	144	158	163	123	128	121
9	141	136	126	132	136	147	146	162	155	123	121	126
10	140	135	128	127	136	146	150	166	152	131	117	126
11	140	135	129	124	136	146	155	171	150	137	116	124
12	138	135	129	129	135	146	158	179	146	137	116	124
13	135	135	127	132	135	144	155	183	143	136	118	126
14	131	143	126	138	134	146	154	164	143	136	118	127
15	130	138	126	177	132	144	153	158	144	136	118	126
16	130	136	126	171	132	146	148	162	146	135	122	124
17	130	135	127	154	137	144	144	167	146	135	120	124
18	130	137	128	149	137	142	141	170	144	134	118	121
19	129	146	128	144	142	141	141	184	144	134	131	116
20	129	138	128	142	179	142	135	206	150	126	132	116
21	130	138	128	141	188	142	136	184	152	122	131	116
22	130	137	129	140	177	142	136	175	152	121	124	116
23	130	136	130	138	206	142	135	167	150	121	121	116
24	132	136	130	138	187	142	135	157	148	121	122	116
25	135	136	130	138	170	146	137	158	146	120	126	115
26	135	134	131	135	163	143	140	160	147	119	126	114
27	135	135	134	130	160	143	144	166	146	118	124	113
28	135	135	134	131	158	143	147	167	144	118	123	119
29	135	134	132	128	157	144	155	172	143	118	119	122
30	135	128	131	124	-----	147	160	171	132	127	116	122
31	135	-----	132	124	-----	147	-----	170	-----	130	116	-----
TOTAL	4,215	4,078	4,014	4,222	4,318	4,529	4,370	5,226	4,638	3,948	3,830	3,585
MEAN	136	136	129	136	149	146	146	169	155	127	124	120
MAX	149	146	134	177	206	155	160	206	184	137	132	127
MIN	129	128	126	124	128	141	135	157	132	118	116	113
AC-FT	8,360	8,090	7,960	8,370	8,560	8,980	8,670	10,370	9,200	7,830	7,600	7,110
CAL YR 1967	TOTAL 57,740		MEAN 158		MAX 336		MIN 123		AC-FT 114,500			
WTR YR 1968	TOTAL 50,973		MEAN 139		MAX 206		MIN 113		AC-FT 101,100			

PEAK DISCHARGE (BASE, 180 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-15	1600	3.22	197	05-20	0900	3.33	214
02-23	1700	3.39	223	06-03	0200	3.20	194

SACRAMENTO RIVER BASIN

779

11-3605. BURNEY CREEK NEAR BURNEY, CALIF.

LOCATION.--Lat 40°52'15", long 121°40'50", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.19, T.35 N., R.3 E., on right bank 300 ft upstream from road bridge, 0.8 mile southwest of Burney, and 4.5 miles upstream from Goose Creek.

DRAINAGE AREA.--88.8 sq mi.

RECORDS AVAILABLE.--August 1911 to August 1913 (published as "at Burney"), March 1921 to September 1922, April 1958 to September 1964, October 1965 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Altitude of gage is 3,180 ft (from topographic map). August 1911 to August 1913 and March 1921 to September 1922, staff gage or graphic water-stage recorder at different site and datum.

AVERAGE DISCHARGE.--12 years (1911-13, 1921-22, 1958-64, 1965-68), 54.2 cfs (39,240 acre-ft per year).

EXTREMES.--Maximum discharge during year, 765 cfs Feb. 23 (gage height, 9.62 ft); minimum daily, 8.2 cfs July 6, 30.

1911-13, 1921-22, 1958-64, 1965-68: Maximum discharge, 1,350 cfs Jan. 31, 1963 (gage height, 11.62 ft), from rating curve extended above 380 cfs; minimum, 3.4 cfs Aug. 4, 1961.

REMARKS.--Small diversions upstream for irrigation. Slight regulation probably caused by logging operations.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	13	25	18	33	234	166	71	27	12	9.6	12
2	33	15	24	18	38	204	156	68	27	12	9.2	12
3	59	18	36	18	52	188	141	66	26	11	11	12
4	25	16	50	18	47	181	131	64	28	10	10	9.6
5	24	16	88	18	43	224	134	64	45	9.2	9.6	9.6
6	23	16	43	18	40	196	129	63	53	8.2	11	10
7	22	17	34	18	41	168	121	60	43	13	11	11
8	22	16	28	18	40	152	116	56	38	16	11	12
9	20	16	28	18	40	136	118	56	33	18	10	12
10	20	19	28	18	42	121	121	50	30	16	11	13
11	20	19	27	18	43	120	138	58	30	16	9.6	13
12	20	20	27	18	45	134	139	60	27	15	9.6	13
13	20	20	26	18	49	128	120	113	22	16	9.2	14
14	20	28	26	80	44	132	110	96	20	15	11	20
15	20	23	25	165	44	139	108	63	20	15	11	18
16	20	20	25	131	41	196	102	60	20	15	11	17
17	20	17	25	98	100	163	91	54	16	13	12	16
18	20	18	24	66	154	128	88	52	18	13	11	16
19	20	38	24	52	182	107	86	54	19	12	24	16
20	20	25	23	49	196	104	83	76	18	13	24	15
21	20	16	23	50	538	99	83	63	16	11	32	15
22	20	18	22	49	438	99	82	71	15	9.6	25	15
23	20	20	22	47	687	104	79	78	19	10	18	15
24	20	17	22	44	580	104	76	66	20	9.6	15	15
25	20	19	21	43	408	169	75	58	12	9.2	14	14
26	20	16	21	42	358	168	75	57	12	9.2	16	12
27	20	19	20	41	318	132	75	53	13	8.7	16	13
28	20	20	20	40	275	126	75	43	16	9.2	16	10
29	20	24	20	78	250	132	70	38	13	8.7	15	9.6
30	17	32	19	141	-----	148	68	36	13	8.2	15	11
31	13	-----	19	38	-----	156	-----	33	-----	8.7	13	-----
TOTAL	675	591	865	1,488	5,166	4,592	3,156	1,900	709	370.5	430.8	400.8
MEAN	21.8	19.7	27.9	48.0	178	148	105	61.3	23.6	12.0	13.9	13.4
MAX	59	38	88	165	687	234	166	113	53	18	32	20
MIN	13	13	19	18	33	99	68	33	12	8.2	9.2	9.6
AC-FT	1,340	1,170	1,720	2,950	10,250	9,110	6,260	3,770	1,410	735	854	795

CAL YR 1967 TOTAL 33,342 MEAN 91.3 MAX 920 MIN 12 AC-FT 66,130
WTR YR 1968 TOTAL 20,344.1 MEAN 55.6 MAX 687 MIN 8.2 AC-FT 40,350

Note.--No gage-height record Dec. 7 to Jan. 17.

SACRAMENTO RIVER BASIN

11-3625. PIT RIVER BELOW PIT NO. 4 DAM, CALIF.

LOCATION.--Lat 40°58'25", long 121°46'42", in SW $\frac{1}{4}$ sec.17, T.36 N., R.2 E., on right bank 0.65 mile downstream from Ruling Creek, 1.3 miles downstream from Pit No. 4 Dam, and 2.7 miles downstream from Pit No. 3 powerhouse.

DRAINAGE AREA.--4,647 sq mi, excluding Goose Lake basin.

RECORDS AVAILABLE.--May 1922 to September 1968. 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.

GAGE.--Digital water-stage recorder. Altitude of gage is 2,358 ft (from river-profile map). Prior to November 1922 graphic water-stage recorder at site at Pecks Bridge 7.4 miles upstream at different datum. November 1922 to June 20, 1927, graphic water-stage recorder at site at Lindsay Flat 1.8 miles upstream at different datum. June 20, 1927, to Mar. 31, 1965, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--58 years (1910-68), 2,735 cfs (1,980,000 acre-ft per year), including diversion to Pit No. 4 powerhouse. Period 1910-22 extrapolated on basis of records for Pit River at Big Bend.

EXTREMES.--Maximum discharge during year, 12,200 cfs Feb. 23 (gage height, 13.10 ft); minimum daily, 51 cfs Feb. 15.

1922-55 (prior to diversion to Pit No. 4 powerhouse): Maximum discharge, 30,200 cfs Dec. 12, 1937 (gage height, 17.90 ft), from rating curve extended above 12,000 cfs on basis of velocity-area studies of maximum flow; minimum daily, 234 cfs Sept. 13, 1953.

1955-68: Maximum discharge, 21,600 cfs Dec. 24, 1964 (gage height, 15.68 ft); minimum daily, 40 cfs Feb. 21, 1965.

REMARKS.--Flow regulated by many small reservoirs and powerplants (total usable reservoir capacity, 253,000 acre-ft). Many diversions above station; diversion to Pit No. 4 powerhouse began June 9, 1955. See schematic diagram for Pit and McCloud River basins.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	156	102	82	60	56	1,530	100	156	168	154	164	178
2	608	85	85	59	59	985	109	181	168	154	173	173
3	753	83	88	58	61	679	102	189	181	152	159	183
4	709	82	92	57	59	364	104	176	183	149	161	173
5	737	80	91	58	59	332	104	247	189	159	168	183
6	692	79	71	58	58	232	104	149	183	159	168	173
7	134	77	73	57	59	202	104	145	171	156	176	178
8	110	78	71	57	57	104	104	164	178	159	176	186
9	720	78	70	58	57	59	102	152	168	161	178	173
10	1,170	76	70	57	52	87	104	156	168	154	178	181
11	1,130	75	64	57	52	66	104	159	183	161	176	178
12	1,000	76	60	56	52	66	104	173	178	159	166	168
13	771	78	59	57	52	71	102	173	183	154	168	173
14	107	78	59	62	52	79	104	161	178	161	173	168
15	111	77	59	69	51	77	104	183	161	159	166	176
16	108	77	60	62	52	123	104	189	156	159	166	171
17	106	76	61	59	59	545	102	176	164	156	173	171
18	107	77	61	58	57	390	102	173	166	156	178	176
19	107	77	60	58	68	250	96	173	164	156	186	161
20	112	76	60	56	2,510	136	100	186	161	154	181	181
21	114	78	61	56	4,670	96	102	176	159	154	183	176
22	107	78	60	57	7,470	74	113	156	159	154	164	171
23	109	78	60	58	8,790	1,760	109	164	154	154	176	171
24	110	79	60	57	9,100	84	109	149	154	145	161	154
25	110	77	60	57	7,970	74	107	166	154	154	173	168
26	109	78	60	56	6,550	68	107	166	140	156	176	173
27	108	80	60	56	4,960	68	107	168	149	152	164	171
28	108	78	60	57	3,560	65	107	178	152	156	176	171
29	107	78	60	57	2,350	63	111	176	152	161	171	176
30	106	79	60	57	-----	63	109	166	152	168	176	161
31	109	-----	59	56	-----	63	-----	173	-----	166	176	-----
TOTAL	10,645	2,370	2,056	1,797	59,002	8,855	3,140	5,299	4,976	4,852	5,330	5,196
MEAN	343	79.0	66.3	58.0	2,035	286	105	171	166	157	172	173
MAX	1,170	102	92	69	9,100	1,760	113	247	189	168	186	186
MIN	106	75	59	56	51	59	96	145	140	145	159	154
AC-FT	21,110	4,700	4,080	3,560	117,000	17,560	6,230	10,510	9,870	9,620	10,570	10,310
MEAN a	2,239	2,259	2,348	2,565	5,289	3,757	2,854	2,625	2,044	2,056	2,033	2,168
AC-FT a	137,700	134,400	144,400	157,700	304,200	231,000	169,800	161,400	121,600	126,400	125,000	129,000

CAL YR 1967 TOTAL 134,490 MEAN 368 MAX 6,300 MIN 50 AC-FT 266,800 MEAN a 2,993 AC-FT a 2,167,000
WTR YR 1968 TOTAL 113,518 MEAN 310 MAX 9,100 MIN 51 AC-FT 225,200 MEAN a 2,676 AC-FT a 1,943,000

a Adjusted for diversion to Pit No. 4 powerhouse.

SACRAMENTO RIVER BASIN

781

11-3630. PIT RIVER AT BIG BEND, CALIF.

LOCATION.--Lat 41°01'10", long 121°54'35", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.31, T.37 N., R.1 E., on left bank at Big Bend, 0.4 mile downstream from Nelson Creek, and 1.5 miles upstream from Kosk Creek.

DRAINAGE AREA.--4,710 sq mi, excluding Goose Lake basin.

RECORDS AVAILABLE.--October 1910 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Published as "at Henderson" 1910-23.

GAGE.--Digital water-stage recorder. Datum of gage is 1,674.47 ft above mean sea level, datum of 1929. Prior to Dec. 28, 1912, staff gage and Dec. 28, 1912, to June 21, 1924, graphic water-stage recorder at same site at datum 7.69 ft higher. June 22, 1924, to Apr. 1, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--33 years (1910-43, prior to diversion to Pit No. 5 powerplant), 2,931 cfs (2,122,000 acre-ft per year). Twenty-five years (1943-68), 525 cfs (380,100 acre-ft per year), unadjusted.

EXTREMES.--Maximum discharge during year, 15,000 cfs Feb. 23 (gage height, 13.68 ft); minimum daily, 51 cfs Dec. 14, 16, Jan. 5-8.
1910-68: Maximum discharge, 40,200 cfs Dec. 23, 1964 (gage height, 16.88 ft), from rating curve extended above 13,000 cfs on basis of velocity-area studies; minimum daily, 34 cfs Mar. 29, 1955.

REMARKS.--Flow regulated by many reservoirs and powerplants (total usable reservoir capacity, about 253,000 acre-ft). Many diversions above station; diversion to Pit No. 5 powerhouse began May, 1, 1944. See schematic diagram for Pit and McCloud River basins.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115	103	80	56	77	2,560	465	148	160	130	117	118
2	128	94	60	53	81	1,990	355	176	153	131	121	116
3	120	92	87	53	92	1,670	457	175	153	130	116	113
4	120	90	653	52	87	1,340	241	178	151	123	116	122
5	117	87	98	51	84	1,280	329	174	169	128	113	118
6	119	87	68	51	91	1,750	285	172	160	123	115	114
7	117	88	70	51	92	1,870	184	170	160	120	119	114
8	113	91	61	51	94	1,190	186	171	153	128	121	114
9	115	92	58	59	98	826	260	168	147	125	119	118
10	114	90	57	82	101	676	214	166	149	121	115	116
11	118	89	56	61	104	510	181	163	149	123	118	117
12	117	87	54	55	105	626	177	163	148	123	113	117
13	115	91	53	56	103	516	169	202	150	124	115	118
14	118	112	51	94	471	637	164	183	148	123	116	116
15	117	92	52	1,050	756	685	171	176	140	122	116	116
16	116	89	51	968	1,010	884	155	174	142	124	121	115
17	117	90	52	109	1,470	1,240	148	170	142	124	117	117
18	113	90	56	85	1,500	1,090	145	167	139	123	117	117
19	115	99	52	78	1,120	909	141	168	141	122	132	121
20	117	90	52	76	3,510	857	136	332	139	116	137	118
21	119	89	52	81	6,270	525	133	212	136	121	126	120
22	117	87	52	88	9,150	558	133	207	131	119	122	114
23	112	94	52	84	11,000	416	126	197	128	116	122	115
24	113	95	56	81	11,300	625	123	183	130	119	118	120
25	111	93	63	80	9,560	513	124	185	131	121	121	120
26	113	92	66	77	8,130	347	122	175	133	119	118	119
27	114	96	69	72	6,090	292	122	174	133	117	121	117
28	113	90	66	71	4,850	379	121	168	131	115	121	121
29	112	100	61	105	3,510	443	121	167	128	115	119	115
30	108	97	58	113	-----	384	120	164	130	116	118	117
31	113	-----	55	79	-----	376	-----	163	-----	116	114	-----
TOTAL	3,586	2,776	2,471	4,122	80,906	27,964	5,808	5,591	4,304	3,777	3,694	3,513
MEAN	116	92.5	79.7	133	2,790	902	194	180	143	122	119	117
MAX	128	112	653	1,050	11,300	2,560	465	332	169	131	137	122
MIN	108	87	51	51	77	292	120	148	128	115	113	113
AC-FT	7,110	5,510	4,900	8,180	160,500	55,470	11,520	11,090	8,540	7,490	7,330	6,970
CAL YR 1967	TOTAL 195,673			MEAN 536		MAX 6,910		MIN 51		AC-FT 388,100		
WTR YR 1968	TOTAL 148,512			MEAN 406		MAX 11,300		MIN 51		AC-FT 294,600		

SACRAMENTO RIVER BASIN

11-3639.1. JAMES B. BLACK POWERPLANT NEAR BIG BEND, CALIF.

LOCATION.--Lat 40°59'15", long 121°58'35", in SW¼SE¼ sec.9, T.36 N., R.1 W., at powerplant on right bank of Pit River, 5.8 miles downstream from Big Bend.

RECORDS AVAILABLE.--December 1965 to September 1968.

GAGE.--Recorded output from powerplant turbines.

EXTREMES.--1965-68: Maximum daily discharge, 2,420 cfs July 15, 1966; no flow for several days each year.

REMARKS.--Water is diverted from McCloud Reservoir (see sta. no. 11-3677.4.) at SE¼SW¼ sec.22, T.38 N., R.2 W., to Iron Canyon Reservoir (see sta. no. 11-3639.2.) and thence in 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 furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	1,270	1,550	434	963	1,640	1,230	950	1,010	803	635	4.5
2	701	1,020	920	1,050	1,000	1,620	1,330	1,010	739	981	656	4.5
3	1,060	568	246	847	650	1,430	1,140	1,080	1,110	1,160	648	746
4	1,040	413	1,020	838	667	1,620	1,420	13	608	498	650	1,130
5	1,280	334	767	1,140	928	1,590	1,170	807	865	1,150	651	1,320
6	1,080	1,350	1,380	830	917	1,530	1,160	705	1,020	638	643	1,360
7	375	917	867	151	834	1,410	1,470	935	853	31	656	1,270
8	0	236	1,010	1,130	665	1,640	898	1,160	1,100	278	659	1,080
9	857	663	707	935	464	1,570	1,500	735	1,070	400	766	1,170
10	963	883	541	907	430	1,370	1,250	1,250	1,060	1,180	749	1,310
11	988	1,930	967	967	322	1,330	1,170	544	964	676	710	1,370
12	1,080	0	893	711	1,510	1,550	1,350	95	915	943	683	1,350
13	746	786	1,120	0	1,210	1,510	1,130	868	1,040	55	687	995
14	0	881	992	556	982	1,430	1,370	877	1,070	316	666	462
15	439	1,390	996	1,280	987	1,440	1,160	1,570	38	881	677	3.0
16	1,650	1,040	77	1,020	995	1,340	1,300	1,660	33	1,080	677	880
17	1,760	840	246	996	994	1,670	1,100	1,170	936	124	678	1,290
18	1,380	375	986	790	993	1,420	1,270	257	756	37	678	1,050
19	872	636	1,010	967	989	1,490	1,060	265	878	119	711	1,190
20	1,100	815	903	954	989	1,430	60	1,200	530	535	883	1,200
21	590	1,120	1,220	619	1,090	1,190	9.1	980	246	570	976	154
22	918	1,040	1,440	940	2,120	1,440	616	903	27	568	969	3.0
23	1,380	422	551	862	2,150	1,260	1,400	962	22	583	1,100	1,020
24	1,160	1,270	638	876	1,760	1,260	1,040	1,190	634	624	1,010	1,290
25	887	579	624	913	1,970	1,230	1,200	864	797	607	820	1,500
26	867	738	859	828	2,080	921	779	805	716	607	944	1,370
27	993	745	1,030	1,000	1,570	1,560	645	1,000	510	615	1,100	1,310
28	862	766	657	729	1,740	1,310	973	1,090	206	625	1,290	144
29	1,290	688	1,040	818	1,650	1,190	1,370	1,310	26	633	946	0
30	1,190	593	1,100	927	-----	1,190	920	863	20	623	1,250	905
31	1,330	-----	745	930	-----	1,450	-----	781	-----	642	71	-----
TOTAL	28,838	24,308	27,102	25,945	33,619	44,031	32,490.1	27,899	19,799	18,582	24,239	26,881.0
MEAN	930	810	874	837	1,159	1,420	1,083	900	660	599	782	896
MAX	1,760	1,930	1,550	1,280	2,150	1,670	1,500	1,660	1,110	1,180	1,290	1,500
MIN	0	0	77	0	322	921	9.1	13	20	31	71	0
AC-FT	57,200	48,210	53,760	51,460	66,680	87,330	64,440	55,340	39,270	36,860	48,080	53,320
CAL YR 1967	TOTAL 438,417.00		MEAN 1,201		MAX 2,280		MIN 0		AC-FT 869,600			
WTR YR 1968	TOTAL 333,733.10		MEAN 912		MAX 2,150		MIN 0		AC-FT 661,900			

11-3639.3. IRON CANYON CREEK BELOW IRON CANYON DAM, NEAR BIG BEND, CALIF.

LOCATION.--Lat 41°02'00", long 121°59'08", in NW¼SW¼ sec.28, T.37 N., R.1 W., on left bank 0.3 mile downstream from Iron Canyon Dam, and 4.1 miles west of Big Bend.

DRAINAGE AREA.--11.6 sq mi.

RECORDS AVAILABLE.--August 1966 to September 1968.

GAGE.--Digital water-stage recorder, 60° sharp-crested V-notch weir, and sharp-crested rectangular weir. Datum of gage is 2,461.52 ft above mean sea level (levels by Pacific Gas and Electric Co.).

EXTREMES.--Maximum discharge during year, 10 cfs Feb. 21 (gage height, 1.59 ft); minimum daily, 2.5 cfs Sept. 26. 1966-68: Maximum discharge, 39 cfs Mar. 16, 1967 (gage height, 1.84 ft); no flow July 15-18, 1967.

REMARKS.--Flow is completely regulated by Iron Canyon Dam (see sta. no. 11-3639.2.). There is inter-basin diversion from McCloud Reservoir (see sta. no. 11-3677.9.) to Iron Canyon Reservoir (see sta. no. 11-3639.2.), and these into a tunnel to James B. Black powerplant on the Pit River (see sta. no. 11-3639.1.). See schematic diagram for Pit and McCloud River basins.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	5.2	3.4	3.3	4.0	3.9	4.1	4.7	3.3	4.5	3.6	3.4
2	7.2	5.2	3.3	3.1	4.0	3.2	3.9	4.8	3.4	3.0	3.6	3.5
3	7.2	5.2	3.4	4.9	4.0	3.3	4.2	4.5	3.5	3.0	3.5	3.5
4	7.2	3.4	4.6	4.6	4.3	2.8	4.1	5.2	3.5	2.9	3.6	3.5
5	7.2	3.5	3.7	4.0	4.3	3.2	3.8	6.4	3.5	3.2	3.5	3.4
6	6.5	3.5	3.5	3.8	4.3	3.1	3.9	6.6	3.5	4.0	3.5	3.3
7	6.5	3.2	3.3	3.8	4.3	3.5	3.8	5.8	3.7	4.1	3.5	3.2
8	6.5	3.2	3.3	3.9	4.3	3.2	4.5	5.5	3.7	4.1	3.6	3.2
9	5.2	3.2	3.3	3.8	4.6	2.9	5.3	5.4	3.5	3.9	3.6	3.3
10	3.0	3.2	3.3	3.8	5.0	2.8	4.8	5.7	3.6	3.9	3.5	3.5
11	2.7	3.0	3.3	3.7	5.4	3.1	5.0	6.1	3.6	3.8	3.5	3.7
12	2.8	2.7	3.3	3.7	4.6	3.3	6.1	6.5	3.6	3.8	3.5	4.0
13	3.1	3.4	3.1	3.9	3.8	3.8	5.5	7.9	3.6	3.8	4.3	4.1
14	3.9	4.3	3.1	4.6	3.7	4.6	5.1	7.8	3.3	3.9	3.7	5.2
15	4.0	3.9	3.2	4.6	3.7	4.0	4.8	5.6	3.3	3.9	3.6	6.2
16	4.0	5.2	3.3	4.6	3.9	5.2	3.6	4.0	3.4	3.9	3.6	4.9
17	3.7	4.6	3.4	4.0	5.6	4.0	3.8	3.3	3.5	3.9	3.6	3.4
18	3.4	3.3	3.5	4.0	4.8	3.6	4.7	3.0	3.5	3.4	3.6	3.3
19	3.4	3.4	3.5	4.0	5.3	3.4	5.4	3.2	4.2	3.7	3.7	3.2
20	3.3	3.2	3.4	3.9	5.9	3.6	5.3	4.1	5.7	3.4	3.7	3.1
21	3.4	3.1	3.4	4.0	7.8	4.5	6.3	3.6	3.8	3.5	3.7	3.1
22	3.4	3.2	3.2	3.8	7.0	4.2	5.9	3.6	3.2	3.5	3.6	3.2
23	3.4	3.3	3.1	3.9	7.0	4.6	5.9	3.7	3.2	3.5	3.5	3.3
24	3.3	3.3	3.2	3.9	5.7	4.0	5.3	3.7	3.2	3.5	3.5	3.2
25	3.2	3.3	3.3	3.9	4.6	4.7	5.0	3.7	3.0	3.5	3.5	2.8
26	3.4	3.3	3.4	4.0	3.8	4.6	4.7	3.6	2.9	3.5	3.5	2.5
27	3.4	3.3	3.4	4.0	3.6	4.2	5.3	3.6	2.8	3.5	3.4	2.8
28	3.4	3.3	3.4	4.0	3.4	3.7	4.7	3.5	3.7	3.5	3.4	3.2
29	3.6	3.5	3.4	4.0	3.7	3.5	4.6	3.5	6.1	3.6	3.3	3.3
30	3.1	3.5	3.3	4.0	-----	3.7	5.0	3.6	6.3	3.5	3.3	3.4
31	3.2	-----	3.3	4.0	-----	3.5	-----	3.4	-----	3.5	3.3	-----
TOTAL	134.1	108.9	104.6	123.5	136.4	115.7	144.4	145.6	111.1	112.7	110.3	105.7
MEAN	4.33	3.63	3.37	3.98	4.70	3.73	4.81	4.70	3.70	3.64	3.56	3.52
MAX	7.2	5.2	4.6	4.9	7.8	5.2	6.3	7.9	6.3	4.5	4.3	6.2
MIN	2.7	2.7	3.1	3.1	3.4	2.8	3.6	3.0	2.8	2.9	3.3	2.5
AC-FT	266	216	207	245	271	229	286	289	220	224	219	210

CAL YR 1967 TOTAL 1,467.50

MEAN 4.02

MAX 15

MIN 0

AC-FT 2,910

WTR YR 1968 TOTAL 1,453.0

MEAN 3.97

MAX 7.9

MIN 2.5

AC-FT 2,880

SACRAMENTO RIVER BASIN

11-3650. PIT RIVER NEAR MONTGOMERY CREEK, CALIF.

LOCATION.--Lat 40°50'36", long 122°00'58", in SE¼ sec.31, T.35 N., R.1 W., on right bank 0.5 mile upstream from Potem Creek, 1.9 miles downstream from Pit No. 7 dam and powerhouse, and 5.0 miles west of town of Montgomery Creek.

DRAINAGE AREA.--4,951 sq mi, excluding Goose Lake basin.

RECORDS AVAILABLE.--October 1944 to September 1968 (monthly discharge only December 1964 to May 1965). Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is 1,036 ft above mean sea level (levels by Pacific Gas and Electric Co.). October 1944 to Feb. 17, 1963, at site 1.9 miles upstream at different datum. Feb. 17, 1963, to May 21, 1965, at site 2.7 miles upstream at different datum.

EXTREMES.--Maximum daily discharge during year, 22,800 cfs Feb. 23; minimum daily, 403 cfs June 23. 1944-68: Maximum discharge, 37,100 cfs Dec. 23, 1955 (gage height, 14.12 ft, site and datum then in use); minimum daily, 42 cfs July 22, 1967.

REMARKS.--Flow 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 Pit River began December 1965 (see sta. no. 11-3677.2.). See schematic diagram for Pit and McCloud River basins. Records represent flow through Pit No. 7 powerplant and spill from Pit No. 7 Reservoir. Records of chemical analyses for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

REVISIONS (water year).--1967 report: 1966.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,270	3,570	4,200	2,300	3,660	9,390	6,090	3,650	4,820	4,950	3,920	1,610
2	1,670	4,250	3,570	3,370	3,140	8,840	7,340	3,600	4,240	3,690	3,550	3,070
3	4,520	3,250	3,480	3,490	2,680	8,270	5,100	3,100	4,360	4,460	1,200	2,620
4	3,320	2,650	5,630	3,870	4,890	6,890	7,390	3,380	3,270	2,780	3,570	3,670
5	3,800	1,980	5,280	4,240	5,520	8,090	7,010	3,740	4,200	4,380	2,870	3,960
6	3,500	3,350	3,840	3,010	4,150	6,670	4,580	3,850	3,950	2,190	3,200	4,720
7	3,840	3,370	3,740	1,670	4,060	6,730	7,200	5,360	4,600	1,340	3,070	4,000
8	1,460	2,120	4,480	3,270	3,530	6,990	5,870	2,760	3,660	2,370	4,030	1,820
9	3,170	4,970	3,180	4,340	5,300	7,370	5,330	3,040	4,260	5,150	3,010	3,380
10	5,050	1,890	3,830	3,760	6,710	6,700	5,950	4,190	4,290	3,870	2,360	4,120
11	4,810	5,160	4,200	3,720	6,100	5,950	5,890	3,330	4,170	2,640	2,570	5,070
12	2,830	1,680	3,650	4,980	5,200	7,310	6,570	3,040	3,630	3,400	3,850	4,660
13	3,470	3,000	3,600	4,110	3,160	5,970	6,310	4,480	4,500	2,400	2,430	4,230
14	3,600	4,230	4,130	3,340	6,320	7,050	5,900	4,460	3,390	1,570	4,350	791
15	4,930	3,890	3,250	6,250	5,470	7,630	5,020	5,540	4,310	3,220	4,530	2,600
16	3,380	3,010	2,610	5,740	5,800	8,280	5,610	4,550	2,220	4,330	3,570	2,780
17	3,850	3,380	2,410	5,310	6,700	8,600	6,430	5,190	3,840	4,190	2,490	4,610
18	4,150	2,650	3,530	4,800	7,870	8,480	5,090	5,140	3,280	3,040	1,060	3,370
19	4,090	3,690	3,620	4,570	7,770	7,960	5,310	3,810	4,420	2,060	4,100	5,060
20	3,850	3,330	3,540	3,470	8,770	6,470	2,440	3,720	5,360	2,070	4,710	4,010
21	3,290	3,580	4,410	2,800	16,600	7,120	3,040	4,170	4,700	1,680	4,170	4,750
22	3,850	3,450	5,080	4,060	19,300	7,050	4,860	5,070	525	3,400	3,180	2,120
23	4,510	4,020	3,460	5,060	22,800	6,130	5,690	4,430	403	4,260	3,850	3,750
24	2,610	3,590	3,100	3,620	21,200	6,350	4,120	5,610	1,320	3,870	3,330	3,380
25	4,130	2,760	3,240	5,430	19,500	6,560	5,800	5,080	3,360	3,040	2,110	3,910
26	3,710	3,950	3,760	4,920	17,000	6,900	4,680	4,270	2,190	2,580	3,540	3,290
27	4,130	3,450	4,490	3,560	13,800	6,600	2,580	4,920	3,550	2,230	5,300	3,220
28	2,660	4,210	3,750	3,000	12,700	7,460	5,570	4,510	3,550	1,650	4,950	2,810
29	4,480	2,870	4,630	4,980	8,540	7,220	4,400	4,460	500	3,450	2,620	2,480
30	3,740	3,340	5,070	4,150	-----	5,860	4,080	5,990	883	3,850	4,170	3,190
31	2,940	-----	2,770	5,630	-----	7,410	-----	4,230	-----	2,710	1,980	-----
TOTAL	111,610	100,640	119,530	126,820	258,240	224,300	161,250	132,670	101,751	96,820	103,640	103,051
MEAN	3,600	3,355	3,856	4,091	8,905	7,235	5,375	4,280	3,392	3,123	3,343	3,435
MAX	5,050	5,160	5,630	6,250	22,800	9,390	7,390	5,990	5,360	5,150	5,300	5,070
MIN	1,460	1,680	2,410	1,670	2,680	5,860	2,440	2,760	403	1,340	1,060	791
AC-FT	221,400	199,600	237,100	251,500	512,200	444,900	319,800	263,100	201,800	192,000	205,600	204,400
CAL YR 1967	TOTAL 1,968,152		MEAN 5,392		MAX 16,600	MIN 42		AC-FT 3,904,000				
WTR YR 1968	TOTAL 1,640,322		MEAN 4,482		MAX 22,800	MIN 403		AC-FT 3,254,000				

SACRAMENTO RIVER BASIN

785

11-3675. McCLOUD RIVER NEAR McCLOUD, CALIF.

LOCATION.--Lat 41°11'20", long 122°03'50", in NE $\frac{1}{4}$ sec.34, T.39 N., R.2 W., on right bank 0.4 mile downstream from Angel Creek, and 6 miles southeast of McCloud.

DRAINAGE AREA.--358 sq mi.

RECORDS AVAILABLE.--April 1931 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 2,711.2 ft above mean sea level (river-profile survey). Prior to Oct. 16, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--37 years, 908 cfs (657,400 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,670 cfs Feb. 23 (gage height, 2.57 ft); minimum daily, 765 cfs Sept. 30.

1931-68: Maximum discharge, 11,800 cfs Dec. 21, 1955 (gage heights, 9.42 ft in gage well, 10.7 ft from floodmarks), from rating curve extended above 4,500 cfs on basis of slope-area measurement of maximum flow; minimum, 524 cfs Nov. 23, 24, 1932.

REMARKS.--Two small diversions above station for irrigation, and one 22-inch pipe line for town of McCloud and millpond. See schematic diagram for Pit and McCloud River basins.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project and reviewed by the Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	880	845	827	809	835	1,120	1,220	1,100	996	850	828	786
2	901	845	833	824	835	1,090	1,180	1,090	996	842	821	786
3	894	845	837	835	835	1,080	1,160	1,090	981	842	821	786
4	880	845	863	835	828	1,070	1,130	1,110	981	842	821	786
5	880	846	857	835	828	1,090	1,120	1,120	1,030	842	814	779
6	874	843	837	835	828	1,100	1,120	1,090	1,010	842	800	779
7	874	841	837	835	835	1,070	1,110	1,080	973	835	800	779
8	874	843	827	835	835	1,050	1,100	1,060	959	835	800	779
9	874	840	824	850	835	1,030	1,100	1,060	944	835	800	779
10	874	841	823	835	842	1,000	1,120	1,060	936	828	800	779
11	867	840	822	842	842	996	1,170	1,070	929	828	793	779
12	867	838	820	835	842	1,000	1,200	1,060	922	828	793	779
13	867	840	816	842	842	1,000	1,160	1,090	915	828	800	779
14	860	856	812	878	842	1,000	1,140	1,090	915	828	800	779
15	860	844	818	936	842	1,020	1,140	1,060	907	828	800	779
16	860	839	820	907	842	1,050	1,130	1,030	900	821	800	779
17	859	838	820	871	915	1,040	1,100	1,030	893	821	800	779
18	857	839	823	864	951	1,010	1,090	1,030	893	821	800	779
19	857	842	816	857	973	996	1,080	1,050	886	821	807	779
20	855	836	814	850	1,070	988	1,070	1,300	878	821	807	772
21	856	834	813	850	1,390	981	1,060	1,250	878	814	800	772
22	855	833	812	850	1,500	981	1,040	1,150	871	814	800	772
23	853	832	812	850	1,620	988	1,040	1,120	871	814	800	772
24	852	831	811	842	1,550	996	1,030	1,090	864	814	793	772
25	851	830	811	842	1,370	1,070	1,030	1,090	864	814	793	772
26	850	828	813	842	1,250	1,150	1,040	1,080	864	807	793	772
27	849	829	815	842	1,200	1,100	1,050	1,060	857	821	793	772
28	849	829	815	842	1,160	1,090	1,060	1,060	857	828	793	772
29	847	837	814	842	1,130	1,110	1,060	1,040	850	828	786	772
30	846	833	811	842	-----	1,150	1,090	1,030	850	828	786	765
31	845	-----	809	835	-----	1,170	-----	1,010	-----	828	786	-----
TOTAL	26,767	25,162	25,482	26,289	29,467	32,586	33,140	33,650	27,470	25,648	24,828	23,314
MEAN	863	839	822	848	1,016	1,051	1,105	1,085	916	827	801	777
MAX	901	856	863	936	1,620	1,170	1,220	1,300	1,030	850	828	786
MIN	845	828	809	809	828	981	1,030	1,010	850	807	786	765
AC-FT	53,090	49,910	50,540	52,140	58,450	64,630	65,730	66,740	54,490	50,870	49,250	46,240
CAL YR 1967	TOTAL 382,576		MEAN 1,048		MAX 2,150		MIN 785		AC-FT 758,800			
WTR YR 1968	TOTAL 333,803		MEAN 912		MAX 1,620		MIN 765		AC-FT 662,100			

Peak discharge (base, 1,500 cfs).--Feb. 23 (1415 hrs) 1,670 cfs (2.57 ft).

SACRAMENTO RIVER BASIN

11-3677.2. McCLOUD-IRON CANYON DIVERSION TUNNEL NEAR McCLOUD, CALIF.

LOCATION.--Lat 41°08'06", long 122°04'26", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.22, T.38 N., R.2 W., on left bank of McCloud Reservoir, 8.8 miles southeast of McCloud.

RECORDS AVAILABLE.--December 1965 to September 1968.

GAGE.--None. Graphic water-stage recorders on McCloud Reservoir and Iron Canyon Reservoir used to compute record.

EXTREMES.--1965-68: Maximum daily discharge, 1,890 cfs May 20-22, June 1-3, 10, 1967; no flow for several days each year.

REMARKS.--Water is diverted from McCloud Reservoir (see sta. no. 11-3677.4.) to Iron Canyon Reservoir (see sta. no. 11-3639.2.) and thence into James B. Black powerplant (see sta. no. 11-3639.1.) on the Pit River. Diversion began Dec. 1, 1965. See schematic diagram for Pit and McCloud River basins.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	730	1,060	783	789	850	1,620	1,370	1,090	1,030	567	700	750
2	688	1,060	854	783	886	1,610	1,380	1,100	998	634	702	671
3	728	951	779	811	848	1,590	1,370	1,110	1,010	656	707	683
4	766	823	766	817	804	1,560	1,370	951	969	623	709	734
5	823	781	777	844	800	1,570	1,370	954	964	757	709	794
6	860	766	815	860	815	1,560	1,370	932	978	752	711	848
7	815	844	858	779	819	1,540	1,340	964	969	678	714	886
8	723	768	860	741	802	1,530	1,330	1,010	985	646	714	899
9	668	700	834	796	759	1,530	1,320	985	996	634	728	919
10	716	318	794	819	714	1,520	1,340	1,040	1,010	707	737	958
11	766	0	779	832	668	1,470	1,330	980	1,010	714	737	985
12	783	429	794	825	734	1,450	1,340	866	993	746	737	1,020
13	804	1,170	827	728	838	1,450	1,350	896	1,000	678	734	1,000
14	739	1,090	864	644	872	1,440	1,350	909	1,000	651	734	924
15	654	1,090	870	693	884	1,430	1,350	998	866	688	746	811
16	697	1,090	796	809	896	1,410	1,330	1,110	759	732	746	807
17	842	1,030	673	846	907	1,410	1,320	1,120	794	683	746	856
18	958	938	666	852	928	1,420	1,310	1,020	796	623	728	872
19	953	846	732	850	943	1,420	1,310	915	813	581	732	898
20	954	815	772	862	956	1,410	1,210	973	779	597	752	922
21	917	827	807	844	998	1,390	1,070	1,020	714	610	777	804
22	884	852	884	825	1,120	1,390	1,020	1,020	634	623	798	695
23	922	817	919	829	1,290	1,390	1,060	1,010	567	623	825	737
24	964	813	848	834	1,400	1,370	1,090	1,040	600	636	844	802
25	945	832	774	836	1,480	1,350	1,110	1,040	644	644	840	886
26	930	777	759	838	1,580	1,300	1,100	1,010	668	661	850	936
27	905	757	787	846	1,620	1,300	1,040	1,030	664	668	870	973
28	888	750	809	842	1,620	1,350	1,020	1,040	613	676	905	844
29	884	743	809	821	1,620	1,340	1,070	1,080	556	683	907	709
30	958	725	836	823	-----	1,330	1,110	1,060	509	688	936	739
31	985	-----	842	836	-----	1,350	-----	1,030	-----	695	838	-----
TOTAL	25,849	24,462	24,967	25,154	29,451	44,800	37,450	31,303	24,888	20,554	23,913	25,362
MEAN	834	815	805	811	1,016	1,445	1,248	1,010	830	663	771	845
MAX	985	1,170	919	862	1,620	1,620	1,380	1,120	1,030	757	936	1,020
MIN	654	0	666	644	668	1,300	1,020	866	509	567	700	671
AC-FT	51,270	48,520	49,520	49,890	58,420	88,860	74,280	62,090	49,360	40,770	47,430	50,300
CAL YR 1967	TOTAL 442,850.00		MEAN 1,213		MAX 1,890		MIN 0		AC-FT 878,400			
WTR YR 1968	TOTAL 338,153.00		MEAN 924		MAX 1,620		MIN 0		AC-FT 670,700			

11-3677.6. McCLOUD RIVER BELOW McCLOUD DAM, NEAR McCLOUD, CALIF.

LOCATION.--Lat 41°07'44", long 122°04'08", in SW¼NE¼ sec.27, T.38 N., R.2 W., on left bank 0.1 mile downstream from Lizard Creek, 0.6 mile downstream from McCloud Dam, and 9 miles southeast of McCloud.

DRAINAGE AREA.--404 sq mi.

RECORDS AVAILABLE.--April 1966 to September 1968 (low flow only).

GAGE.--Digital water-stage recorder. Datum of gage is 2,401.76 ft above mean sea level (levels by Pacific Gas and Electric Co.). Prior to Oct. 21, 1967, graphic water-stage recorder at same site and datum.

REMARKS.--Flow regulated by McCloud Reservoir (see sta. no. 11-3677.4.) since November 1965. Most of McCloud River runoff is diverted from reservoir through tunnel to Iron Canyon Reservoir (see sta. no. 11-3639.2.) in Pit River basin. This station records fishwater release. See schematic diagram for Pit and McCloud River basins.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	199	192	191	153	127	47	43	113	183	196	199	201
2	199	192	191	151	134	46	42	113	182	195	200	204
3	199	192	191	149	134	45	42	117	182	193	201	197
4	199	192	193	137	135	44	42	119	182	193	201	194
5	199	192	193	143	127	44	54	119	183	193	201	194
6	199	192	192	146	122	44	62	119	183	193	202	193
7	197	192	191	145	115	44	76	120	182	193	201	192
8	197	192	191	146	110	61	76	120	182	193	201	191
9	199	192	188	146	102	61	76	123	182	194	202	193
10	199	193	185	150	96	72	76	124	182	194	202	194
11	199	194	187	152	96	81	76	125	182	194	202	193
12	199	194	188	152	90	88	72	125	184	194	199	191
13	199	190	188	151	84	88	70	126	186	194	198	194
14	199	192	188	153	84	89	70	132	186	194	198	194
15	199	191	176	131	90	70	80	137	186	194	197	194
16	199	190	158	94	96	46	87	160	186	195	196	193
17	199	192	158	103	101	46	87	170	186	195	196	193
18	199	192	158	113	102	44	92	170	186	196	196	192
19	197	192	158	123	102	43	104	171	189	196	196	191
20	197	192	158	131	77	52	108	171	191	198	196	193
21	195	192	158	131	58	57	108	172	191	198	196	194
22	195	191	158	128	54	63	111	173	191	198	196	193
23	195	191	158	125	56	67	112	173	191	199	196	192
24	195	191	158	124	56	67	112	173	192	200	194	191
25	195	191	158	124	54	54	112	173	193	201	193	189
26	195	191	158	121	53	43	112	173	194	197	195	189
27	194	190	156	120	53	43	112	173	194	195	196	189
28	194	190	153	120	51	42	112	173	194	196	194	188
29	194	191	153	120	49	43	112	173	194	196	193	187
30	193	191	153	119	-----	43	113	173	196	197	195	187
31	193	-----	153	119	-----	43	-----	180	-----	198	194	-----
TOTAL	6,110	5,749	5,339	4,120	2,608	1,720	2,551	4,583	5,615	6,062	6,126	5,780
MEAN	197	192	172	133	89.9	55.5	85.0	148	187	196	198	193
MAX	199	194	193	153	135	89	113	180	196	201	202	204
MIN	193	190	153	94	49	42	42	113	182	193	193	187
AC-FT	12,120	11,400	10,590	8,170	5,170	3,410	5,060	9,090	11,140	12,020	12,150	11,460
CAL YR 1967	TOTAL	-	MEAN	-	MAX	-	MIN	-	AC-FT	-		
WTR YR 1968	TOTAL	6,363	MEAN	154	MAX	204	MIN	42	AC-FT	111,800		

SACRAMENTO RIVER BASIN

11-3678. McCloud River at Ah-Di-Na, near McCloud, Calif.

LOCATION.--Lat 41°06'39", long 122°05'42", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.33, T.38 N., R.2 W., on right bank at Ah-Di-Na, 1.8 miles downstream from Squirrel Creek, 3.9 miles downstream from McCloud Dam, and 9.6 miles south of McCloud.

DRAINAGE AREA.--427 sq mi.

RECORDS AVAILABLE.--October 1964 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 2,160 ft (from topographic map). Prior to Oct. 18, 1967, graphic water-stage recorder at same site and datum.

EXTREMES.--Maximum discharge during year, 890 cfs Feb. 21 (gage height, 3.07 ft); minimum daily, 141 cfs Jan. 31, 1964-68: Maximum discharge, 9,660 cfs Dec. 22, 1964 (gage height, 9.43 ft in gage well, from floodmarks), from rating curve extended above 3,000 cfs; minimum daily, 141 cfs Jan. 31, 1968.
Flood of Dec. 21, 1955, reached a stage of 12.5 ft (discharge, 16,800 cfs, from rating curve extended above 3,000 cfs).

REMARKS.--Flow regulated by McCloud Reservoir (see sta. no. 11-3677.5.) since November, 1965. Diversion to Iron Canyon Reservoir (see sta. no. 11-3639.2.) through McCloud River diversion tunnel (see sta. no. 11-3677.2.) started Dec. 1, 1965. See schematic diagram for Pit and McCloud River basins.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project and reviewed by the Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	211	202	220	162	146	224	205	163	207	206	205	207
2	223	201	223	160	157	204	187	161	205	204	205	211
3	214	201	228	157	162	190	171	164	205	202	206	213
4	211	201	272	144	165	183	159	165	205	201	206	213
5	208	202	250	149	158	187	164	163	213	202	207	212
6	208	201	217	151	156	178	167	162	207	201	208	211
7	208	202	208	152	161	165	159	160	204	201	206	211
8	205	204	203	152	160	159	162	159	203	201	206	210
9	205	202	203	155	160	156	167	161	202	202	208	212
10	205	205	205	153	160	159	172	162	201	202	207	212
11	205	206	206	153	165	161	176	162	200	202	206	211
12	205	210	206	152	161	175	170	160	201	202	204	210
13	202	211	205	155	151	178	157	168	204	202	202	212
14	202	223	204	183	145	207	151	168	203	202	204	214
15	202	214	191	228	147	228	158	172	202	202	203	211
16	202	211	165	173	162	241	162	189	201	202	201	211
17	202	210	166	153	328	230	155	201	201	202	202	211
18	202	212	166	150	336	191	162	200	200	202	202	210
19	202	214	165	151	330	167	166	203	203	202	205	208
20	201	215	165	157	412	161	169	239	205	203	210	210
21	203	220	165	158	738	161	166	219	204	204	206	211
22	203	219	163	161	609	164	166	215	204	205	203	211
23	204	219	162	163	632	175	167	212	204	205	202	209
24	204	219	162	162	512	182	165	209	204	205	200	208
25	204	218	165	161	387	211	164	210	204	207	200	206
26	203	217	166	156	317	206	164	207	205	203	201	205
27	204	218	169	149	287	192	164	205	205	200	202	205
28	201	218	168	147	264	181	164	203	205	201	201	204
29	200	224	168	145	243	188	164	201	205	202	199	203
30	201	223	166	144	-----	201	164	200	205	202	201	203
31	200	-----	163	141	-----	207	-----	204	-----	203	200	-----
TOTAL	6,350	6,342	5,885	4,877	7,911	5,812	4,987	5,767	6,117	6,280	6,318	6,285
MEAN	205	211	190	157	273	187	166	186	204	203	204	210
MAX	223	224	272	228	738	241	205	239	213	207	210	214
MIN	200	201	162	141	145	156	151	159	200	200	199	203
AC-FT	12,600	12,580	11,670	9,670	15,690	11,530	9,890	11,440	12,130	12,460	12,530	12,470
Mean a	1,013	1,002	974	996	1,487	1,498	1,406	1,302	1,057	957	938	892
Ac-ft a	62,270	59,600	59,890	61,260	85,510	92,090	83,670	80,030	62,900	58,830	57,660	53,080

CAL YR 1967 TOTAL 91,648 MEAN 251 MAX 1,440 MIN 148 AC-FT 181,800 MEAN a 1,455 AC-FT a 1,053,000
WTR YR 1968 TOTAL 72,931 MEAN 199 MAX 738 MIN 141 AC-FT 144,700 MEAN a 1,125 AC-FT a 816,800

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

SACRAMENTO RIVER BASIN

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11-3680. MCCLOUD RIVER ABOVE SHASTA LAKE, CALIF.

LOCATION.--Lat 40°57'30", long 122°13'05", in NW¼ sec.28, T.36 N., R.3 W., on right bank just upstream from Shasta Lake, 0.2 mile downstream from Big Bollibokka Creek, and 11.3 miles east of Lamoine.

DRAINAGE AREA.--604 sq mi.

RECORDS AVAILABLE.--October 1945 to September 1968. Published as "above Shasta Reservoir" prior to 1950.

GAGE.--Graphic water-stage recorder. Datum of gage is 1,100.00 ft above mean sea level (levels by Bureau of Reclamation).

AVERAGE DISCHARGE.--20 years (1945-65, prior to regulation by McCloud Reservoir and diversion to Pit River basin), 1,699 cfs (1,230,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4,790 cfs Feb. 21 (gage height, 14.91 ft); minimum daily, 261 cfs July 28, Sept. 19-21, 27-30.

1945-68: Maximum discharge, 45,200 cfs Dec. 22, 1955 (gage height, 28.20 ft), from rating curve extended above 6,400 cfs on basis of slope-area measurement of maximum flow; minimum daily, 261 cfs July 28, Sept. 19-21, 27-30, 1968.

REMARKS.--Records excellent. Flow partially regulated by McCloud Reservoir (see sta. no. 11-3677.4) since Nov. 3, 1965. Diversions to Iron Canyon Reservoir (see sta. no. 11-3639.2) began Dec. 1, 1965. See schematic diagram for Pit and McCloud River basins. Records of chemical analyses for the water year 1968 are published in Part 2 of this report.

COOPERATION.--Water-stage recorder graph and 10 discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	301	297	330	313	402	1,070	727	370	356	297	281	273
2	388	293	352	301	470	954	673	361	356	293	281	277
3	374	293	406	297	620	875	625	361	352	289	273	277
4	325	293	730	273	637	816	592	356	352	281	269	273
5	321	297	744	281	643	816	570	356	430	281	265	277
6	321	297	435	273	709	764	559	348	392	277	265	277
7	313	293	406	273	856	745	537	343	361	273	265	273
8	317	305	366	273	842	679	515	338	348	273	269	273
9	317	309	343	305	862	637	515	334	338	269	269	269
10	317	301	338	317	875	608	510	334	334	269	265	273
11	309	297	338	289	868	581	510	338	334	269	265	273
12	313	301	334	281	842	655	505	334	330	273	265	273
13	313	305	325	305	778	739	475	379	325	269	265	269
14	309	370	317	573	703	1,360	455	356	321	273	269	273
15	309	317	313	1,240	655	1,670	450	348	321	273	273	273
16	309	305	277	1,080	727	2,020	450	352	321	269	273	269
17	309	301	281	797	2,030	1,960	435	361	317	269	273	269
18	309	301	297	598	2,110	1,460	425	361	313	265	273	269
19	309	309	281	490	1,930	1,160	425	374	313	269	297	261
20	305	297	281	455	2,590	1,000	430	559	313	269	330	261
21	309	301	273	450	4,190	914	420	440	313	269	305	261
22	317	301	277	505	3,850	849	406	420	309	269	285	265
23	313	301	281	532	4,030	830	406	420	305	269	273	265
24	305	301	281	510	3,180	804	402	402	305	273	273	265
25	305	297	297	500	2,340	894	392	406	301	273	269	265
26	305	297	321	475	1,840	862	392	388	301	269	269	265
27	305	305	370	435	1,540	804	388	379	297	265	273	261
28	301	305	388	415	1,350	752	384	374	297	261	273	261
29	301	356	379	450	1,200	739	379	366	297	269	269	261
30	297	356	348	430	-----	739	374	361	297	269	269	261
31	297	-----	325	397	-----	727	-----	356	-----	269	269	-----
TOTAL	9,743	9,201	11,034	14,113	43,669	29,483	14,326	11,575	9,849	8,455	8,512	8,062
MEAN	314	307	356	455	1,506	951	478	373	328	273	275	269
MAX	388	370	744	1,240	4,190	2,020	727	559	430	297	330	277
MIN	297	293	273	273	402	581	374	334	297	261	265	261
AC-FT	19,320	18,250	21,890	27,990	86,620	58,480	28,420	22,960	19,540	16,770	16,880	15,990
CAL YR 1967	TOTAL	292,153		MEAN	800	MAX	8,370	MIN	273	AC-FT	579,500	
WTR YR 1968	TOTAL	178,022		MEAN	486	MAX	4,190	MIN	261	AC-FT	353,100	

SACRAMENTO RIVER BASIN

RESERVOIRS IN PIT AND MCCLOUD RIVER BASINS, CALIF.

11-3614. LAKE BRITTON NEAR BURNEY.--Lat 41°01'20", long 121°40'32", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.30, T.37 N., R.3 E., at control house on right bank 200 ft above dam on Pit River, 1.1 miles downstream from Clark Creek, 1.3 miles northwest of Burney Falls, and 9 miles north of Burney. Drainage area, 4,606 sq mi. Records available, October 1965 to September 1968. Gage is a remote telemark read once daily. Datum of gage is at mean sea level (levels by Pacific Gas and Electric Co.). Maximum contents during year, 14,600 acre-ft Feb. 24 (elevation, 2,757.10 ft); minimum, 719 acre-ft Feb. 1 (elevation, 2,744.75 ft). Maximum contents during period 1965-68, 14,600 acre-ft Feb. 24, 1968 (elevation, 2,757.10 ft); minimum, 719 acre-ft Feb. 1, 1968 (elevation, 2,744.75 ft).

Reservoir is formed by gravity-type concrete dam. Storage began July 15, 1925. Maximum storage, 40,600 acre-ft. Record of contents furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project. See schematic diagram for Pit and McCloud River basins.

11-3677.4. MCCLOUD RESERVOIR NEAR MCCLOUD.--Lat 41°08'06", long 122°04'26", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.22, T.38 N., R.2 W., on McCloud Dam near spillway on McCloud River, 200 ft downstream from Panther Creek, and 8.8 miles southeast of McCloud. Drainage area, 403 sq mi. Records available, October 1965 to September 1968. Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Pacific Gas and Electric Co.). Maximum contents during year, 34,900 acre-ft Aug. 10 (elevation, 2,679.40 ft); minimum, 16,400 acre-ft Jan. 12 (elevation, 2,634.90 ft). Maximum contents during the period 1965-68, 35,400 acre-ft Dec. 14, 1965, May 20, 22, 1967 (elevation, 2,680.40 ft); minimum since storage pool first filled, 15,700 acre-ft Jan. 22, 1967 (elevation, 2,632.60 ft).

Reservoir is formed by a rockfill dam completed in 1965. Capacity, 36,500 acre-ft between elevations 2,571.30 (invert of sluice pipe) and 2,682.50 ft (top of radial gates). No dead storage. Water is diverted from McCloud Reservoir through a diversion tunnel to Iron Canyon Reservoir and thence into the Pit River. Record of contents furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project. See schematic diagram for Pit and McCloud River basins.

11-3639.2. IRON CANYON RESERVOIR NEAR BIG BEND.--Lat 41°02'41", long 121°58'52", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.21, T.37 N., R.1 W., in control house on left bank 500 ft above Iron Canyon Dam on Iron Canyon Creek, 3.7 miles northwest of Big Bend. Drainage area, 11.5 sq mi. Records available, December 1965 to September 1968. Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Pacific Gas and Electric Co.). Maximum contents during year, 22,800 acre-ft July 24 (elevation, 2,662.07 ft); minimum, 3,150 acre-ft Mar. 22 (elevation, 2,592.60 ft). Maximum contents during period 1965-68, 22,800 acre-ft July 24, 1968 (elevation, 2,662.07 ft); minimum since initial operation of reservoir, 2,860 acre-ft May 23, 24, 29, June 2, 7, 9, 14, 23, 24, 1966 (elevation, 2,590.00 ft).

Reservoir is formed by a rockfill dam completed in 1965. Capacity is 24,200 acre-ft between elevations 2,525.00 (invert of sluice pipe) and 2,665.00 ft (crest of spillway). No dead storage. Water is diverted from McCloud Reservoir through a tunnel to Iron Canyon Reservoir and thence into the Pit River via a powerplant. Record of contents furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project. See schematic diagram for Pit and McCloud River basins.

MONTH-END ELEVATIONS AND CONTENTS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

			Change in			Change in			Change in
Date	Elevation (feet)	Contents (acre- feet)	contents (acre- feet)	Elevation (feet)	Contents (acre- feet)	contents (acre- feet)	Elevation (feet)	Contents (acre- feet)	contents (acre- feet)
Lake Britton				McCloud Reservoir			Iron Canyon Reservoir		
Sept. 30.....	2,753.95	10,700	-	2,648.30	21,100	-	2,627.00	9,750	-
Oct. 31.....	2,747.60	3,570	-7,130	2,643.90	19,500	-1,600	2,612.20	6,210	-3,540
Nov. 30.....	2,749.85	5,980	+2,410	2,639.60	18,000	-1,500	2,622.40	8,540	+2,330
Dec. 31.....	2,747.70	3,680	-2,300	2,636.00	16,700	-1,300	2,613.80	6,540	-2,000

Calendar year 1967.....	-	-	-1,590	-	-	-7,000	-	-	-240

Jan. 31.....	2,747.00	2,950	-730	2,640.90	18,400	+1,700	2,617.80	7,420	+880
Feb. 28.....	2,754.10	10,900	+7,950	2,669.00	29,800	+11,400	2,594.00	3,320	-4,100
Mar. 31.....	2,751.10	7,370	-3,530	2,649.40	21,500	-8,300	2,594.00	3,320	0
Apr. 30.....	2,749.65	5,760	-1,610	2,648.20	21,000	-500	2,611.00	5,980	+2,660
May 31.....	2,749.30	5,380	-380	2,664.00	27,500	+6,500	2,630.80	10,800	+4,820
June 30.....	2,755.65	12,800	+7,420	2,667.10	28,900	+1,400	2,652.60	20,700	+9,900
July 31.....	2,754.20	11,000	-200	2,678.50	34,500	+5,600	2,662.00	22,800	+2,100
Aug. 31.....	2,753.80	10,500	-500	2,673.90	32,200	-2,300	2,650.90	17,800	-5,000
Sept. 30.....	2,753.00	9,560	-940	2,651.90	22,500	-9,700	2,633.50	11,600	-6,200

Water year 1967-68.....	-	-	-1,140	-	-	+1,400	-	-	+1,850

SACRAMENTO RIVER BASIN

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11-3700. SHASTA LAKE NEAR REDDING, CALIF.

LOCATION.--Lat 40°43'10", long 122°25'10", in NW¼ sec.15, T.33 N., R.5 W., in Shasta Dam on Sacramento River near right bank, 2 miles downstream from Squaw Creek, and 9.5 miles north of Redding.

DRAINAGE AREA.--6,421 sq mi, excluding Goose Lake basin.

RECORDS AVAILABLE.--November 1942 to September 1968. Prior to 1950, published as Shasta Reservoir near Redding.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Prior to July 10, 1944, staff gage at various sites near dam at same datum.

EXTREMES.--Maximum contents during year, 3,908,700 acre-ft May 30, 31, June 1 (elevation, 1,044.35 ft); minimum, 2,669,800 acre-ft Sept. 30 (elevation, 992.56 ft).

1942-68: Maximum contents, 4,550,300 acre-ft May 19, 1967 (elevation, 1,066.94 ft); minimum since reservoir first filled, 2,144,900 acre-ft Nov. 22, 1961 (elevation, 965.54 ft).

REMARKS.--Reservoir 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 (bottom of lowest set of river outlets) and 1,067.0 ft (top of flashboard gates on drum-type spillway gates) above mean sea level. Dead storage, 115,700 acre-ft. Installation of flashboard gates on top of drum gates completed Nov. 12, 1964. Gates increased elevation to 1,067.0 ft, total capacity, 4,552,100 acre-ft. All water passes down the Sacramento River, most of which is through powerplant at dam. Records, including extremes, represent total contents at 2400 hours. See schematic diagram for Pit and McCloud River basins.

COOPERATION.--Records furnished by Bureau of Reclamation.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN THOUSANDS OF ACRE-Feet)

960	2,046.8	1,010	3,051.8
970	2,226.1	1,020	3,286.9
980	2,416.0	1,030	3,533.5
990	2,616.6	1,050	4,063.1
1,000	2,828.5	1,067	4,552.1

CONTENTS, IN THOUSANDS OF ACRE-Feet, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,497.7	3,323.9	3,235.8	3,161.5	3,248.5	3,525.2	3,806.6	3,888.8	3,908.7	3,706.2	3,295.8	2,944.0
2	3,490.7	3,320.2	3,237.0	3,157.3	3,253.8	3,521.6	3,816.4	3,888.5	3,907.3	3,694.5	3,283.3	2,934.7
3	3,487.9	3,313.9	3,241.8	3,153.3	3,257.6	3,523.1	3,821.2	3,888.2	3,906.0	3,686.4	3,266.0	2,924.2
4	3,481.9	3,308.1	3,253.3	3,150.0	3,265.3	3,524.9	3,830.5	3,886.4	3,901.9	3,674.2	3,253.0	2,916.2
5	3,476.7	3,302.4	3,259.5	3,148.4	3,274.7	3,529.7	3,839.0	3,885.6	3,901.9	3,663.5	3,239.2	2,908.9
6	3,470.2	3,297.3	3,260.5	3,144.4	3,281.9	3,530.7	3,842.5	3,885.6	3,899.8	3,648.5	3,225.6	2,903.1
7	3,465.4	3,293.2	3,259.0	3,138.8	3,290.1	3,534.7	3,850.5	3,886.9	3,896.6	3,631.7	3,211.8	2,896.5
8	3,455.0	3,287.4	3,257.6	3,135.7	3,297.3	3,535.0	3,856.4	3,882.1	3,891.2	3,618.4	3,200.2	2,884.6
9	3,448.0	3,286.9	3,252.8	3,140.2	3,306.7	3,535.0	3,859.0	3,877.8	3,887.7	3,609.1	3,186.7	2,875.8
10	3,455.0	3,280.7	3,249.5	3,140.6	3,319.7	3,535.0	3,863.8	3,876.7	3,883.7	3,598.6	3,172.3	2,868.5
11	3,441.6	3,280.7	3,246.6	3,139.5	3,330.4	3,533.5	3,869.4	3,873.7	3,879.4	3,584.8	3,157.7	2,863.3
12	3,435.1	3,274.4	3,242.5	3,140.4	3,338.9	3,542.9	3,874.8	3,870.0	3,874.0	3,571.6	3,144.6	2,857.1
13	3,429.2	3,271.0	3,238.4	3,141.8	3,341.6	3,551.2	3,879.9	3,871.6	3,871.1	3,556.8	3,129.9	2,850.6
14	3,423.7	3,272.0	3,235.8	3,151.4	3,351.3	3,565.9	3,884.5	3,871.3	3,865.7	3,540.1	3,119.9	2,836.2
15	3,420.3	3,270.1	3,230.8	3,172.3	3,358.1	3,582.5	3,887.4	3,875.1	3,861.4	3,526.4	3,111.3	2,822.5
16	3,413.6	3,266.2	3,223.7	3,186.7	3,370.1	3,610.6	3,890.4	3,875.3	3,852.1	3,514.8	3,100.8	2,810.7
17	3,407.7	3,263.6	3,217.5	3,195.9	3,407.4	3,637.1	3,895.0	3,876.7	3,846.2	3,503.2	3,088.3	2,802.7
18	3,401.8	3,260.5	3,213.4	3,200.9	3,436.6	3,657.3	3,896.6	3,879.1	3,839.3	3,489.4	3,074.7	2,791.9
19	3,396.6	3,258.1	3,209.9	3,204.7	3,468.7	3,672.9	3,898.2	3,881.0	3,834.2	3,473.2	3,065.5	2,784.2
20	3,391.4	3,255.7	3,204.9	3,205.6	3,509.0	3,685.9	3,893.9	3,883.9	3,830.8	3,458.2	3,060.7	2,774.5
21	3,383.8	3,253.3	3,201.6	3,205.6	3,579.7	3,698.6	3,889.8	3,885.6	3,826.8	3,442.1	3,053.4	2,765.9
22	3,378.2	3,249.9	3,201.4	3,208.2	3,648.5	3,710.1	3,890.4	3,888.5	3,814.6	3,428.4	3,043.3	2,753.1
23	3,375.0	3,248.5	3,197.1	3,212.3	3,715.4	3,719.5	3,892.5	3,889.8	3,801.3	3,417.3	3,034.2	2,743.0
24	3,367.2	3,246.1	3,190.2	3,214.4	3,701.0	3,729.3	3,891.2	3,894.4	3,789.1	3,405.7	3,024.6	2,732.4
25	3,363.0	3,241.8	3,184.1	3,218.4	3,666.1	3,740.3	3,891.7	3,896.8	3,780.7	3,392.2	3,011.8	2,722.4
26	3,357.4	3,239.6	3,179.6	3,221.3	3,621.7	3,750.8	3,891.7	3,899.0	3,768.2	3,377.2	3,002.1	2,712.1
27	3,353.8	3,237.0	3,178.4	3,221.1	3,580.5	3,759.8	3,887.7	3,900.9	3,756.9	3,362.0	2,997.3	2,702.1
28	3,346.4	3,235.8	3,174.0	3,223.4	3,552.2	3,770.1	3,890.9	3,903.3	3,746.3	3,345.5	2,990.3	2,692.2
29	3,342.3	3,237.3	3,173.5	3,234.6	3,536.5	3,780.1	3,890.1	3,904.1	3,730.3	3,333.1	2,979.0	2,681.5
30	3,336.5	3,237.3	3,173.5	3,238.9	-----	3,787.6	3,889.3	3,908.7	3,713.8	3,321.2	2,970.0	2,669.8
31	3,329.2	-----	3,167.8	3,246.1	-----	3,797.9	-----	3,908.7	-----	3,307.4	2,957.9	-----
(a)	1,021.75	1,017.95	1,015.00	1,018.30	1,030.12	1,040.20	1,043.63	1,044.35	1,037.01	1,020.85	1,005.86	992.56
(b)	-176.6	-91.9	-69.5	+78.3	+290.4	+261.4	+91.4	+91.4	-194.9	-406.4	-349.5	-288.1
(c)	7,410	3,710	3,130	2,550	2,980	4,520	9,490	10,530	14,370	14,930	9,690	9,370
MAX	3,497.7	3,323.9	3,260.5	3,246.1	3,715.4	3,797.9	3,898.2	3,908.7	3,908.7	3,706.2	3,295.8	2,944.0
MIN	3,329.2	3,235.8	3,167.8	3,135.7	3,248.5	3,521.6	3,806.6	3,870.0	3,713.8	3,307.4	2,957.9	2,669.8
CAL YR 1967	b 44.7			MAX 4,550.3			MIN 3,143.7					
WTR YR 1968	b -836.0			MAX 3,908.7			MIN 2,669.8					

a Elevation, in feet, at end of month.

b Change in contents, in thousands of acre-feet.

c Evaporation, in acre-feet.

SACRAMENTO RIVER BASIN

11-3705. SACRAMENTO RIVER AT KESWICK, CALIF.

LOCATION.--Lat 40°36'05", long 122°26'35", in SW¼NW¼ sec.28, T.32 N., R.5 W., on right bank 0.4 mile upstream from Middle Creek, 0.8 mile downstream from Keswick Dam, 1.6 miles downstream from Keswick, and 10 miles downstream from Shasta Dam.

DRAINAGE AREA.--6,468 sq mi, excluding Goose Lake basin.

RECORDS AVAILABLE.--October 1938 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is 479.81 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1939, at site 1.5 miles upstream at datum 20.2 ft higher and Oct. 1, 1939, to Apr. 30, 1942, at site 1.5 miles upstream at datum 15.2 ft higher. Since Aug. 20, 1960, auxiliary graphic water-stage recorder at city of Redding pumping 2.1 miles downstream.

AVERAGE DISCHARGE.--30 years, 8,320 cfs (6,023,000 acre-ft per year), adjusted for change in contents and evaporation from Shasta Lake and transbasin diversion into Keswick Reservoir.

EXTREMES.--Maximum discharge during year, 53,300 cfs Feb. 24 (gage height, 27.46 ft); minimum daily, 5,920 cfs Mar. 22.

1938-43 (prior to regulation by Shasta Lake): Maximum discharge, 186,000 cfs Feb. 23, 1940 (gage height, 47.2 ft, site and datum then in use), from rating curve extended above 75,000 cfs on basis of peak discharge at Kennet plus 4,000 cfs estimated inflow; minimum observed, 2,730 cfs Aug. 22, 1939.

1944-68: Maximum discharge, 78,800 cfs Feb. 21, 1958 (gage height, 31.55 ft); minimum, 154 cfs May 15, 1948.

REMARKS.--Records good. Flow regulated by Shasta Lake beginning Dec. 30, 1943 (see sta. no. 11-3700). Diurnal fluctuations from Shasta powerplant re-regulated by Keswick Reservoir (capacity, 4,170 acre-ft between normal operation elevations 579.0 and 586.0 ft) and powerplant. No diversion for irrigation between Shasta Dam and station at Keswick. Since December 1963, water is released from Whiskeytown Lake (see sta. no. 11-3717) at lat 40°37'03", long 122°31'31", through a tunnel to Spring Creek powerplant (see sta. no. 11-3716) and then into Keswick Reservoir. See schematic diagram for Pit and McCloud River basins.

COOPERATION.--Fourteen discharge measurements furnished by Bureau of Reclamation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9,600	9,310	7,230	7,750	6,710	22,800	6,040	10,000	9,580	12,900	14,200	9,790
2	9,600	8,180	7,210	7,720	6,810	18,000	6,030	10,000	9,550	13,500	14,200	9,790
3	9,600	8,240	7,250	7,710	6,730	13,500	6,030	10,000	9,600	13,300	14,200	9,790
4	9,600	8,110	7,240	7,770	6,690	12,100	6,040	10,000	10,100	13,300	14,200	9,790
5	9,600	7,250	7,230	7,190	6,680	12,100	6,040	10,000	10,100	13,900	14,200	9,790
6	9,600	7,250	7,750	6,650	6,660	12,100	6,040	10,000	10,100	13,700	14,200	9,790
7	9,600	7,250	8,330	6,640	6,640	12,100	6,030	10,000	10,700	13,600	14,200	9,790
8	9,600	7,250	8,260	6,620	6,640	12,100	6,020	10,000	10,700	13,600	14,200	9,790
9	9,600	7,220	8,280	6,640	6,640	12,000	7,090	10,000	10,700	13,700	14,200	9,790
10	9,600	7,250	8,290	6,720	6,640	11,000	7,120	10,000	10,700	13,700	14,200	9,790
11	9,600	7,210	8,290	6,670	6,630	11,000	7,120	10,000	10,600	13,700	14,200	9,790
12	9,600	7,220	8,280	6,670	6,630	10,000	7,100	9,600	10,500	14,300	14,200	9,790
13	9,600	7,250	8,280	6,670	6,640	10,100	7,120	9,550	10,400	14,200	14,200	9,790
14	9,600	7,250	8,260	6,750	6,640	9,100	7,120	9,010	10,500	14,200	13,600	9,790
15	9,600	7,250	8,250	6,720	6,640	9,060	7,340	8,440	10,800	14,200	13,300	9,790
16	9,600	7,220	8,250	6,680	6,670	8,280	7,610	8,400	10,800	14,200	12,800	9,790
17	9,600	7,260	8,220	6,650	6,980	7,120	8,170	8,410	10,800	14,200	12,200	9,790
18	9,600	7,210	8,210	6,650	6,720	6,530	8,270	8,410	10,700	14,200	12,200	9,790
19	9,600	7,170	8,210	6,640	6,770	6,530	9,240	8,410	11,500	14,200	12,000	9,790
20	9,600	7,140	8,190	6,640	7,490	5,990	9,470	8,410	11,500	14,200	10,400	9,790
21	9,700	7,180	8,190	6,640	9,800	5,970	9,450	8,410	11,500	14,200	10,200	9,790
22	9,600	7,180	8,190	6,600	12,300	5,920	9,480	8,400	11,500	14,200	10,100	9,790
23	9,600	7,180	8,180	6,650	18,400	5,940	9,890	8,400	11,500	14,200	10,100	9,790
24	9,700	7,180	8,140	6,640	50,500	5,950	9,700	8,400	11,800	14,200	10,100	9,790
25	9,700	7,180	8,210	6,640	52,400	5,930	9,430	8,400	12,100	14,200	10,100	9,790
26	9,700	7,180	8,230	6,640	52,500	5,990	9,370	8,400	13,000	14,200	10,100	9,790
27	9,700	7,190	8,230	6,650	46,500	6,010	9,380	8,400	12,900	14,200	10,100	9,790
28	9,700	7,190	8,250	6,650	37,100	5,990	9,360	8,400	12,900	14,200	10,100	9,790
29	9,700	7,200	8,250	6,760	27,300	5,990	9,370	8,400	12,900	14,200	10,100	9,790
30	9,700	7,200	8,260	6,780	-----	6,010	9,370	8,400	12,900	14,200	10,100	9,790
31	9,700	-----	8,290	6,730	-----	6,030	-----	8,770	-----	14,200	10,100	-----
TOTAL	298,500	221,350	249,930	211,530	441,450	287,240	235,840	281,420	332,930	433,000	382,300	293,700
MEAN	9,629	7,378	8,062	6,824	15,220	9,266	7,861	9,078	11,100	13,970	12,330	9,790
MAX	9,700	9,310	8,330	7,770	52,500	22,800	9,890	10,000	13,000	14,300	14,200	9,790
MIN	9,600	7,140	7,210	6,600	6,630	5,920	6,020	8,400	9,550	12,900	10,100	9,790
AC-FT	592,100	439,000	495,700	419,600	875,600	569,700	467,800	558,200	660,400	858,800	758,300	582,500
Mean a	4,316	4,410	5,354	6,918	18,860	12,140	7,448	6,315	4,422	3,715	3,651	3,791
Ac-fta	265,400	262,400	329,200	425,400	1,085,000	746,700	443,200	388,300	263,100	228,400	224,500	225,600

CAL YR 1967 TOTAL 4,096,940 MEAN 11,220 MAX 42,500 MIN 3,820 AC-FT 8,126,000 MEAN a 9,232 AC-FT a 6,684,000
WTR YR 1968 TOTAL 3,669,190 MEAN 10,030 MAX 52,500 MIN 5,920 AC-FT 7,278,000 MEAN a 6,732 AC-FT a 4,887,000

a Adjusted for change in contents and evaporation from Shasta Lake and transbasin diversion into Keswick Reservoir.

SACRAMENTO RIVER BASIN

793

11-3710. CLEAR CREEK AT FRENCH GULCH, CALIF.

LOCATION (revised).--Lat 40°41'42", long 122°38'08", on right bank 1,200 ft downstream from French Gulch, 0.3 mile south of town of French Gulch, and 15 miles northwest of Redding.

DRAINAGE AREA.--115 sq mi.

RECORDS AVAILABLE.--July 1950 to September 1968.

GAGE.--Digital water-stage recorder and concrete control. Datum of gage is 1,320.60 ft above mean sea level, datum of 1929, supplementary adjustment of 1956. Prior to Dec. 28, 1959, graphic water-stage recorder at datum 3.00 ft higher. Dec. 28, 1959, to Oct. 7, 1964, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--18 years, 209 cfs (151,300 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,190 cfs Feb. 23 (gage height, 8.26 ft); minimum daily, 8.0 cfs July 29.
1950-68: Maximum discharge, 7,600 cfs Dec. 22, 1964 (gage height, 13.70 ft); minimum, 3.9 cfs Sept. 6-8, 1955.

REMARKS.--Records good. No large diversion above station. See schematic diagram for Pit and McCloud River basins. Records of suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	22	40	60	103	415	179	72	41	17	10	11
2	36	22	48	55	143	371	168	71	41	17	20	11
3	45	22	75	50	232	328	157	68	42	16	14	10
4	28	22	148	48	256	303	151	67	40	15	11	10
5	30	23	223	46	270	289	146	66	45	14	11	11
6	28	25	88	43	319	270	139	66	49	14	10	10
7	26	24	79	42	391	256	133	64	43	13	10	10
8	25	25	67	43	375	240	129	62	39	13	11	9.8
9	24	28	57	45	359	224	123	61	37	12	11	9.8
10	24	28	55	58	339	208	120	60	36	12	10	10
11	23	29	57	53	312	199	119	60	34	12	9.2	10
12	23	28	55	48	284	229	116	59	33	11	8.8	10
13	23	29	49	94	262	230	112	63	33	11	9.3	11
14	22	68	44	490	239	230	108	66	32	12	11	12
15	22	41	45	656	230	230	107	60	31	12	12	13
16	22	33	44	413	256	312	105	56	28	11	12	12
17	21	31	42	266	624	339	102	54	26	11	13	11
18	20	30	45	203	647	303	100	53	25	11	13	10
19	21	30	42	162	895	273	98	58	24	10	18	11
20	21	29	39	141	1,440	252	94	72	23	10	25	11
21	24	29	39	150	1,500	241	93	64	23	9.7	27	12
22	28	28	39	178	1,670	232	91	62	23	9.6	23	11
23	26	28	40	178	2,030	221	88	57	22	8.9	20	11
24	25	28	47	164	1,500	212	88	56	21	8.9	17	11
25	24	28	59	152	1,080	219	85	60	20	9.0	17	10
26	24	28	76	138	818	207	82	55	19	8.9	21	10
27	24	28	95	124	658	195	79	51	18	8.5	21	10
28	23	30	98	120	552	185	77	47	17	8.2	18	9.7
29	23	43	93	135	490	180	75	46	17	8.0	15	9.3
30	23	46	77	122	-----	178	73	44	17	8.1	13	9.4
31	21	-----	66	108	-----	174	-----	43	-----	8.1	12	-----
TOTAL	767	905	2,071	4,585	18,274	7,745	3,337	1,843	899	349.9	453.3	317.0
MEAN	24.7	30.2	66.8	148	630	250	111	59.5	30.0	11.3	14.6	10.6
MAX	45	68	223	656	2,030	415	179	72	49	17	27	13
MIN	18	22	39	42	103	174	73	43	17	8.0	8.8	9.3
AC-FT	1,520	1,800	4,110	9,090	36,250	15,360	6,620	3,660	1,780	694	899	629
CAL YR 1967	TOTAL 84,597		MEAN 232		MAX 2,470		MIN 14		AC-FT 167,800			
WTR YR 1968	TOTAL 41,546.2		MEAN 114		MAX 2,030		MIN 8.0		AC-FT 82,410			

Peak discharge (base, 1,500 cfs).--Feb. 23 (0430 hrs) 2,190 cfs (8.26 ft).

KLAMATH RIVER BASIN

11-5254.3. JUDGE FRANCIS CARR POWERPLANT NEAR FRENCH GULCH, CALIF.

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

RECORDS AVAILABLE.--April 1963 to September 1968.

GAGE.--Recorded powerplant output.

EXTREMES.--1963-68: Maximum daily discharge, 3,598 cfs for many days in June and July 1968; no flow May 6-9, 1963 and Oct. 25, 1966.

REMARKS.--Water is diverted from Trinity River at NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.8, T.33 N., R.8 W., through a tunnel to powerplant and then into Whiskeytown Lake (see sta. no. 11-3717.). See schematic diagram for Pit and McCloud River basins.

COOPERATION.--Records furnished by Bureau of Reclamation and rounded to meet Geological Survey editorial procedures.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,500	2,470	1,310	1,160	732	845	480	3,260	3,520	3,570	3,580	1,320
2	2,560	1,510	1,300	1,180	732	876	480	3,380	3,530	3,570	3,580	1,350
3	2,570	1,360	1,290	1,160	750	830	471	3,450	3,570	3,510	3,580	1,030
4	2,560	1,280	1,300	1,170	710	816	519	3,400	3,570	3,580	3,580	992
5	2,490	1,290	1,290	964	722	807	568	3,400	3,520	3,600	3,570	988
6	2,450	1,070	1,290	805	707	812	568	3,400	3,520	3,600	3,570	989
7	2,520	1,300	1,290	802	692	809	612	3,370	3,560	3,600	3,570	952
8	2,500	1,220	1,330	794	777	791	613	3,370	3,560	3,600	3,560	1,030
9	2,510	1,170	1,310	797	699	825	924	3,440	3,540	3,600	3,560	965
10	2,510	1,160	1,270	882	765	797	992	3,460	3,540	3,600	3,560	951
11	2,510	1,180	1,220	815	772	778	999	3,470	3,540	3,600	3,560	976
12	2,470	1,220	1,330	771	775	836	1,110	3,470	3,540	3,600	3,560	974
13	2,440	1,220	1,310	780	763	874	1,250	3,480	3,540	3,600	3,550	968
14	2,480	1,210	1,320	771	755	875	1,130	3,480	3,550	3,600	3,550	849
15	2,530	1,170	1,270	810	751	869	1,340	3,500	3,570	3,600	3,550	780
16	2,550	1,180	1,320	724	746	688	1,690	3,500	3,600	3,600	3,550	808
17	2,470	1,200	1,260	709	778	665	2,180	3,400	3,600	3,590	3,090	889
18	2,560	1,330	1,350	789	774	424	2,540	3,520	3,600	3,600	3,060	895
19	2,560	1,230	1,290	766	794	502	3,220	3,440	3,600	3,590	2,950	925
20	2,550	1,110	1,220	712	1,110	581	3,250	3,530	3,600	3,590	1,680	977
21	2,470	1,110	1,350	722	945	285	3,290	3,540	3,600	3,590	1,360	948
22	2,470	1,180	1,270	713	1,140	511	3,260	3,480	3,570	3,580	1,220	948
23	2,490	1,230	1,200	732	1,110	466	3,260	3,470	3,560	3,590	1,300	948
24	2,470	1,230	1,100	716	1,360	475	3,260	3,530	3,550	3,590	1,330	950
25	2,470	1,230	1,130	721	1,140	429	3,260	3,550	3,570	3,590	1,160	1,150
26	2,640	1,290	1,120	753	978	445	3,260	3,530	3,570	3,590	1,460	947
27	2,540	1,300	1,120	718	795	429	3,260	3,500	3,570	3,590	1,300	600
28	2,490	1,300	1,080	689	812	433	3,260	3,520	3,600	3,590	1,290	582
29	2,510	1,300	1,210	748	789	447	3,260	3,510	3,600	3,580	1,350	525
30	2,440	1,290	1,110	700	-----	480	3,260	3,520	3,600	3,590	1,340	757
31	2,370	-----	1,180	738	-----	477	-----	3,520	-----	3,580	1,370	-----
TOTAL	77,650	38,340	38,740	25,311	24,373	20,177	57,566	107,390	106,960	111,260	82,290	27,963
MEAN	2,505	1,278	1,250	816	840	651	1,919	3,464	3,565	3,589	2,655	932
MAX	2,640	2,470	1,350	1,180	1,360	876	3,290	3,550	3,600	3,600	3,580	1,350
MIN	2,370	1,070	1,080	689	692	285	471	3,260	3,520	3,510	1,160	525
AC-FT	154,000	76,050	76,840	50,200	48,340	40,020	114,200	213,000	212,200	220,700	163,200	55,460
CAL YR 1967	TOTAL 645,712		MEAN 1,769		MAX 3,322		MIN 463		AC-FT 1,281,000			
WTR YR 1968	TOTAL 718,020		MEAN 1,962		MAX 3,600		MIN 285		AC-FT 1,424,000			

SACRAMENTO RIVER BASIN

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11-3716. SPRING CREEK POWERPLANT AT KESWICK, CALIF.

LOCATION.--Lat 40°37'41", long 122°27'59", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.18, T.32 N., R.5 W., at powerplant on Spring Creek, 0.4 mile northwest of Keswick, and 4.9 miles northwest of Redding.

RECORDS AVAILABLE.--December 1963 to September 1968.

GAGE.--Discharge computed from powerplant output.

EXTREMES.--1963-68: Maximum daily discharge, 3,987 cfs July 19, 1968; minimum daily, 10 cfs Dec. 15, 1963.

REMARKS.--Water is released from Whiskeytown Lake (see sta. no. 11-3717.) at lat 40°37'03", long 122°31'31", through a tunnel to powerplant and then into Keswick Reservoir. See schematic diagram for Pit and McCloud River basins.

COOPERATION.--Records furnished by Bureau of Reclamation and rounded to meet Geological Survey editorial procedures.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,570	2,350	1,500	1,340	1,050	2,000	679	3,410	3,490	3,900	3,950	1,130
2	2,560	1,430	1,520	1,370	1,010	1,970	682	3,470	3,560	3,880	3,970	1,280
3	2,670	1,170	1,830	1,370	1,090	2,000	708	3,780	3,580	3,790	3,970	1,900
4	2,930	1,270	1,800	1,370	1,090	2,000	671	3,770	3,520	3,780	3,950	1,920
5	2,590	1,330	1,600	1,180	1,080	2,000	843	3,730	3,500	3,810	3,920	1,910
6	2,450	1,060	1,630	992	1,170	2,020	833	3,770	3,480	3,800	3,910	1,910
7	2,550	1,110	1,680	988	1,330	2,000	859	3,050	3,500	3,880	3,890	1,940
8	2,530	1,130	1,650	1,010	1,620	2,060	862	3,020	3,530	3,930	3,890	1,910
9	2,560	1,130	1,640	1,030	1,240	2,020	1,210	3,020	3,530	3,910	3,910	1,860
10	2,570	1,180	1,640	1,190	1,220	2,060	1,130	3,060	3,520	3,830	3,890	1,930
11	2,540	1,200	1,620	1,070	1,270	2,020	1,180	3,000	3,560	3,840	3,970	2,030
12	2,510	1,200	1,650	1,070	1,310	2,020	1,270	3,000	3,530	3,840	3,930	1,900
13	2,520	1,180	1,650	1,060	1,310	2,050	1,360	3,010	3,540	3,910	3,930	1,900
14	2,510	1,300	1,600	1,200	1,300	2,040	1,250	3,010	3,530	3,900	3,930	824
15	2,410	1,320	1,650	1,210	1,310	2,060	1,560	3,020	3,550	3,900	3,880	837
16	2,450	1,330	1,560	1,170	1,150	1,190	1,770	3,010	3,570	3,820	3,870	833
17	2,390	1,610	1,630	1,490	1,380	1,180	2,620	2,990	3,570	3,840	3,380	816
18	2,370	1,750	1,520	1,500	1,400	1,030	2,830	3,040	3,610	3,950	2,900	827
19	2,460	1,690	1,640	1,510	1,430	1,310	3,260	2,950	3,810	3,990	2,770	843
20	2,550	1,640	1,710	1,510	1,450	1,020	3,390	2,990	3,810	3,880	1,510	829
21	2,450	1,700	1,640	1,460	1,650	917	3,330	2,990	3,810	3,880	1,420	829
22	2,530	1,770	1,660	1,460	1,550	959	3,420	2,950	3,810	3,890	1,360	831
23	2,580	1,760	1,620	1,500	1,960	904	3,430	2,940	3,800	3,920	1,330	831
24	2,550	1,770	1,630	1,490	2,110	947	3,390	3,190	3,800	3,910	1,340	820
25	2,600	1,710	1,580	1,040	2,010	773	3,400	3,510	3,790	3,910	1,190	819
26	2,600	1,710	1,600	1,050	2,030	737	3,440	3,530	3,790	3,910	1,350	865
27	2,890	1,690	1,620	1,050	2,060	715	3,530	3,520	3,800	3,910	1,690	1,470
28	2,540	1,700	1,600	1,020	2,010	735	3,610	3,520	3,810	3,910	1,360	1,480
29	2,620	1,700	1,620	1,070	2,000	739	3,450	3,510	3,810	3,980	1,210	1,470
30	2,820	1,700	1,660	1,060	-----	696	3,420	3,510	3,790	3,930	1,040	705
31	2,480	-----	1,510	1,020	-----	683	-----	3,510	-----	3,940	1,150	-----
TOTAL	79,350	44,590	50,460	37,850	42,590	44,855	63,387	100,780	109,300	120,470	87,760	39,449
MEAN	2,560	1,486	1,628	1,221	1,469	1,447	2,113	3,251	3,643	3,886	2,831	1,315
MAX	2,930	2,350	1,830	1,510	2,110	2,060	3,610	3,780	3,810	3,990	3,970	2,030
MIN	2,370	1,060	1,500	988	1,010	683	671	2,940	3,480	3,780	1,040	705
AC-FT	157,400	88,440	100,100	75,070	84,480	88,970	125,700	199,900	216,800	238,900	174,100	78,250
CAL YR 1967	TOTAL 778,108		MEAN 2,132		MAX 3,634		MIN 727		AC-FT 1,543,000			
WTR YR 1968	TOTAL 820,841		MEAN 2,243		MAX 3,990		MIN 671		AC-FT 1,628,000			

SACRAMENTO RIVER BASIN

11-3717. WHISKEYTOWN LAKE NEAR IGO, CALIF.

LOCATION.--Lat 40°37'03", long 122°31'31", at outlet works to Spring Creek powerplant on Clear Creek, 1.8 miles downstream from Whiskey Creek, and 7.8 miles northeast of Igo.

DRAINAGE AREA.--200 sq mi.

RECORDS AVAILABLE.--May 1963 to September 1968. Prior to October 1964 published as Whiskeytown Reservoir near Igo.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

EXTREMES.--Maximum contents during year, 238,500 acre-ft Oct. 3, 26 (elevation, 1,209.19 ft); minimum, 201,800 acre-ft Mar. 29 (elevation, 1,197.18 ft).
1963-68: Maximum contents, 245,200 acre-ft Dec. 23, 1964 (elevation, 1,211.27 ft); minimum since reservoir was first filled, 188,700 acre-ft Feb. 10, 1964 (elevation, 1,192.60 ft).

REMARKS.--Reservoir is formed by earth- and rockfill dam. Storage began in May 1963. Capacity, 241,100 acre-ft between elevations 1,100.00 (minimum operating level) and 1,210.00 ft (crest of spillway). No dead storage. Transbasin water enters the reservoir through Judge Francis Carr powerplant (see sta. no. 11-5254.3) and is released through Spring Creek Tunnel to Spring Creek powerplant (see sta. no. 11-3716) and Keswick Reservoir. Records, including extremes, represent contents at 2400 hours. See schematic diagram for Pit and McCloud River basins.

COOPERATION.--Records furnished by Bureau of Reclamation.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

1,015	714	1,080	15,100
1,020	994	1,100	27,500
1,030	1,800	1,120	46,700
1,040	3,060	1,140	74,000
1,050	4,900	1,180	155,300
1,060	7,420	1,220	274,400

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	237.8	237.2	225.0	210.1	202.8	224.2	202.4	202.9	231.0	236.9	236.6	236.6
2	238.4	237.1	225.2	209.9	203.3	223.1	202.5	203.4	231.3	236.8	236.5	236.5
3	238.5	237.4	224.7	209.6	203.5	221.9	202.4	203.4	231.8	236.5	236.5	234.6
4	237.9	237.3	225.3	209.4	203.7	220.5	202.6	203.2	232.3	236.6	236.4	232.6
5	237.6	237.2	225.3	209.1	203.9	219.1	202.5	203.0	232.7	236.7	236.4	230.6
6	237.6	237.1	225.1	208.9	204.1	217.6	202.4	202.8	233.1	236.9	236.4	228.6
7	237.6	237.5	224.7	208.6	204.0	216.1	202.3	203.9	233.6	237.0	236.4	226.6
8	237.5	237.7	224.2	208.4	203.4	214.4	202.2	205.1	234.0	236.8	236.6	224.8
9	237.5	237.7	223.7	208.5	203.4	212.8	202.0	206.4	234.2	236.8	236.6	223.0
10	237.4	237.5	223.1	208.6	203.4	211.0	202.1	207.7	234.6	236.9	236.7	221.0
11	237.4	237.4	222.5	208.2	203.3	209.1	202.2	209.0	234.8	236.9	236.6	219.0
12	237.3	237.4	222.0	207.8	203.2	207.9	202.3	210.5	235.0	236.9	236.5	217.2
13	237.0	237.8	221.4	208.0	202.9	206.6	202.4	212.2	235.3	236.9	236.5	215.5
14	236.9	238.1	220.9	209.2	202.6	205.2	202.5	213.6	235.7	236.8	236.5	215.5
15	237.1	237.9	220.3	210.4	202.3	203.7	202.4	214.9	236.1	236.8	236.5	215.2
16	237.3	237.6	219.9	210.7	202.8	204.0	202.5	216.3	236.5	236.9	236.6	215.1
17	237.5	236.8	219.4	210.0	204.6	204.2	202.2	217.6	237.0	237.0	235.9	215.1
18	238.0	236.1	219.3	209.2	205.4	203.9	202.2	219.2	237.4	236.9	236.1	215.1
19	238.2	235.2	218.7	208.2	207.1	203.3	202.5	220.7	237.5	236.7	236.4	215.1
20	238.2	234.1	217.7	207.1	210.5	203.2	202.6	222.4	237.5	236.7	237.2	215.2
21	238.3	233.0	217.3	206.1	213.6	202.7	203.0	224.1	237.7	236.7	237.0	215.4
22	238.3	231.7	216.6	205.2	218.6	202.5	203.0	225.5	237.6	236.7	236.8	215.5
23	238.3	230.7	216.0	204.2	222.9	202.3	203.1	226.8	237.4	236.6	236.7	215.6
24	238.2	229.6	215.1	203.1	225.6	202.0	203.2	227.9	237.3	236.6	236.6	215.8
25	238.1	228.7	214.3	202.9	227.0	202.0	203.3	228.6	237.1	236.7	236.6	216.4
26	238.5	227.8	213.7	202.7	227.2	202.0	203.3	229.0	237.1	236.7	236.8	216.6
27	237.9	227.1	212.9	202.3	226.6	202.0	203.2	229.3	237.0	236.7	236.1	214.8
28	237.7	226.3	212.2	202.6	225.8	201.9	202.9	229.7	236.9	236.7	235.9	212.9
29	237.6	225.9	211.6	203.1	225.0	201.8	202.9	230.0	236.9	236.6	235.9	211.0
30	237.0	225.3	210.7	203.2	-----	201.9	202.9	230.4	237.1	236.6	236.2	211.1
31	236.9	-----	210.3	203.2	-----	202.0	-----	230.7	-----	236.6	236.5	-----
(a)	1,208.69	1,204.99	1,200.06	1,197.66	1,204.90	1,197.24	1,197.55	1,206.72	1,208.75	1,208.59	1,208.56	1,200.33
(b)	-1.3	-11.6	-15.0	-7.1	+21.8	-23.0	+0.9	+27.8	+6.4	-0.5	-0.1	-25.4
(c)	610	330	170	180	210	540	1,050	1,220	1,740	2,160	1,480	1,330
MAX	238.5	238.1	225.3	210.7	227.2	224.2	203.3	230.7	237.7	237.0	237.2	236.6
MIN	236.9	225.3	210.3	202.3	202.3	201.8	202.0	202.8	231.0	236.5	235.9	211.0
CAL YR 1967	b +20.6		MAX 238.9		MIN 189.4							
WTR YR 1968	b -27.1		MAX 238.5		MIN 201.8							

a Elevation, in feet, at end of month.

b Change in contents, in thousands of acre-feet.

c Evaporation, in acre-feet.

SACRAMENTO RIVER BASIN

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11-3720. CLEAR CREEK NEAR IGO, CALIF.

LOCATION.--Lat 40°30'50", long 122°31'20", on left bank at highway bridge on Redding-Igo road 1.0 mile northeast of Igo, 8.3 miles southwest of Redding, and 10.4 miles upstream from mouth.

DRAINAGE AREA.--228 sq mi.

RECORDS AVAILABLE.--October 1940 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 672 ft above mean sea level. Prior to Sept. 28, 1962, graphic water-stage recorder, at same site and datum.

AVERAGE DISCHARGE.--28 years, 416 cfs (301,200 acre-ft per year), adjusted for storage and diversions.

EXTREMES.--Maximum discharge during year, 1,430 cfs Feb. 22 (gage height, 5.09 ft); minimum daily, 50 cfs June 13, Sept. 17.

1940-63 (prior to regulation by Whiskeytown Reservoir): Maximum discharge, 24,500 cfs Dec. 21, 1955 (gage height, 13.75 ft); minimum, 8.6 cfs Sept. 4, 6, 7, 1950.

1963-68: Maximum discharge, 9,940 cfs Dec. 22, 1964 (gage height, 9.23 ft); minimum daily, 37 cfs for many days in August and September 1966.

REMARKS.--Records excellent. Flow regulated by Whiskeytown Lake since May 1963 (see sta. no. 11-3717). Trans-basin diversion from Trinity River through Judge Francis Carr powerplant to Whiskeytown Lake began in April 1963 (see sta. no. 11-5254.3). Diversions from Whiskeytown Lake to Spring Creek powerplant (see sta. no. 11-3716) began in December 1963. See schematic diagram for Pit and McCloud River basins. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	75	100	79	158	122	93	59	59	54	54	53
2	71	97	118	55	308	112	86	59	59	54	54	53
3	67	98	186	55	243	104	78	59	60	54	54	53
4	65	98	182	55	190	101	75	59	59	54	54	53
5	65	99	146	54	162	95	74	58	62	54	54	53
6	65	100	112	54	153	93	71	58	61	54	54	53
7	65	97	142	54	137	93	70	58	58	54	54	53
8	65	100	115	55	121	87	70	58	55	54	54	52
9	65	99	105	58	113	85	68	58	58	54	54	53
10	63	98	102	139	104	81	68	59	64	54	54	53
11	63	98	100	76	94	77	67	59	59	54	54	52
12	63	99	100	68	87	98	67	61	58	54	54	52
13	63	102	98	96	84	160	66	89	50	54	54	52
14	63	117	98	215	87	169	65	71	57	54	54	53
15	63	100	95	170	86	145	65	65	57	54	54	52
16	63	99	95	109	132	202	64	61	57	55	54	51
17	63	95	98	86	597	181	65	61	55	53	54	50
18	63	96	102	75	259	148	65	60	56	53	54	51
19	63	97	100	70	425	130	64	62	56	53	54	51
20	63	96	98	66	440	120	64	68	56	53	57	51
21	64	95	98	64	525	110	64	63	56	53	56	51
22	65	95	98	62	967	102	64	64	55	53	54	51
23	65	95	102	60	665	98	63	63	55	53	54	51
24	65	95	105	59	366	93	64	62	54	53	54	51
25	64	95	105	57	254	93	63	62	54	53	54	51
26	64	95	102	57	202	87	62	62	54	53	54	51
27	64	94	102	56	169	85	61	60	54	53	54	51
28	64	94	102	66	144	81	60	60	54	53	54	51
29	64	126	100	156	131	79	60	60	55	53	53	51
30	64	111	98	156	-----	77	59	59	54	53	53	51
31	64	-----	98	135	-----	77	-----	60	-----	54	52	-----
TOTAL	1,992	2,955	3,402	2,617	7,403	3,385	2,025	1,917	1,701	1,661	1,675	1,554
MEAN	64.3	98.5	110	84.4	255	109	67.5	61.8	56.7	53.6	54.0	51.8
MAX	71	126	186	215	967	202	93	89	64	55	57	53
MIN	63	75	95	54	84	77	59	58	50	53	52	50
AC-FT	3,950	5,860	6,750	5,190	14,680	6,710	4,020	3,800	3,370	3,290	3,320	3,080
Mean a	107	118	247	376	1,266	539	294	321	273	378	252	29.7
Ac-ft a	6,570	7,010	15,190	23,120	72,810	33,170	17,490	19,720	16,220	23,240	15,510	1,770
CAL YR 1967	TOTAL 46,096		MEAN 126		MAX 880		MIN 63		AC-FT 91,430	Mean a 532	Ac-ft a 385,260	
WTR YR 1968	TOTAL 32,287		MEAN 88.2		MAX 967		MIN 50		AC-FT 64,040	Mean a 347	Ac-ft a 251,820	

a Adjusted from change in contents and evaporation from Whiskeytown Lake, diversion from Trinity River through Judge Francis Carr powerplant and diversion to Spring Creek powerplant.

SACRAMENTO RIVER BASIN

11-3720.6. CHURN CREEK BELOW NEWTOWN CREEK, NEAR REDDING, CALIF.

LOCATION.--Lat 40°38'17", long 122°22'02", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.7, T.32 N., R.4 W., on left bank 100 ft downstream from Newtown Creek, 0.1 mile upstream from Oasis Road bridge, and 4.2 miles north of Redding.

DRAINAGE AREA.--11.9 sq mi.

RECORDS AVAILABLE.--October 1965 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 640 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 645 cfs Mar. 13 (gage height, 5.41 ft); no flow for several months. 1965-68: Maximum discharge, 1,300 cfs Dec. 5, 1966 (gage height, 6.66 ft); no flow for several months in each year.

Flood of Dec. 22, 1964, reached a stage of 7.68 ft from floodmarks on right bank (discharge, 4,000 cfs, from station above Newtown Creek adjusted for intervening drainage area).

REMARKS.--Records good. Small diversion above station for domestic supply.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	3.9	3.1	80	22	12	2.2	.43			
2		0	7.5	3.0	156	18	11	1.8	.43			
3		0	52	2.7	114	16	8.6	1.5	.56			
4		0	26	2.7	85	14	8.0	1.4	.51			
5		0	17	2.7	60	13	7.5	1.4	2.0			
6		0	8.6	2.7	44	12	6.9	1.2	2.3			
7		0	43	2.7	34	22	6.3	1.2	1.3			
8		0	13	2.7	25	15	5.8	1.2	.80			
9		0	7.8	4.2	21	14	5.3	1.1	.62			
10		0	5.8	71	18	11	5.1	1.1	.51			
11		0	4.6	31	15	9.5	4.9	1.0	.47			
12		0	3.9	21	13	30	4.6	2.2	.47			
13		0	3.4	44	12	171	3.9	7.8	.47			
14		.03	3.1	128	17	158	3.9	4.0	.39			
15		.18	3.0	90	14	88	3.9	2.5	.27			
16		.11	2.8	48	30	144	3.7	1.9	.13			
17		.08	2.8	29	281	99	3.4	1.6	.10			
18		.08	4.4	20	109	66	3.3	1.4	.07			
19		.15	4.6	15	132	48	3.1	1.8	.05			
20		.13	4.4	12	164	37	3.0	3.3	.04			
21		.11	4.2	11	183	30	2.8	2.5	.04			
22		.10	5.6	8.9	360	24	2.7	2.6	.03			
23		.08	6.3	8.0	277	22	2.7	2.0	.02			
24		.08	6.3	7.5	128	18	2.7	1.8	.01			
25		.10	5.6	6.9	80	19	2.5	1.7	0			
26		.11	4.6	6.6	55	16	2.5	1.4	0			
27		.11	4.4	5.8	42	13	2.2	1.2	0			
28		.18	3.9	9.2	34	12	2.1	1.0	0			
29		9.4	3.6	105	26	11	2.0	.80	0			
30		8.0	3.4	114	-----	10	2.0	.68	0			
31		-----	3.3	88	-----	9.5	-----	.51	-----			-----
TOTAL	0	19.03	272.8	906.4	2,609	1,192.0	138.4	57.79	12.02	0	0	0
MEAN	0	.63	8.80	29.2	90.0	38.5	4.61	1.86	.40	0	0	0
MAX	0	9.4	52	128	360	171	12	7.8	2.3	0	0	0
MIN	0	0	2.8	2.7	12	9.5	2.0	.51	0	0	0	0
AC-FT	0	38	541	1,800	5,170	2,360	275	115	24	0	0	0
CAL YR 1967	TOTAL	8,063.63	MEAN	22.1	MAX	449	MIN	0	AC-FT	15,990		
WTR YR 1968	TOTAL	5,207.44	MEAN	14.2	MAX	360	MIN	0	AC-FT	10,330		

DATE	TIME	PEAK DISCHARGE (BASE, 360 CFS)	DATE	TIME	PEAK DISCHARGE (BASE, 360 CFS)
02-17	1000	5.08 524	03-13	2000	5.41 645
02-22	1000	4.90 470			

11-3722. SOUTH COW CREEK NEAR MILLVILLE, CALIF.

LOCATION.--Lat 40°32'55", long 122°05'30", in NW¼NE¼ sec.16, T.31 N., R.2 W., on left bank 2.5 miles upstream from Old Cow Creek, and 4.4 miles east of Millville.

DRAINAGE AREA.--77.3 sq mi.

RECORDS AVAILABLE.--October 1956 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 610 ft (from topographic map). Prior to Aug. 9, 1957, graphic water-stage recorder at site 1.0 mile downstream at different datum. Aug. 9, 1957, to Apr. 24, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--12 years, 98.9 cfs (71,600 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,870 cfs Feb. 19 (gage height, 6.55 ft); minimum daily, 8.0 cfs Aug. 9.

1956-68: Maximum discharge, 5,720 cfs May 18, 1957 (gage height, 9.23 ft, site and datum then in use), from rating curve extended above 800 cfs by comparison with rating curve at present site; minimum, 0.3 cfs Aug. 30, 1960.

Flood of December 1955 reached a stage of 12.5 ft from floodmarks, previous site and datum (discharge, unknown).

REMARKS.--Records good. Diversions above station of up to 35 cfs for irrigation of about 1,050 acres. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

REVISIONS (water years).--1967 report: 1964(M), 1965(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	27	41	38	130	221	147	71	33	16	12	14
2	41	27	37	37	546	198	137	72	35	18	12	14
3	63	28	214	35	300	180	119	72	34	15	9.4	13
4	36	28	392	34	181	165	112	72	34	14	14	11
5	35	29	246	33	144	158	112	71	48	17	11	16
6	33	30	71	33	133	144	105	67	59	14	12	17
7	30	28	203	32	129	138	100	64	48	16	12	15
8	31	28	71	33	122	134	97	64	40	16	10	17
9	31	31	52	53	130	122	95	60	36	16	8.0	16
10	30	30	45	1,080	130	111	98	55	34	17	11	16
11	30	30	42	161	121	105	103	54	30	18	13	13
12	30	30	39	104	113	202	106	60	30	17	8.9	13
13	26	31	34	139	106	203	100	74	31	17	12	14
14	26	48	40	1,280	105	158	98	74	28	17	15	16
15	28	38	46	1,450	95	139	99	66	27	13	18	18
16	26	33	34	626	170	636	97	60	27	13	17	13
17	26	31	31	315	669	265	91	58	22	14	17	14
18	25	33	38	200	269	193	87	57	20	12	17	14
19	27	49	38	149	746	165	85	59	18	9.5	33	14
20	29	35	35	121	972	148	80	72	20	12	92	18
21	30	32	34	107	831	138	79	61	23	16	75	20
22	32	32	34	95	814	132	68	68	25	10	44	20
23	29	31	36	88	1,190	128	65	65	25	13	30	19
24	27	30	37	84	725	123	60	61	22	10	26	19
25	30	30	38	80	492	142	61	56	23	12	23	16
26	30	30	40	75	381	134	59	55	22	11	24	13
27	29	31	49	71	323	125	63	49	22	11	23	16
28	29	33	50	68	279	120	57	41	17	8.9	22	13
29	30	45	45	524	244	120	60	42	17	12	19	15
30	28	47	42	465	-----	120	64	38	18	14	16	20
31	27	-----	39	181	-----	124	-----	35	-----	15	16	-----
TOTAL	947	985	2,193	7,791	10,590	5,191	2,704	1,873	868	434.4	672.3	467
MEAN	30.5	32.8	70.7	251	365	167	90.1	60.4	28.9	14.0	21.7	15.6
MAX	63	49	392	1,450	1,190	636	147	74	59	18	92	20
MIN	23	27	31	32	95	105	57	35	17	8.9	8.0	11
AC-FT	1,880	1,950	4,350	15,450	21,000	10,300	5,360	3,720	1,720	862	1,330	926
CAL YR 1967	TOTAL 48,670		MEAN 133		MAX 2,210		MIN 18		AC-FT 96,540			
WTR YR 1968	TOTAL 34,715.7		MEAN 94.9		MAX 1,450		MIN 8.0		AC-FT 68,860			

PEAK DISCHARGE (BASE, 1,800 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-10	0400	5.69	2,110	02-19	2230	6.55	2,870
01-14	2100	6.38	2,700	02-23	1615	5.38	1,820
01-29	2145	6.14	2,460	03-16	0800	5.52	1,920

SACRAMENTO RIVER BASIN

11-3740. COW CREEK NEAR MILLVILLE, CALIF.

LOCATION.--Lat 40°30'20", long 122°13'55", in NE¹/₄NW¹/₄ sec.32, T.31 N., R.3 W., on right bank 4.2 miles southwest of Millville, and 4.3 miles downstream from Little Cow Creek.

DRAINAGE AREA.--425 sq mi.

RECORDS AVAILABLE.--October 1949 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 400 ft (from topographic map). Prior to July 1, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--19 years, 637 cfs (461,200 acre-ft per year).

EXTREMES.--Maximum discharge during year, 13,600 cfs Jan. 14, Feb. 20 (gage height, 11.82 ft); minimum daily, 9.2 cfs July 25.

1949-68: Maximum discharge, 45,200 cfs Dec. 27, 1951 (gage height, 21.55 ft); minimum daily, 0.80 cfs Aug. 13, 1966.

Flood of 1937 or 1940 reached a stage of 238 ft from floodmarks.

REMARKS.--Records good. Numerous small diversions above station for irrigation. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	76	224	157	1,170	1,150	669	245	123	29	16	33
2	256	74	164	150	3,980	1,020	675	249	116	21	18	31
3	129	73	1,450	146	2,580	933	590	244	118	17	17	26
4	123	80	1,720	140	1,510	863	551	254	120	21	16	19
5	121	88	2,200	136	1,110	858	545	249	183	27	16	21
6	110	88	479	133	969	819	522	237	265	23	13	26
7	104	88	1,670	131	891	763	488	222	234	20	11	29
8	97	95	629	134	752	727	467	218	155	17	14	33
9	92	109	349	161	734	661	456	214	137	17	11	27
10	93	110	282	3,510	718	606	445	204	125	17	11	28
11	88	108	245	1,120	640	571	465	197	114	16	14	29
12	81	106	215	604	572	934	456	214	109	15	17	29
13	73	107	183	915	513	1,720	430	324	101	20	17	29
14	72	190	144	6,550	519	1,680	413	384	97	19	27	38
15	78	189	156	9,320	508	1,760	402	277	88	23	26	39
16	75	139	163	3,600	645	4,300	378	236	81	19	27	32
17	64	126	156	1,800	7,000	2,410	349	215	65	17	32	25
18	60	121	164	1,050	2,800	1,460	333	208	63	16	31	28
19	66	206	189	766	4,040	1,090	317	214	55	13	58	31
20	73	162	174	620	7,290	909	310	325	47	15	346	31
21	90	134	162	547	6,150	802	296	283	46	13	411	38
22	92	121	156	530	5,480	740	278	279	48	17	194	40
23	85	117	157	460	8,260	707	270	280	44	10	110	35
24	89	116	176	409	4,550	666	262	253	38	10	92	31
25	95	117	203	379	2,820	735	254	233	39	9.2	75	34
26	90	120	214	353	2,150	736	251	227	34	10	77	31
27	90	117	253	332	1,740	652	248	197	29	9.5	74	29
28	82	126	237	321	1,450	614	238	169	26	12	69	30
29	83	142	201	1,990	1,270	603	237	157	21	13	51	29
30	78	260	182	3,900	-----	603	233	138	24	14	42	34
31	74	-----	166	1,880	-----	606	-----	133	-----	13	39	-----
TOTAL	2,911	3,705	13,063	42,244	72,811	32,698	11,828	7,279	2,745	512.7	1,972	915
MEAN	93.9	124	421	1,363	2,511	1,055	394	235	91.5	16.5	63.6	30.5
MAX	256	260	2,200	9,320	8,260	4,300	675	384	265	29	411	40
MIN	60	73	144	131	508	571	233	133	21	9.2	11	19
AC-FT	5,770	7,350	25,910	83,790	144,400	64,860	23,460	14,440	5,440	1,020	3,910	1,810
CAL YR 1967	TOTAL 300,508		MEAN 823		MAX 17,600		MIN 24		AC-FT 596,000			
WTR YR 1968	TOTAL 192,683.7		MEAN 526		MAX 9,320		MIN 9.2		AC-FT 382,200			

PEAK DISCHARGE (BASE, 10,000 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-14	2330	11.81	13,600	02-20	0100	11.82	13,600
02-17	1245	11.20	12,400	02-23	0115	10.42	10,800

SACRAMENTO RIVER BASIN

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11-3744. MIDDLE FORK COTTONWOOD CREEK NEAR ONO, CALIF.

LOCATION.--Lat 40°23'25", long 122°31'15", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.3, T.29 N., R.6 W., on left bank 0.4 mile upstream from North Fork Cottonwood Creek, and 7.8 miles southeast of Ono.

DRAINAGE AREA.--249 sq mi.

RECORDS AVAILABLE.--October 1956 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 550 ft (from topographic map). Prior to Oct. 11, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--12 years, 223 cfs (161,400 acre-ft per year); median of yearly mean discharges, 170 cfs (123,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 6,020 cfs Feb. 19 (gage height, 12.47 ft); minimum daily, 5.2 cfs Aug. 12.

1956-68: Maximum discharge, 13,500 cfs Dec. 22, 1964 (gage height, 19.08 ft from floodmarks in gage well), from rating curve extended above 7,800 cfs on basis of slope-area measurement of maximum flow; minimum daily, 1.2 cfs Aug. 28, 1964.

REMARKS.--Records fair. No regulation or diversion above station. Records of water temperatures and suspended-loads at or near this gaging station for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	16	37	92	388	760	277	101	60	19	9.2	8.8
2	14	15	33	86	1,210	670	270	100	59	18	8.2	8.3
3	42	16	197	79	989	579	237	98	62	18	7.4	7.8
4	31	16	156	73	731	525	224	97	58	17	6.6	7.3
5	24	17	342	69	646	489	215	94	58	17	6.4	7.0
6	23	17	144	64	607	427	204	92	64	16	6.1	7.3
7	21	17	217	60	638	376	195	90	59	15	6.2	7.6
8	20	18	163	62	599	343	189	88	54	13	7.1	7.6
9	19	19	99	68	561	320	183	86	51	12	6.7	7.5
10	18	20	88	373	563	299	181	85	47	12	6.0	7.1
11	17	20	84	211	538	281	181	83	47	12	5.5	6.9
12	17	20	83	145	477	308	175	83	45	12	5.2	7.2
13	17	20	75	274	467	341	167	85	42	11	5.5	7.2
14	16	44	54	1,750	402	324	160	97	41	11	6.2	7.5
15	15	47	55	2,340	360	306	154	85	40	11	7.0	8.4
16	15	29	64	1,210	554	371	150	80	37	11	6.8	8.0
17	16	26	56	633	1,510	391	146	75	34	10	6.2	7.3
18	16	24	63	421	1,110	350	141	75	33	10	6.0	7.1
19	16	25	59	316	2,830	329	135	79	31	9.5	7.8	6.8
20	16	28	58	267	4,130	313	130	108	30	8.5	14	6.6
21	17	27	60	286	3,050	299	126	94	29	8.3	28	6.9
22	18	25	63	335	2,890	290	123	87	27	8.7	25	7.1
23	19	24	72	321	2,960	285	121	81	24	8.4	20	7.0
24	18	23	87	297	2,450	279	119	77	23	8.0	15	6.6
25	17	23	92	278	1,870	306	114	78	23	7.8	14	6.3
26	17	22	110	252	1,480	317	112	75	22	7.6	13	6.0
27	17	22	147	229	1,180	288	110	72	20	7.5	15	6.2
28	16	24	159	214	986	273	107	69	18	7.1	16	5.9
29	15	30	144	629	839	271	103	66	17	7.2	13	5.4
30	16	43	121	481	-----	273	102	64	19	7.3	10	5.6
31	16	-----	102	354	-----	262	-----	62	-----	7.8	9.4	-----
TOTAL	570	717	3,284	12,269	37,015	11,245	4,851	2,606	1,174	348.7	318.5	212.3
MEAN	18.4	23.9	106	396	1,276	363	162	84.1	39.1	11.2	10.3	7.08
MAX	42	47	342	2,340	4,130	760	277	108	64	19	28	8.8
MIN	11	15	33	60	360	262	102	62	17	7.1	5.2	5.4
AC-FT	1,130	1,420	6,510	24,340	73,420	22,300	9,620	5,170	2,330	692	632	421

CAL YR 1967 TOTAL 96,885 MEAN 265 MAX 3,880 MIN 11 AC-FT 192,200
WTR YR 1968 TOTAL 74,610.5 MEAN 204 MAX 4,130 MIN 5.2 AC-FT 148,000

PEAK DISCHARGE (BASE, 1,800 CFS)
DATE TIME G.H.T. DISCHARGE DATE TIME G.H.T. DISCHARGE
01-14 2315 9.90 2,860 02-19 2215 12.47 6,020
02-02 0030 8.66 1,880

SACRAMENTO RIVER BASIN

11-3757. NORTH FORK COTTONWOOD CREEK NEAR IGO, CALIF.

LOCATION.--Lat 40°26'32", long 122°32'57", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.21, T.30 N., R.6 W., near right bank on downstream side of bridge on Gas Point Road, 1.2 miles downstream from Huling Creek, 4.4 miles south of Igo, and 4.5 miles upstream from Middle Fork.

DRAINAGE AREA.--88.7 sq mi.

RECORDS AVAILABLE.--October 1956 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 630 ft (from topographic map). Prior to Nov. 14, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--12 years, 163 cfs (118,000 acre-ft per year); median of yearly mean discharges, 125 cfs (90,500 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,760 cfs Feb. 22 (gage height, 34.36 ft); minimum daily, 0.80 cfs July 23-25.

1956-68: Maximum discharge, 11,000 cfs Dec. 22, 1964 (gage height, 39.45 ft in gage well, 41.7 ft from floodmarks), from rating curve extended above 4,400 cfs on basis of slope-area measurement of maximum flow; minimum daily, 0.80 cfs July 23-25, 1968.

Flood of Dec. 21, 1955, reached a peak discharge of 14,300 cfs by slope-area measurement at site 1.2 miles upstream (above Huling Creek) adjusted for intervening drainage area.

REMARKS.--Some storage for irrigation above station in Rainbow Lake (capacity, 4,800 acre-ft). Some flow diverted upstream to Clear Creek basin by Happy Valley Irrigation Canal.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

REVISIONS (water years).--1966 report: 1960(M), 1961(M), 1963(M), 1964(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.3	18	36	54	264	294	151	56	27	5.1	2.5	3.0
2	16	17	54	52	568	272	132	50	26	5.1	2.5	2.8
3	29	19	218	50	294	262	119	46	26	5.4	2.0	2.8
4	18	19	146	50	223	245	115	46	26	4.5	1.8	2.5
5	17	20	161	48	196	240	111	46	26	3.9	1.8	2.2
6	17	19	76	48	191	196	107	46	27	3.9	1.8	2.5
7	16	18	165	46	196	191	104	32	27	3.6	1.5	2.5
8	14	20	73	46	186	181	104	39	26	3.9	1.6	2.5
9	13	21	62	54	191	175	104	36	26	3.9	1.8	2.5
10	14	20	56	247	186	170	100	39	25	4.2	1.5	3.0
11	14	20	56	92	175	161	96	37	25	4.2	1.5	3.3
12	14	20	54	76	165	191	96	37	25	4.2	1.2	2.2
13	13	22	54	165	186	312	92	46	22	3.6	1.2	2.2
14	13	54	52	435	165	245	88	46	21	2.2	1.5	2.8
15	14	26	52	303	165	212	88	41	20	2.2	2.2	3.3
16	15	25	46	186	283	262	88	36	18	2.5	2.0	3.6
17	16	23	43	132	996	228	84	34	17	3.0	2.0	3.6
18	17	23	52	107	419	212	81	36	16	2.8	2.0	3.3
19	19	26	46	96	1,300	202	78	39	13	1.3	4.8	3.0
20	16	25	45	88	1,010	196	76	64	13	1.3	11	2.8
21	16	25	45	88	1,050	186	73	45	13	1.2	13	3.0
22	16	25	48	88	1,810	181	73	43	13	1.0	8.8	3.0
23	16	25	56	84	1,330	170	76	39	13	.80	6.2	3.0
24	16	26	62	81	926	170	73	37	11	.80	4.2	3.0
25	16	27	62	81	696	170	70	37	7.6	.80	4.2	1.5
26	16	26	64	81	564	165	67	37	6.6	1.2	6.9	1.3
27	16	27	67	84	431	156	64	36	6.6	1.2	6.2	1.3
28	16	29	70	103	350	132	64	33	6.6	1.0	6.2	1.3
29	16	59	67	435	311	123	62	32	6.6	1.0	4.2	1.3
30	16	48	59	329	-----	119	62	29	6.2	1.2	3.6	1.3
31	20	-----	56	218	-----	123	-----	29	-----	1.5	3.3	-----
TOTAL	494.3	777	2,203	4,047	14,827	6,142	2,698	1,249	542.2	82.50	115.0	76.4
MEAN	15.9	25.7	71.1	131	511	198	89.9	40.3	18.1	2.66	3.71	2.55
MAX	29	59	218	435	1,810	312	151	64	27	5.4	13	3.6
MIN	9.3	17	36	46	165	119	62	29	6.2	.80	1.2	1.3
AC-FT	980	1,530	4,370	8,030	29,410	12,180	5,350	2,480	1,080	164	228	152

CAL YR 1967 TOTAL 61,815.2 MEAN 169 MAX 1,480 MIN 6.9 AC-FT 122,600
WTR YR 1968 TOTAL 33,248.40 MEAN 90.8 MAX 1,810 MIN .80 AC-FT 65,950

11-3758.2. SOUTH FORK COTTONWOOD CREEK NEAR COTTONWOOD, CALIF.

LOCATION.--Lat 40°18'59", long 122°26'52", in SE¼ sec.32, T.29 N., R.5 W., on right bank 15 ft downstream from highway bridge, 0.7 mile upstream from Dry Fork, and 10.3 miles southwest of Cottonwood.

DRAINAGE AREA.--217 sq mi.

RECORDS AVAILABLE.--October 1962 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 525 ft (from topographic map). October 1962 to Dec. 22, 1964, graphic water-stage recorder at site 85 ft upstream at different datum. Dec. 22, 1964, to Apr. 3, 1967, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--6 years, 183 cfs (132,500 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4,450 cfs Jan. 15 (gage height, 7.13 ft); no flow for many days. 1962-68: Maximum discharge, 13,400 cfs Dec. 22, 1964 (gage height, 13.6 ft from floodmarks), from slope-area measurement of maximum flow; no flow for many days in each year.

REMARKS.--Small diversion above station. Records of suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	4.6	28	66	235	490	221	112	70	11	0	3.0
2	.20	4.3	25	60	419	437	229	114	70	10	0	2.2
3	1.0	4.0	57	55	483	401	206	114	70	9.0	0	1.6
4	22	4.0	124	50	407	377	191	120	66	8.5	0	1.0
5	15	4.6	280	46	383	371	181	120	63	8.0	0	1.1
6	12	4.9	98	39	377	341	171	114	73	7.6	0	.50
7	10	4.9	110	32	401	320	161	109	69	7.2	0	.30
8	9.0	5.1	96	38	401	310	171	104	65	6.8	0	.10
9	8.2	5.4	62	45	389	295	174	102	61	5.2	0	.10
10	7.4	5.8	55	413	431	272	171	99	58	4.8	0	0
11	6.6	6.2	57	225	419	272	174	99	55	3.6	0	0
12	5.8	5.8	58	112	377	295	174	97	52	3.6	0	0
13	5.1	7.0	54	186	383	335	167	97	48	3.3	0	0
14	4.6	21	37	2,520	335	290	155	99	45	3.0	0	0
15	4.0	42	28	3,380	300	276	148	90	42	3.0	0	0
16	3.8	26	39	1,500	439	290	142	83	39	3.0	0	0
17	3.8	19	36	696	866	300	136	81	36	2.7	0	0
18	3.8	19	45	455	649	272	128	81	34	2.4	0	0
19	3.8	19	32	341	1,060	249	125	90	32	2.4	0	0
20	3.8	18	20	285	2,900	230	120	107	30	2.0	0	0
21	4.3	18	23	285	2,440	225	114	109	28	1.3	0	0
22	4.9	17	22	300	2,050	218	109	102	26	1.0	19	0
23	5.1	15	22	280	2,100	210	104	97	24	.80	13	0
24	6.6	15	28	258	1,730	210	97	90	22	.40	9.3	0
25	6.2	14	49	240	1,140	214	90	88	20	.20	7.9	0
26	5.8	14	80	220	830	225	90	83	18	.10	7.9	0
27	5.4	13	124	195	702	218	92	83	16	0	7.9	0
28	5.1	14	137	171	625	206	97	83	14	0	7.9	0
29	4.6	20	121	816	546	210	99	81	13	0	5.7	0
30	4.3	28	94	571	-----	218	107	81	12	0	4.8	0
31	4.3	-----	75	300	-----	210	-----	77	-----	0	4.0	-----
TOTAL	186.70	398.6	2,116	14,180	23,817	8,787	4,344	3,006	1,271	110.90	87.4	9.90
MEAN	6.02	13.3	68.3	457	821	283	145	97.0	42.4	3.58	2.82	.33
MAX	22	42	280	3,380	2,900	490	229	120	73	11	19	3.0
MIN	.20	4.0	20	32	235	206	90	77	12	0	0	0
AC-FT	370	791	4,200	28,130	47,240	17,430	8,620	5,960	2,520	220	173	20
CAL YR 1967	TOTAL 71,799.90		MEAN 197		MAX 4,010		MIN .20		AC-FT 142,400			
WTR YR 1968	TOTAL 58,314.50		MEAN 159		MAX 3,380		MIN 0		AC-FT 115,700			

SACRAMENTO RIVER BASIN

11-3760. COTTONWOOD CREEK NEAR COTTONWOOD, CALIF.

LOCATION.--Lat 40°23'10", long 122°14'15", in NE¼ sec.7, T.29 N., R.3 W., on right bank 2 miles east of Cottonwood and 2.4 miles upstream from mouth.

DRAINAGE AREA.--922 sq mi.

RECORDS AVAILABLE.--October 1940 to September 1968.

GAGE.--Graphic water-age recorder. Datum of gage is 364.0 ft above mean sea level (levels by Corps of Engineers). Prior to July 26, 1963, at site 250 ft upstream at datum 3.59 ft higher. Sept. 21, 1967, to Jan. 14, 1968, auxiliary gage at a site a few hundred ft downstream at datum 2.35 ft higher.

AVERAGE DISCHARGE.--28 years, 803 cfs (581,300 acre-ft per year); median of yearly mean discharges, 620 cfs (449,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 19,400 cfs Feb. 20 (gage height, 14.14 ft); minimum daily, 46 cfs July 28.

1940-68: Maximum discharge, 60,000 cfs Dec. 22, 1964 (gage height, 19.64 ft); minimum, 15 cfs for several days in September 1945.

REMARKS.--Records good except those for Jan. 14 to June 12, which are poor. 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 Canal. Records of chemical analyses and water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	80	147	285	1,270	1,790	738	332	245	86	48	71
2	69	84	131	250	3,420	1,690	716	332	243	86	48	69
3	102	91	430	226	3,320	1,580	643	332	249	83	52	63
4	122	90	615	215	2,150	1,530	631	323	262	77	53	65
5	108	97	1,070	205	1,660	1,510	605	332	268	75	55	67
6	110	100	610	198	1,440	1,340	590	332	272	73	49	63
7	110	112	681	190	1,400	1,160	565	314	282	71	48	63
8	104	131	625	188	1,310	1,070	553	301	246	71	48	61
9	108	145	396	205	1,230	1,020	528	314	225	65	49	71
10	106	147	316	1,410	1,230	1,100	514	314	214	61	48	69
11	102	152	296	1,050	1,200	1,000	535	314	210	61	51	69
12	108	154	278	530	1,370	1,020	528	314	228	63	48	61
13	104	154	264	716	1,390	1,330	500	350	217	63	48	58
14	102	198	220	5,270	1,350	1,250	500	332	214	61	49	58
15	95	182	198	8,530	1,330	1,000	479	314	211	61	52	63
16	86	138	205	4,060	1,600	1,350	472	301	206	61	52	58
17	83	114	198	2,190	4,740	1,430	444	301	200	56	53	63
18	76	108	208	1,470	2,920	1,110	458	314	200	55	53	73
19	83	108	210	1,050	5,450	895	430	472	195	53	65	69
20	83	102	190	884	13,200	855	416	444	184	53	104	69
21	91	100	192	842	8,720	845	402	416	134	53	124	69
22	108	97	190	866	9,000	825	395	386	110	58	108	67
23	114	93	205	860	9,380	804	386	345	108	53	129	67
24	118	91	223	818	6,980	782	386	315	101	51	138	65
25	129	90	244	782	4,500	792	350	290	94	52	136	61
26	122	86	274	755	3,300	792	350	258	92	51	141	65
27	120	84	340	755	2,670	782	368	254	88	49	146	61
28	122	86	380	735	2,070	726	359	247	90	46	141	59
29	97	102	360	3,730	1,890	704	332	252	90	50	112	61
30	91	152	340	3,610	-----	699	332	245	90	49	75	61
31	86	-----	320	1,740	-----	682	-----	247	-----	49	77	-----
TOTAL	3,130	3,468	10,356	44,615	101,490	33,463	14,505	9,937	5,568	1,896	2,400	1,939
MEAN	101	116	334	1,439	3,500	1,079	484	321	186	61.2	77.4	64.6
MAX	129	198	1,070	8,530	13,200	1,790	738	472	282	86	146	73
MIN	69	80	131	188	1,200	682	332	245	88	46	48	58
AC-FT	6,210	6,880	20,540	88,490	201,300	66,370	28,770	19,710	11,040	3,760	4,760	3,850

CAL YR 1967 TOTAL 322,391 MEAN 883 MAX 15,600 MIN 55 AC-FT 639,500
WTR YR 1968 TOTAL 232,767 MEAN 636 MAX 13,200 MIN 46 AC-FT 461,700

PEAK DISCHARGE (BASE, 7,100 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-15	0130	12.46	11,600	02-20	0300	14.14	19,400
01-29	2200	12.20	10,600				

11-3765.5. BATTLE CREEK BELOW COLEMAN FISH HATCHERY NEAR COTTONWOOD, CALIF.

LOCATION.--Lat 40°23'55", long 122°08'45", in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.1, T.29 N., R.3 W., on right bank 3.7 miles downstream from Spring Branch, 5.7 miles upstream from mouth, and 7.0 miles east of Cottonwood.

DRAINAGE AREA.--358 sq mi.

RECORDS AVAILABLE.--October 1961 to September 1968. October 1940 to September 1961 at site 0.6 mile upstream published as "near Cottonwood"; low flow records not equivalent owing to Coleman Fish Hatchery diversion.

GAGE.--Digital water-stage recorder. Altitude of gage is 415 ft (from topographic map). Prior to July 1, 1964, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--7 years, 450 cfs (325,800 acre-ft per year).

EXTREMES.--Maximum discharge during year, 6,200 cfs Jan. 14 (gage height, 9.90 ft); minimum daily, 220 cfs July 31.

1940-68: Maximum discharge, 12,800 cfs Feb. 6, 1942 (gage height, 11.85 ft, site and datum then in use).

1961-68: Minimum discharge, 52 cfs Aug. 8, 1962.

Maximum stage known, 15.8 ft Dec. 11, 1937, from floodmarks at former site and datum (discharge, 35,000 cfs, by slope-area measurement).

REMARKS.--Records excellent. Flow regulated by four small powerplants, several small reservoirs, and Coleman Fish Hatchery. Coleman Fish Hatchery diverts 50 to 90 cfs which is returned above the station. Ten cfs diverted above station for irrigation. Maximum flows considered equivalent to former station Battle Creek near Cottonwood. Records of water temperatures and suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

REVISIONS (water year).--1965 report: 1963.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	268	242	299	283	484	770	596	405	349	261	230	241
2	272	246	292	282	980	717	574	401	350	256	233	242
3	430	251	590	275	767	700	537	414	343	260	227	242
4	340	251	505	275	613	670	522	419	348	253	223	240
5	325	251	730	275	553	682	496	423	345	261	224	237
6	322	251	391	270	511	652	475	413	362	269	223	238
7	303	251	735	272	505	636	466	399	354	253	226	241
8	286	248	408	273	474	637	462	397	333	248	224	234
9	288	254	345	436	477	597	464	390	328	252	222	232
10	290	254	329	2,560	480	560	475	393	319	251	228	230
11	286	254	313	554	471	545	485	390	313	250	224	245
12	283	254	309	415	463	599	496	393	307	240	225	252
13	279	254	297	420	466	735	484	427	303	242	225	254
14	274	295	289	2,680	449	641	467	429	296	248	229	272
15	262	311	285	3,450	435	588	464	395	300	245	230	270
16	265	292	292	1,360	473	1,030	460	384	299	241	227	267
17	249	284	285	874	814	865	437	378	290	240	233	266
18	245	280	296	643	696	674	428	377	300	240	232	266
19	252	337	299	544	1,220	613	423	386	296	232	249	264
20	246	328	295	482	2,770	577	413	423	288	238	351	264
21	245	292	290	449	1,930	563	405	405	296	232	401	261
22	250	295	286	426	1,710	547	398	410	295	233	343	261
23	257	288	284	411	2,120	542	391	413	290	229	289	261
24	253	284	284	405	1,740	526	381	412	270	229	271	264
25	258	280	286	396	1,220	554	381	389	278	229	267	256
26	252	280	288	389	1,020	588	379	387	274	230	262	259
27	247	280	300	386	926	545	387	372	275	228	257	264
28	246	288	312	383	863	539	386	367	280	229	254	255
29	248	292	314	1,220	812	545	391	360	284	226	248	250
30	247	303	297	972	-----	568	399	361	278	225	243	242
31	249	-----	290	564	-----	572	-----	359	-----	220	242	-----
TOTAL	8,517	8,270	10,815	22,624	26,442	19,577	13,522	12,271	9,243	7,490	7,762	7,570
MEAN	275	276	349	730	912	632	451	396	308	242	250	252
MAX	430	337	735	3,450	2,770	1,030	596	429	362	269	401	272
MIN	245	242	284	270	435	526	379	359	270	220	222	230
AC-FT	16,890	16,400	21,450	44,870	52,450	38,830	26,820	24,340	18,330	14,860	15,400	15,010
CAL YR 1967	TOTAL 192,611		MEAN 528		MAX 3,200		MIN 242		AC-FT 382,000			
WTR YR 1968	TOTAL 154,103		MEAN 421		MAX 3,450		MIN 220		AC-FT 305,700			

PEAK DISCHARGE (BASE, 2,500 CFS)

DATE	TIME	G.H.T.	DISCHARGE	DATE	TIME	G.H.T.	DISCHARGE
01-10	0400	9.53	5,720	02-20	0100	8.97	4,990
01-14	1845	9.90	6,200	02-23	1800	7.23	2,920
01-29	2200	6.86	2,520				

SACRAMENTO RIVER BASIN

11-3780. SACRAMENTO RIVER NEAR RED BLUFF, CALIF.

LOCATION.--Lat 40°13'55", long 122°10'50", in SE $\frac{1}{4}$ sec.34, T.28 N., R.3 W., on left bank at lower end of Iron Canyon, 0.5 mile downstream from Sevenmile Creek, and 4.6 miles northeast of Red Bluff.

DRAINAGE AREA.--9,022 sq mi, excluding Goose Lake basin.

RECORDS AVAILABLE.--1879-88 annual observed maximums only, published in WSP 1315-A. January 1892 to September 1968. 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, and as "at Jellys Ferry" 1895-1902.

GAGE.--Graphic water-stage recorder. Datum of gage is 253.57 ft above mean sea level, datum of 1929. Prior to January 1902, staff gage at site 16.2 miles upstream at different datum. January 1902 to December 1919, staff gage at several sites within 1 mile of present site at same datum.

AVERAGE DISCHARGE.--77 years, 11,480 cfs (8,311,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 64,000 cfs Feb. 24 (gage height, 15.20 ft); minimum daily, 7,380 cfs Jan. 7.

1879-88, 1892-1968: Maximum discharge, 291,000 cfs Feb. 28, 1940 (gage height, 38.9 ft), from rating curve extended above 170,000 cfs on basis of velocity-area studies; minimum, 2,000 cfs Mar. 29, 1944 (gage height, -0.45 ft).

REMARKS.--Records excellent. Flow regulated by Shasta Lake since Dec. 30, 1943 (see sta. no. 11-3700.). Diversions, in addition to those on tributaries, for irrigation of 22,000 acres between stations at Keswick and Red Bluff. Transbasin diversions from Trinity River to Whiskeytown Lake via Judge Francis Carr powerplant (see sta. no. 11-5254.3.) started in April 1963. Records of chemical analyses, water temperatures, and suspended-sediment loads at or near this gaging station for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9,550	10,000	8,210	8,810	11,200	29,900	8,790	10,500	9,440	13,300	14,500	10,500
2	9,660	8,870	8,100	8,480	17,200	25,200	8,930	10,500	9,450	13,500	14,500	10,600
3	10,100	8,560	10,900	8,460	18,800	20,000	8,590	10,500	9,690	13,700	14,500	10,500
4	9,840	8,590	11,100	8,370	13,300	16,800	8,430	10,500	10,000	13,600	14,500	10,500
5	9,810	7,920	13,600	8,180	11,600	16,500	8,370	10,600	10,400	14,000	14,500	10,500
6	9,780	7,560	9,840	7,640	10,800	16,300	8,290	10,500	10,700	14,200	14,400	10,500
7	9,750	7,640	12,700	7,380	10,500	16,000	8,050	10,500	10,900	14,000	14,400	10,600
8	9,720	7,670	11,000	7,430	10,100	15,900	8,020	10,500	11,000	14,000	14,500	10,600
9	9,750	7,670	9,890	7,740	9,840	15,600	8,400	10,400	10,900	13,900	14,400	10,600
10	9,720	7,700	9,490	20,500	9,720	14,800	8,840	10,400	10,900	14,000	14,400	10,600
11	9,720	7,700	9,430	11,900	9,630	14,200	8,840	10,400	10,700	14,000	14,500	10,600
12	9,720	7,730	9,420	9,090	9,320	13,600	8,810	10,400	10,600	14,200	14,500	10,600
13	9,660	7,750	9,230	9,010	9,350	16,300	8,760	10,500	10,500	14,500	14,500	10,600
14	9,580	8,080	9,090	22,200	9,210	16,300	8,700	10,500	10,400	14,500	14,100	10,600
15	9,580	8,130	9,090	41,000	9,070	15,200	8,730	9,810	10,700	14,500	13,800	10,700
16	9,580	7,830	9,150	20,100	9,480	17,300	9,120	9,320	10,800	14,500	13,400	10,600
17	9,550	7,810	9,150	13,900	24,600	16,300	9,370	9,180	10,800	14,400	12,900	10,600
18	9,550	7,780	9,180	10,800	18,500	12,300	9,630	9,150	10,400	14,400	12,700	10,500
19	9,600	7,810	9,210	9,690	17,100	11,000	10,300	9,180	11,900	14,400	12,800	10,600
20	9,600	7,940	9,120	9,150	42,100	10,200	11,000	9,350	11,900	14,400	12,300	10,600
21	9,660	7,780	9,090	8,840	32,500	9,630	11,200	9,490	12,000	14,400	11,800	10,600
22	9,720	7,780	9,040	8,760	32,800	9,400	11,100	9,430	11,900	14,400	11,200	10,600
23	9,750	7,780	9,070	8,620	41,400	9,120	11,200	9,430	11,900	14,400	11,000	10,400
24	9,780	7,780	9,070	8,460	54,800	9,010	11,500	9,290	11,900	14,400	10,900	10,200
25	9,810	7,780	9,090	8,320	61,900	8,930	11,100	9,210	12,400	14,400	10,900	10,200
26	9,840	7,810	9,180	8,290	58,800	9,210	10,900	9,180	13,100	14,400	10,900	10,200
27	9,840	7,860	9,290	8,180	56,800	8,900	10,800	8,980	13,300	14,400	10,900	10,200
28	9,860	7,860	9,350	8,080	46,200	8,760	10,800	8,870	13,300	14,400	10,800	10,200
29	9,840	8,080	9,320	15,300	36,200	8,650	10,800	8,810	13,300	14,400	10,600	10,300
30	9,860	8,270	9,260	23,900	-----	8,650	10,800	8,650	13,400	14,400	10,600	10,300
31	9,980	-----	9,230	13,500	-----	8,650	-----	8,620	-----	14,400	10,600	-----
TOTAL	301,760	239,520	297,890	370,080	702,820	428,610	288,170	302,650	338,580	440,400	400,300	314,700
MEAN	9,734	7,984	9,609	11,940	24,240	13,830	9,606	9,763	11,290	14,210	12,910	10,490
MAX	10,100	10,000	13,600	41,000	61,900	29,900	11,500	10,600	13,400	14,500	14,500	10,700
MIN	9,550	7,560	8,100	7,380	9,070	8,650	8,020	8,620	9,440	13,300	10,600	10,200
AC-FT	598,500	475,100	590,900	734,000	1,394,000	850,100	571,600	600,300	671,600	873,500	794,000	624,200
CAL YR 1967	TOTAL 5,123,930			MEAN 14,040		MAX 77,400		MIN 5,280		AC-FT 10,160,000		
WTR YR 1968	TOTAL 4,425,480			MEAN 12,090		MAX 61,900		MIN 7,380		AC-FT 8,778,000		

SACRAMENTO RIVER BASIN

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11-3788. RED BANK CREEK NEAR RED BLUFF, CALIF.

LOCATION.--Lat 40°05'25", long 122°24'45", in SE $\frac{1}{4}$ sec.22, T.26 N., R.5 W., on road bridge near left bank, 0.1 mile downstream from unnamed tributary, 1.8 miles southeast of town of Red Bank, and about 13 miles west of Red Bluff.

DRAINAGE AREA.--93.5 sq mi.

RECORDS AVAILABLE.--October 1959 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 470 ft (from topographic map). Prior to Apr. 4, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--9 years, 37.2 cfs (26,930 acre-ft per year).

EXTREMES.--Maximum discharge during year, 3,320 cfs Jan. 29 (gage height, 7.81 ft); no flow for several months. 1959-68: Maximum discharge, 9,730 cfs Jan. 5, 1965 (gage height, 10.06 ft); no flow for several months in each year.

REMARKS.--Some small storage ponds and possibly some diversions for irrigation upstream.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	2.5	125	51	14	1.7				
2			0	1.9	332	45	18	1.5				
3			0	1.7	191	39	11	1.3				
4			4.2	1.7	131	34	8.9	1.3				
5			29	1.7	88	33	8.9	1.3				
6			9.5	1.5	62	28	7.8	1.1				
7			24	1.7	50	27	7.2	1.1				
8			14	1.7	41	28	6.7	.80				
9			7.8	2.2	35	24	6.7	.60				
10			5.8	101	38	21	6.2	.50				
11			4.5	29	30	20	6.7	.40				
12			3.4	15	26	24	6.2	.40				
13			3.1	22	34	33	5.3	.50				
14			1.9	891	30	24	5.3	1.1				
15			2.2	380	26	20	5.3	1.7				
16			2.8	100	246	33	4.5	1.3				
17			2.2	48	635	27	4.1	.90				
18			4.1	31	223	20	4.1	.60				
19			4.9	24	437	19	3.7	.90				
20			4.1	19	391	17	3.4	1.9				
21			3.1	17	281	16	3.4	1.9				
22			3.1	15	239	16	3.4	1.9				
23			2.8	14	247	15	3.4	1.5				
24			2.8	12	170	14	3.1	.90				
25			3.1	11	120	14	2.8	.80				
26			3.1	9.5	95	13	2.8	.50				
27			3.1	8.9	77	12	2.2	.40				
28			3.1	9.5	64	10	2.2	.40				
29			2.5	951	56	10	1.9	.20				
30			2.5	370	-----	8.9	1.9	.10				
31		-----	2.5	154	-----	8.3	-----	0	-----			-----
TOTAL	0	0	159.2	3,248.5	4,520	704.2	171.1	29.50	0	0	0	0
MEAN	0	0	5.14	105	156	22.7	5.70	.95	0	0	0	0
MAX	0	0	29	951	635	51	18	1.9	0	0	0	0
MIN	0	0	0	1.5	26	8.3	1.9	0	0	0	0	0
AC-FT	0	0	316	6,440	8,970	1,400	339	59	0	0	0	0
CAL YR 1967	TOTAL	19,391.90	MEAN	53.1	MAX	1,670	MIN	0	AC-FT	38,460		
WTR YR 1968	TOTAL	8,832.50	MEAN	24.1	MAX	951	MIN	0	AC-FT	17,520		

SACRAMENTO RIVER BASIN

11-3790. ANTELOPE CREEK NEAR RED BLUFF, CALIF.

LOCATION.--Lat 40°12'10", long 122°07'05", in Rio De Los Berrendos Grant, on right bank 1.8 miles upstream from diversion dam of Los Molinos Mutual Water Co., 6.5 miles east of Red Bluff, and 9.7 miles upstream from mouth.

DRAINAGE AREA.--123 sq mi.

RECORDS AVAILABLE.--October 1940 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 360 ft (from topographic map). Prior to Sept. 18, 1954, graphic water-stage recorder at site 0.8 mile downstream at different datum. Sept. 18, 1954, to Oct. 1, 1964, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--28 years, 142 cfs (102,800 acre-ft per year); median of yearly mean discharges, 125 cfs (90,500 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4,830 cfs Jan. 14 (gage height, 10.69 ft); minimum daily, 32 cfs Aug. 9, 10.

1940-68: Maximum discharge, 11,500 cfs Feb. 22, 1956 (gage height, 12.43 ft); maximum gage height, 13.96 ft Oct. 12, 1962; minimum discharge, 8.2 cfs Oct. 27, 1961.

Flood of December 1937 reached a stage of about 22 ft from floodmarks, at former site and datum.

REMARKS.--Records good except those for period of no gage-height record, which are fair. Small diversion above station for Red Bluff water supply during October to June of each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	44	114	51	220	191	121	98	56	39	35	35
2	44	44	66	50	658	175	124	98	55	39	35	35
3	76	44	389	49	492	159	118	98	54	39	34	35
4	50	44	203	48	308	148	110	99	54	39	33	35
5	47	44	287	48	239	144	107	98	56	39	33	35
6	48	44	109	48	218	140	105	97	58	38	33	35
7	46	44	230	48	200	138	99	91	56	38	33	35
8	45	44	124	48	174	147	98	87	53	38	33	35
9	44	46	84	68	168	133	98	86	52	37	32	35
10	44	46	70	1,810	170	120	99	84	51	37	32	35
11	44	46	63	294	158	112	107	83	49	37	33	35
12	44	46	59	150	144	179	115	83	48	37	33	35
13	44	46	55	139	141	397	115	86	48	37	34	35
14	44	64	50	1,660	128	259	110	87	47	37	34	37
15	44	55	51	1,590	116	194	110	79	46	37	35	37
16	44	49	52	515	121	616	110	76	45	37	35	36
17	44	47	51	297	439	479	105	72	44	37	36	35
18	44	47	53	194	354	295	99	71	43	37	35	35
19	44	73	54	148	422	227	98	72	43	36	37	35
20	44	57	53	120	967	187	96	79	42	36	72	35
21	44	50	52	104	864	163	94	77	42	35	274	35
22	44	48	51	94	676	150	92	81	41	35	81	35
23	45	48	51	88	669	138	90	80	41	35	48	35
24	45	48	51	83	565	128	88	75	40	35	43	35
25	45	47	53	79	417	132	88	72	40	35	40	35
26	45	47	54	75	327	142	89	70	40	35	40	35
27	45	46	54	73	279	128	90	67	40	35	39	35
28	44	49	54	70	241	120	92	64	39	34	38	35
29	44	58	54	698	212	115	93	61	39	34	37	34
30	44	94	53	752	-----	116	96	60	39	34	36	34
31	44	-----	52	304	-----	116	-----	58	-----	34	35	-----
TOTAL	1,414	1,509	2,796	9,795	10,087	5,888	3,056	2,489	1,401	1,132	1,428	1,053
MEAN	45.6	50.3	90.2	316	348	190	102	80.3	46.7	36.5	46.1	35.1
MAX	76	94	389	1,810	967	616	124	99	58	39	274	37
MIN	41	44	50	48	116	112	88	58	39	34	32	34
AC-FT	2,800	2,990	5,550	19,430	20,010	11,680	6,060	4,940	2,780	2,250	2,830	2,090

CAL YR 1967 TOTAL 64,564
WTR YR 1968 TOTAL 42,048

MEAN 177
MEAN 115

MAX 2,350
MAX 1,810

MIN 40
MIN 32

AC-FT 128,100
AC-FT 83,400

Peak discharge (base, 2,200 cfs).--Jan. 10 (0515 hrs) 4,450 cfs (10.40 ft); Jan. 14 (1830 hrs) 4,830 cfs (10.69 ft).

Note.--No gage-height record May 25 to Aug. 14.

SACRAMENTO RIVER BASIN

809

11-3795. ELDER CREEK NEAR PASKENTA, CALIF.

LOCATION.--Lat 40°01'30", long 122°30'35", in SE¼NW¼ Sec.14, T.25 N., R.6 W., on left bank 2.5 miles downstream from South Fork Elder Creek, 8.2 miles northwest of Flournoy, and 10 miles north of Paskenta.

DRAINAGE AREA.--92.9 sq mi.

RECORDS AVAILABLE.--October 1948 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Digital water-stage recorder. Datum of gage is 718.1 ft above mean sea level. Prior to Aug. 13, 1965, graphic water-stage recorder at site 300 ft downstream at datum 5.13 ft lower. Aug. 13, 1965, to Oct. 12, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--20 years, 94.8 cfs (68,630 acre-ft per year); median of yearly mean discharges, 74 cfs (53,600 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,970 cfs Feb. 19 (gage height, 6.20 ft), from rating curve extended above 1,500 cfs; minimum daily, 1.1 cfs Sept. 28, 29.

1948-68: Maximum discharge, 11,700 cfs Feb. 24, 1958 (gage height, 13.90 ft, site and datum then in use), from rating curve extended above 3,500 cfs on basis of slope-area measurements at gage heights 10.97 and 13.90 ft; no flow at times in some years.

REMARKS.--Records excellent. No regulation or large diversion above station. Records of suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	6.0	13	20	168	178	92	40	17	5.4	2.6	2.6
2	9.2	5.7	13	18	388	158	81	39	17	5.1	2.2	2.5
3	17	5.7	72	17	270	143	74	38	17	5.4	1.9	2.2
4	10	6.5	78	16	187	138	69	39	17	5.1	1.7	2.0
5	11	6.9	108	16	168	136	68	37	18	4.8	1.6	2.1
6	10	6.9	34	15	182	123	64	36	20	4.8	1.6	2.1
7	9.2	7.4	69	14	175	114	61	33	22	3.9	1.3	2.0
8	8.3	7.4	33	15	161	114	60	32	17	3.6	1.7	1.9
9	8.3	7.8	24	17	163	100	58	31	16	3.3	1.6	1.8
10	7.8	8.3	23	220	199	90	61	30	15	3.3	1.3	1.9
11	7.4	8.3	22	57	163	85	66	30	14	3.0	1.3	1.9
12	7.4	7.8	22	36	141	100	68	30	14	2.9	1.2	1.9
13	6.9	9.6	18	102	152	100	61	32	13	2.9	1.3	1.8
14	6.0	43	16	1,130	121	87	58	37	13	3.0	1.8	1.9
15	6.0	17	17	760	108	83	57	31	12	3.3	2.5	2.1
16	6.0	12	16	290	290	123	55	28	11	3.0	2.3	1.8
17	6.0	11	15	168	634	104	54	27	10	2.9	2.1	1.5
18	6.0	11	20	119	326	92	51	27	9.6	2.8	2.1	1.4
19	6.0	12	17	90	905	83	50	28	9.2	2.5	2.9	1.3
20	6.5	13	15	78	980	81	47	33	8.7	2.2	11	1.4
21	6.5	11	15	83	840	78	45	28	8.7	2.2	13	1.6
22	7.8	10	15	79	574	76	43	28	7.8	2.1	8.3	1.6
23	7.8	10	15	71	570	74	42	28	7.4	2.0	6.0	1.5
24	7.4	10	18	64	439	72	40	27	6.5	2.0	4.8	1.5
25	6.9	10	22	60	343	79	39	26	6.0	2.0	4.5	1.4
26	6.9	9.2	28	55	287	76	39	25	5.7	1.9	6.5	1.3
27	6.9	9.6	34	50	248	71	39	23	5.7	1.8	6.0	1.3
28	6.5	10	33	74	217	72	39	22	5.4	1.7	5.1	1.1
29	6.5	17	28	478	192	78	39	20	5.1	1.7	3.3	1.1
30	6.0	17	23	238	-----	83	40	19	5.4	1.8	2.9	1.2
31	6.0	-----	20	175	-----	83	-----	18	-----	1.9	2.7	-----
TOTAL	235.9	327.1	896	4,625	9,591	3,074	1,660	922	354.2	94.3	109.1	51.7
MEAN	7.61	10.9	28.9	149	331	99.2	55.3	29.7	11.8	3.04	3.52	1.72
MAX	17	43	108	1,130	980	178	92	40	22	5.4	13	2.6
MIN	5.7	5.7	13	14	108	71	39	18	5.1	1.7	1.2	1.1
AC-FT	468	649	1,780	9,170	19,020	6,100	3,290	1,830	703	187	216	103

CAL YR 1967 TOTAL 44,000.3 MEAN 121 MAX 2,600 MIN 4.5 AC-FT 87,270
WTR YR 1968 TOTAL 21,940.3 MEAN 59.9 MAX 1,130 MIN 1.1 AC-FT 43,520

PEAK DISCHARGE (BASE, 1,200 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-14	1645	6.09	1,890	02-19	1915	6.20	1,970
01-29	1415	5.29	1,380				

SACRAMENTO RIVER BASIN

11-3805. ELDER CREEK AT GERBER, CALIF.

LOCATION.--Lat 40°03'05", long 122°09'53", in Saucos Grant, on right bank 1.0 mile west of Gerber, and 3.5 miles upstream from mouth.

DRAINAGE AREA.--136 sq mi.

RECORDS AVAILABLE.--October 1949 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 232.14 ft above mean sea level (from Bureau of Reclamation bench-mark). Prior to Oct. 1, 1961, at site about 150 ft upstream at datum 4.32 ft higher.

AVERAGE DISCHARGE.--19 years, 99.8 cfs (72,250 acre-ft per year); median of yearly mean discharges, 80 cfs (57,900 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,430 cfs Jan. 29 (gage height, 8.16 ft); no flow for many days. 1949-68: Maximum discharge, 14,100 cfs Jan. 5, 1965 (gage height, 14.90 ft); no flow at times in each year.

REMARKS.--Records good.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	5.0	18	141	186	85	25	7.6	.99	0	
2	.05	0	2.8	18	456	169	88	23	7.6	.87	.13	
3	.11	0	13	16	326	152	73	21	7.6	.99	.99	
4	.14	0	40	14	178	141	69	23	7.5	.81	.14	
5	.07	0	140	12	141	134	67	20	7.4	.87	.02	
6	0	0	61	9.8	137	127	62	28	7.5	.81	.01	
7	0	0	60	8.6	137	117	60	49	8.0	.93	0	
8	0	0	46	8.0	127	117	58	58	8.0	.61	0	
9	0	0	25	10	117	104	57	73	5.6	1.3	0	
10	0	0	19	156	141	93	55	80	4.9	.61	.22	
11	0	0	18	76	124	88	57	78	5.2	1.0	0	
12	0	0	16	22	102	88	58	71	4.6	.31	0	
13	0	0	14	21	104	110	57	50	3.6	.03	0	
14	0	0	8.0	878	90	104	54	46	2.9	.03	0	
15	0	9.6	7.4	1,090	73	96	54	40	2.0	.12	0	
16	0	3.8	12	428	263	113	50	35	1.6	.35	0	
17	0	1.1	9.2	206	1,040	120	49	27	1.4	.06	0	
18	0	1.1	10	127	440	104	47	25	1.1	.02	0	
19	0	.94	16	90	761	93	46	22	1.3	.39	0	
20	0	.20	21	73	1,400	88	44	22	1.2	.61	0	
21	0	.71	19	67	926	85	42	20	1.3	.56	.08	
22	0	1.1	18	69	660	82	41	15	1.3	.01	0	
23	0	.67	18	64	660	82	38	14	.93	.05	0	
24	0	.07	17	58	543	78	36	12	.87	0	0	
25	0	0	18	55	404	78	32	12	.93	0	0	
26	0	0	20	52	320	80	27	12	.76	0	0	
27	0	0	25	47	274	75	27	11	1.0	.07	0	
28	0	0	30	46	235	73	27	9.0	.81	0	0	
29	0	.09	29	598	210	75	28	8.4	.87	0	0	
30	0	3.4	25	540	-----	80	27	7.4	1.0	0	0	
31	0	-----	21	191	-----	82	-----	7.4	-----	0	0	-----
TOTAL	0.37	22.78	783.4	5,068.4	10,530	3,214	1,515	944.2	106.37	12.40	1.59	0
MEAN	.012	.76	25.3	163	363	104	50.5	30.5	3.55	.40	.051	0
MAX	.14	9.6	140	1,090	1,400	186	88	80	8.0	1.3	.99	0
MIN	0	0	2.8	8.0	73	73	27	7.4	.76	0	0	0
AC-FT	.7	45	1,550	10,050	20,890	6,370	3,000	1,870	211	25	3.2	0
CAL YR 1967	TOTAL 47,713.45	MEAN 131	MAX 2,310	MIN 0	AC-FT 94,640							
WTR YR 1968	TOTAL 22,198.51	MEAN 60.7	MAX 1,400	MIN 0	AC-FT 44,030							

PEAK DISCHARGE (BASE, 1,200 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-14	2130	7.84	2,170	02-17	0700	7.79	1,990
01-29	2230	8.16	2,430	02-19	2400	8.11	2,370

SACRAMENTO RIVER BASIN

811

11-3815. MILL CREEK NEAR LOS MOLINOS, CALIF.

LOCATION.--Lat 40°03'17", long 122°01'23", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.6, T.25 N., R.1 W., on right bank 4.5 miles northeast of Los Molinos, and 5.5 miles (revised) upstream from mouth.

DRAINAGE AREA.--131 sq mi.

RECORDS AVAILABLE.--September 1909 to August 1913 (fragmentary), October 1928 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 385 ft (from topographic map). September 1909 to September 1913, staff gage at site 0.3 mile downstream at different datum. October 1928 to Oct. 5, 1964, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--40 years (1928-68), 292 cfs (211,400 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4,000 cfs Jan. 14 (gage height, 7.94 ft); minimum daily, 95 cfs Sept. 18, 24, 25, 29, 30.

1928-68: Maximum discharge, 23,000 cfs Dec. 11, 1937 (gage height, 23.4 ft from floodmarks), from rating curve extended above 7,000 cfs on basis of slope-area measurement of maximum flow; minimum, 49 cfs Dec. 13, 1932.

REMARKS.--Records good except those for period of no gage-height record, which are fair. No storage or large diversion above station. Records of chemical analyses near this station for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	119	117	193	142	331	457	400	346	237	163	110	100
2	166	115	147	139	861	413	363	343	238	161	111	100
3	256	114	480	135	664	391	332	354	240	159	109	101
4	153	114	283	130	489	380	320	370	243	158	107	100
5	143	114	395	130	434	380	314	362	253	157	105	100
6	142	114	207	130	436	363	300	327	282	154	103	100
7	136	114	379	128	389	350	293	310	272	150	101	97
8	134	115	208	128	349	347	290	304	260	148	100	96
9	130	124	165	189	342	322	296	290	245	145	100	97
10	130	122	152	1,580	348	300	320	283	239	141	100	97
11	127	120	146	342	323	284	352	279	237	139	100	97
12	125	120	141	227	308	388	373	289	226	137	99	97
13	123	120	133	238	305	510	342	302	223	134	98	97
14	122	152	121	1,540	280	423	324	318	221	132	101	103
15	120	142	123	2,440	259	358	329	280	220	131	108	103
16	120	128	133	928	257	829	315	260	213	130	105	99
17	120	125	131	530	524	635	305	247	210	126	114	97
18	118	130	135	386	513	434	282	242	207	121	107	95
19	117	442	138	317	736	362	273	247	203	117	182	96
20	117	154	133	276	1,820	326	267	279	200	115	259	97
21	117	136	131	254	1,760	308	261	269	196	113	446	97
22	128	129	130	238	1,370	298	251	301	191	112	167	97
23	123	128	130	230	1,570	293	247	338	187	110	144	97
24	120	126	132	226	1,280	290	245	330	180	109	131	95
25	120	124	137	224	899	313	251	303	174	109	120	95
26	120	123	145	218	713	340	262	289	172	108	117	96
27	117	122	171	213	615	313	281	277	169	107	115	97
28	118	126	174	203	547	312	293	263	168	108	112	97
29	119	142	163	843	493	338	307	254	168	109	109	95
30	117	203	154	743	-----	372	333	246	167	110	107	95
31	117	-----	147	396	-----	388	-----	239	-----	110	103	-----
TOTAL	4,034	4,155	5,557	13,843	19,215	11,817	9,121	9,141	6,441	4,023	3,990	2,930
MEAN	130	139	179	447	663	381	304	295	215	130	129	97.7
MAX	256	442	480	2,440	1,820	829	400	370	282	163	446	103
MIN	117	114	121	128	257	284	245	239	167	107	98	95
AC-FT	8,000	8,240	11,020	27,460	38,110	23,440	18,090	18,130	12,780	7,980	7,910	5,810

CAL YR 1967	TOTAL	136,079	MEAN	373	MAX	3,090	MIN	114	AC-FT	269,900
WTR YR 1968	TOTAL	94,267	MEAN	258	MAX	2,440	MIN	95	AC-FT	187,000

PEAK DISCHARGE (BASE, 2,400 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-10	0400	7.62	3,650	02-20	0130	6.42	2,470
01-14	1830	7.94	4,000				

Note.--No gage-height record May 9 to Aug. 6.

SACRAMENTO RIVER BASIN

11-3819.9. THOMES CREEK TRIBUTARY AT PASKENTA, CALIF.

LOCATION.--Lat 39°52'15", long 122°33'20", in NW¼NE¼ sec.8, T.23 N., R.6 W., at culvert on county road, 1.0 mile southwest of Paskenta.

DRAINAGE AREA.--0.64 sq mi.

RECORDS AVAILABLE.--Water years 1961-67 (annual maximum), October 1967 to September 1968.

GAGE.--Graphic water-stage recorder, crest-stage gage, and tipping-bucket rain gage. Altitude of gage is 825 ft (from topographic map). Prior to Aug. 7, 1967, crest-stage gages only, at same site and datum.

EXTREMES.--Maximum discharge during year, 52 cfs Jan. 29 (gage height, 5.44 ft); no flow for several months. 1961-68: Maximum discharge, 107 cfs Jan. 5, 1965 (gage height, 7.99 ft); no flow for several months each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	0	0	1.8	.05	.02					
2		0	0	0	2.8	.02	0					
3		0	.05	0	.50	.01	0					
4		0	.30	0	.28	.02	0					
5		0	.05	0	.16	.01	0					
6		0	0	0	.10	.01	0					
7		0	0	0	.05	.02	0					
8		0	0	0	.02	.05	0					
9		0	0	0	.02	0	0					
10		0	0	.20	.01	0	0					
11		0	0	0	0	0	0					
12		0	0	0	0	.10	0					
13		0	0	5.0	.13	.02	0					
14		.01	0	8.0	.01	0	0					
15		0	0	2.0	.02	0	0					
16		0	0	.06	6.0	.50	0					
17		0	0	.02	8.1	.10	0					
18		0	.05	.01	.55	0	0					
19		0	0	.01	13	0	0					
20		0	0	.01	1.7	0	0					
21		0	0	0	3.0	0	0					
22		0	0	0	1.6	0	0					
23		0	0	0	.82	0	0					
24		0	0	0	.40	0	0					
25		0	0	0	.24	0	0					
26		0	0	0	.13	0	0					
27		0	0	0	.07	0	0					
28		0	0	0	.05	0	0					
29		0	0	15	.05	0	0					
30		0	0	1.4	-----	0	0					
31		-----	0	.45	-----	0	-----					
TOTAL	0	0.01	0.45	32.16	41.61	0.91	0.02	0	0	0	0	0
MEAN	0	.0003	.015	1.04	1.43	.029	.0007	0	0	0	0	0
MAX	0	.01	.30	15	13	.50	.02	0	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	.02	.9	64	83	1.8	.04	0	0	0	0	0
(a)	.1	2.0	3.4	6.0	4.5	1.1	.5	.9	.3	0	.6	0

CAL YR 1967 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1968 TOTAL 75.16 MEAN .21 MAX 15 MIN 0 AC-FT 149

a Precipitation, in inches.

SACRAMENTO RIVER BASIN

813

11-3820. THOMES CREEK AT PASKENTA, CALIF.

LOCATION.--Lat 39°52'57", long 122°33'03", in SW¼NW¼ sec.4, T.23 N., R.6 W., on left bank 0.25 mile upstream from Digger Creek, and 0.3 mile upstream from highway bridge at Paskenta.

DRAINAGE AREA.--194 sq mi.

RECORDS AVAILABLE.--October 1920 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Published as Thomas Creek at Paskenta prior to 1943.

GAGE.--Graphic water-stage recorder. Datum of gage is 731.1 ft above mean sea level. Prior to Oct. 1, 1930, staff gage at site 0.3 mile downstream at different datum. Oct. 1, 1930, to Dec. 28, 1938, water-stage recorder at site 1,300 ft upstream and Dec. 29, 1938, to June 20, 1942, at site 1,000 ft upstream at different datum. June 21, 1942, to Sept. 30, 1959, at present site at datum 1.75 ft higher.

AVERAGE DISCHARGE.--48 years, 272 cfs (196,900 acre-ft per year); median of yearly mean discharges, 220 cfs (159,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 8,740 cfs Feb. 19 (gage height, 9.64 ft); minimum daily, 3.5 cfs Sept. 30.

1920-68: Maximum discharge, 37,800 cfs Dec. 22, 1964 (gage height, 15.32 ft, in gage well, 16.4 ft, from floodmarks), from rating curve extended above 14,000 cfs on basis of slope-area measurement of maximum flow; no flow at times in many years.

REMARKS.--Records fair. No storage or large diversions above station. Records of chemical analyses, water temperatures, and suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	17	44	220	535	726	495	212	80	19	7.2	11
2	11	16	41	205	1,000	618	441	210	79	19	6.7	9.6
3	79	16	142	188	790	580	414	208	77	20	6.2	9.0
4	46	16	202	182	535	562	381	214	74	25	6.2	8.3
5	34	17	302	174	545	568	358	216	76	23	5.6	8.3
6	31	17	140	164	580	495	351	190	74	23	5.6	8.3
7	27	17	176	144	586	441	334	168	69	22	5.6	8.3
8	24	17	116	137	535	414	324	158	58	21	5.6	8.3
9	23	18	81	154	520	381	327	158	52	20	5.0	7.7
10	21	19	96	444	540	344	348	154	51	19	4.3	7.7
11	21	19	110	280	495	324	369	152	49	18	4.3	7.7
12	20	19	110	245	475	354	358	144	46	18	4.4	7.7
13	20	22	90	562	475	362	309	158	42	18	4.4	7.7
14	20	115	75	4,510	455	351	294	156	39	18	4.6	7.1
15	19	80	51	4,080	418	348	306	132	37	17	4.6	7.1
16	18	53	59	1,530	545	423	297	120	35	17	4.6	5.9
17	18	44	51	890	1,070	410	268	120	34	16	4.6	5.2
18	18	42	81	790	946	369	248	122	32	13	4.6	5.2
19	18	42	51	790	3,580	354	240	134	31	12	5.2	5.2
20	17	42	40	820	4,360	340	225	224	30	12	8.3	4.6
21	18	40	42	1,040	3,680	348	216	166	28	12	21	4.6
22	19	38	40	1,110	2,790	344	196	142	25	10	24	4.0
23	20	37	42	1,090	3,190	337	192	124	23	8.9	21	4.0
24	20	35	87	1,040	1,950	351	190	112	28	8.9	18	4.0
25	20	34	160	946	1,170	441	190	110	25	8.4	16	4.0
26	20	34	240	790	979	455	196	106	24	7.2	18	4.0
27	19	33	331	626	935	405	204	102	23	6.7	18	4.0
28	19	34	325	510	880	432	194	100	21	6.7	16	4.0
29	18	42	304	830	790	510	194	98	20	7.2	14	4.0
30	18	55	255	717	-----	535	214	91	20	6.7	12	3.5
31	18	-----	238	550	-----	495	-----	86	-----	7.2	11	-----
TOTAL	701.0	1,030	4,122	25,758	35,349	13,417	8,673	4,587	1,302	459.9	296.6	190.0
MEAN	22.6	34.3	133	831	1,219	433	289	148	43.4	14.8	9.57	6.33
MAX	79	115	331	4,510	4,360	726	495	224	80	25	24	11
MIN	7.0	16	40	137	418	324	190	86	20	6.7	4.3	3.5
AC-FT	1,390	2,040	8,180	51,090	70,110	26,610	17,200	9,100	2,580	912	588	377
CAL YR 1967	TOTAL	114,118.1	MEAN	313	MAX	5,700	MIN	6.1	AC-FT	226,300		
WTR YR 1968	TOTAL	95,885.5	MEAN	262	MAX	4,510	MIN	3.5	AC-FT	190,200		

PEAK DISCHARGE (BASE, 1,800 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-14	2100	9.30	7,700	02-19	2200	9.64	8,740
02-02	2400	5.83	1,810				

SACRAMENTO RIVER BASIN

11-3825.5. DEER CREEK BELOW SLATE CREEK, NEAR DEER CREEK MEADOWS, CALIF.

LOCATION.--Lat 40°14'00", long 121°27'50", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.1, T.27 N., R.4 E., on right bank 0.4 mile downstream from Slate Creek, 3.2 miles southwest of Deer Creek Meadows, and 15 miles southwest of Chester.

DRAINAGE AREA.--69.4 sq mi.

RECORDS AVAILABLE.--August 1961 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 4,300 ft (from topographic map). Prior to Oct. 13, 1966, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--7 years, 125 cfs (90,500 acre-ft per year).

EXTREMES.--Maximum discharge during year, 890 cfs Feb. 21 (gage height, 4.90 ft); minimum daily, 47 cfs Sept. 29, 30.

1961-68: Maximum discharge, 7,900 cfs Dec. 22, 1964 (gage height, 11.06 ft in gage well, 11.95 ft from floodmarks), from rating curve extended above 1,500 cfs on basis of slope-area measurement at gage height 9.06 ft; minimum, 37 cfs Nov. 17, 1961, Sept. 17, 1962.

REMARKS.--Records good. No storage or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	57	59	62	76	264	243	137	85	57	52	50
2	118	56	59	59	82	242	224	134	84	57	51	50
3	89	56	64	57	101	235	209	133	83	57	51	50
4	66	57	81	57	93	231	208	132	82	56	51	50
5	67	57	103	56	88	233	206	129	84	59	50	50
6	64	56	80	55	85	216	197	123	85	59	50	50
7	62	56	75	55	84	205	194	118	81	56	50	50
8	61	57	67	56	86	200	193	116	78	55	50	49
9	61	57	66	59	92	184	199	113	76	55	50	49
10	61	57	64	59	96	171	209	111	74	54	50	49
11	60	56	63	60	101	163	221	111	72	54	50	49
12	60	56	61	59	104	154	221	111	71	54	50	49
13	59	57	54	67	106	150	202	126	70	54	50	50
14	58	76	63	158	99	156	195	115	69	54	51	53
15	59	62	61	461	92	156	194	106	68	54	51	50
16	59	59	61	256	92	150	186	101	66	53	52	49
17	59	58	60	162	142	148	169	99	66	53	52	49
18	59	64	62	130	157	140	161	97	65	52	53	49
19	59	139	61	114	247	134	158	105	64	53	96	49
20	58	80	60	104	586	136	151	119	63	52	76	49
21	61	67	59	97	756	138	145	105	63	52	78	49
22	61	61	59	93	640	144	139	133	62	51	64	49
23	60	60	59	93	795	151	138	131	62	51	57	48
24	59	59	60	91	627	156	136	131	61	51	54	48
25	58	58	62	89	460	202	136	119	60	51	53	48
26	58	56	65	84	385	191	137	105	59	51	53	48
27	58	57	75	80	348	180	137	99	58	51	52	48
28	59	59	75	77	318	192	135	95	58	50	52	48
29	57	59	72	62	291	215	136	93	58	51	51	47
30	57	58	67	77	-----	235	138	90	58	50	51	47
31	57	-----	64	83	-----	246	-----	87	-----	52	51	-----
TOTAL	1,945	1,867	2,041	3,072	7,229	5,718	5,317	3,524	2,085	1,659	1,702	1,473
MEAN	62.7	62.2	65.8	99.1	249	184	177	114	69.5	53.5	54.9	49.1
MAX	118	139	103	461	795	264	243	137	85	59	96	53
MIN	57	56	54	55	76	134	135	87	58	50	50	47
AC-FT	3,860	3,700	4,050	6,090	14,340	11,340	10,550	6,990	4,140	3,290	3,380	2,920
CAL YR 1967 TOTAL	52,415			MEAN 144	MAX 927	MIN 54		AC-FT 104,000				
WTR YR 1968 TOTAL	37,632			MEAN 103	MAX 795	MIN 47		AC-FT 74,640				

Peak discharge (base, 300 cfs).--Jan. 15 (0600 hrs) 555 cfs (4.27 ft); Feb. 21 (0745 hrs) 890 cfs (4.90 ft).

SACRAMENTO RIVER BASIN

815

11-3835. DEER CREEK NEAR VINA, CALIF.

LOCATION.--Lat 40°00'50", long 121°56'50", in NW¼NE¼ sec.23, T.25 N., R.1 W., on left bank 0.5 mile upstream from concrete diversion dam, and 7.9 miles northeast of Vina.

DRAINAGE AREA.--208 sq mi.

RECORDS AVAILABLE.--October 1911 to December 1915, March 1920 to December 1937, January 1939 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is 479.5 ft above mean sea level (river-profile survey). Prior to Oct. 9, 1928, staff gage at site 0.8 mile downstream at different datum. Oct. 9, 1928, to Jan. 19, 1939, graphic water-stage recorder at present site at datum 2.64 ft higher. Jan. 19, 1939, to July 14, 1965, graphic water-stage recorder at present site and datum. July 15, 1965, to Apr. 27, 1967, digital water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--50 years, 305 cfs (220,800 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4,310 cfs Jan. 10 (gage height, 7.86 ft); minimum daily, 84 cfs Sept. 28-30.

1911-15, 1920-37, 1939-68: Maximum discharge, 23,800 cfs Dec. 10, 1937 (gage height, 19.2 ft, present datum, from floodmarks), from rating curve extended above 9,200 cfs on basis of velocity-area studies; minimum, 43 cfs Dec. 13, 1932.

REMARKS.--Records good. No storage or large diversions above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	111	111	143	128	318	590	507	249	152	102	96	89
2	122	111	125	126	648	514	467	244	148	102	93	89
3	219	111	291	122	672	481	429	242	146	102	90	89
4	127	112	209	119	560	451	411	242	146	101	88	88
5	121	112	336	119	536	448	403	236	150	99	87	88
6	121	112	185	117	590	423	381	229	160	101	87	88
7	116	112	371	116	546	406	368	220	156	99	87	87
8	115	113	187	117	485	406	358	212	143	98	86	87
9	113	113	149	156	505	364	355	208	137	98	86	87
10	113	114	138	1,820	532	333	364	201	134	97	86	87
11	113	114	133	367	458	315	385	199	132	96	86	87
12	113	113	130	225	426	420	396	203	129	96	86	87
13	112	114	122	235	426	575	371	210	127	96	86	88
14	111	131	112	1,210	374	555	351	224	126	97	87	92
15	109	130	119	2,410	330	477	345	197	124	97	89	90
16	111	119	128	1,130	336	1,310	338	186	122	96	88	87
17	111	116	125	600	824	934	313	178	120	94	93	86
18	111	119	130	416	699	675	298	176	119	94	89	86
19	111	203	128	330	951	553	289	176	117	93	96	86
20	111	166	125	276	2,360	483	278	201	115	93	184	86
21	111	130	122	242	2,300	448	267	192	113	92	141	86
22	115	120	121	218	1,980	429	256	210	112	92	127	86
23	114	117	123	209	2,090	418	252	234	110	92	106	85
24	113	115	128	200	1,770	411	246	232	109	90	98	85
25	112	114	135	191	1,260	440	244	212	108	90	96	85
26	111	113	141	185	1,010	479	244	190	106	90	94	85
27	111	113	161	176	865	433	246	178	105	89	93	85
28	111	117	163	174	752	422	244	170	105	89	93	84
29	113	140	154	850	655	448	244	164	102	90	90	84
30	112	152	141	797	-----	479	249	160	102	92	90	84
31	111	-----	133	395	-----	499	-----	156	-----	92	89	-----
TOTAL	3,625	3,677	4,908	13,776	25,258	15,619	9,899	6,331	3,775	2,949	2,987	2,603
MEAN	117	123	158	444	871	504	330	204	126	95.1	96.4	86.8
MAX	219	203	371	2,410	2,360	1,310	507	249	160	102	184	92
MIN	109	111	112	116	318	315	244	156	102	89	86	84
AC-FT	7,190	7,290	9,730	27,320	50,100	30,980	19,630	12,560	7,490	5,850	5,920	5,160
CAL YR 1967	TOTAL 149,506		MEAN 410		MAX 3,900		MIN 108		AC-FT 296,500			
WTR YR 1968	TOTAL 95,407		MEAN 261		MAX 2,410		MIN 84		AC-FT 189,200			

PEAK DISCHARGE (BASE, 2,500 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-10	0530	7.86	4,310	02-20	0300	6.50	2,760
01-15	0330	7.07	3,360	03-16	0930	6.24	2,520

11-3846. LITTLE STONY CREEK ABOVE EAST PARK RESERVOIR, NEAR LODOGA, CALIF.

LOCATION.--Lat 39°17'48", long 122°32'22", in SE¼NW¼ sec.28, T.17 N., R.6 W., on left bank 1.1 miles upstream from county bridge on Lodoga-Stonyford road, 1.4 miles downstream from Frenzel Creek, and 2.8 miles southwest of Lodoga.

DRAINAGE AREA.--45.6 sq mi.

RECORDS AVAILABLE.--September 1966 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 1,300 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 998 cfs Jan. 14 (gage height, 6.79 ft); minimum daily, 0.39 cfs Sept. 27.

1966-68: Maximum discharge, 2,300 cfs (revised) Jan. 21, 1967 (gage height, 9.15 ft), from rating curve extended above 1,400 cfs; minimum daily, 0.39 cfs Sept. 27, 1968.

REVISIONS.--The maximum discharge for the 1967 water year has been revised to 2,300 cfs Jan. 21, 1967 (gage height, 9.15 ft), superseding figures published in Surface Water Records of California, Vol. 2, 1967.

REMARKS.--Records good. No known storage or diversions above station. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

REVISIONS.--Revised figures of discharge, in cubic feet per second, for the 1967 water year, superseding those published in Surface Water Records of California, Vol. 2, 1967, are given herewith:

Nov. 19, 1966.....	100	Jan. 20, 1967.....	304
Dec. 2.....	353	21.....	1,530
4.....	576	29.....	1,120
5.....	647		

MONTH	CFS-DAYS	MAX	MIN	MEAN	AC-FT
November 1966.....	898.4	206	1.1	29.9	1,780
December.....	3,770	647	28	122	7,480
January 1967.....	8,950	1,530	21	289	17,750
CAL YR 1966.....					
WTR YR 1967.....	27,202.77	1,530	0.70	74.5	53,960

Revised peak discharge.--1967: Nov. 19 (2100 hrs) 638 cfs (6.77 ft); Dec. 2 (1600 hrs) 1,060 cfs (7.52 ft); Dec. 4 (2245 hrs) 1,300 cfs (7.88 ft); Jan. 21 (1015 hrs) 2,300 cfs (9.15 ft); Jan. 29 (0530 hrs) 1,540 cfs (7.89 ft).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.8	6.3	7.7	70	95	57	17	8.5	2.3	.79	1.1
2	3.3	1.8	5.0	7.5	210	86	53	17	8.2	2.3	.78	1.0
3	5.3	1.8	56	7.1	208	78	47	17	8.2	2.3	.70	1.1
4	2.8	1.9	45	7.0	142	71	45	16	8.2	2.2	.64	1.0
5	2.6	2.1	74	7.0	124	68	43	16	8.9	2.1	.62	.99
6	2.6	2.1	20	6.8	124	63	41	16	9.2	1.9	.62	1.0
7	2.3	2.1	69	6.7	118	63	39	15	8.5	1.6	.61	1.0
8	2.1	2.1	24	7.6	103	63	37	15	7.8	1.6	.59	.84
9	2.1	2.3	15	17	96	56	35	15	7.5	1.7	.67	.81
10	2.1	2.3	12	70	91	51	34	14	7.2	1.6	.62	.80
11	2.1	2.5	10	28	81	47	33	15	6.8	1.6	.58	.81
12	2.0	2.5	9.1	23	73	108	33	15	6.2	1.4	.58	.83
13	2.0	3.6	7.4	70	72	113	31	15	5.9	1.5	.64	.81
14	1.8	17	7.2	530	66	113	29	15	5.9	1.7	.78	.81
15	1.8	5.3	8.5	438	61	99	29	14	5.7	1.8	.95	.82
16	1.8	4.0	7.5	152	172	194	28	14	5.1	1.7	.96	.77
17	1.8	3.5	7.8	93	452	154	27	13	4.8	1.5	.90	.61
18	1.8	3.5	25	76	267	127	26	13	4.6	1.4	.86	.55
19	1.8	3.5	16	59	610	108	26	12	4.1	1.3	.91	.54
20	1.9	3.5	11	51	624	95	25	13	4.1	1.2	2.0	.56
21	1.9	3.4	8.7	46	480	86	25	12	3.9	1.1	5.6	.63
22	2.1	3.5	7.3	41	340	78	23	12	3.7	1.1	3.9	.67
23	2.2	3.5	7.3	38	272	74	23	12	3.3	.97	2.2	.64
24	2.1	3.5	8.5	36	225	69	22	12	3.1	1.0	1.7	.58
25	2.0	3.5	10	34	190	66	21	12	3.1	.94	1.5	.48
26	1.9	3.5	11	32	162	63	20	11	2.9	.92	1.7	.42
27	2.0	3.6	12	31	138	58	20	10	2.9	.83	1.6	.39
28	1.9	4.0	11	31	118	56	19	10	2.7	.74	1.5	.41
29	1.9	10	9.4	180	104	55	19	9.6	2.4	.63	1.4	.41
30	1.9	9.6	8.6	120	-----	53	18	9.2	2.5	.61	1.2	.51
31	1.9	-----	8.1	80	-----	50	-----	8.9	-----	.73	1.1	-----
TOTAL	67.1	117.3	537.7	2,333.4	5,793	2,560	928	415.7	165.9	44.27	39.20	21.89
MEAN	2.16	3.91	17.3	75.3	200	82.6	30.9	13.4	5.53	1.43	1.26	.73
MAX	5.3	17	74	530	624	194	57	17	9.2	2.3	5.6	1.1
MIN	1.3	1.8	5.0	6.7	61	47	18	8.9	2.4	.61	.58	.39
AC-FT	133	233	1,070	4,630	11,490	5,080	1,840	825	329	88	78	43
CAL YR 1967	TOTAL	23,999.97	MEAN	65.8	MAX	2,060	MIN	.97	AC-FT	47,600		
WTR YR 1968	TOTAL	13,023.46	MEAN	35.6	MAX	624	MIN	.39	AC-FT	25,830		

PEAK DISCHARGE (BASE, 370 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-14	2300	6.79	998	02-17	0415	5.64	538
02-02	2000	5.15	370	02-19	1615	6.75	980

Note.--No gage-height record Jan. 5-15.

SACRAMENTO RIVER BASIN

11-3865. GRINDSTONE CREEK NEAR ELK CREEK, CALIF.

LOCATION (revised).--Lat 39°40'38", long 122°31'51", on line between secs. 15 and 16, T.21 N., R.6 W., on right bank 600 ft upstream from highway bridge, 4.5 miles north of Elk Creek.

DRAINAGE AREA.--172 sq mi.

RECORDS AVAILABLE.--October 1935 to November 1937, October 1939 to April 1940, October 1965 to September 1968. Monthly and yearly discharge only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Altitude of gage is 640 ft (from topographic map). October 1935 to November 1937, at site 0.2 mile downstream at different datum. October 1939 to April 1940, at site 600 ft downstream at different datum.

AVERAGE DISCHARGE.--5 years (1936-37, 1966-68), 124 cfs (89,770 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4,570 cfs Feb. 19 (gage height, 12.52 ft), from rating curve extended above 2,700 cfs; minimum daily, 0.20 cfs Sept. 16-24.

1935-37, 1939-40, 1965-68: Maximum discharge, 13,000 cfs Feb. 27, 1940 (gage height, 7.55 ft, site and datum then in use), from rating curve extended above 2,400 cfs on basis of slope-area measurement of maximum flow; no flow at times in many years.

Flood of Dec. 22, 1964, reached a stage of 9.38 ft from floodmarks, at site 600 ft downstream at different datum (discharge, 22,200 cfs by slope-area measurement).

REMARKS.--No known diversions above station.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CURIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	2.6	7.0	36	115	381	198	68	31	14	1.0	1.0
2	7.0	2.0	4.2	31	216	349	170	68	28	12	1.0	.60
3	7.0	2.6	68	26	373	341	144	65	24	12	1.0	.60
4	8.2	3.4	86	24	297	311	139	68	26	12	.60	.60
5	8.2	4.2	165	20	282	282	134	65	26	11	.60	.60
6	7.0	4.2	46	20	311	242	125	61	26	9.4	.60	.60
7	6.0	5.0	72	18	319	223	115	58	26	8.2	.60	.60
8	5.0	5.0	43	18	319	193	111	55	22	7.0	.60	1.0
9	4.2	5.0	31	33	311	165	111	55	20	5.0	.60	1.0
10	3.4	5.0	33	346	319	144	115	55	20	5.0	.60	1.0
11	3.4	5.0	36	120	297	134	134	52	22	4.2	.60	1.0
12	3.4	6.0	36	79	275	170	134	52	22	3.4	1.0	1.0
13	3.4	8.2	26	172	268	193	111	61	22	3.4	1.0	1.0
14	3.4	49	18	1,640	248	170	111	61	22	4.2	1.5	.60
15	2.6	14	20	1,460	206	170	111	52	22	4.2	1.5	.40
16	3.4	5.0	20	533	326	255	98	49	20	3.4	1.0	.20
17	3.4	2.6	24	326	634	235	90	43	20	2.6	1.0	.20
18	2.6	1.5	33	262	514	198	86	43	20	2.6	1.0	.20
19	3.4	1.5	28	216	1,870	176	86	46	20	2.6	2.0	.20
20	3.4	1.5	28	187	2,160	165	79	72	18	2.6	2.6	.20
21	4.2	1.5	41	187	1,780	165	72	58	18	2.6	2.6	.20
22	4.2	1.0	82	187	1,380	165	65	58	18	2.6	2.6	.20
23	7.0	.60	111	165	1,320	165	68	52	17	2.0	1.5	.20
24	7.0	.60	115	154	965	165	61	46	17	2.0	1.5	.20
25	6.0	.40	94	149	722	235	61	49	17	1.5	1.0	.40
26	4.2	.40	65	125	593	235	65	46	17	1.0	1.5	.40
27	4.2	.40	58	107	504	193	65	41	15	1.0	2.0	.40
28	3.4	.40	52	98	441	193	61	41	15	1.0	2.0	.40
29	3.4	4.2	49	193	389	210	65	38	14	1.0	1.0	.40
30	2.6	15	43	165	-----	204	68	36	15	1.0	1.0	.40
31	2.6	-----	38	125	-----	187	-----	33	-----	1.0	1.0	-----
TOTAL	143.2	157.80	1,572.2	7,222	17,754	6,614	3,053	1,647	620	145.5	38.10	15.80
MEAN	4.62	5.26	50.7	233	612	213	102	53.1	20.7	4.69	1.23	.53
MAX	8.2	.49	165	1,640	2,160	381	198	72	31	14	2.6	1.0
MIN	2.6	.40	4.2	18	115	134	61	33	14	1.0	.60	.20
AC-FT	284	313	3,120	14,320	35,210	13,120	6,060	3,270	1,230	289	76	31
CAL YR 1967	TOTAL	61,019.40	MEAN	167	MAX	4,200	MIN	.40	AC-FT	121,000		
WTR YR 1968	TOTAL	38,982.60	MEAN	107	MAX	2,160	MIN	.20	AC-FT	77,320		

11-3870. STONY CREEK NEAR FRUTO, CALIF.

LOCATION (revised).--Lat 39°40'18", long 122°31'01", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.15, T.21 N., R.6 W., on right bank 0.3 mile downstream from Grindstone Creek and 6.5 miles northwest of Fruto.

DRAINAGE AREA.--598 sq mi.

RECORDS AVAILABLE.--January 1901 to October 1912, October 1960 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 600 ft (from topographic map). Prior to Oct. 6, 1912, staff gage at site 1.0 mile downstream at different datum.

AVERAGE DISCHARGE.--19 years, 655 cfs (474,200 acre-ft per year), unadjusted.

EXTREMES.--Maximum discharge during year, 14,500 cfs Feb. 19 (gage height, 11.62 ft); minimum daily, 8.8 cfs Aug. 25.

1901-12, 1960-68: Maximum discharge, 40,200 cfs Dec. 23, 1964 (gage heights, 15.94 ft in gage well, 16.1 ft from floodmarks); no flow July 5-13, Oct. 25, 26, 1901.

REMARKS.--Records fair. Many diversions above station for irrigation. Flow regulated by East Park Reservoir beginning in 1910 (usable capacity, 50,600 acre-ft) and by Stony Gorge Reservoir beginning in 1928 (usable capacity, 50,100 acre-ft).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	301	180	24	40	240	1,080	598	228	228	207	470	343
2	305	137	20	38	643	980	586	238	228	277	430	343
3	332	134	154	37	730	883	515	440	228	425	388	356
4	324	134	145	37	537	618	465	435	224	420	384	440
5	316	134	218	36	620	348	435	435	224	410	379	425
6	305	132	80	32	703	309	406	430	228	410	361	420
7	305	132	188	32	812	289	388	425	224	406	334	317
8	305	130	80	32	831	361	379	406	224	402	330	317
9	297	130	47	36	703	406	370	384	220	402	325	283
10	282	127	43	702	581	388	366	379	224	402	313	140
11	258	123	43	188	515	366	370	379	224	402	313	140
12	258	120	43	109	480	430	384	374	220	397	309	140
13	247	101	33	250	470	542	532	415	220	397	309	140
14	237	119	33	3,490	455	554	614	402	217	402	301	140
15	247	42	23	2,380	420	586	586	379	214	402	297	137
16	208	23	24	576	944	824	576	370	214	406	297	165
17	167	19	23	330	4,640	1,040	570	366	214	406	293	330
18	122	15	51	253	3,450	935	576	334	214	406	293	430
19	56	14	37	224	7,180	857	655	334	214	406	273	425
20	50	14	29	189	7,850	787	649	356	210	397	204	402
21	50	14	26	186	5,230	727	475	343	210	392	103	317
22	51	14	23	183	4,220	685	348	334	207	388	19	309
23	51	14	23	174	3,630	643	309	305	207	388	13	277
24	51	14	30	166	2,990	620	238	297	207	410	9.6	234
25	60	14	48	160	2,090	661	234	301	207	410	8.8	231
26	91	14	80	155	1,710	655	231	293	210	430	9.6	234
27	91	14	101	150	1,660	620	228	269	207	475	9.6	231
28	119	14	91	142	1,470	592	228	245	207	475	14	228
29	107	17	74	1,200	1,240	592	228	238	207	470	14	228
30	107	32	56	770	-----	586	228	234	207	470	144	224
31	132	-----	45	297	-----	570	-----	231	-----	465	370	-----
TOTAL	5,832	2,121	1,935	12,594	57,044	19,534	12,767	10,599	6,489	12,555	7,317.6	8,346
MEAN	188	70.7	62.4	406	1,967	630	426	342	216	405	236	278
MAX	332	180	218	3,490	7,850	1,080	655	440	228	475	470	440
MIN	50	14	20	32	240	289	228	228	207	207	8.8	137
AC-FT	11,570	4,210	3,840	24,980	113,100	38,750	25,320	21,020	12,870	24,900	14,510	16,550
CAL YR 1967	TOTAL 248,247		MEAN 680		MAX 10,600	MIN 14		AC-FT 492,400				
WTR YR 1968	TOTAL 157,133.6		MEAN 429		MAX 7,850	MIN 8.8		AC-FT 311,700				

SACRAMENTO RIVER BASIN

11-3878. NORTH FORK STONY CREEK NEAR NEWVILLE, CALIF.

LOCATION.--Lat 39°47'05", long 122°28'30", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.6, T.22 N., R.5 W., on right bank 150 ft downstream from Bedford Creek, and 2.7 miles east of Newville.

DRAINAGE AREA.--67.1 sq mi.

RECORDS AVAILABLE.--May 1963 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 531.43 ft above mean sea level.

AVERAGE DISCHARGE.--5 years, 33.2 cfs (24,040 acre-ft per year).

EXTREMES.--Maximum discharge during year, 3,580 cfs Jan. 29 (gage height, 5.87 ft); no flow for many days.
1963-68: Maximum discharge, 12,500 cfs Jan. 5, 1965 (gage height, 11.48 ft), from rating curve extended above 2,500 cfs on basis of slope-area measurements at gage heights 7.3 and 11.48 ft; no flow at times in each year.
Flood of Apr. 7, 1963, reached a stage of 7.3 ft from floodmarks (discharge, 4,600 cfs by slope-area measurement).

REMARKS.--Records good. No regulation above station. Probably a few small diversions above the station for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.04	0	3.1	54	43	19	4.0	1.0	.12	.02	
2	.04	.02	0	2.8	245	38	18	4.0	.75	.09	.02	
3	.04	.02	11	2.5	114	33	14	4.0	1.0	.12	.01	
4	.04	0	5.7	2.5	78	32	13	4.3	.88	.09	.01	
5	.04	0	18	2.5	67	30	12	4.6	1.0	.09	.01	
6	.04	0	5.2	2.5	73	29	10	4.3	2.2	.12	.01	
7	.04	0	54	2.5	60	28	9.0	4.6	2.7	.05	0	
8	.04	0	16	2.8	49	34	8.4	4.3	1.8	.06	0	
9	.04	0	6.7	4.3	42	27	8.4	4.0	.75	.04	0	
10	.06	0	3.9	274	49	24	7.8	4.0	.52	.04	0	
11	.06	0	3.5	20	36	22	7.8	4.0	.40	.03	0	
12	.06	0	3.1	12	31	30	6.8	4.3	.36	.04	0	
13	.06	0	2.8	53	35	36	5.5	12	.32	.04	0	
14	.06	0	2.2	942	30	27	5.5	32	.29	.04	.01	
15	.06	0	4.3	272	27	23	5.5	13	.26	.04	0	
16	.04	0	3.5	92	337	49	5.0	9.6	.24	.04	0	
17	.04	0	4.3	45	594	34	4.6	7.3	.22	.04	0	
18	.04	0	24	31	128	28	4.6	6.8	.21	.03	0	
19	.04	0	7.3	25	828	24	4.6	6.8	.20	.02	.01	
20	.04	0	4.3	21	302	22	4.6	7.3	.19	.02	.02	
21	.04	0	3.5	18	250	22	4.3	4.0	.18	.02	.04	
22	.04	0	3.1	15	152	21	4.3	5.5	.16	.02	.02	
23	.04	0	3.1	14	130	20	4.3	5.5	.14	.01	.02	
24	.04	0	2.8	13	103	19	4.6	4.6	.13	.01	.01	
25	.04	0	3.1	11	85	18	4.0	4.3	.12	.01	.01	
26	.04	0	3.1	10	70	16	4.0	4.0	.10	.01	.02	
27	.04	0	3.1	8.4	60	15	3.7	2.7	.12	.02	.02	
28	.04	0	3.1	9.6	52	15	3.7	2.2	.12	.01	.01	
29	.04	0	3.1	1,090	45	15	3.4	1.6	.16	.01	0	
30	.04	0	3.1	262	-----	15	3.7	1.2	.12	.01	0	
31	.04	-----	3.1	90	-----	14	-----	1.0	-----	.01	0	-----
TOTAL	1.36	0.08	214.0	3,353.5	4,126	803	214.1	181.8	16.64	1.30	0.27	0
MEAN	.044	.003	6.90	108	142	25.9	7.14	5.86	.55	.042	.009	0
MAX	.06	.04	54	1,090	828	49	19	32	2.7	.12	.04	0
MIN	.04	0	0	2.5	27	14	3.4	1.0	.10	.01	0	0
AC-FT	2.7	.2	424	6,650	8,180	1,590	425	361	33	2.6	.5	0

CAL YR 1967 TOTAL 16,536.94 MEAN 45.3 MAX 1,160 MIN 0 AC-FT 32,800
WTR YR 1968 TOTAL 8,912.05 MEAN 24.3 MAX 1,090 MIN 0 AC-FT 17,680

PEAK DISCHARGE (BASE, 1,000 CFS)							
DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-10	0200	4.38	1,080	02-17	0200	4.78	1,450
01-14	1600	5.81	2,510	02-19	1400	5.15	1,810
01-29	1700	5.87	2,580				

SACRAMENTO RIVER BASIN

821

11-3879.9. SOUTH DIVERSION CANAL NEAR ORLAND, CALIF.

LOCATION.--Lat 39°48'35", long 122°19'45", in NE¼ sec.32, T.23 N., R.4 W., on left bank 0.4 mile downstream from Black Butte Dam, and 8.2 miles northwest of Orland.

RECORDS AVAILABLE.--July 1955 to September 1968. Prior to October 1961, published as an adjustment to Stony Creek at Black Butte damsite near Orland.

GAGE.--Graphic water-stage recorder and Parshall flume. Datum of gage is 372.64 ft above mean sea level. Prior to Oct. 23, 1956, at site 0.5 mile 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.

AVERAGE DISCHARGE.--13 years, 107 cfs (77,460 acre-ft per year).

EXTREMES.--1955-68: Maximum daily discharge, 318 cfs June 18, 1967; no flow at times in each year.

REMARKS.--Records good. Canal diverts from Black Butte Reservoir at right end of Black Butte Dam; water is used for irrigation. Pump diverts water at times above station. Total diverted during the 1968 water year was 941 acre-ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	121	124	9.1	9.0	4.6	5.5	64	240	172	237	197	254
2	118	96	8.4	9.1	5.5	8.7	70	226	208	239	203	264
3	86	93	8.4	9.1	4.6	8.4	69	233	219	258	205	265
4	90	117	8.4	9.0	4.6	8.4	69	246	222	269	182	249
5	104	123	8.4	9.1	4.6	6.4	69	233	210	251	220	190
6	140	80	8.4	9.1	4.6	4.9	69	240	204	228	244	154
7	156	75	8.4	9.1	4.6	4.9	80	246	204	222	240	110
8	137	77	8.4	9.1	4.6	4.6	120	232	212	192	243	104
9	129	52	8.4	9.4	4.6	4.3	177	251	199	216	251	106
10	142	42	8.4	9.4	4.3	4.0	241	242	196	236	206	124
11	161	59	8.7	9.4	4.3	4.0	285	233	198	247	168	152
12	156	30	8.7	9.4	4.3	4.6	281	196	206	250	164	175
13	132	15	8.7	9.4	4.3	4.6	261	184	209	254	175	192
14	117	11	8.7	10	4.3	4.6	258	186	222	230	182	203
15	92	11	8.7	9.6	4.3	4.6	214	166	230	195	217	217
16	77	22	8.7	9.1	5.2	4.9	221	180	236	235	203	233
17	90	25	8.7	9.1	5.5	4.9	213	224	235	234	165	238
18	93	20	8.7	9.1	3.8	4.6	202	239	228	226	124	223
19	93	17	8.7	9.1	4.7	4.9	186	216	215	206	124	178
20	92	2.3	8.7	9.1	1.6	4.9	225	171	250	227	119	138
21	134	1.1	9.1	9.1	1.6	4.9	242	169	263	253	38	124
22	124	.40	9.1	9.1	4.0	5.2	229	168	275	262	0	102
23	106	.30	9.1	3.6	4.0	5.5	240	182	269	272	5.3	110
24	97	.20	9.1	.70	4.6	5.5	253	174	234	244	8.2	136
25	80	.10	9.4	.10	3.0	5.5	249	192	232	250	7.7	162
26	72	3.6	9.4	0	3.2	21	262	173	242	239	49	191
27	72	14	9.1	0	3.0	30	268	197	264	229	80	200
28	67	13	9.1	0	1.9	30	266	212	266	213	105	212
29	59	1.5	9.1	4.8	2.1	38	274	230	279	214	160	206
30	84	1.6	9.4	6.0	-----	44	275	219	265	214	218	209
31	102	-----	9.4	5.2	-----	44	-----	156	-----	205	258	-----
TOTAL	3,323	1,127.10	273.0	223.30	116.3	340.3	5,932	6,456	6,864	7,247	4,761.2	5,421
MEAN	107	37.6	8.81	7.20	4.01	11.0	198	208	229	234	154	181
MAX	161	124	9.4	10	5.5	44	285	251	279	272	258	265
MIN	59	.10	8.4	0	1.6	4.0	64	156	172	192	0	102
AC-FT	6,590	2,240	541	443	231	675	11,770	12,810	13,610	14,370	9,440	10,750
CAL YR 1967	TOTAL	38,410.70	MEAN	105	MAX	318	MIN	0	AC-FT	76,190		
WTR YR 1968	TOTAL	42,084.20	MEAN	115	MAX	285	MIN	0	AC-FT	83,470		

SACRAMENTO RIVER BASIN

11-3879.95. BLACK BUTTE RESERVOIR NEAR ORLAND, CALIF.

LOCATION.--Lat 39°48'50", long 122°20'10", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.29, T.23 N., R.4 W., in control tower in right abutment of main dam on Stony Creek, 8 miles northwest of Orland.

DRAINAGE AREA.--740 sq mi.

RECORDS AVAILABLE.--October 1963 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

EXTREMES.--Maximum contents during year, 109,200 acre-ft Feb. 20 (elevation, 460.93 ft); minimum, 24,300 acre-ft Nov. 8, 9 (elevation, 427.20 ft).
1963-68: Maximum contents, 149,700 acre-ft June 8, 9, 1967 (elevation, 471.19 ft); minimum since initial season of operation, 9,420 acre-ft Oct. 27, 1964 (elevation, 413.83 ft).

REMARKS.--Reservoir is formed by seven earthfill dams; storage began Oct. 28, 1963. Usable capacity, 150,000 acre-ft between elevations 414.6 (minimum operating level) and 473.5 ft (spillway crest) above mean sea level. Additional storage of 10,000 acre-ft is not available for release. South Diversion Canal (see sta. no. 11-3879.9.) diverts at right end of dam. Water is released down Stony Creek for irrigation. Records including extremes represent total contents at 2400 hours.

COOPERATION.--Records furnished by Corps of Engineers.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

413.0	8,810	450.0	73,700
415.0	10,300	460.0	105,900
420.0	15,000	470.0	144,600
430.0	28,800	480.0	191,300
440.0	48,100		

CONTENTS, IN ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30,500	25,300	24,700	26,800	61,000	55,300	89,600	76,200	60,200	47,600	38,700	28,200
2	29,700	25,200	24,600	26,800	62,800	56,300	90,500	75,200	59,800	47,200	38,300	28,000
3	29,200	25,000	24,900	26,800	64,600	57,100	91,300	74,500	59,500	47,000	37,800	27,700
4	28,800	24,900	25,200	26,700	65,900	57,600	92,000	73,700	59,100	46,900	37,400	27,700
5	28,600	24,700	25,700	26,700	67,100	58,000	92,600	72,900	58,800	46,700	36,900	27,900
6	28,500	24,600	25,900	26,700	68,600	58,700	93,000	72,200	58,600	46,700	36,400	28,200
7	28,500	24,500	26,200	26,700	70,200	59,400	93,400	71,500	58,300	46,600	35,700	28,500
8	28,600	24,300	26,400	26,600	71,800	60,200	93,700	70,700	58,100	46,600	35,000	28,800
9	28,700	24,300	26,500	26,700	73,200	61,000	93,700	69,900	57,700	46,500	34,400	28,900
10	28,700	24,400	26,500	28,500	74,400	61,900	93,200	69,000	57,500	46,400	33,600	28,800
11	28,700	24,400	26,500	29,100	75,300	62,600	92,100	68,200	57,100	46,200	33,100	28,400
12	28,700	24,400	26,500	29,300	76,100	63,500	91,000	67,500	56,800	46,000	32,600	28,000
13	28,700	24,700	26,500	29,800	77,000	64,700	90,400	66,800	56,500	45,800	32,100	27,500
14	28,700	24,900	26,400	37,100	77,700	65,800	90,000	66,300	56,200	45,700	31,500	27,100
15	28,700	24,900	26,400	43,500	78,300	66,900	89,700	65,700	55,700	45,600	31,400	26,500
16	28,800	24,900	26,400	45,800	80,100	68,600	89,300	65,000	55,300	45,500	31,300	25,900
17	28,700	24,800	26,300	47,000	87,500	70,700	88,700	64,200	54,900	45,400	31,200	25,600
18	28,500	24,700	26,400	47,800	92,800	72,500	88,400	63,200	54,400	45,400	31,200	25,700
19	28,300	24,600	26,400	48,400	102,100	74,200	88,200	62,500	54,000	44,900	31,400	25,900
20	27,900	24,700	26,400	48,800	109,200	75,700	88,000	62,000	53,500	44,300	31,500	26,200
21	27,500	24,700	26,400	49,300	102,400	77,300	87,400	61,900	52,900	43,700	31,800	26,500
22	27,100	24,800	26,300	49,600	92,300	78,600	86,600	62,000	52,400	43,000	31,800	26,700
23	26,800	24,800	26,300	50,000	80,700	80,000	85,600	62,000	51,700	42,300	31,800	26,800
24	26,500	24,800	26,200	50,300	67,800	81,100	84,400	62,000	51,200	41,800	31,700	26,700
25	26,300	24,800	26,200	50,600	57,900	82,400	83,200	61,800	50,800	41,200	31,600	26,600
26	26,100	24,800	26,300	50,800	55,300	83,600	81,900	61,800	50,300	40,700	31,300	26,300
27	25,900	24,700	26,400	51,000	54,600	84,700	80,700	61,500	49,800	40,300	30,900	26,000
28	25,900	24,600	26,500	51,500	53,800	85,600	79,600	61,200	49,100	39,900	30,300	25,700
29	25,700	24,700	26,700	56,700	54,000	86,600	78,500	60,900	48,600	39,600	29,600	25,400
30	25,600	24,800	26,700	59,300	-----	87,600	77,300	60,500	48,100	39,200	28,800	25,100
31	25,400	-----	26,800	60,200	-----	88,500	-----	60,400	-----	39,000	28,400	-----
(a)	427.92	427.50	428.76	445.10	442.57	454.83	451.21	445.18	440.00	435.62	429.79	427.71
(b)	-6,200	-600	+2,000	+33,400	-6,200	+34,500	-11,200	-16,900	-12,300	-9,100	-10,600	-3,300
(c)	826	440	361	263	312	660	1,521	1,369	1,797	1,662	1,234	1,098
MAX	30,500	25,300	26,800	60,200	109,200	88,500	93,700	76,200	60,200	47,600	38,700	28,900
MIN	25,400	24,300	24,600	26,600	53,800	55,300	77,300	60,400	48,100	39,000	28,400	25,100
CAL YR 1967	b -51,800			MAX	149,700	MIN	24,300					
WTR YR 1968	b -6,500			MAX	109,200	MIN	24,300					

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet.

11-3880. STONY CREEK BELOW BLACK BUTTE DAM, NEAR ORLAND, CALIF.

LOCATION.--Lat 39°49'00", long 122°19'25", in SW¼ sec.28, T.23 N., R.4 W., on left bank 200 ft downstream from road bridge, 0.6 mile downstream from Black Butte Dam, and 8.1 miles northwest of Orland.

DRAINAGE AREA.--741 sq mi.

RECORDS AVAILABLE.--July 1955 to September 1968. Prior to October 1962, published as Stony Creek at Black Butte damsite, near Orland.

GAGE.--Digital water-stage recorder and grouted rock control. Datum of gage is 366.02 ft above mean sea level (levels by Corps of Engineers). Prior to Dec. 12, 1960, graphic water-stage recorder at site 0.6 mile upstream at different datum. Dec. 12, 1960, to Nov. 30, 1963, wire-weight gage at bridge 200 ft upstream at datum 4.04 ft higher. Nov. 30, 1963, to Nov. 1, 1966, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--13 years, 584 cfs (422,800 acre-ft per year), adjusted for diversion to South Diversion Canal since 1956 and for change in contents and evaporation from Black Butte Reservoir since 1964.

EXTREMES.--Maximum discharge during year, 10,300 cfs Feb. 24 (gage height, 8.92 ft); no flow Nov. 21-26, 29. 1955-63 (prior to regulation by Black Butte Reservoir): Maximum discharge, 36,300 cfs Feb. 24, 1958 (gage height, 11.82 ft, site and datum then in use), from rating curve extended above 7,500 cfs on basis of slope-area measurement of maximum flow; no flow Dec. 8-10, 31, 1956, Jan. 1-10, 1957, Oct. 19 to Nov. 7, Nov. 13-15, 1962.

1964-68: Maximum discharge, 19,400 cfs Dec. 25, 1965 (gage height, 10.41 ft); no flow at times in each year.

REMARKS.--Records excellent. Many diversions above station for irrigation. Flow regulated by Black Butte Reservoir (see sta. no 11-3879.95.), East Park Reservoir (usable capacity, 50,600 acre-ft), and Stony Gorge Reservoir (usable capacity, 50,100 acre-ft). Prior to October 1956, figures of daily discharge included water diverted to South Diversion Canal, which diverts 0.6 mile above station. Records of combined monthly discharge do not include a small diversion that bypasses the station at times for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	578	89	43	38	41	495	72	498	154	166	348	164
2	565	96	43	37	46	483	62	495	155	173	341	155
3	476	97	42	37	46	483	52	500	162	166	351	154
4	380	91	39	37	46	485	62	506	162	167	358	152
5	278	84	36	37	46	255	72	509	154	178	346	142
6	187	83	35	37	46	36	77	514	145	174	345	122
7	142	95	35	37	46	30	81	515	142	166	350	101
8	137	94	37	37	46	28	101	512	135	162	358	108
9	128	82	37	35	46	27	169	488	140	163	358	131
10	112	72	37	37	46	27	328	487	145	162	375	138
11	95	65	36	38	47	26	540	497	146	178	375	144
12	97	52	36	39	47	12	518	489	140	193	347	148
13	101	51	37	40	49	.70	500	489	143	175	331	145
14	105	53	37	42	49	.30	497	490	144	164	334	145
15	114	53	37	43	90	8.0	495	480	155	178	163	147
16	113	49	37	45	298	28	492	485	159	163	138	144
17	114	45	37	45	494	28	490	499	173	151	139	141
18	118	46	37	45	507	11	479	508	182	152	146	138
19	122	40	37	45	1,840	8.9	474	504	181	328	123	109
20	117	.30	37	45	5,270	28	479	402	173	369	102	86
21	110	0	37	45	9,390	28	494	216	176	370	65	77
22	105	0	37	45	9,870	28	510	126	176	371	39	86
23	95	0	37	47	9,840	28	518	119	163	368	39	113
24	86	0	37	46	9,610	28	522	133	172	375	39	130
25	89	0	37	44	7,310	28	528	142	170	375	40	135
26	89	0	37	44	3,150	41	526	143	162	368	90	138
27	88	29	37	44	2,030	50	514	154	160	375	110	139
28	80	36	37	44	1,920	50	494	168	160	372	124	131
29	77	0	38	42	1,240	53	490	167	159	360	142	129
30	74	1.8	38	41	-----	53	499	161	156	346	146	132
31	79	-----	37	41	-----	53	-----	156	-----	345	161	-----
TOTAL	5,051	1,404.10	1,161	1,279	63,506	2,939.90	11,135	11,552	4,744	7,753	6,723	3,924
MEAN	163	46.8	37.5	41.3	2,190	94.8	371	373	158	250	217	131
MAX	578	97	43	47	9,870	495	540	515	182	375	375	164
MIN	74	0	35	35	41	.30	52	119	135	151	39	77
AC-FT	10,020	2,780	2,300	2,540	126,000	5,830	22,090	22,910	9,410	15,380	13,330	7,780
Mean a	184	80.8	84.2	597	2,091	678	406	329	210	363	219	274
Ac-ft a	11,300	4,810	5,180	36,690	120,300	41,690	24,150	20,240	12,480	22,310	13,480	16,290

CAL YR 1967 TOTAL 241,219.10 MEAN 661 MAX 9,920 MIN 0 AC-FT 478,500 MEAN a 716 AC-FT a 518,600
WTR YR 1968 TOTAL 121,172.00 MEAN 331 MAX 9,870 MIN 0 AC-FT 240,300 MEAN a 453 AC-FT a 328,900

a Adjusted for diversion to South Diversion Canal, and change in contents and evaporation from Black Butte Reservoir.

SACRAMENTO RIVER BASIN

11-3885. STONY CREEK NEAR HAMILTON CITY, CALIF.

LOCATION.--Lat 39°43'25", long 122°02'47", in Capay Grant, on right bank 2.3 miles southwest of Hamilton City, 6 miles upstream from mouth, and 8 miles east of Orland.

DRAINAGE AREA.--777 sq mi.

RECORDS AVAILABLE.--October 1940 to September 1968. Records for water year 1941 incomplete, yearly estimate published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is 151.18 ft above mean sea level (levels by Bureau of Reclamation). Prior to February 1946, at site 3 miles upstream at different datum.

AVERAGE DISCHARGE.--28 years, 415 cfs (300,400 acre-ft per year).

EXTREMES.--Maximum discharge during year, 9,170 cfs Feb. 22 (gage height, 12.08 ft); no flow for several days. 1940-68: Maximum discharge, 39,900 cfs Feb. 25, 1958 (gage height, 18.31 ft); no flow at times in most years.

REMARKS.--Records fair except those for Mar. 5 to Apr. 16, which are poor. Flow regulated by East Park Reservoir beginning in 1910 (usable capacity, 50,600 acre-ft), by Stony Gorge Reservoir beginning in 1928 (usable capacity, 50,100 acre-ft), and by Black Butte Reservoir beginning in October 1963 (see sta. no. 11-3879.95.). Diversions for irrigation of about 17,200 acres above station in the Bureau of Reclamation Orland project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	495	23	0	0	44	628	20	395	26	17	210	0
2	495	21	0	0	63	573	28	395	23	15	200	0
3	436	20	0	0	58	562	34	390	32	11	200	0
4	365	20	0	0	45	540	35	390	14	9.8	210	0
5	290	20	0	0	41	473	39	385	15	17	203	0
6	201	24	0	0	37	158	28	385	21	11	189	0
7	141	14	0	0	35	104	12	385	31	12	189	7.1
8	112	14	0	0	34	91	5.5	380	23	17	203	9.8
9	90	26	0	0	31	72	5.8	380	26	9.8	203	9.0
10	73	35	0	0	30	61	21	385	21	9.0	193	7.5
11	63	29	0	0	30	55	308	380	21	4.3	210	12
12	54	26	2.8	0	29	55	354	380	12	4.9	206	9.8
13	49	20	3.8	0	30	51	327	380	11	11	200	12
14	48	21	1.3	10	27	41	340	380	13	12	200	6.1
15	48	28	3.3	24	24	32	372	390	9.8	14	161	3.3
16	40	26	3.8	24	111	30	372	367	4.9	11	78	5.5
17	36	19	3.8	22	466	31	385	376	2.8	21	51	4.3
18	29	19	7.5	21	512	30	385	390	4.9	17	39	3.8
19	27	21	6.8	21	1,070	26	390	395	7.5	39	50	6.8
20	35	18	6.1	20	3,650	17	372	380	16	164	50	16
21	38	9.8	5.5	20	8,120	16	376	242	17	158	72	30
22	48	5.5	5.5	19	9,020	19	380	133	6.1	167	58	26
23	48	2.8	3.3	19	8,990	19	380	87	5.5	174	32	14
24	51	.80	.17	19	9,020	17	395	78	6.8	177	24	2.8
25	49	0	0	18	6,760	16	395	59	4.3	183	21	.70
26	41	0	0	18	3,280	12	390	51	2.8	196	19	.40
27	32	0	0	18	1,750	14	395	45	2.8	193	12	.14
28	36	0	0	17	1,680	20	400	29	2.8	189	11	1.0
29	36	0	0	42	1,270	19	385	30	5.5	196	4.3	1.0
30	32	0	0	124	-----	18	372	16	9.8	210	2.0	4.3
31	28	-----	0	58	-----	15	-----	16	-----	206	.38	-----
TOTAL	3,566	462.90	53.67	514	56,257	3,815	7,701.3	8,474	398.3	2,475.8	3,500.68	193.34
MEAN	115	15.4	1.73	16.6	1,940	123	257	273	13.3	79.9	113	6.44
MAX	495	35	7.5	124	9,020	628	400	395	32	210	210	30
MIN	27	0	0	0	24	12	5.5	16	2.8	4.3	.38	0
AC-FT	7,070	918	106	1,020	111,600	7,570	15,280	16,810	790	4,910	6,940	383
CAL YR 1967	TOTAL	222,790.37	MEAN	610	MAX	10,500	MIN	0	AC-FT	441,900		
WTR YR 1968	TOTAL	87,411.99	MEAN	239	MAX	9,020	MIN	0	AC-FT	173,400		

SACRAMENTO RIVER BASIN

825

11-3890. SACRAMENTO RIVER AT BUTTE CITY, CALIF.

LOCATION (revised).--Lat 39°27'28", long 121°59'35", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.32, T.19 N., R.1 W., on left bank 100 ft above highway bridge, 0.5 mile south of Butte City, and at mile 115.8 upstream from Sacramento.

DRAINAGE AREA.--12,096 sq mi.

RECORDS AVAILABLE.--April 1921 to September 1938 (low-water periods only), October 1938 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Digital water-stage recorder. Datum of gage is set to datum of Corps of Engineers which is 2.92 ft below mean sea level. Prior to December 1930, at site 0.5 mile upstream at same datum. October 1938 to Oct. 2, 1967, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--30 years (1938-68), 12,460 cfs (9,021,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 69,500 cfs Feb. 26 (gage height, 89.38 ft); minimum daily, 6,390 cfs May 31.

1940-68: Maximum discharge, 170,000 cfs Feb. 7, 1942 (gage height, 96.87 ft).

1921-68: Minimum discharge recorded, 1,050 cfs July 15, 25, 26, 1931 (gage height, 67.49 ft).

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, power developments, unmeasured over-bank flow during extreme floods, diversions for irrigation, and return flow from irrigated areas.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10,100	9,670	8,900	9,800	18,700	44,000	10,300	8,140	6,420	9,750	11,100	8,050
2	9,860	9,600	8,720	9,430	17,500	37,500	10,600	8,160	7,120	9,710	11,100	7,980
3	10,100	8,640	9,250	9,140	25,900	31,000	10,200	8,160	7,330	10,000	11,100	8,020
4	10,500	8,370	13,400	9,080	22,800	25,100	9,590	8,210	7,250	10,100	11,100	8,060
5	10,200	8,370	12,600	9,000	18,000	22,200	9,130	8,320	7,520	10,000	11,100	8,140
6	10,000	7,800	13,700	8,740	16,100	21,200	8,860	8,410	7,900	10,300	11,200	8,340
7	9,910	7,510	11,100	8,230	15,200	20,300	8,530	8,480	8,250	10,400	11,100	8,450
8	9,820	7,430	13,900	8,030	14,600	19,700	8,030	8,410	8,520	10,300	11,100	8,550
9	9,740	7,490	11,700	8,040	14,000	19,200	7,410	8,380	8,560	10,300	11,200	8,650
10	9,740	7,400	10,600	13,400	14,000	18,600	7,570	8,420	8,540	10,200	11,100	8,700
11	9,760	7,430	10,300	24,300	13,800	17,600	7,880	8,430	8,410	10,300	11,200	8,820
12	9,580	7,470	10,000	13,700	13,200	17,100	7,820	8,560	8,310	10,300	11,200	8,950
13	9,630	7,470	9,850	11,100	12,800	17,800	7,710	8,620	8,160	10,600	11,300	9,070
14	9,520	7,600	9,710	12,700	12,700	20,000	7,370	9,030	7,950	10,700	11,300	9,130
15	9,450	8,110	9,540	38,500	12,300	19,400	7,170	8,840	7,790	10,700	11,100	9,210
16	9,540	8,150	9,560	49,900	12,100	18,700	7,080	8,070	8,020	10,700	10,800	9,200
17	9,490	7,820	9,600	27,700	17,900	24,200	7,100	7,570	8,110	10,700	10,400	9,140
18	9,490	7,820	9,560	18,200	34,000	20,400	7,260	7,350	7,990	10,800	9,950	9,280
19	9,430	7,980	9,610	14,700	24,900	16,600	7,280	7,340	7,780	10,700	9,780	9,070
20	9,430	8,090	9,610	13,000	35,800	14,900	7,610	7,510	8,400	10,800	10,300	9,200
21	9,450	7,950	9,530	12,100	56,200	13,800	7,990	7,690	8,510	10,900	10,700	9,300
22	9,520	7,760	9,480	11,400	54,900	13,100	8,330	7,660	8,460	10,900	11,500	9,370
23	9,580	7,690	9,460	11,100	52,500	12,500	8,350	7,550	8,440	10,900	9,570	9,520
24	9,600	7,670	9,460	10,800	58,300	12,200	8,480	7,470	8,440	10,900	9,120	9,600
25	9,600	7,670	9,480	10,500	64,500	11,800	8,580	7,350	8,480	10,900	8,920	9,450
26	9,670	7,650	9,570	10,200	68,500	11,900	8,330	7,250	8,760	10,900	8,880	9,340
27	9,690	7,620	9,770	9,990	65,000	11,700	8,210	7,150	9,400	11,000	8,890	9,270
28	9,650	7,650	10,000	9,750	58,000	11,200	8,250	6,940	9,610	11,000	8,700	9,320
29	9,600	7,890	10,100	11,900	53,000	11,100	8,170	6,710	9,630	11,000	8,510	9,070
30	9,560	8,390	10,000	37,000	-----	10,700	8,040	6,530	9,680	11,000	8,300	9,310
31	9,560	-----	9,930	31,700	-----	10,400	-----	6,390	-----	11,000	8,130	-----
TOTAL	300,770	238,160	317,990	483,130	897,200	575,900	247,230	243,100	247,740	327,760	319,750	267,560
MEAN	9,702	7,939	10,260	15,580	30,940	18,580	8,241	7,842	8,258	10,570	10,310	8,919
MAX	10,500	9,670	13,900	49,900	68,500	44,000	10,600	9,030	9,680	11,000	11,500	9,600
MIN	9,430	7,400	8,720	8,030	12,100	10,400	7,080	6,390	6,420	9,710	8,130	7,980
AC-FT	596,600	472,400	630,700	958,300	1,780M	1,142M	490,400	482,200	491,400	650,100	634,200	530,700
CAL YR 1967	TOTAL 5,630,620		MEAN 15,430		MAX 97,000		MIN 6,160		AC-FT 11,170,000			
WTR YR 1968	TOTAL 4,466,290		MEAN 12,200		MAX 68,500		MIN 6,390		AC-FT 8,859,000			

SACRAMENTO RIVER BASIN

11-3895. SACRAMENTO RIVER AT COLUSA, CALIF.

LOCATION.--Lat 39°12'51", long 121°59'57", at north end of Jimeno Grant, on right bank just downstream from highway bridge at Colusa, and at mile 89.4 upstream from Sacramento.

DRAINAGE AREA.--12,110 sq mi.

RECORDS AVAILABLE.--April 1921 to October 1939 (low-water periods only), June 1940 to September 1968.

GAGE.--Digital water-stage recorder. Gage is set to datum of Corps of Engineers which is 2.95 ft below mean sea level. Prior to December 1930, graphic water-stage recorder in center fender pier 50 ft upstream from bridge at same datum. December 1930 to June 24, 1964, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--28 years (1940-68), 10,850 cfs (7,855,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 39,100 cfs Feb. 26 (gage height, 64.50 ft); minimum daily, 5,940 cfs June 1.

1940-68: Maximum discharge, 49,000 cfs Feb. 8, 1942 (gage height, 69.20 ft).

1921-68: Minimum discharge recorded, 820 cfs July 25, 26, 1931 (gage height, 34.79 ft).

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, power development, bypassing for flood control, diversions for irrigation, and return flow from irrigated areas.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10,200	9,560	8,570	8,950	23,200	34,700	10,500	7,610	5,940	8,850	10,500	7,970
2	9,930	9,600	8,810	8,780	17,200	32,400	10,600	7,660	6,500	8,850	10,600	7,860
3	9,980	9,020	8,610	8,390	20,800	30,500	10,500	7,660	6,710	8,950	10,600	7,850
4	10,400	8,470	11,700	8,280	24,100	27,000	10,000	7,700	6,710	9,200	10,700	7,880
5	10,300	8,400	12,600	8,210	19,700	22,900	9,510	7,780	6,720	9,170	10,700	7,970
6	10,100	8,180	13,200	8,110	16,400	21,100	9,160	7,880	6,900	9,320	10,700	8,140
7	10,000	7,690	11,000	7,730	14,900	19,900	8,880	7,940	7,380	9,550	10,700	8,260
8	9,970	7,550	13,400	7,410	14,100	19,100	8,470	8,030	7,590	9,470	10,700	8,420
9	9,920	7,540	10,800	7,380	13,400	18,600	7,950	7,980	7,850	9,530	10,700	8,540
10	9,930	7,530	10,000	8,420	13,000	18,100	7,690	8,080	7,880	9,500	10,700	8,640
11	9,920	7,500	9,550	20,400	13,100	17,400	7,980	8,120	7,880	9,500	10,600	8,780
12	9,810	7,490	9,300	17,100	12,600	16,600	7,940	8,230	7,890	9,520	10,700	8,890
13	9,750	7,480	9,150	11,400	12,100	16,600	7,890	8,370	7,810	9,680	10,800	9,060
14	9,690	7,510	9,000	10,200	11,800	18,500	7,590	8,550	7,620	9,970	10,800	9,140
15	9,570	7,840	8,950	21,100	11,500	19,500	7,380	8,730	7,450	10,000	10,800	9,300
16	9,610	8,090	8,950	33,200	11,300	18,500	7,240	8,220	7,300	10,100	10,500	9,310
17	9,590	7,880	8,930	29,600	12,800	21,100	7,170	7,600	7,320	10,000	10,200	9,290
18	9,570	7,790	8,880	21,700	25,000	23,200	7,090	7,320	7,330	10,100	9,830	9,230
19	9,540	7,830	8,800	15,900	28,200	18,600	7,240	7,220	7,290	10,100	9,530	9,190
20	9,540	8,080	8,720	13,100	26,800	15,700	7,230	7,250	7,290	10,100	9,870	9,190
21	9,540	7,970	8,670	11,600	35,100	14,400	7,660	7,380	7,520	10,200	10,000	9,290
22	9,560	7,820	8,620	10,700	36,400	13,400	7,910	7,420	7,590	10,200	11,500	9,340
23	9,630	7,690	8,600	10,300	35,900	12,800	8,000	7,370	7,590	10,300	10,000	9,400
24	9,640	7,690	8,600	9,910	36,700	12,400	7,960	7,170	7,590	10,300	9,220	9,510
25	9,650	7,670	8,610	9,580	37,700	12,000	8,180	7,060	7,570	10,300	8,960	9,390
26	9,670	7,640	8,680	9,290	38,900	11,800	7,960	6,990	7,780	10,300	8,850	9,340
27	9,690	7,620	8,800	9,030	38,500	11,800	7,810	6,930	8,190	10,400	8,810	9,210
28	9,680	7,630	9,000	8,780	37,900	11,300	7,810	6,550	8,650	10,500	8,710	9,240
29	9,620	7,730	9,150	8,870	36,700	10,800	7,760	6,260	8,760	10,500	8,510	9,140
30	9,550	8,100	9,130	20,700	-----	10,600	7,660	6,080	8,760	10,500	8,250	9,090
31	9,490	-----	9,060	30,700	-----	10,500	-----	5,960	-----	10,500	8,090	-----
TOTAL	303,040	238,590	295,840	414,820	675,800	561,800	246,720	233,100	225,360	305,460	311,130	265,860
MEAN	9,775	7,953	9,543	13,380	23,300	18,120	8,224	7,519	7,512	9,854	10,040	8,862
MAX	10,400	9,600	13,400	33,200	38,900	34,700	10,600	8,730	8,760	10,500	11,500	9,510
MIN	9,490	7,480	8,570	7,380	11,300	10,500	7,090	5,960	5,940	8,850	8,090	7,850
AC-FT	601,100	473,200	586,800	822,800	1,340M	1,114M	489,400	462,300	447,000	605,900	617,100	527,300
CAL YR 1967	TOTAL 5,156,890		MEAN 14,130		MAX 39,200		MIN 6,230		AC-FT 10,230,000			
WTR YR 1968	TOTAL 4,077,520		MEAN 11,140		MAX 38,900		MIN 5,940		AC-FT 8,088,000			

SACRAMENTO RIVER BASIN

827

11-3897. BUTTE CREEK AT BUTTE MEADOWS, CALIF.

LOCATION.--Lat 40°04'05", long 121°34'25", in NW $\frac{1}{4}$ sec.31, T.26 N., R.4 E., on right bank 1.0 mile downstream from small tributary, 1.5 miles southwest of Butte Meadows, and 15 miles northeast of Forest Ranch.

DRAINAGE AREA.--44.4 sq mi.

RECORDS AVAILABLE.--August 1960 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 4,260 ft (from topographic map). Prior to Oct. 13, 1966, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--8 years, 123 cfs (89,050 acre-ft per year).

EXTREMES.--Maximum discharge during year, 679 cfs Feb. 23 (gage height, 3.69 ft); minimum daily, 52 cfs Sept. 23-30.

1960-68: Maximum discharge, 4,290 cfs Dec. 22, 1964 (gage height, 7.64 ft); minimum, 46 cfs Sept. 4, 1961.

REMARKS.--Records good. No storage or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	62	62	65	82	240	196	201	109	66	59	54
2	119	60	64	63	86	223	188	199	106	66	57	54
3	83	60	70	62	90	212	181	202	104	66	56	54
4	71	62	85	62	82	205	180	202	101	64	56	54
5	71	62	110	61	80	206	177	194	105	64	56	54
6	68	60	85	61	79	194	171	179	104	64	55	54
7	66	60	80	61	79	188	171	171	99	63	55	54
8	66	62	75	62	80	180	172	168	95	62	55	53
9	65	62	70	62	82	168	179	165	91	61	55	53
10	65	62	68	62	83	160	191	162	88	61	55	54
11	65	60	66	62	83	153	204	160	86	60	55	53
12	64	60	64	64	84	152	209	156	83	60	55	53
13	63	60	62	69	84	156	200	170	81	61	55	53
14	63	79	62	151	81	149	198	150	81	61	57	56
15	63	62	62	315	79	145	202	142	79	60	57	54
16	63	60	62	162	84	154	197	136	77	60	57	53
17	63	60	65	117	135	143	184	135	76	60	57	53
18	63	70	70	99	125	133	179	134	75	59	57	53
19	63	150	66	91	183	129	178	142	74	59	74	53
20	63	90	64	86	354	128	173	172	74	59	70	53
21	65	75	64	85	473	129	169	148	73	58	68	53
22	65	65	64	86	409	130	163	152	72	58	61	53
23	65	62	64	86	540	131	163	178	72	57	59	52
24	63	62	65	84	432	132	161	156	71	57	58	52
25	63	60	68	83	352	145	166	145	70	57	57	52
26	62	60	73	81	314	140	173	136	69	57	56	52
27	62	60	82	79	292	141	180	131	68	57	56	52
28	63	62	76	78	274	150	182	127	68	56	56	52
29	62	62	71	75	255	165	192	122	67	57	55	52
30	62	62	67	70	-----	180	200	118	67	57	54	52
31	60	-----	65	78	-----	191	-----	112	-----	59	54	-----
TOTAL	2,063	1,993	2,171	2,722	5,456	5,052	5,479	4,865	2,485	1,866	1,787	1,594
MEAN	66.5	66.4	70.0	87.8	188	163	183	157	82.8	60.2	57.6	53.1
MAX	119	150	110	315	540	240	209	202	109	66	74	56
MIN	60	60	62	61	79	128	161	112	67	56	54	52
AC-FT	4,090	3,950	4,310	5,400	10,820	10,020	10,870	9,650	4,930	3,700	3,540	3,160

CAL YR 1967 TOTAL 56,209 MEAN 154 MAX 690 MIN 60 AC-FT 111,500
WTR YR 1968 TOTAL 37,533 MEAN 103 MAX 540 MIN 52 AC-FT 74,450

PEAK DISCHARGE (BASE, 350 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-15	0015	3.19	400	02-23	0945	3.69	679
02-21	0500	3.50	565				

SACRAMENTO RIVER BASIN

11-3900. BUTTE CREEK NEAR CHICO, CALIF.

LOCATION.--Lat 39°43'34", long 121°42'28", in NW¼NW¼ sec.36, T.22 N., R.2 E., on right bank 0.7 mile downstream from Little Butte Creek, and 7.5 miles east of Chico.

DRAINAGE AREA.--147 sq mi.

RECORDS AVAILABLE.--October 1930 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Digital water-stage recorder. Altitude of gage is 320 ft (from topographic map). Prior to Aug. 13, 1944, graphic water-stage recorder at site 0.4 mile upstream at different datum. Aug. 13, 1944, to Dec. 7, 1964, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--38 years, 394 cfs (285,200 acre-ft per year), unadjusted.

EXTREMES.--Maximum discharge during year, 3,090 cfs Feb. 21 (gage height, 5.06 ft); minimum daily, 84 cfs Oct. 31 to Nov. 3.

1930-68: Maximum discharge, 21,200 cfs Dec. 22, 1964 (gage height, 14.12 ft), from rating curve extended above 8,900 cfs on basis of slope-area measurement at gage height 13.35 ft; minimum, 10 cfs Nov. 29, 1952.

REMARKS.--Records good. Flow slightly regulated by storage in Magalia Reservoir (capacity, 3,540 acre-ft) and since 1957 by Paradise Reservoir (capacity, 6,430 acre-ft). Diversions above station for irrigation and domestic use of about 4,200 acre-ft annually. Butte Creek receives water above station from West Branch Feather River by way of Toadtown Canal. Records of chemical analyses and water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	154	84	205	184	290	694	597	392	267	149	140	120
2	182	84	160	174	382	643	579	385	263	149	131	124
3	311	84	250	176	442	604	544	382	261	150	126	127
4	191	122	400	161	384	575	526	385	258	146	123	129
5	183	125	600	159	369	568	519	383	255	143	122	124
6	179	128	250	162	375	543	502	367	273	143	121	126
7	167	134	325	162	396	535	489	354	265	128	120	130
8	162	126	239	163	419	548	473	346	253	141	116	123
9	146	132	201	186	439	512	468	341	241	142	117	124
10	138	136	184	1,150	535	477	476	338	236	134	120	125
11	139	128	178	425	498	452	494	335	239	122	114	124
12	133	127	173	288	461	506	497	332	235	122	118	124
13	137	124	153	250	487	881	483	358	224	129	119	124
14	127	172	144	626	445	940	467	354	211	122	123	131
15	123	160	149	2,050	424	764	462	329	209	123	128	129
16	125	133	185	912	441	1,170	462	314	203	126	128	126
17	126	135	165	556	1,560	1,090	453	306	197	133	131	122
18	127	144	173	436	1,340	820	427	304	195	125	127	120
19	126	251	178	370	1,180	696	414	309	186	154	143	122
20	127	185	163	336	2,500	623	414	339	187	145	210	124
21	127	153	157	315	2,570	599	406	333	180	146	198	125
22	132	152	148	311	1,970	582	395	350	176	146	164	125
23	131	140	154	311	1,800	561	383	351	175	146	149	124
24	130	140	167	307	1,520	555	376	352	172	146	136	123
25	129	142	178	295	1,210	581	376	327	168	141	132	122
26	128	133	204	285	1,040	586	377	310	163	128	130	122
27	128	136	256	280	917	559	381	300	158	132	128	134
28	129	143	259	275	824	536	382	292	152	120	128	139
29	128	219	229	629	745	562	387	284	152	122	129	138
30	116	208	209	761	-----	577	388	279	154	128	124	141
31	84	-----	194	380	-----	587	-----	273	-----	128	121	-----
TOTAL	4,465	4,280	6,630	13,075	25,963	19,926	13,597	10,404	6,308	4,209	4,116	3,791
MEAN	144	143	214	422	895	643	453	336	210	136	133	126
MAX	311	251	600	2,050	2,570	1,170	597	392	273	154	210	141
MIN	84	84	144	159	290	452	376	273	152	120	114	120
AC-FT	8,860	8,490	13,150	25,930	51,500	39,520	26,970	20,640	12,510	8,350	8,160	7,520
Mean a	48.5	40.8	56.7	83.6	76.7	121	115	114	89.5	58.2	60.5	58.7
Ac-ft a	2,980	2,420	3,490	5,140	4,410	7,430	6,820	7,010	5,330	3,580	3,720	3,490

CAL YR 1967 TOTAL 197,159 MEAN 540 MAX 5,080 MIN 84 AC-FT 391,100 Mean a 92.7 Ac-ft a 67,140
WTR YR 1968 TOTAL 116,764 MEAN 319 MAX 2,570 MIN 84 AC-FT 231,600 Mean a 76.9 Ac-ft a 55,820

Peak discharge (base, 2,700 cfs).--Jan. 15 (0400 hrs) 2,700 cfs (4.71 ft); Feb. 21 (0915 hrs) 3,090 cfs (5.06 ft).

a Toadtown Canal diversion from West Branch Feather River. Record furnished by Pacific Gas and Electric Company.

11-3905. SACRAMENTO RIVER BELOW WILKINS SLOUGH, NEAR GRIMES, CALIF.

LOCATION.--Lat 39°00'36", long 121°49'25", in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.2, T.13 N., R.1 E., on right bank 1,200 ft downstream from Wilkins Slough, 5.8 miles southeast of Grimes, and at mile 62.9 upstream from Sacramento.

DRAINAGE AREA.--12,940 sq mi.

RECORDS AVAILABLE.--August 1931 to September 1938 (low-water periods only), October 1938 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1965, published as "below Wilkins Slough."

GAGE.--Digital water-stage recorder. Gage is set to datum of Corps of Engineers which is 3.00 ft below mean sea level. Prior to Nov. 7, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--30 years (1938-68), 9,565 cfs (6,925,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 28,400 cfs Feb. 27 (gage height, 48.37 ft); minimum daily, 5,000 cfs June 1.

1938-68: Maximum discharge, 28,900 cfs Feb. 27, 1958 (gage height, 51.41 ft); maximum gage height, 52.75 ft Mar. 1, 1940.

1931-68: Minimum discharge recorded, 100 cfs Aug. 1, 1931 (gage height, 14.20 ft).

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, power developments, bypassing for flood control, diversions for irrigation, and return flow from irrigated areas. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10,200	9,680	8,810	9,590	24,400	27,500	11,100	5,500	5,000	7,580	9,570	8,010
2	9,960	9,710	9,230	9,470	20,300	27,100	11,100	5,500	5,060	7,620	9,600	7,820
3	9,480	9,520	9,140	9,150	20,100	26,800	11,000	5,600	5,520	7,600	9,630	7,760
4	9,970	8,900	10,500	8,950	23,900	26,100	10,700	5,700	5,600	7,850	9,740	7,780
5	10,200	8,700	12,500	8,870	22,300	24,800	10,000	5,900	5,680	7,950	9,840	7,870
6	10,000	8,620	13,300	8,820	19,000	23,100	9,570	6,200	6,220	7,980	9,860	8,050
7	9,910	8,190	12,900	8,570	17,100	21,600	9,300	6,600	6,780	8,280	9,940	8,300
8	9,830	7,960	12,100	8,240	16,200	20,400	8,940	6,980	7,220	8,330	9,920	8,510
9	9,770	7,890	13,100	8,130	15,500	19,700	8,390	7,000	7,380	8,370	9,870	8,750
10	9,790	7,910	11,700	8,350	15,000	19,200	7,840	7,210	7,360	8,370	9,900	8,940
11	9,740	7,880	10,700	16,000	14,900	18,500	7,880	7,480	7,330	8,360	9,810	9,140
12	9,700	7,890	10,200	19,200	14,600	17,600	7,870	7,700	7,150	8,380	9,790	9,320
13	9,600	7,910	9,950	14,200	14,100	17,300	7,760	7,980	6,990	8,410	9,850	9,560
14	9,560	7,940	9,760	11,600	13,700	18,400	7,500	8,110	6,710	8,710	9,950	9,730
15	9,500	8,090	9,570	16,100	13,500	19,800	7,160	8,420	6,450	8,840	10,000	9,980
16	9,480	8,440	9,410	25,100	13,200	19,500	6,860	8,310	6,280	8,920	9,950	10,100
17	9,530	8,450	9,370	25,200	13,700	20,000	6,530	7,750	6,370	8,920	9,730	10,100
18	9,490	8,280	9,380	23,300	21,300	23,100	6,000	7,370	6,340	8,950	9,500	9,940
19	9,500	8,260	9,360	19,100	26,400	20,600	5,800	7,150	6,170	8,990	9,190	9,910
20	9,500	8,420	9,370	15,900	25,900	17,500	5,560	7,090	6,030	8,960	9,170	9,820
21	9,490	8,470	9,340	14,000	27,600	15,800	5,600	7,190	6,360	9,060	9,670	9,870
22	9,530	8,370	9,290	12,900	28,000	14,700	5,900	7,320	6,430	9,130	10,400	9,910
23	9,600	8,220	9,250	12,200	28,000	13,900	6,100	7,360	6,410	9,140	10,600	9,950
24	9,640	8,170	9,230	11,800	28,000	13,300	6,100	7,230	6,400	9,150	9,520	9,960
25	9,680	8,160	9,200	11,300	28,100	12,900	6,050	7,010	6,370	9,180	9,050	9,860
26	9,710	8,130	9,230	11,000	28,200	12,600	6,400	6,800	6,440	9,250	8,900	9,770
27	9,760	8,120	9,320	10,700	28,200	12,500	6,900	6,570	6,720	9,300	8,780	9,750
28	9,760	8,110	9,480	10,400	28,000	12,200	6,750	6,320	7,250	9,480	8,710	9,740
29	9,710	8,160	9,650	10,200	27,800	11,600	6,150	6,010	7,470	9,500	8,560	9,720
30	9,710	8,400	9,720	16,100	-----	11,300	5,650	5,630	7,520	9,510	8,320	9,710
31	9,670	-----	9,680	25,500	-----	11,100	-----	5,250	-----	9,540	8,100	-----
TOTAL	300,970	250,950	313,740	419,940	617,000	570,500	228,460	212,240	195,010	269,610	295,420	277,630
MEAN	9,709	8,365	10,120	13,550	21,280	18,400	7,615	6,846	6,500	8,697	9,530	9,254
MAX	10,200	9,710	13,300	25,500	28,200	27,500	11,100	8,420	7,520	9,540	10,600	10,100
MIN	9,480	7,880	8,810	8,130	13,200	11,100	5,560	5,250	5,000	7,580	8,100	7,760
AC-FT	597,000	497,800	622,300	832,900	1,224M	1,132M	453,100	421,000	386,800	534,800	586,000	550,700
CAL YR 1967	TOTAL 4,923,100			MEAN 13,490		MAX 26,200	MIN 7,080	AC-FT 9,765,000				
WTR YR 1968	TOTAL 3,951,470			MEAN 10,800		MAX 28,200	MIN 5,000	AC-FT 7,838,000				

SACRAMENTO RIVER BASIN

11-3906.55. SOUTH FORK WILLOW CREEK NEAR FRUTO, CALIF:

LOCATION.--Lat 39°32'30", long 122°23'20", SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.35, T.20 N., R.5 W., on right bank 150 ft downstream from county road bridge, and 4.5 miles southeast of Fruto.

DRAINAGE AREA.--38.9 sq mi.

RECORDS AVAILABLE.--July 1963 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 375 ft (from topographic map).

AVERAGE DISCHARGE.--5 years, 2.07 cfs (1,500 acre-ft per year).

EXTREMES.--Maximum discharge during year, 780 cfs Jan. 29 (gage height, 7.37 ft), from rating curve extended above 60 cfs on basis of slope-area measurement of maximum flow; no flow for several months.

1963-68: Maximum discharge, 1,920 cfs Jan. 5, 1965 (gage height, 9.94 ft), from rating curve extended above 60 cfs on basis of slope-area measurement of maximum flow; no flow for several months in each year.

REMARKS.--Records good. No known regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				0	.56	3.0	.64	.01				
2				0	33	2.5	.56	.01				
3				0	6.6	2.1	.48	.01				
4				0	1.8	1.8	.48	0				
5				.0	.64	1.8	.48	0				
6				0	.18	1.7	.41	0				
7				0	.01	1.7	.34	0				
8				0	0	2.2	.34	0				
9				0	0	1.8	.34	0				
10				0	0	1.3	.34	0				
11				0	0	1.2	.34	0				
12				0	0	1.4	.28	0				
13				0	0	2.2	.23	0				
14				0	0	1.4	.28	0				
15				1.5	0	1.2	.28	0				
16				0	18	1.7	.23	0				
17				0	133	1.9	.18	0				
18				0	16	1.2	.18	0				
19				0	221	.82	.23	0				
20				0	70	.73	.18	0				
21				0	30	.73	.14	0				
22				0	16	.73	.10	0				
23				0	11	.73	.14	0				
24				0	8.3	.64	.14	0				
25				0	6.4	.64	.10	0				
26				0	5.4	.56	.04	0				
27				0	4.4	.56	.03	0				
28				0	3.6	.48	.02	0				
29				233	3.2	.48	.02	0				
30				46	-----	.48	.01	0				
31		-----		3.8	-----	.48	-----	0	-----			-----
TOTAL	0	0	0	284.3	589.09	40.16	7.56	0.03	0	0	0	0
MEAN	0	0	0	9.17	20.3	1.30	.25	.001	0	0	0	0
MAX	0	0	0	233	221	3.0	.64	.01	0	0	0	0
MIN	0	0	0	0	0	.48	.01	0	0	0	0	0
AC-FT	0	0	0	564	1,170	80	15	.06	0	0	0	0
CAL YR 1967	TOTAL	1,383.10	MEAN	3.79	MAX	265	MIN	0	AC-FT	2,740		
WTR YR 1968	TOTAL	921.14	MEAN	2.52	MAX	233	MIN	0	AC-FT	1,830		

PEAK DISCHARGE (BASE, 100 CFS)							
DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-29	1830	7.37	780	02-19	1530	7.31	758
02-17	0500	5.73	326				

SACRAMENTO RIVER BASIN

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11-3906.6. WALKER CREEK AT ARTOIS, CALIF.

LOCATION.--Lat 39°37'32", long 122°11'45", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.34, T.21 N., R.3 W., on left bank 500 ft upstream from county road bridge, and 0.3 mile north of Artois.

DRAINAGE AREA.--60.4 sq mi.

RECORDS AVAILABLE.--July 1965 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 156.4 ft above mean sea level (levels by Corps of Engineers).

EXTREMES.--Maximum discharge during year, 1,310 cfs Jan. 29 (gage height, 8.32 ft), from rating curve extended above 350 cfs; no flow for several days.

1965-68: Maximum discharge, 1,850 cfs Jan. 30, 1967 (gage height, 9.21 ft), from rating curve extended above 350 cfs; no flow at times each year.

REMARKS.--Records good. Several small storage ponds above station for diversion for irrigation.

REVISIONS (water year).--1967 report: 1966.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	1.4	.12	0	39	7.7	1.0	12	.09	11	7.6	3.3
2	3.3	1.1	.07	0	196	6.6	2.8	15	.06	7.0	8.6	1.3
3	9.0	3.1	1.3	0	95	5.7	4.3	7.9	.12	4.9	6.4	.54
4	17	3.1	4.7	0	44	4.8	4.0	5.5	.30	6.5	6.6	3.4
5	7.9	9.7	5.5	0	28	4.2	5.4	3.9	.30	3.8	6.9	15
6	3.4	13	3.2	0	20	3.9	6.8	6.8	2.6	5.0	4.9	12
7	2.2	22	1.8	0	15	3.6	8.6	11	6.4	2.5	5.3	9.0
8	2.4	13	1.1	0	12	4.1	10	10	14	.80	4.3	8.9
9	3.0	12	.72	0	9.1	4.0	12	8.3	11	.62	2.1	7.7
10	6.4	12	.47	0	7.4	3.4	14	11	8.0	2.5	1.8	4.6
11	2.9	9.0	.33	0	6.3	2.7	12	17	3.3	2.5	2.0	2.1
12	3.3	4.7	.19	0	5.3	2.9	10	15	.92	2.2	4.7	1.3
13	8.2	7.0	.15	0	5.0	4.3	8.8	19	.29	3.6	2.7	.93
14	6.6	10	.05	.27	7.6	4.7	7.6	23	5.4	6.7	.98	.69
15	5.6	6.3	.02	62	8.0	3.5	6.4	18	7.1	8.5	6.4	.80
16	5.0	3.8	0	37	61	3.4	6.6	12	4.3	6.7	10	4.5
17	5.0	3.6	0	14	572	4.1	8.0	10	3.6	4.4	12	6.5
18	7.9	6.5	0	7.0	140	3.9	9.2	4.9	4.2	8.6	10	3.5
19	6.5	7.8	0	3.8	365	2.6	10	8.3	6.5	4.9	8.3	8.9
20	4.2	6.2	0	2.2	357	2.0	8.6	5.9	5.3	1.7	6.0	14
21	2.9	6.1	0	1.4	122	1.6	7.6	7.7	3.4	1.5	15	11
22	3.1	2.6	0	.96	67	1.4	6.6	6.9	4.2	1.1	37	6.7
23	7.6	1.2	0	.59	46	1.4	5.8	6.5	3.8	1.3	11	5.1
24	8.2	.61	0	.38	34	1.4	5.0	7.0	5.3	1.7	5.0	1.9
25	5.1	.30	0	.28	26	1.2	4.5	7.0	8.4	5.3	2.7	1.5
26	4.7	.13	0	.21	19	1.0	4.1	5.6	2.5	4.1	1.6	2.0
27	3.4	.06	0	.14	14	.84	5.3	9.0	1.4	3.6	1.1	7.2
28	1.6	.04	0	.11	11	3.3	6.6	3.5	1.5	4.9	.34	5.4
29	2.1	.07	0	200	8.9	6.2	8.1	1.2	1.5	3.2	.31	7.9
30	1.8	.08	0	448	-----	3.6	10	.44	5.6	3.4	.24	5.3
31	2.0	-----	0	84	-----	1.4	-----	.18	-----	5.7	1.3	-----
TOTAL	157.7	166.49	19.72	862.34	2,340.6	105.44	219.7	279.52	121.38	130.22	193.17	162.96
MEAN	5.09	5.55	.64	27.8	80.7	3.40	7.32	9.02	4.05	4.20	6.23	5.43
MAX	17	22	5.5	448	572	7.7	14	23	14	11	37	15
MIN	1.6	.04	0	0	5.0	.84	1.0	.18	.06	.62	.24	.54
AC-FT	313	330	39	1,710	4,640	209	436	554	241	258	383	323

CAL YR 1967 TOTAL 4,848.88 MEAN 13.3 MAX 617 MIN 0 AC-FT 9,620
WTR YR 1968 TOTAL 4,759.24 MEAN 13.0 MAX 572 MIN 0 AC-FT 9,440

PEAK DISCHARGE (BASE, 160 CFS)
DATE TIME G.HT. DISCHARGE DATE TIME G.HT. DISCHARGE
01-29 2345 8.32 1,310 02-17 1015 7.46 894
02-02 1030 6.21 465 02-19 2045 7.76 1,060

Note.--No gage-height record Apr. 3 to May 2.

SACRAMENTO RIVER BASIN

11-3906.72. STONE CORRAL CREEK NEAR SITES, CALIF.

LOCATION.--Lat 39°17'18", long 122°18'00", in NW¼NW¼ sec.34, T.17 N., R.4 W., on left bank at road bridge 2.4 miles southeast of Sites.

DRAINAGE AREA.--38.2 sq mi.

RECORDS AVAILABLE.--March 1958 to September 1964, October 1965 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 180 ft (from topographic map).

AVERAGE DISCHARGE.--9 years, 3.38 cfs (2,450 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,640 cfs Jan. 29 (gage height, 14.52 ft), from rating curve extended above 1,200 cfs on basis of slope-conveyance study at gage height 13.0 ft; no flow for several months.

1958-64, 1965-68: Maximum discharge, 2,640 cfs Jan. 29, 1968 (gage height, 14.52 ft), from rating curve extended above 1,200 cfs on basis of slope-conveyance study at gage height 13.0 ft; no flow for several months each year.

Flood of Apr. 2, 1958, reached a stage of 14.93 ft (discharge, 2,500 cfs); flood of Dec. 22, 1964, reached a stage of 13.0 ft from floodmarks (discharge, 1,940 cfs from slope-conveyance study).

REMARKS.--No known diversion or regulation above station. Records of water temperatures and suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Records furnished by U.S. Bureau of Reclamation and reviewed by Geological Survey.

DISCHARGE, IN CURIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				0	5.8	6.1	.70	1.6	0			
2				0	97	5.3	.90	1.3	.10			
3				0	18	4.4	.70	1.0	.10			
4				0	8.5	4.5	.60	.90	.10			
5				0	5.9	4.2	.60	.80	.20			
6				0	4.3	3.7	.70	.70	.20			
7				0	3.3	3.7	.60	.60	.10			
8				0	2.7	5.5	.70	.60	.10			
9				0	2.5	4.0	.80	.50	.10			
10				0	2.3	3.1	1.0	.40	.10			
11				0	1.9	3.0	1.2	.40	0			
12				0	1.6	3.5	1.4	.40	0			
13				0	1.5	6.0	1.4	.30	0			
14				3.8	1.3	3.8	1.7	.30	0			
15				7.0	1.3	3.0	2.0	.40	0			
16				.30	62	13	2.2	.30	0			
17				0	337	4.6	2.1	.20	0			
18				0	29	2.4	2.1	.20	0			
19				0	289	1.6	2.5	.20	0			
20				0	83	1.3	2.5	.20	0			
21				0	53	1.2	2.4	.20	0			
22				0	25	1.2	2.4	.20	0			
23				0	18	1.2	2.6	.20	0			
24				0	14	1.0	2.4	.20	0			
25				0	11	1.0	2.2	.30	0			
26				0	9.2	.80	2.1	.30	0			
27				0	8.1	.70	1.9	.20	0			
28				0	7.0	.70	1.9	0	0			
29				982	6.3	.60	1.9	0	0			
30				178	-----	.60	1.9	0	0			
31		-----		15	-----	.50	-----	0	-----			-----
TOTAL	0	0	0	1,186.10	1,109.5	96.20	48.10	12.90	1.10	0	0	0
MEAN	0	0	0	38.3	38.3	3.10	1.60	.42	.037	0	0	0
MAX	0	0	0	982	337	13	2.6	1.6	.20	0	0	0
MIN	0	0	0	0	1.3	.50	.60	0	0	0	0	0
AC-FT	0	0	0	2,350	2,200	191	95	26	2.2	0	0	0
CAL YR 1967	TOTAL	3,717.30		MEAN	10.2	MAX	592	MIN	0	AC-FT	7,370	
WTR YR 1968	TOTAL	2,453.90		MEAN	6.70	MAX	982	MIN	0	AC-FT	4,870	

11-3910. SACRAMENTO RIVER AT KNIGHTS LANDING, CALIF.

LOCATION.--Lat 38°48'10", long 121°42'55", in NE¼ sec.14, T.11 N., R.2 E., on left bank just upstream from Southern Pacific Railroad bridge at Knights Landing, 13.1 miles upstream from Feather River, and at mile 34.0 upstream from Sacramento.

DRAINAGE AREA.--14,550 sq mi.

RECORDS AVAILABLE.--April 1921 to October 1939 (low-water periods only), June 1940 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Digital water-stage recorder. Gage is set to datum of Corps of Engineers which is 2.93 ft below mean sea level. April 1921 to Dec. 9, 1930, in fender pier of railroad bridge at same datum. Dec. 10, 1930, to Sept. 23, 1968, graphic water-stage recorder at present site and datum. Water-stage recorder for station at Verona was used as auxiliary gage for this station January 1941 to June 1945. Since Aug. 16, 1945, auxiliary water-stage recorder 6.0 miles downstream from base gage.

AVERAGE DISCHARGE.--28 years (1940-68), 10,300 cfs (7,457,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 28,100 cfs Feb. 28 (gage height, 37.27 ft); minimum daily discharge, 5,420 cfs June 2.

1940-68: Maximum discharge, 30,000 cfs Dec. 3, 1960 (gage height, 30.31 ft); maximum gage height, 41.83 ft Feb. 8, 1942 (backwater from Feather River and Sutter bypass).

1921-68: Minimum discharge recorded, 250 cfs July 23, 1931 (gage height, 7.80 ft).

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, power developments, bypassing for flood control, diversions for irrigation, and considerable return flow from irrigated areas.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11,300	10,500	9,460	10,400	26,200	27,100	11,800	5,950	5,480	7,470	10,200	8,680
2	11,100	10,500	10,100	10,300	22,800	26,700	11,700	5,850	5,420	7,480	10,400	8,520
3	10,500	10,400	10,200	9,990	20,600	26,200	11,900	6,110	5,630	7,690	10,500	8,500
4	9,990	9,700	10,800	9,740	24,400	26,000	11,500	6,500	5,820	7,620	10,600	8,660
5	10,400	9,360	13,600	9,660	24,900	25,000	10,900	7,160	5,840	7,870	10,700	8,950
6	10,800	9,360	14,000	9,420	22,200	22,800	10,400	7,340	5,960	7,880	10,700	9,290
7	10,900	9,060	14,600	9,340	19,200	22,700	10,200	7,800	6,690	8,320	10,800	9,780
8	10,500	8,660	13,600	8,890	17,700	22,000	9,620	8,250	7,680	8,340	10,700	10,300
9	10,500	8,620	14,400	8,650	17,200	21,500	8,740	8,410	8,480	8,370	10,700	10,600
10	10,400	8,790	13,600	8,950	16,400	21,200	8,330	8,740	8,440	8,520	10,800	10,800
11	10,400	8,860	12,300	15,000	15,900	20,600	8,130	9,240	8,320	8,550	10,800	11,200
12	10,500	8,830	11,600	21,600	15,800	19,400	8,180	9,710	8,010	8,610	10,700	11,500
13	10,300	8,750	11,100	17,000	15,500	18,800	8,080	9,980	7,640	8,600	10,700	11,600
14	10,600	8,770	10,900	13,900	14,400	19,200	7,980	10,100	7,300	8,910	10,900	11,600
15	10,100	8,930	10,600	16,400	14,600	20,900	7,410	10,200	6,950	9,200	11,000	11,800
16	10,000	9,450	10,400	27,400	14,200	21,700	7,070	10,600	6,650	9,180	11,100	12,000
17	10,100	9,510	10,300	27,400	14,200	21,100	6,910	9,680	6,460	9,230	10,900	11,600
18	10,200	9,370	10,300	25,300	18,900	24,700	6,360	8,780	6,550	9,290	10,800	11,100
19	10,200	9,200	10,200	21,000	27,700	23,000	6,090	8,330	6,400	9,300	10,400	11,000
20	10,100	9,420	10,300	17,100	26,000	19,100	6,040	8,120	6,250	9,200	10,200	10,800
21	10,100	9,510	10,300	15,200	26,600	17,000	6,140	8,420	6,320	9,300	10,800	10,700
22	10,400	9,430	10,100	14,300	26,800	15,900	6,430	8,810	6,420	9,340	11,900	10,800
23	10,500	9,150	10,100	13,400	27,800	15,300	6,590	8,770	6,460	9,250	13,000	10,700
24	10,500	9,000	9,950	12,700	27,800	14,700	6,480	8,530	6,290	9,250	12,000	10,700
25	10,500	8,950	9,850	12,200	27,800	14,200	6,550	8,310	6,250	9,370	11,200	10,500
26	10,500	8,840	9,960	11,900	27,800	13,700	6,840	8,130	6,390	9,440	10,700	10,400
27	10,600	8,830	9,950	11,600	27,800	13,300	7,410	7,690	6,570	9,620	10,300	10,400
28	10,700	8,830	10,100	11,200	27,700	12,900	7,080	7,290	7,040	9,990	10,100	10,300
29	10,600	8,790	10,400	11,100	27,800	12,200	6,220	6,670	7,470	10,100	9,850	10,200
30	10,700	9,000	10,500	14,900	-----	12,000	6,100	6,320	7,670	10,100	9,380	10,100
31	10,700	-----	10,500	25,800	-----	12,100	-----	5,770	-----	10,100	8,900	-----
TOTAL	324,690	276,370	344,070	451,740	636,700	603,000	243,180	251,560	202,850	275,490	331,730	313,080
MEAN	10,470	9,212	11,100	14,570	21,960	19,450	8,106	8,115	6,762	8,887	10,700	10,440
MAX	11,300	10,500	14,600	27,400	27,800	27,100	11,900	10,600	8,480	10,100	13,000	12,000
MIN	9,990	8,620	9,460	8,650	14,200	12,000	6,040	5,770	5,420	7,470	8,900	8,500
AC-FT	644,000	548,200	682,500	896,000	1,263M	1,196M	482,300	499,000	402,300	546,400	658,000	621,000

CAL YR 1967 TOTAL 5,156,700 MEAN 14,130 MAX 27,800 MIN 7,930 AC-FT 10,230,000

WTR YR 1968 TOTAL 4,254,460 MEAN 11,620 MAX 27,800 MIN 5,420 AC-FT 8,439,000

SACRAMENTO RIVER BASIN

11-3925. MIDDLE FORK FEATHER RIVER NEAR OLIO, CALIF.

LOCATION.--Lat 39°45'10", long 120°35'40", in SE $\frac{1}{4}$ sec.23, T.22 N., R.12 E., on left bank 0.6 mile upstream from Frazier Creek, 1.0 mile northwest of Clío, and 2.2 miles southeast of Blairsden.

DRAINAGE AREA.--686 sq mi.

RECORDS AVAILABLE.--October 1925 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 4,380 ft (from topographic map). Prior to July 28, 1953, at site 0.5 mile downstream at different datum.

AVERAGE DISCHARGE.--43 years, 278 cfs (201,300 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4,310 cfs Feb. 22 (gage height, 11.06 ft); minimum daily, 14 cfs July 28, 29.

1925-68: Maximum discharge, 14,500 cfs Feb. 1, 1963 (gage height, 16.19 ft); minimum, 4.3 cfs Sept. 5, 1934.

REMARKS.--Records good. Diversions for irrigation of about 40,000 acres above station, of which 14,500 acres receive supplemental water of about 7,000 acre-ft annually from Little Truckee River. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	74	96	76	126	715	387	120	91	43	20	18
2	133	75	96	77	144	632	382	120	84	39	18	18
3	114	76	91	76	179	560	378	128	85	35	17	18
4	82	77	130	73	157	498	373	137	87	31	17	18
5	80	77	225	76	142	473	359	137	85	28	17	20
6	78	74	140	70	133	435	319	128	90	26	17	18
7	83	73	189	71	133	410	291	120	93	25	16	18
8	85	74	133	71	136	438	277	119	100	23	16	19
9	84	75	131	73	166	486	264	114	110	23	17	20
10	83	75	123	85	216	515	258	113	98	20	17	20
11	82	74	124	89	264	489	250	113	87	19	17	20
12	81	73	118	86	338	446	242	111	82	19	16	18
13	78	73	109	74	405	443	233	124	81	18	16	18
14	77	84	100	88	446	440	232	113	85	18	16	18
15	75	77	95	347	461	443	238	113	77	18	16	19
16	75	77	76	223	455	467	240	106	74	19	17	18
17	74	78	68	157	586	511	238	104	69	19	21	20
18	74	83	69	140	663	564	227	110	65	19	19	20
19	74	104	69	132	973	564	217	141	60	18	31	20
20	74	95	69	127	1,770	502	165	156	51	17	28	21
21	74	92	70	133	3,090	440	131	150	49	17	24	21
22	75	93	71	159	4,190	408	145	142	45	16	22	21
23	76	93	71	189	3,640	380	139	137	42	16	22	21
24	76	91	72	188	2,660	361	135	133	39	15	21	21
25	75	90	73	183	2,060	385	132	131	38	15	22	21
26	75	86	75	175	1,500	382	128	124	29	15	23	20
27	75	86	77	167	1,160	364	127	123	28	15	24	21
28	74	87	77	162	941	361	120	120	26	14	22	20
29	74	92	77	153	811	368	115	113	26	14	20	20
30	74	98	78	131	-----	375	119	105	26	15	20	21
31	74	-----	80	130	-----	380	-----	98	-----	17	19	-----
TOTAL	2,466	2,476	3,072	3,981	27,945	14,235	6,861	3,803	2,002	646	608	586
MEAN	79.5	82.5	99.1	128	964	459	229	123	66.7	20.8	19.6	19.5
MAX	133	104	225	347	4,190	715	387	156	110	43	31	21
MIN	58	73	68	70	126	361	115	98	26	14	16	18
AC-FT	4,890	4,910	6,090	7,900	55,430	28,230	13,610	7,540	3,970	1,280	1,210	1,160

CAL YR 1967	TOTAL 190,062	MEAN 521	MAX 9,080	MIN 40	AC-FT 377,000
WTR YR 1968	TOTAL 68,681	MEAN 188	MAX 4,190	MIN 14	AC-FT 136,200

Peak discharge (base, 850 cfs).--Feb. 22 (1800 hrs) 4,310 cfs (11.06 ft).

11-3945. MIDDLE FORK FEATHER RIVER NEAR MERRIMAC, CALIF.

LOCATION.--Lat 39°42'30", long 121°16'10", in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.2, T.21 N., R.6 E., on left bank 400 ft downstream from bridge on Milsap Bar Road, 500 ft downstream from Little North Fork, 4.5 miles southeast of Merrimac, and 20 miles northeast of Oroville.

DRAINAGE AREA.--1,062 sq mi.

RECORDS AVAILABLE.--October 1951 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 1,560 ft (from topographic map). Prior to Jan. 21, 1965, graphic water-stage recorder on right bank at same site and datum.

AVERAGE DISCHARGE.--17 years, 1,382 cfs (1,001,000 acre-ft per year); median of yearly mean discharges, 1,190 cfs (862,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 10,300 cfs Feb. 21 (gage height, 12.43 ft); minimum daily, 134 cfs Sept. 8, 9, 17-21.

1951-68: Maximum discharge, 86,200 cfs Dec. 22, 1964 (gage height, 26.5 ft, from floodmarks, present site), from rating curve extended above 19,000 cfs on basis of slope-area measurement of maximum flow; minimum, 92 cfs Jan. 2, 1960.

Flood of Dec. 10, 1937, reached a stage of 19.4 ft, from floodmarks (discharge, 46,100 cfs).

REVISIONS.--The maximum discharges for the 1956 and 1963 water years have been revised to 55,300 cfs Dec. 23, 1955 (gage height, 21.2 ft) and 58,000 cfs Feb. 1, 1963 (gage height, 21.65 ft), superceding figures published in WSP 1445 and in Surface Water Records of California Vol. 2, 1963.

REMARKS.--Records good. Diversions above station for irrigation of about 1,000 acres between stations near Clio and near Merrimac. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

REVISIONS (water year).--1965 report: 1960.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	241	241	360	345	662	2,840	2,540	1,950	936	277	169	148
2	498	245	321	335	745	2,610	2,270	1,950	892	294	169	140
3	825	245	390	308	1,110	2,440	2,080	2,030	871	294	162	140
4	397	245	540	285	1,020	2,300	2,000	2,090	843	281	154	140
5	332	245	1,120	290	928	2,320	1,970	1,980	794	269	148	140
6	320	241	626	290	892	2,160	1,850	1,800	801	257	144	137
7	297	241	698	290	906	2,020	1,780	1,660	864	253	140	140
8	294	241	584	321	920	1,980	1,730	1,610	780	241	140	134
9	285	241	440	345	1,000	1,920	1,760	1,600	731	233	140	134
10	281	241	395	662	1,270	1,850	1,890	1,580	692	229	140	137
11	280	241	375	460	1,190	1,770	2,090	1,560	656	221	140	140
12	273	241	365	370	1,200	1,730	2,150	1,480	626	217	137	137
13	268	241	298	385	1,320	1,760	2,040	1,490	596	213	137	137
14	261	308	233	737	1,300	1,800	1,960	1,380	566	213	137	140
15	252	330	273	4,500	1,270	1,760	1,970	1,280	554	209	140	140
16	249	277	330	2,610	1,300	1,970	1,960	1,220	530	201	144	140
17	249	265	312	1,450	2,650	2,030	1,830	1,220	495	197	154	134
18	248	269	345	1,060	3,030	1,920	1,700	1,240	480	193	158	134
19	245	460	316	878	3,060	1,840	1,640	1,310	465	189	209	134
20	245	435	312	773	6,980	1,750	1,580	1,500	435	181	281	134
21	245	350	290	724	8,920	1,660	1,460	1,480	415	177	298	134
22	247	316	298	717	8,670	1,610	1,380	1,410	395	177	225	137
23	249	303	312	759	8,860	1,600	1,380	1,280	375	169	201	137
24	249	294	321	780	7,000	1,580	1,380	1,190	350	165	185	137
25	249	290	340	752	5,440	1,750	1,420	1,200	330	165	173	144
26	245	281	360	724	4,460	1,950	1,500	1,190	326	162	169	144
27	245	285	445	692	3,890	1,800	1,600	1,170	308	162	162	144
28	245	298	475	656	3,450	1,820	1,650	1,140	298	162	162	140
29	245	340	440	656	3,160	2,040	1,770	1,120	290	162	158	137
30	241	365	385	608	-----	2,360	1,910	1,070	285	158	154	137
31	241	-----	355	674	-----	2,530	-----	928	-----	158	148	-----
TOTAL	9,041	8,615	12,654	24,436	86,603	61,470	54,240	45,108	16,979	6,479	5,178	4,151
MEAN	292	287	408	788	2,986	1,983	1,808	1,455	566	209	167	138
MAX	825	460	1,120	4,500	8,920	2,840	2,540	2,090	936	294	298	148
MIN	241	241	233	285	662	1,580	1,380	928	285	158	137	134
AC-FT	17,930	17,090	25,100	48,470	171,800	121,900	107,600	89,470	33,680	12,850	10,270	8,230
CAL YR 1967	TOTAL 649,822			MEAN 1,780		MAX 11,500		MIN 233		AC-FT 1,289,000		
WTR YR 1968	TOTAL 334,954			MEAN 915		MAX 8,920		MIN 134		AC-FT 664,400		

Peak discharge (base, 7,000 cfs).--Feb. 21 (1200 hrs) 10,300 cfs (12.43 ft).

SACRAMENTO RIVER BASIN

11-3946.2. FALL RIVER NEAR FEATHER FALLS, CALIF.

LOCATION.--Lat 39°40'00", long 121°08'00", in NW $\frac{1}{4}$ sec.19, T.21 N., R.8 E., on right bank 0.5 mile downstream from Coyote Creek, and 8 miles northeast of Feather Falls.

DRAINAGE AREA.--9.89 sq mi.

RECORDS AVAILABLE.--July 1963 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 4,000 ft (from topographic map). Prior to July 6, 1967, digital water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--5 years, 39.7 cfs (28,740 acre-ft per year).

EXTREMES.--Maximum discharge during year, 477 cfs Feb. 21 (gage height, 4.43 ft); minimum daily, 1.7 cfs Sept. 29, 30.

1963-68: Maximum discharge, 3,770 cfs Dec. 22, 1964 (gage height, 10.00 ft), from rating curve extended above 300 cfs on basis of slope-area measurement of maximum flow; minimum daily, 1.7 cfs Oct. 10, Nov. 3, 1966, Sept. 29, 30, 1968.

REMARKS.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	3.2	4.5	7.0	24	106	94	62	17	5.8	3.2	2.6
2	21	3.0	3.7	6.3	26	98	84	60	16	5.8	2.8	2.6
3	13	3.0	4.2	6.3	27	93	77	59	16	5.8	2.6	2.6
4	5.5	3.2	9.1	5.8	26	89	75	58	14	5.5	2.6	2.6
5	5.5	3.2	16	5.3	25	89	74	54	15	5.3	2.4	2.6
6	5.3	3.2	7.7	5.3	24	83	72	50	16	5.3	2.4	2.6
7	4.7	3.2	7.0	5.8	23	78	70	47	15	5.0	2.4	2.6
8	4.5	3.2	6.0	5.3	23	74	71	44	14	5.0	2.3	2.3
9	4.2	3.2	5.5	5.3	25	68	78	42	13	4.7	2.3	2.3
10	4.2	3.2	5.0	5.2	26	63	82	40	12	4.7	2.3	2.3
11	4.2	3.2	4.8	5.2	26	59	89	38	11	4.5	2.3	2.3
12	4.0	3.2	4.5	5.5	26	56	91	36	11	4.2	2.3	2.3
13	4.0	3.2	4.0	5.5	26	55	88	36	10	4.2	2.3	2.3
14	3.7	5.8	4.2	19	26	51	86	35	9.9	4.2	2.4	2.4
15	3.5	4.5	4.2	158	25	48	83	34	9.5	4.0	2.6	2.4
16	3.5	4.0	4.2	78	29	49	80	31	9.2	4.0	2.6	2.3
17	3.5	3.7	4.2	46	118	45	73	29	8.8	4.0	3.0	1.9
18	3.5	4.2	4.2	34	114	41	69	29	8.8	3.7	3.0	1.9
19	3.5	14	4.2	29	140	40	66	28	8.1	3.7	5.0	1.9
20	3.5	6.7	4.2	25	263	39	63	29	7.7	3.5	5.3	1.9
21	3.5	5.3	4.2	23	369	39	58	28	7.7	3.5	5.5	1.9
22	3.5	4.5	4.0	23	290	39	57	29	7.4	3.3	4.0	1.9
23	3.5	4.2	4.2	24	302	40	54	26	7.4	3.3	3.5	1.9
24	3.5	4.0	4.7	24	234	41	55	25	7.0	3.2	3.2	1.9
25	3.5	3.7	5.5	24	182	47	55	26	6.7	3.2	3.0	1.9
26	3.3	3.7	7.0	23	152	50	58	23	6.3	3.2	2.8	1.8
27	3.3	3.7	10	22	138	52	60	22	6.3	3.0	2.8	1.8
28	3.3	4.0	12	20	126	57	61	20	6.0	3.0	2.8	1.8
29	3.3	4.0	10	18	115	69	63	19	6.0	3.0	2.6	1.7
30	3.3	4.2	8.8	20	-----	82	63	18	6.0	3.2	2.8	1.7
31	3.2	-----	7.7	22	-----	93	-----	18	-----	3.0	2.6	-----
TOTAL	144.8	125.4	189.5	705.8	2,950	1,933	2,149	1,095	308.8	127.8	91.7	65.0
MEAN	4.67	4.18	6.11	22.8	102	62.4	71.6	35.3	10.3	4.12	2.96	2.17
MAX	21	14	16	158	369	106	94	62	17	5.8	5.5	2.6
MIN	2.8	3.0	3.7	5.2	23	39	54	18	6.0	3.0	2.3	1.7
AC-FT	287	249	376	1,400	5,850	3,830	4,260	2,170	613	253	182	129

CAL YR 1967 TOTAL 16,956.3 MEAN 46.5 MAX 442 MIN 2.4 AC-FT 33,630
WTR YR 1968 TOTAL 9,885.8 MEAN 27.0 MAX 369 MIN 1.7 AC-FT 19,610

Peak discharge (base, 150 cfs).--Jan. 15 (0400 hrs) 175 cfs (3.26 ft); Feb. 21 (0600 hrs) 477 cfs (4.43 ft).

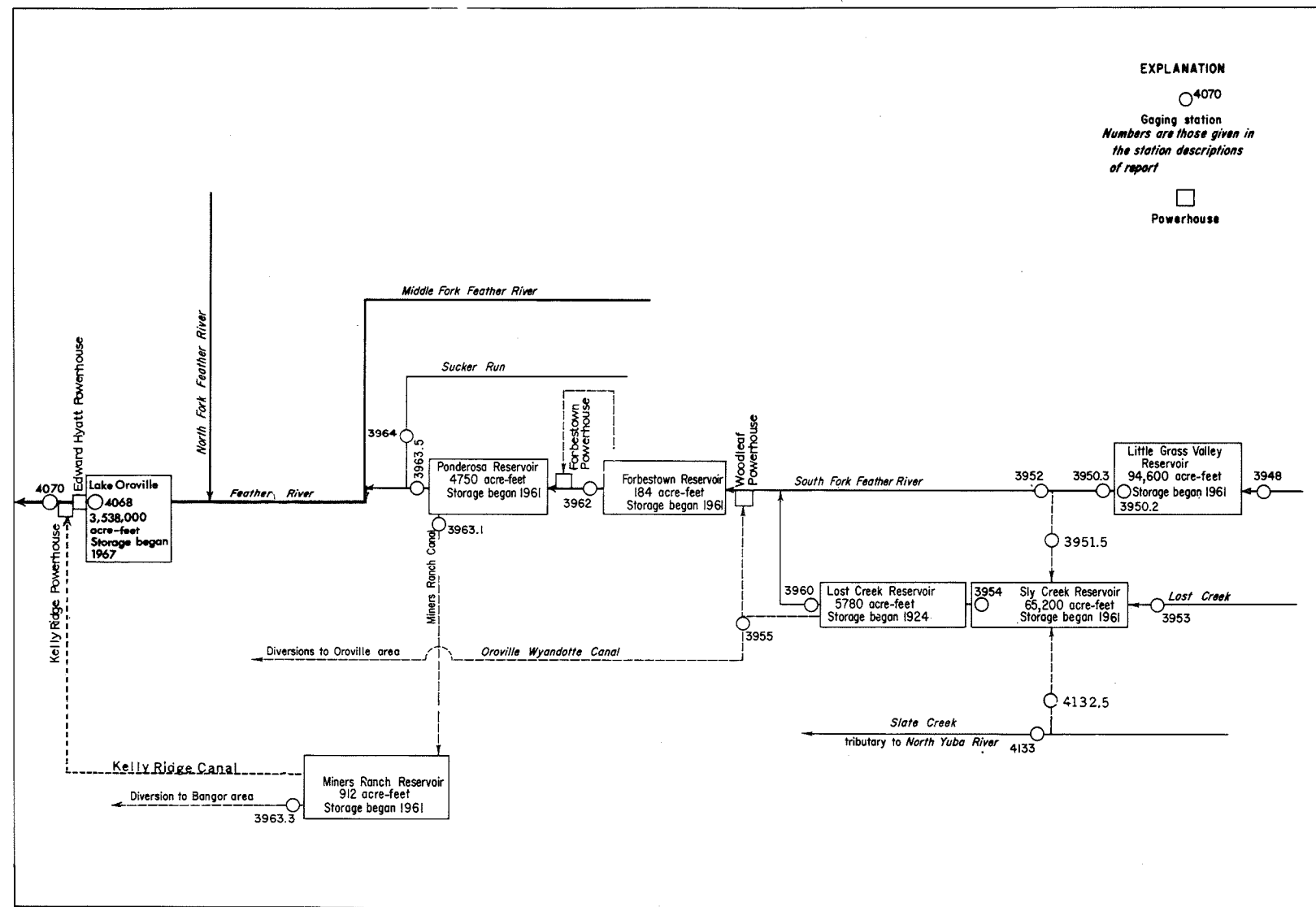


FIGURE 8.--Schematic diagram showing diversions and storage in South Fork Feather River basin.

SACRAMENTO RIVER BASIN

11-3948. SOUTH FORK FEATHER RIVER ABOVE LITTLE GRASS VALLEY RESERVOIR, CALIF.

LOCATION.--Lat 39°45'07", long 120°57'26", in NW¼SE¼ sec.22, T.22 N., R.9 E., on right bank 0.5 mile downstream from unnamed tributary, 4.5 miles upstream from Little Grass Valley Dam, and 5 miles north of LaPorte.

DRAINAGE AREA.--8.09 sq mi.

RECORDS AVAILABLE.--October 1960 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 5,080 ft (from topographic map).

AVERAGE DISCHARGE.--8 years, 27.9 cfs (20,200 acre-ft per year).

EXTREMES.--Maximum discharge during year, 292 cfs Feb. 21 (gage height, 3.35 ft); maximum gage height, 4.21 ft Jan. 15 (backwater from ice); minimum daily discharge, 0.06 cfs Sept. 9-13, 29.

1960-68: Maximum discharge, 4,160 cfs Jan. 31, 1963 (gage height, 7.12 ft), from rating curve extended above 140 cfs on basis of slope-area measurement at gage height 5.47 ft; minimum daily, 0.06 cfs Sept. 9-13, 29, 1968.

REMARKS.--Records good. No storage or diversion above station. See schematic diagram for South Fork Feather River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.25	.41	1.6	2.8	12	62	57	81	29	2.2	.30	.30
2	8.0	.41	1.1	2.8	20	59	51	81	28	2.2	.30	.25
3	3.8	.41	1.1	3.4	23	53	48	87	26	2.2	.25	.25
4	1.2	.41	1.8	2.8	23	51	48	87	24	2.0	.20	.20
5	1.1	.41	3.0	3.0	22	53	48	79	22	1.8	.20	.15
6	.95	.41	2.5	3.0	18	48	44	68	23	2.0	.15	.15
7	.63	.41	2.5	2.8	14	43	44	64	21	1.8	.15	.11
8	.55	.41	1.8	2.5	14	40	44	62	18	1.8	.15	.08
9	.55	.41	1.8	2.2	11	36	50	60	17	2.0	.15	.06
10	.47	.41	1.6	2.3	9.9	34	57	60	16	2.0	.15	.06
11	.47	.41	1.8	2.4	9.9	31	68	59	14	1.8	.15	.06
12	.41	.41	1.8	2.5	9.9	31	68	55	12	1.8	.15	.06
13	.41	.41	1.6	2.8	9.9	31	66	51	11	1.8	.15	.06
14	.35	2.1	2.0	5.8	9.9	29	64	44	9.9	1.4	.15	.08
15	.35	1.4	2.1	131	9.2	26	64	42	9.2	1.1	.20	.11
16	.35	.83	2.0	34	9.9	27	62	43	8.6	.95	.25	.11
17	.35	.73	1.8	21	39	24	55	43	8.6	.95	.30	.11
18	.35	1.1	2.0	16	36	22	51	46	8.0	.83	.35	.15
19	.35	7.4	2.0	14	48	21	50	51	7.4	.73	2.8	.15
20	.35	4.5	1.6	13	118	21	48	60	6.9	.63	2.5	.11
21	.35	3.0	1.6	12	209	20	43	53	6.4	.55	2.5	.08
22	.41	2.0	1.4	11	139	20	42	50	5.4	.47	1.2	.11
23	.41	1.8	1.6	11	205	19	42	42	4.5	.47	.83	.11
24	.41	1.4	1.8	11	142	20	43	37	4.1	.47	.55	.08
25	.41	1.1	2.2	11	104	23	44	43	3.4	.41	.47	.08
26	.41	.95	3.4	11	90	24	50	42	3.0	.35	.41	.08
27	.41	.95	5.4	9.9	81	24	57	42	2.8	.30	.35	.08
28	.41	.95	4.9	9.2	77	29	60	40	2.5	.30	.30	.08
29	.41	.83	3.7	8.0	68	36	68	38	2.5	.30	.30	.06
30	.35	1.2	3.0	7.5	-----	46	79	34	2.2	.30	.25	.08
31	.41	-----	3.0	8.0	-----	57	-----	31	-----	.30	.30	-----
TOTAL	25.63	37.57	69.5	379.7	1,581.6	1,060	1,615	1,675	356.4	36.21	16.46	3.45
MEAN	.83	1.25	2.24	12.2	54.5	34.2	53.8	54.0	11.9	1.17	.53	.12
MAX	8.0	7.4	5.4	131	209	62	79	87	29	2.2	2.8	.30
MIN	.25	.41	1.1	2.2	9.2	19	42	31	2.2	.30	.15	.06
AC-FT	51	75	138	753	3,140	2,100	3,200	3,320	707	72	33	6.8

CAL YR 1967 TOTAL 13,322.90 MEAN 36.5 MAX 292 MIN .20 AC-FT 26,430
WTR YR 1968 TOTAL 6,856.52 MEAN 18.7 MAX 209 MIN .06 AC-FT 13,600

Peak discharge (base, 140 cfs).--Jan. 15 (0200 hrs) 244 cfs (3.23 ft); Feb. 21 (0600 hrs) 292 cfs (3.35 ft).

SACRAMENTO RIVER BASIN

839

11-3950.2. LITTLE GRASS VALLEY RESERVOIR NEAR LAPORTE, CALIF.

LOCATION.--Lat 39°43'25", long 121°01'10", in W $\frac{1}{2}$ sec.31, T.22 N., R.9 E., on right bank 300 ft upstream from dam on South Fork Feather River, 3.3 miles northwest of LaPorte.

DRAINAGE AREA.--25.8 sq mi.

RECORDS AVAILABLE.--October 1961 to September 1968. Month-end elevation and contents only October 1961 to October 1962.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Oroville-Wyandotte Irrigation District). Prior to Nov. 1, 1962, in valve chamber in dam at same datum.

EXTREMES.--Maximum contents during year, 92,700 acre-ft May 22, 23, 25-27 (elevation, 5,045.8 ft); minimum, 49,200 acre-ft Sept. 30 (elevation, 5,014.2 ft).
1961-68: Maximum contents, 96,100 acre-ft Apr. 29, 1965 (elevation, 5,047.9 ft); minimum since reservoir first filled, 49,200 acre-ft Sept. 30, 1968 (elevation, 5,014.2 ft).

REMARKS.--Reservoir is formed by rockfill dam. Storage began in October 1961. Total capacity, 94,700 acre-ft between elevations 4,876 (invert of release valve) and 5,047 ft (top of spillway gates), all of which is usable. Water is released down South Fork Feather River for power development and irrigation downstream. Records, including extremes, represent contents at 2400 hours. See schematic diagram for South Fork Feather River basin.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

5,000	34,600
5,010	44,400
5,020	55,900
5,030	68,900
5,040	83,500
5,048	96,300

CONTENTS, IN ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62,400	56,700	57,300	55,900	56,100	70,200	76,000	87,000	92,200	91,200	79,800	57,600
2	62,500	56,700	57,300	55,500	56,400	70,600	76,500	87,400	92,000	91,100	79,400	56,500
3	62,300	56,700	57,600	55,300	56,500	71,100	76,800	87,900	91,900	90,700	79,000	55,500
4	62,000	56,700	57,800	55,000	56,700	71,500	77,100	88,400	91,900	90,400	78,700	54,600
5	61,700	56,700	58,000	54,500	56,700	71,800	77,500	88,900	91,700	90,100	78,200	53,600
6	61,500	56,700	58,000	54,200	56,800	72,200	77,800	89,300	91,700	89,600	77,900	52,600
7	61,200	56,700	58,100	53,800	56,900	72,500	78,100	89,600	91,700	89,300	77,500	51,600
8	61,000	56,700	58,100	53,500	56,900	73,000	78,400	90,000	91,700	88,900	77,100	50,600
9	60,700	56,700	58,100	53,200	57,100	73,300	78,700	90,300	91,700	88,500	76,800	49,900
10	60,400	56,700	58,200	53,000	57,200	73,600	79,100	90,600	91,700	88,100	76,300	49,900
11	60,000	56,500	58,200	52,700	57,200	73,700	79,500	90,900	91,700	87,700	76,000	49,900
12	59,800	56,500	58,100	52,600	57,300	74,000	80,000	91,200	91,700	87,300	75,500	49,900
13	59,500	56,500	58,100	52,600	57,300	74,400	80,400	91,500	91,500	87,000	74,900	49,800
14	59,300	56,700	58,100	53,000	57,400	74,900	80,900	91,700	91,500	86,500	74,100	49,800
15	58,900	56,700	58,100	53,800	57,600	75,000	81,300	92,000	91,500	86,200	73,400	49,800
16	58,600	56,700	58,100	54,000	57,700	75,300	81,600	92,200	91,500	85,800	72,400	49,800
17	58,400	56,700	58,100	54,300	58,400	75,500	82,000	92,200	91,500	85,400	71,500	49,700
18	58,100	56,900	58,400	54,400	58,600	75,500	82,300	92,400	91,500	85,100	70,500	49,700
19	57,700	57,100	58,400	54,500	59,500	75,500	82,600	92,400	91,500	84,600	69,800	49,700
20	57,400	57,100	58,400	54,500	60,700	75,500	82,900	92,500	91,500	84,300	68,900	49,600
21	57,200	57,100	58,400	54,600	62,600	75,500	83,200	92,500	91,500	83,800	68,000	49,600
22	56,900	57,100	58,400	54,700	63,900	75,500	83,500	92,700	91,500	83,300	67,100	49,600
23	56,800	57,100	58,400	54,700	65,600	75,500	83,800	92,700	91,400	83,000	66,200	49,500
24	56,800	57,100	58,400	54,800	66,700	75,500	84,100	92,500	91,400	82,600	65,200	49,500
25	56,800	57,100	58,500	54,800	67,500	75,500	84,400	92,700	91,400	82,300	64,300	49,500
26	56,800	57,100	58,200	55,000	68,100	75,600	84,700	92,700	91,400	81,900	63,300	49,500
27	56,800	57,100	57,800	55,100	68,800	75,600	85,100	92,700	91,400	81,600	62,400	49,400
28	56,800	57,100	57,600	55,200	69,300	75,600	85,500	92,500	91,400	81,100	61,500	49,400
29	56,700	57,200	57,100	55,700	69,800	75,600	86,000	92,500	91,200	80,900	60,400	49,400
30	56,700	57,300	56,700	55,900	-----	75,700	86,500	92,400	91,200	80,400	59,500	49,200
31	56,700	-----	56,400	56,000	-----	75,900	-----	92,400	-----	80,100	58,500	-----
(a)	5,020.6	5,021.1	5,020.4	5,020.1	5,030.6	5,034.8	5,041.9	5,045.6	5,044.9	5,037.7	5,022.0	5,014.2
(b)	-5,900	+600	-900	-400	+13,800	+6,100	+10,600	+5,900	-1,200	-11,100	-21,500	-9,300
MAX	62,500	57,300	58,500	56,000	69,800	75,900	86,500	92,700	92,200	91,200	79,800	57,600
MIN	56,700	56,500	56,400	52,600	56,100	70,200	76,000	87,000	91,200	80,100	58,500	49,200
CAL YR 1967	b	-7,500		MAX	92,800	MIN	56,400					
WTR YR 1968	b	-13,400		MAX	92,700	MIN	49,200					

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

SACRAMENTO RIVER BASIN

11-3950.3. SOUTH FORK FEATHER RIVER BELOW LITTLE GRASS VALLEY DAM, CALIF.

LOCATION.--Lat 39°43'26", long 121°01'17", in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.31, T.22 N., R.9 E., on left bank 0.1 mile downstream from Little Grass Valley Dam, 0.7 mile downstream from Ice Creek, and 3.5 miles northwest of LaPorte.

DRAINAGE AREA.--25.9 sq mi.

RECORDS AVAILABLE.--October 1927 to September 1933 (published as "near LaPorte"), October 1960 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 4,809.0 ft above mean sea level. Prior to Oct. 1, 1960, at site 0.4 mile 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 mile upstream at datum 4,850.00 ft above mean sea level.

AVERAGE DISCHARGE.--14 years (1927-33, 1960-68), 84.6 cfs (61,250 acre-ft per year), adjusted for change in contents in Little Grass Valley Reservoir.

EXTREMES.--Maximum discharge during year, 506 cfs Sept. 4-6 (gage height, 10.22 ft); minimum daily, 2.1 cfs Oct. 24-31, Nov. 2-6.

1927-33, 1960-68: Maximum discharge, 4,250 cfs Feb. 1, 1963; minimum, 0.2 cfs Oct. 28-31, Nov. 2, 1961.

REMARKS.--Records good. Flow regulated by Little Grass Valley Reservoir (see sta. no. 11-3950.2.) beginning in October 1961. No diversion above station. See schematic diagram for South Fork Feather River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	130	2.2	5.0	191	5.2	6.5	108	9.3	114	11	182	470
2	130	2.1	5.0	191	5.5	6.2	6.8	11	114	98	182	466
3	130	2.1	5.0	191	5.9	6.2	6.5	11	114	186	182	462
4	130	2.1	5.0	191	5.7	6.2	6.5	11	116	186	182	486
5	130	2.1	5.2	191	5.5	6.2	6.5	10	97	184	182	506
6	130	2.1	5.2	191	5.5	6.2	6.2	9.3	83	184	180	506
7	130	2.9	5.2	191	5.5	6.2	6.2	8.9	60	184	180	502
8	130	4.6	5.0	191	5.5	5.9	6.2	8.6	28	182	180	498
9	130	4.6	5.0	191	5.5	5.9	6.2	8.6	28	182	180	306
10	130	4.6	5.0	191	5.5	5.7	7.1	8.6	28	182	180	9.3
11	130	4.6	5.0	191	5.5	5.7	7.4	8.3	28	182	180	9.3
12	129	4.6	4.8	99	5.5	5.7	7.4	8.3	27	182	243	9.3
13	129	4.6	4.8	4.8	5.5	5.7	7.4	8.3	27	182	297	9.3
14	129	4.8	4.6	5.7	5.5	5.7	7.1	7.7	27	182	294	9.3
15	129	4.6	4.6	12	5.5	10	7.1	7.7	27	182	370	9.3
16	129	4.6	4.6	6.8	5.7	43	6.8	47	27	182	442	9.3
17	128	4.6	4.6	5.7	9.3	68	6.5	86	27	182	442	9.3
18	128	4.8	4.6	5.2	7.7	72	6.2	86	27	182	442	9.3
19	128	5.0	4.8	5.0	9.6	72	6.2	86	14	182	442	9.3
20	128	4.8	4.8	5.0	15	70	5.9	86	4.1	182	458	9.3
21	128	4.8	4.8	5.0	20	70	5.9	86	5.9	182	470	9.3
22	128	4.8	4.8	5.0	13	69	5.7	98	11	182	474	9.3
23	65	4.8	4.8	5.0	16	68	5.7	116	11	182	474	9.3
24	2.1	4.8	5.0	5.0	11	68	5.9	116	11	182	474	9.3
25	2.1	4.8	5.2	5.0	8.9	77	6.2	116	11	182	478	9.3
26	2.1	4.8	103	5.0	8.3	86	6.8	116	11	182	478	9.3
27	2.1	4.8	191	5.0	7.7	86	7.4	116	11	182	478	9.3
28	2.1	4.8	191	5.0	7.1	91	7.4	114	11	182	478	9.3
29	2.1	4.8	191	5.0	6.8	101	8.0	114	11	182	478	9.3
30	2.1	4.8	191	5.2	-----	116	8.3	114	11	182	474	9.3
31	2.1	-----	191	5.2	-----	142	-----	114	-----	182	474	-----
TOTAL	2,924.8	124.4	1,180.4	2,305.6	228.9	1,393.0	301.5	1,747.6	1,122.0	5,401	10,650	4,397.3
MEAN	94.3	4.15	38.1	74.4	7.89	44.9	10.1	56.4	37.4	174	344	147
MAX	130	5.0	191	191	20	142	108	116	116	186	478	506
MIN	2.1	2.1	4.6	4.8	5.2	5.7	5.7	7.7	4.1	11	180	9.3
AC-FT	5,800	247	2,340	4,570	454	2,760	598	3,470	2,230	10,710	21,120	8,720
Mean a	-1.62	142	23.4	67.8	248	144	188	152	17.3	-6.34	-6.18	-9.75
Ac-ft a	-100	847	1,440	4,170	14,254	8,860	11,200	9,370	1,030	-390	-380	-580

CAL YR 1967 TOTAL 48,846.4 MEAN 134 MAX 1,120 MIN 2.1 AC-FT 96,890 MEAN a 123 AC-FT a 89,390
WTR YR 1968 TOTAL 31,776.5 MEAN 86.8 MAX 506 MIN 2.1 AC-FT 63,030 MEAN a 68.5 AC-FT a 49,720

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

Note.--For months when inflow to the reservoir was small and other quantities were large, discordant figures of net runoff may appear. Records of evaporation from Little Grass Valley Reservoir are not available.

11-3952. SOUTH FORK FEATHER RIVER BELOW DIVERSION DAM, NEAR STRAWBERRY VALLEY, CALIF.

LOCATION.--Lat 39°38'51", long 121°07'04", in NE¼SE¼ sec.30, T.21 N., R.8 E., on right bank 0.1 mile downstream from diversion dam, 3.1 miles upstream from Rock Creek, and 5.8 miles north of Strawberry Valley.

DRAINAGE AREA.--37.7 sq mi.

RECORDS AVAILABLE.--October 1960 to September 1968.

GAGE.--Graphic water-stage recorder and since Nov. 7, 1962, concrete control. Datum of gage is 3,535.02 ft above mean sea level (levels by Oroville-Wyandotte Irrigation District).

AVERAGE DISCHARGE.--8 years, 137 cfs (99,180 acre-ft per year), adjusted for diversion to South Fork Tunnel.

EXTREMES.--Maximum discharge during year, 696 cfs Feb. 23 (gage height, 5.53 ft); minimum daily, 0.70 cfs Jan. 18-23.

1960-68: Maximum discharge, 6,330 cfs Jan. 31, 1963 (gage height, 13.21 ft), from rating curve extended above 500 cfs on basis of computation of maximum flow over diversion dam; minimum daily, 0.3 cfs Dec. 25, 1962, to Jan. 2, 1963, Mar. 1-3, 1963.

REMARKS.--Records excellent. Flow regulated by Little Grass Valley Reservoir (see sta. no. 11-3950.2). South Fork Diversion Tunnel (maximum capacity about 600 cfs) 500 ft upstream, diverts to Sly Creek Reservoir (see sta. no. 11-3954); diversion began in November 1961. See schematic diagram for South Fork Feather River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	6.8	4.6	4.9	17	13	13	13	12	12	14	14
2	13	6.8	4.6	4.9	14	13	13	13	12	12	14	14
3	13	6.8	4.6	4.9	14	13	13	13	13	12	14	14
4	13	6.8	4.6	4.9	13	13	13	12	13	12	14	14
5	13	6.8	4.6	4.9	13	12	13	12	13	12	14	14
6	13	6.8	4.6	4.9	13	12	13	12	13	13	14	14
7	13	6.8	4.6	4.9	13	12	13	12	13	13	14	14
8	13	8.8	4.6	4.9	13	12	13	12	12	13	14	14
9	13	9.6	4.6	4.9	13	13	13	12	12	13	14	14
10	13	9.6	4.6	4.9	13	13	13	12	12	13	14	13
11	13	10	4.6	4.9	13	13	13	12	12	13	14	12
12	13	10	4.6	4.9	13	13	13	12	12	13	13	12
13	13	10	4.6	4.9	13	13	13	12	12	13	13	12
14	13	15	4.6	4.6	13	13	13	12	12	13	13	12
15	13	10	4.6	5.2	13	13	13	12	12	13	13	12
16	13	10	4.6	5.2	13	13	13	12	12	13	13	12
17	13	9.6	4.6	4.8	14	13	13	12	12	14	13	12
18	13	11	6.8	.70	14	13	13	12	12	14	13	12
19	13	27	6.4	.70	14	13	13	13	12	14	13	12
20	13	15	5.2	.70	15	13	13	13	12	14	13	12
21	13	11	4.9	.70	21	13	13	13	12	14	13	12
22	13	10	4.6	.70	14	13	13	13	12	14	13	12
23	13	10	4.6	.70	29	13	13	13	12	14	13	12
24	12	10	4.6	3.2	14	13	13	13	12	14	13	12
25	9.9	10	4.6	13	14	13	13	12	12	14	13	12
26	8.4	10	4.6	13	13	12	13	13	12	14	14	12
27	7.4	10	4.6	13	13	12	13	13	12	14	14	12
28	7.0	8.3	4.9	13	13	12	13	13	12	14	14	12
29	7.0	4.3	4.9	18	13	12	13	13	12	14	14	12
30	6.7	4.6	4.9	26	-----	13	13	13	12	14	14	12
31	6.7	-----	4.9	22	-----	13	-----	13	-----	14	14	-----
TOTAL	363.1	291.4	148.7	208.90	415	395	390	387	365	413	420	379
MEAN	11.7	9.71	4.80	6.74	14.3	12.7	13.0	12.5	12.2	13.3	13.5	12.6
MAX	13	27	6.8	26	29	13	13	13	13	14	14	14
MIN	6.7	4.3	4.6	.70	13	12	13	12	12	12	13	12
AC-FT	720	578	295	414	823	783	774	768	724	819	833	752
Mean a	114	10.1	48.7	109	154	129	84.6	83.9	47.8	176	347	148
Ac-ft a	7,030	604	3,000	6,730	8,850	7,920	5,030	5,160	2,840	10,810	21,340	8,790
(b)	6,310	26	2,700	6,010	8,030	7,140	4,260	4,390	2,120	9,990	20,510	8,040

CAL YR 1967 TOTAL 11,483.3 MEAN 31.5 MAX 1,000 MIN 4.3 AC-FT 22,780

WTR YR 1968 TOTAL 4,176.10 MEAN 11.4 MAX 29 MIN .70 AC-FT 8,280

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

11-3953. LOST CREEK ABOVE SLY CREEK RESERVOIR, CALIF.

LOCATION.--Lat 39°37'05", long 121°05'19", in NE¼SW¼ sec.4, T.20 N., R.8 E., on left bank 0.4 mile upstream from French Creek, and 3.8 miles north of Strawberry Valley.

DRAINAGE AREA.--14.1 sq mi.

RECORDS AVAILABLE.--October 1960 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 3,570 ft (from topographic map).

AVERAGE DISCHARGE.--8 years, 52.2 cfs (37,790 acre-ft per year).

EXTREMES.--Maximum discharge during year, 800 cfs Feb. 21 (gage height, 4.60 ft); minimum daily, 4.9 cfs Sept. 29, 30.

1960-68: Maximum discharge, 5,640 cfs Dec. 22, 1964 (gage height, 8.48 ft from floodmarks in gage well, 9.66 ft from outside floodmarks), from rating curve extended above 250 cfs on basis of slope-area measurements at gage heights 5.97 and 7.87 ft; minimum, 3.2 cfs Oct. 7-10, 1961.

REMARKS.--Records good. No regulation or diversion above station. See schematic diagram for South Fork Feather River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	7.3	11	14	32	129	132	61	24	11	8.3	5.7
2	31	6.9	9.8	13	36	120	119	58	24	11	8.0	5.7
3	20	6.9	15	12	38	113	106	57	22	11	7.6	5.7
4	11	6.9	26	12	38	111	103	55	22	10	7.3	5.7
5	12	6.9	51	11	37	110	100	51	22	9.8	7.3	5.7
6	11	6.9	19	11	36	102	95	48	22	9.5	6.6	5.7
7	9.5	6.9	18	12	34	95	92	43	22	9.5	6.6	5.7
8	9.1	6.9	15	12	34	94	91	41	20	9.1	6.6	5.4
9	9.1	6.9	13	12	38	85	95	40	18	9.1	6.6	5.4
10	9.1	7.3	12	12	42	78	106	39	18	9.1	6.3	5.4
11	8.7	7.3	11	13	39	73	113	38	17	9.1	6.3	5.4
12	8.3	7.3	11	14	39	70	113	36	17	8.7	6.0	5.4
13	8.3	7.3	10	13	40	69	106	38	17	8.7	6.0	5.4
14	8.0	13	11	44	39	68	98	36	16	8.7	6.6	5.7
15	7.6	9.5	12	250	38	63	95	35	16	8.7	6.9	5.7
16	7.3	8.7	11	94	44	70	92	33	15	8.7	6.9	5.4
17	7.3	8.3	11	55	191	64	84	31	14	8.7	7.3	5.1
18	7.3	9.8	11	41	147	59	78	30	14	8.7	6.6	5.4
19	7.3	36	11	35	209	58	74	30	14	8.7	12	5.1
20	7.3	14	11	32	394	57	70	30	14	8.7	11	5.1
21	7.6	11	12	32	572	57	66	30	14	8.7	11	5.1
22	8.0	9.8	12	33	398	57	64	30	14	8.3	8.7	5.1
23	8.0	9.5	12	35	446	58	61	29	13	8.3	8.0	5.1
24	8.0	9.5	12	35	312	63	61	29	12	8.0	7.6	5.1
25	8.0	9.1	12	34	224	73	61	29	12	8.0	7.3	5.1
26	8.0	9.1	15	33	191	77	63	28	12	8.0	6.9	5.1
27	8.0	9.5	21	32	172	77	64	28	12	7.6	6.9	5.1
28	8.0	9.8	20	31	158	89	64	28	12	7.6	6.9	5.1
29	7.6	13	17	30	143	111	65	27	12	7.6	6.6	4.9
30	7.6	12	16	29	-----	129	64	27	11	7.6	6.0	4.9
31	7.3	-----	14	28	-----	138	-----	26	-----	7.9	6.0	-----
TOTAL	292.6	293.3	462.8	1,064	4,161	2,617	2,595	1,141	492	274.1	228.7	160.4
MEAN	9.44	9.78	14.9	34.3	143	84.4	86.5	36.8	16.4	8.84	7.38	5.35
MAX	31	36	51	250	572	138	132	61	24	11	12	5.7
MIN	7.3	6.9	9.8	11	32	57	61	26	11	7.6	6.0	4.9
AC-FT	580	582	918	2,110	8,250	5,190	5,150	2,260	976	544	454	318

CAL YR 1967 TOTAL 22,574.3 MEAN 61.8 MAX 680 MIN 6.9 AC-FT 44,780
WTR YR 1968 TOTAL 13,781.9 MEAN 37.7 MAX 572 MIN 4.9 AC-FT 27,340

Peak discharge (base, 300 cfs).--Jan. 15 (0230 hrs) 360 cfs (3.62 ft); Feb. 21 (0630 hrs) 800 cfs (4.60 ft).

11-3954. SLY CREEK RESERVOIR NEAR STRAWBERRY VALLEY, CALIF.

LOCATION.--Lat 39°35'00", long 121°06'45", in NW¼NW¼ sec.20, T.20 N., R.8 E., on right bank 100 ft upstream from dam on Lost Creek, 1.4 miles northwest of Strawberry Valley.

DRAINAGE AREA.--24.0 sq mi.

RECORDS AVAILABLE.--November 1961 to September 1968 (fragmentary prior to Mar. 14, 1962).

GAGE.--Staff gage read once daily. Datum of gage is at mean sea level (levels by Oroville-Wyandotte Irrigation District). Prior to Sept. 30, 1966, graphic water-stage recorder in valve chamber inside dam at same datum.

EXTREMES.--Maximum contents during year, 57,000 acre-ft Oct. 3 (elevation, 3,517.2 ft); minimum, 8,700 acre-ft Feb. 16 (elevation, 3,386.9 ft).

1961-68: Maximum contents, 65,500 acre-ft June 2-5, 11, 12, 1962, Apr. 7, 1963 (elevation, 3,531.5 ft); minimum, 8,430 acre-ft Jan. 28, 29, 1966 (elevation, 3,385.5 ft).

REMARKS.--Reservoir is formed by earthfill dam. Storage began in November 1961. Total capacity, 65,200 acre-ft between elevations 3,285 (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. Records, including extremes, show contents at 2400 hours. See schematic diagram for South Fork Feather River basin.

COOPERATION.--Reservoir staff gage readings furnished by Oroville-Wyandotte Irrigation District.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

3,360	4,300
3,390	9,300
3,420	16,600
3,450	26,300
3,480	38,500
3,510	53,400
3,532	66,200

CONTENTS, IN ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57,300	47,400	25,300	13,000	14,100	28,700	34,400	48,500	53,800	45,600	42,800	49,500
2	57,300	47,100	24,600	13,200	13,500	29,200	35,000	48,800	53,800	45,100	42,500	50,400
3	57,500	46,600	23,900	13,200	13,100	29,700	35,200	49,200	53,900	45,200	42,600	50,700
4	57,200	46,000	24,900	13,300	12,700	29,900	35,400	49,600	54,000	45,500	42,900	51,100
5	56,900	45,700	24,200	13,300	12,500	30,200	35,600	50,000	53,900	45,500	42,900	51,200
6	56,700	45,200	22,800	13,400	12,500	30,400	35,700	50,300	53,800	45,500	42,900	51,800
7	56,500	44,500	22,200	13,500	12,300	30,600	35,700	50,600	53,600	45,400	43,100	52,600
8	56,200	43,600	21,200	13,500	11,800	30,700	36,100	50,700	53,600	45,300	43,100	53,200
9	55,800	42,900	21,100	13,600	11,200	30,600	36,700	50,900	53,200	45,100	42,300	53,300
10	55,400	42,500	20,400	13,900	10,800	30,600	37,500	51,100	53,100	45,000	41,700	52,800
11	54,900	42,100	19,600	14,300	10,500	30,500	38,400	51,200	53,000	45,000	41,700	52,300
12	54,300	41,700	19,000	14,300	10,100	30,500	39,300	51,500	52,700	44,800	41,800	51,800
13	53,800	41,000	17,300	14,000	9,700	30,600	39,500	51,800	52,300	44,800	42,000	51,300
14	53,300	40,300	16,800	14,300	9,200	30,600	40,600	51,800	52,100	44,900	41,700	50,900
15	52,800	39,400	15,800	16,000	8,820	30,900	41,500	51,400	51,800	45,100	41,600	50,600
16	52,300	38,400	15,000	17,900	8,700	31,400	42,200	51,400	51,500	44,700	41,900	50,200
17	51,800	37,400	14,100	18,200	10,100	31,600	42,600	51,600	51,400	44,200	42,400	49,500
18	51,200	36,800	13,300	17,300	11,500	32,000	43,200	51,900	51,100	44,300	43,100	49,000
19	50,700	36,700	12,500	16,400	12,800	32,800	43,700	52,300	50,600	44,100	43,800	48,500
20	50,200	36,500	11,600	15,900	15,500	32,900	44,100	52,400	50,200	44,100	44,200	48,000
21	49,700	35,800	10,600	15,900	18,400	32,400	44,700	52,400	49,600	44,100	44,700	47,700
22	49,300	34,500	9,890	15,900	20,500	31,900	45,200	52,400	49,100	44,000	45,100	47,500
23	49,100	33,300	9,590	15,900	22,700	31,400	45,500	52,700	48,700	44,000	45,600	46,900
24	49,100	32,100	9,370	15,900	24,400	31,100	45,800	52,900	48,300	44,200	46,000	46,300
25	49,200	30,800	9,220	16,000	25,300	31,000	46,000	53,000	47,900	43,900	46,600	45,800
26	49,300	29,900	9,260	16,100	26,000	31,100	46,300	53,300	47,600	43,400	47,400	45,300
27	49,300	29,100	10,600	16,000	26,800	31,300	46,600	53,400	47,300	43,500	48,100	44,800
28	49,400	28,100	11,700	15,900	27,400	31,700	47,000	53,500	46,900	43,900	48,200	44,500
29	49,400	27,000	12,300	15,700	28,300	32,200	47,500	53,600	46,600	44,100	48,400	44,200
30	48,900	26,100	12,600	15,000	-----	32,900	48,000	53,600	46,200	44,000	48,700	43,700
31	48,000	-----	12,900	14,600	-----	33,600	-----	53,700	-----	42,600	49,100	-----
(a)	3,499.7	3,449.4	3,405.8	-	3,455.2	3,468.8	3,499.8	3,510.5	3,496.1	3,488.7	3,501.8	3,491.0
(b)	-9.5	-21.9	-13.2	+1.7	+13.7	+5.3	+14.4	+5.7	-7.5	-3.6	+6.5	-5.4
MAX	57,500	47,400	25,300	18,200	28,300	33,600	48,000	53,700	54,000	45,600	49,100	53,300
MIN	48,000	26,100	9,220	13,000	8,700	28,700	34,400	48,500	46,200	42,600	41,600	43,700
CAL YR 1967	b -27.7		MAX 65,000		MIN 9,220							
WTR YR 1968	b -13.8		MAX 57,500		MIN 8,700							

a Elevation, in feet, at end of month.

b Change in contents, in thousands of acre-feet.

SACRAMENTO RIVER BASIN

11-3955. OROVILLE-WYANDOTTE CANAL NEAR CLIPPER MILLS, CALIF.

LOCATION.--Lat 39°33'15", long 121°11'30", in NE¼ sec.33, T.20 N., R.7 E., in concrete valve house at head of canal, 2.5 miles north of Clipper Mills.

RECORDS AVAILABLE.--October 1927 to September 1941 (published as Forbestown Ditch), October 1954 to September 1968. Monthly discharge only for October 1953 to September 1961, published with records for Lost Creek near Clipper Mills.

GAGE.--Graphic water-stage recorder and Parshall flume. Datum of gage is 3,166.0 ft above mean sea level (levels by Oroville-Wyandotte Irrigation District). Prior to Sept. 30, 1941, staff gages and Oct. 1, 1941, to Nov. 16, 1962, graphic water-stage recorder at sites at different datums 4 miles upstream in abandoned portion of canal 0.3 mile downstream from Lost Creek Dam.

AVERAGE DISCHARGE.--29 years, 18.5 cfs (13,390 acre-ft per year).

EXTREMES.--1927-41, 1954-68: Maximum daily discharge, 43 cfs Aug. 9 to Sept. 9, 1937; no flow at times in many years.

REMARKS.--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. See schematic diagram for South Fork Feather River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	16	17	15	.62	.37	.25	6.6	9.5	15	27	26
2	17	16	17	14	.55	.37	.20	5.5	9.3	16	27	25
3	16	16	18	13	.55	.49	.20	4.8	8.1	16	28	24
4	15	16	17	12	.55	.55	.49	7.2	9.8	21	27	24
5	17	17	17	11	.55	.55	.62	8.6	12	22	26	24
6	17	18	17	9.1	.43	.55	.62	6.4	13	23	26	24
7	17	17	10	11	.43	.55	.62	8.1	13	21	25	25
8	17	16	4.0	12	.43	.49	.62	9.1	13	22	26	25
9	16	16	.82	13	.43	.49	.68	8.1	12	28	26	23
10	16	17	.75	14	.43	.49	.68	8.6	11	28	26	23
11	17	18	.55	13	.43	.49	.62	9.0	11	28	25	24
12	17	17	.62	12	.37	.49	.62	9.0	11	29	26	24
13	17	16	.62	12	.43	.43	.82	8.5	13	27	25	24
14	17	16	1.4	12	.43	.43	.89	8.3	13	24	25	25
15	17	16	1.8	8.5	.43	.49	.75	7.6	14	23	25	26
16	17	15	2.4	6.1	.49	.55	.75	9.0	15	23	25	23
17	17	16	2.6	6.1	.49	.55	.75	8.8	14	24	26	24
18	17	18	4.7	7.0	.49	.49	.75	8.1	16	25	27	24
19	17	18	9.8	2.9	.49	.43	.75	8.1	17	26	23	24
20	17	16	10	1.0	.55	.43	.75	7.5	17	29	22	24
21	17	14	10	1.0	.62	.37	.75	7.8	17	28	23	25
22	17	17	7.8	1.0	.43	.43	.75	8.5	17	26	23	25
23	17	17	6.7	1.0	.32	.49	.75	9.0	18	26	23	23
24	17	18	7.5	1.0	.32	.43	.75	10	18	27	23	22
25	17	17	8.0	1.0	.37	.37	.82	12	17	27	25	24
26	17	16	8.0	.75	.37	.37	.82	12	16	27	23	24
27	17	17	7.8	.62	.37	.49	.82	10	16	27	23	24
28	17	16	12	.62	.37	.49	.82	9.3	16	29	23	25
29	17	16	15	.62	.37	.43	4.9	9.3	16	26	25	25
30	16	17	15	.62	-----	.43	7.3	9.8	16	27	25	23
31	15	-----	15	.62	-----	.37	-----	9.5	-----	28	24	-----
TOTAL	522	496	265.86	213.55	13.11	14.35	30.91	264.1	418.7	768	773	725
MFAN	16.8	16.5	8.58	6.89	.45	.46	1.03	8.52	14.0	24.8	24.9	24.2
MAX	20	18	18	15	.62	.55	7.3	12	18	29	28	26
MIN	15	14	.55	.62	.32	.37	.20	4.8	8.1	15	22	22
AC-FT	1,040	984	527	424	26	28	61	524	830	1,520	1,530	1,440
CAL YR 1967	TOTAL 2,591.36			MEAN 7.10	MAX 20	MIN 0	AC-FT 5,140					
WTR YR 1968	TOTAL 4,504.58			MEAN 12.3	MAX 29	MIN .20	AC-FT 8,930					

11-3960. LOST CREEK NEAR CLIPPER MILLS, CALIF.

LOCATION.--Lat 39°34'25", long 121°08'25", in SW $\frac{1}{4}$ sec.24, T.20 N., R.7 E., on left bank 0.3 mile downstream from Lost Creek Reservoir, and 2.8 miles north of Clipper Mills.

DRAINAGE AREA.--30.0 sq mi.

RECORDS AVAILABLE.--October 1927 to September 1941, October 1948 to September 1968. Records for Woodleaf powerplant from February 1963 to September 1966 in files of Geological Survey.

GAGE.--Graphic water-stage recorder. Altitude of gage is 3,170 ft (from topographic map).

AVERAGE DISCHARGE.--27 years (1927-41, 1948-61, prior to regulation by Sly Creek Reservoir), 73.0 cfs (52,850 acre-ft per year). Seven years (1962-68), 31.5 cfs (22,810 acre-ft per year), unadjusted.

EXTREMES.--Maximum discharge during year, 698 cfs July 31 (gage height, 3.53 ft); minimum daily, no flow July 29.

1927-41, 1948-68: Maximum discharge, 5,000 cfs Dec. 22, 1955 (gage height, 6.90 ft); no flow at times in some years.

REMARKS.--Records fair. Flow regulated by Sly Creek Reservoir (see sta. no. 11-3954.) and Lost Creek Reservoir, 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 powerhouse. Oroville-Wyandotte Canal (see sta. no. 11-3955.) diverts from Woodleaf penstock for irrigation and domestic use. Records represent release or spill from Lost Creek Dam to Lost Creek. See schematic diagram for South Fork Feather River basin.

REVISIONS.--Revised figures of monthly diversions, in acre-feet, to Woodleaf powerplant for the 1967 water year, superseding figures given in Water Resources Data for California for 1967, Part 1, Vol. 2, are given herewith:

Month	Diversion, in acre-feet
October.....	14,440
November.....	9,600
December.....	28,520
January.....	25,300
February.....	29,220
March.....	30,820
April.....	31,360
May.....	30,730
June.....	30,080
July.....	13,740
August.....	14,330
September.....	12,860

Month	Diversion, in acre-feet
October.....	14,440
November.....	9,600
December.....	28,520
January.....	25,300
February.....	29,220
March.....	30,820
April.....	31,360
May.....	30,730
June.....	30,080
July.....	13,740
August.....	14,330
September.....	12,860

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	128	60	.28	.16	364	.58	.38	.16	.09	1.4	.85	.62
2	.57	.16	.24	.15	372	.54	.35	.16	.09	1.4	.47	.58
3	.24	.15	.32	.15	425	.47	.32	.16	.08	1.2	.85	.58
4	.09	.15	.80	.15	465	.44	.32	.15	.08	1.2	.26	.58
5	.06	.15	.54	.14	283	.44	.32	.15	.08	1.0	.04	.54
6	.06	.15	.22	.14	.44	.41	.30	.15	.08	1.0	.03	.50
7	.05	.15	.70	.13	.44	.41	.28	.15	.08	1.0	.03	.50
8	.05	.15	.26	.14	.44	.50	.26	.15	.08	.75	.03	.47
9	.05	.15	.20	.18	.80	.44	.24	.15	.06	.75	.69	.47
10	.05	.15	.18	1.0	1.2	.44	.22	.13	.06	.66	.66	.44
11	.05	.15	.18	.35	.85	.41	.20	.13	.05	.66	.62	.44
12	.05	.15	.17	.26	.80	.44	.20	.13	.05	.58	.50	.44
13	.05	.15	.16	.24	1.0	.62	.20	.16	.05	.66	.24	.44
14	.05	.32	.15	1.0	.80	1.2	.19	.14	.05	.58	.04	.44
15	.05	.20	.15	3.5	.75	1.2	.19	.13	.05	.39	.87	.44
16	.05	.19	.15	1.0	.95	1.6	.19	.11	.05	.04	1.4	.44
17	.05	.19	.15	.58	3.8	7.5	.19	.11	.05	.37	1.2	.44
18	.05	.24	.15	.47	2.3	105	.19	.11	.04	.58	1.0	.44
19	.05	.41	.15	.38	2.7	1.0	.19	.11	.04	.33	.95	.47
20	.05	.16	.15	.35	55	.80	.19	.12	.11	.62	.80	.47
21	.05	.15	.15	.32	4.7	.75	.19	.12	2.9	.54	.75	.47
22	.06	.17	.15	.30	3.1	.70	.19	.11	5.3	.58	.70	.47
23	.06	.17	.15	.30	2.5	.62	.18	.11	6.2	.31	.66	.47
24	.06	.18	.15	.28	1.7	.58	.18	.11	5.0	.38	.62	.44
25	.06	.18	.16	.26	1.4	.54	.18	.12	3.1	.06	.58	.47
26	.06	.18	.17	.24	1.2	.50	.18	.11	2.7	.48	.47	.47
27	.06	.20	.18	.24	.85	.47	.18	.11	2.3	.40	.07	.47
28	.06	.22	.19	.24	.75	.44	.18	.10	2.1	.04	.04	.47
29	.06	.28	.19	.28	.66	.41	.18	.09	1.6	0	.43	.44
30	.06	.32	.18	26	-----	.38	.18	.09	1.4	.21	.66	.44
31	.06	-----	.17	372	-----	.38	-----	.09	-----	144	.62	-----
TOTAL	130.37	65.57	7.14	410.93	1,998.13	130.21	6.74	3.92	33.92	162.17	17.13	14.35
MEAN	4.21	2.19	.23	13.3	68.9	4.20	.22	.13	1.13	5.23	.55	.48
MAX	128	60	.80	372	465	105	.38	.16	6.2	144	1.4	.62
MIN	.05	.15	.15	.13	.44	.38	.18	.09	.04	0	.03	.44
AC-FT	259	130	14	815	3,960	258	13	7.8	67	322	34	28
(a)	16,780	23,330	21,020	13,600	20,770	27,970	15,030	10,680	11,230	11,680	13,640	13,710

CAL YR 1967 TOTAL 6,003.68 MEAN 16.4 MAX 430 MIN .05 AC-FT 11,910
WTR YR 1968 TOTAL 2,980.58 MEAN 8.14 MAX 465 MIN 0 AC-FT 5,910

a Diversion, in acre-feet, to Woodleaf powerplant; furnished by Oroville-Wyandotte Irrigation District.

SACRAMENTO RIVER BASIN

11-3962. SOUTH FORK FEATHER RIVER BELOW FORBESTOWN DAM, CALIF.

LOCATION.--Lat 39°33'05", long 121°12'30", in NE¼ sec.32, T.20 N., R.7 E., on right bank 500 ft downstream from Forbestown Dam, 0.4 mile upstream from Oroleve Creek, and 4.0 miles northeast of Forbestown.

DRAINAGE AREA.--87.5 sq mi.

RECORDS AVAILABLE.--July 1962 to September 1968. Records for Forbestown powerplant from February 1963 to September 1966 in files of Geological Survey.

GAGE.--Graphic water-stage recorder. Altitude of gage is 1,690 ft (from topographic map).

AVERAGE DISCHARGE.--6 years, 68.5 cfs (49,590 acre-ft per year).

EXTREMES.--Maximum discharge during year, 774 cfs Jan. 31 (gage height, 7.21 ft); minimum daily, 5.6 cfs Dec. 6, 9, 10.

1962-68: Maximum discharge, 7,510 cfs Jan. 31, 1963 (gage height, 13.85 ft in gage well, 15.3 ft from floodmarks); minimum daily, 0.6 cfs Apr. 4, 1963.

REMARKS.--Records fair. Flow regulated by Little Grass Valley Reservoir (see sta. no. 11-3950.2.), Sly Creek Reservoir (see sta. no. 11-3954.) and smaller reservoirs. Water from North Yuba River basin is imported through Slate Creek Tunnel (see sta. no. 11-4132.5.) to Sly Creek Reservoir. Oroville-Wyandotte Canal (see sta. no. 11-3955.) 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 for South Fork Feather River basin.

REVISIONS.--Revised figures of diversion in acre-feet, to Forbestown powerplant published in Surface Water Records of California, Part 1, Vol. 2, 1967 are given herewith:

Oct. 1966	13,570	Apr. 1967	38,310
Nov.	10,760	May	38,950
Dec.	33,940	June	36,610
Jan. 1967	31,270	July	15,810
Feb.	34,550	Aug.	15,250
Mar.	37,990	Sept.	13,620

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.8	7.8	6.1	6.8	88	7.8	7.1	7.4	11	11	11	11
2	8.1	6.8	6.1	6.8	101	7.8	7.4	10	11	11	11	11
3	7.8	6.8	6.4	6.8	10	7.8	7.4	12	11	11	11	11
4	8.1	6.8	6.1	6.8	10	7.8	7.4	12	11	11	10	11
5	7.6	6.8	34	6.8	7.6	7.8	7.4	12	11	11	10	11
6	7.6	6.8	5.6	6.6	7.4	7.8	7.4	11	11	10	10	11
7	7.6	6.6	5.8	6.6	7.1	8.1	7.4	11	11	10	10	11
8	7.6	6.8	5.8	6.6	7.1	8.1	7.4	11	11	11	10	11
9	7.6	6.6	5.6	6.6	7.1	8.1	7.4	11	11	11	10	11
10	7.6	6.6	5.6	6.8	7.1	8.1	7.4	11	11	10	11	11
11	7.6	6.4	5.8	6.6	7.1	7.8	7.4	11	11	10	11	10
12	7.6	6.4	5.8	6.6	7.1	8.4	7.4	11	11	10	11	11
13	7.6	6.4	5.8	6.8	7.1	8.4	7.4	12	11	10	11	11
14	7.4	6.6	5.6	6.8	7.1	16	7.4	12	11	10	11	11
15	7.4	6.6	5.8	7.1	7.1	41	7.4	12	11	10	11	11
16	7.4	6.6	7.9	7.1	7.1	73	7.4	11	11	10	11	11
17	7.4	6.6	5.8	7.4	28	6.6	7.4	11	11	9.8	11	11
18	7.4	6.8	5.8	7.4	7.6	42	7.4	11	11	9.8	11	11
19	7.4	6.8	5.8	7.1	30	8.8	7.4	11	11	9.8	11	11
20	7.6	6.8	5.8	6.8	188	7.1	7.4	11	11	9.8	11	12
21	7.6	6.8	5.8	6.8	28	6.6	7.4	11	11	9.4	11	11
22	7.6	6.8	6.1	6.8	7.6	6.6	7.4	11	11	9.8	11	11
23	7.6	7.1	6.1	6.8	7.6	6.6	7.4	11	11	9.8	11	11
24	7.4	7.1	6.1	6.8	7.6	6.6	7.4	11	11	9.8	11	11
25	7.6	7.1	6.1	6.8	7.6	6.6	7.4	11	11	9.8	11	11
26	7.6	7.1	6.1	6.8	7.6	6.6	7.4	11	11	9.8	11	12
27	7.6	7.1	6.4	6.8	7.6	6.6	7.4	11	11	9.8	11	12
28	7.6	7.4	6.4	6.8	7.6	6.6	7.4	11	11	9.4	11	11
29	7.6	7.4	6.6	7.1	7.8	6.6	7.4	11	11	9.4	11	11
30	7.8	7.4	6.6	7.1	-----	7.1	7.4	11	11	9.4	11	11
31	7.8	-----	6.6	376	-----	7.1	-----	11	-----	9.8	11	-----
TOTAL	236.0	205.7	215.9	581.5	637.6	371.9	221.7	342.4	330	312.4	335	332
MEAN	7.61	6.86	6.96	18.8	22.0	12.0	7.39	11.0	11.0	10.1	10.8	11.1
MAX	8.1	7.8	34	376	188	73	7.4	12	11	11	11	12
MIN	7.4	6.4	5.6	6.6	7.1	6.6	7.1	7.4	11	9.4	10	10
AC-FT	468	408	428	1,150	1,260	738	440	679	655	620	664	659
(a)	18,300	25,830	22,890	15,500	33,660	35,460	19,380	12,740	13,450	13,960	13,330	12,830

CAL YR 1967 TOTAL 21,585.2 MEAN 59.1 MAX 1,200 MIN 5.6 AC-FT 42,810
WTR YR 1968 TOTAL 4,122.1 MEAN 11.3 MAX 376 MIN 5.6 AC-FT 8,180

a Diversion, in acre-feet, to Forbestown powerplant; furnished by Oroville-Wyandotte Irrigation District.

SACRAMENTO RIVER BASIN

847

11-3963.1. MINERS RANCH CANAL BELOW PONDEROSA DAM, NEAR FORBESTOWN, CALIF.

LOCATION.--Lat 39°33'00", long 121°18'20", in SE¼NW¼ sec.33, T.20 N., R.6 E., on right bank 800 ft downstream from Ponderosa Dam, and 3 miles northwest of Forbestown.

RECORDS AVAILABLE.--October 1962 to September 1968.

GAGE.--Graphic water-stage recorder and Parshall flume. Altitude of gage is 975 ft (from topographic map).

AVERAGE DISCHARGE.--6 years, 217 cfs (157,100 acre-ft per year).

EXTREMES.--1962-68: Maximum daily discharge, 277 cfs July 22, 1965; no flow at times in most years.

REMARKS.--Records excellent. Canal diverts from South Fork Feather River at Ponderosa Dam. Water is used for power development and irrigation. See schematic diagram for South Fork Feather River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	259	261	228	212	261	259	254	240	256	254	254	252
2	259	227	228	210	261	258	256	240	254	256	254	250
3	261	210	228	216	250	256	256	240	252	253	254	250
4	261	212	228	171	250	253	256	240	253	253	253	251
5	261	200	228	250	250	253	257	239	253	252	253	251
6	261	181	228	246	252	252	258	212	254	252	253	250
7	259	172	228	241	254	252	258	238	254	251	253	250
8	258	222	228	252	254	252	258	240	254	251	256	248
9	254	239	232	251	259	252	257	240	253	252	256	245
10	261	241	242	252	266	252	259	240	252	252	253	248
11	266	199	251	244	266	252	258	240	253	252	253	250
12	264	173	262	232	266	252	256	240	254	252	252	251
13	263	184	267	232	262	252	257	239	256	251	252	252
14	263	232	267	247	266	251	256	239	257	250	253	251
15	263	241	267	256	266	250	248	240	257	251	253	250
16	55	242	267	261	266	245	246	241	256	251	253	248
17	0	236	267	259	263	247	246	241	254	251	252	250
18	0	224	266	252	261	247	246	241	254	257	251	251
19	0	215	257	250	258	245	246	240	254	261	250	251
20	0	219	256	257	254	251	246	238	254	259	251	251
21	76	228	254	261	253	253	246	238	254	256	251	250
22	144	234	245	262	244	256	244	239	254	256	251	248
23	28	234	238	262	261	256	244	239	253	257	252	240
24	0	234	230	261	254	256	244	239	253	258	252	242
25	0	234	227	256	259	256	244	239	253	258	252	247
26	20	234	127	254	261	256	244	239	254	257	251	252
27	125	234	0	256	261	256	244	238	254	257	253	251
28	168	232	74	256	261	254	244	239	254	256	253	251
29	151	228	233	257	261	252	242	250	254	253	253	248
30	198	228	235	259	-----	253	242	256	254	254	253	248
31	261	-----	238	258	-----	252	-----	256	-----	254	252	-----
TOTAL	5,139	6,650	7,026	7,633	7,500	7,831	7,512	7,440	7,621	7,877	7,832	7,477
MEAN	166	222	227	246	259	253	250	240	254	254	253	249
MAX	266	261	267	262	266	259	259	256	257	261	256	252
MIN	0	172	0	171	244	245	242	212	252	250	250	240
AC-FT	10,190	13,190	13,940	15,140	14,880	15,530	14,900	14,760	15,120	15,620	15,530	14,830
(a)	7,710	12,820	13,390	14,380	14,320	15,170	12,550	12,280	12,300	12,310	12,440	12,050
CAL YR 1967	TOTAL 85,395.00		MEAN 234		MAX 276		MIN 0		AC-FT 169,400			
WTR YR 1968	TOTAL 87,538.00		MEAN 239		MAX 267		MIN 0		AC-FT 173,600			

a Diversion in acre-feet, to Kelly Ridge powerplant; furnished by Oroville-Wyandotte Irrigation District.

SACRAMENTO RIVER BASIN

11-3963.3. BANGOR CANAL BELOW MINERS RANCH RESERVOIR, NEAR OROVILLE, CALIF.

LOCATION.--Lat 39°30'15", long 121°27'20", in NE¼SW¼ sec.18, T.19 N., R.5 E., on left bank 400 ft downstream from outlet at Miners Ranch Dam, and 5 miles east of Oroville.

RECORDS AVAILABLE.--January 1963 to September 1968.

GAGE.--Graphic water-stage recorder and Parshall flume. Altitude of gage is 815 ft (from topographic map).

AVERAGE DISCHARGE.--5 years, 15.2 cfs (11,000 acre-ft per year).

EXTREMES.--1963-68: Maximum daily discharge, 65 cfs Aug. 17-20, 1963; no flow for several days in 1965.

REMARKS.--Records excellent. Flow regulated by Miners Ranch Reservoir (capacity, 912 acre-ft). Canal completed in November 1962. Water is used for irrigation. See schematic diagram for South Fork Feather River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	9.7	2.4	2.2	1.2	.92	1.2	23	23	28	28	28
2	30	2.2	2.4	2.2	1.2	.92	1.2	23	23	28	28	28
3	30	2.2	2.2	2.2	1.0	.92	1.2	23	23	28	28	28
4	26	2.2	2.2	2.2	1.0	.92	1.2	23	25	28	28	28
5	23	2.2	2.2	2.2	1.0	.80	4.6	23	25	28	28	28
6	23	2.2	2.0	2.2	1.0	.80	7.2	23	25	28	28	28
7	23	2.2	2.0	2.2	.92	.80	7.2	23	25	28	28	28
8	23	2.4	2.0	2.2	.92	.80	7.2	23	25	28	28	28
9	23	2.4	2.0	2.2	1.0	.92	9.9	23	25	28	28	28
10	23	2.4	2.0	2.0	1.0	.92	12	23	28	28	28	28
11	23	2.4	2.0	1.7	1.2	.92	14	23	30	28	28	28
12	23	2.6	2.0	1.7	1.2	.92	16	23	30	28	28	28
13	23	2.6	2.0	1.7	1.2	1.0	16	23	28	28	28	29
14	22	2.6	2.0	1.7	1.2	1.0	16	23	27	28	28	29
15	21	2.6	2.0	1.8	1.2	1.0	16	23	27	28	28	29
16	21	2.6	2.0	1.8	1.4	1.2	16	23	27	28	28	29
17	20	2.6	2.0	1.8	1.4	1.2	17	23	27	28	28	29
18	19	2.6	2.0	1.7	1.4	1.0	17	23	28	28	28	29
19	19	2.6	2.0	1.5	1.4	1.0	17	23	28	28	28	29
20	19	2.6	2.2	1.5	1.4	.92	17	23	27	28	28	29
21	19	2.4	2.2	1.5	1.2	.92	17	23	27	28	28	29
22	21	2.2	2.0	1.5	1.2	.92	19	23	27	28	28	29
23	23	2.2	2.0	1.5	1.0	1.0	21	23	27	28	28	29
24	23	2.2	2.0	1.5	1.0	1.0	21	23	28	28	28	29
25	22	2.2	2.0	1.5	1.0	1.0	21	23	28	28	28	29
26	21	2.2	2.0	1.5	.92	1.2	20	23	28	28	28	29
27	21	2.2	2.0	1.5	.92	1.2	20	23	28	28	28	29
28	21	2.4	2.0	1.5	.92	1.2	20	23	28	28	28	29
29	21	2.4	2.0	1.5	.92	1.2	21	23	28	28	28	30
30	21	2.4	2.0	1.4	-----	1.2	22	23	29	28	28	30
31	21	-----	2.2	1.2	-----	1.2	-----	23	-----	28	28	-----
TOTAL	698	78.7	64.0	54.8	32.32	30.92	416.9	713	804	868	868	860
MEAN	22.5	2.62	2.06	1.77	1.11	1.00	13.9	23.0	26.8	28.0	28.0	28.7
MAX	30	9.7	2.4	2.2	1.4	1.2	22	23	30	28	28	30
MIN	19	2.2	2.0	1.2	.92	.80	1.2	23	23	28	28	28
AC-FT	1,380	156	127	109	64	61	827	1,410	1,590	1,720	1,720	1,710
CAL YR 1967	TOTAL	5,226.7		MEAN	14.3	MAX	31	MIN	2.0	AC-FT	10,370	
WTR YR 1968	TOTAL	5,488.64		MEAN	15.0	MAX	30	MIN	.80	AC-FT	10,890	

SACRAMENTO RIVER BASIN

849

11-3963.5. SOUTH FORK FEATHER RIVER AT PONDEROSA DAM, CALIF.

LOCATION.--Lat 39°32'54", long 121°18'11", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.33, T.20 N., R.6 E., at entrance to Miners Ranch Canal on the left end of Ponderosa Dam, 2,800 ft upstream from Sucker Run, and 2.6 miles northwest of Forbestown. Prior to Oct. 1, 1967, at site 1,800 ft downstream.

DRAINAGE AREA.--108 sq mi.

RECORDS AVAILABLE.--July 1962 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Oroville-Wyandotte Irrigation District). Prior to Oct. 1, 1967, at site 1,800 ft downstream at different datum.

AVERAGE DISCHARGE.--6 years, 441 cfs (319,300 acre-ft per year), adjusted for diversion to Miners Ranch Canal.

EXTREMES.--Maximum discharge during year, 1,120 cfs Feb. 20 (elevation, 955.75 ft); no flow for several months.

1962-68: Maximum discharge, 11,000 cfs Dec. 22, 1964 (gage height, 11.52 ft in gage well, 12.7 ft outside from floodmarks, site and datum then in use); no flow for several months in 1968.

REMARKS.--Records good. Flow regulated by several reservoirs and diversions. Water is imported from North Yuba River basin through Slate Creek Tunnel. Miners Ranch Canal (see sta. no. 11-3963.1.) diverts at Ponderosa Dam for power development and irrigation; diversion began in October 1962. See schematic diagram for South Fork Feather River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	177	285	0	232	410	383					
2	100	136	290	0	472	394	394					
3	100	124	116	0	466	388	383					
4	100	129	305	0	454	388	372					
5	0	116	410	0	444	388	366					
6	100	109	325	0	383	388	361					
7	100	107	345	0	400	388	356					
8	100	128	330	0	383	410	303					
9	100	136	315	0	388	410	17					
10	200	136	285	0	394	394	0					
11	200	116	265	0	356	361	0					
12	200	109	241	0	340	388	0					
13	200	111	232	0	345	466	0					
14	200	128	232	0	335	366	0					
15	200	92	146	181	320	241	0					
16	400	265	232	400	320	89	0					
17	400	275	246	366	544	400	0					
18	400	290	232	340	526	484	0					
19	400	388	8.3	271	496	460	0					
20	400	330	0	28	962	449	0					
21	250	305	0	17	724	427	0					
22	250	285	0	14	586	410	0					
23	0	295	0	13	484	422	0					
24	0	285	0	6.1	460	416	0					
25	0	280	0	0	466	405	0					
26	0	270	0	0	444	405	0					
27	0	275	3.3	0	432	400	0					
28	0	280	33	0	427	388	0					
29	0	315	0	39	422	388	0					
30	3.9	315	0	206	-----	383	0					
31	117	-----	0	76	-----	383	-----					
TOTAL	4,520.9	6,307	4,876.6	1,957.1	13,005	12,089	2,935	0	0	0	0	0
MEAN	146	210	157	63.1	448	390	97.8	0	0	0	0	0
MAX	400	388	410	400	962	484	394	0	0	0	0	0
MIN	0	92	0	0	232	89	0	0	0	0	0	0
AC-FT	8,970	12,510	9,670	3,880	25,800	23,980	5,820	0	0	0	0	0
MEAN a	312	432	384	309	707	643	348	240	254	254	253	249
AC-FT a	19,160	25,700	23,610	19,020	40,680	39,510	20,720	14,760	15,120	15,620	15,530	14,830
CAL YR 1967	TOTAL 118,431.60	MEAN 324	MAX 1,810	MIN 0	AC-FT 234,900	MEAN a 558	AC-FT a 404,300					
WTR YR 1968	TOTAL 45,690.60	MEAN 125	MAX 962	MIN 0	AC-FT 90,630	MEAN a 364	AC-FT a 264,300					

a Adjusted for diversion to Miners Ranch Canal.

SACRAMENTO RIVER BASIN

11-3964. SUCKER RUN NEAR FORBESTOWN, CALIF.

LOCATION.--Lat 39°33'12", long 121°18'04", in NW¼NE¼ sec.33, T.20 N., R.6 E., on left bank at upstream side of road bridge, 0.7 mile upstream from confluence with South Fork Feather River, and 2.8 miles northwest of Forbestown.

DRAINAGE AREA.--18.7 sq mi.

RECORDS AVAILABLE.--June 1965 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 960 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 301 cfs Feb. 19 (gage height, 3.83 ft); minimum daily, 1.7 cfs Oct. 1.

1965-68: Maximum discharge, 819 cfs Jan. 21, 1967 (gage height, 6.03 ft), from rating curve extended above 180 cfs on basis of critical depth computation of flow at gage height 7.4 ft; minimum daily, 0.40 cfs Oct. 7, 1966.

Flood of Dec. 22, 1964, reached a stage of 7.4 ft from floodmarks (discharge, 1,260 cfs, from computation of critical depth flow over the rock control).

REMARKS.--Records good for flows above 15 cfs, poor below. Undetermined amount of water diverted above station at times for use at lumber mill in Feather Falls. See schematic diagram for South Fork Feather River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	7.5	12	10	45	26	22	11	6.2	3.5	3.3	2.8
2	17	7.3	11	10	59	24	22	11	6.4	3.6	2.4	3.2
3	10	7.0	23	10	50	22	21	11	6.3	3.8	2.0	2.9
4	7.2	7.2	29	10	45	21	20	11	6.4	4.4	1.9	2.4
5	7.3	7.4	35	9.9	40	20	20	9.9	6.5	5.7	1.9	2.2
6	7.0	7.5	14	9.7	38	19	19	9.9	7.9	5.3	1.8	2.2
7	6.7	7.6	38	9.9	36	20	17	9.9	7.9	5.0	1.8	2.2
8	6.6	7.6	17	10	35	30	17	9.9	7.5	4.7	1.8	2.2
9	6.5	8.0	13	11	45	26	16	9.9	6.3	5.0	1.8	2.2
10	6.5	8.1	11	60	58	19	16	9.9	6.0	4.8	1.8	2.1
11	6.4	7.9	11	21	38	15	15	9.8	6.0	4.7	1.8	2.1
12	6.4	7.9	11	14	33	24	15	9.8	5.8	4.3	1.8	2.1
13	6.3	8.1	10	13	44	61	15	11	5.6	4.6	1.8	2.1
14	6.3	10	10	25	34	75	14	11	5.4	5.0	1.8	2.4
15	6.6	8.7	10	100	29	53	14	9.9	4.8	4.5	2.3	2.5
16	6.7	8.6	10	45	34	82	14	9.0	4.4	4.4	2.4	2.5
17	6.4	8.6	9.9	28	102	78	13	8.6	5.0	4.2	2.8	2.5
18	6.0	9.6	11	20	67	63	13	8.5	5.4	3.9	2.6	2.4
19	6.0	30	10	17	100	52	13	8.5	5.5	3.7	4.3	2.4
20	5.8	10	10	14	150	45	12	8.7	5.4	3.3	7.6	2.4
21	6.0	8.8	9.8	13	128	40	12	8.7	5.3	2.9	10	2.4
22	6.5	8.8	9.9	12	95	36	11	9.0	5.2	2.8	8.2	2.4
23	6.6	8.6	10	12	78	33	12	8.7	4.7	2.9	6.5	2.4
24	6.6	8.6	12	11	62	31	11	8.6	4.4	2.8	4.6	2.4
25	6.8	8.5	12	11	52	29	12	8.8	4.1	2.8	3.8	2.4
26	6.6	8.5	12	10	43	28	12	8.6	4.0	2.8	3.3	2.4
27	6.7	8.6	12	10	37	25	11	8.2	4.0	2.6	3.2	2.4
28	6.9	9.9	12	10	32	24	11	7.9	4.0	2.0	3.0	2.4
29	7.3	14	11	30	28	23	11	7.5	3.8	2.2	2.7	2.3
30	7.4	14	11	90	-----	22	11	6.7	3.5	2.5	2.4	2.3
31	7.6	-----	11	60	-----	21	-----	6.2	-----	2.8	2.4	-----
TOTAL	214.4	282.9	428.6	716.5	1,637	1,087	442	287.1	163.7	117.5	99.8	71.6
MEAN	6.92	9.43	13.8	23.1	56.4	35.1	14.7	9.26	5.46	3.79	3.22	2.39
MAX	17	30	38	100	150	82	22	11	7.9	5.7	10	3.2
MIN	1.7	7.0	9.8	9.7	28	15	11	6.2	3.5	2.0	1.8	2.1
AC-FT	425	561	850	1,420	3,250	2,160	877	569	325	233	198	142
CAL YR 1967	TOTAL 10,125.0			MEAN 27.7		MAX 350		MIN 1.0		AC-FT 20,080		
WTR YR 1968	TOTAL 5,548.1			MEAN 15.2		MAX 150		MIN 1.7		AC-FT 11,000		

Peak discharge (base, 300 cfs).--Feb. 19 (2400 hrs) 301 cfs (3.83 ft).

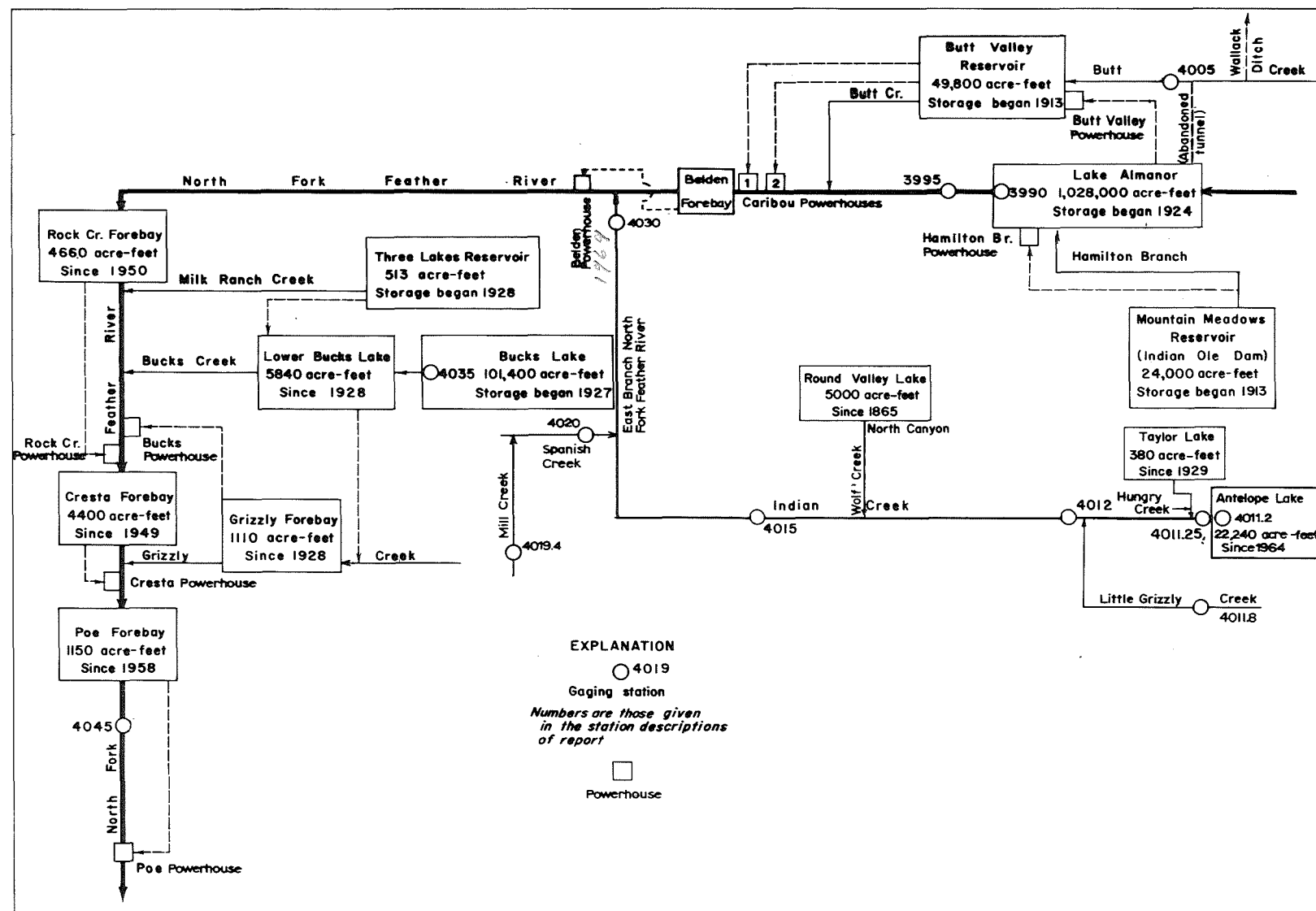


FIGURE 9.—Schematic diagram showing diversions and storage in North Fork Feather River basin.

SACRAMENTO RIVER BASIN

11-3990. LAKE ALMANOR AT PRATTVILLE, CALIF.

LOCATION.--Lat 40°12'50", long 121°09'40", in SW¼NE¼ sec.11, T.27 N., R.7 E., at outlet tower to No. 2 tunnel on North Fork Feather River at Prattville, 4.7 miles northwest of Lake Almanor Dam, and 5.6 miles northwest of Canyondam.

DRAINAGE AREA.--491 sq mi.

RECORDS AVAILABLE.--July 1913 to September 1968. Monthly contents only for some periods, published in WSP 1315-A. Published as "near Prattville" 1937-64. Prior to October 1964, records published as usable contents.

GAGE.--Telemark gage monitored once daily. Datum of gage is 10.23 ft below mean sea level (levels by Pacific Gas and Electric Co.). Prior to June 1, 1965, staff gage at site 4.7 miles southeast at same datum.

EXTREMES.--Maximum contents observed during year, 873,400 acre-ft May 9 (gage height, 4,483.58 ft); minimum observed, 600,300 acre-ft Sept. 30 (gage height, 4,471.67 ft).
1913-68: Maximum contents, 1,039,900 acre-ft June 10, 1965 (gage height, 4,490.14 ft); minimum, 5,230 acre-ft Feb. 5, 1918 (gage height, 4,416.1 ft).

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, 1,036,000 acre-ft between gage heights 4,480 (upper storage limit) and 4,422 ft (bottom of lowest outlet) of which 8,950 acre-ft is not available for release. Water is diverted by tunnel and penstock to Butt Valley Reservoir and powerhouse for use in Caribou powerplants; some water also released down North Fork Feather River (see sta. no. 11-3995.). Figures given herein represent total contents at 2400 hours. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Record of contents furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

CAPACITY TABLE (GAGE HEIGHT, IN FEET, AND CONTENTS, IN ACRE-FEET)

4,422	8,950	4,432	34,200	4,450	220,800	4,475	672,700
4,424	10,100	4,434	49,500	4,455	294,500	4,480	787,300
4,426	11,300	4,437	74,200	4,460	376,700	4,485	908,500
4,428	13,500	4,440	101,900	4,465	467,000	4,490	1,036,000
4,430	21,200	4,445	156,400	4,470	565,500		

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	815.1	759.2	731.2	706.6	733.5	765.0	836.9	858.0	850.2	804.1	744.6	663.3
2	815.3	757.3	731.4	706.4	734.2	768.0	839.1	860.4	848.8	802.5	742.0	662.0
3	814.6	755.4	731.7	706.4	733.7	770.6	841.0	862.6	848.3	799.8	739.3	661.6
4	812.2	753.4	733.7	706.1	734.9	773.7	843.0	865.1	847.8	799.1	736.5	658.9
5	810.5	751.5	735.6	706.4	734.6	725.8	844.4	866.8	847.8	797.0	733.7	656.1
6	808.6	749.4	735.3	706.4	733.5	728.8	845.4	868.7	847.6	795.1	730.5	653.2
7	806.7	747.3	737.0	706.4	730.5	781.2	845.6	870.9	846.6	792.7	727.5	650.6
8	805.1	745.3	737.4	706.1	727.5	784.0	844.9	872.9	844.7	792.3	725.0	647.7
9	803.4	743.2	738.3	706.1	725.5	786.1	844.4	873.4	843.2	789.9	722.0	638.5
10	801.7	742.0	738.1	703.0	723.6	788.2	844.4	872.2	841.3	788.5	719.3	642.5
11	800.1	742.9	736.0	702.1	722.0	790.4	845.1	870.9	839.1	786.6	716.3	639.6
12	800.8	744.1	737.2	700.9	720.0	794.4	847.6	869.5	838.1	785.2	713.4	637.2
13	796.5	742.9	733.0	707.7	717.7	799.8	848.3	869.7	836.5	782.8	710.4	634.2
14	794.4	741.8	731.0	711.1	715.7	799.8	847.3	868.7	834.8	782.1	707.3	631.6
15	792.3	739.9	728.7	714.1	712.7	802.2	849.5	867.5	832.8	780.0	704.3	628.5
16	790.8	738.6	725.2	716.3	710.0	805.8	851.9	866.3	830.7	778.6	702.1	626.2
17	788.9	737.0	723.2	716.8	708.8	807.9	852.7	864.8	829.5	776.0	701.4	624.2
18	786.4	739.5	723.9	717.7	710.4	809.8	853.9	863.6	829.0	774.1	699.3	621.9
19	784.9	742.7	722.7	718.4	714.8	811.5	853.4	862.9	826.4	771.8	697.1	619.3
20	782.6	741.6	720.7	719.1	718.9	813.2	851.9	862.9	823.7	769.7	695.3	616.7
21	781.2	739.7	719.1	719.8	724.3	815.3	850.5	861.7	823.0	767.1	692.8	615.8
22	779.3	737.4	716.6	719.8	730.5	817.2	849.0	861.2	821.1	765.9	690.3	614.8
23	777.4	738.8	714.8	720.4	737.0	818.9	849.3	860.7	818.9	763.6	687.6	612.8
24	775.5	737.4	712.5	720.9	742.7	820.6	850.0	859.7	817.0	761.5	684.7	610.5
25	773.7	737.9	710.2	721.1	747.3	822.7	851.0	858.5	814.8	759.2	682.0	608.4
26	771.5	737.0	708.4	721.8	751.7	824.7	850.7	857.3	812.7	759.3	678.9	606.5
27	769.4	735.3	706.6	722.7	755.4	826.6	851.2	855.6	810.5	755.4	676.7	604.1
28	768.0	733.7	707.0	723.4	758.9	828.3	851.9	854.1	807.9	753.1	674.4	603.3
29	765.2	733.7	706.8	730.5	762.0	830.0	853.6	854.1	807.0	751.0	671.6	602.4
30	763.4	731.9	706.6	731.9	-----	832.4	855.8	853.1	806.3	748.7	668.9	600.3
31	761.3	-----	706.6	732.6	-----	834.8	-----	851.9	-----	746.6	666.2	-----
(a)	4,478.89	4,477.62	4,476.51	4,477.65	4,478.92	4,481.99	4,482.86	4,482.70	4,480.80	4,478.26	4,474.71	4,471.67
(b)	-54,000	-29,400	-25,300	+26,000	+29,400	+72,800	+21,000	-3,900	-45,600	-59,700	-80,400	-65,900
MAX	815.3	759.2	738.3	732.6	762.0	834.8	855.8	873.4	850.2	804.1	744.6	663.3
MIN	761.3	731.9	706.6	700.9	708.8	765.0	836.9	851.9	806.3	746.6	666.2	600.3

CAL YR 1967

b +33,900

WTR YR 1968

b -215,000

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11-3995. NORTH FORK FEATHER RIVER NEAR PRATTVILLE, CALIF.

LOCATION.--Lat 40°10'10", long 121°05'29", in NE¼SW¼ sec.28, T.27 N., R.8 E., on left bank 0.5 mile downstream from Almanor Dam, 4.5 miles southeast of Prattville, and 9 miles upstream from Butt Creek.

DRAINAGE AREA.--493 sq mi.

RECORDS AVAILABLE.--June 1905 to September 1968 (daily discharges for July 1921 to September 1936 include water diverted through Almanor-Butt Creek tunnel). Records for water year 1911 incomplete, yearly estimate published in WSP 1315-A. Published as "below Prattville" prior to 1911. Supplemental records for Almanor-Butt Creek tunnel diversion computed November 1924 to Dec. 30, 1958, as difference of flow between Butt Creek above Almanor-Butt Creek tunnel (unpublished prior to 1936 and since 1964), and Butt Creek below Almanor-Butt Creek tunnel (unpublished prior to 1936 and 1960-64).

GAGE.--Digital water-stage recorder and broad-crested weir. Altitude of gage is 4,380 ft (from topographic map). Prior to Oct. 1, 1936, staff gages or water-stage recorders at several sites within half a mile of present site at various datums. Oct. 1, 1936, to Mar. 16, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--63 years, 895 cfs (648,000 acre-ft per year), adjusted for diversion and leakage.

EXTREMES.--Maximum daily discharge during year, 52 cfs Apr 3; minimum daily, 31 cfs Apr. 19-21. Extremes do not include diversions through Butt Valley powerhouse and leakage from Almanor-Butt Creek tunnel No. 1. 1905-68: Maximum discharge, 10,000 cfs Mar. 19, 1907, before construction of dam (gage height, 16.2 ft at former site), from rating curve extended above 3,700 cfs; no flow Apr. 15, 16, 1914, at times January to April 1919, Apr. 21, 1923.

REMARKS.--Records good. Flow regulated by Lake Almanor (see sta. no. 11-3990.) and Mountain Meadows Reservoir since 1924 (capacity, 24,000 acre-ft). Water diverted for power from Lake Almanor through old Almanor-Butt Creek tunnel to Butt Creek until Dec. 30, 1958. Diversion through new tunnel and Butt Valley powerhouse began Dec. 31, 1958. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	39	37	35	36	37	39	34	35	37	36	34
2	40	39	37	35	36	37	48	34	35	37	36	34
3	40	39	37	35	36	37	52	35	34	37	36	34
4	40	39	37	35	36	37	43	34	34	37	36	34
5	40	39	37	35	36	37	34	34	34	37	36	34
6	40	38	37	35	36	38	34	34	34	37	36	34
7	40	39	37	35	36	37	34	34	34	36	36	34
8	40	38	37	35	36	38	33	34	34	36	35	34
9	40	38	37	35	36	38	32	34	34	36	35	34
10	40	38	37	35	36	38	33	34	34	37	35	34
11	40	38	37	35	36	38	33	34	34	37	35	34
12	40	38	37	35	36	38	33	34	34	37	35	33
13	40	38	37	35	36	38	33	34	34	37	35	33
14	39	38	37	35	36	38	33	35	34	37	35	33
15	39	38	36	35	36	38	33	35	36	37	35	33
16	39	37	36	35	36	38	33	35	37	36	35	33
17	39	37	36	34	36	38	32	35	38	36	35	33
18	39	37	36	34	36	38	32	35	37	36	35	33
19	39	38	36	35	36	38	31	35	37	36	35	32
20	39	37	36	35	37	38	31	35	37	36	35	32
21	39	37	36	36	37	38	31	35	37	36	35	32
22	39	37	36	35	37	38	40	35	37	36	35	32
23	39	37	36	36	38	38	47	35	37	36	35	32
24	39	37	36	36	37	38	46	35	37	36	35	32
25	39	37	36	36	37	39	47	35	37	36	35	32
26	39	37	36	36	37	39	43	35	37	36	34	32
27	39	37	36	36	37	39	37	35	37	36	34	32
28	39	37	35	36	37	39	34	35	37	36	34	32
29	39	37	35	36	37	39	34	35	37	36	34	32
30	39	37	35	36	-----	39	34	34	37	36	34	32
31	39	-----	35	36	-----	39	-----	35	-----	36	34	-----
TOTAL	1,222	1,132	1,126	1,093	1,055	1,179	1,099	1,072	1,070	1,128	1,086	989
MEAN	39.4	37.7	36.3	35.3	36.4	38.0	36.6	34.6	35.7	36.4	35.0	33.0
MAX	40	39	37	36	38	39	52	35	38	37	36	34
MIN	39	37	35	34	36	37	31	34	34	36	34	32
AC-FT	2,420	2,250	2,230	2,170	2,090	2,340	2,180	2,130	2,120	2,240	2,150	1,960
Mean a	1,458	1,175	1,122	637	911	59.2	622	1,081	1,372	1,447	1,727	1,502
Ac-ft a	89,640	69,870	69,040	39,160	52,420	3,640	36,980	66,480	81,600	89,000	106,200	89,340

CAL YR 1967 TOTAL 13,089 MEAN 35.9 MAX 40 MIN 33 AC-FT 25,960 MEAN a 1,036 AC-FT a 750,300
WTR YR 1968 TOTAL 13,251 MEAN 36.2 MAX 52 MIN 31 AC-FT 26,280 MEAN a 1,093 AC-FT a 793,400

a Adjusted for diversion through Butt Valley powerhouse and leakage from Almanor-Butt Creek tunnel No. 1.

SACRAMENTO RIVER BASIN

11-4005. BUTT CREEK BELOW ALMANOR-BUTT CREEK TUNNEL, NEAR PRATTVILLE, CALIF.

LOCATION.--Lat 40°11'12", long 121°11'11", in NW¼ sec.22, T.27 N., R.7 E., on right bank 400 ft downstream from outlet of old tunnel from Lake Almanor to Butt Creek, and 2.2 miles southwest of Prattville.

DRAINAGE AREA.--69.3 sq mi.

RECORDS AVAILABLE.--October 1936 to September 1959, October 1964 to September 1968. Published as "below Tunnel No. 1" 1938-40. Records for water years 1937-38 published in WSP 1515.

GAGE.--Digital water-stage recorder and concrete control. Altitude of gage is 4,400 ft (from topographic map). Prior to Oct. 5, 1937, at site 200 ft downstream at datum 4 ft lower. Oct. 5, 1937, to Mar. 14, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE (natural flow of Butt Creek).--32 years, 79.1 cfs (57,270 acre-ft per year), adjusted for leakage from Almanor-Butt Creek tunnel No. 1.

EXTREMES.--Maximum discharge during year, 447 cfs Feb. 23 (gage height, 2.04 ft); minimum daily, 38 cfs Sept. 8, 9.

1936-59, 1964-68: Maximum discharge, 3,830 cfs Dec. 23, 1964 (gage height, 5.87 ft), from rating curve extended above 1,400 cfs; minimum daily, 30 cfs Dec. 1, 2, 1936.

REMARKS.--Records good. No regulation above station. Wallack ditch, above station, diverts several cubic feet per second during each irrigation season into Yellow Creek basin. Leakage from Almanor-Butt Creek tunnel No. 1 was 7,000 acre-ft during 1968 water year. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	55	58	65	66	160	188	133	77	50	45	39
2	81	55	61	60	68	149	168	133	73	50	43	39
3	75	55	61	68	79	146	160	133	73	50	42	41
4	58	55	68	71	71	146	162	133	73	50	42	39
5	58	55	81	70	68	151	160	126	75	49	41	41
6	58	55	68	68	68	143	151	119	77	49	41	39
7	60	55	65	66	65	136	151	116	73	48	41	39
8	60	55	68	63	65	131	151	114	71	48	39	38
9	60	55	77	60	66	121	157	112	68	48	41	38
10	58	55	71	49	66	116	168	110	66	46	41	39
11	58	55	68	55	66	112	179	112	66	45	39	39
12	58	55	68	56	68	107	179	107	65	43	39	39
13	58	55	68	58	70	110	162	119	63	43	41	39
14	56	66	68	71	66	107	157	105	63	43	41	41
15	56	58	68	198	65	105	160	97	63	43	41	39
16	56	56	65	136	65	110	151	95	61	45	42	39
17	56	55	63	97	77	103	138	95	60	43	42	39
18	56	56	61	85	88	97	133	92	58	43	42	39
19	56	97	61	75	107	95	133	99	58	43	49	39
20	56	70	61	70	291	95	126	114	58	43	53	41
21	58	63	61	66	318	97	121	101	56	43	52	41
22	58	60	60	65	280	99	116	101	56	42	48	41
23	58	58	60	65	377	105	116	110	56	42	45	39
24	56	56	60	63	287	110	116	105	55	43	42	39
25	56	56	60	63	226	126	119	99	55	43	42	39
26	56	55	60	65	198	124	121	92	55	42	42	39
27	56	56	61	65	188	121	124	88	53	42	41	39
28	56	58	61	66	179	136	126	86	52	42	41	39
29	56	56	60	46	168	157	128	85	52	42	42	39
30	55	60	61	41	-----	179	133	83	50	43	41	39
31	55	-----	65	63	-----	194	-----	81	-----	43	39	-----
TOTAL	1,809	1,751	1,998	2,209	3,866	3,888	4,354	3,295	1,881	1,389	1,320	1,180
MEAN	58.4	58.4	64.5	71.3	133	125	145	106	62.7	44.8	42.6	39.3
MAX	81	97	81	198	377	194	188	133	77	50	53	41
MIN	55	55	58	41	65	95	116	81	50	42	39	38
AC-FT	3,590	3,470	3,960	4,380	7,670	7,710	8,640	6,540	3,730	2,760	2,620	2,340
CAL YR 1967	TOTAL 44,230		MEAN 121		MAX 658		MIN 54		AC-FT 87,730			
WTR YR 1968	TOTAL 28,940		MEAN 79.1		MAX 377		MIN 38		AC-FT 57,400			

SACRAMENTO RIVER BASIN

855

11-4011.8. LITTLE GRIZZLY CREEK NEAR GENESEE, CALIF.

LOCATION.--Lat 40°00'55", long 120°45'10", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.21, T.25 N., R.11 E., on right bank 2.5 miles upstream from Indian Creek, and 2 miles south of Genesee.

DRAINAGE AREA.--29.6 sq mi.

RECORDS AVAILABLE.--August 1964 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 4,180 ft (from topographic map). Prior to Nov. 19, 1966, graphic water-stage recorder at same site and datum.

EXTREMES.--Maximum discharge during year, 333 cfs Feb. 20 (gage height, 3.71 ft); minimum daily, 4.7 cfs Sept. 7, 8, 12, 27.

1964-68: Maximum discharge, 1,600 cfs Dec. 23, 1964 (gage height, 5.90 ft), from rating curve extended above 500 cfs on basis of slope-area measurement of maximum flow; minimum daily, 3.5 cfs Sept. 10, 11, 30, 1966.

REMARKS.--Records good. Records of water temperatures for the 1968 water year are published in Part 2 of this report. See schematic diagram for North Fork Feather River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	8.5	8.7	8.2	12	72	93	107	44	11	6.4	4.9
2	15	8.5	7.7	7.9	13	65	80	111	42	11	6.0	4.9
3	16	8.2	8.5	7.0	18	63	73	119	41	10	5.7	4.9
4	11	8.2	12	7.0	17	63	72	124	39	10	5.5	4.8
5	11	8.2	14	7.2	16	65	69	117	38	9.8	5.5	4.8
6	11	8.3	10	7.2	16	58	64	104	41	9.6	5.5	4.8
7	10	8.3	12	7.4	17	53	63	96	36	9.0	5.4	4.7
8	9.8	8.0	9.0	7.7	18	50	63	92	32	8.6	5.3	4.7
9	9.5	8.2	9.0	7.7	22	45	69	92	30	8.5	5.4	4.8
10	9.5	8.2	8.7	18	24	41	80	90	27	8.3	5.4	4.8
11	9.3	8.1	9.0	8.7	23	38	93	86	25	8.0	5.3	4.8
12	9.3	7.9	8.2	9.0	22	36	96	83	24	7.7	5.2	4.7
13	9.2	7.8	7.9	8.2	23	36	89	82	23	7.8	5.3	4.8
14	9.1	10	7.3	11	21	34	87	73	22	7.8	5.7	5.0
15	8.9	8.9	8.0	8.7	19	32	85	66	21	7.7	6.0	5.0
16	8.9	8.3	8.2	4.9	18	34	84	63	19	7.6	6.1	4.9
17	8.8	8.2	8.1	31	23	36	71	62	19	7.4	6.6	4.8
18	8.7	9.0	8.3	23	33	32	68	64	18	7.2	6.4	4.8
19	8.8	15	8.7	19	69	31	60	68	17	7.0	7.9	4.9
20	8.7	12	8.2	16	235	30	57	76	16	6.8	7.9	5.2
21	8.7	10	7.9	15	264	31	53	74	16	6.7	8.7	5.3
22	9.3	9.0	7.9	14	185	32	51	73	15	6.6	7.7	5.3
23	9.0	8.3	7.9	14	219	34	51	69	15	6.3	6.6	5.1
24	8.7	8.0	8.2	13	173	36	52	61	14	6.2	6.0	4.9
25	8.6	7.7	8.2	13	126	42	56	55	13	6.1	5.7	4.8
26	8.7	7.2	8.5	13	105	43	63	53	13	6.1	5.5	4.8
27	8.7	7.4	9.0	13	95	43	67	52	12	6.0	5.5	4.7
28	9.1	7.6	9.0	12	86	48	67	52	12	5.8	5.4	4.8
29	8.7	7.8	8.7	12	78	62	89	52	12	5.8	5.3	4.8
30	8.7	8.5	8.5	11	-----	81	102	49	11	5.9	5.1	4.9
31	8.6	-----	8.0	11	-----	95	-----	46	-----	6.2	5.0	-----
TOTAL	298.3	259.3	273.3	488.2	1,990	1,461	2,167	2,411	707	238.5	185.0	146.4
MEAN	9.62	8.64	8.82	15.7	68.6	47.1	72.2	77.8	23.6	7.69	5.97	4.88
MAX	16	15	14	87	264	95	102	124	44	11	8.7	5.3
MIN	8.6	7.2	7.3	7.0	12	30	51	46	11	5.8	5.0	4.7
AC-FT	592	514	542	968	3,950	2,900	4,300	4,780	1,400	473	367	290
CAL YR 1967	TOTAL 25,939.9		MEAN 71.1		MAX 696		MIN 7.2		AC-FT 51,450			
WTR YR 1968	TOTAL 10,625.0		MEAN 29.0		MAX 264		MIN 4.7		AC-FT 21,070			

Peak discharge (base, 300 cfs).--Feb. 20 (0145 hrs) 333 cfs (3.71 ft).

SACRAMENTO RIVER BASIN

11-4015. INDIAN CREEK NEAR CRESCENT MILLS, CALIF.

LOCATION.--Lat 40°04'20", long 120°55'35", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.25, T.26 N., R.9 E., on left bank 0.8 mile upstream from Dixie Creek, and 1.5 miles south of Crescent Mills.

DRAINAGE AREA.--739 sq mi.

RECORDS AVAILABLE.--January 1906 to December 1909, September 1911 to March 1918, October 1930 to September 1968.
GAGE.--Digital water-stage recorder. Altitude of gage is 3,500 ft (from topographic map). Prior to March 1918, staff gage at site 800 ft upstream at different datum. October 1930 to July 10, 1968, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--47 years (1906-9, 1911-17, 1930-68), 537 cfs (388,800 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4,720 cfs Feb. 24 (gage height, 9.00 ft); minimum daily, 12 cfs Aug. 12.

1906-9, 1911-18, 1930-68: Maximum discharge observed, 25,000 cfs Mar. 19, 1907 (gage height, 20.2 ft, site and datum then in use); minimum, 1.7 cfs Aug. 25, 1931.

REMARKS.--Records good. Natural flow affected by storage in Round Valley Reservoir since 1865 (capacity, 5,000 acre-ft), Taylor Lake since 1929 (capacity, 380 acre-ft), and Antelope Lake since November 1963 (capacity, 22,500 acre-ft). Diversions above station for irrigation of about 11,800 acres, of which 9,700 acres is in Indian and Genesee Valleys. See schematic diagram for North Fork Feather River basin. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

REVISIONS (water years).--1965 report: 1956(M), 1958(M). Revised figures of discharge, in cubic feet per second, for the 1967 water year, superseding figures published in Surface Water Records of California, Part 1, Vol. 2, are given herewith:

Sept. 13..... 40	Sept. 19..... 51	Sept. 25..... 50
14..... 38	20..... 53	26..... 39
15..... 36	21..... 53	27..... 43
16..... 34	22..... 51	28..... 38
17..... 35	23..... 49	29..... 41
18..... 45	24..... 54	30..... 37

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
September 1967.....	1,330	53	34	44.3	2,640
Wtr yr 1967.....	350,634	6,350	17	961	695,500

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	70	124	130	210	1,600	1,340	568	188	36	21	16
2	58	90	117	124	240	1,420	1,230	540	174	29	20	16
3	103	110	126	111	268	1,320	1,120	512	158	29	16	16
4	104	105	217	114	275	1,260	1,020	528	148	28	16	18
5	104	100	594	121	272	1,280	968	516	132	38	16	18
6	104	95	290	119	280	1,150	905	460	164	35	19	16
7	104	90	373	124	310	1,030	850	410	202	25	15	18
8	103	90	258	122	359	986	800	380	188	25	18	20
9	102	92	184	128	444	950	792	362	170	22	16	20
10	101	95	168	331	608	855	820	347	150	20	16	19
11	100	95	156	264	616	776	895	341	124	20	16	19
12	99	95	142	170	644	744	940	335	111	20	12	20
13	94	94	117	170	736	850	885	338	104	20	13	19
14	76	104	114	254	708	920	820	323	101	20	17	19
15	79	104	124	1,520	644	850	800	285	104	20	18	19
16	72	98	126	942	580	1,050	796	270	92	18	18	20
17	69	96	121	536	684	1,120	768	252	87	18	20	18
18	71	98	122	389	945	980	708	250	76	20	19	18
19	71	147	130	329	1,120	855	656	254	75	15	22	19
20	77	150	128	290	2,840	800	616	290	52	15	23	21
21	92	133	120	272	3,780	825	568	290	43	16	27	22
22	94	121	122	258	4,160	845	520	312	46	16	25	24
23	92	114	121	252	4,000	825	484	338	35	15	24	26
24	96	111	122	246	4,540	840	472	323	33	14	30	31
25	90	107	127	242	3,460	915	472	287	29	16	28	32
26	90	103	127	230	2,570	1,060	468	264	37	16	26	32
27	87	101	135	220	2,110	940	488	252	33	16	24	33
28	80	108	138	218	1,880	925	480	232	33	17	20	33
29	75	118	138	200	1,670	1,050	512	202	35	16	19	35
30	70	128	130	150	-----	1,220	544	194	30	20	18	38
31	65	-----	122	180	-----	1,330	-----	196	-----	20	16	-----
TOTAL	2,665	3,162	5,133	8,756	40,953	31,571	22,737	10,451	2,954	655	608	675
MEAN	86.0	105	166	282	1,412	1,018	758	337	98.5	21.1	19.6	22.5
MAX	104	150	594	1,520	4,540	1,600	1,340	568	202	38	30	38
MIN	43	70	114	111	210	744	468	194	29	14	12	16
AC-FT	5,290	6,270	10,180	17,370	81,230	62,620	45,100	20,730	5,860	1,300	1,210	1,340
CAL YR 1967	TOTAL 336,767		MEAN 923		MAX 6,350		MIN 25		AC-FT 668,000			
WTR YR 1968	TOTAL 130,320		MEAN 356		MAX 4,540		MIN 12		AC-FT 258,500			

PEAK DISCHARGE (BASE, 1,100 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-15	1100	6.28	1,790	03-16	2000	5.54	1,270
02-24	0730	9.00	4,720	04-01	0400	5.70	1,380

11-4019.4. MILL CREEK NEAR QUINCY, CALIF.

LOCATION.--Lat 39°56'03", long 120°54'18", in NE $\frac{1}{4}$ sec.19, T.24 N., R.10 E., on left bank at culvert on State Highways 70 and 89, 2.2 miles east of Quincy.

DRAINAGE AREA.--6.72 sq mi.

RECORDS AVAILABLE.--Water years 1963-65 (annual maximum), October 1965 to September 1968.

GAGE.--Graphic water-stage recorder, crest-stage gage, and float operated rain gage. Altitude of gage is 3,500 ft (from topographic map). Prior to July 24, 1967, at site 38 ft downstream at datum 0.55 ft lower.

EXTREMES.--Maximum discharge during year, 69 cfs Feb. 20 (gage height, 2.41 ft); no flow for several months. 1962-68: Maximum discharge, 601 cfs Dec. 22, 1964 (gage height, 7.02 ft, site and datum then in use), from rating curve extended above 220 cfs on basis of computation of flow through culvert at gage heights 5.53 and 7.02 ft; no flow for several months each year.

REMARKS.--Records fair.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	0	.10	5.5	17	16	7.4	1.6			
2		0	0	0	5.5	16	14	7.4	1.4			
3		0	0	0	6.9	14	13	8.5	1.2			
4		0	1.8	0	5.2	14	12	8.5	1.1			
5		0	2.1	0	4.8	14	12	7.9	.84			
6		0	.84	0	4.4	13	12	6.9	.84			
7		0	1.7	.10	4.8	12	11	6.0	.51			
8		0	.84	.20	5.2	13	10	5.6	.17			
9		0	.40	1.0	6.0	12	10	6.0	0			
10		0	.19	10	8.5	11	12	6.0	0			
11		0	.14	8.0	8.5	10	13	5.6	0			
12		0	.05	6.0	7.9	10	12	5.2	0			
13		0	0	5.0	7.9	10	12	5.2	.52			
14		1.4	0	24	7.4	10	10	4.4	.49			
15		0	.40	39	6.9	10	10	4.1	0			
16		0	.30	16	7.4	13	10	2.7	0			
17		0	.20	9.1	14	13	9.1	2.3	0			
18		.13	.40	6.4	15	12	9.7	2.3	0			
19		7.7	.30	4.8	21	10	9.1	2.7	0			
20		5.6	.10	4.1	47	9.7	8.5	3.5	0			
21		.44	0	3.5	49	9.1	8.5	3.2	0			
22		0	0	3.2	35	9.1	7.4	3.2	0			
23		0	.10	3.0	35	8.5	6.0	2.7	0			
24		0	.20	3.0	33	9.1	6.4	2.1	0			
25		0	.20	3.0	27	12	6.4	2.1	0			
26		0	.30	2.3	24	12	6.9	1.9	0			
27		0	.40	1.7	22	12	6.9	2.1	0			
28		0	.50	1.7	20	12	6.9	1.9	0			
29		.20	.60	1.8	18	14	7.4	1.9	0			
30		1.5	.40	2.0	-----	16	7.4	1.9	0			
31		-----	.20	6.0	-----	16	-----	1.7	-----			
TOTAL	0	16.97	12.66	165.00	462.8	373.5	295.6	132.9	8.67	0	0	0
MEAN	0	.57	.41	5.32	16.0	12.0	9.85	4.29	.29	0	0	0
MAX	0	7.7	2.1	39	49	17	16	8.5	1.6	0	0	0
MIN	0	0	0	0	4.4	8.5	6.0	1.7	0	0	0	0
AC-FT	0	34	25	327	918	741	586	264	17	0	0	0
(a)	2.00	3.49	4.16	6.36	4.23	3.92	.22	.60	.29	0	.44	-

CAL YR 1967 TOTAL 3,463.63 MEAN 9.49 MAX 110 MIN 0 AC-FT 6,870
WTR YR 1968 TOTAL 1,468.10 MEAN 4.01 MAX 49 MIN 0 AC-FT 2,910

a Precipitation, in inches (some precipitation falling as snow may not be included). Records of precipitation for October and November obtained from Weather Bureau gage at Quincy.

SACRAMENTO RIVER BASIN

11-4020. SPANISH CREEK ABOVE BLACKHAWK CREEK, AT KEDDIE, CALIF.

LOCATION.--Lat 40°00'05", long 120°57'20", in NE $\frac{1}{4}$ sec.27, T.25 N., R.9 E., on right bank 200 ft upstream from Blackhawk Creek, and 0.9 mile southeast of Keddle.

DRAINAGE AREA.--184 sq mi.

RECORDS AVAILABLE.--October 1933 to September 1968. Prior to October 1953, published as "at Keddle." Records for October 1911 to September 1933 at site 1.2 miles downstream not equivalent owing to inflow.

GAGE.--Digital water-stage recorder. Altitude of gage is 3,250 ft (from topographic map). Prior to Dec. 12, 1963, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--35 years, 259 cfs (187,500 acre-ft per year).

EXTREMES.--Maximum discharge during year, 3,340 cfs Feb. 21 (gage height, 6.62 ft); minimum daily, 20 cfs Aug. 18, Sept. 18.

1933-68: Maximum discharge, 15,400 cfs Dec. 22, 1964 (gage height, 13.53 ft), from rating curve extended above 4,400 cfs on basis of slope-area measurement at gage height 12.47 ft; minimum, 3.8 cfs Aug. 12, 1934.

REMARKS.--Records excellent. Flow regulated by five small reservoirs having a combined capacity of 800 acre-ft. Approximately 4,600 acres irrigated above station (from information furnished by U.S. Forest Service). City of Quincy diverts about 450 acre-ft annually for municipal supply. See schematic diagram for North Fork Feather River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	56	81	81	120	583	638	294	108	34	30	22
2	72	57	79	79	134	532	541	286	106	35	29	21
3	143	58	91	69	148	505	464	289	106	39	28	23
4	72	57	148	70	150	489	435	291	105	37	28	23
5	65	56	463	74	152	516	436	285	101	36	27	24
6	63	56	175	72	153	474	405	251	124	36	24	24
7	60	56	237	75	166	429	379	215	136	35	24	25
8	58	56	157	75	191	457	364	200	113	31	24	26
9	58	56	121	85	260	414	372	202	103	29	24	25
10	57	56	107	339	396	359	411	203	96	30	23	25
11	56	55	102	176	337	320	466	197	90	30	25	27
12	55	56	95	120	337	323	479	189	87	31	22	27
13	55	56	78	113	361	439	428	201	84	28	23	26
14	54	70	73	167	309	493	392	184	80	30	21	27
15	53	69	85	1,640	264	476	391	171	68	31	22	26
16	55	62	85	708	250	700	389	163	59	32	23	25
17	54	60	82	349	649	672	333	158	61	30	25	22
18	54	61	84	229	744	534	309	157	55	32	20	20
19	54	129	87	184	844	446	290	159	48	30	24	23
20	54	96	83	158	2,300	408	275	182	40	26	31	25
21	54	85	79	145	2,500	397	258	170	40	26	47	26
22	54	78	81	138	1,740	391	237	184	42	27	47	26
23	56	74	80	136	1,760	404	230	181	42	26	40	27
24	55	70	80	134	1,400	418	226	172	43	23	38	27
25	56	68	80	132	1,000	498	227	156	55	22	35	27
26	56	66	82	127	836	529	235	149	48	24	32	27
27	56	68	88	122	773	466	255	144	44	25	31	27
28	56	73	91	119	710	466	259	132	41	26	29	27
29	55	76	92	112	635	546	285	123	38	25	29	27
30	55	78	86	86	-----	643	304	122	36	26	27	26
31	55	-----	81	100	-----	675	-----	116	-----	28	25	-----
TOTAL	1,841	2,014	3,433	6,214	19,619	15,002	10,713	5,926	2,199	920	877	753
MEAN	59.4	67.1	111	200	677	484	357	191	73.3	29.7	28.3	25.1
MAX	143	129	463	1,640	2,500	700	638	294	136	39	47	27
MIN	41	55	73	69	120	320	226	116	36	22	20	20
AC-FT	3,650	3,990	6,810	12,330	38,910	29,760	21,250	11,750	4,360	1,820	1,740	1,490
CAL YR 1967	TOTAL 135,641			MEAN 372	MAX 5,800			MIN 30	AC-FT 269,000			
WTR YR 1968	TOTAL 69,511			MEAN 190	MAX 2,500			MIN 20	AC-FT 137,900			

Peak discharge (base, 1,700 cfs).--Jan. 15 (0530 hrs) 2,450 cfs (5.87 ft); Feb. 21 (0800 hrs) 3,340 cfs (6.62 ft).

SACRAMENTO RIVER BASIN

859

11-4030. EAST BRANCH OF NORTH FORK FEATHER RIVER NEAR RICH BAR, CALIF.

LOCATION.--Lat 40°00'40", long 121°13'00", in SW¼NE¼ sec.20, T.25 N., R.7 E., on left bank 0.5 mile upstream from mouth, and 1.3 miles west of Rich Bar.

DRAINAGE AREA.--1,025 sq mi.

RECORDS AVAILABLE.--October 1950 to September 1961, December 1967 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 2,300 ft (from topographic map). Prior to Nov. 29, 1950, at site 30 ft downstream at same datum. Graphic water-stage recorder October 1950 to September 1961.

AVERAGE DISCHARGE.--11 years, 1,052 cfs (761,600 acre-ft per year).

EXTREMES.--Maximum discharge during period December to September, 9,700 cfs Feb. 21 (gage height, 10.46 ft); minimum daily, 66 cfs Aug. 16.
1950-61, 1967-68: Maximum discharge, 48,000 cfs Dec. 23, 1955 (gage height, 16.52 ft), from rating curve extended above 15,000 cfs on basis of study of upstream and downstream peak discharges; minimum, 39 cfs Sept. 6, 7, 1955, July 28, Aug. 23, 1961.

REMARKS.--No storage or diversion between stations on Indian and Spanish Creeks and station near Rich Bar.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			269	294	602	2,930	2,410	1,100	414	112	90	72
2			254	297	587	2,650	2,180	1,050	397	113	87	69
3			280	267	713	2,450	1,940	1,000	377	112	83	70
4			527	254	730	2,300	1,750	1,000	364	115	76	71
5			1,400	261	685	2,320	1,690	1,000	348	113	74	74
6			730	267	669	2,230	1,590	940	377	122	71	75
7			753	274	701	1,980	1,490	850	439	111	74	73
8			679	299	795	1,930	1,410	800	414	104	70	75
9			451	294	925	1,880	1,380	750	377	97	73	77
10			388	789	1,390	1,670	1,440	708	351	94	70	77
11			364	783	1,410	1,490	1,600	680	321	91	68	77
12			338	480	1,390	1,400	1,700	660	293	89	71	79
13			294	417	1,530	1,660	1,610	640	282	90	66	78
14			256	527	1,490	1,870	1,460	620	264	88	68	79
15			399	4,070	1,300	1,720	1,420	600	254	89	71	79
16			348	2,960	1,210	1,940	1,400	580	229	91	74	77
17			311	1,460	1,460	2,400	1,340	550	216	89	76	75
18			294	981	2,630	1,990	1,220	530	201	87	81	72
19			314	789	2,490	1,680	1,120	520	181	90	84	69
20			299	690	6,880	1,510	1,050	580	163	82	96	73
21			280	627	8,320	1,480	980	560	138	77	120	77
22			288	597	8,310	1,480	940	600	135	77	115	78
23			285	578	7,540	1,490	900	630	141	81	110	79
24			283	568	7,960	1,520	880	645	127	78	115	80
25			288	554	6,190	1,610	860	611	130	75	110	81
26			294	545	4,780	1,950	860	574	133	74	100	82
27			308	522	4,040	1,760	880	548	130	76	90	82
28			326	509	3,630	1,680	920	518	124	78	84	83
29			329	505	3,230	1,850	980	466	121	79	80	81
30			317	451	-----	2,190	1,050	439	116	76	78	81
31		-----	294	484	-----	2,410	-----	428	-----	87	76	-----
TOTAL			12,240	22,393	83,587	59,420	40,450	21,177	7,557	2,837	2,601	2,295
MEAN			395	722	2,882	1,917	1,348	683	252	91.5	83.9	76.5
MAX			1,400	4,070	8,320	2,930	2,410	1,100	439	122	120	83
MIN			254	254	587	1,400	860	428	116	74	66	69
AC-FT			24,280	44,420	165,800	117,900	80,230	42,000	14,990	5,630	5,160	4,550

CAL YR 1967 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1968 TOTAL - MEAN - MAX - MIN - AC-FT -

Note.--No gage-height record Apr. 19 to May 23.

SACRAMENTO RIVER BASIN

11-4035. BUCKS LAKE NEAR BUCKS LODGE, CALIF.

LOCATION.--Lat 39°53'45", long 121°12'10", in NW $\frac{1}{4}$ sec.33, T.24 N., R.7 E., in intake tower No. 2 upstream from dam on Bucks Creek, 2 miles northwest of Bucks Lodge, and 15 miles west of Quincy.

DRAINAGE AREA.--28.6 sq mi.

RECORDS AVAILABLE.--1927-28 (year-end contents only, published in WSP 1315-A), October 1928 to September 1968. Prior to October 1954 published as Bucks Creek Reservoir near Bucks Ranch.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Feather River Power Co.).

EXTREMES.--Maximum contents during year, 86,100 acre-ft June 29 to July 1; maximum elevation, 5,146.06 ft July 1; minimum contents, 35,700 acre-ft Dec. 22 (elevation, 5,112.59 ft).

1928-68: Maximum contents, 105,800 acre-ft June 23, 1938 (elevation, 5,157.1 ft); minimum, 12,330 acre-ft Feb. 27, 1929, (elevation, 5,090.7 ft).

REMARKS.--Reservoir is formed by concrete-faced, rock-fill dam completed in 1927; storage began in May 1927. Capacity, 101,700 acre-ft between elevations 5,064.75 (sill of outlet gate) and 5,154.85 ft (spillway crest) above mean sea level. Released water flows down Bucks Creek to Lower Bucks Lake, where it enters tunnel that discharges into Grizzly Creek, thence to Bucks Creek powerhouse. Figures given herein represent total contents, of which 274 acre-ft is not available for release. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Record of contents furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

5,064.75	274	5,075	2,400	5,100	21,200	5,125	52,500
5,066	388	5,080	4,740	5,105	26,600	5,130	60,000
5,068	635	5,085	7,920	5,110	32,500	5,140	75,900
5,070	977	5,090	11,700	5,115	38,800	5,150	93,000
5,072	1,440	5,095	16,200	5,120	45,500	5,160	111,200

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65.7	52.7	41.4	36.3	41.9	50.1	58.3	68.4	82.5	85.8	72.9	59.9
2	65.8	52.3	40.9	36.3	42.1	50.4	58.6	69.0	82.8	85.3	73.2	59.7
3	65.4	51.8	40.8	36.3	42.3	50.7	58.9	69.5	83.0	85.1	72.7	59.3
4	65.0	51.3	40.7	36.4	42.4	51.1	59.1	70.1	83.2	85.1	72.2	58.8
5	64.6	51.0	40.4	36.4	42.6	51.4	59.4	70.7	83.5	85.1	71.7	58.4
6	64.2	50.6	40.1	36.5	42.6	51.7	59.6	71.2	83.8	85.1	71.3	57.9
7	63.7	50.1	39.9	36.5	42.7	52.0	59.9	71.6	84.0	85.1	70.8	57.5
8	63.2	49.7	39.5	36.6	42.8	52.3	60.3	72.1	84.2	84.8	70.3	57.0
9	62.6	49.3	39.2	36.9	42.9	52.5	60.6	72.5	84.3	84.3	69.8	56.6
10	62.4	48.8	38.8	37.0	43.0	52.7	61.0	73.0	84.5	83.8	69.3	56.1
11	61.9	48.4	38.4	37.0	43.1	52.9	61.4	73.5	84.6	83.3	68.8	55.6
12	61.5	48.0	38.0	37.1	43.2	53.3	61.8	74.0	84.7	82.8	68.3	55.2
31	61.0	47.6	37.7	37.0	43.3	53.7	62.2	74.4	84.9	82.8	67.8	54.8
14	60.5	47.4	37.3	37.4	43.3	54.0	62.5	75.0	85.0	81.8	67.4	54.6
15	60.2	47.0	37.0	38.4	43.2	54.2	62.9	75.3	85.2	81.3	66.9	54.4
16	59.7	46.6	36.7	39.0	43.1	54.6	63.3	75.7	85.3	80.8	66.4	54.0
17	59.2	46.2	36.5	39.2	43.4	54.8	63.6	76.3	85.4	80.4	65.9	53.5
18	58.8	45.9	36.3	39.4	43.5	55.0	63.9	76.8	85.5	79.9	65.5	53.1
19	58.3	45.7	36.2	39.5	43.9	55.1	64.3	76.5	85.5	79.5	65.2	52.6
20	57.9	45.3	36.0	39.6	44.4	55.3	64.6	77.7	85.6	79.2	64.9	52.2
21	57.5	44.9	35.8	39.7	45.5	55.4	64.9	78.3	85.7	79.0	64.4	51.7
22	57.0	44.5	35.7	39.9	46.4	55.6	65.2	78.8	85.8	78.5	64.0	51.2
23	56.6	44.1	35.8	40.0	47.3	55.8	65.4	79.2	85.8	78.0	63.5	50.8
24	56.2	43.7	35.8	40.1	47.9	55.9	65.8	79.6	85.9	77.5	63.1	50.4
25	55.7	43.3	35.8	40.2	48.4	56.3	66.1	80.0	85.9	77.0	62.6	49.9
26	55.2	42.9	35.9	40.3	48.7	56.5	66.5	80.4	85.9	76.4	62.1	49.5
27	54.8	42.6	36.0	40.5	49.1	56.7	66.9	80.8	86.0	76.0	61.7	49.1
28	52.9	42.2	36.1	40.7	49.5	56.9	67.4	81.1	86.0	75.6	61.2	48.6
29	53.9	42.0	36.1	41.4	49.8	57.2	67.9	81.5	86.1	75.1	60.9	48.1
30	53.5	41.8	36.2	41.7	-----	57.6	68.4	82.1	86.1	74.6	60.4	47.7
31	53.1	-----	36.1	41.8	-----	57.9	-----	82.4	-----	74.2	60.1	-----
(a)	5,125.35	5,117.26	5,112.91	5,117.26	5,123.10	5,128.64	5,135.40	5,143.89	5,146.05	5,138.95	5,130.10	5,121.62
(b)	-13,000	-11,300	-5,700	+5,700	+8,000	+8,100	+10,500	+14,000	+3,700	-11,900	-14,100	-12,400
MAX	65.8	52.7	41.4	41.8	49.8	57.9	68.4	82.4	86.1	85.8	73.2	59.9
MIN	53.1	41.8	35.7	36.3	41.9	50.1	58.3	68.4	82.5	74.2	60.1	47.7

CAL YR 1967 b -7,500

WTR YR 1968 b -18,400

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11-4045. NORTH FORK FEATHER RIVER AT PULGA, CALIF.

LOCATION.--Lat 39°47'40", long 121°27'00", in NE¼ sec.6, T.22 N., R.5 E., on left bank between railroad and highway bridges, 0.5 mile downstream from Flea Valley Creek and Pulga and 1.5 miles downstream from Poe Dam.

DRAINAGE AREA.--1,953 sq mi.

RECORDS AVAILABLE.--October 1910 to September 1968. Monthly discharge only for some periods and yearly estimates for water year 1911 and 1938, published in WSP 1315-A. Prior to October 1962, published as "at Big Bar."

GAGE.--Digital water-stage recorder. Datum of gage is 1,304.88 ft above mean sea level (levels by Pacific Gas and Electric Co.). Prior to Oct. 1, 1937, graphic water-stage recorder at site 1.1 miles upstream at different datum: Oct. 1, 1937, to Sept. 30, 1958, graphic water-stage recorder at present site at datum 5.00 ft higher. Oct. 1, 1958 to May 1, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--58 years, 2,911 cfs (2,107,000 acre-ft per year), including diversion through Poe powerplant.

EXTREMES.--Maximum discharge during year, 12,000 cfs Feb. 21 (gage height, 16.20 ft); minimum daily, 49 cfs Nov. 26.

1910-58 (prior to diversion to Poe powerhouse): Maximum discharge, 72,400 cfs Dec. 23, 1955 (gage height, 35.60 ft, present datum), from rating curve extended above 34,000 cfs; minimum daily, 235 cfs Oct. 31, 1932. 1958-68: Maximum discharge, 73,000 cfs Dec. 22, 1964 (gage height, 35.80 ft), from rating curve extended above 34,000 cfs; minimum daily, 33 cfs June 25, 1961.

REMARKS.--Records good. Flow regulated by Lake Almanor (see sta. no. 11-3990), Bucks Lake (see sta. no. 11-4035), Mountain Meadows Reservoir, Butt Valley Reservoir, and five forebays (combined capacity, 1,239,000 acre-ft). Diversion through Poe powerplant began on May 29, 1958. See schematic diagram of North Fork Feather River basin. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Gage-height record and nine discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	55	56	53	77	449	92	85	61	53	53	56
2	79	55	53	50	101	179	90	68	59	53	55	56
3	61	55	75	51	112	103	87	67	58	53	55	55
4	57	56	106	52	102	95	85	67	58	52	54	55
5	58	55	679	52	96	91	85	68	59	53	55	53
6	58	58	137	51	95	88	84	69	57	54	56	54
7	59	57	81	50	97	90	82	80	59	53	53	53
8	58	57	62	50	95	91	81	66	57	52	54	56
9	57	57	56	59	97	88	81	66	55	54	54	55
10	58	53	55	139	106	984	82	66	55	53	56	54
11	59	52	51	74	98	656	84	66	57	54	54	54
12	57	53	54	64	95	519	83	64	54	55	53	53
13	58	54	54	63	97	849	80	69	57	53	53	54
14	57	63	52	136	91	1,140	80	67	58	53	54	56
15	56	55	53	4,510	87	1,060	78	64	56	53	54	54
16	58	54	52	1,320	100	1,360	78	63	56	53	53	54
17	56	54	52	96	408	1,870	76	64	57	52	55	53
18	56	56	55	80	686	1,490	74	61	56	52	56	53
19	56	64	53	74	548	934	75	64	54	54	62	53
20	56	55	52	68	6,980	967	75	63	54	54	60	54
21	57	52	53	65	9,840	933	73	61	55	63	59	52
22	58	55	54	66	8,220	984	77	64	53	56	56	53
23	58	51	54	64	7,870	1,130	79	65	55	54	57	54
24	58	50	55	65	7,050	929	76	62	54	55	58	54
25	56	73	55	64	4,700	1,240	74	62	53	55	56	54
26	56	49	57	62	2,830	1,350	72	62	55	73	53	54
27	55	52	58	62	2,050	795	73	61	55	55	56	54
28	55	52	56	63	1,540	99	73	60	55	53	56	54
29	57	63	55	94	913	92	118	61	53	54	56	54
30	56	59	56	116	-----	93	541	61	52	53	56	53
31	56	-----	55	86	-----	91	-----	60	-----	56	57	-----
TOTAL	1,795	1,674	2,496	7,899	55,181	20,839	2,888	2,026	1,677	1,690	1,719	1,621
MEAN	57.9	55.8	80.5	255	1,903	672	96.3	65.4	55.9	54.5	55.5	54.0
MAX	79	73	679	4,510	9,840	1,870	541	85	61	73	62	56
MIN	55	49	51	50	77	88	72	60	52	52	53	52
AC-FT	3,560	3,320	4,950	15,670	109,400	41,330	5,730	4,020	3,330	3,350	3,410	3,220
Mean a	2,360	2,026	2,205	2,269	5,602	3,617	3,454	3,266	2,140	2,075	2,197	2,019
Ac-ft at 145,100	120,500	135,600	135,600	139,500	322,300	222,400	205,500	200,800	127,500	127,600	135,100	120,100

CAL YR 1967 TOTAL 315,951 MEAN 866 MAX 16,400 MIN 49 AC-FT 626,700 MEAN a 4,162 AC-FT a 3,017,000
WTR YR 1968 TOTAL 101,505 MEAN 277 MAX 9,840 MIN 49 AC-FT 201,300 MEAN a 2,758 AC-FT a 2,802,000

a Adjusted for diversion through Poe powerhouse.

SACRAMENTO RIVER BASIN

11-4053. WEST BRANCH FEATHER RIVER NEAR PARADISE, CALIF.

LOCATION.--Lat 39°47'15", long 121°33'40", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.6, T.22 N., R.4 E., on left bank 0.6 mile upstream from Griffin Gulch, and 4.0 miles northeast of Paradise.

DRAINAGE AREA.--110 sq mi (revised).

RECORDS AVAILABLE.--October 1957 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 1,370 ft (from topographic map).

AVERAGE DISCHARGE.--11 years, 286 cfs (207,100 acre-ft per year).

EXTREMES.--Maximum discharge during year, 5,200 cfs Feb. 21 (gage height, 11.75 ft); minimum daily, 0.79 cfs Oct. 15, Sept. 30.

1957-68: Maximum discharge, 26,300 cfs Dec. 22, 1964 (gage height, 26.2 ft from floodmarks), from rating curve extended above 8,800 cfs; minimum, 0.3 cfs Aug. 31, Sept. 1, 2, 1960, Sept. 8, 1962.

REMARKS.--Records good. Dewey, Miners, and Hendricks Canals divert from headwaters of West Branch Feather River into Butte Creek basin for power development at DeSabra and Centerville plants of Pacific Gas and Electric Co. Upper Miocene Canal diverts about 50 cfs to Lime Saddle powerplant. Flow regulated by Round Valley Reservoir (usable capacity, 5,000 acre-ft) and Philbrook Reservoir (capacity, 5,010 acre-ft). Records of water temperatures for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Water-stage recorder graph and 12 discharge measurements furnished by California Department of Water Resources.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.92	14	20	18	200	694	533	365	132	1.1	1.4	1.3
2	116	14	7.5	12	317	617	443	344	123	1.1	1.3	1.3
3	123	13	79	7.8	460	577	401	359	108	1.1	1.2	1.3
4	3.5	5.7	246	6.9	374	553	387	356	94	.92	1.2	1.3
5	1.1	1.2	379	5.1	335	553	374	350	86	.99	1.1	1.3
6	2.2	1.1	82	4.5	314	489	350	300	94	.99	.99	1.3
7	1.1	1.1	175	4.2	335	457	344	264	94	.92	.99	1.2
8	1.1	1.1	61	4.2	292	450	341	276	98	.99	.92	1.2
9	.99	1.1	30	51	287	394	377	292	67	.99	.92	1.1
10	.92	1.2	20	745	359	338	443	292	54	.99	.92	1.1
11	.92	1.1	14	142	298	300	497	276	32	.99	.99	1.1
12	.92	1.1	13	79	264	348	513	259	26	.92	.99	1.1
13	.92	1.1	8.7	58	240	541	460	309	22	.92	.99	1.1
14	.85	14	9.6	435	214	589	422	229	20	.92	1.1	1.1
15	.79	6.5	14	2,760	187	468	432	214	17	.92	1.1	1.2
16	.85	2.5	9.0	995	229	710	422	192	14	.92	1.2	1.1
17	.92	2.0	5.4	457	1,490	577	329	202	12	.92	1.2	.99
18	.99	3.0	7.5	266	1,110	446	289	214	10	.92	1.6	.92
19	.99	59	6.3	183	1,120	374	289	231	8.4	.92	8.6	.92
20	.92	11	4.2	138	2,840	335	287	362	6.6	1.1	34	.92
21	.99	2.0	3.8	128	3,550	314	266	279	5.1	1.1	18	.92
22	.99	1.4	3.8	128	2,180	303	242	276	4.0	1.1	4.3	.92
23	1.1	1.8	4.0	132	2,080	295	242	306	3.2	1.1	3.0	2.4
24	1.1	1.8	11	123	1,500	287	235	261	3.2	1.1	2.5	.99
25	1.1	1.2	18	110	1,120	365	259	261	2.5	1.1	2.0	.85
26	1.1	1.1	28	99	995	387	295	229	1.8	1.1	1.8	.85
27	1.1	1.2	59	89	935	335	326	214	1.6	1.1	1.6	.85
28	1.1	1.6	58	81	856	359	329	167	1.4	1.1	1.6	.85
29	1.1	30	40	91	753	432	353	190	1.2	1.1	1.4	.85
30	1.1	20	28	220	-----	493	368	176	1.2	1.1	1.3	.79
31	13	-----	21	187	-----	525	-----	153	-----	1.2	1.3	-----
TOTAL	283.68	216.9	1,465.8	7,759.7	25,234	13,905	10,848	8,198	1,143.2	31.74	101.51	33.12
MEAN	9.15	7.23	47.3	250	870	449	362	264	38.1	1.02	3.27	1.10
MAX	123	59	379	2,760	3,550	710	533	365	132	1.2	34	2.4
MIN	.79	1.1	3.8	4.2	187	287	235	153	1.2	.92	.92	.79
AC-FT	563	430	2,910	15,390	50,050	27,580	21,520	16,260	2,270	63	201	66
CAL YR 1967	TOTAL 134,977.48	MEAN 370	MAX 5,180	MIN .79	AC-FT 267,700							
WTR YR 1968	TOTAL 69,220.65	MEAN 189	MAX 3,550	MIN .79	AC-FT 137,300							

PEAK DISCHARGE (BASE, 2,000 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-15	0330	10.16	3,630	02-21	0800	11.75	5,200
02-17	1530	8.70	2,380				

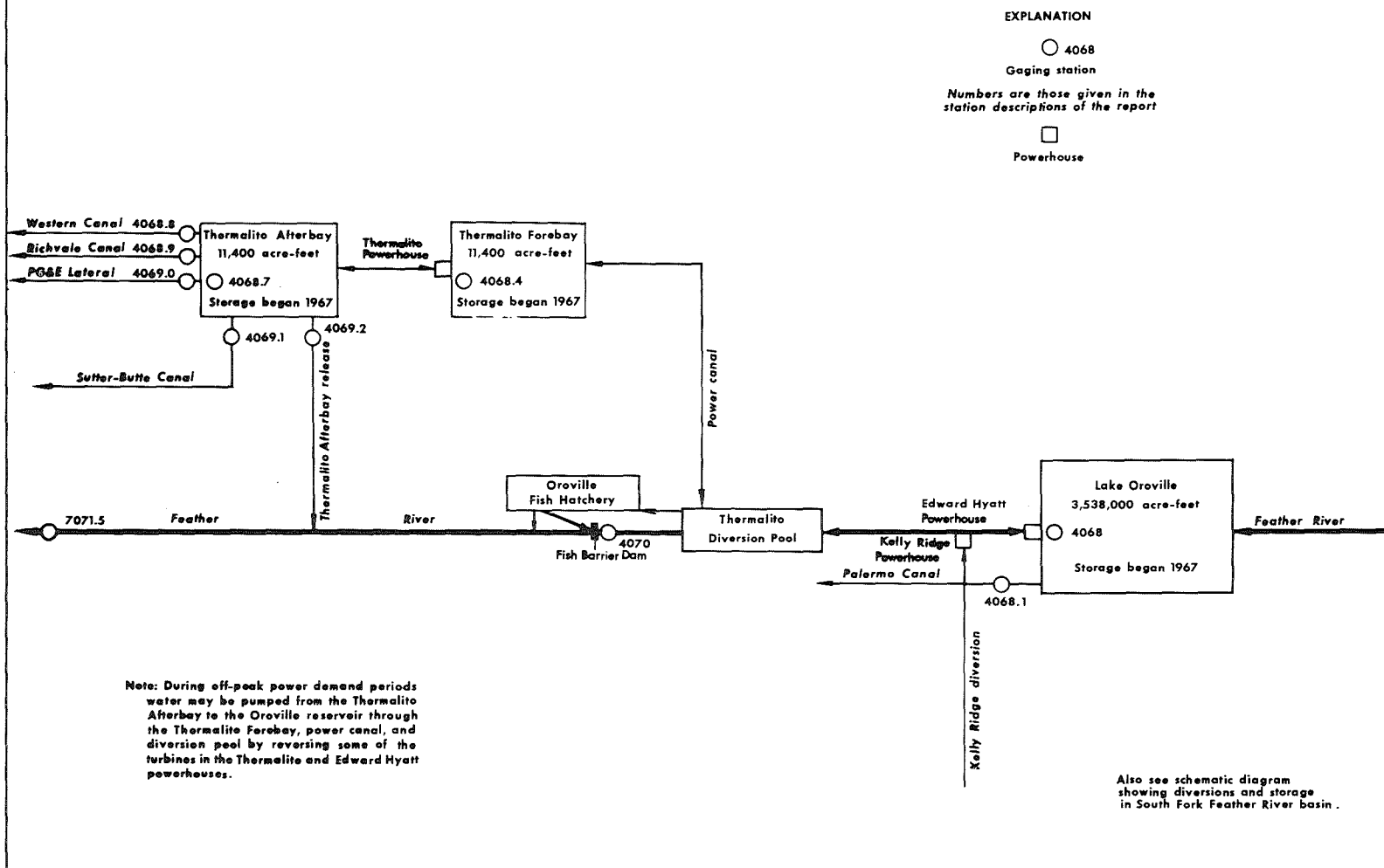


FIGURE 10.--Schematic diagram showing diversions and storage from Feather River at Lake Oroville.

SACRAMENTO RIVER BASIN

11-4068. LAKE OROVILLE NEAR OROVILLE, CALIF.

LOCATION.--Lat 39°32'00", long 121°28'25", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.1, T.19 N., R.4 E., near intake structure at left end of Oroville Dam on Feather River, 1.0 mile downstream from North Fork Feather River, and 4.2 miles east of Oroville.

DRAINAGE AREA.--3,609 sq mi.

RECORDS AVAILABLE.--November 1967 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is at mean sea level (levels by California Department of Water Resources).

EXTREMES.--Maximum contents during year, 1,719,300 acre-ft May 22 (elevation, 754.44 ft); minimum since initial storage began, 1,643,000 acre-ft Sept. 3 (elevation, 746.27 ft).

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, 2,686,000 acre-ft between elevations 640.0 (minimum power pool) and 900.0 ft (normal maximum pool) above mean sea level. Dead storage, 852,200 acre-ft. Total capacity at normal maximum pool (900.0 ft above mean sea level), 3,538,000 acre-ft. Water is released to Edward Hyatt powerhouse through penstock in left abutment of dam and to Palermo Canal through concrete tunnel also in left abutment of dam. The 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.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey in connection with a Federal Power Commission project.

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		-	41.8	167.5	400.7	1,083.8	1,501.7	1,700.6	1,713.2	1,670.8	1,645.3	1,647.0
2		-	43.6	169.8	412.7	1,101.5	1,515.3	1,700.1	1,711.4	1,669.3	1,645.2	1,644.8
3		-	45.6	171.6	424.5	1,116.8	1,526.7	1,698.2	1,709.4	1,669.7	1,644.9	1,643.0
4		-	49.9	173.4	434.5	1,127.5	1,538.9	1,693.9	1,706.5	1,667.2	1,644.5	1,643.1
5		-	58.5	175.3	444.3	1,138.8	1,551.9	1,689.4	1,705.8	1,665.8	1,644.4	1,643.7
6		-	64.6	177.5	454.0	1,505.5	1,564.8	1,686.2	1,706.6	1,664.5	1,644.1	1,644.7
7		-	71.1	180.2	465.9	1,164.5	1,577.2	1,684.3	1,708.7	1,663.1	1,645.2	1,645.3
8		-	76.1	183.6	476.6	1,180.2	1,588.9	1,684.7	1,710.1	1,661.7	1,645.5	1,646.3
9		-	80.3	187.9	487.1	1,193.1	1,599.1	1,687.8	1,710.9	1,660.4	1,646.4	1,646.4
10		-	84.3	198.0	499.2	1,206.1	1,609.6	1,694.1	1,710.1	1,659.2	1,646.6	1,648.3
11		-	88.1	205.1	510.0	1,216.0	1,619.6	1,697.0	1,710.4	1,657.2	1,647.0	1,648.0
12		-	92.8	211.5	521.1	1,228.3	1,629.1	1,698.6	1,710.9	1,656.2	1,647.5	1,649.2
13		-	98.4	216.2	533.9	1,245.2	1,638.1	1,701.1	1,711.4	1,655.1	1,648.4	1,649.2
14		2.48	103.1	223.6	546.7	1,260.4	1,647.6	1,705.1	1,710.4	1,653.7	1,648.4	1,648.8
15		7.46	107.6	258.2	559.0	1,273.9	1,657.1	1,708.5	1,709.1	1,653.2	1,649.1	1,648.0
16		10.0	110.7	282.2	572.4	1,290.8	1,666.8	1,711.5	1,706.6	1,652.6	1,648.5	1,649.5
17		12.4	113.1	299.4	597.6	1,308.4	1,673.8	1,711.5	1,707.1	1,651.4	1,648.1	1,653.1
18		14.9	117.4	309.9	621.8	1,323.8	1,682.7	1,711.6	1,705.9	1,651.4	1,647.6	1,655.9
19		18.6	121.9	317.2	645.2	1,336.9	1,686.1	1,710.6	1,704.6	1,650.2	1,648.4	1,657.8
20		21.9	126.1	322.3	703.3	1,348.8	1,690.6	1,714.2	1,702.7	1,648.8	1,649.5	1,659.2
21		24.2	130.9	326.8	771.5	1,362.3	1,693.7	1,718.5	1,697.1	1,646.9	1,651.7	1,660.5
22		26.2	135.0	331.2	830.1	1,373.9	1,696.0	1,719.3	1,692.6	1,646.0	1,651.4	1,661.7
23		28.2	138.9	335.3	885.5	1,389.7	1,695.7	1,719.1	1,688.7	1,645.8	1,649.4	1,664.4
24		30.1	142.7	341.0	933.1	1,402.5	1,698.7	1,718.6	1,684.5	1,646.2	1,647.0	1,668.2
25		32.1	146.7	345.6	969.8	1,412.8	1,698.9	1,719.0	1,683.3	1,646.4	1,645.2	1,671.2
26		33.4	150.8	350.9	999.3	1,425.8	1,699.0	1,718.5	1,681.6	1,646.7	1,645.7	1,674.2
27		34.6	155.3	355.2	1,025.1	1,431.9	1,698.7	1,718.1	1,679.7	1,644.9	1,646.8	1,677.0
28		35.8	158.4	359.1	1,047.0	1,440.5	1,699.4	1,717.3	1,677.4	1,644.9	1,648.1	1,678.0
29		37.9	160.5	367.5	1,065.4	1,453.1	1,699.5	1,717.2	1,674.4	1,645.3	1,649.0	1,677.9
30		39.8	162.5	381.5	-----	1,468.7	1,699.4	1,716.2	1,671.5	1,644.7	1,649.9	1,677.8
31		-----	165.0	391.0	-----	1,485.2	-----	1,715.0	-----	1,644.5	1,648.7	-----
(a)	-	355.51	454.23	539.22	673.76	728.50	752.33	753.98	749.35	746.43	746.89	750.03
(b)	-	+39.8	+125.2	+226.0	+674.4	+419.9	+214.1	+15.6	-43.5	-27.0	+4.24	+29.1
(c)	-	20	190	210	380	1,470	3,390	4,060	6,500	8,120	6,630	6,560
MAX	0	39.8	165.0	391.0	1,065.4	1,485.3	1,699.5	1,719.3	1,713.2	1,670.8	1,651.7	1,678.0
MIN	0	0	41.8	167.5	400.7	1,083.8	1,501.7	1,684.3	1,671.5	1,644.5	1,644.1	1,643.0

CAL YR 1967

b -

MAX -

MIN -

WTR YR 1968

b +1,677.8

MAX 1,719.3

MIN 0

a Elevation, in feet, at end of month.

b Change in contents, in thousands of acre-feet.

c Evaporation, in acre-feet.

11-4068.7. THERMALITO AFTERBAY NEAR OROVILLE, CALIF.

LOCATION.--Lat 39°27'30", long 121°38'17", in NE¼SE¼ sec.33, T.19 N., R.3 E., at dam 195 ft northeast of centerline of outlet structure, and 5.7 miles southwest of Oroville.

RECORDS AVAILABLE.--October 1967 to September 1968.

GAGE.--Digital water-stage recorders. Datum of gage is at mean sea level (levels by California Department of Water Resources). Auxiliary digital recorder 90 ft southwest of centerline of Western Canal outlet, and 7.2 miles west of Oroville.

EXTREMES.--Maximum contents during year, 22,950 acre-ft Dec. 14 (elevation, 127.01 ft); minimum since initial operation began, 5,590 acre-ft Mar. 1.

REMARKS.--Reservoir is formed by an earthfill dam completed in 1967; diversion from the reservoir began Oct. 12, 1967. Capacity, 68,200 acre-ft between elevations 120.0 and 139.0 ft, extreme operating levels. Normal operating range is 123 to 136.5 ft. Water is released to four canals and to the Feather River from the reservoir (see sta. nos. 11-4068.8., 11-4068.9., 11-4069., 11-4069.1., 11-4069.2.). Total maximum release to the four canals is approximately 4,000 cfs. 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 furnished by California Department of Water Resources and reviewed by Geological Survey in connection with a Federal Power Commission project.

CONTENTS, IN ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	-	1,570	14,460	21,610	21,640	5,590	12,910	13,820	19,640	19,120	20,250	20,760
2	-	1,570	15,340	21,640	21,420	5,790	15,490	13,640	19,560	19,460	20,380	20,920
3	-	1,570	17,430	21,660	20,600	7,790	16,790	13,510	19,590	20,010	20,520	20,550
4	-	1,570	19,590	21,860	19,900	9,980	15,540	13,460	20,200	20,360	20,220	19,850
5	-	1,570	19,930	22,020	19,060	12,410	15,720	13,440	20,010	20,710	20,300	19,960
6	-	1,570	20,490	21,970	18,750	17,480	15,770	13,550	18,830	20,550	20,380	19,750
7	-	1,570	20,650	21,750	18,600	17,890	15,800	13,550	18,800	20,090	20,220	19,590
8	-	1,570	21,060	21,580	18,060	18,520	15,820	13,730	18,910	20,040	20,250	19,850
9	-	1,570	21,420	21,520	18,940	15,940	16,060	13,820	18,960	20,870	20,170	20,060
10	-	1,570	21,880	21,640	18,240	14,690	16,300	14,140	18,800	19,380	20,200	19,320
11	-	1,570	22,410	21,520	17,430	15,180	16,450	14,670	18,700	20,870	20,280	20,520
12	270	1,570	22,750	21,910	16,010	15,870	16,280	15,320	18,940	20,440	20,120	21,200
13	1,300	1,570	22,810	22,020	8,390	16,180	15,582	16,990	19,060	19,980	20,180	20,870
14	1,570	1,690	22,950	21,910	6,230	17,780	14,690	16,330	19,060	20,060	20,380	20,820
15	1,570	2,350	22,690	21,200	5,840	18,650	14,300	16,620	19,200	20,170	20,600	20,710
16	1,570	4,100	22,690	20,600	5,880	16,990	15,020	17,180	20,200	20,360	20,710	20,200
17	1,570	6,540	22,670	19,850	5,760	15,420	18,650	16,910	18,140	20,380	20,600	19,960
18	1,570	7,050	22,720	20,280	5,730	15,630	15,020	18,320	18,370	20,550	20,550	19,850
19	1,570	7,000	22,690	20,870	5,760	17,860	14,670	19,480	18,500	20,550	20,380	20,060
20	1,570	7,680	22,690	20,330	5,710	17,480	14,740	20,140	18,780	20,490	20,170	20,330
21	1,570	8,850	22,670	20,440	5,730	17,380	14,970	19,960	18,750	20,410	20,330	20,280
22	1,570	10,040	22,640	20,920	5,690	19,590	15,390	19,640	18,650	20,490	20,600	20,170
23	1,570	11,200	22,640	21,520	5,680	20,650	15,200	19,750	18,650	20,060	20,820	20,170
24	1,570	12,260	22,580	21,770	5,660	20,220	13,870	19,590	18,650	20,060	21,140	19,960
25	1,570	12,690	22,580	21,860	5,650	19,320	13,840	19,480	18,700	20,280	21,010	20,410
26	1,570	13,060	22,750	22,110	5,640	18,040	13,690	19,610	18,750	20,300	20,650	19,300
27	1,570	13,240	22,720	22,130	5,620	16,590	14,090	19,690	18,680	20,380	20,380	17,990
28	1,570	13,370	22,220	22,130	5,610	13,690	14,370	19,610	18,860	20,360	20,060	16,640
29	1,570	13,710	21,580	22,810	5,000	13,260	14,140	19,560	18,940	20,380	20,440	15,300
30	1,570	14,070	21,520	22,810	-----	11,630	13,960	19,540	18,990	20,490	20,490	16,740
31	1,570	-----	21,580	22,410	-----	10,550	-----	19,590	-----	20,490	20,650	-----
(a)	119.10	123.53	126.52	126.82	-	121.88	123.48	125.78	125.55	126.12	126.18	124.66
(b)	+1,570	+12,500	+7,510	+830	-16,810	+4,950	+3,410	+5,630	-600	+1,500	+160	-3,210
(c)	49	263	548	303	224	538	1,200	1,520	2,340	2,940	2,550	2,380
MAX	1,570	14,070	22,950	22,810	21,640	20,650	18,650	20,140	20,200	20,870	21,140	21,200
MIN	0	1,570	14,460	19,850	5,600	5,590	12,910	13,440	18,140	19,120	20,060	15,300
CAL YR 1967	b -			MAX -			MIN -					
WTR YR 1968	b +16,740			MAX 22,950			MIN 0					

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet.

SACRAMENTO RIVER BASIN

11-4068.8. WESTERN CANAL AT INTAKE, NEAR OROVILLE, CALIF.

LOCATION.--Lat 39°30'19", long 121°41'06", in SW¼NW¼ sec.18, T.19 N., R.3 E., on left bank 500 ft downstream from Thermalito Afterbay Dam, and 7.3 miles west of Oroville.

RECORDS AVAILABLE.--October 1967 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by California Department of Water Resources.).

EXTREMES.--Maximum daily discharge, 955 cfs May 4, 5; no flow for many days

REMARKS.--Water is diverted from Thermalito Afterbay. Water is used for irrigation. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	-	307	164	161			0	911	624	706	670	430
2	-	307	148	162			0	940	632	714	664	430
3	-	307	80	161			0	952	640	720	660	430
4	-	292	0	87			0	955	676	718	660	418
5	-	292	0	0			0	955	686	720	656	416
6	-	292	82	0			0	941	678	716	656	406
7	-	307	164	0			0	930	650	716	646	392
8	-	323	134	0			64	919	636	714	646	380
9	-	323	133	0			259	857	636	710	630	360
10	-	323	134	0			340	769	598	698	632	344
11	-	323	134	0			329	686	582	694	628	281
12	-	323	136	0			319	663	590	698	630	220
13	100	292	136	0			308	645	590	692	630	172
14	292	323	161	0			298	639	610	694	620	153
15	292	355	176	0			322	582	624	694	616	131
16	277	292	174	0			399	558	632	694	594	119
17	277	307	176	0			427	548	640	682	550	88
18	292	292	168	0			495	518	646	678	542	72
19	292	277	168	0			580	507	678	682	520	72
20	287	277	168	0			674	505	692	682	512	72
21	292	323	168	0			725	502	692	682	500	72
22	292	323	168	0			756	499	692	682	498	72
23	292	339	168	0			764	496	692	678	484	70
24	292	307	168	0			745	494	690	676	478	72
25	292	307	167	0			774	491	690	682	462	149
26	292	292	167	0			823	488	698	684	446	201
27	292	292	168	0			854	485	706	674	440	197
28	292	292	167	0			854	483	716	672	446	198
29	292	277	163	0			885	515	694	672	440	200
30	292	262	162	0	-----		904	520	694	670	432	200
31	307	-----	160	0	-----		-----	576	-----	672	432	-----
TOTAL	-	9,148	4,462	571	0	0	12,898	20,529	19,704	21,466	17,420	6,817
MEAN	-	305	144	18.4	0	0	430	662	657	692	562	227
MAX	-	355	176	162	0	0	904	955	716	720	670	430
MIN	-	262	0	0	0	0	0	483	582	670	432	70
AC-FT	-	18,140	8,850	1,130	0	0	25,580	40,720	39,080	42,580	34,550	13,520

CAL YR 1967 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1968 TOTAL - MEAN - MAX - MIN - AC-FT -

867

LOCATION.--Lat 39°30'19", long 121°41'06", in SW¹/₄ sec.18, T.19 N., R.3 E., on right bank 500 ft downstream from axis of Thermalito Afterbay Dam, and 7.3 miles west of Oroville.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (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 diversion and storage from Feather River at Lake Oroville.

DISCHARGE, IN CUBIC FEET PER SECOND, APRIL TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							-	257	216	245	236	107
2							-	256	214	245	237	111
3							-	256	213	245	238	112
4							-	256	236	244	237	110
5							-	256	244	246	237	108
6							-	256	244	248	215	107
7							-	256	245	243	204	108
8							-	257	245	243	205	108
9							-	256	245	244	204	108
10							-	257	246	243	205	108
11							-	225	245	245	205	59
12							-	214	245	248	165	27
13							46	214	245	245	147	24
14							84	212	245	245	147	24
15							124	215	246	237	149	24
16							150	216	245	235	150	24
17							232	215	245	235	151	24
18							277	217	246	236	150	24
19							277	216	246	236	148	24
20							276	215	246	236	122	10
21							275	216	245	236	107	5.0
22							277	214	245	236	107	5.0
23							276	214	245	236	109	5.0
24							275	215	244	236	110	3.0
25							276	215	245	236	108	0
26							233	216	245	236	110	0
27							199	217	243	236	111	0
28							200	217	243	237	111	0
29							238	216	243	235	111	0
30					-----		257	216	244	235	112	0
31		-----			-----		-----	216	-----	235	112	-----
TOTAL							-	7,094	7,244	7,438	4,960	1,369.0
MEAN							-	229	241	240	160	45.6
MAX							-	257	246	248	238	112
MIN							-	212	213	235	107	0
AC-FT							-	14,070	14,370	14,750	9,840	2,720
CAL YR 1967	TOTAL -		MEAN -		MAX -		MIN -		AC-FT -			
WTR YR 1968	TOTAL -		MEAN -		MAX -		MIN -		AC-FT -			

SACRAMENTO RIVER BASIN

11-4069. PACIFIC GAS AND ELECTRIC CO. LATERAL AT INTAKE, NEAR OROVILLE, CALIF.

LOCATION.--Lat 39°29'22", long 121°41'12", in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.19, T.19 N., R.3 E., on right bank 82 ft downstream from axis of Thermalito Afterbay Dam, and 7.2 miles west of Oroville.

RECORDS AVAILABLE.--April to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by California Department of Water Resources).

EXTREMES.--Maximum daily discharge during period April to September, 27 cfs Apr. 26-28; no flow for many days.

REMARKS.--Flow regulated at Outlet Works from Thermalito Afterbay; water is used for irrigation.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, APRIL TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							-	10	9.0	10	11	4.2
2							-	10	9.0	10	11	4.2
3							-	10	9.0	11	11	4.2
4							-	10	9.0	10	11	4.3
5							-	10	9.0	9.9	11	4.3
6							-	10	9.2	9.9	11	3.8
7							-	10	9.4	10	11	1.7
8							-	10	9.4	10	11	.30
9							-	9.9	9.4	9.9	11	0
10							-	9.9	9.4	10	11	0
11							-	9.9	9.4	11	11	0
12							-	9.9	9.4	11	8.8	0
13							-	7.8	9.4	11	8.6	0
14							-	6.6	9.4	11	8.8	0
15							-	6.6	9.4	11	8.8	0
16							-	7.0	9.4	11	8.8	0
17							-	7.4	9.4	11	8.8	0
18							-	8.8	9.2	11	7.8	0
19							-	9.7	9.2	11	6.4	0
20							10	9.7	9.4	12	6.3	0
21							19	8.0	9.4	12	6.3	0
22							20	7.0	9.9	12	6.3	0
23							20	7.0	10	12	6.3	0
24							23	7.0	10	12	6.3	0
25							26	7.0	10	12	6.3	0
26							27	7.0	10	12	6.3	0
27							27	7.0	10	12	6.3	0
28							27	8.2	10	12	6.1	0
29							23	9.0	10	11	5.5	0
30							13	9.0	10	11	4.8	0
31							-----	9.0	-----	11	4.7	-----
TOTAL							-	268.4	284.7	340.7	259.3	27.00
MEAN							-	8.66	9.49	11.0	8.36	.90
MAX							-	10	10	12	11	4.3
MIN							-	6.6	9.0	9.9	4.7	0
AC-FT							-	532	565	676	514	54
CAL YR 1967	TOTAL -		MEAN -		MAX -		MIN -		AC-FT -			
WTR YR 1968	TOTAL -		MEAN -		MAX -		MIN -		AC-FT -			

11-4069.1. SUTTER BUTTE CANAL AT INTAKE, NEAR OROVILLE, CALIF.

LOCATION.--Lat 39°27'01", long 121°39'27", in NW corner of Boga Fernandez Grant, T.18 N., R.3 E., on left bank 675 ft downstream from Thermalito Afterbay Dam, and 6.8 miles southwest of Oroville.

RECORDS AVAILABLE.--November 1967 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by California Department of Water Resources).

EXTREMES.--Maximum daily discharge during period November to September, 2,110 cfs Apr. 22-24; no flow for many days.

REMARKS.--Water is diverted from Thermalito Afterbay. Water is used for irrigation. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, NOVEMBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		-	35	20	8.6	16	215	1,940	1,430	1,560	1,450	1,130
2		-	35	20	0	13	247	1,990	1,440	1,560	1,460	1,130
3		-	35	20	0	49	234	2,000	1,460	1,580	1,460	1,150
4		-	35	20	0	35	228	2,040	1,490	1,590	1,450	1,150
5		-	35	20	0	23	222	2,000	1,470	1,600	1,450	1,160
6		-	35	20	0	20	266	1,960	1,480	1,620	1,430	1,120
7		-	35	6.9	0	21	308	1,880	1,500	1,620	1,420	1,090
8		-	35	0	4.6	12	401	1,850	1,500	1,600	1,410	1,090
9		-	35	0	15	1.2	562	1,870	1,500	1,590	1,400	1,040
10		-	35	0	15	1.2	738	1,700	1,500	1,580	1,400	964
11		-	29	0	15	1.0	917	1,530	1,500	1,580	1,400	938
12		-	20	0	15	111	1,070	1,520	1,500	1,590	1,410	891
13		-	20	0	15	148	1,250	1,450	1,500	1,590	1,400	816
14		-	20	0	15	140	1,340	1,400	1,500	1,580	1,390	753
15		-	20	0	15	143	1,360	1,370	1,500	1,550	1,380	743
16		-	20	0	15	143	1,480	1,370	1,480	1,520	1,360	710
17		2.5	20	0	15	143	1,690	1,340	1,470	1,500	1,350	668
18		15	20	0	15	140	1,880	1,350	1,510	1,500	1,350	659
19		15	20	0	15	143	2,060	1,340	1,540	1,510	1,340	632
20		15	20	0	7.5	148	2,050	1,340	1,550	1,500	1,300	562
21		15	20	0	0	145	2,090	1,340	1,560	1,500	1,260	532
22		15	20	0	0	148	2,110	1,350	1,560	1,460	1,240	532
23		15	20	0	0	150	2,110	1,370	1,560	1,480	1,170	532
24		15	20	0	0	150	2,110	1,370	1,560	1,510	1,120	532
25		15	20	0	0	148	2,100	1,370	1,550	1,510	1,100	528
26		15	20	7.9	29	145	2,040	1,360	1,560	1,510	1,100	524
27		20	20	18	37	143	1,950	1,360	1,560	1,510	1,090	532
28		35	20	18	27	138	1,900	1,360	1,560	1,520	1,080	528
29		35	20	18	20	138	1,920	1,360	1,580	1,510	1,110	541
30		35	20	18	-----	138	1,970	1,370	1,580	1,480	1,130	536
31		-----	20	18	-----	138	-----	1,400	-----	1,440	1,130	-----
TOTAL		-	779	224.8	298.7	3,032.4	38,818	48,250	45,450	47,750	40,540	23,713
MEAN		-	25.1	7.25	10.3	97.8	1,294	1,556	1,515	1,540	1,308	790
MAX		-	35	20	37	150	2,110	2,040	1,580	1,620	1,460	1,160
MIN		-	20	0	0	1.0	215	1,340	1,430	1,440	1,080	524
AC-FT		-	1,550	446	592	6,010	76,990	95,700	90,150	94,710	80,410	47,030

CAL YR 1967 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1968 TOTAL - MEAN - MAX - MIN - AC-FT -

Note.--No gage-height record Nov. 17 to Feb. 20.

SACRAMENTO RIVER BASIN

11-4069.2. THERMALITO AFTERBAY RELEASE TO FEATHER RIVER, NEAR OROVILLE, CALIF.

LOCATION.--Lat 39°27'23", long 121°38'10", in NW¼SE¼ sec.33, T.19 N., R.3 E., on left bank of outlet channel 955 ft downstream from centerline of Thermalito Afterbay Dam, and 5.7 miles southwest of Oroville.

RECORDS AVAILABLE.--November 1967 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 100 ft above mean sea level (levels by California Department of Water Resources).

EXTREMES.--Maximum discharge during period November to September, 5,420 cfs Feb. 13 (gage height, 17.88 ft); no flow for many days.

REMARKS.--Flow completely regulated by gates at Thermalito Afterbay Outlet 955 ft upstream. See schematic diagram showing diversions and storage from Feather River at Lake Oroville. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, NOVEMBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		-	0	400	400	0	394	1,700	2,030	4.0	0	406
2		-	0	400	400	0	415	1,910	1,930	0	0	406
3		-	0	400	394	0	425	2,940	1,840	0	0	406
4		-	0	406	387	0	405	3,250	1,680	0	0	400
5		-	0	406	387	0	395	3,270	1,460	0	0	400
6		-	0	400	381	115	397	2,840	834	0	0	394
7		-	0	400	394	394	397	2,020	402	0	0	394
8		-	0	400	400	394	396	1,820	400	0	0	394
9		-	0	400	400	387	400	1,050	400	0	0	394
10		-	0	400	400	387	396	407	400	0	0	394
11		-	0	400	400	381	394	405	399	0	0	394
12		-	0	400	416	381	395	397	400	0	0	400
13		-	0	400	3,500	387	391	1,140	401	0	0	400
14		-	0	400	983	389	400	2,140	403	0	0	400
15		-	0	400	222	401	400	722	740	0	0	394
16		0	0	394	82	395	400	1,250	896	0	0	394
17		0	0	394	53	395	400	2,400	898	0	0	394
18		0	0	394	48	382	400	2,430	900	0	0	394
19		0	0	394	31	386	400	2,350	1,050	0	180	394
20		0	0	394	78	405	400	1,690	1,300	0	172	394
21		0	0	394	56	410	400	1,010	1,310	0	172	400
22		0	0	394	82	416	608	2,200	1,700	0	170	394
23		0	0	394	29	398	897	2,480	1,700	0	170	394
24		0	0	400	34	92	887	2,690	1,560	0	170	394
25		0	0	400	24	282	881	2,740	948	0	189	394
26		0	96	400	9.6	420	879	2,800	535	0	400	394
27		0	190	400	0	406	900	2,860	393	0	400	413
28		0	272	400	0	385	909	2,850	387	0	387	400
29		0	400	400	0	395	1,090	2,550	381	0	387	400
30		0	400	400	-----	395	1,520	2,380	352	0	387	413
31		-----	400	400	-----	384	-----	2,210	-----	0	406	-----
TOTAL		-	1,758	12,364	9,990.6	9,562	16,971	62,901	28,029	4.0	3,590	11,942
MEAN		-	56.7	399	345	308	566	2,029	934	.13	116	398
MAX		-	400	406	3,500	420	1,520	3,270	2,030	4.0	406	413
MIN		-	0	394	0	0	391	397	352	0	0	394
AC-FT		-	3,490	24,520	19,820	18,970	33,660	124,800	55,590	7.9	7,120	23,690
CAL YR 1967 TOTAL -			MEAN -	MAX -	MIN -	AC-FT -						
WTR YR 1968 TOTAL -			MEAN -	MAX -	MIN -	AC-FT -						

SACRAMENTO RIVER BASIN

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11-4070. FEATHER RIVER AT OROVILLE, CALIF.

LOCATION.--Lat 39°31'13", long 121°32'48", in SW¼ sec. 8, T.19 N., R.4 E., on right bank 300 ft upstream from fish barrier dam on Feather River, and 0.6 mile northeast of Oroville business district.

DRAINAGE AREA.--3,624 sq mi.

RECORDS AVAILABLE.--October 1901 to September 1968. October 1934 to September 1961 published as "near Oroville." Monthly discharge only for some periods published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is 148.97 ft above mean sea level (levels by California Department of Water Resources). Jan. 1, 1902, to Dec. 15, 1912, staff gages at several locations 0.2 mile downstream at various datums. Dec. 16, 1912, to Sept. 30, 1934, graphic water-stage recorder at site 0.2 mile downstream at datum 139.53 ft above mean sea level, datum of 1929. Oct. 1, 1934, to June 30, 1962, graphic water-stage recorder at site 5.0 miles upstream at datum 182.02 ft above mean sea level, datum of 1929. July 1, 1962, to Sept. 30, 1964, graphic water-stage recorder at site 0.2 mile downstream at mean sea level datum, datum of 1929.

AVERAGE DISCHARGE.--67 years, 5,816 cfs (4,211,000 acre-ft per year) adjusted for diversions in and out of, change in storage of, and evaporation from Lake Oroville, Thermalito Forebay, and Thermalito Afterbay.

EXTREMES (river only).--Maximum discharge during year, 6,450 cfs Oct. 3 (gage height, 3.70 ft); minimum daily, 314 cfs Apr. 18, June 9, 10, 13.

1901-68: Maximum discharge observed, 230,000 cfs Mar. 19, 1907 (elevation, 167.5 ft above mean sea level, datum of 1929); minimum, 300 cfs (estimated), Nov. 9, 1931.

(combined).--Maximum discharge during year, 6,490 cfs Oct. 3; minimum daily, 354 cfs Apr. 18.

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.

REMARKS.--Records excellent. Flow regulated by Lake Oroville (see sta. no. 11-4068.) and other powerplants and reservoirs above station. Several diversions above station for power and irrigation. See REMARKS for upstream stations and schematic diagrams showing diversions from Feather River at Lake Oroville and for South Fork Feather River basin. Records of water temperatures, and suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Water-stage recorder graph and 11 discharge measurements furnished by California Department of Water Resources in connection with a Federal Power Commission project.

REVISIONS (water year).--1967 report: 1966.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,180	2,910	948	401	392	750	410	410	410	402	412	412
2	3,560	3,250	948	401	401	810	382	420	410	412	412	412
3	4,970	3,100	935	401	401	810	420	392	410	412	421	422
4	3,980	2,570	935	410	401	822	430	392	392	402	421	431
5	3,560	1,940	922	420	401	786	441	392	387	412	412	402
6	3,470	2,510	909	420	401	580	420	392	402	402	412	402
7	3,620	2,890	909	420	401	420	401	401	402	412	412	402
8	3,230	1,570	909	430	392	392	401	382	393	422	412	402
9	3,070	1,190	909	401	392	392	401	392	384	412	412	393
10	3,140	1,190	909	420	401	401	401	392	384	412	412	402
11	2,490	1,180	896	410	410	420	401	401	393	412	412	402
12	2,100	1,750	896	410	420	410	410	410	393	407	402	412
13	2,160	2,380	896	420	430	410	410	483	384	412	402	422
14	2,950	1,480	890	401	494	382	401	401	412	412	402	431
15	2,910	1,140	896	401	774	401	401	392	402	412	392	431
16	2,630	970	909	401	810	420	392	392	402	412	392	422
17	2,950	942	909	410	786	392	363	401	412	412	412	431
18	2,730	956	922	401	810	401	354	401	412	412	412	431
19	2,710	970	909	392	822	372	382	392	402	412	412	431
20	2,630	970	909	392	822	420	401	392	393	412	412	431
21	2,140	956	909	410	834	401	410	392	410	412	397	422
22	2,120	956	834	410	822	382	401	401	412	412	402	412
23	2,290	970	810	410	822	472	401	410	412	412	402	402
24	2,630	1,050	810	392	810	738	401	420	412	412	402	402
25	2,650	1,430	810	392	798	410	401	420	412	402	412	393
26	2,870	1,430	692	392	810	410	401	420	402	402	412	393
27	2,450	1,430	624	401	822	410	401	420	412	402	412	402
28	1,690	1,370	547	401	822	420	401	410	412	402	422	402
29	1,620	970	420	420	834	410	401	410	402	402	422	402
30	1,890	956	401	420	-----	410	410	410	393	408	412	393
31	2,850	-----	401	392	-----	410	-----	410	-----	408	412	-----
TOTAL	85,240	47,376	25,523	12,602	17,935	15,064	12,050	12,553	12,058	12,689	12,695	12,347
MEAN	2,750	1,579	823	407	618	486	402	405	402	409	410	412
MAX	4,970	3,250	948	430	834	822	441	483	417	422	422	431
MIN	1,180	942	401	392	392	372	354	382	384	402	392	393
AC-FT	169,100	93,970	50,620	25,000	35,570	29,880	23,900	24,900	23,920	25,170	25,180	24,490
Mean a	2,887	2,664	3,049	4,263	12,204	7,593	6,353	5,165	2,993	2,496	2,592	2,272
Ac-ft at 177,500	158,500	187,500	262,100	702,000	466,900	378,000	317,600	178,100	153,500	159,400	135,200	

CAL YR 1967 TOTAL 2,670,639 MEAN 7,317 MAX 48,300 MIN 401 AC-FT 5,297,000 MEAN a 7,607 AC-FT a 5,507,300
WTR YR 1968 TOTAL 278,132 MEAN 760 MAX 4,970 MIN 354 AC-FT 551,700 MEAN a 4,513 AC-FT a 3,276,300

a Adjusted for diversions in and out of, change in storage of, and evaporation from Lake Oroville, Thermalito Forebay, and Thermalito Afterbay.

SACRAMENTO RIVER BASIN

11-4071.5. FEATHER RIVER NEAR GRIDLEY, CALIF.

LOCATION.--Lat 39°22'00", long 121°38'46", in SW $\frac{1}{4}$ sec.33, T.18 N., R.3 E., on right bank 300 ft upstream from highway bridge, and 2.7 miles east of Gridley.

DRAINAGE AREA.--3,676 sq mi.

RECORDS AVAILABLE.--October 1964 to September 1968. January 1944 to September 1964 are published in reports by California Department of Water Resources.

GAGE.--Digital water-stage recorder. Gage is set to datum of Corps of Engineers which is 2.91 ft below mean sea level. Prior to Mar. 13, 1966, graphic water-stage recorder on left bank at same datum.

EXTREMES.--Maximum discharge during year, 5,420 cfs Feb. 13 (gage height, 27.24 ft); minimum daily, 366 cfs July 26.

1964-68: Maximum discharge, 151,000 cfs Dec. 23, 1964 (gage height, 100.43 ft); minimum daily, 117 cfs June 27, 1966.

Flood of Dec. 23, 1955, reached a stage of 102.25 ft, discharge unknown.

REMARKS.--Flow regulated by Lake Oroville since November 1967 (see sta. no. 11-4068.) and Thermalito Afterbay release to the Feather River since December 1968 (see sta. no. 11-4069.2.). See schematic diagram showing diversions and storage from Feather River at Lake Oroville. Records of water temperatures and suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	697	2,690	964	892	1,040	867	843	2,050	2,490	574	426	824
2	1,910	3,120	953	897	1,090	857	828	2,180	2,360	509	410	819
3	3,880	3,000	953	893	1,070	880	838	3,260	2,290	457	404	830
4	3,290	2,730	931	889	1,050	863	850	3,720	2,140	428	408	831
5	2,700	1,980	920	911	1,030	868	847	3,750	1,930	419	408	854
6	2,690	1,990	920	923	988	864	824	3,490	1,480	422	400	851
7	2,780	2,840	920	925	1,010	877	807	2,530	962	415	389	850
8	2,470	2,170	920	931	996	855	816	2,320	942	420	389	844
9	2,440	1,210	920	937	966	822	824	1,760	925	419	389	848
10	2,200	1,260	920	990	964	817	816	980	911	410	395	837
11	1,980	1,230	920	930	953	821	814	975	917	406	396	852
12	1,600	1,470	920	931	953	820	814	1,000	908	403	390	862
13	1,190	2,190	920	931	3,220	868	802	1,380	865	407	388	866
14	2,290	1,930	920	955	1,990	839	808	3,060	870	404	393	860
15	2,200	1,190	920	998	1,050	841	802	1,050	1,070	396	393	854
16	2,170	1,070	931	965	1,020	888	622	2,010	1,280	396	394	1,030
17	2,240	994	931	942	1,010	866	756	2,590	1,280	391	404	913
18	2,090	975	942	906	966	846	768	2,970	1,290	381	404	880
19	2,020	991	942	873	989	840	771	2,910	1,350	379	503	872
20	1,950	985	942	779	1,080	858	768	2,500	1,610	377	558	860
21	1,850	959	903	875	1,090	868	786	1,280	1,610	378	555	856
22	1,380	964	905	899	1,060	860	893	2,650	1,960	381	559	847
23	1,670	964	868	930	1,010	853	1,210	2,890	2,020	381	584	859
24	1,810	1,160	860	972	974	823	1,190	3,140	1,910	381	591	858
25	2,140	1,470	860	1,070	943	884	1,180	3,210	1,440	374	598	856
26	2,110	1,470	893	1,020	929	797	1,180	3,240	1,020	366	745	852
27	2,300	1,480	863	992	921	848	1,210	3,290	831	370	793	864
28	1,880	1,420	909	1,010	909	843	1,260	3,300	814	379	788	868
29	1,610	987	906	1,080	909	835	1,370	3,060	762	374	784	875
30	1,450	984	887	1,110	-----	845	1,780	2,820	795	373	795	881
31	2,500	-----	888	1,050	-----	847	-----	2,680	-----	392	819	-----
TOTAL	65,487	47,873	28,351	29,406	32,180	26,360	28,077	78,045	41,032	12,562	15,852	25,853
MEAN	2,112	1,596	915	949	1,110	850	936	2,518	1,368	405	511	862
MAX	3,880	3,120	964	1,110	3,220	888	1,780	3,750	2,490	574	819	1,030
MIN	697	959	860	779	909	797	622	975	762	366	388	819
AC-FT	129,900	94,950	56,230	58,330	63,830	52,280	55,690	154,800	81,390	24,920	31,440	51,280
CAL YR 1967	TOTAL 2,362,260		MEAN 6,472		MAX 45,000	MIN 697		AC-FT 4,685,000				
WTR YR 1968	TOTAL 431,078		MEAN 1,178		MAX 3,880	MIN 366		AC-FT 855,000				

SACRAMENTO RIVER BASIN

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11-4075. SOUTH HONCUT CREEK NEAR BANGOR, CALIF.

LOCATION (revised).--Lat 39°22'04", long 121°22'16", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.35, T.18 N., R.5 E., on right bank 2.3 miles southeast of Bangor, 3.3 miles upstream from Tennessee Creek, and 16.3 miles southeast of Oroville.

DRAINAGE AREA.--30.6 sq mi.

RECORDS AVAILABLE.--October 1950 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 620 ft (from topographic map). Prior to Oct. 9, 1963, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--18 years, 34.4 cfs (24,900 acre-ft per year); median of yearly mean discharges, 27 cfs (19,500 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,740 cfs Feb. 19 (gage height, 7.55 ft); no flow July 27, 31, Aug. 1, 2, 1950-68; Maximum discharge, 17,600 cfs Dec. 26, 1964 (gage height, 19.25 ft), from rating curve extended above 2,200 cfs on basis of slope-area measurements at gage heights 11.15 and 19.25 ft; no flow at times in most years.

REMARKS.--Records good except those for period May to September, which are poor. Some small diversions upstream for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.44	.76	15	4.6	74	23	17	4.4	1.4	.11	0	.80
2	1.3	.63	7.2	4.7	329	21	17	4.1	1.3	.10	0	.85
3	4.7	.60	42	4.4	141	18	14	3.8	1.3	.11	.01	1.0
4	1.9	.98	38	3.7	76	17	13	3.7	1.5	.36	.05	.91
5	1.5	1.5	69	3.5	49	16	13	3.7	1.8	.41	.06	.97
6	1.4	1.5	14	3.4	35	15	11	4.3	2.6	.25	.06	1.0
7	1.4	1.6	59	3.3	28	17	11	3.4	3.2	.21	.05	.70
8	1.3	1.4	20	3.3	23	26	10	3.2	2.5	.19	.04	.46
9	1.2	1.8	9.7	3.8	20	20	11	3.2	2.2	.16	.03	.40
10	1.2	1.8	6.7	141	19	16	10	3.1	1.9	.14	.02	.37
11	1.1	1.1	5.4	30	16	14	9.5	3.2	1.8	.11	.02	.34
12	1.1	2.1	4.8	17	13	58	9.5	3.4	1.7	.10	.02	.37
13	1.1	2.7	4.2	12	18	276	7.9	3.7	1.5	.10	.04	.43
14	1.1	3.8	3.6	52	15	159	8.2	4.8	1.4	.10	.05	.52
15	.96	3.6	3.4	307	13	86	8.3	4.5	1.3	.08	.07	.62
16	.94	2.8	3.6	56	17	219	8.7	4.0	1.1	.06	.06	.62
17	.90	2.1	3.7	30	256	127	8.7	3.8	1.2	.06	.08	.62
18	.94	2.3	4.8	21	97	82	8.0	4.7	.78	.06	.21	.52
19	.97	33	4.9	16	352	59	7.4	5.1	.77	.04	.81	.37
20	.88	7.4	4.5	13	432	46	7.1	3.3	.70	.03	1.3	.34
21	.89	4.4	4.8	11	415	38	6.9	3.1	.65	.02	1.6	.37
22	1.6	3.4	4.7	10	141	33	6.2	3.0	.58	.01	1.4	.31
23	2.0	3.1	5.0	9.0	98	29	6.3	2.9	.68	.01	1.1	.25
24	2.2	3.1	5.2	8.3	71	25	6.1	2.8	.80	.02	.84	.25
25	2.2	3.1	4.9	7.5	52	24	5.8	2.9	.37	.01	.89	.21
26	1.6	3.1	4.8	6.3	39	21	5.4	2.7	.34	.01	1.0	.15
27	1.2	3.3	4.8	5.6	34	20	4.8	2.3	.25	0	.95	.13
28	1.0	4.0	4.7	5.6	29	19	4.5	2.1	.23	.01	.90	.31
29	.84	23	4.9	45	26	19	4.7	2.1	.19	.01	.77	.11
30	.70	23	5.3	739	-----	17	4.5	1.9	.14	.01	.65	.11
31	.83	-----	5.1	145	-----	16	-----	1.5	-----	0	.85	-----
TOTAL	41.39	146.97	377.7	1,722.0	2,928	1,576	265.5	104.7	36.18	2.89	13.93	14.41
MEAN	1.34	4.90	12.2	55.5	101	50.8	8.85	3.38	1.21	.093	.45	.48
MAX	4.7	33	69	739	432	276	17	5.1	3.2	.41	1.6	1.0
MIN	.44	.60	3.4	3.3	13	14	4.5	1.5	.14	0	0	.11
AC-FT	82	292	749	3,420	5,810	3,130	527	208	72	5.7	28	29

CAL YR 1967 TOTAL 15,979.03 MEAN 43.8 MAX 1,630 MIN .21 AC-FT 31,690
WTR YR 1968 TOTAL 7,229.67 MEAN 19.8 MAX 739 MIN 0 AC-FT 14,340

Peak discharge (base, 1,400 cfs).--Jan. 30 (0245 hrs) 1,580 cfs (7.35 ft); Feb. 19 (2230 hrs) 1,740 cfs (7.55 ft).

SACRAMENTO RIVER BASIN

11-4077. FEATHER RIVER AT YUBA CITY, CALIF.

LOCATION.--Lat 39°08'20", long 121°36'17", in NE $\frac{1}{4}$ sec.23, T.15 N., R.3 E., on left bank at 5th Street railroad bridge in Yuba City, 0.7 mile above confluence with Yuba River, and at mile 28.0 above mouth.

DRAINAGE AREA.--3,974 sq mi.

RECORDS AVAILABLE.--October 1964 to September 1968. November 1943 to September 1963 (prior to July 1, 1944, stage only) published in reports of California Department of Water Resources.

GAGE.--Digital water-stage recorder. Gage is set to datum of Corps of Engineers. Prior to Oct. 1, 1967, graphic water-stage recorder at same site and datum.

EXTREMES.--Maximum daily discharge during year, 5,400 cfs Feb. 21; maximum gage height, 50.13 ft Feb. 21; minimum daily, 410 cfs July 29-31, Aug. 4, 7-18.
1964-68: Maximum discharge, 172,000 cfs Dec. 23, 1964 (gage height, 76.42 ft); minimum daily, 166 cfs June 30, 1966.

REMARKS.--Flow regulated by powerplants and reservoirs. There are many diversions above the station for irrigation. Records of water temperatures and suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Gage-height record and ten discharge measurements furnished by California Department of Water Resources.

REVISIONS (water year).--1967 report: 1965.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,550	2,860	1,340	1,030	2,960	1,520	1,050	2,180	2,920	961	412	945
2	2,000	3,200	1,260	1,030	1,700	1,480	1,070	2,410	2,750	637	420	951
3	3,900	3,470	1,270	1,030	1,500	1,470	1,150	3,510	2,700	585	415	952
4	4,140	3,270	1,420	1,020	1,350	1,460	1,210	4,470	2,540	529	410	951
5	3,650	2,480	1,540	1,020	1,250	1,420	1,190	4,560	2,260	563	412	966
6	3,430	2,090	1,420	1,070	1,220	1,360	1,180	4,550	1,900	507	413	986
7	3,240	2,940	1,400	1,130	1,210	1,310	1,170	3,690	1,310	471	410	1,020
8	3,180	2,770	1,390	1,160	1,200	1,310	1,160	3,210	1,090	477	410	1,040
9	2,990	1,530	1,270	1,230	1,180	1,340	1,150	3,000	1,070	448	410	1,080
10	2,550	1,360	1,220	1,440	1,170	1,300	1,150	2,060	1,060	440	410	1,090
11	2,600	1,320	1,190	1,660	1,170	1,100	1,130	1,300	1,050	452	410	1,080
12	2,030	1,420	1,140	1,390	1,200	1,080	1,110	1,240	1,040	456	410	1,130
13	1,610	1,920	1,130	1,220	2,780	1,300	1,090	1,800	990	457	410	1,170
14	2,300	2,310	1,120	1,240	4,370	2,300	1,070	3,430	995	484	410	1,140
15	2,610	1,450	1,120	1,970	2,430	2,000	1,030	2,480	1,250	545	410	1,130
16	2,590	1,280	1,150	2,090	1,680	1,820	990	1,750	1,520	473	410	1,110
17	2,440	1,140	1,160	1,740	1,500	2,500	1,010	2,470	1,530	438	410	1,260
18	2,540	1,080	1,210	1,580	1,350	3,050	1,040	3,370	1,480	431	410	1,100
19	2,240	1,150	1,170	1,390	2,000	2,500	1,040	3,390	1,460	433	501	1,060
20	2,390	1,200	1,150	1,290	4,100	1,900	1,040	3,240	1,630	440	706	1,080
21	2,360	1,150	1,130	1,210	5,400	1,600	1,050	2,000	1,730	440	741	1,100
22	1,790	1,140	1,130	1,180	5,200	1,500	1,100	2,300	1,830	437	743	1,100
23	1,930	1,130	1,070	1,150	4,500	1,390	1,380	3,220	2,080	429	769	1,090
24	2,000	1,120	1,040	1,110	3,700	1,300	1,490	3,520	2,060	420	772	1,070
25	2,430	1,400	1,030	1,090	3,000	1,250	1,480	3,650	1,840	420	751	1,070
26	2,360	1,460	1,040	1,080	2,350	1,190	1,450	3,720	1,410	420	773	1,090
27	2,660	1,480	1,060	1,100	1,890	1,140	1,470	3,800	1,130	420	955	1,090
28	2,520	1,510	1,030	1,130	1,650	1,100	1,520	3,750	1,030	415	966	1,100
29	1,910	1,510	1,040	1,380	1,590	1,080	1,590	3,650	982	410	958	1,090
30	1,730	1,380	1,040	2,300	-----	1,070	1,800	3,240	1,030	410	940	1,100
31	2,310	-----	1,020	4,500	-----	1,050	-----	3,120	-----	410	935	-----
TOTAL	77,980	53,520	36,700	43,960	66,600	47,190	36,360	94,080	47,667	14,858	17,912	32,141
MEAN	2,515	1,784	1,184	1,418	2,297	1,522	1,212	3,035	1,589	479	578	1,071
MAX	4,140	3,470	1,540	4,500	5,400	3,050	1,800	4,560	2,920	961	966	1,260
MIN	1,550	1,080	1,020	1,020	1,170	1,050	990	1,240	982	410	410	945
AC-FT	154,700	106,200	72,790	87,190	132,100	93,600	72,120	186,600	94,550	29,470	35,530	63,750

CAL YR 1967 TOTAL 2,562,013 MEAN 7,019 MAX 50,800 MIN 914 AC-FT 5,082,000
WTR YR 1968 TOTAL 568,968 MEAN 1,555 MAX 5,400 MIN 410 AC-FT 1,129,000

Note.--Stage-discharge relationship affected by backwater from the Yuba River January to June.

RESERVOIRS IN FEATHER RIVER BASIN, CALIF.

11-3914.9. LAKE DAVIS.--Lat 39°53'03", long 120°28'31", in SW $\frac{1}{4}$ sec.1, T.23 N., R.13 E., in control house on left abutment of Grizzly Valley Dam on Big Grizzly Creek, 5.3 miles north of Portola. Drainage area, 44.0 sq mi. Records available, November 1966 to September 1968. Gage, digital water-stage recorder in control house on Grizzly Valley Dam. Datum of gage is at mean sea level (levels by California Department of Water Resources). Maximum contents during year, 65,173 acre-ft May 5 (elevation, 5,769.90 ft); minimum, 48,276 acre-ft Nov. 13 (elevation, 5,764.66 ft).

Reservoir is formed by earth and rockfill dam completed in 1967. Capacity, is 84,040 acre-ft between elevations 5,700 (top of low level intake) and 5,775 ft (crest of spillway). Dead storage, 108 acre-ft. Record of contents furnished by California Department of Water Resources.

11-3913.7. FRENCHMAN LAKE.--Lat 39°53'36", long 120°11'17", in SE $\frac{1}{4}$ sec.33, T.24 N., R.16 E., in valve chamber at center of toe of Frenchman Dam on Little Last Chance Creek, 5.4 miles upstream from the confluence with Middle Fork Feather River, and 7.1 miles north of Chilcote. Drainage area, 81.1 sq mi. Records available, October 1966 to September 1968 in reports of Geological Survey. November 1961 to September 1966 published in reports of California Department of Water Resources. Gage, digital water-stage recorder in valve house at center of toe of Frenchman Dam. Datum of gage is at mean sea level (levels by California Department of Water Resources). Maximum contents during year, 55,988 acre-ft Apr. 16 (elevation, 5,588.36 ft); minimum, 40,575 acre-ft Sept. 30 (elevation, 5,577.69 ft).

Reservoir is formed by rockfill dam completed in 1961. Capacity, 53,582 acre-ft between elevations 5,517 (invert of intake) and 5,588 ft (crest of spillway). Dead storage, 1,840 acre-ft. Record of contents furnished by California Department of Water Resources.

11-4011.2. ANTELOPE LAKE.--Lat 40°10'42", long 120°36'20", in SE $\frac{1}{4}$ sec.22, T.27 N., R.12 E., in control house at toe of Antelope Dam on Indian Creek, 1.3 miles south of Boulder Creek Guard station, 12 miles northeast of Genesee, and 13.9 miles northeast of Taylorsville. Drainage area, 68.6 sq mi. Records available, October 1966 to September 1968 in reports of Geological Survey. November 1963 to September 1966 published in reports of California Department of Water Resources. Gage, digital water-stage recorder in control house at toe of Antelope Dam. Datum of gage is at mean sea level (levels by California Department of Water Resources). Maximum contents during year, 23,531 acre-ft Feb. 24 (elevation, 5,003.08 ft); minimum, 19,411 acre-ft Sept. 30 (elevation, 4,998.53 ft).

Reservoir is formed by a rockfill dam. Storage began November 1963. Capacity, 22,239 acre-ft between elevations 4,950 (lip of intake tower) and 5,002 ft (crest of spillway). Record of contents furnished by California Department of Water Resources.

MONTH-END ELEVATIONS AND CONTENTS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

Date	Elevation (feet) ^a	Contents (acre- feet)	Change in contents (acre- feet)	Elevation (feet) ^a	Contents (acre- feet)	Change in contents (acre- feet)	Elevation (feet) ^a	Contents (acre- feet)	Change in contents (acre- feet)
Lake Davis				Frenchman Lake			Antelope Lake		
Sept. 30.....	5,964.96	49,165	-1,260	5,581.72	46,044	-1,182	5,000.98	21,574	-578
Oct. 31.....	5,764.75	48,542	-623	5,581.64	45,931	-113	5,000.77	21,348	-190
Nov. 30.....	5,764.68	48,335	-207	5,581.76	46,128	+197	5,000.85	21,456	+72
Dec. 31.....	5,765.06	49,463	+1,128	5,582.15	46,652	+524	5,001.19	21,766	+310
Cal yr 1967.....	-	-	+47,808	-	-	+8,132	-	-	+3,190
Jan. 31.....	5,765.72	51,459	+1,996	5,582.77	47,537	+885	5,002.21	22,709	+943
Feb. 28.....	5,767.36	56,618	+5,159	5,585.52	51,587	+4,050	5,002.86	23,321	+612
Mar. 31.....	5,768.88	61,655	+5,037	5,587.52	54,662	+3,075	5,002.77	23,236	-85
Apr. 30.....	5,769.86	65,033	+3,378	5,587.43	54,521	-141	5,002.71	23,179	-57
May 31.....	5,769.66	64,335	-698	5,585.72	51,889	-2,632	5,002.16	22,662	-517
June 30.....	5,769.01	62,097	-2,238	5,583.12	48,047	-3,847	5,001.34	21,903	-759
July 31.....	5,768.26	59,571	-2,526	5,581.14	45,231	-2,811	5,000.31	20,970	-933
Aug. 31.....	5,767.68	57,658	-1,913	5,578.48	41,614	-3,617	4,999.46	20,217	-753
Sept. 30.....	5,767.16	55,974	-1,684	5,577.69	40,575	-1,039	4,998.53	19,411	-806
Wtr yr 1967-68...	-	-	+6,809	-	-	-5,469	-	-	-2,163

^a Elevation at 2400 hours.

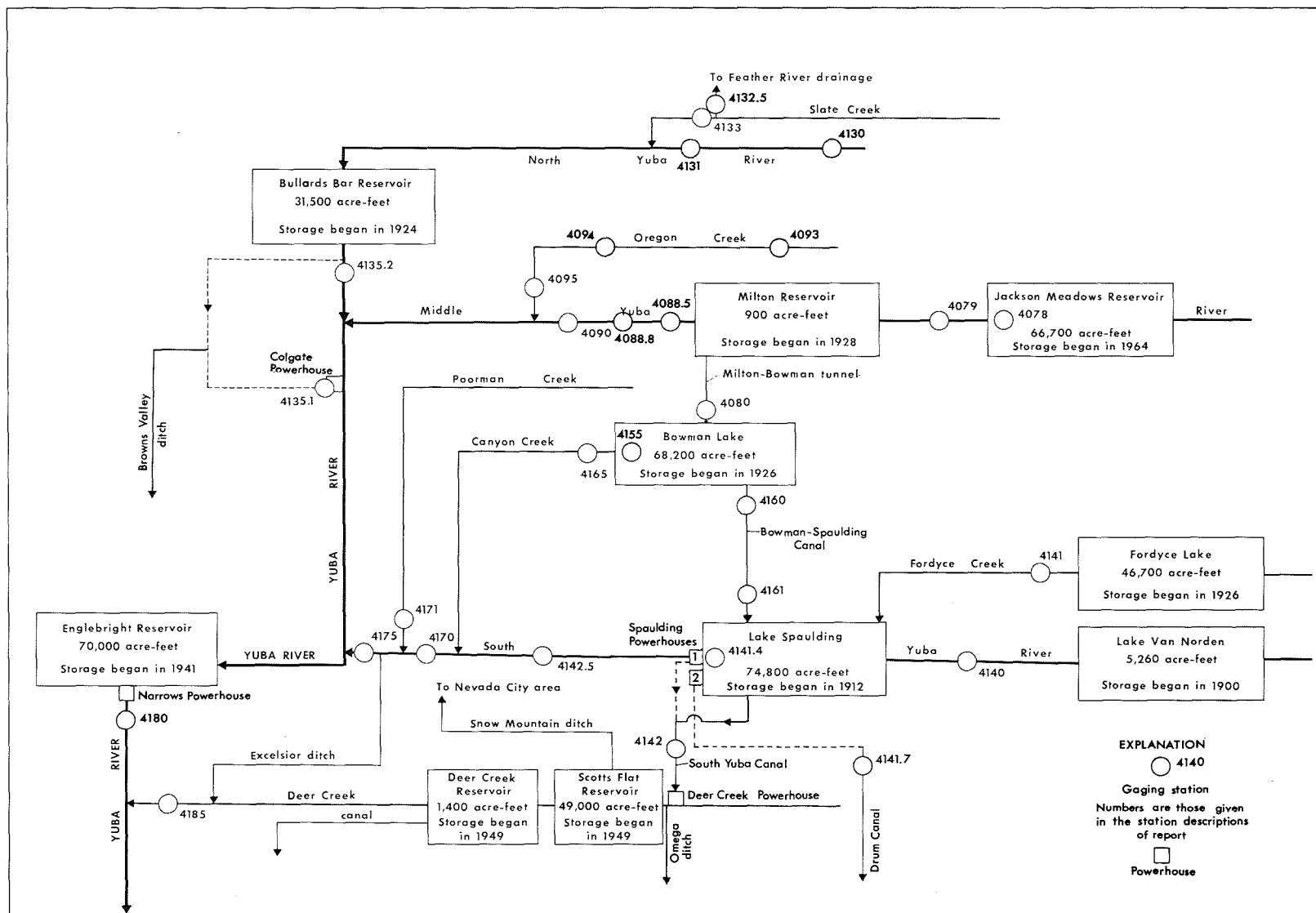


FIGURE 11.--Schematic diagram showing diversions and storage in Yuba River basin.

11-4078. JACKSON MEADOWS RESERVOIR NEAR SIERRA CITY, CALIF.

LOCATION.--Lat 39°30'40", long 120°33'15", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.18, T.19 N., R.13 E., on right bank at Jackson Meadows Dam on Middle Yuba River, 0.7 mile downstream from Pass Creek, and 5.7 miles southeast of Sierra City.

DRAINAGE AREA.--37.4 sq mi.

RECORDS AVAILABLE.--November 1964 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Nevada Irrigation District).

EXTREMES.--Maximum contents during year, 69,900 acre-ft June 11-18 (elevation, 6,036.7 ft); minimum, 31,000 acre-ft Sept. 30 (elevation, 5,994.6 ft).

1964-68: Maximum contents, 69,900 acre-ft June 11-18, 1968 (elevation, 6,036.7 ft); minimum since initial season of normal operation, 22,700 acre-ft Jan. 6, 1967 (elevation, 5,982.7 ft).

REMARKS.--Reservoir is formed by an earthfill dam. Storage began Nov. 9, 1964. Usable capacity, 66,700 acre-ft between elevations 5,933.0 (bottom of intake tower) and 6,036.0 ft (top of spillway Tainter gates). Dead storage, 2,500 acre-ft. Records, including extremes, represent total contents at 2400 hours.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

5,960	10,600	6,010	43,900
5,970	15,400	6,020	53,200
5,980	21,000	6,030	63,000
5,990	27,600	6,040	73,500
6,000	35,300		

CONTENTS, IN ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35,300	31,700		-	34,400	42,300	48,400	60,800	68,500	69,500	64,100	47,300
2	35,000	31,700		-	34,500	42,500	48,700	60,700	68,400	69,500	63,600	46,700
3	34,500	31,700		-	34,600	42,800	48,900	61,500	68,600	69,500	63,100	46,100
4	34,000	31,600		32,600	34,700	43,100	49,100	62,300	68,800	69,500	62,500	45,600
5	33,500	31,600		32,600	34,700	43,400	49,300	63,000	69,000	69,500	61,900	45,000
6	33,000	31,600		32,600	34,800	43,600	49,600	63,600	69,300	69,500	61,400	44,500
7	32,500	31,600		32,600	34,900	43,900	49,800	64,300	69,500	69,500	60,800	43,900
8	32,000	31,600		32,700	34,900	44,100	50,100	64,800	69,700	69,400	60,200	43,300
9	31,700	31,600		32,700	34,900	44,300	50,100	65,500	69,800	69,400	59,700	42,700
10	31,700	31,600		32,800	35,000	44,500	50,900	66,000	69,800	69,400	59,100	42,200
11	31,700	31,600		32,900	35,000	44,700	51,400	66,500	69,900	69,400	58,500	41,600
12	31,700	31,600		32,900	35,000	44,800	51,800	67,000	69,900	69,400	57,800	41,100
13	31,700	31,600		32,900	35,100	45,000	52,200	67,100	69,900	69,300	57,300	40,500
14	31,700	31,700		33,000	35,100	45,200	52,700	67,300	69,900	69,300	56,700	40,000
15	31,700	31,700		33,300	35,200	45,300	53,200	67,500	69,900	69,300	56,200	39,400
16	31,700	31,700		33,400	35,200	45,600	53,600	67,700	69,900	69,300	55,600	38,900
17	31,700	-		33,400	35,300	45,700	53,800	67,900	69,900	69,300	55,200	38,300
18	31,700	-		33,400	35,600	45,800	54,200	68,300	69,900	69,300	54,700	37,700
19	31,700	-		33,400	36,000	45,900	54,500	68,600	69,800	69,300	54,400	37,100
20	31,700	-		33,400	36,800	46,000	54,800	69,000	69,800	69,300	53,900	36,600
21	31,700	-		33,500	37,700	46,100	55,100	69,200	69,800	69,300	53,400	36,000
22	31,700	-		33,500	38,400	46,200	55,400	69,000	69,800	69,200	52,900	35,400
23	31,700	-		33,600	39,500	46,300	55,700	68,800	69,800	68,900	52,300	34,900
24	31,700	-		33,600	40,200	46,500	56,100	68,600	69,700	68,500	51,800	34,300
25	31,700	-		33,600	40,600	46,700	56,400	68,600	69,700	68,000	51,200	33,800
26	31,700	-		33,700	41,000	46,700	56,800	68,500	69,700	67,500	50,600	33,200
27	31,700	-		33,900	41,400	46,900	57,300	68,400	69,700	67,000	50,100	32,700
28	31,700	-		34,000	41,600	47,100	57,900	68,400	69,500	66,400	49,500	32,100
29	31,700	-		34,100	42,000	47,300	58,600	68,500	69,500	65,800	49,000	31,600
30	31,700	32,000		34,300	-----	47,700	59,300	68,600	69,500	65,000	48,400	31,000
31	31,700	-----	32,500	34,400	-----	48,000	-----	68,600	-----	64,600	47,900	-----
(a)	5,995.4	-	-	5,998.8	6,007.8	6,014.5	6,026.3	6,035.4	6,036.3	6,031.6	6,014.4	5,994.6
(b)	-4,300	+300	+500	+1,900	+7,600	+6,000	+11,300	+9,300	+900	-4,900	-16,700	-16,900
MAX	35,300	-	-	34,400	42,000	48,000	59,300	69,200	69,900	69,500	64,100	47,300
MIN	31,700	-	-	-	34,400	42,300	48,400	60,000	68,400	64,600	47,900	31,000
CAL YR 1967	b	+7,000		MAX	65,800	MIN	22,700					
WTR YR 1968	b	-5,000		MAX	69,900	MIN	31,000					

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

Note.--No elevation record Nov. 17 to Jan. 3.

SACRAMENTO RIVER BASIN

11-4079. MIDDLE YUBA RIVER BELOW JACKSON MEADOWS DAM, NEAR SIERRA CITY, CALIF.

LOCATION.--Lat 39°30'58", long 120°33'40", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.18, T.19 N., R.13 E., on right bank 0.6 mile downstream from Jackson Meadows Dam, and 5.2 miles southeast of Sierra City.

DRAINAGE AREA.--38.3 sq mi (revised).

RECORDS AVAILABLE.--October 1964 to September 1968. If record for Milton-Bowman tunnel 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.--Graphic water-stage recorder and concrete control. Datum of gage is 5,717.20 ft above mean sea level (levels by Nevada Irrigation District).

EXTREMES.--Maximum discharge during year, 508 cfs May 13 (gage height, 4.32 ft); minimum daily, 3.8 cfs Nov. 3-13.

1964-68: Maximum discharge, 2,300 cfs Sept. 1, 1965 (gage height, 6.60 ft), from rating curve extended above 1,100 cfs as explained below; minimum daily, 0.1 cfs Oct. 1, 2, 1964.

Maximum stage known since at least 1925, 10.57 ft Jan. 31, 1963, from floodmarks (discharge, 10,000 cfs, from rating curve extended above 1,100 cfs on basis of computation of maximum flow over dam, adjusted for diversion and inflow).

REMARKS.--Records good. Flow completely regulated by Jackson Meadows Reservoir (see sta. no. 11-4078.).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	248	4.0	4.6	5.5	4.6	8.8	9.4	10	230	18	202	260
2	248	4.0	4.4	5.5	5.3	8.8	8.8	10	209	17	245	260
3	248	3.8	4.4	5.3	5.5	8.8	8.5	10	93	17	254	260
4	248	3.8	4.6	5.1	4.8	8.8	8.8	10	6.0	16	248	260
5	248	3.8	5.3	5.1	4.8	8.8	8.8	10	5.8	15	254	260
6	248	3.8	4.8	5.1	4.4	8.8	8.8	10	6.0	14	257	260
7	248	3.8	4.8	4.8	4.4	8.5	9.1	9.4	15	13	267	260
8	245	3.8	4.6	4.8	4.4	8.5	9.1	9.4	38	12	257	260
9	121	3.8	4.6	4.8	4.4	7.9	9.4	9.4	60	11	260	260
10	4.0	3.8	4.6	8.5	4.4	7.6	9.8	9.4	68	9.8	260	257
11	4.0	3.8	4.6	6.0	4.6	7.6	10	9.4	76	8.8	264	257
12	4.0	3.8	4.6	4.8	4.6	7.3	10	9.1	75	7.6	260	257
13	4.0	3.8	4.6	4.6	4.6	7.3	9.8	150	75	6.0	248	257
14	4.0	4.2	5.3	5.5	4.6	7.3	9.8	101	70	5.8	251	254
15	4.0	4.0	5.1	11	4.8	7.0	9.4	95	70	5.8	278	254
16	4.0	4.2	4.8	7.3	4.6	7.0	9.4	107	70	5.8	254	254
17	4.0	4.4	4.8	5.8	7.0	6.8	8.8	86	68	5.5	225	254
18	4.0	4.6	7.0	5.5	7.0	6.8	8.5	72	63	5.4	209	254
19	4.0	4.8	6.2	5.5	12	6.5	8.5	102	62	5.3	225	254
20	4.0	4.6	5.1	5.5	20	6.5	8.8	90	56	5.3	254	257
21	4.0	4.6	4.8	5.5	19	6.5	8.8	199	48	5.1	254	260
22	4.0	4.4	4.8	5.3	13	6.8	8.5	295	47	57	257	264
23	4.0	4.4	4.8	5.3	18	6.8	8.5	281	44	146	257	264
24	4.0	4.4	4.8	5.3	13	7.0	8.5	270	39	170	260	264
25	4.0	4.4	5.1	5.3	11	7.3	9.1	260	35	212	264	264
26	4.0	4.4	5.1	5.3	9.8	7.3	9.1	245	32	254	260	260
27	4.0	4.6	5.3	5.3	9.8	7.6	9.4	245	30	264	260	264
28	4.0	4.6	5.3	4.6	9.8	8.2	9.8	207	26	257	260	264
29	4.0	4.6	5.5	5.1	9.4	9.1	10	158	22	309	260	264
30	4.0	4.6	5.5	8.8	-----	9.4	10	126	20	323	260	264
31	4.0	-----	5.5	6.0	-----	9.8	-----	187	-----	204	260	-----
TOTAL	2,190.0	125.6	155.3	177.8	233.6	241.2	275.2	3,392.1	1,758.8	2,405.2	7,824	7,781
MEAN	70.6	4.19	5.01	5.74	8.06	7.78	9.17	109	58.6	77.6	252	259
MAX	248	4.8	7.0	11	20	9.8	10	295	230	323	278	264
MIN	4.0	3.8	4.4	4.6	4.4	6.5	8.5	9.1	5.8	5.1	202	254
AC-FT	4,340	249	308	353	463	478	546	6,730	3,490	4,770	15,520	15,430
Mean a	.65	9.23	13.1	36.6	140	105	199	261	73.8	-2.11	-21.3	-24.7
Ac-ft a	40	549	808	2,250	8,060	6,480	11,850	16,030	4,390	-130	-1,180	-1,470

CAL YR 1967 TOTAL 50,536.6 MEAN 138 MAX 1,020 MIN 3.8 AC-FT 100,200 MEAN a 148 AC-FT a 107,200
 WTR YR 1968 TOTAL 26,559.8 MEAN 72.6 MAX 323 MIN 3.8 AC-FT 52,680 MEAN a 65 AC-FT a 47,680

a Adjusted for change in contents in Jackson Meadows Reservoir.

Note.--When inflow to the reservoir is small and other quantities are large, discordant figures of net runoff may appear. Records of evaporation from Jackson Meadows Reservoir are not available.

SACRAMENTO RIVER BASIN

879

11-4080. MILTON-BOWMAN TUNNEL OUTLET NEAR GRANITEVILLE, CALIF.

LOCATION.--Lat 39°27'35", long 120°36'40", in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.3, T.18 N., R.12 E., on right bank 100 ft downstream from tunnel outlet near upper end of Bowman Lake, and 6.9 miles east of Graniteville.

RECORDS AVAILABLE.--May 1928 to September 1930, February 1931 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1962, published as Milton-Bowman tunnel at outlet.

GAGE.--Graphic water-stage recorder and Parshall flume. Altitude of gage is 5,600 ft (from topographic map). Prior to Sept. 22, 1964, at present site at datum 0.56 ft higher.

AVERAGE DISCHARGE.--40 years (1928-68), 69.2 cfs (50,100 acre-ft per year).

EXTREMES.--1928-30, 1931-68: Maximum daily discharge, 492 cfs Feb. 11, 1941; minimum daily, 0.4 cfs Oct. 7, 1944.

REMARKS.--Records good. Tunnel diverts from Middle Yuba River at Milton, in sec.12, T.19 N., R.12 E., and discharges into Bowman Lake. Practically the entire flow of Middle Yuba River is diverted during low and medium flows. Flow is regulated by Jackson Meadows Reservoir (see sta. no. 11-4078.) since November 1964.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	249	1.6	5.3	5.3	7.3	26	23	32	237	17	200	262
2	255	1.7	4.8	5.0	9.2	24	20	32	226	16	247	262
3	253	1.7	5.0	4.8	12	23	20	34	148	15	254	261
4	250	1.7	6.0	4.8	9.8	22	20	34	18	14	252	260
5	250	1.7	7.3	4.8	9.2	22	20	32	14	13	254	261
6	248	1.7	5.8	4.8	8.9	21	19	28	15	13	254	262
7	247	1.7	6.5	4.8	8.6	20	19	26	18	12	263	262
8	247	1.7	5.5	4.8	8.6	19	19	26	37	11	256	261
9	163	1.7	5.0	4.8	8.9	18	21	26	65	9.8	256	261
10	11	1.7	5.0	6.0	8.9	16	23	26	74	8.9	263	261
11	7.1	1.7	5.0	5.3	8.9	16	27	25	82	8.1	257	259
12	5.5	1.7	5.0	5.0	8.6	16	26	24	80	7.6	260	258
13	5.3	1.7	4.8	5.0	9.2	16	25	128	78	6.5	250	257
14	5.0	2.3	4.6	6.0	8.9	15	25	148	76	5.8	246	256
15	4.8	1.9	4.6	23	8.6	14	26	103	74	5.3	272	258
16	4.3	1.7	4.6	16	8.6	14	24	138	72	5.0	257	259
17	2.5	3.6	4.6	11	16	13	22	110	70	4.8	232	258
18	1.9	6.5	5.5	10	19	12	20	98	66	4.8	215	258
19	1.9	8.9	5.3	9.2	29	12	20	117	62	4.6	229	256
20	1.9	7.6	5.0	8.6	79	12	20	127	57	4.3	256	256
21	1.9	6.3	4.8	8.1	77	12	20	176	52	4.1	253	257
22	1.9	5.5	4.8	7.8	57	12	19	292	47	28	256	261
23	1.9	5.3	4.8	7.8	83	12	19	284	43	130	260	262
24	1.9	5.3	4.8	7.8	58	12	20	279	39	165	263	261
25	1.9	5.0	4.8	7.8	41	14	21	270	35	190	267	261
26	1.9	5.0	4.8	8.1	35	14	22	252	31	246	266	259
27	1.9	5.0	5.3	8.1	32	14	24	250	29	255	265	258
28	1.9	5.5	5.5	8.1	30	15	25	230	26	249	264	257
29	1.9	5.5	5.5	8.1	28	18	28	182	22	271	263	258
30	1.7	6.0	5.3	8.1	-----	20	30	150	19	334	263	262
31	1.6	-----	5.3	7.8	-----	22	-----	180	-----	230	262	-----
TOTAL	2,233.6	108.9	160.9	236.6	728.2	516	667	3,859	1,912	2,288.6	7,855	7,784
MEAN	72.1	3.63	5.19	7.63	25.1	16.6	22.2	124	63.7	73.8	253	259
MAX	255	8.9	7.3	23	83	26	30	292	237	334	272	262
MIN	1.6	1.6	4.6	4.8	7.3	12	19	24	14	4.1	200	256
AC-FT	4,430	216	319	469	1,440	1,020	1,320	7,650	3,790	4,540	15,580	15,440
CAL YR 1967	TOTAL 23,649.7		MEAN 64.8		MAX 290		MIN 1.6		AC-FT 46,910			
WTR YR 1968	TOTAL 28,349.8		MEAN 77.5		MAX 334		MIN 1.6		AC-FT 56,230			

SACRAMENTO RIVER BASIN

11-4088.5. MIDDLE YUBA RIVER NEAR CAMPTONVILLE, CALIF.

LOCATION.--Lat 39°25'01" (revised), long 120°57'06", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.15, T.18 N., R.9 E., on right bank 0.6 mile downstream from Kanaka Creek, and 5.8 miles southeast of Camptonville.

DRAINAGE AREA.--136 sq mi.

RECORDS AVAILABLE.--August 1967 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 2,170 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 3,530 cfs Feb. 20 (gage height, 10.33 ft); minimum daily, 24 cfs Sept. 29, 30.

REMARKS.--Records excellent. Natural flow of stream affected by Jackson Meadows Reservoir since November 1964 (see sta. no. 11-4078.), Milton-Bowman tunnel (see sta. no. 11-4080.) which diverts above station to Bowman Lake (see sta. no. 11-4155.), and other small diversions above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	39	55	78	119	589	548	339	149	49	33	30
2	68	38	50	74	224	527	483	336	141	49	33	30
3	127	38	70	68	463	483	431	356	141	49	30	30
4	58	36	135	64	342	447	398	370	131	48	30	29
5	52	37	354	62	330	419	390	352	131	47	29	29
6	51	37	102	60	348	401	359	309	127	45	28	29
7	48	37	153	62	362	398	339	276	151	46	27	28
8	47	36	104	57	345	423	330	270	122	44	28	27
9	45	36	77	63	423	362	336	261	112	43	28	27
10	44	36	71	186	495	309	362	230	106	43	28	27
11	44	36	69	120	373	297	404	250	100	42	30	27
12	44	36	66	94	336	294	415	235	92	41	30	26
13	44	36	37	86	408	342	380	245	92	40	30	26
14	42	57	28	109	345	370	366	220	88	40	30	26
15	41	50	44	1,240	297	356	370	203	85	40	30	26
16	40	43	57	729	305	495	356	193	81	40	30	26
17	40	40	54	348	991	519	315	189	78	38	40	26
18	50	44	61	238	1,000	431	285	191	77	38	34	26
19	63	85	61	187	1,150	370	270	205	72	38	77	26
20	56	58	55	161	2,560	342	261	232	70	38	94	26
21	44	45	51	155	2,760	333	250	232	67	38	45	26
22	44	40	50	155	1,990	333	238	212	64	36	39	26
23	44	38	60	157	2,400	336	225	197	63	35	36	26
24	44	38	85	153	1,740	345	225	181	59	34	34	26
25	43	38	108	145	1,230	408	228	181	57	34	34	26
26	44	37	143	137	992	439	240	177	55	33	33	26
27	42	40	193	135	835	404	264	175	54	33	32	26
28	42	45	157	124	725	415	270	175	52	32	32	25
29	42	55	118	120	650	479	297	173	52	30	33	24
30	41	64	96	108	-----	527	327	167	51	30	32	24
31	40	-----	86	133	-----	540	-----	157	-----	31	31	-----
TOTAL	1,514	1,295	2,850	5,608	24,538	12,733	9,962	7,289	2,720	1,224	1,100	802
MEAN	48.8	43.2	91.9	181	846	411	332	235	90.7	39.5	35.5	26.7
MAX	127	85	354	1,240	2,760	589	548	370	151	49	94	30
MIN	40	36	28	57	119	294	225	157	51	30	27	24
AC-FT	3,000	2,570	5,650	11,120	48,670	25,260	19,760	14,460	5,400	2,430	2,180	1,590
CAL YR 1967	TOTAL	-	MEAN	-	MAX	-	MIN	-	AC-FT	-		
WTR YR 1968	TOTAL	71,635	MEAN	196	MAX	2,760	MIN	24	AC-FT	142,100		

SACRAMENTO RIVER BASIN

881

11-4090. MIDDLE YUBA RIVER ABOVE OREGON CREEK, NEAR NORTH SAN JUAN, CALIF.

LOCATION.--Lat 39°23'35", long 121°04'50", in SE $\frac{1}{4}$ sec.28, T.18 N., R.8 E., on left bank 1,000 ft upstream from Oregon Creek, and 2 miles northeast of North San Juan.

DRAINAGE AREA.--162 sq mi.

RECORDS AVAILABLE.--October 1940 to September 1968. Monthly and yearly discharges for the water year 1941 published in WSP 1315-A. Prior to October 1949, published as Middle Fork Yuba River above Oregon Creek. October 1949 to September 1964, published as Middle Yuba River above Oregon Creek. If record for Oregon Creek near North San Juan is subtracted from record published as Middle Fork Yuba River near North San Juan, a record equivalent to that at this site can be obtained for the period 1910-41.

GAGE.--Graphic water-stage recorder. Altitude of gage is 1,440 ft (from topographic map).

AVERAGE DISCHARGE.--28 years, 353 cfs (255,600 acre-ft per year).

EXTREMES.--Maximum discharge during year, 3,950 cfs Feb. 20 (gage height, 8.08 ft); minimum daily, 29 cfs Aug. 8.

1940-68: Maximum discharge, 31,600 cfs Jan. 31, 1963 (gage height, 18.55 ft), from rating curve extended above 15,000 cfs on basis of slope-area measurement at gage height 15.25 ft; minimum, 10 cfs Jan. 3, 1950.

REMARKS.--Records good. Natural flow of stream is affected by Jackson Meadows Reservoir since November 1964 (see sta. no. 11-4078.), Milton-Bowman tunnel (see sta. no. 11-4080.) which diverts above station to Bowman Lake (see sta. no. 11-4155.), and other small diversions above station. Records of water temperatures and suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	43	71	83	157	562	518	333	161	59	34	43
2	74	43	61	76	265	510	472	333	159	59	36	39
3	143	42	76	72	534	472	430	345	153	58	33	36
4	68	41	131	68	396	450	399	366	143	57	31	36
5	59	42	386	68	375	440	393	351	145	56	31	36
6	56	43	62	70	390	405	363	318	147	55	30	36
7	53	43	164	73	399	393	345	295	163	55	30	36
8	51	41	123	64	381	419	333	278	137	54	29	35
9	50	42	88	66	436	387	336	272	126	50	30	35
10	50	41	75	213	510	339	357	270	116	51	30	36
11	49	41	73	143	396	315	387	268	108	50	31	35
12	48	41	70	102	345	310	402	255	102	50	32	34
13	48	42	50	91	433	387	378	268	100	50	32	34
14	47	60	37	110	378	422	360	242	97	50	34	34
15	45	57	50	1,210	324	408	366	222	96	49	36	34
16	45	49	65	740	324	548	354	205	90	46	34	32
17	46	45	58	378	999	590	327	203	88	45	45	31
18	50	48	63	270	996	500	300	203	83	44	43	31
19	64	97	62	211	1,090	433	290	218	80	44	60	31
20	64	73	58	179	2,850	384	282	248	76	43	114	31
21	51	55	55	165	2,920	372	272	248	75	41	62	32
22	50	49	55	165	2,060	363	260	230	73	39	50	32
23	50	47	61	167	2,410	360	250	209	71	39	46	32
24	49	46	84	161	1,790	366	248	195	68	37	43	31
25	49	45	109	155	1,200	405	250	195	65	37	42	31
26	49	44	139	153	936	454	260	191	65	36	40	31
27	46	47	187	153	790	416	278	189	64	36	39	31
28	46	57	159	143	680	416	282	187	64	35	40	31
29	45	61	123	149	614	454	300	185	61	33	39	30
30	44	88	103	153	-----	492	321	183	60	32	39	31
31	44	-----	90	165	-----	510	-----	173	-----	32	39	-----
TOTAL	1,686	1,513	2,988	6,016	25,378	13,282	10,113	7,678	3,036	1,422	1,254	1,007
MEAN	54.4	50.4	96.4	194	875	428	337	248	101	45.9	40.5	33.6
MAX	143	97	386	1,210	2,920	590	518	366	163	59	114	43
MIN	44	41	37	64	157	310	248	173	60	32	29	30
AC-FT	3,340	3,000	5,930	11,930	50,340	26,340	20,060	15,230	6,020	2,820	2,490	2,000
CAL YR 1967	TOTAL 180,110			MEAN 493		MAX 3,440		MIN 37		AC-FT 357,200		
WTR YR 1968	TOTAL 75,373			MEAN 206		MAX 2,920		MIN 29		AC-FT 149,500		

SACRAMENTO RIVER BASIN

11-4093. OREGON CREEK AT CAMPTONVILLE, CALIF.

LOCATION.--Lat 39°26'46", long 121°02'43", in SE $\frac{1}{4}$ sec.11, T.18 N., R.8 E., on right bank 25 ft downstream from County bridge, 0.5 mile southeast of Camptonville, and 5.5 miles upstream from mouth.

DRAINAGE AREA.--23.0 sq mi.

RECORDS AVAILABLE.--August 1967 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 2,230 ft (from topographic map). Prior to Aug. 14, 1968, graphic water-stage recorder at same site and datum.

EXTREMES.--1967: Maximum discharge during period August and September, 5.3 cfs Sept. 18 (gage height, 2.07 ft); minimum daily, 3.4 cfs Sept. 21, 22, 27-30.
1967-68: Maximum discharge during year, 1,160 cfs Feb. 19 (gage height, 6.98 ft); minimum daily, 2.3 cfs Sept. 29, 30.

REMARKS.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, 1967

DAY	AUG	SEPT	DAY	AUG	SEPT	DAY	AUG	SEPT	DAY	AUG	SEPT	DAY	AUG	SEPT
1	-	4.4	8	-	4.4	15	-	4.0	22	-	3.4	29	-	3.4
2	-	4.4	9	-	4.4	16	-	3.8	23	-	3.6	30	4.5	3.4
3	-	4.4	10	-	4.4	17	-	3.8	24	-	3.8	31	4.4	
4	-	4.4	11	-	4.4	18	-	4.5	25	-	3.8			
5	-	4.7	12	-	4.4	19	-	4.0	26	-	3.5			
6	-	4.5	13	-	4.4	20	-	3.6	27	-	3.4			
7	-	4.4	14	-	4.0	21	-	3.4	28	-	3.4			

TOTAL..... - 120.4
MEAN..... - 4.01
RUNOFF IN ACRE-FEET..... - 239

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	4.4	10	22	38	157	127	32	13	5.3	3.6	2.7
2	27	4.4	8.7	21	84	139	115	30	12	5.3	3.3	2.8
3	22	4.4	14	19	154	124	102	29	12	5.3	3.1	2.8
4	7.4	4.4	47	18	113	113	94	28	12	5.1	2.8	2.8
5	7.1	4.4	112	17	108	108	87	27	12	4.9	2.8	2.7
6	6.9	4.5	29	16	112	100	80	26	14	4.7	2.7	2.7
7	5.8	4.5	52	15	118	97	75	25	14	4.5	2.7	2.7
8	5.5	4.5	30	16	123	110	72	24	12	4.5	2.7	2.7
9	4.9	4.5	21	17	138	99	69	23	11	4.4	2.7	2.7
10	4.7	4.5	18	49	184	87	67	22	11	4.4	2.7	2.6
11	4.7	4.5	17	34	145	79	68	22	10	4.2	2.7	2.6
12	4.7	4.5	16	26	137	79	67	22	9.8	4.0	2.7	2.6
13	4.5	4.5	10	25	172	91	63	24	9.6	4.0	2.7	2.6
14	4.4	10	8.5	50	140	101	59	24	9.4	4.2	2.8	2.7
15	4.0	7.6	10	430	121	107	58	22	9.3	4.2	3.1	2.8
16	4.2	5.8	10	210	150	166	55	20	8.7	4.2	3.1	2.7
17	4.2	5.5	9.5	125	500	165	51	19	7.9	3.8	5.1	2.4
18	4.2	6.2	10	90	380	136	48	18	7.9	3.8	4.4	2.4
19	4.2	20	10	71	460	123	45	18	7.6	3.6	12	2.4
20	4.2	11	11	59	730	115	43	18	7.4	3.4	11	2.6
21	4.2	8.2	10	58	870	113	42	18	7.6	3.4	5.8	2.7
22	4.4	6.7	10	56	574	112	40	19	7.1	3.3	5.3	2.8
23	4.4	6.2	12	57	562	112	38	18	6.7	3.3	4.2	2.7
24	4.5	6.0	15	53	444	111	36	17	6.4	3.1	3.8	2.6
25	4.5	5.8	21	50	320	128	35	18	6.0	3.1	3.6	2.4
26	4.4	5.8	28	48	255	131	34	16	6.0	3.1	3.4	2.4
27	4.4	6.0	40	46	220	123	34	15	5.8	3.1	3.3	2.4
28	4.4	8.7	35	42	192	119	33	14	5.5	3.0	3.3	2.4
29	4.4	9.3	31	42	173	122	32	14	5.3	3.0	3.1	2.3
30	4.4	12	27	43	-----	123	32	14	5.3	3.0	3.0	2.3
31	4.4	-----	24	54	-----	122	-----	13	-----	3.3	2.8	-----
TOTAL	186.6	198.8	706.7	1,879	7,717	3,612	1,801	649	272.3	122.5	120.3	78.0
MFAN	6.02	6.63	22.8	60.6	266	117	60.0	20.9	9.08	3.95	3.88	2.60
MAX	27	20	112	430	870	166	127	32	14	5.3	12	2.8
MIN	3.6	4.4	8.5	15	38	79	32	13	5.3	3.0	2.7	2.3
AC-FT	370	394	1,400	3,730	15,310	7,160	3,570	1,290	540	243	239	155

CAL YR 1967 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1968 TOTAL 17,343.2 MEAN 47.4 MAX 870 MIN 2.3 AC-FT 34,400

Note.--No gage-height record Feb. 4-21.

11-4094. OREGON CREEK BELOW LOG CABIN DAM, NEAR CAMPTONVILLE, CALIF.

LOCATION.--Lat 39°26'18", long 121°03'28", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.11, T.18 N., R.8 E., on right bank 200 ft upstream from High Point Ravine, and 1.2 miles southwest of Camptonville.

DRAINAGE AREA.--29.1 sq mi.

RECORDS AVAILABLE.--August to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 1,911.56 ft above mean sea level (levels by Yuba County Water Agency).

EXTREMES.--Maximum discharge during period August to September, 7.2 cfs Aug. 22 (gage height, 2.28 ft); minimum daily, 4.2 cfs Sept. 18, 19, 25, 28, 30.

REMARKS.--Records good. See schematic diagram for Yuba River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1											-	4.7
2											-	4.7
3											-	4.7
4											-	4.6
5											-	4.6
6											-	4.6
7											-	4.6
8											-	4.4
9											-	4.4
10											-	4.6
11											-	4.6
12											-	4.6
13											-	4.6
14											-	4.7
15											-	4.9
16											-	4.7
17											-	4.4
18											-	4.2
19											-	4.2
20											-	4.4
21											-	4.6
22											7.0	4.7
23											6.7	4.6
24											6.3	4.4
25											5.9	4.2
26											5.6	4.4
27											5.4	4.4
28											5.4	4.2
29											5.2	4.4
30											4.9	4.2
31		-----			-----		-----		-----		4.8	-----
TOTAL											-	135.3
MEAN											-	4.51
MAX											-	4.9
MIN											-	4.2
AC-FT											-	268

CAL YR 1967	TOTAL	-	MEAN	-	MAX	-	MIN	-	AC-FT	-
WTR YR 1968	TOTAL	-	MEAN	-	MAX	-	MIN	-	AC-FT	-

SACRAMENTO RIVER BASIN

11-4095. OREGON CREEK NEAR NORTH SAN JUAN, CALIF.

LOCATION.--Lat 39°24'10", long 121°04'35", in NW¼NW¼ sec.27, T.18 N., R.8 E., on right bank 0.7 mile upstream from mouth, and 2.7 miles northeast of North San Juan.

DRAINAGE AREA.--34.4 sq mi.

RECORDS AVAILABLE.--September 1911 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 1,580 ft (from topographic map). Prior to October 1933, staff gages at site 0.6 mile downstream at different datums. October 1933 to Sept. 27, 1962, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--57 years, 78.0 cfs (56,470 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,560 cfs Feb. 20 (gage height, 7.29 ft); minimum daily, 3.3 cfs Sept. 27.

1911-68: Maximum discharge, 10,300 cfs Dec. 22, 1964 (gage height, 12.88 ft), from rating curve extended above 3,600 cfs on basis of slope-area measurement of maximum flow; minimum, 0.7 cfs for several days in July, August 1931, September 1934.

REMARKS.--Records good. Small diversions above station for irrigation and mining. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	10	18	29	51	172	145	39	17	9.0	6.0	4.7
2	4.2	10	14	26	119	155	134	38	16	8.4	5.5	4.8
3	4.3	10	31	24	214	141	120	37	17	8.7	5.5	4.8
4	17	10	59	23	148	131	110	36	17	8.2	5.1	4.4
5	16	10	169	22	138	125	104	34	19	8.4	4.8	4.2
6	16	11	44	21	143	116	97	33	18	7.9	4.2	4.3
7	14	10	79	21	151	116	91	32	19	7.6	4.6	4.0
8	14	9.9	47	21	151	133	87	30	17	7.6	4.4	4.6
9	14	10	31	22	181	119	84	30	17	7.6	4.6	4.0
10	13	9.9	26	87	221	105	83	29	15	7.4	4.4	4.1
11	13	10	24	53	174	95	84	28	15	6.8	4.4	4.3
12	12	10	28	38	161	101	83	28	14	6.5	3.9	3.7
13	12	10	17	34	203	126	79	34	14	6.3	4.6	4.2
14	12	17	16	57	168	139	74	33	14	6.5	4.8	4.4
15	11	14	20	521	149	140	71	29	13	6.3	4.7	3.7
16	12	11	19	252	168	227	67	27	13	6.5	5.2	4.3
17	12	11	17	147	566	222	63	26	13	6.0	5.9	4.4
18	12	11	19	106	431	181	60	25	12	6.0	6.6	4.1
19	11	32	19	84	530	159	57	23	12	5.8	13	4.1
20	11	18	18	72	938	148	54	23	11	6.0	17	4.2
21	11	13	17	66	1,010	142	53	23	11	6.0	11	4.4
22	12	11	16	65	656	139	50	24	11	5.5	8.7	4.2
23	12	11	18	67	630	137	48	23	11	5.5	7.9	4.6
24	12	11	22	63	483	135	46	22	9.5	4.8	5.8	4.4
25	12	11	29	59	372	149	45	23	9.3	5.1	4.4	4.3
26	12	13	36	57	305	150	44	22	9.7	5.1	4.8	3.8
27	12	13	50	55	256	142	43	21	9.6	5.1	5.2	3.3
28	11	15	45	51	220	137	42	20	9.3	4.8	4.9	3.4
29	11	19	40	55	193	137	41	19	9.0	5.1	5.1	4.0
30	11	22	35	48	-----	139	40	19	8.7	5.1	5.0	3.8
31	10	-----	31	61	-----	138	-----	18	-----	5.3	4.8	-----
TOTAL	442.5	383.8	1,054	2,307	9,130	4,396	2,199	848	401.1	200.9	186.8	125.5
MEAN	14.3	12.8	34.0	74.4	315	142	73.3	27.4	13.4	6.48	6.03	4.18
MAX	43	32	169	521	1,010	227	145	39	19	9.0	17	4.8
MIN	9.5	9.9	14	21	51	95	40	18	8.7	4.8	3.9	3.3
AC-FT	878	761	2,090	4,580	18,110	8,720	4,360	1,680	796	398	371	249

CAL YR 1967 TOTAL 1,888.8 MEAN 5.17 MAX 37,292 MIN 9.5 AC-FT 3,750
WTR YR 1968 TOTAL 21,674.6 MEAN 59.2 MAX 1,010 MIN 3.3 AC-FT 42,990

Peak discharge (base, 1,000 cfs).--Feb. 20 (0030 hrs) 1,560 cfs (7.29 ft); Feb. 21 (0730 hrs) 1,490 cfs (7.18 ft).

SACRAMENTO RIVER BASIN

885

11-4130. NORTH YUBA RIVER BELOW GOODYEARS BAR, CALIF.

LOCATION.--Lat 39°31'30", long 120°56'13", in SW¼ sec.11, T.19 N., R.9 E., on right bank 200 ft downstream from St. Catherine Creek, 3.1 miles southwest of Goodyears Bar, and 6.4 miles southwest of Downieville.

DRAINAGE AREA.--250 sq mi.

RECORDS AVAILABLE.--October 1930 to September 1968. 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.

GAGE.--Digital water-stage recorder. Datum of gage is 2,435 ft above mean sea level (river-profile survey). Prior to Mar. 23, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--38 years, 732 cfs (529,900 acre-ft per year).

EXTREMES.--Maximum discharge during year, 5,540 cfs Feb. 21 (gage height, 9.74 ft); minimum daily, 116 cfs Sept. 29.

1930-68: Maximum discharge, 40,000 cfs Feb. 1, 1963 (gage height, 23.8 ft, from floodmarks), from rating curve extended above 8,500 cfs on basis of one float measurement at 17,900 cfs and slope-area measurements at gage heights 19.15 and 23.8 ft; minimum, 69 cfs Aug. 26, 1931.

REMARKS.--Records excellent. Several small diversions above station for irrigation and mining.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	180	167	199	238	335	1,390	1,280	1,370	775	234	162	134
2	321	166	189	228	444	1,260	1,080	1,370	766	229	156	133
3	462	166	214	214	789	1,190	980	1,460	744	229	151	133
4	246	166	353	210	633	1,150	955	1,520	698	222	149	132
5	232	167	686	206	605	1,160	965	1,420	670	214	146	131
6	229	167	287	202	615	1,040	895	1,240	666	211	145	130
7	211	167	405	199	647	985	880	1,160	722	206	143	129
8	203	166	285	204	633	975	875	1,150	605	200	142	129
9	198	165	235	220	722	885	925	1,160	573	197	142	128
10	195	166	725	432	798	811	1,060	1,160	524	195	140	127
11	193	165	217	283	698	766	1,220	1,140	498	190	139	127
12	190	163	210	245	658	744	1,220	1,030	480	186	139	125
13	187	164	181	235	690	798	1,140	1,020	453	185	136	124
14	184	223	160	811	633	798	1,120	910	432	185	142	127
15	180	195	217	2,440	587	766	1,160	865	418	184	147	128
16	180	176	207	1,200	605	905	1,090	845	403	181	151	124
17	180	171	189	730	1,600	925	940	870	390	177	169	121
18	178	186	206	573	1,590	816	870	900	375	175	156	121
19	177	299	203	489	1,730	744	855	995	360	172	297	121
20	177	237	195	447	4,050	706	835	1,180	343	170	285	123
21	177	207	187	438	4,660	698	811	1,090	331	167	186	124
22	184	187	189	453	3,490	702	757	985	319	165	172	124
23	181	181	199	447	4,180	702	766	875	307	163	165	123
24	177	176	223	429	3,140	714	789	798	293	162	158	121
25	177	173	283	415	2,360	825	830	875	277	160	153	120
26	175	169	370	405	2,020	835	910	870	268	158	150	120
27	173	172	474	390	1,820	798	995	880	259	157	146	119
28	173	184	398	368	1,660	860	1,030	895	252	154	146	118
29	171	210	321	365	1,500	1,020	1,210	885	243	154	143	116
30	169	207	277	360	-----	1,190	1,330	860	238	156	140	118
31	167	-----	253	385	-----	1,280	-----	811	-----	158	136	-----
TOTAL	6,227	5,508	8,237	14,261	43,892	28,438	29,773	32,589	13,682	5,696	4,932	3,750
MEAN	201	184	266	460	1,514	917	992	1,051	456	184	159	125
MAX	462	299	686	2,440	4,660	1,390	1,330	1,520	775	234	297	134
MIN	167	163	160	199	335	698	757	798	238	154	136	116
AC-FT	12,350	10,920	16,340	28,290	87,060	56,410	59,050	64,640	27,140	11,300	9,780	7,440

CAL YR 1967# TOTAL 372,647 MEAN 1,018 MAX 5,330 MIN 160 AC-FT 739,100
WTR YR 1968# TOTAL 196,985 MEAN 538 MAX 4,660 MIN 116 AC-FT 390,700

Peak discharge (base, 3,200 cfs).--Feb. 21 (0800 hrs) 5,540 cfs (9.74 ft); Feb. 23 (1115 hrs) 4,640 cfs (9.05 ft).

SACRAMENTO RIVER BASIN

11-4131. NORTH YUBA RIVER ABOVE SLATE CREEK NEAR STRAWBERRY VALLEY, CALIF.

LOCATION.--Lat 39°31'29", long 121°05'26", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.9, T.19 N., R.8 E., on left bank 500 ft upstream from Slate Creek, and 2.8 miles southeast of Strawberry Valley.

DRAINAGE AREA.--351 sq mi.

RECORDS AVAILABLE.--July to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 1,953.44 ft above mean sea level. Prior to Sept. 18, 1968, graphic water-stage recorder at same site and datum.

EXTREMES.--Maximum discharge during period June to September, 610 cfs Aug. 20 (gage height, 6.39 ft); minimum daily, 138 cfs Sept. 29.
Flood of Dec. 22, 1964, reached a stage of 29.8 ft from floodmarks (discharge, 63,400 cfs from slope-area measurement).

REMARKS.--Records good. Several small diversions above station for irrigation and mining.

DISCHARGE, IN CUBIC FEET PER SECOND, JULY TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									-	283	187	160
2									-	276	184	158
3									-	272	181	155
4									-	266	175	155
5									-	258	172	152
6									-	252	172	152
7									-	248	169	152
8									-	241	169	152
9									-	234	166	152
10									-	230	166	150
11									-	227	163	148
12									-	224	163	148
13									-	217	163	148
14									-	217	166	148
15									-	217	172	150
16									-	214	175	148
17									-	211	205	145
18									-	208	190	142
19									-	205	268	142
20									-	199	418	145
21									-	199	238	145
22									-	196	214	148
23									-	193	202	148
24									-	190	190	145
25									-	187	184	145
26									-	184	181	145
27									314	181	178	142
28									302	178	175	140
29									294	178	172	138
30					-----				286	181	166	140
31		-----			-----		-----		-----	184	163	-----
TOTAL									-	6,750	5,887	4,438
MEAN									-	218	190	148
MAX									-	283	418	160
MIN									-	178	163	138
AC-FT									-	13,390	11,680	8,800
CAL YR 1967	TOTAL	-	MEAN	-	MAX	-	MIN	-	AC-FT	-		
WTR YR 1968	TOTAL	-	MEAN	-	MAX	-	MIN	-	AC-FT	-		

11-4132.5. SLATE CREEK TUNNEL NEAR STRAWBERRY VALLEY, CALIF.

LOCATION.--Lat 39°36'58", long 121°03'00", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.2, T.20 N., R.8 E., on right bank 30 ft upstream from diversion dam on Slate Creek, 0.3 mile upstream from Fency Ravine, and 4.5 miles northeast of town of Strawberry Valley.

RECORDS AVAILABLE.--October 1966 to September 1968. Records of daily discharge for December 1961 to September 1966 are in files of Geological Survey. Monthly diversion used to adjust Slate Creek below diversion dam near Strawberry Valley since February 1962.

GAGE.--Graphic water-stage recorder. Altitude of gage is 3,535 ft (from topographic map).

EXTREMES.--1962-68: Maximum daily discharge, 863 cfs Apr. 6, 1963; no flow for many days in each year.

REMARKS.--Records good. Tunnel diverts water from Slate Creek to Sly Creek Reservoir (see sta. no. 11-3954.) for power development. See schematic diagram for South Fork Feather River basin.

DISCHARGE, IN CURIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	2.7	11	36	66	427	538	306	81	14	5.0	1.6
2	0	2.6	10	30	70	355	428	297	78	14	4.0	1.4
3	19	2.6	10	22	163	325	376	306	75	13	3.5	1.3
4	13	2.6	48	23	132	313	358	301	70	12	3.1	1.1
5	14	2.6	165	20	116	364	357	270	66	12	2.4	.92
6	11	2.6	49	19	108	371	336	235	70	11	2.3	.69
7	8.4	2.6	39	21	108	332	320	212	80	10	2.3	.34
8	7.4	2.6	26	23	111	311	316	203	64	9.4	2.4	.25
9	6.9	2.6	24	24	132	279	346	196	59	8.7	2.4	.21
10	6.6	2.6	21	26	154	256	406	190	54	8.4	2.3	.21
11	6.2	2.6	21	25	139	233	457	181	52	7.6	2.3	.21
12	6.0	2.6	16	24	134	221	444	169	50	7.1	2.3	.21
13	5.3	2.6	9.7	24	144	218	399	170	45	7.1	2.3	.21
14	4.4	19	12	88	131	205	377	151	42	6.9	2.6	.21
15	4.4	7.9	18	832	118	189	370	143	38	6.6	3.7	.21
16	4.6	5.5	17	462	138	222	346	135	37	6.4	3.1	.25
17	4.4	4.4	15	195	623	202	297	134	35	6.2	4.2	.25
18	4.4	7.4	14	131	604	180	270	132	32	5.7	3.3	.25
19	4.2	75	15	104	507	172	258	139	31	5.3	25	.25
20	4.0	30	14	91	609	172	245	158	28	5.0	22	.29
21	5.0	15	13	89	499	179	230	144	27	4.8	15	.29
22	5.3	10	13	100	387	185	214	148	25	4.4	7.1	.29
23	4.6	7.9	15	110	402	196	213	127	23	4.2	5.3	.29
24	4.0	6.9	19	109	354	212	217	114	21	4.0	4.2	.29
25	3.8	6.2	27	104	335	276	226	133	20	4.0	3.7	.21
26	3.7	5.0	62	98	329	294	245	120	19	4.0	3.3	0
27	3.7	5.5	117	86	505	285	266	111	17	4.0	3.1	0
28	3.8	7.4	99	74	645	320	270	108	17	3.5	3.1	0
29	3.7	6.9	67	47	523	417	297	103	16	3.7	2.6	0
30	3.5	5.5	52	34	-----	529	308	97	15	4.2	2.3	0
31	3.1	-----	42	81	-----	577	-----	89	-----	4.4	2.1	-----
TOTAL	178.4	259.4	1,080.7	3,152	8,286	8,817	9,730	5,322	1,287	221.6	152.3	11.73
MEAN	5.75	8.65	34.9	102	286	284	324	172	42.9	7.15	4.91	.39
MAX	19	75	165	832	645	577	538	306	81	14	25	1.6
MIN	0	2.6	9.7	19	66	172	213	89	15	3.5	2.1	0
AC-FT	354	515	2,140	6,250	16,440	17,490	19,300	10,560	2,550	440	302	23
CAL YR 1967	TOTAL 43,062.30		MEAN 118		MAX 836	MIN 0		AC-FT 85,410				
WTR YR 1968	TOTAL 38,498.13		MEAN 105		MAX 832	MIN 0		AC-FT 76,360				

SACRAMENTO RIVER BASIN

11-4133. SLATE CREEK BELOW DIVERSION DAM, NEAR STRAWBERRY VALLEY, CALIF.

LOCATION.--Lat 39°36'52", long 121°03'04", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.2, T.20 N., R.8 E., on right bank 300 ft downstream from diversion dam, 0.2 mile upstream from Fenev Ravine, and 4.5 miles northeast of town of Strawberry Valley.

DRAINAGE AREA.--49.4 sq mi.

RECORDS AVAILABLE.--October 1960 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 3,570 ft (from topographic map).

AVERAGE DISCHARGE.--8 years, 195 cfs (141,200 acre-ft per year), adjusted for diversion.

EXTREMES (creek only).--Maximum discharge during year, 2,280 cfs Feb. 21 (gage height, 8.23 ft); minimum daily, 5.8 cfs on many days.

1960-68: Maximum discharge, 13,100 cfs Dec. 22, 1964 (gage height, 16.42 ft), from rating curve extended above 5,500 cfs on basis of computed flow over dam at gage heights 12.75 and 15.90 ft; minimum, 0.3 cfs Mar. 4, 5, 1962.

(combined flow).--Maximum discharge during year, 2,940 cfs Feb. 21; minimum daily, 7.0 cfs Sept. 30.

1960-68: Maximum discharge, 13,900 cfs Dec. 22, 1964; minimum daily, 2.3 cfs Nov. 23, 1961.

REMARKS.--Records good. Slate Creek Tunnel (see sta. no. 11-4132.5.) diverts at diversion dam 300 ft upstream up to 900 cfs from Slate Creek Reservoir (capacity, 223 acre-ft) to Sly Creek Reservoir (see sta. no. 11-3954.). Diversion began in February 1962. See schematic diagram for South Fork Feather River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	9.7	9.7	9.7	12	6.6	6.2	5.8	5.8	9.3	8.4	8.1
2	126	9.7	9.7	9.7	10	6.6	5.8	6.2	5.8	9.3	8.4	8.1
3	60	9.7	9.7	9.7	10	6.6	5.8	6.2	5.8	9.3	8.4	8.1
4	9.7	9.7	10	9.7	10	6.6	5.8	6.2	5.8	9.3	8.4	8.1
5	9.7	9.7	10	9.7	10	17	5.8	6.2	5.8	9.3	8.4	8.1
6	9.7	9.7	9.7	9.7	10	6.6	5.8	6.2	5.8	9.3	8.4	8.1
7	9.7	9.7	9.7	9.7	9.7	6.6	6.2	6.2	5.8	9.3	8.4	7.7
8	9.7	9.7	9.7	9.7	9.7	6.6	6.2	6.2	5.8	9.3	8.4	7.7
9	9.7	9.7	9.7	9.7	10	6.2	6.2	6.2	5.8	9.3	8.4	7.7
10	9.7	9.7	9.7	9.7	10	6.2	6.2	6.2	5.8	9.3	8.4	7.7
11	9.7	9.7	9.7	9.7	10	6.2	6.2	6.2	6.2	9.3	8.4	7.7
12	9.7	9.7	9.7	9.7	10	6.2	6.2	6.2	6.2	9.3	8.4	7.7
13	9.7	9.7	9.7	9.7	10	5.8	6.2	6.2	7.3	9.3	8.4	7.3
14	9.7	9.7	9.7	10	10	5.8	6.2	6.2	9.3	9.3	8.4	7.7
15	9.7	9.7	9.7	422	10	6.2	6.2	6.2	9.3	9.3	8.4	7.7
16	9.7	9.7	9.7	9.7	11	6.2	6.6	6.2	9.3	9.3	8.4	7.7
17	9.7	9.7	9.7	9.7	206	6.2	6.6	6.2	9.3	9.3	8.1	7.7
18	9.7	9.7	9.7	9.7	36	6.2	6.2	5.8	9.3	9.3	8.1	7.3
19	9.7	9.7	9.7	9.7	199	6.2	6.2	5.8	9.3	8.8	8.1	7.3
20	9.7	9.7	9.7	9.3	848	6.2	6.6	6.2	9.3	8.4	8.1	7.3
21	9.7	9.7	9.7	9.3	1,590	6.2	6.6	6.2	9.3	8.4	8.1	7.3
22	9.7	9.7	9.7	9.3	926	6.2	6.6	6.2	9.3	8.4	8.1	7.0
23	9.7	9.7	9.7	9.3	1,140	6.2	6.2	6.2	9.3	8.4	8.1	7.0
24	9.7	9.7	9.7	9.3	712	6.2	6.2	6.2	9.3	8.4	8.1	7.0
25	9.7	9.7	9.7	9.3	447	6.2	5.8	6.2	9.3	8.4	8.1	7.0
26	9.7	9.7	9.7	9.3	335	6.2	5.8	6.2	9.3	8.4	8.1	7.0
27	9.7	9.7	9.7	9.3	165	6.2	5.8	6.2	9.3	8.4	8.1	7.0
28	9.7	9.7	9.7	9.3	7.0	6.2	5.8	6.2	9.3	8.4	8.1	7.0
29	9.7	9.7	9.7	25	7.0	6.2	5.8	6.2	9.3	8.4	8.1	7.0
30	9.7	9.7	9.7	62	-----	6.2	5.8	6.2	9.3	8.4	8.1	7.0
31	9.7	-----	9.7	21	-----	6.2	-----	5.8	-----	8.4	8.1	-----
TOTAL	469.6	291.0	301.3	788.6	6,780.4	205.0	183.6	190.6	235.8	277.0	255.9	225.1
MEAN	15.1	9.70	9.72	25.4	234	6.61	6.12	6.15	7.86	8.94	8.25	7.50
MAX	126	9.7	10	422	1,590	17	6.6	6.2	9.3	9.3	8.4	8.1
MIN	9.7	9.7	9.7	9.3	7.0	5.8	5.8	5.8	5.8	8.4	8.1	7.0
AC-FT	931	577	598	1,560	13,450	407	364	378	468	549	508	446
Mean a	20.8	18.3	44.6	127	520	291	330	178	50.8	16.1	13.2	7.88
Ac-ft a	1,280	1,090	2,740	7,810	29,890	17,900	9,660	10,840	3,020	989	810	469

CAL YR 1967 TOTAL 47,289.4 MEAN 130 MAX 1,950 MIN 8.9 AC-FT 93,800 MEAN a 248 AC-FT a 179,200
WTR YR 1968 TOTAL 10,203.9 MEAN 27.9 MAX 1,590 MIN 5.8 AC-FT 20,240 MEAN a 133 AC-FT a 96,600

a Adjusted for diversion to Slate Creek Tunnel.

SACRAMENTO RIVER BASIN

889

11-4135.1. COLGATE POWERPLANT NEAR FRENCH CORRAL, CALIF.

LOCATION.--Lat 39°19'51", long 121°11'18", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.16, T.17 N., R.7 E., at powerplant on right bank of Yuba River, 0.3 mile upstream from Dobbins Creek, and 2.3 miles northwest of French Corral.

RECORDS AVAILABLE.--October 1966 to September 1968. Records of daily discharge for October 1960 to September 1966 are given in files of Geological Survey.

GAGE.--Recorded output from powerplant turbines.

EXTREMES.--1966-68: Maximum daily discharge, 558 cfs Feb. 17, 1968; no flow for several days each year.

REMARKS.--Water is diverted from North Yuba River 0.9 mile upstream from station at North Yuba River below New Bullards Bar Dam near North San Juan (see sta. no. 11-4135.2.). Browns Valley Ditch diverts up to 10 cfs from the head of the penstock for use in irrigation.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	333	308	367	502	489	541	545	549	549	375	152	0
2	336	364	344	481	494	541	545	524	549	364	0	0
3	356	353	358	498	489	545	549	549	549	347	0	0
4	459	350	375	481	489	545	549	549	549	347	0	0
5	464	350	421	472	494	545	549	554	545	350	0	0
6	485	350	387	481	485	545	549	554	545	350	0	0
7	481	350	498	464	489	541	545	549	502	358	0	0
8	481	294	498	447	489	485	545	549	545	384	0	0
9	472	325	498	441	489	541	545	549	545	409	0	0
10	450	300	498	438	494	545	545	549	545	468	0	0
11	429	283	506	435	498	545	545	549	545	481	0	0
12	421	223	502	459	498	545	545	549	528	481	0	0
13	398	226	468	409	528	545	545	545	541	485	0	0
14	300	218	506	347	545	545	545	545	541	489	0	0
15	283	234	432	398	545	541	545	545	536	494	0	0
16	264	234	432	468	545	541	545	549	532	489	0	0
17	264	209	450	485	558	519	545	549	528	472	0	0
18	314	231	432	528	549	545	545	549	532	476	0	0
19	333	280	453	515	545	545	545	549	524	441	0	129
20	398	367	453	515	545	549	545	549	441	387	0	350
21	356	350	438	519	545	549	545	545	435	384	0	336
22	350	267	447	519	545	519	549	545	432	372	0	226
23	358	269	444	515	536	541	549	549	401	314	0	202
24	325	199	444	515	545	545	541	549	372	283	0	186
25	325	256	381	515	541	519	545	549	375	275	0	435
26	330	283	364	519	541	545	545	545	327	248	0	438
27	267	272	392	528	498	545	545	300	353	245	0	435
28	319	269	447	532	528	549	545	545	375	218	0	427
29	353	325	444	511	541	549	549	545	367	210	0	415
30	275	294	494	476	-----	549	549	545	361	226	0	418
31	294	-----	498	481	-----	549	-----	549	-----	199	0	-----
TOTAL	11,273	8,633	13,671	14,894	15,077	16,753	16,378	16,719	14,469	11,421	152	3,997
MEAN	364	288	441	480	520	540	546	539	482	368	4.90	133
MAX	485	367	506	532	558	549	549	554	549	494	152	438
MIN	264	199	344	347	485	485	541	300	327	199	0	0
AC-FT	22,360	17,120	27,120	29,540	29,900	33,230	32,490	33,160	28,700	22,650	301	7,930
CAL YR 1967	TOTAL 158,483.00		MEAN 434		MAX 554		MIN 0		AC-FT 314,300			
WTR YR 1968	TOTAL 143,437.00		MEAN 392		MAX 558		MIN 0		AC-FT 284,500			

SACRAMENTO RIVER BASIN

11-4135.2. NORTH YUBA RIVER BELOW NEW BULLARDS BAR DAM NEAR NORTH SAN JUAN, CALIF.

LOCATION.--Lat 39°22'48", long 121°08'19", in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.36, T.18 N., R.7 E., on right bank 1.1 mile downstream from New Bullards Bar Dam, and 2 miles northwest of North San Juan.

DRAINAGE AREA.--490 sq mi.

RECORDS AVAILABLE.--Aug. 13, 1966 to Sept. 30, 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 1,280 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 14,400 cfs Feb. 21 (gage height, 19.31 ft); minimum daily, 0.60 cfs Jan. 8.

1966-68: Maximum discharge, 21,600 cfs Jan. 21, 1967 (gage height, 23.45 ft), from rating curve extended above 13,000 cfs on basis of computation of flow over dam at 49.8 ft; minimum daily, 0.42 cfs Nov. 5, 1966.

REMARKS.--Records good except those for period of no-gage height record, which are poor. Flow regulated by Bullards Bar Reservoir (usable capacity, 31,500 acre-ft). New Bullards Bar Dam is under construction downstream from the present dam. Storage on Sept. 30, 1968 was about 6,500 acre-ft, including storage behind the Coffey dam and Old Bullards Bar Reservoir. Colgate powerplant (see sta. no. 11-4135.1.) diverts 0.9 mile upstream. Water is diverted out of basin through Slate Creek Tunnel (see sta. no. 11-4132.5.). See schematic diagram for the Yuba River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	1.6	18	4.1	274	2,050	1,790	1,270	436	6.0	10	25
2	13	1.5	4.1	10	347	1,810	1,550	1,280	407	6.0	10	24
3	11	1.6	18	13	1,030	1,660	1,290	1,310	390	6.0	10	28
4	19	3.7	12	12	873	1,530	1,140	1,450	359	6.0	10	31
5	18	4.1	41	16	721	1,470	1,130	1,370	316	6.0	10	34
6	3.5	1.9	67	9.9	691	1,370	1,030	1,160	320	7.0	10	39
7	4.5	3.7	47	2.2	756	1,250	952	980	435	7.0	10	36
8	3.1	1.8	26	.60	689	1,330	912	922	278	7.0	10	42
9	7.2	5.5	28	1.3	797	1,130	932	912	224	7.0	10	45
10	3.1	1.8	32	28	1,190	918	1,070	922	186	7.0	10	43
11	6.8	3.3	25	23	1,000	817	1,340	907	148	7.0	10	44
12	2.9	10	18	24	823	734	1,430	820	111	7.0	10	45
13	7.0	4.1	16	20	847	1,080	1,300	805	79	7.0	10	45
14	46	7.5	19	20	797	1,250	1,170	745	42	7.0	10	44
15	3.7	5.8	16	1,000	666	1,180	1,210	641	25	7.0	9.9	45
16	3.7	46	24	3,030	631	1,360	1,150	573	14	8.0	9.9	50
17	14	23	14	1,340	2,830	1,680	956	572	5.0	8.0	9.0	44
18	4.8	3.3	20	721	3,950	1,370	804	587	5.0	8.0	6.0	40
19	7.2	16	7.4	462	2,720	1,090	755	660	5.0	8.0	3.7	15
20	7.2	7.8	6.6	324	9,130	930	724	789	5.0	8.0	3.5	12
21	21	30	4.3	267	11,300	863	685	865	5.0	8.0	3.3	7.9
22	2.4	1.1	3.4	251	8,740	875	620	757	5.0	8.0	2.5	6.1
23	1.9	4.1	3.6	274	8,800	845	588	634	5.0	8.0	6.0	6.0
24	3.3	28	9.9	264	7,050	862	597	530	5.0	8.0	22	6.2
25	4.1	4.1	9.7	239	4,680	928	624	515	5.0	8.0	24	12
26	2.7	7.2	11	215	3,730	1,140	679	582	6.0	9.0	27	14
27	13	17	14	194	3,210	1,010	792	552	6.0	9.0	13	29
28	2.2	4.3	13	168	2,630	1,020	820	564	6.0	9.0	30	6.3
29	11	3.3	13	155	2,280	1,250	959	563	6.0	9.0	28	15
30	9.9	12	20	169	-----	1,580	1,190	539	6.0	9.0	21	18
31	2.2	-----	11	265	-----	1,750	-----	487	-----	9.0	21	-----
TOTAL	265.9	265.1	572.0	9,522.10	83,182	38,132	30,189	25,263	3,845.0	234.0	379.8	851.5
MEAN	8.58	8.84	18.5	307	2,868	1,230	1,006	815	128	7.55	12.3	28.4
MAX	46	46	67	3,030	11,300	2,050	1,790	1,450	436	9.0	30	50
MIN	1.9	1.1	3.4	.60	274	734	588	487	5.0	6.0	2.5	6.0
AC-FT	527	526	1,130	18,890	165,000	75,630	59,880	50,110	7,630	464	753	1,690

CAL YR 1967 TOTAL 513,370.9 MEAN 1.406 MAX 13,400 MIN 1.1 AC-FT 1,018,000
WTR YR 1968 TOTAL 192,701.40 MEAN 527 MAX 11,300 MIN .60 AC-FT 382,200

Note.--No gage-height record June 17 to Aug. 14.

SACRAMENTO RIVER BASIN

891

11-4140. SOUTH YUBA RIVER NEAR CISCO, CALIF.

LOCATION.--Lat 39°19'12", long 120°33'38", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.19, T.17 N., R.13 E., on right bank 0.7 mile downstream from Rattlesnake Creek, 1.3 miles west of Cisco Grove, and 1.5 miles northwest of Cisco.

DRAINAGE AREA.--51.8 sq mi.

RECORDS AVAILABLE.--April 1942 to September 1968. Prior to October 1949, published as South Fork Yuba River near Cisco.

GAGE.--Digital water-stage recorder. Altitude of gage is 5,520 ft (from river-profile map). Prior to October 1945, graphic water-stage recorder at site 200 ft upstream at same datum. October 1945 to Mar. 22, 1965, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--26 years, 194 cfs (140,500 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,670 cfs Feb. 20 (gage height, 6.76 ft); minimum daily, 4.8 cfs Aug. 16.

1942-68: Maximum discharge, 18,400 cfs Jan. 31, 1963 (gage height, 19.6 ft from floodmarks in gage house, 20.6 ft from outside floodmarks), from rating curve extended above 4,600 cfs on basis of slope-area measurement at gage height 15.8 ft; minimum daily, 0.1 cfs Nov. 5-7, 1954.

REMARKS.--Records good. Low flow regulated by Lake Van Norden (capacity, 4,320 acre-ft, 5,260 acre-ft with flashboards).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	32	18	24	50	297	393	775	281	58	31	15
2	55	32	17	23	107	266	256	765	275	56	30	14
3	58	34	18	21	196	278	234	858	248	55	29	14
4	43	33	19	18	119	287	257	818	209	54	28	14
5	42	34	24	18	90	285	278	668	178	53	27	14
6	39	33	19	17	77	214	232	514	156	52	25	19
7	53	18	24	17	71	178	262	473	221	50	24	20
8	52	13	20	16	67	157	306	446	161	47	17	20
9	47	13	21	15	71	134	403	486	154	47	14	20
10	45	12	22	23	66	123	558	519	130	45	16	20
11	42	12	21	18	62	115	631	485	121	40	17	20
12	38	12	22	16	62	108	548	439	111	38	17	20
13	36	12	20	15	64	107	459	390	90	37	17	20
14	36	20	20	24	59	101	494	307	82	35	15	23
15	35	16	20	344	55	95	534	301	76	34	7.0	24
16	35	14	19	261	57	96	443	359	71	32	4.8	24
17	35	13	19	123	242	92	295	413	67	31	12	23
18	35	15	20	86	290	87	247	467	61	29	19	23
19	34	28	19	71	437	83	269	534	56	28	53	23
20	34	26	19	63	1,350	95	268	706	52	26	56	24
21	34	25	19	66	1,130	133	259	550	49	23	26	24
22	34	19	20	69	672	145	230	370	47	21	23	23
23	34	17	20	73	1,180	150	276	290	45	19	21	23
24	33	16	21	73	690	152	334	254	69	17	20	23
25	33	16	23	74	397	153	422	402	40	16	19	23
26	33	15	28	66	367	170	548	410	36	15	19	23
27	32	14	39	60	379	240	601	430	34	27	18	22
28	34	16	42	53	355	300	645	427	33	27	18	22
29	33	21	36	50	307	420	776	396	57	29	18	22
30	33	17	32	62	-----	472	809	341	60	31	17	22
31	33	-----	26	57	-----	475	-----	305	-----	31	16	-----
TOTAL	1,199	598	707	1,916	9,069	6,008	12,267	14,898	3,270	1,103	673.8	621
MEAN	38.7	19.9	22.8	61.8	313	194	409	481	109	35.6	21.7	20.7
MAX	58	34	42	344	1,350	475	809	858	281	58	56	24
MIN	32	12	17	15	50	83	230	254	33	15	4.8	14
AC-FT	2,380	1,190	1,400	3,800	17,990	11,920	24,330	29,550	6,490	2,190	1,340	1,230

CAL YR 1967 TOTAL 100,223 MEAN 275 MAX 1,830 MIN 12 AC-FT 198,800

WTR YR 1968 TOTAL 52,329.8 MEAN 143 MAX 1,350 MIN 4.8 AC-FT 103,800

Peak discharge (base, 1,500 cfs).--Feb. 20 (0300 hrs) 1,670 cfs (6.76 ft).

SACRAMENTO RIVER BASIN

11-4141. FORDYCE CREEK BELOW FORDYCE DAM, NEAR CISCO, CALIF.

LOCATION.--Lat 39°22'45", long 120°29'52", in NW¼SE¼ sec.34, T.18 N., R.13 E., on right bank 850 ft downstream from Fordyce Dam, and 5.3 miles northeast of Cisco.

DRAINAGE AREA.--31.7 sq mi.

RECORDS AVAILABLE.--June 1966 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 6,250 ft (from topographic map). Prior to July 3, 1968, graphic water-stage recorder at same site and datum.

EXTREMES.--Maximum discharge during year, 258 cfs June 2 (gage height, 3.35 ft); minimum daily, 5.3 cfs Jan. 8, 9.

1966-68: Maximum discharge, 1,610 cfs June 18, 1967 (gage height, 4.92 ft), from rating curve extended above 750 cfs; minimum daily, 5.3 cfs Jan. 8, 9, 1968.

REMARKS.--Flow regulated by Fordyce Lake (usable capacity, 46,700 acre-ft).

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	296	5.7	5.5	5.5	6.9	14	17	25	234	250	230	185
2	291	6.0	5.5	5.5	8.0	14	17	25	250	246	254	181
3	287	6.0	5.5	5.5	8.3	14	17	25	246	250	250	178
4	283	6.0	5.7	5.5	8.0	14	17	25	201	250	250	175
5	274	6.0	6.4	5.5	7.7	14	18	25	163	250	246	175
6	107	6.2	6.2	5.5	7.4	15	18	25	135	246	246	172
7	13	6.2	6.0	5.5	7.4	15	18	26	148	246	242	169
8	13	6.2	6.0	5.3	7.4	15	18	26	137	246	242	166
9	163	6.2	6.0	5.3	7.4	15	18	27	127	242	238	166
10	254	6.2	6.0	5.5	7.4	15	19	27	109	246	234	163
11	250	6.2	6.0	5.5	7.4	15	20	28	102	242	234	160
12	246	6.2	6.0	5.5	7.4	15	20	28	102	242	230	157
13	242	6.2	6.0	5.7	7.4	15	20	28	70	238	230	154
14	238	6.2	6.2	7.4	7.7	15	20	29	61	238	227	151
15	79	6.2	6.2	10	7.7	15	20	29	67	238	227	148
16	6.0	6.2	6.2	6.9	7.7	15	21	29	69	238	227	148
17	5.7	6.2	6.2	6.7	9.2	15	21	29	69	234	223	89
18	5.5	6.0	6.2	6.7	8.9	15	21	29	71	234	219	51
19	5.5	6.0	6.2	6.7	10	16	21	30	67	234	219	51
20	5.5	6.0	6.2	6.4	13	16	21	31	62	230	216	22
21	5.5	6.0	6.2	6.4	13	16	21	31	113	230	216	6.9
22	5.5	5.7	6.4	6.7	12	16	21	31	181	227	212	6.9
23	5.5	5.7	6.4	6.7	16	16	21	32	181	227	212	6.9
24	5.5	5.7	6.9	6.7	13	16	21	33	223	227	208	6.7
25	5.5	5.7	6.9	6.7	13	16	22	34	258	223	205	6.7
26	5.5	5.7	6.9	6.7	13	16	22	35	258	223	201	6.7
27	5.5	5.7	6.9	6.9	13	16	22	36	258	219	201	6.7
28	5.5	5.7	6.7	6.9	13	17	22	37	254	219	198	6.7
29	5.5	5.7	6.0	6.9	14	17	23	37	254	219	191	6.7
30	5.5	5.7	5.7	6.9	-----	17	23	43	254	219	188	6.9
31	5.5	-----	5.5	6.9	-----	17	-----	129	-----	216	185	-----
TOTAL	3,124.7	179.4	190.7	196.5	282.3	477	600	1,024	4,724	7,289	6,901	2,928.8
MEAN	101	5.98	6.15	6.34	9.73	15.4	20.0	33.0	157	235	223	97.6
MAX	296	6.2	6.9	10	16	17	23	129	258	250	254	185
MIN	5.5	5.7	5.5	5.3	6.9	14	17	25	61	216	185	6.7
AC-FT	6,200	356	378	390	560	946	1,190	2,030	9,370	14,460	13,690	5,810
CAL YR 1967	TOTAL 63,703.8			MEAN 175		MAX 1,380		MIN 5.5		AC-FT 126,400		
WTR YR 1968	TOTAL 27,917.4			MEAN 76.3		MAX 296		MIN 5.3		AC-FT 55,370		

11-4141.4. LAKE SPAULDING NEAR EMIGRANT GAP, CALIF.

LOCATION.--Lat 39°19'35", long 120°38'32", in SE¼NE¼ sec.20, T.17 N., R.12 E., on left abutment of Spaulding Dam on South Yuba River, 2.5 miles northeast of Emigrant Gap.

DRAINAGE AREA.--118 sq mi.

RECORDS AVAILABLE.--October 1964 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 4,809.6 ft above mean sea level (levels by Pacific Gas and Electric Co.). Prior to July 1968, staff gage at same site and datum.

EXTREMES.--Maximum contents during year, 67,100 acre-ft June 22, 23 (gage height, 193.7 ft); minimum, 6,600 acre-ft Jan. 31 (gage height, 58.9 ft).

1964-68: Maximum contents, 75,100 acre-ft July 13, 1967 (gage height, 205.5 ft); minimum, 6,600 acre-ft Jan. 31, 1968 (gage height, 58.9 ft).

REMARKS.--Lake is formed by three concrete-arch dams with spillway on the middle arch. Storage began in 1913. Capacity, 74,800 acre-ft from gage heights 0.6 (bottom of outlet) and 205.0 ft (top of radial gates). Released water flows through Spaulding powerhouses Nos. 1 and 2. Flow through powerhouse No. 1 is transported out of Yuba River basin by Drum Canal to Bear River basin.

COOPERATION.--Record of contents furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

CAPACITY TABLE (GAGE HEIGHT, IN FEET, AND CONTENTS, IN ACRE-FT)

11	329	50	4,580
15	427	70	9,630
20	566	100	19,500
25	874	150	41,500
30	1,350	200	71,300
40	2,740	206	75,500

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49,300	31,200	15,900	9,050	7,110	32,900	19,500	33,700	60,400	66,100	64,500	55,700
2	49,100	30,400	15,700	8,540	7,260	32,400	19,300	35,300	61,300	65,800	64,100	55,700
3	49,200	29,400	15,400	8,350	9,420	31,900	18,800	37,000	62,200	65,600	64,300	55,700
4	49,200	28,600	13,300	8,350	10,300	31,400	18,500	38,800	63,200	65,800	64,500	55,000
5	49,100	27,700	14,700	8,430	10,600	31,000	18,200	40,400	63,600	66,000	64,500	55,400
6	49,000	26,900	13,600	8,540	10,000	30,400	17,800	41,300	64,100	66,200	64,100	56,100
7	48,400	26,000	13,000	8,630	9,370	30,000	17,400	45,000	64,700	66,500	63,400	56,800
8	47,700	25,200	13,000	8,740	8,850	29,200	17,100	42,400	65,300	66,600	63,100	57,500
9	47,000	24,300	13,100	8,910	8,740	29,100	17,200	43,000	65,700	66,300	62,600	58,000
10	46,900	23,500	13,200	8,800	8,460	28,500	18,000	43,800	66,100	66,100	62,600	58,600
11	46,700	23,300	13,000	8,800	8,460	27,900	19,200	44,700	66,400	65,900	62,600	59,300
12	46,600	23,500	12,100	8,800	8,770	27,200	20,400	45,300	66,600	65,900	62,400	60,500
13	46,500	23,100	11,200	8,850	9,110	26,300	20,900	45,900	66,700	65,800	61,800	59,700
14	46,800	22,200	10,600	9,050	9,340	25,400	21,300	46,300	66,800	65,700	61,300	59,500
15	47,000	21,400	9,800	11,700	9,480	24,500	22,100	46,700	66,900	65,600	60,700	60,200
16	46,800	20,500	9,630	13,200	9,690	23,600	22,700	47,300	66,900	65,400	60,300	59,100
17	45,500	19,600	9,630	13,200	10,800	22,900	22,900	48,000	66,900	65,300	60,400	58,400
18	44,400	19,500	9,630	12,600	12,800	22,100	22,900	48,900	66,900	65,100	60,400	57,500
19	43,400	19,600	9,420	11,900	14,100	21,300	22,900	49,900	66,900	65,000	60,300	56,500
20	42,200	19,500	9,220	12,000	20,600	20,300	22,900	51,400	66,900	65,200	60,000	55,500
21	41,200	19,100	9,050	12,200	25,700	19,500	22,900	52,600	66,900	65,400	59,500	54,400
22	40,000	18,300	8,960	12,100	27,800	18,700	22,800	53,500	67,100	65,400	58,900	53,400
23	38,900	18,300	9,020	11,400	29,200	18,300	23,100	54,000	67,100	65,300	58,300	52,300
24	37,700	18,000	9,080	10,700	33,600	17,400	23,800	54,400	67,000	65,100	58,300	51,100
25	36,700	18,000	9,080	10,000	33,800	16,900	24,200	55,000	66,300	64,800	58,300	50,000
26	35,900	18,100	9,420	9,020	33,800	17,000	25,800	55,900	66,100	64,700	58,100	49,000
27	35,100	17,900	10,200	8,490	33,700	16,900	27,200	56,700	66,700	64,800	57,200	47,900
28	35,100	17,400	10,600	8,020	33,600	17,000	28,600	57,500	66,200	65,100	56,700	46,800
29	33,900	17,200	10,600	7,640	33,200	17,400	30,300	58,300	66,400	65,200	56,200	45,700
30	32,900	16,300	9,980	7,000	-----	18,300	32,000	59,000	66,400	65,000	55,600	44,600
31	32,000	-----	9,250	6,600	-----	19,200	-----	59,600	-----	64,800	55,600	-----
(a)	130.5	90.8	68.7	58.9	133.0	99.0	130.5	181.8	192.5	190.1	175.2	155.8
(b)	-17,700	-15,700	-7,050	-2,650	+26,800	-14,000	+12,800	+27,600	+6,800	-1,600	-9,200	-11,000
Max	49,300	31,200	15,900	13,200	33,800	32,900	32,000	59,600	67,100	66,600	64,500	60,500
Min	32,000	16,300	8,960	6,600	7,110	16,900	17,100	33,700	60,400	64,700	55,600	44,600

CAL YR 1967 b -23,950
WTR YR 1968 b -5,100

MAX 75,100
MAX 67,100

MIN 8,960
MIN 6,600

a Gage height, in feet, at end of month.
b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

11-4141.7. DRUM CANAL AT INTAKE NEAR EMIGRANT GAP, CALIF.

LOCATION.--Lat 39°19'28", long 120°38'37", in NE¼SE¼ sec.20, T.17 N., R.12 E., in Spaulding No. 1 powerhouse, and 2.4 miles northeast of Emigrant Gap.

RECORDS AVAILABLE.--October 1964 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 4,880 ft (from topographic map).

EXTREMES.--1964-68: Maximum daily discharge, 750 cfs Apr. 1, 1968; no flow for many days in most years.

REMARKS.--Canal diverts from Spaulding No. 1 powerhouse at Lake Spaulding Dam. Water is used for irrigation and power in the Bear River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project and reviewed by the Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	702	596	456	348	168	742	750	351	303	535	647	301
2	569	599	303	224	134	746	741	351	301	600	578	301
3	488	653	303	210	151	743	745	353	301	570	303	590
4	484	597	428	172	152	743	747	349	303	303	303	672
5	488	597	494	155	445	742	747	349	300	473	618	33
6	494	598	492	155	675	590	746	440	295	300	708	5.8
7	496	592	489	155	710	549	748	481	304	298	709	5.8
8	496	593	436	156	712	555	746	482	304	537	709	41
9	499	595	197	158	634	558	625	449	304	600	556	83
10	500	526	197	248	372	556	571	395	304	600	397	7.0
11	501	104	505	156	105	557	575	395	304	568	397	7.0
12	502	104	594	155	4.1	621	576	401	304	494	654	99
13	412	445	597	155	12	729	578	397	304	492	710	545
14	298	594	602	155	0	741	579	398	304	492	708	356
15	296	594	533	309	0	741	576	343	304	492	709	356
16	394	594	200	398	0	741	572	298	304	492	468	636
17	501	528	200	576	0	742	565	298	304	493	404	735
18	500	178	327	718	0	741	564	301	304	491	404	732
19	503	179	309	592	0	741	564	303	304	438	627	735
20	508	422	303	201	25	741	566	298	303	304	708	738
21	505	502	260	203	496	741	572	295	303	304	712	728
22	503	450	190	582	590	740	544	293	303	450	710	714
23	555	200	180	717	634	738	319	293	303	486	614	716
24	593	361	182	698	697	740	251	293	303	487	397	712
25	635	179	182	715	729	624	252	295	303	493	395	712
26	596	179	185	639	732	454	257	295	304	448	639	707
27	599	412	186	487	737	488	251	296	304	300	707	706
28	226	491	299	416	734	481	249	298	304	301	706	710
29	598	489	495	399	734	482	317	300	535	447	708	712
30	600	491	492	303	-----	482	351	301	595	495	650	718
31	598	-----	491	287	-----	605	-----	301	-----	498	307	-----
TOTAL	15,639	13,442	11,107	10,842	10,382.1	20,194	16,244	10,692	9,615	14,281	17,862	14,113.6
MEAN	504	448	358	350	358	651	541	345	321	461	576	470
MAX	702	653	602	718	737	746	750	482	595	600	712	738
MIN	226	104	180	155	0	454	249	293	295	298	303	5.8
AC-FT	31,020	26,660	22,030	21,500	20,590	40,050	32,220	21,210	19,070	28,330	35,430	27,990
CAL YR 1967	TOTAL 209,261.00		MEAN 573		MAX 737		MIN 0		AC-FT 415,100			
WTR YR 1968	TOTAL 164,413.70		MEAN 449		MAX 750		MIN 0		AC-FT 326,100			

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LOCATION.--Lat 39°15'50", long 120°43'45", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.10, T.16 N., R.11 E., on right bank 1.2 miles west of Blue Canyon, and 1.5 miles upstream from Drum forebay.

GAGE.--Digital water-stage recorder. Altitude of gage is 4,800 ft (from topographic map). Prior to Mar. 21, 1967, graphic water-stage recorder at same site and datum.

REMARKS.--Flow represents water diverted from South Yuba River through Spaulding No. 1 powerplant, plus diversion from North Fork American River basin by way of Lake Valley Canal (see sta. no. 11-4261.9). This water enters the Bear River at Drum forebay.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	600	474	376	193	707	721	370	338	560	658	325
2	3.5	602	294	226	132	712	715	385	332	636	699	325
3	.82	569	292	212	153	708	721	392	331	594	322	607
4	.33	600	409	181	152	708	728	389	329	326	325	671
5	.24	596	491	160	439	706	731	392	321	333	603	28
6	.97	598	490	160	572	591	729	488	318	336	715	.5
7	2.5	598	488	160	688	543	733	541	318	325	714	.4
8	2.5	610	454	162	682	551	735	533	321	549	714	.4
9	2.5	612	190	162	626	556	641	497	321	633	589	.3
10	2.5	573	192	248	373	551	587	431	321	632	429	.3
11	2.5	128	466	162	128	551	590	433	320	611	441	.3
12	2.5	128	577	159	12	606	594	435	318	542	641	89
13	2.5	425	577	160	22	701	595	443	313	541	712	517
14	2.5	610	577	165	13	711	597	447	313	540	498	337
15	2.5	610	577	332	12	712	597	388	313	540	716	343
16	75	614	579	427	14	714	596	334	313	539	508	589
17	516	587	579	561	40	713	586	336	312	538	441	693
18	516	198	450	697	26	712	588	341	313	540	443	690
19	518	202	298	614	41	714	589	345	313	490	635	703
20	528	411	298	198	66	714	591	341	312	332	708	710
21	520	524	265	199	521	715	596	341	311	331	712	716
22	518	504	192	553	600	716	575	340	310	478	711	715
23	571	217	181	699	638	716	336	337	310	533	632	717
24	616	382	181	679	674	717	261	336	309	533	429	709
25	606	198	182	695	703	626	262	337	308	541	429	707
26	602	198	185	629	703	402	267	336	316	492	634	698
27	606	398	189	494	708	399	261	336	341	322	709	694
28	239	504	295	427	704	96	260	337	341	322	710	699
29	604	500	500	398	701	1.3	324	340	341	477	711	698
30	604	486	502	298	-----	4.4	361	344	341	536	666	706
31	604	-----	500	283	-----	326	-----	345	-----	541	331	-----
TOTAL	8,274.16	13,782	11,924	10,876	10,336	17,899.7	16,467	11,990	9,618	15,243	18,185	13,688.2
MEAN	267	459	385	351	356	577	549	387	321	492	587	456
MAX	616	614	579	699	708	717	735	541	341	636	716	717
MIN	.24	128	181	159	12	1.3	260	334	308	322	322	.30
AC-FT	16,410	27,340	23,650	21,570	20,500	35,500	32,660	23,780	19,080	30,230	36,070	27,150
CAL YR 1967	TOTAL 203,414.46			MEAN 557	MAX 737		MIN .24	AC-FT 403,500				
WTR YR 1968	TOTAL 158,283.06			MEAN 432	MAX 735		MIN .24	AC-FT 313,900				

SACRAMENTO RIVER BASIN

11-4142. SOUTH YUBA CANAL NEAR EMIGRANT GAP, CALIF.

LOCATION.--Lat 39°18'45", long 120°39'45", in SE 1/4 sec. 30, T.17 N., R.12 E., on left bank of concrete flume 400 ft downstream from Bowman Lake Road, and 2.5 miles northeast of Emigrant Gap.

RECORDS AVAILABLE.--October 1964 to September 1968.

GAGE.--Digital water-stage recorder and concrete control. Altitude of gage is 4,640 ft (from topographic map). Prior to Apr. 3, 1968, graphic water-stage recorder at same site and datum.

EXTREMES.--1964-68: Maximum daily discharge, 165 cfs Aug. 3, 1965; no flow Apr. 20-22, 1968.

REMARKS.--Canal diverts from South Yuba River below Lake Spaulding. Water is diverted to Deer Creek powerhouse where it enters Deer Creek.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project and reviewed by the Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	146	62	83	84	95	120	142	79	90	102	104	101
2	148	77	91	85	85	120	142	79	90	103	104	101
3	147	84	97	85	85	120	140	82	90	104	105	101
4	146	99	98	85	86	120	140	83	91	105	105	100
5	146	100	95	85	86	119	140	84	92	102	104	100
6	145	79	95	85	82	120	139	84	92	101	103	101
7	144	65	96	85	78	120	138	83	92	102	103	99
8	145	47	96	85	79	121	138	84	91	101	103	101
9	145	67	99	85	99	121	60	86	89	101	103	99
10	145	72	99	94	109	121	13	89	91	101	104	99
11	145	88	97	92	114	121	13	90	91	102	104	99
12	145	88	94	87	115	121	35	90	91	100	103	100
13	141	87	91	87	116	121	79	90	91	103	103	99
14	147	87	91	91	116	120	80	90	90	102	103	101
15	113	87	91	88	116	120	44	91	90	102	105	99
16	87	86	92	83	117	120	46	90	91	104	106	99
17	90	86	92	84	117	118	52	88	94	104	106	100
18	90	87	93	82	113	117	53	89	96	103	106	100
19	89	87	93	84	107	116	53	90	97	104	107	102
20	92	85	93	87	109	116	81	89	97	104	100	101
21	93	87	93	90	99	117	79	90	97	105	100	101
22	91	87	94	91	88	119	79	90	97	104	101	100
23	80	86	94	91	91	119	81	90	97	103	101	100
24	75	85	95	88	91	120	82	91	98	103	102	103
25	74	85	95	85	106	119	81	91	101	103	102	103
26	74	85	91	89	116	129	81	91	99	103	101	103
27	103	55	87	99	121	143	81	91	101	103	100	102
28	131	59	86	103	121	143	82	91	101	103	99	102
29	98	70	85	114	121	144	83	92	101	103	99	101
30	81	84	84	119	-----	145	79	92	100	103	99	101
31	74	-----	84	118	-----	144	-----	90	-----	102	101	-----
TOTAL	3,570	2,403	2,864	2,810	2,978	3,834	2,536	2,729	2,828	3,185	3,186	3,018
MEAN	115	80.1	92.4	90.6	103	124	84.5	88.0	94.3	103	103	101
MAX	148	100	99	119	121	145	142	92	101	105	107	103
MIN	74	47	83	82	78	116	13	79	89	100	99	99
AC-FT	7,080	4,770	5,680	5,570	5,910	7,600	5,030	5,410	5,610	6,320	6,320	5,990
CAL YR 1967	TOTAL 44,586		MEAN 122		MAX 157		MIN 11		AC-FT 88,430			
WTR YR 1968	TOTAL 35,941		MEAN 98.2		MAX 148		MIN 13		AC-FT 71,290			

11-4142.5. SOUTH YUBA RIVER AT LANGS' CROSSING, NEAR EMIGRANT GAP, CALIF.

LOCATION.--Lat 39°19'07", long 120°39'27", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.20, T.17 N., R.12 E., on right bank 150 ft downstream from road bridge, 0.8 mile downstream from Spaulding Nos. 1 and 2 powerplants, and 1.6 miles northeast of Emigrant Gap.

DRAINAGE AREA.--120 sq mi.

RECORDS AVAILABLE.--December 1965 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 4,432.44 ft above mean sea level (levels by Pacific Gas and Electric Co.). Prior to Apr. 8, 1968, graphic water-stage recorder at same site and datum.

EXTREMES.--Maximum discharge during year, 186 cfs Feb. 21 (gage height, 3.93 ft); minimum daily, 3.1 cfs

Nov. 5-7.

1965-68: Maximum discharge, 3,550 cfs June 17, 1967 (gage height, 9.61 ft); minimum daily, 3.1 cfs

Nov. 5-7, 1967.

REMARKS.--Records good. Flow regulated by Lake Spaulding (see sta. no. 11-4141.4.).

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project and reviewed by the Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	4.0	7.2	10	9.6	46	14	6.9	5.8	6.3	6.1	5.8
2	10	4.4	7.2	9.6	16	45	14	6.6	5.8	6.1	5.8	5.6
3	8.7	4.2	7.2	9.0	25	44	13	6.6	5.8	6.1	5.6	5.6
4	5.8	4.9	13	8.3	18	44	12	6.6	5.8	6.1	5.6	5.6
5	5.3	3.1	29	8.3	17	44	11	6.6	6.1	6.1	5.3	5.6
6	5.3	3.1	14	8.3	18	43	11	6.6	6.9	5.8	5.3	5.8
7	5.1	3.1	13	8.0	19	42	10	6.3	6.9	5.8	5.1	5.8
8	4.9	3.4	11	8.0	17	44	10	6.3	6.3	5.8	5.1	5.6
9	5.1	4.6	11	8.0	21	45	11	6.3	6.1	6.1	5.1	5.6
10	4.9	4.6	11	8.3	20	44	9.3	6.3	6.6	6.1	5.1	5.6
11	4.6	4.9	10	8.3	18	42	9.3	6.3	7.2	6.1	5.1	5.3
12	4.9	5.3	9.3	8.3	17	40	9.0	6.3	7.4	6.6	5.1	5.3
13	4.4	6.1	7.0	8.3	16	39	8.7	6.9	7.4	5.3	5.1	5.3
14	4.2	6.9	5.7	17	16	39	8.7	6.9	7.4	5.3	5.1	5.3
15	5.3	6.6	6.6	72	14	39	13	6.9	7.4	5.8	5.3	5.3
16	18	6.3	6.6	29	15	40	13	6.6	7.4	5.6	5.6	5.6
17	19	6.3	6.6	19	46	40	7.4	6.6	7.4	5.3	6.1	5.6
18	12	6.6	6.6	16	30	39	6.6	6.6	7.4	5.3	5.8	5.6
19	9.6	11	6.6	13	46	39	6.9	6.6	7.4	5.3	11	5.6
20	7.7	8.7	6.6	13	85	39	6.3	6.3	7.4	5.1	8.7	5.6
21	5.6	6.9	6.4	13	145	36	6.6	6.3	7.2	5.1	6.9	5.6
22	5.3	6.3	6.3	13	96	35	7.2	6.3	7.2	5.1	6.6	5.6
23	4.6	6.3	7.2	13	121	34	7.2	6.3	7.2	4.9	6.3	5.3
24	4.2	6.3	10	13	86	33	7.2	6.3	7.2	4.9	6.1	5.3
25	3.8	6.3	14	12	49	38	7.2	6.3	6.9	4.9	5.8	5.3
26	3.8	6.3	20	11	39	31	7.2	6.3	6.9	5.3	5.8	5.3
27	3.8	6.3	21	11	49	17	6.9	6.3	6.6	7.4	5.8	5.3
28	4.9	6.1	17	10	47	17	6.9	6.3	6.6	9.3	5.8	5.3
29	4.6	6.1	14	9.6	47	17	6.9	6.1	6.6	9.3	5.8	5.3
30	4.4	7.2	13	10	-----	16	6.9	6.1	6.6	9.0	5.8	5.3
31	4.4	-----	11	10	-----	15	-----	6.1	-----	6.9	5.8	-----
TOTAL	199.3	172.2	335.1	415.3	1,162.6	1,126	274.4	199.8	204.9	188.1	183.5	164.7
MEAN	6.43	5.74	10.8	13.4	40.1	36.3	9.15	6.45	6.83	6.07	5.92	5.49
MAX	19	11	29	72	145	46	14	6.9	7.4	9.3	11	5.8
MIN	3.8	3.1	5.7	8.0	9.6	15	6.3	6.1	5.8	4.9	5.1	5.3
AC-FT	395	342	665	824	2,310	2,230	544	396	406	373	364	327
CAL YR 1967	TOTAL	78,654.8	MEAN	215	MAX	3,080	MIN	3.1	AC-FT	156,000		
WTR YR 1968	TOTAL	4,625.9	MEAN	12.6	MAX	145	MIN	3.1	AC-FT	9,180		

SACRAMENTO RIVER BASIN

11-4155. BOWMAN LAKE NEAR GRANITEVILLE, CALIF.

LOCATION.--Lat 39°27'01", long 120°39'10", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.5, T.18 N., R.12 E., on rockfill portion of Bowman Dam on Canyon Creek, 4.5 miles east of Graniteville, and 8 miles south of Sierra City.

DRAINAGE AREA.--27.1 sq mi.

RECORDS AVAILABLE.--December 1926 to September 1968.

GAGE.--Graphic water-stage recorder. Prior to Oct. 8, 1964, staff gage at same site and datum. Datum of gage is at mean sea level (levels by Nevada Irrigation District).

EXTREMES.--Maximum contents during year, 59,300 acre-ft Oct. 8 (elevation, 5,551.9 ft); minimum, 19,400 acre-ft Feb. 11-16 (elevation, 5,490.9 ft).

1926-68: Maximum contents, 71,000 acre-ft May 30, 1965 (elevation, 5,566.5 ft); minimum observed under normal operating conditions since reservoir first filled, 1,000 acre-ft Mar. 4, 1931 (elevation, 5,430.1 ft).

REMARKS.--Lake is formed by one rockfill and one concrete-arch dam; storage began in November 1926. Total capacity, 68,200 acre-ft between elevations 5,400 (bottom of outlet tunnel) and 5,563 ft (crest of concrete-arch dam) above mean sea level. 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 through Milton-Bowman tunnel (see sta. no. 11-4080), and releases it through Bowman-Spaulding Canal (see sta. no. 11-4160), which conveys it to reservoirs of Pacific Gas and Electric Co. Water is eventually used for irrigation by Nevada Irrigation District. Lake completely drained for inspection and repair Nov. 25 to Dec. 9, 1949, Oct. 1-20, 1966.

COOPERATION.--Eighteen staff gage readings furnished by Nevada Irrigation District.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

5,430	900	5,470	10,200
5,435	1,400	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

CONTENTS, IN ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58,800	52,900	40,800	28,500	21,600	33,500	35,300	40,400	51,600	49,700	42,200	49,200
2	59,000	52,500	40,400	28,100	21,600	33,800	35,400	40,800	52,000	49,400	42,500	49,400
3	59,100	52,200	40,000	27,700	21,400	34,100	35,400	41,400	52,300	49,000	42,700	49,700
4	59,200	51,800	39,600	27,200	21,200	34,500	35,400	41,900	52,100	48,700	42,900	49,800
5	59,200	51,400	39,400	26,800	21,000	34,400	35,500	42,300	52,000	48,300	43,200	50,100
6	59,200	51,100	38,900	26,400	20,800	35,100	35,500	42,600	51,800	47,900	43,400	50,400
7	59,200	50,700	38,500	26,000	20,500	35,300	35,500	42,800	51,700	47,600	43,600	50,600
8	59,300	50,300	38,100	25,600	20,200	35,500	35,500	42,900	51,600	47,200	43,800	50,900
9	59,200	49,900	37,600	25,200	20,000	35,600	35,600	43,200	51,600	46,500	44,000	51,200
10	58,800	49,500	37,100	25,000	19,800	35,800	35,900	43,400	51,400	46,200	44,300	51,400
11	58,200	49,200	36,600	24,500	19,400	35,800	36,300	43,500	51,300	45,800	44,500	51,600
12	57,600	48,900	36,000	24,200	19,400	35,900	36,700	43,600	51,200	45,400	44,700	51,900
13	57,200	48,500	35,700	23,800	19,400	36,100	37,000	44,000	51,100	45,000	44,800	52,000
14	56,600	48,200	35,300	23,500	19,400	36,100	37,300	44,300	50,900	44,600	45,000	52,300
15	56,500	47,800	34,900	25,200	19,400	36,000	37,600	44,500	50,800	44,200	45,200	52,500
16	56,500	47,600	34,600	25,700	19,400	36,000	37,800	44,700	50,600	43,800	45,500	52,700
17	56,500	47,200	34,100	25,600	19,800	35,900	38,000	44,900	50,400	43,400	45,600	52,900
18	56,500	46,800	33,800	25,300	20,300	35,800	38,000	45,100	50,200	43,000	45,700	53,200
19	56,500	46,400	33,400	25,000	21,400	35,600	38,000	45,400	50,000	42,600	46,200	53,300
20	56,500	46,000	33,000	24,700	23,500	35,400	38,000	45,900	49,700	42,200	46,400	53,500
21	56,600	45,500	32,600	24,300	25,600	35,200	37,900	46,400	49,400	41,800	46,700	53,700
22	56,600	45,000	32,200	24,000	26,900	35,000	37,900	47,100	49,200	41,500	46,900	54,000
23	56,300	44,600	31,700	23,700	29,200	34,900	37,900	47,600	49,200	41,300	47,100	54,200
24	56,000	44,100	31,300	23,400	30,400	34,700	37,900	48,100	49,200	41,300	47,200	54,400
25	55,600	43,600	30,800	23,200	31,200	34,600	38,000	48,700	49,400	41,300	47,400	54,700
26	55,200	43,200	30,400	22,900	31,700	34,600	38,200	49,200	49,400	41,300	47,600	54,900
27	54,800	42,600	30,100	22,700	32,300	34,400	38,500	49,700	49,600	41,500	48,000	55,200
28	54,400	42,100	29,600	22,400	32,700	34,400	38,800	50,200	49,600	41,600	48,300	55,400
29	54,000	41,800	29,400	22,300	33,000	34,500	39,300	50,600	49,700	41,800	48,500	55,600
30	53,700	41,300	29,200	22,200	-----	34,200	39,800	50,900	49,700	42,100	48,800	55,900
31	53,300	-----	28,800	22,000	-----	35,000	-----	51,200	-----	42,200	49,000	-----
(a)	5,544.4	5,527.9	5,508.0	5,496.1	5,515.0	5,518.4	5,525.7	5,541.8	5,539.9	5,529.1	5,538.8	5,547.6
(b)	-5,500	-12,000	-12,500	-6,800	+11,000	+2,000	+4,800	+11,400	-1,500	-7,500	6,800	+6,900
MAX	59,300	52,900	40,800	28,500	33,000	36,100	39,800	51,200	52,300	49,700	49,000	55,900
MIN	53,300	41,300	28,800	22,000	19,400	33,500	35,300	40,400	49,200	41,300	42,200	49,200
CAL YR 1967			b -8,700			MAX 66,400		MIN 28,800				
WTR YR 1968			b -2,900			MAX 59,300		MIN 19,400				

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

899

11-4160. BOWMAN-SPAULDING CANAL INTAKE NEAR SIERRA CITY, CALIF.

LOCATION.--Lat 39°26'25", long 120°39'30", in NW¼SW¼ sec.8, T.18 N., R.12 E., on left bank 0.6 mile downstream from Bowman Dam, and 8 miles south of Sierra City.

RECORDS AVAILABLE.--October 1927 to September 1968. Prior to October 1962, published as Bowman-Spauldning Canal at intake.

GAGE.--Graphic water-stage recorder. Datum of gage is 5,390.39 ft above mean sea level. Prior to July 1965 at site 0.3 mile upstream at different datum.

AVERAGE DISCHARGE.--41 years, 147 cfs (106,400 acre-ft per year).

EXTREMES.--1927-68: Maximum daily discharge, 294 cfs Aug. 16, 1966; no flow at times in most years.

REMARKS.--Records good. Canal diverts from left bank at Canyon Creek below Bowman Lake. Water is diverted to Lake Spaulding and after passing through several powerhouses, is used for irrigation by Nevada Irrigation District.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	255	195	252	224	207	1.0	96	102	191	89	223	225
2	259	195	249	224	209	1.0	124	105	194	198	223	225
3	256	194	254	221	208	1.0	155	110	196	214	223	225
4	256	194	259	221	207	1.0	157	109	196	225	223	223
5	256	194	260	219	207	1.0	139	110	196	232	224	221
6	256	192	256	223	206	1.0	134	120	196	232	224	221
7	256	192	259	225	206	24	148	141	186	230	224	221
8	256	192	258	225	204	55	154	150	184	229	225	221
9	256	192	260	224	204	63	142	150	195	226	225	221
10	255	192	262	224	203	62	111	151	203	280	226	221
11	254	192	262	223	202	62	88	151	203	270	226	221
12	254	197	262	221	133	62	78	160	207	225	225	224
13	254	201	261	221	71	62	92	166	210	224	225	224
14	254	232	259	225	56	103	101	156	210	224	225	225
15	78	247	258	119	56	151	105	150	210	224	226	228
16	.40	96	258	113	57	165	110	159	210	223	226	229
17	.40	245	256	219	63	170	126	174	210	218	226	229
18	.40	254	256	228	60	178	145	180	212	218	228	230
19	.40	252	255	228	63	183	153	182	214	220	206	230
20	.40	254	255	226	28	190	149	169	214	220	206	229
21	.40	261	254	226	1.0	195	144	160	214	220	226	225
22	.40	269	254	221	1.0	192	142	161	214	224	232	225
23	125	263	252	214	1.0	191	142	162	77	228	229	225
24	196	258	254	213	1.0	190	142	172	0	180	229	225
25	196	258	255	213	1.0	184	142	182	0	224	228	225
26	195	258	256	212	1.0	165	142	186	0	221	226	226
27	195	259	234	210	1.0	169	133	188	0	221	135	226
28	194	261	220	209	1.0	172	129	190	0	221	228	224
29	194	261	219	209	1.0	159	121	190	0	221	223	224
30	195	261	218	202	-----	120	106	190	0	221	224	226
31	195	-----	220	203	-----	95	-----	190	-----	223	224	-----
TOTAL	5,342.80	6,711	7,787	6,585	2,859.0	3,368.0	3,850	4,866	4,542	6,825	6,863	6,744
MEAN	172	224	251	212	98.6	109	128	157	151	220	221	225
MAX	259	269	262	228	209	195	157	190	214	280	232	230
MIN	.40	96	218	113	1.0	1.0	78	102	0	89	135	221
AC-FT	10,600	13,310	15,450	13,060	5,670	6,680	7,640	9,650	9,010	13,540	13,610	13,380
CAL YR 1967	TOTAL 73,785.30		MEAN 202		MAX 274		MIN .40		AC-FT 146,400			
WTR YR 1968	TOTAL 66,342.80		MEAN 181		MAX 280		MIN 0		AC-FT 131,600			

SACRAMENTO RIVER BASIN

11-4161. BOWMAN-SPAULDING CANAL AT JORDAN CREEK SIPHON VENTURI, NEAR EMIGRANT GAP, CALIF.

LOCATION.--Lat 39°20'32", long 120°38'26", in SW $\frac{1}{4}$ sec.16, T.17 N., R.12 E., at outlet of Jordan Creek siphon 0.6 mile downstream from Fuller Lake, and 3.5 miles northeast of Emigrant Gap.

RECORDS AVAILABLE.--October 1964 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 5,440 ft above mean sea level (from topographic map). Prior to June 18, 1968, graphic water-stage recorder at same site and datum.

EXTREMES.--1964-68: Maximum daily discharge, 330 cfs Dec. 22, 1964; no flow at times in each year.

REMARKS.--Records show water diverted from Bowman Lake (see sta. no. 11-4155.) plus numerous small tributaries before it enters Lake Spaulding (see sta. no. 11-4141.4.). See schematic diagram of Yuba River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	255	199	260	218	214	125	209	212	219	136	218	219
2	265	199	252	218	218	111	201	212	217	182	218	221
3	276	199	252	218	231	104	216	214	218	199	218	222
4	269	199	258	217	228	104	229	214	218	197	218	222
5	265	197	259	217	223	106	222	212	217	204	218	219
6	265	197	253	217	219	104	210	207	219	203	218	219
7	260	197	256	219	217	101	212	210	221	201	219	218
8	259	197	255	219	216	131	221	216	214	212	219	218
9	260	197	253	219	217	139	223	219	214	219	219	218
10	260	196	256	224	218	117	223	218	217	259	219	218
11	259	195	256	221	217	109	221	217	217	281	219	218
12	257	195	260	219	140	121	208	217	217	221	219	218
13	256	196	258	218	75	125	207	222	218	217	219	216
14	253	212	255	221	75	152	210	222	217	218	219	214
15	217	238	253	255	85	196	213	213	217	218	218	213
16	24	143	253	174	82	212	213	212	217	218	218	217
17	0	216	253	207	146	216	208	214	217	217	219	217
18	0	247	257	226	136	212	213	221	219	216	219	218
19	0	257	257	223	159	212	222	222	221	214	234	218
20	0	252	253	222	294	213	223	224	218	214	213	218
21	0	251	251	224	284	218	217	217	216	216	216	217
22	0	258	251	222	141	219	214	216	216	216	221	217
23	0	266	249	219	246	219	212	210	88	218	221	216
24	79	260	249	217	173	219	212	213	0	191	218	216
25	195	257	250	214	146	229	213	217	26	222	219	216
26	198	256	253	219	125	221	222	218	43	219	219	214
27	196	256	253	219	104	213	224	219	43	219	168	217
28	194	260	226	218	99	218	221	218	43	218	227	217
29	194	262	218	218	119	224	219	221	43	218	227	212
30	196	264	217	222	-----	223	219	222	43	218	223	212
31	198	-----	216	213	-----	214	-----	222	-----	218	219	-----
TOTAL	5,350	6,718	7,742	6,777	5,047	5,327	6,477	6,711	5,113	6,619	6,759	6,515
MEAN	173	224	250	219	174	172	216	216	170	214	218	217
MAX	276	266	260	255	294	229	229	224	221	281	234	222
MIN	0	143	216	174	75	101	201	207	0	136	168	212
AC-FT	10,610	13,320	15,360	13,440	10,010	10,570	12,850	13,310	10,140	13,130	13,410	12,920

CAL YR 1967 TOTAL 88,899.00 MEAN 244 MAX 300 MIN 0 AC-FT 176,300
 WTR YR 1968 TOTAL 75,155.00 MEAN 205 MAX 294 MIN 0 AC-FT 149,100

SACRAMENTO RIVER BASIN

901

11-4165. CANYON CREEK BELOW BOWMAN LAKE, CALIF.

LOCATION.--Lat 39°26'20", long 120°39'40", in SE¼ sec.7, T.18 N., R.12 E., on left bank 1 mile downstream from Bowman Lake, 3 miles upstream from Texas Creek, and 9 miles south of Sierra City.

DRAINAGE AREA.--28.3 sq mi.

RECORDS AVAILABLE.--January 1927 to September 1968.

GAGE.--Graphic water-stage recorder and concrete control. Altitude of gage is 5,100 ft (from topographic map).

AVERAGE DISCHARGE.--41 years, 39.7 cfs (28,740 acre-ft per year).

EXTREMES.--Maximum discharge during year, 42 cfs Jan. 15 (gage height, 2.24 ft); minimum daily, 2.0 cfs Aug. 24, 25.

1927-68: Maximum discharge, 2,600 cfs Dec. 25, 1964 (gage height, 6.25 ft); no flow at times.

REMARKS.--Records good. Flow regulated by French Lake (usable capacity, 13,840 acre-ft), by Bowman Lake (see sta. no. 11-4155), several smaller reservoirs, and diversion into Bowman-Spaulding Canal (see sta. no. 11-4160). Bowman Lake receives water from Middle Yuba River through Milton-Bowman tunnel (see sta. no. 11-4080).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	4.0	2.5	2.9	5.8	3.6	4.6	3.2	3.5	4.1	2.7	2.2
2	5.2	4.0	2.5	2.7	7.6	3.5	4.3	3.0	3.5	4.0	2.7	2.2
3	4.4	4.0	2.6	2.6	6.4	3.2	4.0	3.0	3.5	4.1	2.7	2.6
4	4.0	4.0	3.0	2.5	4.0	3.0	3.8	2.9	3.5	4.1	2.9	2.9
5	4.0	4.0	5.1	2.5	3.6	3.0	4.0	2.9	3.6	4.1	2.9	2.9
6	3.8	4.0	3.2	2.5	3.5	2.9	3.6	3.2	3.6	4.1	2.9	2.9
7	3.8	4.0	3.0	2.6	3.6	2.7	3.5	3.6	3.6	3.8	2.9	2.9
8	3.8	4.0	2.9	2.6	3.3	3.2	3.5	3.6	3.6	3.8	2.7	3.0
9	3.6	4.0	2.7	2.5	3.8	3.0	3.6	3.6	3.6	3.8	2.3	3.3
10	3.6	4.0	2.9	8.6	3.6	2.9	3.8	3.6	3.6	4.0	2.3	3.3
11	3.6	4.0	2.9	4.1	3.3	2.6	3.6	3.6	3.5	3.5	2.3	3.3
12	3.6	4.0	2.9	3.2	3.3	2.6	3.5	3.6	3.5	3.3	3.2	3.3
13	3.6	4.0	3.0	2.7	3.5	2.9	3.2	3.8	3.3	3.3	4.0	3.2
14	3.6	3.8	4.6	6.3	3.0	2.9	3.2	4.0	3.0	3.3	4.0	3.2
15	3.5	2.6	3.6	21	3.0	3.2	3.2	3.8	2.9	3.2	3.6	2.7
16	3.6	2.3	2.9	6.7	3.3	3.3	3.0	3.8	2.9	3.0	3.2	2.6
17	3.6	2.3	2.7	4.3	15	3.2	2.9	3.8	2.9	3.0	3.0	2.6
18	3.6	2.6	6.0	3.5	6.1	2.9	2.9	3.8	2.9	3.0	3.0	2.6
19	3.6	3.6	5.6	3.2	14	2.9	2.9	3.8	2.9	3.0	4.8	2.5
20	3.6	2.7	4.0	3.0	15	2.9	2.7	3.8	2.9	3.0	3.0	2.3
21	3.6	2.6	3.6	3.2	21	3.3	2.6	3.8	2.9	2.9	2.7	3.5
22	3.6	2.5	2.9	3.6	10	3.5	2.9	3.8	2.9	2.9	2.5	4.8
23	3.8	2.5	2.6	3.6	17	3.6	3.3	3.8	5.6	2.9	2.1	4.3
24	4.1	2.3	3.2	3.2	6.9	4.0	3.3	3.8	6.1	2.9	2.0	4.1
25	4.1	2.3	5.4	2.9	5.2	5.8	3.3	4.0	6.1	3.0	2.0	4.1
26	4.1	2.3	6.5	3.3	4.9	4.8	3.3	3.8	4.4	3.0	4.9	4.0
27	4.1	2.2	6.7	3.5	4.8	4.6	3.2	3.6	4.0	3.0	4.0	3.8
28	4.1	2.3	4.1	3.2	4.0	4.9	3.2	3.3	4.1	3.0	4.0	3.6
29	4.1	2.6	3.3	5.5	3.8	5.6	3.2	3.3	4.1	3.2	3.0	3.6
30	4.1	2.5	3.0	23	-----	5.4	3.2	3.3	4.1	3.0	2.9	3.5
31	4.0	-----	2.9	16	-----	4.9	-----	3.3	-----	2.9	2.7	-----
TOTAL	119.3	96.0	112.8	161.0	192.3	110.8	101.3	110.2	110.6	104.2	93.9	95.8
MEAN	3.85	3.20	3.64	5.19	6.63	3.57	3.38	3.55	3.69	3.36	3.03	3.19
MAX	5.2	4.0	6.7	23	21	5.8	4.6	4.0	6.1	4.1	4.9	4.8
MIN	3.5	2.2	2.5	2.5	3.0	2.6	2.6	2.9	2.9	2.9	2.0	2.2
AC-FT	237	190	224	319	381	220	201	219	219	207	186	190
CAL YR 1967	TOTAL	13,934.4	MEAN	38.2	MAX	665	MIN	2.2	AC-FT	27,640		
WTR YR 1968	TOTAL	1,408.2	MEAN	3.85	MAX	23	MIN	2.0	AC-FT	2,790		

SACRAMENTO RIVER BASIN

11-4170. SOUTH YUBA RIVER NEAR WASHINGTON, CALIF.

LOCATION.--Lat 39°21'38", long 120°46'14", on line between secs.5 and 8, T.17 N., R.11 E., on left bank 800 ft upstream from unnamed tributary, and 1.5 miles east of Washington.

DRAINAGE AREA.--198 sq mi.

RECORDS AVAILABLE.--March 1942 to September 1953, October 1956 to September 1968. Prior to October 1949, published as South Fork Yuba River near Washington.

GAGE.--Graphic water-stage recorder. Altitude of gage is 2,735 ft (from river-profile map). Mar. 14, 1942, to Sept. 30, 1945, at site 150 ft upstream at present datum. Oct. 1, 1945, to July 14, 1949, on right bank 50 ft downstream at present datum. July 15, 1949, to Sept. 30, 1953, on right bank 0.8 mile upstream at different datum. Oct. 1, 1956, to Apr. 24, 1963, at site 50 ft downstream at present datum. Apr. 25, 1963, to Feb. 26, 1965, digital water-stage recorder at site 50 ft downstream at present datum.

AVERAGE DISCHARGE.--23 years, 291 cfs (210,700 acre-ft per year).

EXTREMES.--Maximum discharge during year, 2,140 cfs Feb. 20 (gage height, 5.92 ft); minimum daily, 16 cfs Aug. 4, 5, 8-13.

1942-53, 1956-68: Maximum discharge, 35,300 cfs Dec. 23, 1964 (gage height, 20.0 ft, from floodmarks), from rating curve extended above 6,500 cfs on basis of slope-area measurement at gage height 16.60 ft in gage well, 17.8 ft, from floodmarks; minimum, 9.1 cfs Oct. 18, 1950.

Flood of Dec. 23, 1955, reached a stage of 17.8 ft from floodmarks (discharge, 26,300 cfs).

REMARKS.--Records good. Natural flow affected by Lake Spaulding beginning in 1912 (see sta. no. 11-4141.4.), Bowman Lake (see sta. no. 11-4155.), Fordyce Lake beginning in 1928 (capacity, 46,700 acre-ft), diversions into and out of basin for several powerhouses and for irrigation of about 20,000 acres by Nevada Irrigation District.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	22	40	55	71	210	174	61	33	28	18	20
2	52	21	37	52	134	197	156	60	32	22	18	20
3	70	22	44	47	218	185	140	58	31	21	17	19
4	32	22	84	45	163	179	132	58	31	21	16	20
5	30	22	285	43	160	176	127	53	34	21	16	20
6	29	21	81	42	181	163	120	52	38	20	17	20
7	27	21	110	41	187	160	114	50	51	20	17	21
8	26	21	71	41	170	192	112	48	38	20	16	20
9	26	22	58	44	220	181	112	48	34	20	16	20
10	26	22	55	98	197	156	116	46	33	20	16	20
11	26	23	53	73	165	143	116	45	32	23	16	20
12	26	23	50	59	167	140	110	45	31	21	16	20
13	26	24	44	57	172	169	103	51	31	20	16	20
14	24	36	35	66	143	174	99	54	29	18	18	20
15	26	28	44	744	127	170	101	52	28	19	19	20
16	32	30	42	443	158	220	96	51	28	19	19	19
17	43	26	39	192	607	210	85	45	27	18	22	19
18	36	28	46	125	338	183	78	43	27	18	21	19
19	32	59	44	105	722	169	77	42	26	18	56	19
20	31	41	41	92	1,200	161	75	44	25	18	43	19
21	28	32	39	90	1,240	160	72	43	25	18	28	20
22	29	29	39	99	795	161	71	42	25	17	26	20
23	22	29	46	98	983	163	68	44	24	17	24	21
24	22	28	73	95	644	165	68	41	38	17	22	20
25	21	27	95	90	428	196	68	42	36	17	22	20
26	21	26	118	85	326	199	68	41	35	17	22	20
27	21	27	148	81	310	160	67	38	32	17	24	20
28	23	32	110	75	266	167	65	36	32	17	22	20
29	24	38	82	75	232	185	65	36	31	17	22	19
30	22	45	69	77	-----	194	63	34	30	17	21	19
31	22	-----	60	78	-----	181	-----	34	-----	18	20	-----
TOTAL	897	847	2,182	3,407	10,724	5,469	2,918	1,437	947	594	666	594
MEAN	28.9	28.2	70.4	110	370	176	97.3	46.4	31.6	19.2	21.5	19.8
MAX	70	59	285	744	1,240	220	174	61	51	28	56	21
MIN	21	21	35	41	71	140	63	34	24	17	16	19
AC-FT	1,780	1,680	4,330	6,760	21,270	10,850	5,790	2,850	1,880	1,180	1,320	1,180

CAL YR 1967 TOTAL 145,050

MEAN 397

MAX 3,760

MIN 21

AC-FT 287,700

WTR YR 1968 TOTAL 30,682

MEAN 83.8

MAX 1,240

MIN 16

AC-FT 60,860

SACRAMENTO RIVER BASIN

903

11-4171. POORMAN CREEK NEAR WASHINGTON, CALIF.

LOCATION.--Lat 39°21'36", long 120°48'24", in SW $\frac{1}{4}$ sec.1, T.17 N., R.10 E., on left bank just downstream from U.S. Forest Service road bridge, 0.4 mile west of Washington, and 1.4 miles downstream from Deadman Creek.

DRAINAGE AREA.--23.1 sq mi.

RECORDS AVAILABLE.--July 1961 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 2,600 ft (from topographic map). Prior to Apr. 24, 1963, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--7 years, 62.2 cfs (45,030 acre-ft per year).

EXTREMES.--Maximum discharge during year, 758 cfs Feb. 20 (gage height, 5.94 ft); minimum daily, 7.3 cfs Sept. 29.

1961-68: Maximum discharge, 6,090 cfs Dec. 22, 1964 (gage heights, 12.52 ft in gage well, 13.5 ft from flo dmarks), from rating curve extended above 1,700 cfs on basis of slope-area measurement at 10.95 ft; minimum, 5.9 cfs Oct. 4, 1961.

REMARKS.--Records good. No known diversion or storage above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	12	16	20	26	113	99	81	28	13	10	8.7
2	32	11	15	18	37	105	89	79	26	13	9.6	8.6
3	33	11	17	17	66	99	85	79	26	13	9.4	8.6
4	16	11	35	17	56	94	84	77	25	13	9.3	8.5
5	16	11	64	16	57	92	83	73	26	12	9.0	8.4
6	16	12	25	16	63	83	79	68	29	12	8.6	8.3
7	15	11	40	15	67	80	78	64	35	12	8.5	8.2
8	14	11	26	16	66	84	79	61	27	11	8.4	8.1
9	13	11	20	16	91	77	83	59	24	11	8.4	8.1
10	13	12	19	46	91	71	91	57	23	11	8.2	8.0
11	13	11	18	29	70	67	96	56	22	11	8.2	8.0
12	13	11	17	24	66	65	95	54	21	11	8.2	7.9
13	13	11	14	23	79	74	91	56	20	11	8.3	7.9
14	12	18	14	43	67	78	91	53	20	11	8.7	8.0
15	12	14	17	278	59	77	90	51	19	11	8.9	8.1
16	12	12	15	126	62	94	86	47	18	11	9.0	7.8
17	12	12	15	58	222	94	77	45	17	11	10	7.6
18	12	15	17	44	169	84	73	43	17	10	9.6	7.6
19	12	26	17	36	222	78	73	43	17	10	39	7.6
20	12	17	16	32	474	76	71	45	16	10	20	7.8
21	12	14	15	31	464	75	69	43	16	9.9	12	7.8
22	13	13	16	32	313	76	66	43	16	9.8	11	7.8
23	13	13	19	32	372	75	66	41	15	9.7	11	7.6
24	12	12	24	30	256	74	67	38	15	9.6	10	7.6
25	12	12	32	28	205	89	70	42	15	9.5	9.8	7.5
26	12	12	40	28	172	88	74	37	14	9.4	9.6	7.5
27	12	13	46	26	150	81	77	35	14	9.3	9.5	7.4
28	12	14	37	26	136	83	79	33	14	9.4	9.5	7.4
29	12	17	30	26	123	92	81	31	13	9.6	9.2	7.3
30	12	16	24	20	-----	99	83	30	13	9.7	9.0	7.4
31	12	-----	21	31	-----	100	-----	29	-----	10	8.8	-----
TOTAL	437	396	741	1,200	4,301	2,617	2,425	1,593	601	333.9	328.7	237.1
MEAN	14.1	13.2	23.9	38.7	148	84.4	80.8	51.4	20.0	10.8	10.6	7.90
MAX	33	26	64	278	474	113	99	81	35	13	39	8.7
MIN	12	11	14	15	26	65	66	29	13	9.3	8.2	7.3
AC-FT	867	785	1,470	2,380	8,530	5,190	4,810	3,160	1,190	662	652	470

CAL YR 1967 TOTAL 28,996 MEAN 79.4 MAX 750 MIN 11 AC-FT 57,510
WTR YR 1968 TOTAL 15,210.7 MEAN 41.6 MAX 474 MIN 7.3 AC-FT 30,170

Peak discharge (base, 500 cfs).--Feb. 20 (0100 hrs) 758 cfs (5.94 ft); Feb. 21 (0745 hrs) 614 cfs (5.53 ft).

SACRAMENTO RIVER BASIN

11-4175. SOUTH YUBA RIVER AT JONES BAR, NEAR GRASS VALLEY, CALIF.

LOCATION.--Lat 39°17'32", long 121°06'13", near center of sec.32, T.17 N., R.8 E., on left bank at Jones Bar, 100 ft upstream from Rush Creek, 0.9 mile downstream from bridge on State Highway 49, and 5 miles northwest of Grass Valley.

DRAINAGE AREA.--308 sq mi.

RECORDS AVAILABLE.--October 1940 to September 1948, April 1959 to September 1968. Published as South Fork Yuba River at Jones Bar 1940-48 and as South Yuba River "at Jones Bar" 1959-63.

GAGE.--Graphic water-stage recorder. Altitude of gage is 1,060 ft (from river-profile map). Oct. 1, 1940, to Sept. 30, 1948, graphic water-stage recorder at site 150 ft upstream at datum 2.00 ft higher.

AVERAGE DISCHARGE.--17 years, 470 cfs (340,300 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4,480 cfs Feb. 20 (gage height, 10.76 ft); minimum daily, 36 cfs Sept. 18-21.

1940-48, 1959-68: Maximum discharge, 53,600 cfs Dec. 22, 1964 (gage height, 25.0 ft from floodmarks), from rating curve extended above 23,000 cfs on basis of slope-area measurement of maximum flow; minimum, 1.0 cfs Sept. 10-13, 1944.

Flood of Dec. 23, 1955, reached a stage of 28.7 ft from floodmarks (at site 100 ft upstream and datum 2.00 ft lower).

REMARKS.--Records good. Flow regulated by Lake Spaulding (see sta. no. 11-4140.4.), Fordyce Lake (capacity, 46,700 acre-ft), Bowman Lake (see sta. no. 11-4155.), and many smaller reservoirs. Diversions into and out of basin for several powerhouses, and for irrigation of about 20,000 acres by the Nevada Irrigation District. Records of water temperatures and suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

DISCHARGE. IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	53	109	125	217	558	442	203	92	66	46	42
2	75	52	89	115	400	516	415	196	90	64	45	42
3	196	52	118	106	626	481	370	190	88	58	42	42
4	84	53	202	102	475	457	358	187	88	56	42	41
5	70	54	651	99	451	442	348	179	89	53	40	41
6	69	54	224	95	487	418	330	170	105	52	40	41
7	66	53	371	94	519	421	312	163	121	51	40	40
8	64	53	236	93	484	478	306	156	110	50	40	42
9	61	53	157	100	608	463	306	152	95	50	40	40
10	60	54	133	512	670	403	308	146	90	50	40	39
11	60	55	121	274	499	372	320	143	87	50	40	38
12	60	55	116	181	445	368	312	139	86	52	39	38
13	59	56	101	153	623	554	297	154	83	49	38	38
14	58	76	73	176	493	554	284	168	81	48	40	38
15	55	81	98	1,700	427	519	280	156	79	47	42	39
16	58	66	106	950	421	840	278	139	77	48	44	39
17	67	66	95	466	1,270	856	260	132	74	48	45	37
18	70	70	106	332	1,110	670	240	126	72	46	48	36
19	66	114	106	270	1,160	558	232	121	72	45	60	36
20	64	113	97	234	2,940	493	224	122	69	44	141	36
21	61	79	93	217	2,520	463	219	125	69	44	72	36
22	61	70	92	214	1,800	448	214	121	68	42	59	38
23	61	67	98	223	1,850	433	210	121	65	42	54	38
24	61	66	124	208	1,440	424	206	117	66	42	50	38
25	53	65	162	194	1,050	433	208	115	75	42	48	40
26	53	63	206	183	842	481	210	115	74	42	46	40
27	53	64	268	187	774	400	210	109	72	42	46	40
28	53	80	228	181	698	406	206	104	69	41	48	42
29	55	108	184	215	614	427	205	99	68	42	46	69
30	55	147	154	303	-----	451	208	96	67	42	45	47
31	54	-----	136	258	-----	439	-----	93	-----	44	44	-----
TOTAL	2,030	2,092	5,054	8,560	25,913	15,226	8,318	4,357	2,441	1,492	1,510	1,213
MEAN	65.5	69.7	163	276	894	491	277	141	81.4	48.1	48.7	40.4
MAX	196	147	651	1,700	2,940	856	442	203	121	66	141	69
MIN	48	52	73	93	217	368	205	93	65	41	38	36
AC-FT	4,030	4,150	10,020	16,980	51,400	30,200	16,500	8,640	4,840	2,960	3,000	2,410

CAL YR 1967 TOTAL 283,488

MEAN 777

MAX 5,790

MIN 47

AC-FT 562,300

WTR YR 1968 TOTAL 78,206

MEAN 214

MAX 2,940

MIN 36

AC-FT 155,100

SACRAMENTO RIVER BASIN

905

11-4180. YUBA RIVER AT ENGLEBRIGHT DAM, CALIF.

LOCATION.--Lat 39°14'22", long 121°16'00", in SW¼SE¼ sec.14, T.16 N., R.6 E., on left bank upstream from spillway of Englebright Dam, 1 mile upstream from Deer Creek, and 2.5 miles northeast of Smartville.

DRAINAGE AREA.--1,108 sq mi.

RECORDS AVAILABLE.--October 1941 to September 1968. Prior to October 1953, published as "at Narrows Dam."

If record for Deer Creek near Smartville since 1941 is added to record at this site, a record equivalent to that published from 1903 to 1941 as Yuba River at Smartville can be obtained.

GAGE.--Graphic water-stage recorder, flowmeter in penstock and watt meters in powerhouse just below dam. Datum of gage is at mean sea level (levels by Corps of Engineers). Prior to Sept. 19, 1958, at datum 526.99 ft higher.

AVERAGE DISCHARGE.--27 years, 2,508 cfs (1,816,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 21,400 cfs Feb. 21, including flow through powerplant; minimum daily, 310 cfs Nov. 22.

1941-68: Maximum discharge, 171,000 cfs Dec. 22, 1964 (gage height, 546.14 ft), no flow through powerplant, from rating curve extended above 25,000 cfs 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.

REMARKS.--Records good. Diversions for power and irrigation above station. Up to 250 cfs can bypass station and up to 670 cfs can be diverted into Bear River basin. Flow regulated by Lake Spaulding beginning in 1912 (see sta. no. 11-4141.4.), Jackson Meadows Reservoir (see sta. no. 11-4078.) since November 1964, Englebright Reservoir beginning in 1941 (capacity, 70,000 acre-ft), Bowman Lake (see sta. no. 11-4155.), Fordyce Lake beginning in 1926 (capacity, 46,700 acre-ft), and many smaller reservoirs. Records given herein show total flow over Englebright Dam spillway and through and past powerplant.

COOPERATION.--Records of flow through powerplant furnished by Pacific Gas and Electric Co.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	440	465	460	600	1,470	3,850	3,330	2,350	1,320	490	480	430
2	400	450	450	595	1,950	3,520	3,160	2,350	1,290	500	485	430
3	450	450	450	600	3,260	3,240	2,810	2,350	1,260	533	490	405
4	640	440	460	610	2,760	3,130	2,580	2,480	1,590	610	500	395
5	760	450	505	615	2,400	2,830	2,500	2,450	1,240	537	500	380
6	740	445	525	620	2,270	2,830	2,400	2,300	1,170	500	500	345
7	720	445	510	620	2,390	2,650	2,280	2,090	1,220	490	500	310
8	710	430	510	610	2,390	2,820	2,210	1,960	1,230	480	500	260
9	600	410	530	585	2,420	2,740	2,210	1,960	1,160	520	500	260
10	510	360	560	585	3,120	2,390	2,300	1,940	1,110	650	500	265
11	500	360	530	585	2,670	2,160	2,580	1,900	687	700	500	275
12	505	360	545	320	2,330	2,270	2,700	1,840	684	700	500	255
13	505	360	560	600	2,900	6,940	2,580	1,830	679	650	515	225
14	505	340	550	605	2,620	3,130	2,460	1,850	781	600	530	210
15	400	360	510	615	2,270	2,990	2,420	1,660	724	590	530	200
16	380	380	520	565	2,130	3,550	2,400	1,560	684	575	530	195
17	380	375	540	1,830	5,300	4,310	2,220	1,500	684	575	530	190
18	400	370	530	2,180	7,770	3,570	2,020	1,520	672	565	530	180
19	450	380	530	1,700	5,880	2,920	1,920	1,560	681	550	535	160
20	450	420	580	1,440	17,200	2,680	1,880	1,690	675	525	545	135
21	470	405	580	1,320	17,800	2,520	1,800	1,830	610	500	545	155
22	475	310	580	1,320	14,600	2,450	1,740	1,730	550	490	550	180
23	475	315	550	1,390	13,700	2,400	1,700	1,610	520	480	545	180
24	475	315	530	1,400	11,400	2,350	1,700	1,470	510	480	520	180
25	465	330	530	1,340	7,560	2,420	1,700	1,420	500	480	490	180
26	385	315	550	1,310	6,420	2,810	1,750	1,470	500	480	495	175
27	375	350	570	1,270	5,700	2,600	1,750	1,440	500	480	480	170
28	450	350	585	1,240	4,860	2,550	1,910	1,440	495	480	460	160
29	420	450	610	1,240	4,300	2,730	2,020	1,440	485	480	435	150
30	455	460	600	2,860	-----	3,110	2,240	1,410	485	480	430	130
31	460	-----	600	1,640	-----	3,300	-----	1,380	-----	480	435	-----
TOTAL	15,350	11,650	16,640	32,810	161,840	93,760	67,270	55,780	24,696	16,650	15,585	7,165
MEAN	495	388	537	1,058	5,581	3,025	2,242	1,799	823	537	503	239
MAX	760	465	610	2,860	17,800	6,940	3,330	2,480	1,590	700	550	430
MIN	375	310	450	320	1,470	2,160	1,700	1,380	485	480	430	130
AC-FT	30,450	23,110	33,000	65,080	321,000	186,000	133,400	110,600	48,980	33,020	30,910	14,210

CAL YR 1967 TOTAL 1,183,219 MEAN 3,242 MAX 23,900 MIN 310 AC-FT 2,347,000
WTR YR 1968 TOTAL 519,196 MEAN 1,419 MAX 17,800 MIN 130 AC-FT 1,030,000

Peak discharge (base, 13,000 cfs).--Feb. 21 (1600 hrs) 21,400 cfs.

SACRAMENTO RIVER BASIN

11-4185. DEER CREEK NEAR SMARTVILLE, CALIF.

LOCATION.--Lat 39°13'28", long 121°16'03", in SW¼SE¼ sec.23, T.16 N., R.6 E., on left bank 400 ft upstream from county road bridge, 0.9 mile upstream from mouth, and 2 miles northeast of Smartville.

DRAINAGE AREA.--84.6 sq mi.

RECORDS AVAILABLE.--June 1935 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 630 ft (from river-profile map). June 21, 1935, to Nov. 30, 1938, staff gage at same site and datum.

AVERAGE DISCHARGE.--33 years, 131 cfs (94,840 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4,590 cfs Feb. 19 (gage height, 9.23 ft); minimum daily, 6.5 cfs June 23, 24.

1935-68: Maximum discharge, 11,600 cfs Oct. 13, 1962 (gage height, 13.77 ft), from rating curve extended above 5,200 cfs; minimum, 0.1 cfs Aug. 4-6, 15, 1940.

Flood of March 1928 reached a stage of 14.5 ft from floodmarks (discharge, 14,000 cfs).

REMARKS.--Records good. 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), 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. Records of chemical analyses for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	18	82	29	184	76	161	37	21	7.4	23	11
2	58	16	41	28	496	70	140	32	19	7.4	15	12
3	85	16	124	27	327	64	105	23	20	7.4	13	11
4	27	18	171	27	169	60	89	22	21	7.1	11	11
5	27	20	381	27	128	59	82	21	20	8.8	12	14
6	26	20	73	25	116	56	72	20	24	9.1	11	14
7	23	20	330	24	106	62	66	21	23	9.5	12	13
8	21	21	100	24	95	203	61	19	22	9.9	12	13
9	21	21	57	26	90	219	57	19	19	9.9	11	14
10	20	24	45	469	83	192	58	19	15	9.9	9.5	14
11	20	19	40	126	71	177	56	19	14	10	9.1	16
12	20	19	36	62	63	184	46	20	13	10	9.1	17
13	21	23	33	46	140	522	40	29	13	10	9.5	15
14	19	34	30	54	96	407	46	46	13	10	9.9	13
15	19	25	44	799	72	312	53	29	13	11	11	13
16	18	19	33	200	98	648	50	25	13	11	11	14
17	14	16	31	104	728	530	37	23	12	11	10	13
18	12	14	37	73	261	370	32	22	12	11	9.9	13
19	17	54	58	59	734	288	29	21	7.7	12	20	12
20	19	28	56	48	1,350	249	29	21	7.4	14	26	13
21	14	22	47	42	826	231	23	22	7.4	14	16	13
22	19	16	32	40	305	221	23	22	6.8	14	15	12
23	26	14	29	37	293	213	23	21	6.5	11	15	12
24	24	15	29	35	205	205	23	19	6.5	11	14	12
25	18	16	31	34	149	207	23	20	6.8	11	12	13
26	25	15	32	35	122	209	23	21	7.1	9.5	13	14
27	20	16	31	36	105	180	22	20	7.4	9.5	12	14
28	18	32	27	37	91	161	22	19	6.5	8.0	12	13
29	16	89	26	56	83	154	27	16	6.8	12	11	14
30	16	155	27	1,660	-----	143	35	14	7.4	11	11	14
31	16	-----	26	360	-----	141	-----	23	-----	11	9.9	-----
TOTAL	710	835	2,139	4,649	7,586	6,813	1,553	705	391.3	318.4	395.9	397
MEAN	22.9	27.8	69.0	150	262	220	51.8	22.7	13.0	10.3	12.8	13.2
MAX	85	155	381	1,660	1,350	648	161	46	24	14	26	17
MIN	11	14	26	24	63	56	22	14	6.5	7.1	9.1	11
AC-FT	1,410	1,660	4,240	9,220	15,050	13,510	3,080	1,400	776	632	785	787
CAL YR 1967	TOTAL 54,829.8		MEAN 150		MAX 3,970	MIN 7.4		AC-FT 108,800				
WTR YR 1968	TOTAL 26,492.6		MEAN 72.4		MAX 1,660	MIN 6.5		AC-FT 52,550				

SACRAMENTO RIVER BASIN

907

11-4207. DRY CREEK NEAR BROWNS VALLEY, CALIF.

LOCATION.--Lat 39°15'25", long 121°20'35", in NE 1/4 sec. 7, T.16 N., R.6 E., on left bank 500 ft upstream from diversion dam, and 3.6 miles east of Browns Valley.

DRAINAGE AREA.--87.1 sq mi.

RECORDS AVAILABLE.--July 1964 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 265 ft (from topographic map). Prior to Apr. 6, 1965, graphic water-stage recorder at same site and datum.

EXTREMES.--Maximum discharge during year, 835 cfs Mar. 13 (gage height, 5.69 ft); minimum daily, 1.6 cfs Dec. 4-8.

1964-68: Maximum discharge, 4,810 cfs Jan. 5, 1965 (gage height, 9.65 ft); minimum daily, 1.2 cfs Dec. 12-15, 1964.

REMARKS.--Records good except those for the summer months, which are fair. Flow regulated by Lake Mildred (capacity, 1,500 acre-ft), Merle Collins Reservoir (capacity, 57,000 acre-ft) since 1963. Some diversion above station for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	7.0	6.6	1.7	30	95	59	6.7	6.0	6.2	5.7	6.1
2	10	6.1	4.3	1.7	99	87	69	5.0	6.2	6.4	5.6	6.2
3	9.8	6.1	11	1.7	47	79	63	4.4	6.5	6.4	5.1	6.6
4	6.5	5.6	13	1.6	28	72	56	6.2	6.2	6.8	5.3	5.5
5	6.9	5.4	24	1.6	20	64	54	7.0	6.8	7.1	5.2	6.9
6	5.2	5.4	7.2	1.6	15	61	51	7.2	7.9	6.8	5.2	6.0
7	4.3	5.4	27	1.6	12	67	45	7.0	8.1	6.7	5.2	5.7
8	4.2	4.5	13	1.6	10	94	39	6.7	7.8	6.7	5.2	5.6
9	4.0	4.3	6.8	1.7	8.9	98	36	6.5	8.3	5.7	5.2	5.9
10	3.8	4.2	4.9	4.4	7.9	78	35	6.5	8.2	6.2	5.2	5.9
11	3.7	4.0	4.0	12	7.0	65	33	6.7	7.1	5.7	5.2	5.6
12	3.8	3.9	3.5	5.8	6.2	77	29	7.0	6.9	5.6	5.2	5.5
13	3.9	3.7	3.2	3.8	12	705	27	8.7	7.0	5.7	5.2	5.6
14	3.7	4.7	3.0	7.3	10	640	18	9.2	7.4	5.7	5.2	6.0
15	3.5	3.6	2.8	6.9	7.9	385	11	8.2	6.8	5.7	5.2	5.9
16	3.6	3.9	2.8	23	9.7	468	4.0	7.2	6.5	6.2	5.2	5.7
17	3.7	3.9	2.4	12	86	552	5.6	6.7	6.3	6.7	5.2	5.8
18	3.7	5.0	2.6	8.2	43	328	7.2	6.7	6.0	6.6	5.2	5.7
19	3.9	12	2.8	6.0	155	222	5.0	7.7	5.8	6.0	5.2	6.3
20	3.9	5.9	2.4	5.0	243	165	5.2	7.9	6.7	5.7	5.2	6.3
21	4.0	4.5	2.2	4.0	171	133	7.9	7.4	7.0	5.8	5.2	6.3
22	4.0	4.0	1.9	3.6	71	116	7.4	6.7	6.8	5.5	5.2	6.2
23	4.2	3.9	2.1	3.2	54	102	7.7	7.2	7.1	5.4	5.2	5.6
24	4.4	3.7	2.0	3.0	38	94	7.9	6.7	7.1	4.8	5.2	5.7
25	5.7	3.6	2.0	2.8	29	86	7.9	7.0	6.6	5.4	5.2	5.6
26	8.8	3.6	1.9	2.6	24	80	7.9	6.5	6.8	5.4	5.2	5.6
27	7.5	3.7	1.8	2.6	62	72	7.9	6.2	7.2	5.7	5.2	6.0
28	6.1	4.5	1.8	2.5	98	69	8.4	6.0	7.5	6.1	5.2	6.0
29	5.5	11	1.7	5.6	102	67	7.9	5.6	7.1	6.1	5.2	6.1
30	5.8	12	1.7	357	-----	64	7.9	5.6	6.6	5.7	6.1	6.4
31	7.2	-----	1.7	66	-----	59	-----	6.0	-----	5.5	6.1	-----
TOTAL	161.6	159.1	168.1	663.8	1,506.6	5,344	730.8	210.1	208.3	186.0	163.9	178.3
MEAN	5.21	5.30	5.42	21.4	52.0	172	24.4	6.78	6.94	6.00	5.29	5.94
MAX	10	12	27	357	243	705	69	9.2	8.3	7.1	6.1	6.9
MIN	3.5	3.6	1.7	1.6	6.2	59	4.0	4.4	5.8	4.8	5.1	5.5
AC-FT	321	316	333	1,320	2,990	10,600	1,450	417	413	369	325	354
CAL YR 1967	TOTAL	39,457.1	MEAN	108	MAX	2,480	MIN	1.7	AC-FT	78,260		
WTR YR 1968	TOTAL	9,680.6	MEAN	26.4	MAX	705	MIN	1.6	AC-FT	19,200		

SACRAMENTO RIVER BASIN

11-4210. YUBA RIVER NEAR MARYSVILLE, CALIF.

LOCATION.--Lat 39°10'35", long 121°31'25", in New Helvetia Grant, on left bank 4.2 miles northeast of Marysville, and 5 miles downstream from Dry Creek.

DRAINAGE AREA.--1,339 sq mi.

RECORDS AVAILABLE.--October 1940 to September 1968 (1940-43, 1945, low-water periods only). 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.

GAGE.--Graphic water-stage recorder. Gage is set to datum of Corps of Engineers, which is 2.95 ft below mean sea level. Prior to August 1954 and Oct. 1, 1956, to Sept. 30, 1957, at Simpson Lane Bridge in Marysville 4.2 miles downstream at same datum. Sept. 3, 1963, to Sept. 23, 1968, auxiliary graphic water-stage recorder at Simpson Lane Bridge in Marysville 4.2 miles downstream at same datum.

AVERAGE DISCHARGE.--25 years (1943-68), 2,518 cfs (1,823,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 21,200 cfs Feb. 20 (gage height, 68.69 ft); minimum daily, 41 cfs July 30.

1943-68: Maximum discharge, 180,000 cfs Dec. 22, 1964 (gage height, 90.15 ft from floodmarks), from rating curve extended above 91,000 cfs on basis of Corps of Engineers flood routing study.

1940-68: Minimum discharge recorded, 10 cfs July 2, 1959.

REMARKS.--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 at Englebright Dam and near Marysville. Records of water temperatures near this gaging station for the 1968 water year are published in Part 2 of this report.

REVISIONS (water year).--1965 report: 1960.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	374	235	525	413	2,260	6,000	3,700	1,870	925	66	45	59
2	346	248	436	419	2,910	4,900	3,700	1,910	865	59	45	63
3	466	222	448	425	4,550	4,250	3,200	1,890	808	57	47	63
4	506	222	621	425	4,130	3,700	2,900	1,970	875	64	47	57
5	710	239	895	460	3,220	3,400	2,790	1,980	846	88	45	55
6	728	267	547	499	2,970	3,200	2,720	1,900	771	68	44	52
7	710	248	719	644	3,110	3,100	2,680	1,690	745	66	44	55
8	693	239	685	652	3,080	3,500	2,460	1,570	808	59	45	53
9	613	239	499	652	2,930	3,200	2,360	1,490	771	55	52	55
10	473	226	466	1,120	3,900	3,000	2,390	1,500	771	55	45	53
11	466	177	448	1,100	3,640	2,800	2,570	1,510	660	104	53	55
12	448	165	442	696	2,990	3,100	2,680	1,490	352	122	55	55
13	442	165	436	552	3,260	4,700	2,580	1,430	320	128	53	53
14	436	181	436	710	3,520	4,800	2,410	1,560	407	98	63	53
15	331	197	425	1,810	2,930	4,200	2,340	1,360	384	93	63	57
16	300	226	425	1,160	2,680	4,530	2,300	1,250	320	86	66	57
17	272	231	425	1,760	5,720	6,240	2,180	1,140	267	93	68	59
18	257	231	425	2,860	9,610	4,950	1,930	1,150	231	86	70	55
19	281	272	430	2,200	6,970	4,040	1,760	1,170	214	84	76	52
20	286	315	442	1,820	18,600	3,480	1,630	1,260	226	86	86	50
21	267	336	436	1,570	19,000	3,180	1,550	1,440	205	81	104	52
22	286	336	419	1,450	15,000	3,040	1,430	1,400	161	72	113	53
23	281	341	407	1,440	14,000	2,950	1,340	1,300	110	64	110	52
24	286	336	396	1,460	13,000	2,900	1,300	1,150	100	61	104	50
25	272	286	396	1,400	10,600	2,880	1,300	1,040	92	61	84	50
26	209	193	401	1,360	8,500	3,170	1,330	1,100	80	57	74	50
27	177	218	401	1,320	7,200	3,090	1,390	1,100	74	58	81	49
28	205	248	396	1,300	6,800	2,910	1,490	1,070	66	44	79	47
29	253	374	290	1,270	6,400	3,040	1,560	1,060	63	44	72	44
30	235	583	413	5,850	-----	3,360	1,750	1,000	66	41	64	45
31	262	-----	413	3,500	-----	3,580	-----	995	-----	44	59	-----
TOTAL	11,871	7,796	14,543	42,297	193,480	115,190	65,720	43,745	12,583	2,244	2,056	1,603
MEAN	383	260	469	1,364	6,672	3,716	2,191	1,411	419	72.4	66.3	53.4
MAX	728	583	895	5,850	19,000	6,240	3,700	1,980	925	128	113	63
MIN	177	165	290	413	2,260	2,800	1,300	995	63	41	44	44
AC-FT	23,550	15,460	28,850	83,890	383,800	228,500	130,400	86,770	24,960	4,450	4,080	3,180

CAL YR 1967 TOTAL 1,247,289 MEAN 3,417 MAX 28,100 MIN 165 AC-FT 2,474,000
WTR YR 1968 TOTAL 513,128 MEAN 1,402 MAX 19,000 MIN 41 AC-FT 1,018,000

SACRAMENTO RIVER BASIN

909

11-4217.2. BOARDMAN CANAL NEAR EMIGRANT GAP, CALIF.

LOCATION.--Lat 39°17'49", long 120°42'08", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.35, T.17 N., R.11 E., on right bank 0.4 mile downstream from Boardman diversion dam, and 1.8 miles west of Emigrant Gap.

RECORDS AVAILABLE.--October 1964 to September 1968.

GAGE.--Digital water-stage recorder and Parshall flume. Altitude of gage is 5,020 ft (from topographic map). Prior to June 14, 1967, graphic water-stage recorder 0.25 mile downstream at different datum. June 14, 1967, to Apr. 15, 1968, graphic water-stage recorder at present site and datum.

EXTREMES.--1964-68: Maximum daily discharge, 43 cfs Dec. 21, 1964; no flow for several days each year.

REMARKS.--Water is diverted from Bear River to be used for power development and irrigation in the Bear River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	0	23	14	23	35	30	21	23	26	27	26
2	29	0	23	14	22	35	24	21	23	27	27	26
3	29	9.2	23	14	21	35	30	20	23	28	27	26
4	29	29	24	14	20	35	35	20	23	27	27	27
5	29	29	24	14	20	35	35	20	24	28	28	27
6	29	9.2	24	14	20	35	35	20	24	28	28	27
7	29	.36	23	14	20	35	35	20	23	27	28	27
8	29	.12	23	14	20	36	35	20	23	28	28	27
9	29	0	23	14	22	35	35	22	23	28	28	27
10	29	12	23	13	20	35	35	26	23	28	27	29
11	29	29	23	13	20	35	35	26	23	28	27	30
12	29	29	22	11	20	34	35	25	22	28	27	29
13	28	29	19	11	20	35	35	27	22	28	31	27
14	28	29	19	15	19	35	35	27	23	28	31	27
15	28	29	19	19	19	35	25	26	22	28	30	26
16	28	29	18	18	20	35	22	20	22	28	30	26
17	28	29	17	16	19	34	26	25	22	28	33	27
18	28	29	17	14	12	34	27	25	22	28	33	28
19	28	30	17	14	15	34	27	25	22	27	34	28
20	28	29	16	14	14	35	26	25	23	27	28	28
21	28	29	16	14	14	35	24	25	23	27	26	28
22	28	28	15	14	12	35	25	25	23	27	26	28
23	9.2	25	15	14	14	35	24	25	23	27	26	28
24	.75	24	17	14	10	37	23	25	22	28	26	28
25	.36	23	19	14	9.5	36	23	25	25	29	26	28
26	0	23	17	14	14	34	22	24	26	29	26	28
27	9.6	14	15	16	30	36	22	24	26	29	27	28
28	27	23	14	17	36	38	22	24	26	29	27	28
29	24	23	14	23	35	38	21	24	26	29	27	27
30	8.4	23	14	28	-----	35	21	24	26	28	27	28
31	.38	-----	14	25	-----	35	-----	23	-----	27	27	-----
TOTAL	705.69	614.88	590	477	560.5	1,091	849	729	701	862	870	824
MEAN	22.8	20.5	19.0	15.4	19.3	35.2	28.3	23.5	23.4	27.8	28.1	27.5
MAX	29	30	24	28	36	38	35	27	26	29	34	30
MIN	0	0	14	11	9.5	34	21	20	22	26	26	26
AC-FT	1,400	1,220	1,170	946	1,110	2,160	1,680	1,450	1,390	1,710	1,730	1,630
CAL YR 1967	TOTAL 7,462.67		MEAN 20.4		MAX 30		MIN 0		AC-FT 14,800			
WTR YR 1968	TOTAL 8,874.07		MEAN 24.2		MAX 38		MIN 0		AC-FT 17,600			

SACRAMENTO RIVER BASIN

11-4217.5. DUTCH FLAT NO. 1 POWERPLANT NEAR DUTCH FLAT, CALIF.

LOCATION.--Lat 39°13'02", long 120°50'04", in SW¼SE¼ sec.27, T.16 N., R.10 E., at powerplant 0.75 mile north of Dutch Flat.

RECORDS AVAILABLE.--October 1964 to September 1968.

GAGE.--Recorded powerplant output.

EXTREMES.--1964-68: Maximum daily discharge, 548 cfs for several days in January, February, April 1965; no flow for many days in each year.

REMARKS.--Water is diverted from Drum afterbay through a tunnel to Dutch Flat No. 1 powerplant and returned to Dutch Flat afterbay.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	187	139	0	0	0	0	0	0	0	99	255	0
2	146	0	117	0	0	0	0	0	0	217	283	0
3	90	168	95	26	0	0	0	127	0	180	85	158
4	121	106	187	0	0	0	0	103	0	119	0	258
5	143	140	138	0	82	0	0	0	0	166	132	41
6	0	167	123	0	172	0	0	0	0	87	255	0
7	26	102	141	0	230	0	0	112	0	0	253	0
8	0	181	183	0	249	0	0	74	0	143	262	0
9	0	107	137	0	241	0	0	0	0	190	186	0
10	0	164	0	0	170	0	0	0	0	174	165	0
11	0	96	0	0	101	0	0	0	0	214	0	0
12	0	109	93	0	0	0	0	0	0	183	193	0
13	68	112	154	0	0	0	0	0	0	127	292	240
14	0	49	26	0	0	0	0	0	0	208	303	154
15	0	175	161	134	0	0	0	0	0	235	278	0
16	0	137	16	32	0	0	52	0	0	183	206	95
17	0	95	0	103	0	0	124	0	0	210	0	299
18	0	159	0	157	0	0	110	0	0	183	92	252
19	0	208	0	185	0	0	0	0	0	209	219	278
20	0	193	0	45	0	0	0	0	0	96	278	210
21	0	135	102	0	0	0	0	45	0	0	243	285
22	0	149	63	82	0	0	0	0	0	89	223	257
23	0	0	83	240	0	0	0	0	0	191	258	237
24	0	0	0	193	0	0	0	0	0	184	226	191
25	92	41	0	190	0	0	0	0	0	203	115	350
26	105	0	0	174	0	0	0	0	0	121	201	218
27	146	0	0	87	0	0	0	0	0	158	241	241
28	250	131	0	82	0	0	0	0	0	0	245	273
29	0	138	132	78	0	0	0	0	0	89	282	239
30	131	115	126	72	-----	0	0	0	0	173	289	264
31	134	-----	76	0	-----	0	-----	0	-----	179	152	-----
TOTAL	1,639	3,316	2,153	1,880	1,245	0	286	461	0	4,610	6,212	4,540
MEAN	52.9	111	69.5	60.6	42.9	0	9.53	14.9	0	149	200	151
MAX	250	208	187	240	249	0	124	127	0	235	303	350
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	3,250	6,580	4,270	3,730	2,470	0	567	914	0	9,140	12,320	9,000
CAL YR 1967	TOTAL 66,262.00		MEAN 182		MAX 528		MIN 0			AC-FT 131,400		
WTR YR 1968	TOTAL 26,342.00		MEAN 72.0		MAX 350		MIN 0			AC-FT 52,250		

911

LOCATION.--Lat 39°15'15", long 120°46'30", in SE¹NE⁴ sec.18, T.16 N., R.11 E., on left bank 600 ft downstream from Drum afterbay, and 3.6 miles west of Blue Canyon.

GAGE.--Digital water-stage recorder. Datum of gage is 3,348.09 ft above mean sea level (levels by Nevada Irrigation District). Prior to June 13, 1968, graphic water-stage recorder at same site and datum.

REMARKS.--Records good. Water is diverted from Drum afterbay through the flume to Dutch Flat No. 2 powerplant and returned to Dutch Flat afterbay.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	557	454	425	330	112	610	579	332	271	373	411	366
2	478	519	225	209	116	607	579	334	234	470	388	289
3	463	550	181	164	241	595	578	427	360	471	286	401
4	323	502	301	145	106	600	577	189	273	202	287	462
5	458	495	420	131	364	599	578	438	251	351	400	60
6	459	452	415	131	503	598	578	334	308	230	486	0
7	459	428	421	126	553	591	579	507	267	334	417	0
8	472	459	317	133	592	560	579	500	320	381	495	0
9	473	459	72	134	540	598	586	467	272	449	480	0
10	463	460	153	245	433	593	584	398	298	462	328	0
11	460	0	416	137	195	592	584	404	336	388	393	0
12	470	0	574	136	0	591	582	398	192	402	405	0
13	380	337	500	141	0	591	579	413	330	373	422	283
14	232	554	570	157	0	589	581	407	303	305	437	322
15	224	506	476	503	0	485	581	385	271	344	439	320
16	294	478	238	439	0	595	532	296	252	329	440	373
17	452	490	76	521	0	593	500	310	274	353	317	465
18	458	0	307	577	0	593	489	303	264	352	368	454
19	459	0	283	529	0	578	510	312	303	313	410	457
20	467	279	264	192	0	591	588	325	271	252	424	464
21	465	441	166	192	427	591	588	201	246	336	481	481
22	465	415	201	422	476	589	587	283	244	345	446	457
23	510	117	93	512	589	588	325	350	266	369	436	477
24	546	360	110	588	585	588	142	350	283	354	322	465
25	549	77	161	582	592	563	322	262	282	369	333	454
26	498	150	163	585	579	434	292	327	307	335	373	457
27	476	384	181	381	600	585	246	334	254	222	477	450
28	174	366	266	390	607	584	40	268	333	253	442	450
29	401	412	473	420	606	586	359	309	298	448	418	464
30	549	426	362	217	-----	588	346	285	298	356	400	474
31	447	-----	473	304	-----	581	-----	354	-----	380	259	-----
TOTAL	13,581	10,570	9,283	9,673	8,816	18,026	14,570	10,802	8,461	10,901	12,420	9,345
MEAN	438	352	299	312	304	581	486	348	282	352	401	312
MAX	557	554	574	588	607	610	588	507	360	471	495	481
MIN	174	0	72	126	0	434	40	189	192	202	259	0
AC-FT	26,940	20,970	18,410	19,190	17,490	35,750	28,900	21,430	16,780	21,620	24,630	18,540
CAL YR 1967	TOTAL	160,172.00	MEAN	439	MAX	582	MIN	0	AC-FT	317,700		
WTR YR 1968	TOTAL	136,448.00	MEAN	373	MAX	6						

SACRAMENTO RIVER BASIN

11-4217.7. BEAR RIVER BELOW DRUM AFTERBAY, NEAR BLUE CANYON, CALIF.

LOCATION.--Lat 39°15'16", long 120°46'26", in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.17, T.16 N., R.11 E., on left bank 60 ft below Drum afterbay dam, and 3.5 miles west of Blue Canyon. Prior to Feb. 12, 1968 at site 1,000 ft downstream.

DRAINAGE AREA.--12.3 sq mi.

RECORDS AVAILABLE.--April 1966 to September 1968, low flows only April to September 1966.

GAGE.--Digital water-stage recorder and broad-crested weir. Altitude of gage is 3,300 ft (from topographic map). April 1966 to May 25, 1967, graphic water-stage recorder at present site at different datum, May 26, 1967, to Feb. 11, 1968, graphic water-stage recorder at site 1,000 ft downstream at different datum.

EXTREMES.--Maximum discharge during year, 853 cfs Feb. 23 (gage height, 2.74 ft); minimum daily, 1.0 cfs Dec. 9.

1966-68: Maximum discharge, 853 cfs Feb. 23, 1968 (gage height, 2.74 ft); minimum daily, 1.0 cfs Dec. 9, 1967.

REMARKS.--Water for Dutch Flat No. 1 powerplant (see sta. no. 11-4217.5.) and Dutch Flat No. 2 flume (see sta. no. 11-4217.6.) is diverted from Drum afterbay just upstream from station.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	7.4	2.9	7.8	3.6	189	266	11	11	12	12	12
2	4.7	7.4	14	7.8	5.3	166	301	11	12	11	12	12
3	4.7	6.8	14	7.5	17	177	332	11	12	11	12	12
4	5.4	7.1	7.0	6.4	5.0	126	253	11	11	11	12	13
5	5.0	6.2	6.4	6.4	8.1	141	272	11	11	12	12	16
6	5.9	5.7	4.2	8.4	5.8	11	254	12	11	12	12	5.0
7	6.0	5.0	5.5	8.4	6.1	11	265	12	11	12	12	5.0
8	6.5	4.7	3.1	8.7	6.4	11	269	11	12	12	12	5.0
9	6.8	4.4	1.0	10	7.0	11	96	11	12	12	12	10
10	7.1	4.4	1.5	24	6.0	11	12	11	12	11	12	11
11	6.8	5.0	3.1	2.9	6.0	11	12	11	11	12	12	11
12	6.8	6.5	3.6	3.9	42	11	13	11	12	12	12	11
13	6.5	6.8	4.2	3.3	42	139	16	11	12	12	12	12
14	5.7	7.4	4.7	6.1	37	121	10	12	12	12	12	12
15	6.5	5.4	5.0	31	35	221	10	12	12	11	12	12
16	6.8	5.0	11	12	40	140	10	11	12	12	12	12
17	8.9	5.2	6.1	10	84	118	11	11	12	12	12	12
18	11	7.1	19	10	35	122	11	11	12	12	12	12
19	10	5.4	21	9.9	55	143	11	11	12	11	12	12
20	7.0	6.5	20	5.8	169	115	11	11	11	12	12	12
21	5.2	6.1	25	5.5	31	129	11	11	12	12	12	11
22	5.4	5.8	14	8.4	24	130	11	11	12	12	12	11
23	4.7	6.7	3.1	9.3	126	143	10	12	12	12	12	12
24	5.2	12	3.3	31	288	139	10	11	12	12	12	12
25	4.7	7.5	4.2	23	282	128	10	11	12	12	12	12
26	5.2	11	5.8	24	266	11	10	11	12	12	12	12
27	5.4	7.5	8.1	20	224	11	9.9	11	12	12	12	12
28	5.0	5.5	7.5	19	235	11	10	11	12	12	12	12
29	6.2	5.8	8.7	20	199	12	11	11	12	12	12	12
30	6.2	4.2	7.5	5.5	-----	11	11	11	12	12	12	12
31	7.1	-----	8.7	13	-----	80	-----	11	-----	12	12	-----
TOTAL	195.2	191.5	253.2	369.0	2,290.3	2,800	2,538.9	346	353	366	372	337.0
MEAN	6.30	6.38	8.17	11.9	79.0	90.3	84.6	11.2	11.8	11.8	12.0	11.2
MAX	11	12	25	31	288	221	332	12	12	12	12	16
MIN	4.7	4.2	1.0	2.9	3.6	11	9.9	11	11	11	12	5.0
AC-FT	387	380	502	732	4,540	5,550	5,040	686	700	726	738	668

CAL YR 1967 TOTAL 4,921.9 MEAN 13.5 MAX 492 MIN 1.0 AC-FT 9,760
WTR YR 1968 TOTAL 10,412.1 MEAN 28.4 MAX 332 MIN 1.0 AC-FT 20,650

Note.--No gage-height record July 22 to Aug. 26.

SACRAMENTO RIVER BASIN

913

11-4217.8. CHICAGO PARK FLUME NEAR DUTCH FLAT, CALIF.

LOCATION (revised).--Lat 39°12'55", long 120°50'30", in NW¼NE¼ sec.34, T.16 N., R.10 E., on left bank 670 ft. downstream from Dutch Flat Afterbay, and 0.6 mile north of Dutch Flat. Prior to Sept. 8, 1968, at site 420 ft upstream.

RECORDS AVAILABLE.--November 1965 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 2,600 ft (from topographic map). Prior to Sept. 8, 1968, graphic water-stage recorder at site 420 ft upstream at same datum.

EXTREMES.--1965-68: Maximum daily discharge, 1,030 cfs Feb. 1, May 31, 1967; no flow for several days in each year.

REMARKS.--Records fair. Flow regulated by Dutch Flat Afterbay.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	761	507	514	355	184	377	892	333	212	530	706	405
2	232	552	254	316	158	625	889	408	155	619	546	273
3	0	613	282	191	377	844	883	705	431	608	209	696
4	0	524	514	192	86	775	797	111	243	213	301	700
5	0	560	548	184	545	873	908	175	222	582	686	258
6	0	540	530	196	691	650	775	530	357	129	669	0
7	0	522	526	200	796	638	883	530	351	297	654	0
8	0	631	450	200	807	569	973	521	411	642	769	0
9	0	517	60	207	804	634	799	481	203	663	573	0
10	0	440	246	334	785	615	611	413	213	558	328	0
11	0	126	398	218	531	618	607	426	376	530	437	0
12	0	0	740	218	0	394	659	370	190	514	680	0
13	0	461	427	206	0	856	638	448	313	533	629	192
14	0	652	646	251	0	781	604	437	232	448	733	363
15	0	655	524	775	0	821	626	434	316	540	730	318
16	0	518	341	527	0	743	681	224	266	491	499	585
17	0	537	139	652	0	803	615	465	286	498	366	738
18	248	233	286	779	0	774	561	320	327	490	358	702
19	561	225	360	701	0	879	564	259	308	396	741	782
20	559	332	340	274	0	734	638	432	229	291	748	615
21	557	482	280	268	0	677	628	151	275	351	703	711
22	562	489	268	450	0	789	597	336	276	510	626	702
23	653	92	53	743	0	671	383	393	222	525	671	631
24	590	534	179	768	0	762	111	380	342	443	500	636
25	580	16	209	771	0	813	415	259	284	570	377	804
26	606	211	201	729	0	446	364	185	412	451	634	660
27	598	587	312	416	0	590	363	474	207	222	699	637
28	288	457	373	460	0	543	24	141	355	194	671	673
29	382	512	491	520	122	632	388	428	310	601	743	658
30	733	466	467	195	-----	607	376	185	298	541	605	738
31	525	-----	530	440	-----	649	-----	442	-----	440	284	-----
TOTAL	8,435	12,991	11,488	12,736	5,886	21,182	18,252	11,396	8,622	14,420	17,875	13,477
MEAN	272	433	371	411	203	683	608	368	287	465	577	449
MAX	761	655	740	779	807	879	973	705	431	663	769	804
MIN	0	0	53	184	0	377	24	111	155	129	209	0
AC-FT	16,730	25,770	22,790	25,260	11,670	42,010	36,200	22,600	17,100	28,600	35,450	26,730
CAL YR 1967	TOTAL 228,383.00		MEAN 626		MAX 1,030		MIN 0		AC-FT 453,000			
WTR YR 1968	TOTAL 156,760.00		MEAN 428		MAX 973		MIN 0		AC-FT 310,900			

SACRAMENTO RIVER BASIN

11-4217.9. BEAR RIVER BELOW DUTCH FLAT AFTERBAY, NEAR DUTCH FLAT, CALIF.

LOCATION.--Lat 39°12'55", long 120°50'25", in NE $\frac{1}{4}$ sec.34, T.16 N., R.10 E., at the left bank downstream end of spillway, on Dutch Flat afterbay dam, 0.6 mile north of Dutch Flat.

DRAINAGE AREA.--21.5 sq mi.

RECORDS AVAILABLE.--December 1965 to September 1968.

GAGE.--Graphic water-stage recorder and concrete control. Altitude of gage is 2,600 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 1,390 cfs Feb. 21; minimum daily, 0.08 cfs Mar. 8-19.

1965-68: Maximum discharge, 1,390 cfs Dec. 5, 6, 1966, Feb. 21, 1968; minimum daily, 0.08 cfs Mar. 8-19, 1968.

REMARKS.--Records good. Water is imported from South Yuba River basin via South Yuba Canal (see sta. no. 11-4142.) and Drum Canal above forebay (see sta. no. 11-4141.9.). Chicago Park flume (see sta. no. 11-4217.8.) diverts above station to Chicago Park powerplant. Records include spill over Dutch Flat afterbay dam. This station measures flow from Dutch Flat afterbay in connection with a Federal Power Commission project.

COOPERATION.--Records of spill over Dutch Flat afterbay dam furnished by Nevada Irrigation District.

REVISIONS (water year).--1967 report: 1966.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	6.4	2.6	2.3	2.5	393	6.4	9.2	16	11	11	11
2	291	2.6	2.6	2.3	2.5	159	6.7	12	16	11	11	11
3	565	2.5	2.6	2.3	2.5	24	5.4	12	16	11	11	10
4	539	2.5	2.6	2.3	2.5	6.0	6.2	154	16	11	11	10
5	530	2.3	2.6	2.5	2.5	6.4	6.0	4.5	16	11	11	121
6	548	2.3	2.6	2.5	2.5	6.4	6.7	9.0	13	11	11	74
7	555	2.3	2.6	2.5	2.6	2.6	6.7	14	18	11	11	5.8
8	555	2.3	2.6	2.5	2.6	.08	4.9	13	18	11	11	5.8
9	555	2.3	2.5	2.5	2.6	.08	4.8	12	18	11	11	6.1
10	555	2.3	2.5	2.5	2.6	.08	6.4	14	18	11	11	6.4
11	555	2.3	2.5	2.5	2.5	.08	5.9	14	18	11	11	6.4
12	540	2.3	2.5	2.5	2.5	.08	4.9	13	16	11	11	6.4
13	491	2.3	2.5	2.5	198	.08	6.2	13	13	11	11	6.8
14	295	2.3	2.5	2.5	169	.08	6.2	13	11	11	11	6.8
15	292	2.5	2.5	2.5	91	.08	4.6	13	11	11	11	6.8
16	316	2.5	2.3	2.5	45	.08	4.8	13	11	11	11	6.8
17	549	2.6	2.3	2.5	63	.08	5.1	13	11	11	11	6.8
18	352	2.6	2.3	2.5	39	.08	4.1	13	11	11	11	6.8
19	12	2.6	2.3	2.5	30	.08	4.1	13	11	11	11	6.8
20	12	2.7	2.3	2.5	547	.10	5.4	14	11	11	11	6.8
21	12	2.7	2.3	2.5	918	.98	5.4	14	11	11	11	6.8
22	12	2.7	2.3	2.5	989	3.1	4.2	16	11	11	11	6.8
23	12	2.7	2.3	2.5	938	7.4	2.9	16	11	11	11	6.8
24	12	2.7	2.3	2.5	1,000	7.8	2.4	16	11	11	11	6.8
25	12	2.7	2.3	2.5	911	3.5	3.8	16	11	11	11	6.8
26	12	2.7	2.3	2.5	874	.98	4.3	16	11	11	11	6.8
27	12	2.7	2.3	2.5	824	.72	5.6	16	11	11	11	6.8
28	11	2.7	2.3	2.5	806	.50	5.6	16	11	11	11	6.8
29	11	2.7	2.3	2.5	621	.50	4.3	16	11	11	11	6.8
30	11	2.7	2.3	35	-----	3.7	3.8	15	11	11	11	6.8
31	11	-----	2.3	47	-----	6.2	-----	16	-----	11	11	-----
TOTAL	8,247	79.5	75.1	153.7	9,365.4	633.84	153.8	558.7	399	341	341	396.3
MEAN	266	2.65	2.42	4.96	323	20.4	5.13	18.0	13.3	11.0	11.0	13.2
MAX	565	6.4	2.6	47	1,000	393	6.7	154	18	11	11	121
MIN	11	2.3	2.3	2.3	2.5	.08	2.4	4.5	11	11	11	5.8
AC-FT	16,360	158	149	305	18,580	1,260	305	1,110	791	676	676	786

CAL YR 1967 TOTAL 16,422.3 MEAN 45.0 MAX 565 MIN 2.3 AC-FT 32,570
WTR YR 1968 TOTAL 20,744.34 MEAN 56.7 MAX 1,000 MIN .08 AC-FT 41,150

11-4218. ROLLINS RESERVOIR NEAR COLFAX, CALIF.

LOCATION.--Lat 39°08'05", long 120°56'54", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.22, T.15 N., R.9 E., on left bank just upstream from Rollins Dam on Bear River, 2.3 miles north of Colfax.

DRAINAGE AREA.--104 sq mi.

RECORDS AVAILABLE.--December 1964 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Nevada Irrigation District).

EXTREMES.--Maximum contents during year, 67,300 acre-ft Feb. 21 (elevation, 2,172.6 ft); minimum, 43,500 acre-ft Aug. 4 (elevation, 2,139.6 ft).

1964-68: Maximum contents, 68,800 acre-ft Jan. 21, 1967 (elevation, 2,174.3 ft); minimum since initial filling of reservoir, 28,100 acre-ft Mar. 7, 1965 (elevation, 2,110.0 ft).

REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 15, 1964. Usable capacity, 65,720 acre-ft between elevations 1,970.0 (invert of outlet tunnel) and 2,171.0 ft (spillway crest) above mean sea level. Dead storage, 270 acre-ft. Several diversions into and out of basin upstream for power development and irrigation. Stored water is released into Bear River, part of which is diverted to Pacific Gas and Electric's Bear River Canal for power development. Water is later used for irrigation. Records, including extremes, represent total contents at 2400 hours.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

2,050	8,940	2,120	32,700
2,060	11,200	2,140	43,800
2,080	16,800	2,175	69,400
2,100	23,900		

CONTENTS, IN ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66,400	65,600	63,900	61,900	64,500	66,700	66,700	64,100	60,400	48,000	44,600	53,200
2	66,400	65,800	63,600	61,700	64,300	66,700	66,800	63,900	59,800	48,200	44,600	52,900
3	66,300	66,100	63,500	61,200	64,700	66,700	66,800	64,300	59,700	48,400	44,000	53,700
4	66,200	66,200	64,200	60,700	64,500	66,700	66,700	64,100	59,100	47,900	43,500	54,300
5	66,200	66,400	64,900	60,100	65,100	66,700	66,700	63,500	58,600	48,000	43,600	54,200
6	66,200	66,500	65,200	59,500	66,000	66,500	66,700	63,500	58,300	47,300	43,900	53,400
7	66,200	66,400	65,900	59,000	66,700	66,500	66,700	63,700	58,000	46,800	44,200	52,400
8	66,200	66,500	66,200	58,400	66,700	66,400	66,800	63,900	57,900	47,100	44,600	51,400
9	66,200	66,400	65,500	57,700	66,700	66,500	66,700	63,900	57,300	47,300	44,700	50,300
10	66,200	66,300	65,100	58,100	66,700	66,400	66,600	64,000	56,700	47,400	44,200	49,100
11	66,200	65,600	65,100	57,700	66,400	66,500	66,600	64,100	56,500	47,400	44,000	48,000
12	66,200	64,600	65,700	57,200	66,200	66,700	66,700	64,200	55,800	47,400	44,300	46,800
13	66,100	64,600	65,700	56,700	66,200	67,000	66,600	64,400	55,500	47,400	44,400	45,800
14	65,600	65,100	66,100	56,400	66,100	67,100	66,700	64,600	55,000	47,200	45,100	45,400
15	65,100	65,600	66,200	59,000	65,700	67,100	66,600	64,800	54,600	47,300	45,900	45,100
16	64,600	65,700	65,900	59,800	65,400	67,200	66,600	64,600	54,100	47,300	46,300	45,200
17	64,600	65,800	65,300	60,500	66,100	67,200	66,500	64,800	53,700	47,200	46,300	45,800
18	64,600	65,400	65,100	61,500	66,200	67,100	66,400	64,700	53,300	47,100	46,200	46,300
19	64,600	64,900	64,900	62,200	66,700	67,000	66,400	64,400	52,900	46,900	47,000	46,800
20	64,700	64,800	64,700	61,900	67,100	67,100	66,400	64,600	52,400	46,300	47,800	47,000
21	64,800	64,900	64,300	61,500	67,300	67,000	66,400	64,100	51,900	46,000	48,400	47,600
22	64,700	65,000	64,100	61,600	67,100	67,000	66,400	63,900	51,400	45,900	49,000	48,100
23	65,000	64,300	63,300	62,300	67,200	67,000	66,100	63,800	50,900	45,900	49,700	48,400
24	65,100	64,300	62,700	63,100	67,100	66,800	65,500	63,500	50,400	45,700	50,000	48,600
25	65,200	63,500	62,300	63,900	67,000	66,700	65,500	63,100	50,000	45,800	50,000	49,400
26	65,400	62,900	61,900	64,500	66,900	66,600	65,400	62,600	49,800	45,600	50,600	49,700
27	65,700	63,100	61,700	64,500	66,800	66,600	65,200	62,600	49,200	44,900	51,300	50,000
28	65,200	63,100	61,500	64,700	66,800	66,600	64,600	61,900	48,800	44,300	52,000	50,300
29	64,900	63,500	61,800	65,000	66,700	66,600	64,500	61,700	48,400	44,400	52,900	50,700
30	65,400	63,600	61,900	64,700	-----	66,600	64,300	61,100	47,900	44,400	53,200	51,100
31	65,500	-----	62,100	65,000	-----	66,700	-----	60,900	-----	44,200	53,100	-----
(a)	2,170.4	2,168.1	2,166.2	2,169.8	2,171.9	2,171.8	2,169.0	2,164.7	2,146.6	2,140.7	2,154.2	2,151.4
(b)	-900	-1,900	-1,500	+2,900	+1,700	0	-2,400	-3,400	-13,000	-3,700	+8,900	-2,000
MAX	66,400	66,500	66,200	65,000	67,300	67,200	66,800	64,800	60,400	48,400	53,200	54,300
MIN	64,600	62,900	61,500	56,400	64,300	66,400	64,300	60,900	47,900	44,200	43,500	45,100
CAL YR 1967	b	-2,500		MAX	68,800		MIN	61,500				
WTR YR 1968	b	-15,300		MAX	67,300		MIN	43,500				

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

11-4220. BEAR RIVER CANAL INTAKE NEAR COLFAX, CALIF.

LOCATION.--Lat 39°07'58", long 120°57'12", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.22, T.15 N., R.9 E., on right bank 600 ft downstream from canal inlet, 0.25 mile below Rollins Dam, and 2.2 miles north of Colfax.

RECORDS AVAILABLE.--January 1912 to September 1953, October 1964 to September 1968. Monthly discharge only for some periods published in WSP 1315-A. Prior to 1913, published as Pacific Gas and Electric Co.'s Canal near Colfax.

GAGE.--Digital water-stage recorder. Altitude of gage is 1,980 ft (from topographic map). Prior to Mar. 25, 1946, graphic water-stage recorder at site 1.5 miles downstream at different datum. Mar. 26, 1946, to Apr. 1, 1968, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--45 years (1912-53, 1964-68), 267 cfs (193,300 acre-ft per year).

EXTREMES.--1912-53, 1964-68: Maximum daily discharge, 499 cfs Apr. 20-22, 1966, Aug. 1-3, 1967; no flow at times in most years.

REMARKS.--Records good. Canal diverts from left bank of Bear River. Water is first used to develop power at Halsey and Wise Powerhouse, part of it is then distributed for irrigation and part is eventually spilled into North Fork American River.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	489	493	469	454	463	459	456	452	478	478	480	285
2	490	493	452	452	462	460	455	450	479	479	480	289
3	491	493	455	452	462	461	454	452	479	479	479	302
4	491	494	456	451	461	461	455	455	479	479	477	319
5	491	494	460	450	461	461	455	455	479	479	478	411
6	491	494	459	449	463	461	454	456	479	479	477	449
7	489	495	456	449	464	461	454	458	479	480	477	449
8	489	495	456	449	464	390	454	454	479	479	477	449
9	490	495	456	447	464	0	454	400	479	479	477	450
10	491	495	456	449	464	0	454	352	479	479	477	450
11	494	495	455	447	464	0	454	349	479	477	477	450
12	496	495	455	447	464	0	454	348	479	478	477	450
13	494	495	455	445	464	0	454	346	478	477	477	450
14	493	495	456	446	461	0	454	347	479	477	327	450
15	493	495	456	450	456	0	454	348	479	477	281	450
16	493	495	455	451	455	0	455	347	480	476	299	450
17	493	495	455	451	457	0	451	349	480	477	297	449
18	493	495	455	452	457	0	448	351	480	477	299	450
19	493	495	455	454	459	0	448	350	480	479	300	450
20	493	495	454	454	462	0	448	350	481	480	308	449
21	493	495	454	455	460	0	448	350	481	480	310	449
22	493	495	454	455	457	0	448	440	482	481	310	448
23	493	495	453	455	458	0	448	481	482	481	296	448
24	493	495	453	456	457	94	448	483	482	481	290	448
25	493	495	453	458	457	369	449	483	481	481	291	464
26	493	495	453	459	458	456	450	483	479	481	283	480
27	493	495	453	461	459	455	451	480	478	481	275	479
28	493	495	452	462	459	455	452	478	479	481	275	478
29	493	495	452	462	460	456	456	479	478	481	275	479
30	493	495	453	463	-----	455	458	479	478	480	274	480
31	493	-----	454	463	-----	456	-----	479	-----	480	274	-----
TOTAL	15,260	14,841	14,110	14,048	13,352	6,810	13,573	12,984	14,384	14,853	11,474	13,004
MEAN	492	495	455	453	460	220	452	419	479	479	370	433
MAX	496	495	469	463	464	461	458	483	482	481	480	480
MIN	489	493	452	445	455	0	448	346	478	476	274	285
AC-FT	30,270	29,440	27,990	27,860	26,480	13,510	26,920	25,750	28,530	29,460	22,760	25,790
CAL YR 1967	TOTAL 166,367.60		MEAN 456		MAX 499		MIN 0		AC-FT 330,000			
WTR YR 1968	TOTAL 158,693.00		MEAN 434		MAX 496		MIN 0		AC-FT 314,800			

SACRAMENTO RIVER BASIN

917

11-4225. BEAR RIVER BELOW ROLLINS DAM, NEAR COLFAX, CALIF.

LOCATION.--Lat 39°07'53", long 120°57'29", in SE¼SW¼ sec.22, T.15 N., R.9 E., on right bank 65 ft downstream from highway bridge, 0.5 mile downstream from Rollins Dam, and 2.2 miles north of Colfax.

DRAINAGE AREA.--105 sq mi.

RECORDS AVAILABLE.--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 September 1968. Prior to August 1964, published as Bear River near Colfax. Monthly discharge only for some periods, published in WSP 1315-A. Records for November and December 1911 include diversion to Bear River Canal and are not equivalent.

GAGE.--Graphic water-stage recorder and concrete control. Datum of gage is 1,927.41 ft above mean sea level, datum of 1929. Prior to Aug. 8, 1915, staff gages at several sites above diversion dam 0.3 mile upstream at different datums. Aug. 8, 1915, to June 30, 1917, staff gage 0.7 mile downstream at different datum. Nov. 1, 1949, to Sept. 30, 1953, at site 0.2 mile downstream at different datum.

AVERAGE DISCHARGE.--9 years (1912-13, 1915-16, 1950-53, 1964-68), 336 cfs (243,300 acre-ft per year), unadjusted.

EXTREMES.--Maximum discharge during year, 2,250 cfs Feb. 21 (gage height, 5.06 ft); minimum daily, 19 cfs Nov. 26, 27.

1912-13, 1915-17, 1949-53 (prior to regulation): Maximum discharge, 9,620 cfs Nov. 20, 1950 (gage height, 21.40 ft, site and datum then in use), from rating curve extended above 3,600 cfs on basis of slope-area measurement of maximum flow; no flow at times in 1912, 1952.

1964-68: Maximum discharge, 6,700 cfs Jan. 21, 1967 (gage height, 8.50 ft); minimum daily, 0.5 cfs Nov. 17, 1964.

REMARKS.--Records good. Flow regulated by Rollins Reservoir (see sta. no. 11-4218.) beginning Dec. 15, 1964. Bear River Canal (see sta. no. 11-4220.) diverts above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	290	41	21	21	23	630	610	53	68	67	84	82
2	258	22	21	21	31	625	694	71	68	68	85	82
3	212	22	23	21	26	656	640	71	67	67	85	82
4	122	44	24	21	25	565	550	73	67	66	85	82
5	85	82	24	21	24	667	620	73	67	66	85	80
6	82	110	22	21	23	514	514	71	67	67	88	82
7	87	96	24	21	292	387	536	71	67	66	87	82
8	92	136	24	20	620	460	645	71	67	70	88	82
9	92	97	25	20	667	834	540	70	66	79	88	118
10	88	107	22	25	700	810	307	70	66	77	88	175
11	77	30	22	22	521	799	221	70	66	76	88	175
12	73	22	21	22	112	495	251	70	66	76	88	178
13	77	22	22	21	77	1,050	258	70	66	76	88	180
14	71	22	25	22	38	1,200	230	70	66	76	88	155
15	77	23	60	33	22	1,220	237	70	66	76	87	97
16	77	23	34	23	23	1,270	265	71	67	76	85	95
17	76	23	22	22	28	1,450	240	71	67	76	87	95
18	76	23	22	22	71	1,270	221	71	67	76	87	97
19	74	23	22	22	85	1,290	162	71	67	76	87	97
20	74	22	22	21	1,630	1,050	192	71	67	74	87	97
21	74	22	22	21	1,780	1,000	215	71	67	74	85	95
22	74	22	22	21	1,620	1,030	218	73	67	74	84	92
23	74	21	22	20	1,440	978	121	74	68	76	82	92
24	74	20	22	21	1,320	1,020	31	71	70	76	82	88
25	74	20	22	21	1,050	738	22	71	67	80	82	77
26	74	19	21	22	906	340	22	70	68	88	82	79
27	74	19	21	22	810	318	22	71	68	85	82	80
28	74	22	21	22	744	293	22	71	68	82	82	79
29	74	24	21	22	635	375	25	70	68	80	82	77
30	74	24	21	26	-----	335	26	68	67	80	82	77
31	74	-----	21	24	-----	335	-----	68	-----	82	82	-----
TOTAL	2,974	1,203	738	684	15,343	24,004	8,657	2,177	2,013	2,328	2,642	3,049
MEAN	95.9	40.1	23.8	22.1	529	774	289	70.2	67.1	75.1	85.2	102
MAX	290	136	60	33	1,780	1,450	694	74	70	88	88	180
MIN	71	19	21	20	22	293	22	53	66	66	82	77
AC-FT	5,900	2,390	1,460	1,360	30,430	47,610	17,170	4,320	3,990	4,620	5,240	6,050
CAL YR 1967	TOTAL 161,255		MEAN 442		MAX 3,470	MIN 19		AC-FT 319,800				
WTR YR 1968	TOTAL 65,812		MEAN 180		MAX 1,780	MIN 19		AC-FT 130,500				

SACRAMENTO RIVER BASIN

11-4237. NEW CAMP FAR WEST RESERVOIR NEAR WHEATLAND, CALIF.

LOCATION.--Lat 39°03'00", long 121°18'52", in NE¼SW¼ sec.21, T.14 N., R.6 E., in center of New Camp Far West Dam on the Bear River, 6.4 miles east of Wheatland, and 11.8 miles northeast of Sheridan.

DRAINAGE AREA.--283 sq mi.

RECORDS AVAILABLE.--October 1966 to September 1968. October 1963 to September 1966 in reports of California Department of Water Resources.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by South Sutter Water District).

EXTREMES.--Maximum contents during year, 109,800 acre-ft Feb. 20 (elevation, 302.5 ft); minimum, 2,700 acre-ft Sept. 30 (elevation, 178.2 ft).

REMARKS.--Reservoir is formed by an earthfill dam. Storage began Sept. 30, 1963. Usable capacity, 139,600 acre-ft between elevations 175.0 (bottom of lowest river outlet) and 316.3 ft (maximum spillway design). Dead storage, 2,200 acre-ft. Records including extremes represent total contents at 2400 hours.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

170	1,400	250	34,200
180	3,000	260	44,000
190	4,800	270	55,500
200	7,000	280	69,500
210	9,800	290	85,600
220	14,000	300	104,400
230	19,400	320	151,000
240	25,800		

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68.1	69.7	74.8	83.7	100.5	106.4	105.9	95.6	76.6	50.4	21.8	6.0
2	68.7	69.7	75.0	83.8	101.8	106.4	106.1	94.4	75.9	49.5	21.1	5.8
3	69.7	69.5	75.5	83.8	103.5	106.1	106.1	93.5	75.1	48.6	20.4	5.5
4	70.1	69.5	76.4	84.0	104.4	106.1	106.1	92.6	74.3	47.6	19.7	5.2
5	70.0	69.5	77.9	84.0	105.1	106.1	106.1	91.4	73.5	46.5	19.0	4.9
6	70.1	69.5	78.2	84.2	105.3	106.1	106.1	90.5	72.9	45.5	18.3	4.7
7	70.1	69.5	79.2	84.2	105.3	105.9	105.9	89.7	72.2	44.5	17.6	4.5
8	70.1	69.5	79.6	84.3	105.9	105.9	105.9	88.8	71.6	43.4	16.9	4.2
9	70.1	69.5	80.0	84.5	106.1	106.4	105.9	88.0	70.9	42.4	16.2	4.0
10	70.1	69.7	80.1	85.4	106.4	106.4	105.5	87.1	70.1	41.6	15.5	3.8
11	70.1	69.8	80.4	85.8	106.4	106.4	105.3	86.2	69.4	40.6	14.7	3.6
12	70.1	69.8	80.6	86.2	105.9	106.4	105.3	85.4	68.7	39.7	13.9	3.7
13	70.1	69.8	80.8	86.4	105.5	106.8	105.3	85.0	67.8	38.8	13.3	3.7
14	70.1	70.0	80.9	86.5	105.3	107.4	105.3	84.5	67.1	37.9	12.8	3.7
15	70.1	70.3	81.1	89.7	105.1	107.4	105.3	84.0	66.4	36.9	12.3	3.8
16	70.1	70.5	81.3	90.5	105.1	108.1	105.1	83.7	65.6	36.0	11.8	3.8
17	70.1	70.6	81.4	91.1	106.4	108.1	105.3	83.2	64.7	34.9	11.3	3.8
18	70.1	70.9	81.6	91.4	106.1	107.7	105.1	82.9	63.9	33.9	10.8	3.7
19	70.1	71.4	81.7	91.6	107.9	107.4	104.8	82.4	62.8	33.0	10.3	3.6
20	70.0	71.6	81.9	91.8	109.8	107.0	104.4	82.1	61.8	32.2	9.9	3.5
21	70.0	71.8	82.1	92.0	109.6	107.0	103.8	81.6	60.8	31.3	9.7	3.5
22	70.0	72.1	82.2	92.2	108.5	106.8	103.5	81.3	59.7	30.4	9.4	3.4
23	69.8	72.2	82.4	92.4	108.3	106.8	102.9	80.9	58.6	29.6	9.2	3.4
24	69.8	72.4	82.5	92.6	107.9	106.8	102.1	80.4	57.5	28.7	8.8	3.3
25	69.8	72.6	82.7	92.7	107.4	106.6	101.2	80.1	56.3	27.7	8.6	3.3
26	69.8	72.7	82.9	92.9	107.0	106.1	100.3	79.8	55.5	26.7	8.1	3.2
27	69.8	72.9	83.0	93.1	106.8	105.9	99.3	79.5	54.5	25.7	7.4	3.1
28	69.8	73.2	83.2	93.3	106.6	105.7	98.4	79.0	53.4	24.9	6.8	3.0
29	69.7	73.5	83.3	93.5	106.4	105.7	97.4	78.4	52.4	24.1	6.6	2.8
30	69.7	74.3	83.5	98.4	-----	105.7	96.5	77.9	51.4	23.4	6.3	2.7
31	69.7	-----	83.5	99.7	-----	105.7	-----	77.2	-----	22.6	6.1	-----
(a)	280.1	283.0	288.7	297.5	300.9	300.6	295.8	284.8	266.4	235.0	195.9	178.2
(b)	+1.8	+4.6	+9.2	+16.2	+6.7	-0.7	-9.2	-19.3	-25.8	-28.8	-16.5	-3.4
MAX	70.1	74.3	83.5	99.7	109.8	108.1	106.1	95.6	76.6	50.4	21.8	6.0
MIN	68.1	69.5	74.8	83.7	100.5	105.7	96.5	77.2	51.4	22.6	6.1	2.7
CAL YR 1967		b	-21.0		MAX	116.9		MIN	67.2			
WTR YR 1968		b	-65.2		MAX	109.8		MIN	2.7			

a Elevation, in feet, at end of month.

b Change in contents, in thousands of acre-feet.

SACRAMENTO RIVER BASIN

919

11-4240. BEAR RIVER NEAR WHEATLAND, CALIF.

LOCATION.--Lat 39°00'00", long 121°24'20", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.3, T.13 N., R.5 E., on right bank 100 ft downstream from bridge on U.S. Highway 99E, 1 mile southeast of Wheatland, and 6.5 miles downstream from Rock Creek.

DRAINAGE AREA.--292 sq mi.

RECORDS AVAILABLE.--October 1928 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 76.92 ft above mean sea level. Prior to July 17, 1929, staff gage at about same site at datum 4.58 ft higher. July 17, 1929, to Oct. 22, 1943, graphic water-stage recorder at several sites within 300 ft of present site at datum 4.58 ft higher. Oct. 23, 1943, to June 23, 1964, at site 100 ft upstream at datum 2.00 ft higher.

AVERAGE DISCHARGE.--39 years (1929-68), 419 cfs (303,300 acre-ft per year), adjusted for change in storage and diversions from New Camp Far West Reservoir since 1968.

EXTREMES.--Maximum discharge recorded during year, 5,300 cfs Feb. 20 (gage height, 7.23 ft); minimum daily, 1.4 cfs Sept. 27.
1928-68: Maximum discharge, 33,000 cfs Dec. 22, 1955 (gage height, 19.30 ft, site and datum then in use); maximum gage height, 20.83 ft Nov. 21, 1950, site and datum then in use; no flow at times.

REMARKS.--Records good. Natural flow of stream affected by inflow from Yuba River and American River basins. Flow regulated by Lake Combie (usable capacity, 7,840 acre-ft), Rollins Reservoir since December 1964 (see sta. no. 11-4218.) and New Camp Far West Reservoir since October 1963 (see sta. no. 11-4237.). Many diversions for irrigation and power. Records of chemical analyses for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.6	17	29	30	21	840	445	14	16	14	13	7.0
2	9.6	17	28	30	34	804	642	18	15	13	14	7.0
3	31	17	29	30	24	762	720	21	16	12	14	7.0
4	8.2	17	30	30	23	762	684	22	14	11	16	7.8
5	5.4	17	30	30	98	732	618	24	12	12	14	8.2
6	5.0	18	28	30	44	738	624	25	17	9.6	11	8.2
7	5.0	18	31	30	263	684	576	23	26	11	8.6	8.2
8	13	17	29	30	350	672	540	21	18	9.6	7.0	8.6
9	21	17	29	30	642	690	582	21	19	7.4	8.2	9.0
10	21	18	29	38	768	810	630	23	17	8.6	11	10
11	21	19	28	31	792	846	350	24	14	8.6	10	12
12	21	17	28	31	672	834	236	26	14	11	10	10
13	21	12	28	31	415	912	225	32	14	13	9.6	9.6
14	25	20	28	32	314	1,320	225	30	13	12	9.6	9.6
15	27	27	29	43	239	1,440	180	21	13	12	9.0	9.0
16	28	26	29	33	210	1,530	140	21	13	13	8.6	8.6
17	29	38	29	31	410	2,020	100	24	12	13	21	8.2
18	29	59	30	29	762	1,710	70	25	8.6	12	8.6	7.0
19	28	44	30	18	680	1,430	40	24	8.6	9.0	11	6.6
20	20	28	30	15	4,470	1,280	30	24	9.0	8.2	10	5.4
21	18	21	30	16	4,250	1,130	25	24	8.6	6.8	8.6	3.5
22	19	26	30	17	3,340	1,060	25	24	10	8.2	9.6	3.5
23	19	27	30	17	2,400	1,050	23	23	11	12	8.2	3.5
24	19	27	30	17	2,070	990	26	22	9.6	13	7.8	2.3
25	18	27	31	17	1,670	978	21	23	8.6	13	7.4	3.8
26	18	28	31	17	1,390	798	21	22	8.2	12	7.4	1.5
27	20	28	30	17	1,180	558	22	21	7.8	12	7.0	1.4
28	18	28	30	17	1,040	474	21	24	10	13	7.0	4.6
29	17	30	30	18	936	425	21	22	12	13	6.2	20
30	18	33	30	83	-----	430	17	22	13	13	5.8	24
31	18	-----	30	28	-----	425	-----	21	-----	13	6.6	-----
TOTAL	578.8	738	913	866	29,507	29,134	7,879	711	388.0	349.0	305.8	235.1
MFAN	18.7	24.6	29.5	27.9	1,017	940	263	22.9	12.9	11.3	9.86	7.84
MAX	31	59	31	83	4,470	2,020	720	32	26	14	21	24
MIN	5.0	12	28	15	21	425	17	14	7.8	6.8	5.8	1.4
AC-FT	1,150	1,460	1,810	1,720	58,530	57,790	15,630	1,410	770	692	607	466
Mean a	92.2	125	179	201	1,134	928	322	30.1	-13.6	-41.3	-9.82	40.0
Ac-ft a	5,670	7,440	11,010	17,920	65,230	57,090	19,180	1,850	-810	-2,540	-604	2,380
(b)	2,720	1,380	0	0	0	0	12,750	19,740	24,220	25,570	15,290	5,310

CAL YR 1967 TOTAL 205,406.1 MEAN 563 MAX 12,200 MIN 5.0 AC-FT 407,400 MEAN a 675 AC-FT a 488,700
WTR YR 1968 TOTAL 71,604.7 MEAN 196 MAX 4,470 MIN 1.4 AC-FT 142,000 MEAN a 253 AC-FT a 183,800

a Adjusted for diversions and change in contents in New Camp Far West Reservoir.

b Diversion, in acre-feet, to Camp Far West North and South Canals, and South Sutter Conveyance Canal.

Note.--When inflow to reservoir is small and other quantities are large, discordant figures of net runoff may appear. Records of evaporation from New Camp Far West Reservoir are not available.

SACRAMENTO RIVER BASIN

11-4246. WELLMAN CREEK NEAR SMARTVILLE, CALIF.

LOCATION.--Lat 39°11'37", long 121°20'23", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.31, T.16 N., R.6 E., on right bank 4 ft upstream from culvert on Smartville-Hammarton road, 2.3 miles southwest of Smartville.

DRAINAGE AREA.--0.59 sq mi.

RECORDS AVAILABLE.--Water years 1960-67 (annual maximum), October 1967 to September 1968.

GAGE.--Graphic water-stage recorder, crest-stage gages, and tipping-bucket rain gage. Altitude of gage is 495 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 83 cfs Feb. 21 (gage height, 13.38 ft); no flow for several months. 1960-68: Maximum discharge, 467 cfs Jan. 20, 1964 (gage height, 15.66 ft), from rating curve extended above 40 cfs on basis of computation of flow through culverts and over roadway at gage heights 12.35, 12.65, 13.94, 14.56, and 15.66 ft; no flow for several months each year.

REMARKS.--Records good. No regulation or diversion above station. Small ditch diverts some flow into basin at gage during heavy storms.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	0	0	.27	.12	.12	.02				
2		0	0	0	7.3	.11	.10	.01				
3		0	.01	0	.66	.09	.09	0				
4		0	.01	0	.27	.09	.10	0				
5		0	.02	0	.19	.09	.09	0				
6		0	0	0	.15	.09	.08	0				
7		0	.07	0	.13	.13	.07	0				
8		0	.05	0	.12	.22	.07	0				
9		0	.04	0	.12	.11	.07	0				
10		0	.04	1.6	.12	.10	.07	0				
11		0	.01	.07	.12	.09	.07	0				
12		0	0	.06	.11	3.4	.08	0				
13		0	0	.05	.16	3.6	.08	.02				
14		0	0	1.7	.12	1.1	.07	.05				
15		0	0	3.2	.12	.27	.07	.03				
16		0	0	.12	.42	5.0	.07	.02				
17		0	0	.06	6.0	.88	.07	.01				
18		0	0	.05	.61	.52	.07	0				
19		0	0	.05	17	.22	.07	0				
20		0	0	.05	10	.19	.07	0				
21		0	0	.05	9.1	.17	.06	0				
22		0	0	.04	.82	.15	.06	0				
23		0	0	.04	.82	.13	.06	0				
24		0	0	.04	.36	.12	.06	0				
25		0	0	.04	.24	.12	.06	0				
26		0	0	.04	.22	.12	.06	0				
27		0	0	.04	.17	.12	.04	0				
28		0	0	.04	.15	.12	.03	0				
29		.02	0	.72	.13	.12	.03	0				
30		.02	0	17	-----	.11	.02	0				
31		-----	0	.40	-----	.11	-----	0	-----			-----
TOTAL	0	0.04	0.25	25.46	56.00	17.81	2.06	0.16	0	0	0	0
MEAN	0	.001	.008	.82	1.93	.57	.069	.005	0	0	0	0
MAX	0	.02	.07	17	17	5.0	.12	.05	0	0	0	0
MIN	0	0	0	0	.11	.09	.02	0	0	0	0	0
AC-FT	0	.08	.5	51	111	35	4.1	.3	0	0	0	0
(a)	.80	2.90	1.30	5.10	4.67	3.20	.30	.70	0	0	0	0

CAL YR 1967 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1968 TOTAL 101.78 MEAN .28 MAX 17 MIN 0 AC-FT 202

a Precipitation, in inches.

LOCATION.--Lat 38°54'00", long 121°35'00", T.12 N., R.3 E., on left bank at highway bridge at Nicolaus, 2.9 miles downstream from Bear River, and at mile 9.4.

GAGE.--Digital water-stage recorder. Gage is set to datum of Corps of Engineers which is 3.30 ft below mean sea level. Prior to November 1931, graphic water-stage recorder on middle fender pier of bridge 0.3 mile upstream at same datum. December 1931 to April 1, 1965, graphic water-stage recorder at same site and datum. Since June 1960, auxiliary graphic water-stage recorder at various sites near highway bridge for low water periods.

1943-68: Maximum discharge, 357,000 cfs Dec. 23, 1955; maximum gage height, 51.60 ft Dec. 23, 1955.
1921-68: Minimum discharge, no flow Aug. 2-18, 1924, July 11-22, 24, 26, Aug. 1, 1931.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,980	2,810	1,880	1,510	5,600	8,300	5,030	3,520	3,560	802	250	788
2	1,700	2,940	1,800	1,510	4,550	7,300	5,220	3,730	3,380	606	285	809
3	2,680	3,180	1,760	1,500	6,800	6,500	5,090	3,910	3,240	444	285	816
4	3,580	3,120	1,850	1,490	5,700	6,100	4,760	4,760	3,000	396	280	809
5	3,350	2,920	2,030	1,480	4,700	5,800	4,510	5,200	2,960	432	300	795
6	3,140	2,570	2,070	1,500	4,200	5,500	4,420	5,270	2,730	408	306	816
7	3,140	2,720	1,890	1,590	4,100	5,200	4,310	4,830	2,420	348	265	854
8	3,200	2,980	2,010	1,610	4,050	5,300	4,130	4,160	1,970	324	240	910
9	3,040	2,430	1,880	1,640	4,220	5,600	4,040	3,850	1,870	312	270	942
10	2,920	2,030	1,780	1,780	4,460	5,300	4,040	3,370	1,830	290	280	998
11	2,840	1,960	1,740	2,220	4,800	5,000	4,120	2,730	1,740	275	290	1,010
12	2,590	1,900	1,700	2,120	4,360	4,900	3,900	2,550	1,400	312	285	1,020
13	2,410	2,140	1,660	1,810	4,020	5,810	3,910	2,550	1,280	330	312	1,100
14	2,320	2,460	1,640	1,800	6,410	8,740	3,760	3,280	1,240	330	312	1,100
15	2,730	2,200	1,630	2,130	4,660	9,070	3,600	4,090	1,230	396	324	1,090
16	2,720	1,900	1,640	3,250	3,800	8,550	3,390	2,890	1,280	360	342	1,070
17	2,660	1,800	1,630	2,980	4,250	11,900	3,120	3,160	1,380	300	372	1,130
18	2,720	1,730	1,680	2,810	11,100	12,000	2,960	3,780	1,290	312	360	1,110
19	2,590	1,740	1,680	3,200	11,100	10,300	2,740	4,020	1,240	285	414	1,030
20	2,610	1,770	1,660	2,850	20,900	8,090	2,610	4,040	1,280	280	529	1,010
21	2,570	1,760	1,640	2,590	30,900	6,600	2,470	3,640	1,460	270	676	1,020
22	2,380	1,710	1,640	2,400	33,000	5,850	2,420	3,070	1,450	285	711	1,040
23	2,280	1,690	1,610	2,330	24,000	5,490	2,380	3,920	1,640	275	732	1,040
24	2,380	1,660	1,560	2,330	20,400	5,260	2,560	4,090	1,700	230	753	1,040
25	2,510	1,750	1,540	2,330	18,000	5,120	2,560	4,170	1,600	230	739	1,030
26	2,590	1,840	1,550	2,350	13,500	5,110	2,610	4,220	1,270	230	711	1,050
27	2,640	1,840	1,560	2,270	11,200	4,940	2,700	4,380	1,030	240	781	1,050
28	2,700	1,860	1,540	2,200	10,600	4,620	2,830	4,300	846	230	894	1,070
29	2,410	1,880	1,500	2,210	9,400	4,520	2,860	4,290	802	235	870	1,050
30	2,260	1,900	1,540	3,800	-----	4,690	3,030	3,970	795	255	823	1,060
31	2,310	-----	1,520	7,700	-----	4,920	-----	3,780	-----	235	781	-----
TOTAL	81,950	65,190	52,810	73,290	294,780	202,380	106,080	119,520	52,913	10,257	14,772	29,657
MEAN	2,644	2,173	1,704	2,364	10,160	6,528	3,536	3,855	1,764	331	477	989
MAX	3,580	3,180	2,070	7,700	33,000	12,000	5,220	5,270	3,560	802	894	1,130
MIN	1,700	1,660	1,500	1,480	3,800	4,520	2,380	2,550	795	230	240	788
AC-FT	162,500	129,300	104,700	145,400	584,700	401,400	210,400	237,100	105,000	20,340	29,300	58,820
CAL YR 1967	TOTAL	4,125,580		MEAN	11,300	MAX	93,200	MIN	1,180	AC-FT	8,183,000	
WTR YR 1968	TOTAL	1,103,599		MEAN	3,015	MAX	33,000	MIN	230	AC-FT	2,189,000	

SACRAMENTO RIVER BASIN

11-4255. SACRAMENTO RIVER AT VERONA, CALIF.

LOCATION.--Lat 38°46'50", long 121°36'10", in SE $\frac{1}{4}$ sec.23, T.11 N., R.3 E., on left bank 0.8 mile southeast of Verona, 1 mile downstream from Feather River, 6.2 miles east of Knights Landing, and at mile 19.6 upstream from Sacramento.

DRAINAGE AREA.--21,275 sq mi.

RECORDS AVAILABLE.--May 1926 to September 1929 (low-water periods only), October 1929 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 0.06 ft below datum of Corps of Engineers which is 2.94 ft below mean sea level. Auxiliary graphic water-stage recorder 16 miles downstream from base gage since Oct. 1, 1944, at datum of Corps of Engineers. Prior to Oct. 1, 1944, auxiliary graphic water-stage recorder at site 19.2 miles downstream at datum 0.12 ft above mean sea level. Prior to May 6, 1965, graphic water-stage recorder at same site and datum. May 7, 1965, to July 17, 1967, digital water-stage recorder at same site and datum. July 25, 1967, to Dec. 21, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--39 years (1929-68), 18,020 cfs (13,050,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 58,600 cfs Feb. 28 (gage height, 33.48 ft); minimum daily, 7,280 cfs June 20.

1926-68: Maximum discharge, 79,200 cfs Mar. 1, 1940 (gage height, 41.20 ft); minimum daily, 304 cfs July 23, 24, 1931; maximum reverse flow, 16,800 cfs Dec. 4, 1950, backwater from American River.

1934-68: Maximum combined discharge of Sacramento River at Verona and Fremont weir, about 322,000 cfs Dec. 25, 1964.

REMARKS.--Records excellent. 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 cfs, flow begins over Fremont weir (just upstream) into Yolo bypass (see sta. no. 11-4530.). Elevation of crest of Fremont weir is 33.5 ft (datum of Corps of Engineers).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13,500	13,100	11,800	12,300	34,500	57,700	17,600	8,620	9,180	8,060	10,800	10,200
2	12,700	13,600	12,100	12,200	31,900	56,500	17,800	9,160	8,570	7,910	10,900	10,000
3	12,900	14,000	12,200	12,100	30,600	54,600	17,900	9,520	8,400	7,610	11,100	9,950
4	15,100	13,700	12,500	11,800	32,600	51,900	17,300	10,900	8,550	7,600	11,200	10,200
5	15,400	13,000	14,800	11,600	32,300	47,800	16,200	12,400	8,540	7,920	11,400	10,500
6	15,200	12,200	16,100	11,400	29,600	42,400	15,500	13,100	8,430	8,170	11,400	10,900
7	14,900	11,800	16,700	11,400	27,000	37,200	15,000	13,400	9,450	8,670	11,500	11,500
8	14,700	12,000	16,000	11,200	25,100	33,900	14,300	12,700	10,300	8,900	11,400	12,100
9	14,600	11,600	16,100	11,200	23,700	32,000	13,300	12,500	10,900	8,810	11,400	12,500
10	14,300	10,900	15,600	11,700	22,700	30,300	12,500	12,600	11,100	8,830	11,500	13,000
11	13,700	10,500	14,400	15,400	22,600	28,500	12,300	12,400	10,900	8,850	11,500	13,400
12	13,500	10,300	13,500	22,700	22,000	26,600	12,100	12,600	10,300	8,890	11,500	13,700
13	13,000	10,400	12,800	20,700	21,000	26,100	12,100	13,000	9,530	8,990	11,400	14,000
14	12,500	11,100	12,300	17,400	22,000	28,900	11,800	13,800	8,830	9,220	11,400	14,200
15	12,900	11,400	12,200	17,300	21,300	30,900	11,100	15,500	8,290	9,620	11,600	14,300
16	13,000	11,100	12,100	27,000	19,500	31,000	10,400	14,500	7,820	9,760	11,800	13,900
17	13,000	11,200	12,000	31,100	19,200	32,900	9,630	14,200	7,820	9,730	11,800	13,600
18	12,900	10,900	12,200	32,200	26,500	35,100	8,880	13,700	7,870	9,680	11,800	13,300
19	12,900	10,900	12,200	30,400	34,400	34,100	8,310	13,600	7,570	9,730	11,600	12,900
20	12,800	11,100	12,200	26,700	39,500	30,700	7,940	13,500	7,280	9,790	11,500	12,400
21	12,900	11,100	12,100	23,500	47,900	27,300	7,720	13,500	7,440	9,850	11,900	12,300
22	12,900	11,000	11,900	21,200	54,600	24,600	8,060	12,900	7,810	9,930	12,900	12,400
23	12,600	10,900	11,900	19,100	56,200	22,900	8,030	13,600	8,140	9,950	14,200	12,100
24	12,800	10,700	11,800	17,600	57,900	21,800	8,020	13,700	8,310	9,890	13,800	12,000
25	13,000	10,600	11,700	16,600	58,100	20,900	8,080	13,600	8,150	9,890	13,000	11,900
26	13,300	10,800	11,800	15,900	58,000	20,200	8,380	13,400	7,910	10,000	12,400	11,800
27	13,300	10,800	11,900	15,300	58,200	19,600	9,250	13,200	7,370	10,300	11,900	11,800
28	13,600	10,800	12,000	14,600	58,500	18,700	9,530	12,700	7,370	10,600	11,700	11,700
29	13,400	10,900	12,200	14,400	58,300	17,700	8,740	11,900	7,650	10,700	11,300	11,600
30	12,900	11,400	12,400	17,200	-----	17,400	8,290	11,000	8,090	10,600	10,900	11,500
31	12,500	-----	12,400	31,700	-----	17,600	-----	10,000	-----	10,700	10,500	-----
TOTAL	416,700	343,800	401,900	564,900	1,045,7M	977,800	346,060	391,200	257,870	289,150	363,000	365,650
MEAN	13,440	11,460	12,960	18,220	36,060	31,540	11,540	12,620	8,596	9,327	11,710	12,190
MAX	15,400	14,000	16,700	32,200	58,500	57,700	17,900	15,500	11,100	10,700	14,200	14,300
MIN	12,500	10,300	11,700	11,200	19,200	17,400	7,720	8,620	7,280	7,600	10,500	9,950
AC-FT	826,500	681,900	797,200	1,120M	2,074M	1,939M	686,400	775,900	511,500	573,500	720,000	725,300
CAL YR 1967	TOTAL 9,420,900		MEAN 25,810		MAX 67,000		MIN 10,300		AC-FT 18,690,000			
WTR YR 1968	TOTAL 5,763,730		MEAN 15,750		MAX 58,500		MIN 7,280		AC-FT 11,430,000			

11-4260. SACRAMENTO WEIR SPILL TO YOLO BYPASS, NEAR SACRAMENTO, CALIF.

LOCATION.--Lat 38°36'25", long 121°33'15", on right bank 100 ft upstream and 100 ft downstream from weir, 3.2 miles upstream from American River, 4 miles northwest of Sacramento, and at mile 4.2 upstream from Sacramento.

RECORDS AVAILABLE.--October 1939 to September 1968. Published as Sacramento weir near Sacramento 1939-61. Monthly discharge only for water years 1940-51, published in WSP 1735. 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.--Digital water-stage recorders and concrete weir crest. Gage is set to datum of Corps of Engineers. October 1939 to September 1942, October 1959 to September 1963, graphic water-stage recorder or staff gage at downstream end of weir. October 1942 to September 1959, graphic water-stage recorder on left bank at Sacramento River opposite center of weir at same datum. February 1963 to Nov. 15, 1965, graphic water-stage recorders on right bank 100 ft upstream and 100 ft downstream from ends of weir at same datum.

AVERAGE DISCHARGE.--29 years, 218 cfs (157,800 acre-ft per year).

EXTREMES.--No flow during year.

1926-68: Maximum discharge, 118,000 cfs Mar. 26, 1928; maximum gage height, 33.01 ft Dec. 23, 1955; no flow during all or most of each year.

REMARKS.--No flow since Mar. 22, 1967. Crest of weir is at elevation 25.0 ft and top of moveable gates at 31.0 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. Since February 1963, stage is obtained by averaging the stage obtained at sites above and below the weir.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

SACRAMENTO RIVER BASIN

11-4261.5. ONION CREEK NEAR SODA SPRINGS, CALIF.

LOCATION.--Lat 39°16'00", long 120°21'50", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.11, T.16 N., R.14 E., on right bank 0.3 mile upstream from unnamed tributary, 1 mile upstream from mouth, and 4.0 miles south of Soda Springs.

DRAINAGE AREA.--3.58 sq mi.

RECORDS AVAILABLE.--August 1959 to September 1968.

GAGE.--Graphic water-stage recorder and concrete control. Altitude of gage is 5,900 ft (from topographic map).

AVERAGE DISCHARGE.--9 years, 8.88 cfs (6,430 acre-ft per year).

EXTREMES.--Maximum discharge during year, 102 cfs Feb. 20 (gage height, 2.29 ft); minimum daily, 0.22 cfs Sept. 16-19, 23-28, 30.
1959-68: Maximum discharge, 1,750 cfs Dec. 23, 1964 (gage height, 4.98 ft in gage well, 6.82 ft from floodmarks), from rating curve extended above 40 cfs on basis of slope-area measurement of maximum flow; minimum daily, 0.1 cfs for several days in 1959, 1961.

REMARKS.--Records good. No regulation or diversion above station.

DISCHARGE, IN CURIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.76	.57	1.1	1.7	3.0	19	35	28	7.2	1.3	.57	.36
2	8.2	.57	.99	1.7	3.2	19	22	28	6.7	1.3	.49	.36
3	3.1	.57	.99	1.9	3.9	20	16	31	6.3	1.1	.49	.31
4	1.1	.57	1.1	1.6	3.3	19	18	30	5.4	1.3	.49	.31
5	1.3	.57	1.3	1.6	3.0	19	17	25	5.4	1.3	.42	.31
6	.87	.57	1.1	1.4	2.8	16	17	22	5.0	1.1	.36	.26
7	.76	.57	1.3	1.4	2.8	15	18	21	5.4	1.1	.36	.26
8	.66	.57	.99	1.4	2.8	14	19	20	4.6	.99	.36	.26
9	.57	.57	1.1	1.4	3.0	13	22	19	4.3	.99	.31	.26
10	.57	.57	1.1	1.4	3.0	12	30	18	3.9	.87	.31	.26
11	.57	.66	1.3	1.7	3.0	12	34	16	3.9	.76	.36	.26
12	.57	.66	1.3	1.4	3.3	10	28	15	3.6	.76	.36	.26
13	.57	.66	1.3	1.3	3.3	9.9	27	14	3.3	.87	.36	.26
14	.57	2.0	1.2	3.7	3.0	9.4	30	15	3.0	.87	.36	.26
15	.57	.99	1.2	17	2.8	9.4	27	14	3.0	.76	.36	.31
16	.49	.87	1.3	5.8	2.8	9.9	24	14	2.5	.66	.49	.22
17	.49	.87	1.3	3.9	6.6	9.4	20	14	2.3	.66	.66	.22
18	.49	.99	1.3	3.0	6.7	8.2	19	14	2.3	.66	.57	.22
19	.49	1.7	1.1	3.0	20	7.7	18	14	2.3	.66	11	.22
20	.57	3.3	1.1	3.9	57	8.2	18	15	2.1	.66	1.6	.36
21	.57	1.7	1.1	3.6	33	9.4	18	13	1.9	.66	.76	.31
22	.66	1.1	1.1	3.6	26	10	18	12	1.7	.57	.66	.31
23	.66	1.1	1.3	3.6	65	12	18	11	2.1	.66	.57	.22
24	.57	1.1	1.4	4.3	30	12	19	10	1.7	.49	.57	.22
25	.66	.99	1.9	3.9	23	12	21	11	1.6	.42	.57	.22
26	.66	.87	2.8	3.3	23	12	24	11	1.4	.49	.49	.22
27	.66	.87	4.0	3.1	23	13	24	11	1.4	.49	.42	.22
28	.66	.99	2.8	3.0	22	20	26	11	1.3	.49	.36	.22
29	.66	.87	2.1	2.9	21	28	30	9.4	1.3	.49	.36	.26
30	.57	1.4	1.9	2.8	-----	32	30	8.2	1.1	.42	.36	.22
31	.57	-----	1.7	2.9	-----	30	-----	7.7	-----	.57	.36	-----
TOTAL	30.17	29.39	45.57	97.2	405.3	450.5	687	502.3	98.0	24.42	25.76	7.96
MEAN	.97	.98	1.47	3.14	14.0	14.5	22.9	16.2	3.27	.79	.83	.27
MAX	8.2	3.3	4.0	17	65	32	35	31	7.2	1.3	11	.36
MIN	.49	.57	.99	1.3	2.8	7.7	16	7.7	1.1	.42	.31	.22
AC-FT	60	58	90	193	804	894	1,360	996	194	48	51	16

CAL YR 1967 TOTAL 5,615.03

MEAN 15.4

MAX 178

MIN .49

AC-FT 11,140

WTR YR 1968 TOTAL 2,403.57

MEAN 6.57

MAX 65

MIN .22

AC-FT 4,770

PEAK DISCHARGE (BASE, 50 CFS)

DATE	TIME	G.H.T.	DISCHARGE	DATE	TIME	G.H.T.	DISCHARGE
10-02	1900	2.25	89	02-23	0500	2.20	79
02-20	0130	2.29	102	04-10	1800	2.07	50

925

LOCATION.--Lat 39°18'00", long 120°39'10", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.32, T.17 N., R.12 E., on right bank 0.25 mile upstream from inlet to Carpenter Flat Siphon, and one mile east of Emigrant Gap.

GAGE.--Digital water-stage recorder and concrete control. Altitude of gage is 5,360 ft (from topographic map). Prior to May 1, graphic water-stage recorder at same site and datum.

REMARKS.--Canal diverts from right bank of the North Fork of North Fork American River 2.7 miles downstream from Lake Valley Reservoir to the Drum Canal in the Bear River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project and reviewed by Geological Survey.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	30						1.5	23	30	30	28
2	.07	30						20	20	29	30	28
3	0	30						28	19	29	30	28
4	0	29						27	17	29	30	19
5	0	28						27	10	29	30	.86
6	0	28						28	9.4	29	30	.01
7	0	28						26	9.3	29	30	0
8	0	28						21	9.1	29	30	0
9	0	28						17	9.0	30	30	0
10	0	28						15	8.7	30	30	0
11	0	28						15	8.0	30	30	0
12	0	28						15	5.8	30	30	0
13	0	28						19	2.0	30	30	0
14	0	28						22	1.9	30	30	0
15	0	28						22	1.7	30	30	0
16	6.5	28						24	1.5	30	30	0
17	32	28						24	1.3	30	30	0
18	32	28						27	1.1	30	30	0
19	32	28						31	1.0	30	30	0
20	32	28						31	1.0	30	30	0
21	32	28						31	1.0	30	30	7.8
22	32	28						29	.91	30	30	25
23	32	28						27	.89	30	30	31
24	32	28						25	.78	30	30	29
25	32	28						25	.75	30	30	29
26	31	28						23	9.8	30	28	29
27	31	28						22	30	30	28	29
28	30	28						22	29	30	29	29
29	30	14						24	30	30	29	29
30	30	0			-----			26	30	30	29	29
31	30	-----			-----		-----	26	-----	30	29	-----
TOTAL	496.57	805	0	0	0	0	0	720.5	292.93	923	922	370.67
MEAN	16.0	26.8	0	0	0	0	0	23.2	9.76	29.8	29.7	12.4
MAX	32	30	0	0	0	0	0	31	30	30	30	31
MIN	0	0	0	0	0	0	0	1.5	.75	29	28	0
AC-FT	985	1,600	0	0	0	0	0	1,430	581	1,830	1,830	735
CAL YR 1967	TOTAL	3,225.97	MEAN	8.84	MAX	32	MIN	0	AC-FT	6,400		
WTR YR 1968	TOTAL	4,530.67	MEAN	12.4	MAX	32	MIN	0	AC-FT	8,990		

SACRAMENTO RIVER BASIN

11-4262. NORTH FORK FORBES CREEK NEAR DUTCH FLAT, CALIF.

LOCATION.--Lat 39°08'37", long 120°45'30", in SE¼ sec.17, T.15 N., R.11 E., on right bank 0.2 mile downstream from Big Reservoir, and 6.0 miles southeast of Dutch Flat.

DRAINAGE AREA.--1.68 sq mi.

RECORDS AVAILABLE.--July 1956 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 3,980' ft (from topographic map).

AVERAGE DISCHARGE.--12 years, 4.28 cfs (3,100 acre-ft per year).

EXTREMES.--Maximum discharge during year, 13 cfs Feb. 29, Mar. 1, 6-18 (gage height, 2.38 ft); minimum daily, 0.30 cfs many days in October and November.
 1956-68: Maximum discharge, 200 cfs Feb. 1, 1963 (gage height, 4.18 ft); no flow for many days in 1964-66. Maximum stage known, 6.40 ft probably Dec. 23, 1955, from floodmarks (discharge unknown).

REMARKS.--Flow regulated by Big Reservoir (capacity, 2,200 acre-ft). Some diversion above the station for mining.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.30	.30	6.2	5.4	5.4	13	12	.60	1.3	1.1	1.0	2.0
2	.50	.30	6.2	5.4	5.4	13	12	.60	1.3	1.1	1.0	2.0
3	.50	.30	6.2	5.4	5.4	13	12	.60	1.3	1.1	1.0	2.0
4	.40	.30	6.3	5.3	5.4	13	7.2	.60	1.3	1.1	1.0	2.0
5	.40	.30	6.5	5.2	5.4	13	.70	.60	1.3	1.1	1.0	2.0
6	.40	.30	6.2	5.1	5.4	13	.70	.60	1.3	1.1	1.0	2.0
7	.40	.30	6.3	5.1	5.4	13	.70	.60	1.3	1.1	1.0	2.0
8	.30	.30	6.1	5.1	5.4	13	.70	.60	1.3	1.1	1.0	2.0
9	.30	.30	6.0	5.1	5.6	13	.70	1.3	1.3	1.1	1.0	2.0
10	.30	.30	5.9	5.2	5.8	13	.70	1.9	1.3	1.1	1.5	2.0
11	.30	.30	5.8	5.1	5.7	13	.70	1.9	1.2	1.1	2.1	2.0
12	.30	.30	5.9	5.1	5.6	13	.60	1.9	1.2	1.1	2.1	2.0
13	.30	.30	6.0	5.1	5.6	13	.60	2.0	1.1	1.1	2.1	2.0
14	.30	.40	5.9	5.2	5.6	13	.60	2.0	1.1	1.1	2.1	1.9
15	.30	.30	5.8	6.2	5.6	13	.60	1.9	1.1	1.1	2.1	1.9
16	.30	.30	5.8	5.6	5.9	13	.60	1.9	1.1	1.1	2.1	1.9
17	.30	.30	5.8	5.4	6.8	13	.60	1.9	1.1	1.1	2.1	1.9
18	.30	2.1	5.8	5.4	6.9	12	.60	1.9	1.1	1.1	2.1	1.9
19	.30	4.1	5.8	5.4	7.2	12	.60	1.9	1.1	1.1	2.2	1.9
20	.30	4.1	5.8	5.4	8.5	12	.60	1.2	1.1	1.1	2.1	2.0
21	.30	4.0	5.8	5.4	8.4	12	.50	.50	1.1	1.1	2.1	2.0
22	.30	3.9	5.7	5.4	8.2	12	.50	.50	1.1	1.1	2.1	2.0
23	.30	4.0	5.6	5.4	8.8	12	.50	.90	1.1	1.1	2.1	1.9
24	.30	4.1	5.6	5.4	8.8	12	.50	1.3	1.1	1.0	2.1	1.9
25	.30	3.9	5.6	5.4	8.9	13	.50	1.3	1.1	1.1	2.1	1.9
26	.30	3.9	5.6	5.4	9.0	13	.50	1.3	1.1	1.1	2.1	1.9
27	.30	3.9	5.6	5.4	9.5	13	.50	1.3	1.1	1.1	2.0	1.9
28	.30	5.0	5.6	5.4	9.4	13	.50	1.3	1.1	1.1	2.0	1.9
29	.30	6.5	5.5	5.4	11	12	.50	1.3	1.1	1.1	2.0	1.9
30	.30	6.3	5.4	5.4	-----	12	.50	1.3	1.1	1.0	2.0	1.9
31	.30	-----	5.4	5.4	-----	12	-----	1.3	-----	1.0	2.0	-----
TOTAL	10.10	61.00	181.7	165.6	200.0	393	58.50	38.80	35.2	33.8	54.2	58.6
MEAN	.33	2.03	5.86	5.34	6.90	12.7	1.95	1.25	1.17	1.09	1.75	1.95
MAX	.50	6.5	6.5	6.2	11	13	12	2.0	1.3	1.1	2.2	2.0
MIN	.30	.30	5.4	5.1	5.4	12	.50	.50	1.1	1.0	1.0	1.9
AC-FT	20	121	360	328	397	780	116	77	70	67	108	116
CAL YR 1967	TOTAL 2,434.80		MEAN 6.67		MAX 37		MIN .30		AC-FT 4,830			
WTR YR 1968	TOTAL 1,290.50		MEAN 3.53		MAX 13		MIN .30		AC-FT 2,560			

SACRAMENTO RIVER BASIN

927

11-4264. NORTH SHIRTAIL CREEK NEAR DUTCH FLAT, CALIF.

LOCATION.--Lat 39°07'49", long 120°47'44", in SE¼ sec.24, T.15 N., R.10 E., on right bank 200 ft downstream from Forbes Creek, and 7.0 miles southeast of Dutch Flat.

DRAINAGE AREA.--9.10 sq mi.

RECORDS AVAILABLE.--July 1956 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 3,500 ft (from topographic map).

AVERAGE DISCHARGE.--12 years, 19.3 cfs (13,970 acre-ft per year).

EXTREMES.--Maximum discharge during year, 270 cfs Feb. 20 (gage height, 3.54 ft); minimum daily, 0.40 cfs many days in July, August and September.

1956-68: Maximum discharge, 1,780 cfs Dec. 22, 1964 (gage height, 7.56 ft), from rating curve extended above 590 cfs on basis of slope-area measurement at gage height 6.36 ft; minimum daily, 0.20 cfs for many days in 1959, 1960, and 1966.

Flood of Dec. 23, 1955, reached a stage of 7.30 ft from floodmarks (discharge, 1,650 cfs).

REMARKS.--Flow slightly regulated by Big Reservoir (capacity, 2,200 acre-ft).

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	.60	7.6	9.5	17	49	39	6.2	2.8	1.6	.80	.60
2	4.4	.60	7.3	9.1	19	45	38	6.0	2.8	1.5	.60	.60
3	3.4	.60	8.0	8.7	27	42	36	5.5	2.7	1.3	.50	.60
4	1.5	.70	14	8.5	25	39	31	4.3	2.7	1.4	.40	.60
5	1.6	.70	39	8.2	24	38	23	4.7	2.7	1.3	.40	.60
6	1.4	.70	16	7.9	26	36	21	4.6	2.9	1.3	.50	.50
7	1.3	.70	25	7.6	28	37	20	4.3	3.4	1.2	.50	.50
8	1.2	.70	17	7.5	30	43	19	4.0	3.2	1.1	.50	.50
9	1.1	.70	13	7.5	41	42	18	4.1	2.8	1.1	.50	.40
10	1.1	.70	11	18	45	38	18	4.6	2.6	1.1	.50	.40
11	1.1	.70	10	16	40	36	17	4.7	2.5	1.0	.60	.40
12	1.0	.70	9.7	13	38	36	16	4.8	2.3	.90	.50	.40
13	.90	.70	9.0	12	38	40	16	6.5	2.7	.90	.40	.40
14	.80	1.9	8.0	17	37	45	14	6.0	2.4	.90	.50	.40
15	.80	1.3	7.0	106	35	47	14	5.1	2.4	1.0	.50	.50
16	.90	1.1	8.0	62	37	59	14	4.6	2.3	.80	.40	.50
17	.90	1.0	7.8	37	91	58	13	4.2	2.2	.80	.40	.40
18	.90	1.8	8.7	29	87	51	12	4.1	2.1	.70	.50	.40
19	.90	8.1	8.7	25	81	48	11	4.2	2.0	.60	2.8	.60
20	.80	5.0	7.8	23	188	46	11	4.4	2.0	.60	1.8	1.1
21	.80	4.2	7.5	21	187	46	10	3.9	1.9	.50	1.4	.70
22	.80	4.0	7.5	21	140	45	9.3	3.6	1.9	.50	1.2	.50
23	.90	4.0	7.5	21	141	45	8.8	3.6	1.9	.50	1.1	.50
24	.90	3.9	7.5	20	110	44	8.5	3.6	1.8	.50	1.0	.50
25	.80	3.8	7.7	19	90	47	8.0	3.8	1.6	.50	.70	.40
26	.80	3.8	9.0	19	75	46	7.8	3.5	1.6	.50	.70	.40
27	.80	4.0	11	18	65	45	7.7	3.3	1.5	.40	.70	.40
28	.80	4.8	11	17	58	44	7.5	3.1	1.5	.40	.70	.40
29	.80	6.6	11	17	52	42	7.2	3.0	1.5	.40	.70	.40
30	.70	8.0	11	16	-----	40	6.6	3.0	1.5	.50	.60	.40
31	.60	-----	10	20	-----	39	-----	2.8	-----	.80	.60	-----
TOTAL	35.30	76.10	343.3	641.5	1,872	1,358	482.4	134.1	68.2	26.60	23.00	15.00
MEAN	1.14	2.54	11.1	20.7	64.6	43.8	16.1	4.33	2.27	.86	.74	.50
MAX	4.4	8.1	39	106	188	59	39	6.5	3.4	1.6	2.8	1.1
MIN	.60	.60	7.0	7.5	17	36	6.6	2.8	1.5	.40	.40	.40
AC-FT	70	151	681	1,270	3,710	2,690	957	266	135	53	46	30

CAL YR 1967 TOTAL 10,445.60 MEAN 28.6 MAX 339 MIN .50 AC-FT 20,720
WTR YR 1968 TOTAL 5,075.50 MEAN 13.9 MAX 188 MIN .40 AC-FT 10,070

Peak discharge (base, 180 cfs).--Feb. 20 (0130 hrs) 270 cfs (3.54 ft).

SACRAMENTO RIVER BASIN

11-4270. NORTH FORK AMERICAN RIVER AT NORTH FORK DAM, CALIF.

LOCATION.--Lat 38°56'15", long 121°01'25", in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.31, T.13 N., R.9 E., on left bank 50 ft upstream from spillway of North Fork Dam, 2 miles upstream from Middle Fork, and 4 miles northeast of Auburn.

DRAINAGE AREA.--342 sq mi.

RECORDS AVAILABLE.--October 1941 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 715.0 ft above mean sea level (levels by Corps of Engineers).

AVERAGE DISCHARGE.--27 years, 802 cfs (580,600 acre-ft per year); median of yearly mean discharges, 680 cfs (492,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 11,300 cfs Feb. 20 (gage height, 5.18 ft); minimum daily, 37 cfs Sept. 13-19, 23-30.

1941-68: Maximum discharge, 65,400 cfs Dec. 23, 1964 (gage height, 11.87 ft), from rating curve extended above 24,000 cfs 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.

REMARKS.--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 (see sta. no. 11-4261.9.) diverts from North Fork of North Fork American River into Bear River basin for power development in Alta powerhouse of Pacific Gas and Electric Co. Combined storage and diversion have small effect on natural flow. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	58	200	206	539	1,480	1,510	1,200	426	111	52	49
2	77	58	145	194	539	1,340	1,270	1,140	408	106	52	46
3	248	58	145	182	1,260	1,260	1,070	1,160	408	101	49	46
4	170	61	270	170	1,100	1,200	981	1,200	378	97	46	46
5	106	61	975	160	915	1,190	992	1,090	332	89	46	46
6	93	61	451	155	860	1,080	915	915	325	85	43	43
7	85	65	512	155	871	992	882	810	332	85	43	43
8	81	65	485	150	830	1,060	882	780	340	81	43	43
9	77	65	297	150	850	992	926	770	290	77	43	43
10	77	61	237	358	1,010	860	1,080	800	263	77	43	43
11	77	61	213	417	840	790	1,300	790	250	69	40	43
12	73	61	206	270	760	732	1,260	712	244	65	40	40
13	73	65	176	237	760	915	1,130	694	231	65	40	37
14	69	85	136	244	741	1,090	1,060	647	219	65	43	37
15	73	85	141	2,560	684	1,130	1,130	611	213	65	43	37
16	81	81	150	2,310	647	1,300	1,060	566	213	65	43	37
17	73	81	145	1,120	1,550	1,660	860	575	206	61	43	37
18	69	77	176	732	2,440	1,330	750	593	200	61	43	37
19	65	141	176	584	1,920	1,120	722	665	188	61	58	37
20	65	182	155	494	7,920	992	712	770	176	58	150	40
21	65	136	145	451	6,460	937	703	790	170	58	141	43
22	69	111	141	442	4,530	915	665	674	160	55	85	40
23	65	101	145	451	5,110	893	647	557	155	55	69	37
24	65	97	170	434	4,070	904	684	476	155	55	61	37
25	61	89	219	408	2,750	948	722	468	145	55	55	37
26	61	89	277	392	2,210	1,040	820	530	141	55	52	37
27	58	89	355	378	1,960	937	926	530	131	55	52	37
28	61	111	378	348	1,820	981	937	557	131	52	52	37
29	61	116	311	332	1,610	1,190	1,050	557	126	52	52	37
30	61	237	256	557	-----	1,440	1,190	512	116	52	52	37
31	61	-----	225	584	-----	1,500	-----	460	-----	52	49	-----
TOTAL	2,485	2,708	8,013	15,625	57,556	34,198	28,836	22,599	7,072	2,140	1,723	1,209
MEAN	80.2	90.3	258	504	1,985	1,103	961	729	236	69.0	55.6	40.3
MAX	248	237	975	2,560	7,920	1,660	1,510	1,200	426	111	150	49
MIN	58	58	136	150	539	732	647	460	116	52	40	37
AC-FT	4,930	5,370	15,890	30,990	114,200	67,830	57,200	44,820	14,030	4,240	3,420	2,400
CAL YR 1967	TOTAL 385,723		MEAN 1,057		MAX 10,200		MIN 58		AC-FT 765,100			
WTR YR 1968	TOTAL 184,164		MEAN 503		MAX 7,920		MIN 37		AC-FT 365,300			

Peak discharge (base, 4,300 cfs).--Feb. 20 (0600 hrs) 11,300 cfs (5.18 ft); Feb. 23 (1630 hrs) 6,300 cfs (4.08 ft).

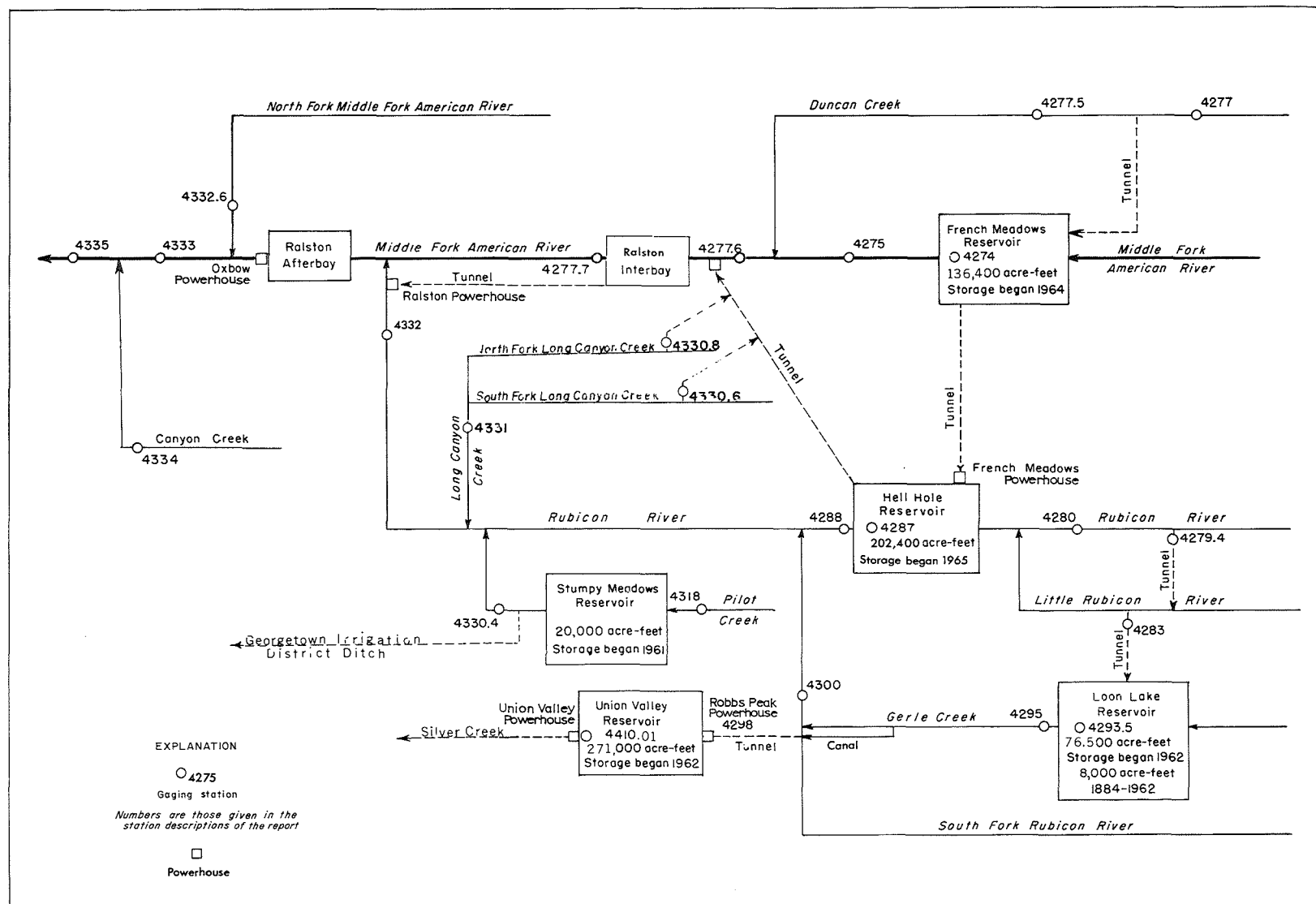


FIGURE 12.--Schematic diagram showing diversions and storage in Middle Fork American and Rubicon river basins.

SACRAMENTO RIVER BASIN

11-4274. FRENCH MEADOWS RESERVOIR NEAR FORESTHILL, CALIF.

LOCATION.--Lat 39°06'32", Long 120°25'49", in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.32, T.15 N., R.14 E., on left bank 2.2 miles upstream from dam on Middle Fork American River, 6.9 miles upstream from Chipmunk Creek, and 21 miles northeast of Foresthill.

DRAINAGE AREA.--47.0 sq mi.

RECORDS AVAILABLE.--December 1964 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Placer County Water Agency).

EXTREMES.--Maximum contents during year, 130,500 acre-ft June 8-17 (elevation, 5,258.8 ft); minimum, 58,000 acre-ft Dec. 22-27, Jan. 9-13, (elevation, 5,195.2 ft).

1964-68: Maximum contents, 137,700 acre-ft May 19, 1966 (elevation, 5,263.9 ft); minimum since reservoir first filled, 58,000 acre-ft Dec. 22-27, 1967, Jan. 9-13, 1968 (elevation, 5,195.2 ft).

REMARKS.--Reservoir is formed by rockfill dam with earth core. Storage began Dec. 21, 1964. Usable capacity, 125,600 acre-ft between elevations 5,125 (minimum operating level) and 5,263 ft (top of radial gates). Dead storage, 10,800 acre-ft. Up to 400 cfs is diverted in reservoir through tunnel from Duncan Creek. Water is released through tunnel to French Meadows powerplant and then into Hell Hole Reservoir on Rubicon River; releases began Dec. 13, 1965. Records, including extremes, represent total contents at 2400 hours. See schematic diagram for Middle Fork American and Rubicon River basins.

REVISIONS (water year).--1966 report: 1965.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-Feet)

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 THOUSANDS OF ACRE-Feet, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85.8	70.9	61.4	58.1	59.5	80.1	94.0	113.9	129.6	128.3	116.3	103.9
2	85.6	70.1	61.3	58.1	59.5	80.8	94.7	114.9	129.8	127.8	115.9	103.9
3	84.8	69.6	61.2	58.1	59.9	81.4	95.1	115.9	130.0	127.1	115.9	103.4
4	84.2	69.6	60.9	58.1	60.1	82.0	95.8	117.1	130.1	126.6	115.9	102.7
5	83.4	69.6	60.7	58.1	60.3	82.6	96.4	117.9	130.2	125.9	115.4	102.0
6	82.8	69.0	60.5	58.1	60.4	83.2	96.9	118.7	130.2	125.2	114.8	101.4
7	82.8	68.2	60.4	58.1	60.6	83.7	97.5	119.3	130.4	124.7	114.1	101.4
8	82.8	67.4	60.2	58.1	60.7	84.3	98.1	120.0	130.5	124.0	113.6	101.3
9	82.3	66.6	60.2	58.0	60.8	84.6	98.8	120.7	130.5	123.4	113.0	100.9
10	81.5	66.0	60.2	58.0	61.0	85.0	99.6	121.3	130.5	122.8	112.9	100.4
11	80.8	66.0	59.9	58.0	61.2	85.4	100.5	122.0	130.5	122.1	112.9	100.0
12	80.0	66.0	59.7	58.0	61.3	85.7	101.4	122.5	130.5	121.4	112.4	99.2
13	79.5	65.4	59.6	58.0	61.5	86.1	102.2	123.2	130.5	120.8	111.7	98.5
14	79.4	64.7	59.4	58.1	61.6	86.6	103.1	123.6	130.5	120.1	111.1	98.4
15	79.4	64.1	59.3	59.1	61.8	86.8	103.9	124.0	130.5	119.5	110.3	98.4
16	78.9	63.7	59.3	59.3	62.0	87.3	104.7	124.4	130.5	118.8	109.7	97.9
17	78.1	63.2	59.3	59.4	62.2	87.6	105.3	124.8	130.5	118.2	109.6	97.2
18	77.3	63.2	58.9	59.5	62.4	87.8	105.8	125.1	130.4	117.5	109.6	96.6
19	76.5	63.4	58.5	59.5	63.6	88.0	106.2	125.6	130.4	117.1	109.6	95.9
20	76.1	63.1	58.1	59.7	67.4	88.3	106.7	126.1	130.2	117.0	109.1	95.2
21	76.0	62.7	58.1	59.8	69.7	88.5	107.2	126.6	130.1	117.0	108.3	95.2
22	76.0	62.4	58.0	59.9	71.2	88.7	107.6	126.8	130.1	116.9	107.7	95.1
23	75.5	62.3	58.0	60.0	73.6	88.9	108.1	127.1	130.0	116.9	107.1	94.7
24	74.8	62.1	58.0	60.2	74.8	89.2	108.6	127.2	129.8	116.9	107.1	94.0
25	74.1	62.1	58.0	60.2	76.2	89.6	109.2	127.5	129.7	116.7	107.0	93.3
26	73.3	62.1	58.0	60.2	77.1	90.0	109.5	127.9	129.6	116.7	106.6	92.7
27	72.9	62.1	58.0	60.0	77.9	90.3	110.2	128.2	129.4	116.7	106.0	92.0
28	72.8	62.1	58.1	59.9	78.8	90.7	111.1	128.6	129.3	116.6	105.3	91.9
29	72.8	62.0	58.1	59.8	79.4	91.4	112.0	128.9	129.1	116.6	104.7	91.9
30	72.4	61.8	58.1	59.5	-----	92.2	113.0	129.1	128.9	116.6	104.0	91.4
31	71.6	-----	58.1	59.4	-----	93.2	-----	129.4	-----	116.5	103.9	-----
(a) 5	209.3	5,199.3	5,195.4	5,196.8	5,216.8	5,229.2	5,245.6	5,258.0	5,257.6	5,248.3	5,238.3	5,227.7
(b)	-14.2	-9.8	-3.7	+1.3	+20.0	+13.8	+19.8	+16.4	-0.5	-12.4	-12.6	-12.5
MAX	85.8	70.9	61.4	60.2	79.4	93.2	113.0	129.4	130.5	128.3	116.3	103.9
MIN	71.6	61.8	58.0	58.0	59.5	80.1	94.0	113.9	128.9	116.5	103.9	91.4
CAL YR 1967		b	-34.2			MAX 136.1		MIN 58.0				
WTR YR 1968		b	+5.6			MAX 130.5		MIN 58.0				

a Elevation, in feet, at end of month.

b Change of contents, in thousands of acre-feet.

SACRAMENTO RIVER BASIN

931

11-4275. MIDDLE FORK AMERICAN RIVER AT FRENCH MEADOWS, CALIF.

LOCATION.--Lat 39°06'35", long 120°28'49", in W1/4 sec.36, T.15 N., R.13 E., on left bank 0.6 mile downstream from French Meadows Dam, 4.1 miles upstream from Chipmunk Creek, and 14 miles south of Cisco.

DRAINAGE AREA.--47.9 sq mi.

RECORDS AVAILABLE.--October 1951 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 4,920 ft (from topographic map). Prior to Oct. 1, 1962, at site 0.8 mile upstream at different datum.

EXTREMES.--Maximum discharge during year, 56 cfs Feb. 20 (gage height, 4.92 ft); minimum daily, 7.6 cfs Oct. 1.

1951-64 (prior to regulation by French Meadows Reservoir): Maximum discharge, 21,500 cfs Jan. 31, 1963 (gage height, 14.20 ft), from rating curve extended above 1,100 cfs on basis of maximum flow at former site; minimum, 0.3 cfs Oct. 4, 5, 21-25, 1960, Oct. 5, 6, 1961.

1964-68: Maximum discharge, 1,310 cfs Apr. 30, 1965 (gage height, 7.68 ft); minimum daily, 0.8 cfs Oct. 22-25, 1964.

REMARKS.--Records good. Flow regulated by French Meadows Reservoir beginning in December 1964 (see sta. no. 11-4274.). Diversions from Duncan Creek to French Meadows Reservoir since December 1964 and from French Meadows Reservoir to Hell Hole Reservoir since December 1965. See schematic diagram for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.6	8.4	9.0	9.0	9.5	15	15	12	13	12	11	9.9
2	8.4	8.4	9.0	8.8	10	14	15	12	13	12	11	9.9
3	8.0	8.4	9.0	8.8	11	14	14	12	13	12	11	9.9
4	7.8	8.4	9.5	8.8	10	14	14	12	13	12	10	9.9
5	7.8	8.4	10	8.8	9.9	14	14	12	13	12	10	9.9
6	7.8	8.4	9.5	8.8	9.9	14	14	12	13	12	10	9.9
7	8.0	8.4	9.5	8.8	9.9	14	14	12	13	12	10	9.9
8	7.8	8.4	9.2	8.8	9.9	14	14	12	13	12	10	9.9
9	7.8	8.4	9.2	8.8	10	14	14	12	13	12	10	9.9
10	7.8	8.6	9.2	9.0	10	13	14	12	13	12	10	9.9
11	7.8	9.0	9.2	9.0	9.9	13	14	12	13	12	10	9.9
12	8.0	9.0	9.2	9.0	9.9	13	14	12	13	12	10	9.9
13	8.0	9.0	9.0	9.0	9.9	13	14	12	13	12	10	9.5
14	8.0	9.7	9.0	9.2	9.9	13	13	12	12	12	10	9.5
15	7.8	9.5	9.0	14	9.9	13	13	12	12	11	10	9.5
16	7.8	9.5	9.0	11	10	13	13	12	12	11	10	9.5
17	8.0	9.2	9.0	9.9	21	13	13	12	12	11	10	9.5
18	8.0	9.2	8.8	9.7	16	13	13	12	12	11	9.9	9.5
19	8.0	9.9	8.8	9.5	22	13	13	12	12	11	11	9.7
20	8.0	9.5	8.8	9.5	33	13	13	12	12	11	10	9.2
21	8.0	9.2	8.8	9.5	36	13	13	12	12	11	9.9	9.5
22	8.2	9.0	8.8	9.7	22	13	13	12	12	11	9.9	9.2
23	8.2	9.0	8.8	9.9	27	13	13	12	12	11	9.9	9.2
24	8.2	9.0	8.8	9.9	19	13	13	12	12	11	9.9	9.2
25	8.2	9.0	9.0	9.9	16	14	12	12	12	11	9.9	9.2
26	8.2	9.0	9.2	9.9	16	14	12	12	12	11	9.9	9.2
27	8.2	9.0	9.2	9.9	15	14	12	13	12	11	9.9	9.2
28	8.4	9.0	9.2	9.7	15	14	12	12	12	11	9.9	9.2
29	8.4	9.0	9.2	9.5	15	15	12	13	12	11	9.9	9.2
30	8.4	9.0	9.0	9.7	-----	15	12	13	12	11	9.7	9.2
31	8.4	-----	9.0	9.5	-----	15	-----	13	-----	11	9.7	-----
TOTAL	249.0	267.9	281.9	295.3	432.6	423	399	376	373	355	312.4	287.0
MEAN	8.03	8.93	9.09	9.53	14.9	13.6	13.3	12.1	12.4	11.5	10.1	9.57
MAX	8.4	9.9	10	14	36	15	15	13	13	12	11	9.9
MIN	7.6	8.4	8.8	8.8	9.5	13	12	12	12	11	9.7	9.2
AC-FT	494	531	559	586	858	839	791	746	740	704	620	569
(a)	13,680	9,800	3,880	1,720	244	0	328	3,180	4,150	12,680	12,920	12,310
CAL YR 1967	TOTAL 8,958.4		MEAN 24.5		MAX 804		MIN 7.4		AC-FT 17,770			
WTR YR 1968	TOTAL 4,052.1		MEAN 11.1		MAX 36		MIN 7.6		AC-FT 8,040			

a Diversion, in acre-feet, from French Meadows Reservoir to Hell Hole Reservoir through French Meadows powerplant.

SACRAMENTO RIVER BASIN

11-4277. DUNCAN CREEK NEAR FRENCH MEADOWS, CALIF.

LOCATION.--Lat 39°08'09", long 120°28'39", in NE¼ sec.24, T.15 N., R.13 E., on left (revised) bank 0.2 mile upstream from diversion dam, 0.5 mile downstream from Little Duncan Creek, 2 miles northwest of French Meadows, and 20 miles northeast of Foresthill.

DRAINAGE AREA.--9.94 sq mi.

RECORDS AVAILABLE.--August 1960 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 5,270 ft (from topographic map). Prior to Sept. 3, 1965, at site 150 ft upstream at datum 9.56 ft higher.

AVERAGE DISCHARGE.--8 years, 33.2 cfs (24,040 acre-ft per year).

EXTREMES.--Maximum daily discharge during year, 300 cfs Feb. 20; minimum daily, 0.90 cfs Aug. 6-13.
1960-68: Maximum discharge, 3,650 cfs Dec. 22, 1964 (gage height, 10.6 ft from floodmarks), from rating curve extended above 13 cfs on basis of computation of flow over diversion dam; minimum daily, 0.2 cfs Sept. 23-25, 1964.

REMARKS.--Records good except those for periods of no gage-height record, which are poor. No storage or diversion above station. See schematic diagram for Middle Fork American and Rubicon River basins.

REVISIONS (water year).--1965 report: 1963.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.3	3.8	3.9	12	73	60	118	31	3.3	1.1	1.2
2	8.6	1.3	2.4	3.6	15	70	49	116	30	3.2	1.0	1.2
3	8.1	1.3	2.4	3.4	17	65	39	122	27	3.2	.96	1.2
4	3.4	1.3	3.6	3.3	18	61	44	122	25	2.8	.96	1.2
5	3.4	1.3	6.0	3.2	17	59	47	110	24	2.6	.93	1.1
6	3.3	1.4	2.7	3.1	18	56	39	96	23	2.3	.90	1.1
7	2.3	1.4	3.0	3.1	19	55	45	86	24	2.2	.90	1.1
8	2.1	1.3	2.7	3.0	20	52	62	83	23	2.1	.90	1.1
9	1.9	1.3	2.6	3.0	23	50	70	85	19	2.0	.90	1.0
10	1.8	1.4	3.2	3.1	23	47	85	82	17	1.9	.90	1.0
11	1.8	1.3	3.3	3.4	22	44	91	77	16	1.8	.90	1.0
12	1.6	1.3	3.3	3.6	22	40	91	70	14	1.8	.90	1.0
13	1.6	1.4	2.7	6.0	21	37	89	65	13	1.7	.90	1.0
14	1.6	4.4	2.6	50	21	34	94	60	12	1.7	.93	1.0
15	1.5	2.0	2.4	56	23	31	93	59	11	1.6	.96	1.0
16	1.5	1.6	2.3	45	28	29	82	56	10	1.6	.96	1.0
17	1.5	1.4	2.2	29	80	28	70	56	9.7	1.6	1.0	.99
18	1.5	1.8	2.3	19	170	26	65	61	8.8	1.4	1.1	.99
19	1.4	6.6	2.3	16	250	26	64	68	8.2	1.4	20	1.0
20	1.4	4.7	2.2	15	300	25	61	73	7.3	1.3	5.8	1.3
21	1.4	2.7	2.1	14	150	26	60	66	6.8	1.3	2.4	1.2
22	1.4	2.0	2.1	14	190	28	59	56	6.2	1.2	2.0	1.1
23	1.5	1.7	2.6	14	155	30	59	49	5.8	1.2	1.8	1.0
24	1.4	1.6	3.2	15	140	33	61	43	5.5	1.2	1.6	1.0
25	1.4	1.6	5.5	13	115	36	66	49	4.7	1.2	1.4	.99
26	1.4	1.4	8.5	11	95	38	75	47	4.5	1.1	1.4	.99
27	1.4	1.4	9.7	10	88	47	82	47	4.1	1.1	1.4	.96
28	1.4	1.7	7.9	9.4	80	66	88	46	3.9	1.1	1.3	.96
29	1.5	1.6	6.0	9.1	78	72	101	43	3.8	1.1	1.3	.93
30	1.4	4.5	4.9	9.0	-----	72	110	40	3.6	1.0	1.2	.96
31	1.4	-----	4.1	9.2	-----	70	-----	34	-----	1.1	1.2	-----
TOTAL	67.2	60.0	114.6	403.4	2,210	1,426	2,101	2,185	401.9	54.1	59.90	31.57
MEAN	2.17	2.00	3.70	13.0	76.2	46.0	70.0	70.5	13.4	1.75	1.93	1.05
MAX	8.6	6.6	9.7	56	300	73	110	122	31	3.3	20	1.3
MIN	1.3	1.3	2.1	3.0	12	25	39	34	3.6	1.0	.90	.93
AC-FT	133	119	227	800	4,380	2,830	4,170	4,330	797	107	119	63

CAL YR 1967 TOTAL 16,920.9 MEAN 46.4 MAX 376 MIN 1.1 AC-FT 33,560
WTR YR 1968 TOTAL 9,114.67 MEAN 24.9 MAX 300 MIN .90 AC-FT 18,080

Peak discharge (250 cfs).--Feb. 20 (time, gage-height, and discharge unknown).

Note.--No gage-height record Jan. 3 to Feb. 26, Feb. 27 to Apr. 7.

11-4277.5. DUNCAN CREEK BELOW DIVERSION DAM, NEAR FRENCH MEADOWS, CALIF.

LOCATION.--Lat 39°07'59", long 120°28'58", in NE¼SE¼ sec.23, T.15 N., R.13 E., on right bank 800 ft downstream from unnamed right bank tributary, 1,000 ft downstream from Duncan Creek diversion dam, and 20 miles north-east of Foresthill.

DRAINAGE AREA.--10.5 sq mi.

RECORDS AVAILABLE.--October 1964 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 5,210 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 379 cfs Feb. 20 (gage height, 3.88 ft); minimum daily, 0.41 cfs Sept. 29, 30.

1964-68: Maximum discharge, 3,640 cfs Dec. 22, 1964 (gage height, 8.74 ft in gage well, 10.0 ft from floodmarks), from rating curve extended above 400 cfs on basis of computation of flow over diversion dam of maximum flow; no flow at times in 1964-66.

REMARKS.--Records good. Practically all flow is diverted above station through Duncan Creek diversion tunnel to French Meadows Reservoir (see sta. no. 11-4274.). Maximum design flow of tunnel is 400 cfs. See schematic diagram for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	.94	1.0	1.3	1.8	10	22	1.6	6.9	2.9	1.0	.74
2	1.8	.94	1.0	1.3	2.8	6.9	9.6	1.8	6.9	2.8	.94	.68
3	1.6	.94	1.0	1.3	4.6	5.6	8.7	4.3	6.6	2.6	.80	.68
4	1.4	1.0	1.2	1.2	3.9	5.8	7.5	9.0	6.3	2.4	.74	.68
5	1.4	1.0	1.3	1.2	3.7	4.8	7.2	8.7	6.3	2.3	.74	.68
6	1.4	1.0	1.2	1.2	3.7	4.1	6.3	8.1	6.6	2.1	.68	.63
7	1.4	1.0	1.2	1.2	3.5	3.7	6.0	8.1	6.6	2.0	.63	.63
8	1.4	1.0	1.2	1.2	3.5	3.5	6.0	8.1	6.6	1.8	.68	.58
9	1.4	1.0	1.1	1.2	3.9	3.4	6.0	8.4	6.3	1.8	.68	.58
10	1.3	1.0	1.1	1.3	3.4	3.2	6.0	8.4	6.3	1.8	.68	.58
11	1.2	1.0	1.1	1.2	3.2	3.2	6.0	8.7	6.0	1.8	.63	.53
12	1.1	1.0	1.1	1.2	3.4	3.0	5.3	8.7	6.0	1.6	.63	.53
13	1.0	1.0	1.1	1.3	3.4	3.0	5.0	8.7	6.0	1.6	.63	.53
14	.94	2.6	1.3	1.6	3.0	3.0	4.6	8.7	6.3	1.6	.68	.53
15	.87	3.4	1.2	17	2.8	2.9	4.1	8.7	6.3	1.6	.74	.58
16	.80	2.2	1.1	6.6	3.0	3.2	3.7	8.7	6.0	1.4	.80	.58
17	.80	1.6	1.1	3.2	16	2.9	3.5	8.7	5.3	1.4	.87	.53
18	.74	1.6	1.2	2.4	10	2.8	3.0	8.4	3.2	1.4	1.0	.49
19	.68	3.2	1.1	2.2	49	2.9	2.9	8.4	3.7	1.3	1.6	.53
20	.53	3.2	1.1	2.4	209	2.8	2.4	8.1	3.9	1.2	2.8	.87
21	1.3	2.1	1.1	3.2	166	3.0	2.3	8.1	3.9	1.1	2.6	.74
22	2.5	.53	1.1	3.4	102	3.5	2.2	7.8	3.9	1.1	2.0	.68
23	1.3	.49	1.1	3.5	203	4.1	2.1	7.8	3.7	1.0	1.6	.63
24	1.1	.49	1.1	3.5	107	4.8	2.1	7.8	3.5	1.0	1.6	.68
25	1.0	.49	1.2	3.4	55	6.3	2.0	7.8	3.5	1.0	1.4	.49
26	1.0	.74	1.4	2.9	36	6.3	2.0	7.8	3.5	.94	1.2	.49
27	1.0	1.1	1.6	2.4	28	7.2	1.8	7.8	3.4	.94	1.1	.45
28	1.0	1.0	1.6	2.2	22	9.3	1.8	7.8	3.4	.87	.94	.45
29	1.0	1.0	1.4	2.0	15	31	1.8	7.8	3.4	.87	.94	.41
30	1.0	1.1	1.4	2.8	-----	20	1.6	7.2	3.2	.87	.80	.41
31	1.0	-----	1.4	2.2	-----	26	-----	7.2	-----	.87	.74	-----
TOTAL	36.16	39.66	37.1	83.0	1,071.6	202.2	145.5	237.2	153.5	47.96	32.87	17.59
MEAN	1.17	1.32	1.20	2.68	37.0	6.52	4.85	7.65	5.12	1.55	1.06	.59
MAX	2.5	3.4	1.6	17	209	31	22	9.0	6.9	2.9	2.8	.87
MIN	.53	.49	1.0	1.2	1.8	2.8	1.6	1.6	3.2	.87	.63	.41
AC-FT	72	79	74	165	2,130	401	289	470	304	95	65	35
CAL YR 1967	TOTAL	8,295.02	MEAN	22.7	MAX	376	MIN	.49	AC-FT	16,450		
WTR YR 1968	TOTAL	2,104.34	MEAN	5.75	MAX	209	MIN	.41	AC-FT	4,170		

SACRAMENTO RIVER BASIN

11-4277.6. MIDDLE FORK AMERICAN RIVER ABOVE MIDDLE FORK POWERHOUSE, NEAR FORESTHILL, CALIF.

LOCATION.--Lat 39°01'30", long 120°35'40", in NW¼NW¼ sec.36, T.14 N., R.12 E., on right bank 300 ft upstream from Middle Fork powerhouse, 3.7 miles upstream from Big Mosquito Creek, and 11 miles east of Foresthill.

DRAINAGE AREA.--87.8 sq mi.

RECORDS AVAILABLE.--August 1965 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 2,540 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 1,390 cfs Feb. 20 (gage height, 5.41 ft); minimum daily, 14 cfs Sept. 27-29.

1966-68: Maximum discharge, 1,460 cfs (revised) Mar. 16, 1967 (gage height, 5.46 ft); minimum daily, 12 cfs Aug. 31, 1966.

REVISIONS.--The maximum discharge for the 1967 water year has been revised to 1,460 cfs Mar. 16, 1967 (gage height, 5.46 ft), superseding figure published in Surface Water Records of California, Vol. 2, 1967.

REMARKS.--Records good. Flow regulated by French Meadows Reservoir (see sta. no. 11-4274.). See schematic diagram for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CURIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	17	25	28	39	178	176	57	36	29	22	17
2	27	17	23	28	49	162	148	55	35	28	22	17
3	38	17	25	26	76	148	133	55	35	28	22	17
4	22	17	32	26	66	138	126	58	35	27	22	16
5	22	17	83	25	65	134	125	57	35	27	21	16
6	21	17	36	26	68	123	117	55	38	26	21	16
7	20	18	43	25	69	120	111	54	39	26	21	16
8	20	17	32	26	69	128	107	52	42	26	21	16
9	19	18	29	26	85	117	105	51	36	26	21	16
10	19	18	28	40	86	107	109	50	36	25	21	16
11	19	18	27	30	77	100	109	50	35	25	21	16
12	19	18	26	28	74	94	104	50	34	25	21	16
13	18	19	20	28	74	104	98	55	33	25	21	15
14	18	26	24	30	72	104	94	56	34	25	21	15
15	18	22	28	168	68	97	92	54	34	25	21	15
16	18	21	25	107	69	108	89	51	33	25	21	15
17	18	21	24	63	202	107	84	48	33	25	22	15
18	18	21	26	50	195	97	79	46	32	25	21	15
19	18	40	26	45	224	91	76	46	31	24	40	15
20	18	28	25	43	832	88	74	45	31	24	28	16
21	18	24	25	43	730	87	71	44	31	23	22	16
22	18	23	25	46	504	89	68	44	30	22	21	16
23	20	21	26	48	694	91	66	43	30	22	20	15
24	18	21	28	46	483	94	65	42	29	22	19	15
25	18	20	30	46	345	111	64	43	30	22	19	15
26	18	20	32	47	285	118	63	41	30	22	18	15
27	18	21	35	46	252	115	61	40	30	22	18	14
28	18	23	33	41	222	125	60	40	29	22	18	14
29	18	26	32	41	199	143	59	38	29	22	18	14
30	18	28	30	42	-----	164	58	38	29	22	18	15
31	18	-----	29	44	-----	172	-----	38	-----	22	17	-----
TOTAL	610	634	932	1,358	6,273	3,654	2,791	1,496	994	759	659	465
MEAN	19.7	21.1	30.1	43.8	216	118	93.0	48.3	33.1	24.5	21.3	15.5
MAX	38	40	83	168	832	178	176	58	42	29	40	17
MIN	18	17	20	25	39	87	58	38	29	22	17	14
AC-FT	1,210	1,260	1,850	2,690	12,440	7,250	5,540	2,970	1,970	1,510	1,310	922
CAL YR 1967	TOTAL 50,151		MEAN 137		MAX 1,090	MIN 17		AC-FT 99,470				
WTR YR 1968	TOTAL 20,625		MEAN 56.4		MAX 832	MIN 14		AC-FT 40,910				

SACRAMENTO RIVER BASIN

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11-4277.7. MIDDLE FORK AMERICAN RIVER BELOW INTERBAY DAM, NEAR FORESTHILL, CALIF.

LOCATION.--Lat 39°01'35", long 120°36'09", in SW¼SE¼ sec.26, T.14 N., R.12 E., on right bank 500 ft below Interbay Dam, 3.3 miles upstream from Big Mosquito Creek, and 10.6 miles east of Foresthill.

DRAINAGE AREA.--89.1 sq mi.

RECORDS AVAILABLE.--October 1965 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 2,470 ft (from topographic map).

EXTREMES.--Maximum daily discharge during year, 520 cfs Feb. 20; minimum daily, 5.4 cfs on several days.
1965-68: Maximum daily discharge, 1,250 cfs June 22, 1967; minimum daily, 1.0 cfs Oct. 25-30, 1966, Jan. 19, 1967.

REMARKS.--Records good. Flow regulated by French Meadows Reservoir (see sta. no. 11-4274.) 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 tunnel to Interbay powerplant and re-diverted to Ralston powerplant. See schematic diagram for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	6.1	6.9	6.1	6.1	6.1	6.9	5.8	14	12	14	14
2	6.9	6.1	6.9	7.8	6.1	6.1	6.9	5.8	14	12	14	14
3	6.9	6.1	6.9	6.1	6.1	5.8	6.5	5.6	14	12	14	14
4	7.2	6.1	6.9	6.1	6.1	6.1	6.5	5.6	14	12	14	14
5	6.9	6.1	6.9	6.1	6.1	6.1	6.9	5.6	14	12	14	15
6	6.9	6.5	6.1	6.1	7.7	6.1	6.5	5.6	14	12	14	15
7	6.9	6.5	6.5	5.8	6.1	6.1	6.1	5.6	14	12	14	14
8	6.5	6.1	6.1	5.8	6.1	6.5	6.1	5.6	14	14	14	15
9	6.9	6.1	6.1	5.8	6.9	6.1	6.1	9.2	14	13	14	15
10	6.5	6.1	6.1	6.1	6.1	6.1	5.8	14	14	14	14	15
11	6.5	6.1	6.1	5.8	5.8	6.1	28	14	14	12	14	15
12	6.5	6.1	6.1	5.8	5.8	6.1	55	14	14	12	14	15
13	6.1	6.1	6.1	5.4	5.8	7.2	48	14	14	12	14	15
14	5.4	8.6	6.1	5.4	5.8	7.2	47	14	14	12	14	15
15	5.8	6.9	6.1	6.4	5.8	5.8	24	14	14	12	14	15
16	6.9	6.5	5.8	6.1	15	13	6.5	14	14	12	14	15
17	6.1	6.5	5.8	6.1	6.1	6.2	6.1	14	14	12	14	15
18	6.1	6.5	6.1	6.5	6.1	6.1	6.1	14	14	12	14	16
19	6.1	6.5	6.1	6.1	6.1	6.1	6.1	14	13	12	14	16
20	6.1	6.5	6.1	5.8	87	26	5.4	14	13	12	14	16
21	6.1	6.5	6.1	5.8	6.5	20	7.3	14	14	12	14	15
22	6.1	6.5	6.1	5.4	6.5	6.1	5.8	14	13	12	14	15
23	6.5	6.5	6.1	5.8	6.5	6.1	5.8	14	13	12	14	15
24	6.5	6.5	6.1	7.3	6.5	5.8	5.8	14	13	12	14	15
25	6.5	6.5	6.1	5.8	6.8	6.1	5.4	14	12	12	14	15
26	6.5	6.1	6.1	7.9	6.5	7.5	5.8	14	12	12	14	15
27	6.5	6.1	6.1	6.7	6.1	6.1	5.4	14	12	12	14	14
28	6.5	6.1	6.1	6.5	6.1	7.2	5.4	14	12	12	14	14
29	6.1	6.1	6.1	6.1	6.1	6.5	5.4	14	12	16	14	14
30	6.1	6.5	6.1	6.1	-----	6.1	6.9	14	12	14	14	14
31	6.1	-----	6.1	6.1	-----	7.4	-----	14	-----	14	14	-----
TOTAL	199.2	191.5	192.9	190.7	270.3	235.8	355.5	362.4	403	385	434	444
MEAN	6.43	6.38	6.22	6.15	9.32	7.61	11.9	11.7	13.4	12.4	14.0	14.8
MAX	7.2	8.6	6.9	7.9	87	26	55	14	14	16	14	16
MIN	5.4	6.1	5.8	5.4	5.8	5.8	5.4	5.6	12	12	14	14
AC-FT	395	380	383	378	536	468	705	719	799	764	861	881
(a)	33,870	25,690	37,250	22,200	20,650	20,310	22,660	20,590	16,760	8,550	18,280	29,160
CAL YR 1967	TOTAL 43,341.6			MEAN 119		MAX 1,250	MIN 1.0	AC-FT 85,970				
WTR YR 1968	TOTAL 3,664.3			MEAN 10.0		MAX 87	MIN 5.4	AC-FT 7,270				

a Diversion, in acre-feet, to Ralston powerplant, furnished by Placer County Water Agency.

SACRAMENTO RIVER BASIN

11-4279.4. RUBICON-ROCKBOUND TUNNEL NEAR MEEKS BAY, CALIF.

LOCATION.--Lat 38°59'20", long 120°13'30", in SE $\frac{1}{4}$ sec.8, T.13 N., R.16 E., on right bank at tunnel intake 100 ft upstream from diversion dam on Rubicon River, 2.5 miles upstream from Rubicon Springs, and 6.5 miles south-west of Meeks Bay.

RECORDS AVAILABLE.--December 1963 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 6,533.23 ft above mean sea level (levels by Sacramento Municipal Utility District). Auxiliary graphic water-stage recorder since Aug. 26, 1966, 300 ft downstream from tunnel outlet at different datum.

AVERAGE DISCHARGE.--5 years, 97.1 cfs (70,300 acre-ft per year).

EXTREMES.--1963-68: Maximum daily discharge, 1,120 cfs Dec. 23, 1964; no flow for several months in each year.

REMARKS.--Records good. Tunnel diverts water from Rubicon River to Rockbound Lake. Practically all flow below 1,200 cfs is diverted through the tunnel. See schematic diagram for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	3.8	9.4	26	98	197	390	273	12	0	1.1
2	7.2	0	7.0	8.1	26	85	122	380	277	17	0	.80
3	93	0	8.1	6.7	53	86	80	370	218	17	0	.80
4	69	0	9.4	5.6	40	88	79	416	241	15	0	.66
5	50	0	12	5.1	28	91	91	374	220	15	0	.46
6	38	0	14	4.4	22	72	73	258	144	13	0	.28
7	23	0	17	4.0	19	58	74	234	115	11	0	.20
8	15	0	16	3.8	18	53	90	262	107	10	0	.15
9	10	0	14	3.6	17	46	127	293	117	9.0	0	.10
10	6.4	0	12	4.4	17	40	190	322	136	8.0	0	.06
11	4.4	0	12	5.6	16	36	265	309	166	6.2	0	.06
12	2.6	0	11	6.4	15	33	254	232	181	4.6	0	.03
13	1.4	0	9.4	5.6	15	32	212	183	164	3.6	0	.03
14	.41	0	10	9.9	15	34	206	158	147	3.0	0	.01
15	.10	0	12	210	14	32	239	150	162	2.5	0	0
16	.01	0	7.0	184	14	30	192	148	168	1.7	0	0
17	0	0	5.6	89	52	30	126	190	173	1.2	0	110
18	0	0	6.1	51	122	29	88	250	159	1.1	0	26
19	0	.03	7.0	36	150	25	88	355	146	.80	16	4.9
20	0	17	7.6	28	835	24	97	423	122	.56	122	1.0
21	0	23	7.3	27	612	25	93	428	110	.28	47	.06
22	0	14	7.0	26	305	30	81	323	109	.15	40	0
23	0	7.8	6.1	27	432	32	92	180	99	.15	26	0
24	0	4.9	6.4	27	432	38	123	139	87	.10	14	0
25	0	3.2	7.6	27	222	46	155	190	75	.10	7.6	0
26	0	2.0	12	25	150	38	222	270	40	.06	5.0	0
27	0	1.1	17	22	132	36	256	334	3.8	.06	3.4	0
28	0	.92	22	20	124	56	270	392	4.0	.06	2.1	0
29	0	1.0	18	16	102	103	361	409	3.4	.03	1.6	0
30	0	2.0	14	15	-----	157	400	333	4.4	.01	1.4	0
31	0	-----	11	21	-----	182	-----	280	-----	.01	1.2	-----
TOTAL	320.52	76.95	329.4	933.6	4,025	1,765	4,943	8,975	3,971.6	153.27	287.3	146.70
MEAN	10.3	2.57	10.6	30.1	139	56.9	165	290	132	4.94	9.27	4.89
MAX	93	23	22	210	835	182	400	428	277	17	122	110
MIN	0	0	3.8	3.6	14	24	73	139	3.4	.01	0	0
AC-FT	636	153	653	1,850	7,980	3,500	9,800	17,800	7,880	304	570	291
CAL YR 1967	TOTAL 49,685.03		MEAN 136		MAX 878		MIN 0		AC-FT 98,550			
WTR YR 1968	TOTAL 25,927.34		MEAN 70.8		MAX 835		MIN 0		AC-FT 51,430			

11-4280. RUBICON RIVER AT RUBICON SPRINGS, NEAR MEEKS BAY, CALIF.

LOCATION.--Lat 39°01'10", long 120°14'46", in SW $\frac{1}{4}$ sec. 31, T.14 N., R.16 E., on right bank 200 ft downstream from Rubicon Springs, 0.7 mile upstream from Miller Creek, and 7 miles west of Meeks Bay.

DRAINAGE AREA.--31.4 sq mi.

RECORDS AVAILABLE.--February 1910 to March 1914 (published as "at Rubicon Springs"), October 1956 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 6,052.97 ft above mean sea level, datum of 1929. Feb. 1, 1910, to Mar. 31, 1914, staff gage or water-stage recorder at site 0.4 mile downstream at different datum.

AVERAGE DISCHARGE.--15 years (1910-13, 1956-68), 115 cfs (83,260 acre-ft per year), adjusted for diversion into Rubicon-Rockbound tunnel.

EXTREMES.--Maximum discharge during year, 630 cfs Feb. 20 (gage height, 5.00 ft); minimum daily, 2.4 cfs Nov. 13. 1910-14, 1956-68: Maximum discharge, 11,500 cfs Feb. 1, 1963 (gage height, 14.28 ft), from rating curve extended above 1,200 cfs on basis of slope-conveyance computation of maximum flow; no flow at times in some years.

Flood of December 1955 reached a stage of 13.0 ft, from floodmarks, present site and datum (discharge, 9,270 cfs).

REMARKS.--Records good. Low summer flow, beginning in 1950, augmented by release from streamflow maintenance dams on Lakes Clyde, Lois, Middle Velma, and Schmidell (total controlled capacity, 555 acre-ft). Flow below 1,200 cfs controlled by Rubicon diversion dam. Diversion to Rubicon-Rockbound tunnel began Dec. 26, 1963 (see sta. no. 11-4279.4). See schematic diagram for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	6.2	7.8	9.3	11	31	59	35	11	8.7	8.4	6.2
2	19	6.2	7.8	9.0	12	30	32	33	11	9.0	7.5	6.2
3	15	6.5	8.1	8.7	23	30	26	33	10	9.0	7.3	6.2
4	8.1	6.5	8.4	8.7	17	31	30	30	9.6	8.7	7.3	6.0
5	7.8	6.5	9.3	8.7	15	31	32	26	9.6	8.7	7.3	6.0
6	7.3	6.2	9.0	8.4	14	23	26	21	9.3	8.7	7.3	6.5
7	7.0	6.0	9.0	8.4	14	20	29	19	9.6	8.7	7.3	6.7
8	6.7	6.0	8.4	8.4	14	20	34	19	10	9.0	7.0	6.7
9	6.7	5.8	8.4	8.4	14	20	43	19	9.6	8.7	7.0	6.7
10	6.7	5.5	8.7	8.7	14	17	56	19	9.3	8.7	7.0	6.7
11	6.7	4.9	9.3	8.7	13	15	55	19	9.3	8.7	6.7	6.5
12	6.7	3.3	8.4	8.4	13	14	48	20	9.3	9.0	6.7	6.5
13	6.5	2.4	7.8	8.4	14	15	40	22	9.0	10	8.4	6.4
14	6.5	5.4	7.5	10	13	15	44	28	9.0	9.6	9.3	6.2
15	6.2	6.0	7.8	96	12	15	44	26	9.0	9.0	9.0	6.5
16	6.5	5.8	7.8	35	12	15	35	20	9.0	9.0	9.3	6.2
17	6.5	5.8	7.5	18	47	14	24	17	8.7	11	9.6	6.5
18	6.5	6.2	8.1	14	41	14	20	17	8.7	11	11	6.2
19	6.5	20	7.8	13	118	13	23	17	8.7	11	20	6.2
20	6.5	14	7.8	13	287	14	24	17	8.4	10	8.4	6.5
21	6.5	8.4	7.8	14	117	15	23	17	8.4	10	7.0	6.2
22	6.5	7.5	7.8	14	73	17	19	14	8.1	10	6.7	6.0
23	6.5	7.3	8.1	16	136	19	23	14	8.1	10	6.5	6.0
24	6.2	7.0	8.4	16	62	20	26	13	8.1	10	6.2	5.8
25	6.2	6.7	10	15	41	25	30	13	8.1	10	6.2	5.8
26	6.2	6.5	14	14	38	21	35	13	7.8	10	6.2	4.9
27	6.2	6.7	20	12	40	21	34	13	8.1	10	6.2	4.3
28	6.5	7.3	15	12	36	33	35	13	8.1	10	6.2	4.3
29	6.2	7.3	12	12	31	48	40	12	8.7	9.3	6.2	4.3
30	6.5	7.5	10	11	-----	55	38	11	8.7	8.1	6.0	4.3
31	6.2	-----	10	12	-----	51	-----	11	-----	8.4	6.2	-----
TOTAL	225.6	207.4	287.8	459.2	1,292	722	1,027	601	270.3	292.0	241.4	179.5
MEAN	7.28	6.91	9.28	14.8	44.6	23.3	34.2	19.4	9.01	9.42	7.79	5.98
MAX	19	20	20	96	287	55	59	35	11	11	20	6.7
MIN	6.2	2.4	7.5	8.4	11	13	19	11	7.8	8.1	6.0	4.3
AC-FT	447	411	571	911	2,560	1,430	2,040	1,190	536	579	479	356
Mean a	17.6	9.48	19.8	44.9	183	80.2	199	309	142	14.4	17.1	10.9
Ac-ft a	1,080	564	1,220	2,760	10,540	4,930	11,840	18,990	8,420	883	1,050	647

CAL YR 1967 TOTAL 10,090.1 MEAN 27.6 MAX 434 MIN 2.4 AC-FT 20,010 MEAN a 164 AC-FT a 118,600
 WTR YR 1968 TOTAL 5,805.2 MEAN 15.9 MAX 287 MIN 2.4 AC-FT 11,510 MEAN a 86.7 AC-FT a 62,920

a Adjusted for diversion to Rubicon-Rockbound Tunnel.

SACRAMENTO RIVER BASIN

11-4283. BUCK-LOON TUNNEL NEAR MEEKS BAY, CALIF.

LOCATION.--Lat 39°00'15", long 120°15'20", in NW $\frac{1}{4}$ sec.6, T.13 N., R.16 E., on right bank at tunnel intake near left abutment of diversion dam, 7.6 miles southwest of Meeks Bay.

RECORDS AVAILABLE.--November 1963 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 6,425.0 ft above mean sea level (levels by Sacramento Municipal Utility District).

AVERAGE DISCHARGE.--5 years, 121 cfs (87,600 acre-ft per year).

EXTREMES.--1963-68: Maximum daily discharge, 1,240 cfs Dec. 23, 1964; no flow for many days in each year.

REMARKS.--Records good except those for period of indefinite stage discharge relation, which are fair. Tunnel diverts from Buck Island Lake and discharges into Loon Lake. Water is used for power development downstream. See schematic diagram for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	0	8.2	16	32	124	244	478	304	.29	.52	5.2
2	.39	0	7.8	14	36	114	185	472	327	.34	.50	4.7
3	72	0	8.2	12	64	107	119	452	363	.50	.47	4.3
4	151	0	14	10	68	109	95	498	322	.77	.44	3.8
5	128	0	25	8.6	49	114	105	474	261	1.2	.42	3.5
6	112	0	22	7.0	37	102	100	340	184	1.9	.39	3.3
7	88	0	26	6.2	30	84	88	277	140	2.8	.37	3.0
8	67	0	26	5.3	27	76	98	298	123	5.2	.35	2.7
9	42	0	22	5.3	26	67	131	331	123	7.0	.33	2.5
10	17	0	20	11	26	57	151	373	137	9.4	.31	2.3
11	8.6	0	18	12	24	49	296	373	161	10	.30	2.2
12	5.0	0	17	9.0	23	45	309	296	186	10	.28	1.9
13	3.2	0	16	8.2	24	48	271	239	183	8.4	.26	1.7
14	2.2	0	12	9.0	23	49	242	192	160	7.1	.25	1.5
15	1.3	0	7.4	166	21	44	278	183	163	5.5	.24	1.4
16	.90	0	7.0	312	20	44	252	172	171	4.4	.23	1.3
17	.64	0	7.8	168	48	45	176	206	181	3.4	.22	1.2
18	.44	0	14	94	157	40	123	267	171	2.8	.21	73
19	.32	1.5	18	61	176	36	102	386	158	2.2	.28	30
20	.20	24	15	44	952	32	110	464	139	1.9	7.8	14
21	.11	35	12	38	1,000	32	117	517	123	1.6	14	4.8
22	.04	29	9.8	36	502	36	105	376	116	1.2	20	1.9
23	0	20	8.6	35	500	39	105	238	112	1.1	25	.97
24	0	12	8.2	35	613	44	136	172	101	1.0	20	.53
25	0	7.4	7.8	35	331	53	168	185	88	.93	15	.32
26	0	4.5	10	35	204	55	244	283	73	.83	11	.15
27	0	3.2	16	36	162	54	306	360	21	.77	9.0	.03
28	0	3.4	24	32	153	56	315	425	.20	.71	8.1	0
29	0	3.4	26	28	136	98	407	476	.22	.67	7.3	0
30	0	7.4	23	35	-----	164	482	402	.23	.61	6.5	0
31	0	-----	19	36	-----	210	-----	328	-----	.58	6.0	-----
TOTAL	700.47	150.8	475.8	1,359.6	5,464	2,227	5,860	10,533	4,591.65	95.10	156.07	172.20
MEAN	22.6	5.03	15.3	43.9	188	71.8	195	340	153	3.07	5.03	5.74
MAX	151	35	26	312	1,000	210	482	517	363	10	25	73
MIN	0	0	7.0	5.3	20	32	88	172	.20	.29	.21	0
AC-FT	1,390	299	944	2,700	10,840	4,420	11,620	20,890	9,110	189	310	342
CAL YR 1967	TOTAL 61,696.27		MEAN 169		MAX 1,030		MIN 0		AC-FT 122,400			
WTR YR 1968	TOTAL 31,785.69		MEAN 86.8		MAX 1,000		MIN 0		AC-FT 63,050			

Note.--Indefinite stage-discharge relation June 27 to Sept. 18.

11-4287. HELL HOLE RESERVOIR NEAR MEEKS BAY, CALIF.

LOCATION.--Lat. 39°03'55", long 120°24'50", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.16, T.14 N., R.14 E., on right bank 0.3 mile upstream from Hell Hole Dam on Rubicon River, and 15.6 miles west of Meeks Bay.

DRAINAGE AREA.--114 sq mi.

RECORDS AVAILABLE.--December 1965 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Placer County Water Agency).

EXTREMES.--Maximum contents during year, 159,500 acre-ft Oct. 1 (elevation, 4,588.7 ft); minimum, 93,300 acre-ft Feb. 16 (elevation, 4,513.7 ft).

1965-68: Maximum contents, 209,500 acre-ft June 17, 1967 (elevation, 4,631.5 ft); minimum since reservoir first filled, 93,300 acre-ft Feb. 16, 1968 (elevation, 4,513.7 ft).

REMARKS.--Reservoir is formed by rockfill dam with earth core. Storage began Dec. 6, 1965. Usable capacity, 202,400 acre-ft between elevations 4,340.0 (minimum operating level) and 4,630.0 ft (crest of ogee spillway) above mean sea level. Dead storage, 248 acre-ft. Records represent total contents. See schematic diagram for Middle Fork American and Rubicon River basins.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

4,340	5,220	4,500	83,000
4,360	9,840	4,550	127,700
4,380	16,200	4,600	171,900
4,400	24,200	4,650	233,400
4,450	49,600		

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	159.5	142.1	127.4	102.8	93.5	119.3	127.8	140.0	153.7	150.9	154.0	149.9
2	159.0	141.9	125.6	102.0	93.4	120.2	128.3	140.8	154.5	150.5	153.7	149.9
3	158.2	142.0	124.2	101.4	93.9	121.0	128.6	141.2	154.1	149.9	153.6	149.1
4	157.2	142.0	123.0	100.6	94.3	121.2	129.0	142.4	154.0	150.5	153.6	148.3
5	156.2	142.0	122.1	99.8	94.2	121.4	129.2	143.7	154.1	150.3	153.2	147.7
6	154.9	141.4	120.7	99.5	94.0	121.5	129.9	144.1	154.1	150.9	153.6	147.0
7	153.5	141.0	119.4	99.5	93.9	121.9	130.6	144.4	153.9	151.4	154.2	146.4
8	153.5	140.4	117.9	98.6	93.8	122.0	130.9	144.6	154.5	151.0	154.7	146.4
9	152.7	140.0	116.1	97.9	93.8	122.5	131.4	145.1	154.9	151.5	155.3	145.7
10	151.8	139.5	114.4	97.5	94.0	122.9	132.1	145.6	154.5	151.3	155.3	144.7
11	152.5	139.1	112.9	96.4	94.3	122.6	133.0	146.6	154.2	151.5	155.3	143.6
12	149.7	139.1	111.3	95.8	94.6	122.5	133.0	147.4	154.2	151.8	155.6	143.1
13	148.6	139.2	109.5	95.9	94.2	122.9	133.9	147.5	153.9	152.4	155.3	142.1
14	148.6	140.0	107.8	96.1	93.9	122.8	135.1	147.7	153.3	153.0	155.2	141.9
15	148.5	140.7	106.2	97.8	93.4	122.8	135.4	147.9	153.7	153.4	155.0	141.9
16	147.9	141.0	106.2	98.6	93.3	123.4	135.3	147.7	154.0	154.0	154.8	141.0
17	148.1	141.4	106.2	98.4	94.9	123.7	134.9	147.6	153.7	154.7	154.9	140.0
18	148.7	141.4	106.4	98.1	95.8	123.6	134.1	148.5	153.2	154.8	154.9	139.1
19	149.3	141.7	105.9	97.8	97.4	123.1	133.2	149.7	152.9	155.2	155.0	138.4
20	149.3	141.2	105.1	98.0	102.1	122.9	133.9	150.3	152.7	155.1	155.0	137.6
21	149.2	140.8	103.9	98.2	105.3	122.6	134.5	150.7	152.6	155.1	154.9	137.5
22	149.2	140.7	102.6	97.9	107.2	122.5	134.3	151.1	152.4	155.0	154.9	137.5
23	148.5	139.8	102.6	97.4	111.3	122.7	134.2	151.3	152.6	155.0	154.7	136.4
24	147.3	139.1	102.7	97.1	113.4	123.2	134.3	151.1	152.3	155.0	153.8	136.3
25	146.1	137.2	102.8	96.8	114.8	123.4	134.7	152.0	151.9	154.6	153.5	135.6
26	145.0	135.4	103.0	96.2	116.1	123.4	135.1	152.9	151.6	154.6	152.8	135.0
27	144.0	133.7	103.3	96.0	117.2	123.5	135.9	153.2	151.3	154.5	151.9	134.2
28	142.2	131.8	102.6	96.1	118.3	123.7	137.1	153.3	151.2	154.5	151.1	134.2
29	141.1	130.2	102.5	95.4	118.8	124.3	138.0	153.2	151.3	154.3	150.5	134.2
30	141.0	128.8	102.5	95.0	-----	125.5	139.1	153.7	151.5	154.3	149.9	134.2
31	141.6	-----	102.6	94.1	-----	126.8	-----	153.5	-----	154.3	149.9	-----
(a)	4,571.0	4,557.0	4,525.6	4,514.7	4,545.4	4,554.7	4,568.3	4,583.0	4,581.0	4,583.8	4,579.4	4,561.9
(b)	-17.9	-12.8	-26.2	-8.5	+24.7	+8.0	+12.3	+14.4	-2.0	+2.8	-4.4	-16.7
MAX	159.5	142.1	127.4	102.8	118.8	126.8	139.1	153.7	154.9	155.2	155.6	149.9
MIN	141.0	128.8	102.5	94.1	93.3	119.3	127.8	140.0	151.2	149.9	149.9	133.2
CAL YR 1967	b -77.5			MAX 209.5		MIN 102.5						
WTR YR 1968	b -26.3			MAX 159.5		MIN 93.3						

a Elevation, in feet, at end of month.

b Change in contents, in thousands of acre-feet.

SACRAMENTO RIVER BASIN

11-4288. RUBICON RIVER BELOW HELL HOLE DAM, NEAR MEEKS BAY, CALIF.

LOCATION.--Lat 39°03'25", long 120°24'25", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.21, T.14 N., R.14 E., on right bank 600 ft downstream from outlet of dam, 2.4 miles downstream from Cottonwood Creek, and 15.3 miles west of Meeks Bay.

DRAINAGE AREA.--114 sq mi (revised).

RECORDS AVAILABLE.--November 1965 to September 1968.

GAGE.--Graphic water-stage recorder and concrete control. Datum of gage is 4,231.52 ft above mean sea level (levels by Placer County Water Agency).

EXTREMES.--Maximum discharge during year, 51 cfs Feb. 20 (gage height, 4.45 ft); minimum daily, 8.8 cfs Aug. 28.

1965-68: Maximum discharge, 2,290 cfs June 18, 1967, including flow over spillway; minimum, no flow Aug. 25 to Sept. 11, 1966.

REMARKS.--Records excellent. Flow regulated by Hell Hole Reservoir beginning December 1965 (see sta. no. 11-4287.). Water is diverted out of the basin above the station through Buck-Loon tunnel (see sta. no. 11-4283.). Water is diverted from Middle Fork American River basin by tunnel from French Meadows Reservoir (see sta. no. 11-4274.) to Hell Hole Reservoir. Water is diverted from Hell Hole Reservoir through a tunnel to Middle Fork powerplant. See schematic diagram for Middle Fork American and Rubicon River basins. During years when Hell Hole Dam spills, records include flow which bypass the station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	13	15	14	14	26	26	26	24	23	14	10
2	11	16	15	14	16	26	26	26	24	23	14	10
3	11	16	15	14	17	25	26	26	24	23	14	10
4	11	16	17	14	17	25	26	26	24	23	14	9.6
5	10	16	18	14	16	25	26	25	24	23	14	9.6
6	10	16	16	14	17	25	26	25	24	23	13	9.6
7	10	16	16	14	20	25	25	24	25	23	10	9.6
8	10	16	15	14	23	26	25	24	24	23	10	9.2
9	10	16	15	14	24	26	25	24	24	23	10	9.2
10	10	16	15	14	23	25	26	24	24	23	10	9.2
11	10	16	15	14	23	24	26	24	24	23	10	9.2
12	10	16	14	14	23	25	26	24	24	23	10	9.2
13	10	16	14	14	23	25	26	24	24	23	10	9.2
14	9.6	16	14	14	23	26	26	25	24	23	10	9.2
15	9.6	16	14	20	22	26	26	25	24	23	10	9.2
16	9.6	16	14	17	22	26	26	24	24	23	10	9.2
17	10	16	14	15	29	26	26	24	24	23	10	9.2
18	10	16	14	14	25	25	25	24	24	23	9.6	9.2
19	10	17	14	14	28	25	25	24	24	23	9.6	9.6
20	10	16	14	14	38	25	25	25	24	23	9.6	9.6
21	10	16	14	14	34	25	24	25	24	23	9.6	9.6
22	10	16	14	14	30	25	24	25	24	23	9.6	9.6
23	10	16	14	14	36	25	24	24	23	23	9.6	9.6
24	10	16	16	14	32	25	24	24	23	23	9.6	9.6
25	11	15	16	14	28	26	24	24	23	23	9.6	9.6
26	11	15	16	14	27	25	24	24	23	23	9.2	9.6
27	11	15	15	14	26	24	24	24	23	23	9.2	9.6
28	11	15	15	14	26	25	24	24	23	23	8.8	9.6
29	10	15	14	14	26	25	25	24	23	19	10	9.6
30	10	15	14	14	-----	26	26	24	23	14	10	9.6
31	10	-----	14	14	-----	26	-----	24	-----	14	10	-----
TOTAL	315.8	472	460	444	708	784	757	759	713	691	327.0	284.8
MEAN	10.2	15.7	14.8	14.3	24.4	25.3	25.2	24.5	23.8	22.3	10.5	9.49
MAX	11	17	18	20	38	26	26	26	25	23	14	10
MIN	9.6	13	14	14	14	24	24	24	23	14	8.8	9.2
AC-FT	626	936	912	881	1,400	1,560	1,500	1,510	1,410	1,370	649	565
(a)	31,790	23,650	32,620	16,610	7,000	12,320	17,210	18,230	15,370	7,950	17,080	28,040
CAL YR 1967	TOTAL 6,197.6			MEAN 17.0		MAX 47		MIN 9.2		AC-FT 12,290		
WTR YR 1968	TOTAL 6,715.6			MEAN 18.3		MAX 38		MIN 8.8		AC-FT 13,320		

a Diversion, in acre-feet, from Hell Hole Reservoir to Middle Fork powerplant, furnished by Placer County Water Agency.

SACRAMENTO RIVER BASIN

941

11-4293 (revised). ROBBS PEAK POWERPLANT NEAR KYBURZ, CALIF.

LOCATION.--Lat 38°53'46", long 120°22'40", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.11, T.12 N., R.14 E., in powerhouse on shore of Union Valley Reservoir, 9.5 miles northwest of Kyburz.

RECORDS AVAILABLE.--October 1962 to September 1968. Prior to October 1965 published as Robbs Peak Tunnel near Riverton.

GAGE.--Discharge computed from powerplant output. Altitude of gage is 4,880 ft (from topographic map). Prior to October 1965, graphic water-stage recorder and concrete control in abandoned section of canal one-half mile upstream at different datum.

AVERAGE DISCHARGE.--6 years, 211 cfs (152,800 acre-ft per year).

EXTREMES.--1962-68: Maximum daily discharge, 1,440 cfs Dec. 22-24, 1964; no flow for many days during 1965-68.

REMARKS.--Tunnel diverts at South Fork Rubicon River diversion dam in NE $\frac{1}{4}$ sec.27, T.13 N., R.14 E., and discharges into Union Valley Reservoir (see sta. no. 11-4410.01). Water is imported from Rubicon River basin via Rubicon-Rockbound tunnel and Buck-Loon tunnel to Loon Lake, thence via Gerle Creek and Robbs Peak tunnel and powerplant to South Fork American River basin for power development. See schematic diagrams for Middle Fork American and Rubicon River basins and South Fork American River basin.

COOPERATION.--Records furnished by Sacramento Municipal Utility District.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0	378	68	223	353	226	143	332	295	301
2	0	0	0	378	35	205	250	190	184	313	294	278
3	0	0	0	366	94	205	186	220	362	323	281	295
4	0	0	56	362	82	186	180	224	371	336	319	297
5	0	52	0	366	54	205	217	178	307	348	266	279
6	126	0	38	366	64	163	187	142	344	298	296	294
7	0	0	0	350	77	130	182	71	338	278	286	279
8	0	0	0	350	48	104	214	90	353	236	258	291
9	0	0	26	345	83	152	250	133	355	308	287	292
10	0	38	7.1	339	64	111	288	30	355	269	283	267
11	29	0	0	396	73	85	326	79	280	275	306	290
12	0	0	0	304	53	118	289	76	335	253	273	147
13	0	0	9.1	0	73	102	263	101	368	297	289	0
14	0	0	197	0	56	106	260	46	354	278	280	0
15	0	0	453	190	56	99	278	127	333	280	283	0
16	0	50	438	229	55	118	253	137	364	300	284	0
17	0	0	407	110	249	131	163	134	372	304	284	0
18	0	0	403	58	297	92	133	111	330	260	265	0
19	0	0	395	60	287	104	120	130	365	280	390	0
20	0	59	391	54	992	88	120	100	350	288	270	0
21	0	0	368	49	842	108	120	131	345	272	249	0
22	0	0	368	51	501	111	116	82	346	291	293	0
23	93	0	347	63	765	97	101	77	338	286	281	0
24	171	48	393	89	513	129	101	66	345	279	281	0
25	171	0	398	57	306	146	113	77	345	265	299	0
26	171	0	403	49	259	122	224	85	340	276	289	0
27	139	0	413	40	281	122	222	79	279	295	277	0
28	0	0	414	45	267	208	202	85	353	259	278	0
29	0	55	410	45	239	288	229	59	314	259	286	0
30	0	0	397	19	-----	335	255	47	354	289	295	0
31	0	-----	397	19	-----	329	-----	73	-----	290	281	-----
TOTAL	900	302	7,128.2	5,527	6,833	4,722	6,195	3,406	9,922	8,917	8,898	3,310
MEAN	29.0	10.1	230	178	236	152	207	110	331	288	287	110
MAX	171	59	453	396	992	335	353	226	372	348	390	301
MIN	0	0	0	0	35	85	101	30	143	236	249	0
AC-FT	1,790	599	14,140	10,960	13,550	9,370	12,290	6,760	19,680	17,690	17,650	6,570
CAL YR 1967	TOTAL	109,461.20	MEAN	300	MAX	1,030	MIN	0	AC-FT	217,100		
WTR YR 1968	TOTAL	66,060.20	MEAN	180	MAX	992	MIN	0	AC-FT	131,000		

SACRAMENTO RIVER BASIN

11-4293.5. LOON LAKE NEAR MECKS BAY, CALIF.

LOCATION.--Lat 39°00'17", long 120°18'30", in SW¼NW¼ sec.4, T.13 N., R.15 E., on right bank at Loon Lake Dam on Gerle Creek, 2.3 miles upstream from Jerrett Creek, and 11 miles southwest of Meeks Bay.

DRAINAGE AREA.--7.94 sq mi.

RECORDS AVAILABLE.--December 1963 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Sacramento Municipal Utility District).

EXTREMES.--Maximum contents during year, 72,800 acre-ft June 3, 4 (elevation, 6,407.6 ft); minimum, 8,760 acre-ft Jan. 12, 13 (elevation, 6,343.4 ft).
1963-68: Maximum contents, 77,600 acre-ft July 6, 7, 1967 (elevation, 6,411.0 ft); minimum since reservoir first filled, 7,660 acre-ft Nov. 12-14, 1966 (elevation, 6,341.1 ft).

REMARKS.--Reservoir is formed by an earthfill dam completed Dec. 27, 1963. Storage began Dec. 5, 1963. Usable capacity, 74,100 acre-ft between elevations 6,325 (invert of fishwater release valve) and 6,410 ft (crest of spillway) above mean sea level. Dead storage, 2,360 acre-ft. Prior to September 1962, reservoir was formed by granite-block dam built in 1884, capacity, 8,000 acre-ft. See schematic diagram for Middle Fork American and Rubicon River basins.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

6,330	3,600
6,340	7,200
6,350	12,500
6,360	19,600
6,370	28,500
6,390	50,000
6,412	79,000

CONTENTS, IN ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33,000	31,400	31,600	16,200	12,600	27,600	34,200	50,300	72,600	60,500	40,500	21,400
2	33,100	31,400	31,600	15,400	12,700	27,900	34,700	51,400	72,700	59,800	39,900	20,700
3	33,100	31,400	31,600	14,900	13,000	28,300	35,100	52,500	72,800	59,100	39,200	20,100
4	33,300	31,300	31,700	14,200	13,100	28,500	35,400	53,500	72,800	58,300	38,500	19,400
5	33,400	31,300	31,800	13,500	13,200	28,800	35,700	54,700	72,600	57,700	37,900	18,800
6	33,500	31,300	31,900	12,900	13,300	29,000	36,000	55,400	72,300	57,100	37,200	18,100
7	33,600	31,300	32,000	12,100	13,300	29,300	36,300	56,000	71,900	56,400	36,600	17,500
8	33,600	31,200	32,100	11,400	13,400	29,600	36,600	56,700	71,400	55,800	36,000	16,800
9	33,600	31,200	32,100	10,600	13,500	29,700	37,000	57,500	71,200	55,200	35,200	16,100
10	33,700	31,200	32,100	9,860	13,500	29,800	37,600	58,300	70,700	54,500	34,600	15,400
11	33,700	31,200	32,100	9,090	13,600	30,000	38,400	59,000	70,300	53,800	33,900	15,100
12	33,700	31,100	32,100	8,760	13,600	30,100	39,500	59,800	70,000	53,200	33,200	15,100
13	33,700	31,100	31,600	8,760	13,700	30,400	40,300	60,300	69,800	52,500	32,600	15,100
14	33,600	31,200	30,900	8,860	13,700	30,500	41,000	60,800	69,300	51,900	32,100	15,000
15	33,600	31,200	30,200	9,450	13,800	30,600	41,400	61,300	69,100	51,300	31,400	15,000
16	33,600	31,200	29,500	10,300	13,800	30,800	41,700	61,800	68,700	50,600	30,800	15,000
17	33,500	31,200	28,700	10,900	14,100	31,000	42,100	62,100	68,400	50,000	30,100	15,000
18	33,500	31,200	27,900	11,200	14,500	31,100	42,400	62,800	68,000	49,400	29,600	15,100
19	33,500	31,200	27,100	11,300	15,100	31,200	42,800	63,600	67,600	48,800	29,200	15,100
20	33,500	31,300	26,200	11,400	17,800	31,300	43,000	64,500	67,100	48,200	28,600	15,100
21	33,400	31,300	25,500	11,500	20,300	31,400	43,500	65,600	66,700	47,500	28,100	15,100
22	33,200	31,400	24,600	11,600	21,600	31,500	43,700	66,300	66,200	46,900	27,600	15,100
23	32,800	31,400	23,600	11,700	23,000	31,600	44,000	66,900	65,800	46,200	27,000	15,100
24	32,500	31,400	22,800	11,700	24,600	31,700	44,400	67,200	65,200	45,600	26,400	15,000
25	32,100	31,400	22,000	11,800	25,400	31,800	44,800	67,600	64,800	45,000	25,900	15,000
26	31,800	31,400	21,100	12,000	26,000	31,900	45,600	68,300	64,100	44,200	25,200	15,000
27	31,600	31,400	20,300	12,000	26,400	32,100	46,300	68,900	63,500	43,600	24,600	15,000
28	31,600	31,400	19,400	12,100	26,900	32,200	47,100	69,600	62,700	43,000	23,900	14,900
29	31,500	31,400	18,600	12,300	27,300	32,500	48,100	70,600	61,900	42,400	23,300	14,900
30	31,500	31,500	17,800	12,500	-----	32,900	49,300	71,400	61,300	41,700	22,600	14,900
31	31,400	-----	17,000	12,600	-----	33,500	-----	72,000	-----	41,100	22,000	-----
(a)	6,373.0	6,373.1	-	6,350.1	6,368.7	-	6,389.4	6,407.0	6,398.9	6,382.3	6,362.8	6,354.0
(b)	+1.6	+0.1	-14.5	-4.4	+14.7	+6.2	+15.8	+22.7	-10.7	-20.2	-19.1	-7.1
MAX	33,700	31,500	32,100	16,200	27,300	33,600	49,300	72,000	72,800	60,500	40,500	21,400
MIN	31,400	31,200	17,000	8,760	12,600	27,600	34,200	50,300	61,300	41,100	22,000	14,900
CAL YR 1967	b	+2.9		MAX	77,600	MIN	7,940					
WTR YR 1968	b	-18.1		MAX	72,800	MIN	8,760					

a Elevation, in feet, at end of month.

b Change in contents, in thousands of acre-feet.

11-4295. GERLE CREEK BELOW LOON LAKE DAM, NEAR MEEKS BAY, CALIF.

LOCATION.--Lat 39°00'20", long 120°18'52", in NE $\frac{1}{4}$ sec.5, T.13 N., R.15 E., on right bank 0.3 mile downstream from Loon Lake Dam and 11 miles southwest of Meeks Bay.

DRAINAGE AREA.--8.01 sq mi.

RECORDS AVAILABLE.--July 1910 to April 1914 (fragmentary), August 1962 to September 1968. Prior to August 1962, published as "near Rubicon Springs."

GAGE.--Graphic water-stage recorder. Altitude of gage is 6,250 ft (from topographic map). Prior to August 1962, staff gage at site about 1,400 ft upstream at different datum.

AVERAGE DISCHARGE.--7 years (1911, 1962-68), 109 cfs (78,910 acre-ft per year).

EXTREMES.--Maximum discharge during year, 470 cfs Dec. 13 (gage height, 6.40 ft); minimum daily, 7.2 cfs Jan. 13, 17, 18.

1910-14, 1962-68: Maximum discharge, 3,240 cfs Feb. 1, 1963 (gage height, 12.65 ft), from rating curve extended above 600 cfs on basis of slope-area measurement of maximum flow; no flow Oct. 15, 1913.

REMARKS.--Records excellent. Flow regulated, beginning 1884, by Loon Lake (see sta. no. 11-4293.5). Original dam was dismantled during September and October 1962 to permit construction of a new earthfill dam which was completed Dec. 27, 1963. Storage began Dec. 5, 1963. Loon Lake receives water from Rubicon River via Rubicon-Rockbound tunnel to Buck Lake and from Buck Lake to Loon Lake via Buck-Loon tunnel (see sta. nos. 11-4279.4 and 11-4283). See schematic diagram for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	7.9	7.9	370	7.9	9.8	11	11	129	357	303	304
2	8.7	7.9	7.9	368	8.2	9.8	10	11	265	357	302	302
3	8.2	7.9	7.9	363	8.5	9.8	10	9.5	336	357	302	304
4	7.9	7.9	7.9	360	8.2	9.8	10	8.5	338	356	300	306
5	7.9	7.9	7.9	360	8.2	9.5	10	8.2	338	332	300	303
6	7.9	7.9	7.9	357	8.2	9.5	10	8.2	338	310	298	302
7	7.9	7.9	7.9	351	8.2	9.3	10	8.2	336	309	304	298
8	7.9	7.9	7.9	346	8.2	9.3	11	8.2	336	309	308	297
9	7.9	7.9	7.9	342	8.2	9.3	11	8.2	336	308	304	294
10	7.9	7.9	7.9	338	8.2	9.3	11	8.5	336	308	304	302
11	7.9	7.9	7.9	333	8.2	9.3	11	8.5	334	308	303	172
12	7.9	7.9	7.9	133	8.2	9.3	11	8.5	348	306	302	9.0
13	7.9	7.9	231	7.2	8.5	9.3	11	8.5	358	304	300	9.8
14	7.9	7.9	370	7.4	8.5	9.3	11	8.7	358	304	300	9.8
15	7.9	7.9	406	9.5	8.5	9.3	11	8.5	358	304	298	9.8
16	7.9	7.9	436	7.4	8.5	9.3	10	8.5	358	304	298	9.8
17	7.9	7.9	434	7.2	9.5	9.3	10	8.5	358	302	300	9.3
18	7.9	8.2	430	7.2	9.0	9.3	10	8.5	357	303	298	9.0
19	7.9	8.5	428	7.4	10	9.3	10	8.5	357	304	297	9.5
20	7.9	8.2	424	7.4	12	9.5	10	8.5	358	303	294	9.3
21	7.9	7.9	420	7.4	11	9.5	10	8.5	358	302	296	9.3
22	100	7.9	416	7.4	10	9.5	10	8.5	358	302	298	9.3
23	191	7.9	412	7.4	12	9.8	10	8.5	357	300	298	8.5
24	154	7.9	402	7.4	10	9.8	10	8.5	358	300	298	8.5
25	154	7.9	398	7.4	9.8	9.8	10	8.5	358	298	297	9.0
26	167	7.7	394	7.7	9.8	9.8	11	8.5	357	302	298	9.0
27	98	7.9	388	7.7	9.8	9.8	11	8.5	358	303	302	9.0
28	7.7	7.9	384	7.7	9.8	10	11	8.7	358	302	304	9.0
29	7.7	7.9	381	7.9	9.8	10	11	8.7	358	302	303	9.0
30	7.4	7.9	378	7.9	-----	10	11	8.7	357	300	304	9.0
31	7.7	-----	375	7.9	-----	10	-----	66	-----	302	306	-----
TOTAL	1,061.5	238.0	7,601.8	4,165.5	264.9	296.6	314	326.3	10,209	9,658	9,319	3,358.9
MEAN	34.2	7.93	245	134	9.13	9.57	10.5	10.5	340	312	301	112
MAX	191	8.5	436	370	12	10	11	66	358	357	308	306
MIN	7.4	7.7	7.9	7.2	7.9	9.3	10	8.2	129	298	294	8.5
AC-FT	2,110	472	15,080	8,260	525	588	623	647	20,250	19,160	18,480	6,660
CAL YR 1967	TOTAL 67,639.1		MEAN 185		MAX 806		MIN 7.4		AC-FT 134,200			
WTR YR 1968	TOTAL 46,813.5		MEAN 128		MAX 436		MIN 7.2		AC-FT 92,850			

SACRAMENTO RIVER BASIN

11-4300. SOUTH FORK RUBICON RIVER BELOW GERLE CREEK, NEAR GEORGETOWN, CALIF.

LOCATION.--Lat 38°57'15", long 120°24'00", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.22, T.13 N., R.14 E., on left bank 600 ft downstream from Gerle Creek, and 18 miles east of Georgetown.

DRAINAGE AREA.--47.6 sq mi.

RECORDS AVAILABLE.--February 1910 to June 1914 (published as Little South Fork Rubicon River below Gerle Creek near Quintette), August 1961 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 4,970 ft (from topographic map). Feb. 1, 1910, to June 21, 1914, staff gage at site about 700 ft downstream at different datum. August 1961 to July 29, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--6 years (1962-68), 23.1 cfs (16,720 acre-ft per year), unadjusted.

EXTREMES.--Maximum discharge during year, 362 cfs Feb. 20 (gage height, 4.47 ft); minimum daily, 3.7 cfs Jan. 1-5, 13.

1910-14, 1961-68: Maximum discharge, 11,500 cfs Jan. 31, 1963 (gage height, 12.32 ft), from rating curve extended above 2,500 cfs on basis of slope-area measurement of maximum flow; minimum, 0.8 cfs Sept. 21, 1962.

REMARKS.--Records good. Flow regulated, beginning 1884, by Loon Lake (see sta. no. 11-4293.5.) (former capacity, 8,000 acre-ft; present capacity, 74,100 acre-ft) except November 1962 to December 1963 during which period flow was regulated only by natural storage in the original lake. Prior to Dec. 3, 1961, water was diverted out of the basin in Georgetown Divide ditch. Robbs Peak Tunnel (see sta. no. 11-4298) began diversion of up to 1,320 cfs to Silver Creek basin October 1962. See schematic diagram for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	7.6	4.3	3.7	5.9	7.9	9.0	8.2	8.8	9.5	9.9	8.9
2	13	6.9	4.4	3.7	5.8	7.7	8.1	8.1	8.8	9.7	9.7	8.9
3	12	4.9	4.4	3.7	5.9	7.5	7.7	8.1	8.9	9.7	9.7	8.9
4	11	4.8	5.4	3.7	5.3	7.4	7.6	7.7	8.8	9.7	9.6	8.9
5	12	4.7	7.6	3.7	5.1	7.4	7.7	7.5	8.8	9.3	9.5	8.9
6	11	4.6	5.0	3.8	5.1	7.1	7.4	7.4	9.0	9.5	9.5	8.6
7	11	4.6	4.9	3.9	5.1	6.9	7.3	7.4	9.2	9.5	9.6	8.6
8	11	4.6	4.5	4.0	5.2	7.3	7.3	7.4	9.0	9.5	9.3	8.6
9	11	4.6	4.5	3.8	5.9	6.9	7.5	7.3	9.0	9.5	9.4	8.6
10	11	4.6	4.4	4.0	5.9	6.6	7.7	7.6	9.2	9.5	9.4	8.9
11	11	4.6	4.2	3.8	5.8	6.4	7.6	8.4	9.0	9.5	9.4	8.9
12	11	4.6	4.1	3.8	5.9	6.3	7.4	8.4	9.1	9.5	9.3	8.2
13	10	4.6	5.1	3.7	5.4	6.5	7.1	8.8	8.9	9.7	9.4	7.2
14	10	5.4	8.6	4.1	5.1	6.3	7.0	8.7	8.7	9.9	9.1	7.6
15	10	4.8	7.7	9.6	5.1	6.2	6.9	8.8	8.9	9.9	9.2	7.2
16	11	4.8	5.4	6.7	5.5	6.4	6.6	8.7	8.9	9.9	9.2	7.6
17	11	4.6	5.0	5.4	11	6.1	6.3	8.6	9.1	9.9	9.2	5.6
18	11	4.9	4.9	5.0	8.6	5.9	6.1	8.4	9.1	10	9.2	5.6
19	11	6.6	4.7	4.8	9.6	5.8	6.0	8.4	8.9	10	11	6.2
20	11	5.1	4.5	4.6	37	5.8	6.0	8.4	9.1	10	9.0	9.3
21	11	4.7	4.1	4.7	17	5.9	5.8	8.4	8.6	9.7	9.7	9.5
22	11	4.6	4.3	4.9	12	6.1	5.7	8.3	8.7	9.9	9.2	9.7
23	51	4.6	4.1	4.9	13	6.3	5.7	8.3	8.7	9.9	9.1	8.6
24	7.9	4.6	4.1	4.8	11	6.4	5.7	8.4	8.5	9.9	8.9	5.8
25	7.7	4.4	4.1	4.7	9.3	6.8	5.8	8.4	8.7	9.9	8.8	5.6
26	7.5	4.3	4.2	4.7	8.7	6.9	5.7	8.4	8.7	9.9	8.7	6.6
27	7.4	4.4	4.2	4.7	8.5	7.0	5.7	8.4	9.1	9.6	8.8	8.6
28	7.6	4.5	4.1	4.6	8.4	7.4	5.7	8.5	9.7	9.6	8.8	8.2
29	7.5	4.8	4.0	4.6	8.1	7.9	5.6	8.7	9.7	9.7	8.9	8.2
30	7.6	4.7	3.9	9.8	-----	8.2	6.4	8.7	9.7	9.8	8.9	8.2
31	7.6	-----	3.9	8.9	-----	8.3	-----	8.9	-----	10	8.9	-----
TOTAL	354.8	147.5	148.6	150.8	250.2	211.6	202.1	255.7	269.4	301.6	288.3	240.2
MEAN	11.4	4.92	4.79	4.86	8.63	6.83	6.74	8.25	8.98	9.73	9.30	8.01
MAX	51	7.6	8.6	9.8	37	8.3	9.0	8.9	9.7	10	11	9.7
MIN	7.4	4.3	3.9	3.7	5.1	5.8	5.6	7.3	8.6	9.3	8.7	5.6
AC-FT	704	293	295	299	496	420	401	507	534	598	572	476
CAL YR 1967	TOTAL 8,868.9		MEAN 24.3		MAX 1,220		MIN 3.9		AC-FT 17,590			
WTR YR 1968	TOTAL 2,820.8		MEAN 7.71		MAX 51		MIN 3.7		AC-FT 5,590			

SACRAMENTO RIVER BASIN

945

11-4318. PILOT CREEK ABOVE STUMPY MEADOWS RESERVOIR, CALIF.

LOCATION.--Lat 38°53'41", long 120°34'02", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.18, T.12 N., R.13 E., on right bank 2.1 miles upstream from Stumpy Meadows dam, and 12.5 miles east of Georgetown.

DRAINAGE AREA.--11.7 sq mi.

RECORDS AVAILABLE.--October 1960 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 4,280 ft (from topographic map).

AVERAGE DISCHARGE.--8 years, 23.1 cfs (16,720 acre-ft per year).

EXTREMES.--Maximum discharge during year, 200 cfs Feb. 20 (gage height, 2.67 ft); minimum daily, 2.7 cfs Sept. 29, 30.

1960-68: Maximum discharge, 2,380 cfs Dec. 23, 1964 (gage height, 5.92 ft in gage well, 6.6 ft from floodmarks), from rating curve extended above 170 cfs on basis of slope-area measurement of maximum flow; maximum gage height, 8.05 ft Jan. 31, 1963; minimum daily discharge, 1.9 cfs Aug. 20-26, Sept. 4-7, 10, 1966.

REMARKS.--Records good. No regulation or diversion above station. See schematic diagram for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.7	6.7	9.4	8.7	12	61	63	21	12	7.1	5.8	3.9
2	13	6.4	8.4	8.3	15	57	60	20	12	6.7	4.9	3.7
3	20	6.4	8.7	8.0	25	55	56	19	12	6.7	4.6	3.5
4	11	6.4	13	7.6	18	52	54	19	12	6.7	4.4	3.5
5	11	6.4	39	7.6	16	51	53	19	12	6.7	4.2	3.5
6	9.8	6.4	16	7.7	15	48	50	19	12	6.4	3.9	3.5
7	9.1	6.4	15	8.0	15	47	48	18	12	6.0	3.9	3.5
8	8.7	6.4	13	8.7	15	49	48	18	12	6.0	3.7	3.4
9	8.4	6.4	12	9.1	18	45	48	17	12	5.8	3.7	3.4
10	8.4	6.4	12	10	19	41	49	17	11	5.8	3.7	3.4
11	8.4	6.4	11	10	18	38	49	17	11	5.6	3.5	3.2
12	8.1	6.4	10	9.8	18	36	46	17	10	5.6	3.4	3.4
13	8.1	6.4	9.2	9.8	18	38	43	20	9.8	5.6	3.5	3.5
14	7.7	10	8.6	12	18	36	42	21	9.8	5.8	3.5	3.7
15	7.4	8.1	8.2	8.9	17	35	40	22	9.8	5.8	3.7	3.9
16	7.4	7.7	8.0	41	19	36	38	20	9.4	5.6	3.5	3.5
17	7.4	7.4	8.0	23	76	34	34	18	9.4	5.6	3.7	3.4
18	7.4	8.7	8.0	18	69	31	32	17	9.1	5.6	3.7	3.2
19	7.4	23	8.0	16	64	31	30	16	9.1	5.3	14	3.0
20	7.1	14	8.0	15	156	28	29	16	8.7	5.1	9.9	3.5
21	7.1	11	8.3	14	160	28	28	15	8.7	4.9	6.4	3.7
22	7.1	9.1	8.5	14	136	28	26	15	8.7	4.9	5.8	3.5
23	7.1	8.4	8.8	15	140	28	25	15	8.4	4.9	5.6	3.4
24	7.1	8.4	9.0	14	123	30	25	14	8.4	4.6	5.1	3.2
25	7.1	8.1	9.1	14	102	34	24	14	8.1	4.6	4.9	3.2
26	7.1	8.1	9.4	14	86	37	24	13	7.7	4.4	4.9	3.0
27	7.1	8.1	9.8	13	78	37	23	13	7.4	4.2	4.6	3.0
28	7.1	8.4	9.8	12	70	40	23	13	7.4	4.2	4.6	3.0
29	7.1	9.1	9.4	11	65	47	22	13	7.4	3.9	4.4	2.7
30	6.7	9.4	8.7	12	-----	55	22	12	7.1	4.2	4.2	2.7
31	6.7	-----	8.7	12	-----	60	-----	12	-----	5.1	3.9	-----
TOTAL	260.8	250.5	333.0	472.3	1,601	1,273	1,154	520	294.4	169.4	149.6	101.0
MEAN	8.41	8.35	10.7	15.2	55.2	41.1	38.5	16.8	9.81	5.46	4.83	3.37
MAX	20	23	39	89	160	61	63	22	12	7.1	14	3.9
MIN	6.7	6.4	8.0	7.6	12	28	22	12	7.1	3.9	3.4	2.7
AC-FT	517	497	661	937	3,180	2,520	2,290	1,030	584	336	297	200

CAL YR 1967 TOTAL 12,621.2 MEAN 34.6 MAX 233 MIN 6.2 AC-FT 25,030
WTR YR 1968 TOTAL 6,579.0 MEAN 18.0 MAX 160 MIN 2.7 AC-FT 13,050

PEAK DISCHARGE (BASE, 100 CFS)
DATE TIME G.HT. DISCHARGE DATE TIME G.HT. DISCHARGE
01-15 0730 2.66 198 02-20 0500 2.67 200
02-17 1500 2.24 115

SACRAMENTO RIVER BASIN

11-4330.4. PILOT CREEK BELOW MUTTON CANYON, NEAR GEORGETOWN, CALIF.

LOCATION.--Lat 38°55'25", long 120°38'27", in NE $\frac{1}{4}$ sec. 4, T.12 N., R.12 E., on left bank 450 ft downstream from Mutton Canyon, 500 ft downstream from Georgetown Divide diversion dam, 2.5 miles downstream from Stumpy Meadows dam, and 10 miles east of Georgetown.

DRAINAGE AREA.--21.1 sq mi.

RECORDS AVAILABLE.--June 1961 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 3,760 ft (from topographic map).

AVERAGE DISCHARGE.--7 years, 26.8 cfs (19,400 acre-ft per year).

EXTREMES.--Maximum discharge during year, 253 cfs Feb. 21 (gage height, 4.71 ft); minimum daily, 0.86 cfs Sept. 24-30.

1961-68: Maximum discharge, 5,430 cfs Dec. 22, 1964 (gage height, 9.60 ft), from rating curve extended above 150 cfs on basis of slope-area measurement at gage height 5.00 ft; maximum gage height, 10.06 ft Dec. 23, 1964; minimum daily discharge, 0.20 cfs Sept. 24, Nov. 1-5, 1966.

REMARKS.--Records good. Flow regulated by Stumpy Meadows Reservoir (usable capacity, 20,000 acre-ft) completed in November 1961. Georgetown Irrigation District ditch (capacity, about 20 cfs) diverts water out of Pilot Creek, 500 ft above station. See schematic diagram for Middle Fork American and Rubicon River basins.

REVISIONS (water year).--1965 report: 1962.

DISCHARGE, IN CURIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	2.1	3.0	2.4	3.4	82	84	12	2.1	4.3	4.6	1.6
2	7.7	2.1	2.9	2.4	4.3	76	84	12	2.1	6.0	3.9	1.6
3	5.3	2.1	3.2	2.4	5.7	73	75	8.8	2.0	8.0	3.9	1.6
4	2.7	2.1	8.0	2.4	4.3	70	72	5.9	2.1	8.0	3.9	1.6
5	2.6	2.0	19	2.4	3.9	69	69	6.2	2.1	7.1	3.7	1.6
6	2.0	2.0	5.7	2.4	3.7	66	68	5.4	2.2	6.8	3.7	1.5
7	2.0	2.0	11	2.4	3.9	66	63	3.4	2.4	6.8	3.7	1.5
8	2.0	2.0	6.1	2.4	3.9	78	61	2.9	2.5	6.4	3.7	1.5
9	2.0	2.0	4.6	2.4	6.8	70	58	2.9	2.1	6.4	3.7	1.5
10	2.0	2.0	4.3	5.6	7.1	60	58	2.7	2.1	6.4	3.7	1.5
11	2.0	2.0	3.2	3.4	5.7	55	58	2.9	2.1	6.4	3.7	1.5
12	2.1	2.0	2.5	2.7	5.3	56	57	2.9	2.0	6.1	3.7	1.5
13	2.1	2.0	2.4	2.5	5.7	72	54	8.2	2.0	5.7	3.7	1.4
14	2.1	3.8	2.4	4.0	5.7	70	50	14	2.9	5.7	3.7	1.4
15	2.0	3.0	2.4	25	5.0	56	45	8.0	4.3	5.7	3.7	1.4
16	2.0	2.9	2.4	14	6.4	62	40	5.2	3.7	5.7	3.7	1.2
17	2.0	2.7	2.4	8.4	22	62	38	5.3	3.0	5.7	3.7	1.1
18	2.0	3.0	2.4	6.4	16	51	36	4.6	3.0	5.7	3.7	1.0
19	2.0	10	2.4	5.3	53	47	33	2.5	4.0	5.7	10	1.0
20	2.0	3.9	2.4	3.9	195	43	32	2.4	5.0	5.0	6.1	1.2
21	2.0	3.2	2.4	3.7	223	43	29	2.4	5.0	4.6	3.9	1.1
22	2.0	3.0	2.4	3.7	208	42	27	2.5	5.0	4.6	3.7	1.0
23	2.0	3.0	2.2	3.7	208	43	26	2.9	4.6	4.6	3.7	.93
24	2.0	2.9	2.4	3.7	182	44	24	2.7	4.6	4.6	3.6	.86
25	2.0	2.7	2.4	3.6	154	50	21	2.5	4.6	4.6	3.4	.86
26	2.0	2.7	2.4	3.6	130	55	22	2.5	4.3	4.6	3.4	.86
27	2.1	2.9	2.5	3.6	116	52	19	2.4	4.3	4.3	3.4	.86
28	2.1	2.7	2.5	3.4	101	52	15	2.2	4.3	4.3	2.6	.86
29	2.1	3.3	2.4	3.6	92	58	14	2.2	4.3	4.3	1.7	.86
30	2.2	3.2	2.4	3.2	-----	68	14	2.2	4.3	4.3	1.7	.86
31	2.1	-----	2.4	5.3	-----	72	-----	2.1	-----	4.6	1.7	-----
TOTAL	74.1	85.3	119.1	143.9	1,780.8	1,863	1,346	144.8	99.0	173.0	117.0	37.25
MEAN	2.39	2.84	3.84	4.64	61.4	60.1	44.9	4.67	3.30	5.58	3.77	1.24
MAX	7.7	10	19	25	223	82	84	14	5.0	8.0	10	1.6
MIN	2.0	2.0	2.2	2.4	3.4	42	14	2.1	2.0	4.3	1.7	.86
AC-FT	147	169	236	285	3,530	3,700	2,670	287	196	343	232	74
CAL YR 1967	TOTAL	14,692.6	MEAN	40.3	MAX	304	MIN	1.1	AC-FT	29,140		
WTR YR 1968	TOTAL	5,983.25	MEAN	16.3	MAX	223	MIN	.86	AC-FT	11,870		

SACRAMENTO RIVER BASIN

947

11-4330.6. SOUTH FORK LONG CANYON CREEK DIVERSION TUNNEL NEAR VOLCANOVILLE, CALIF.

LOCATION.--Lat 39°03'04", long 120°28'14", in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.24, T.14 N., R.13 E., on right bank at diversion dam, 3.3 miles upstream from confluence with North and South Forks Long Canyon Creek, and 17.2 miles east of Volcanoville.

RECORDS AVAILABLE.--October 1965 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 4,630 ft (from topographic map).

EXTREMES.--1965-68: Maximum daily discharge, 122 cfs May 17, 1967; no flow for part of each year.

REMARKS.--Records good. 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 for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0		0	0	1.9	35	35	18	4.4			
2	.71		0	0	3.0	32	30	18	4.0			
3	.08		0	0	7.6	30	28	18	3.8			
4	0		0	0	6.2	30	28	18	3.3			
5	0		1.6	0	6.2	30	27	18	3.6			
6	0		0	0	6.5	27	26	17	4.0			
7	0		0	0	7.6	26	25	15	3.3			
8	0		0	0	7.6	26	25	15	3.0			
9	0		0	0	10	25	25	14	2.1			
10	0		0	0	9.6	24	27	13	1.2			
11	0		0	0	8.8	22	28	13	0			
12	0		0	0	8.8	21	26	13	0			
13	0		0	0	8.5	20	24	13	0			
14	0		0	.18	7.6	20	24	13	0			
15	0		0	28	7.2	20	24	13	0			
16	0		0	14	8.2	22	22	12	0			
17	0		0	6.5	34	20	20	11	0			
18	0		0	4.4	28	18	20	9.9	0			
19	0		0	3.3	38	18	18	9.9	0			
20	0		0	2.8	18	18	18	9.9	0			
21	0		0	3.0	14	19	17	9.9	0			
22	0		0	5.2	12	20	16	9.6	0			
23	0		0	5.2	50	22	16	9.2	0			
24	0		0	4.6	67	22	16	8.2	0			
25	0		0	4.0	51	26	16	8.2	0			
26	0		.20	3.0	46	26	16	7.6	0			
27	0		.29	2.8	44	25	16	7.2	0			
28	0		0	2.1	41	28	16	6.5	0			
29	0		0	1.7	37	32	18	6.2	0			
30	0		0	.14	-----	34	18	5.8	0			
31	0	-----	0	1.7	-----	33	-----	5.2	-----			-----
TOTAL	0.79	0	2.09	92.62	595.3	771	665	365.3	32.7	0	0	0
MEAN	.026	0	.067	2.99	20.5	24.9	22.2	11.8	1.09	0	0	0
MAX	.71	0	1.6	28	67	35	35	18	4.4	0	0	0
MIN	0	0	0	0	1.9	18	16	5.2	0	0	0	0
AC-FT	1.6	0	4.2	184	1,180	1,530	1,320	725	65	0	0	0
CAL YR 1967	TOTAL 5,181.28		MEAN 14.2		MAX 122		MIN 0		AC-FT 10,280			
WTR YR 1968	TOTAL 2,524.80		MEAN 6.90		MAX 67		MIN 0		AC-FT 5,010			

SACRAMENTO RIVER BASIN

11-4330.8. NORTH FORK LONG CANYON CREEK DIVERSION TUNNEL NEAR VOLCANOVILLE, CALIF.

LOCATION.--Lat 39°02'57", long 120°28'56", in SW $\frac{1}{4}$ sec.24, T.14 N., R.13 E., on left bank at diversion dam, 3.2 miles upstream from confluence of North and South Forks Long Canyon Creek, and 16.9 miles east of Volcanoville.

RECORDS AVAILABLE.--October 1965 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 4,700 ft (from topographic map).

EXTREMES.--1965-68: Maximum daily discharge, 54 cfs May 27, 1967; no flow for part of each year.

REMARKS.--Records excellent. 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 for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0		0	0	.77	16	20	8.3				0
2	.34		0	0	2.7	14	17	7.7				0
3	.19		0	0	5.6	14	16	7.5				0
4	0		0	0	2.6	13	16	7.0				0
5	0		.93	0	2.2	12	15	6.4				0
6	0		0	0	2.8	11	14	5.9				0
7	0		0	0	2.9	10	14	5.2				0
8	0		0	0	2.8	9.7	14	4.9				0
9	0		0	0	4.5	9.5	15	4.5				0
10	0		0	0	3.8	9.3	16	4.2				0
11	0		0	0	2.8	8.3	17	3.9				0
12	0		0	0	2.9	7.5	15	3.9				0
13	0		0	0	2.9	7.0	14	4.1				0
14	0		0	.95	1.9	6.4	14	5.0				0
15	0		0	7.4	1.5	6.4	14	5.2				0
16	0		0	2.3	1.6	7.0	13	4.7				0
17	0		0	.44	22	5.9	11	3.9				0
18	0		0	0	13	5.5	11	3.5				0
19	0		0	0	12	5.2	10	3.2				0
20	0		0	.40	1.1	5.7	10	3.1				0
21	0		0	1.6	1.2	6.8	9.3	2.9				0
22	0		0	3.5	3.2	7.5	8.5	2.8				0
23	0		0	3.6	44	8.9	8.5	2.8				0
24	0		.13	3.2	39	10	8.5	2.5				0
25	0		1.6	2.6	28	12	8.7	2.6				0
26	0		2.7	2.2	25	14	9.1	2.3				.0
27	0		2.6	1.6	23	16	8.7	2.0				0
28	0		.90	1.2	20	19	8.7	1.9				0
29	0		.07	.77	18	22	8.9	1.7				0
30	0		0	.60	-----	23	8.7	.53				0
31	0	-----	0	1.5	-----	22	-----	0	-----			-----
TOTAL	0.53	0	8.93	33.86	293.77	344.6	373.6	124.13	0	0	0	0
MEAN	.017	0	.29	1.09	10.1	11.1	12.5	4.00	0	0	0	0
MAX	.34	0	2.7	7.4	44	23	20	8.3	0	0	0	0
MIN	0	0	0	0	.77	5.2	8.5	0	0	0	0	0
AC-FT	1.1	0	18	67	583	684	741	246	0	0	0	0

CAL YR 1967 TOTAL 2,077.46

MEAN 5.69

MAX 54

MIN 0

AC-FT 4,120

WTR YR 1968 TOTAL 1,179.42

MEAN 3.22

MAX 44

MIN 0

AC-FT 2,340

SACRAMENTO RIVER BASIN

949

11-4331. LONG CANYON CREEK NEAR FRENCH MEADOWS, CALIF.

LOCATION.--Lat 39°01'16", long 120°30'53", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.34, T.14 N., R.13 E., on right bank 75 ft downstream from North Fork Long Canyon, 6.5 miles south of French Meadows, and 18 miles east of Foresthill.

DRAINAGE AREA.--18.0 sq mi.

RECORDS AVAILABLE.--August 1960 to September 1968.

GAGE.--Graphic water-stage recorder. Altitude of gage is 4,100 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 590 cfs Feb. 19 (gage height, 6.51 ft); minimum daily, 0.08 cfs Sept. 27, 28.

1960-68: Maximum discharge, 4,690 cfs Dec. 23, 1964 (gage height, 11.20 ft), from rating curve extended above 300 cfs on basis of slope-area measurements at gage heights 6.62 and 10.27 ft; minimum daily, 0.08 cfs Sept. 27, 28, 1968.

REMARKS.--Records good. Water is diverted above this station to a diversion tunnel from Hell Hole Reservoir to Middle Fork American River powerplant via South Fork and North Fork Long Canyon diversion tunnels (see sta. nos. 11-4330.6, and 11-4330.8.); diversions began in February 1966. See schematic diagram for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	1.4	3.7	6.3	10	36	33	9.3	6.8	3.2	.86	.40
2	5.4	1.4	3.7	6.0	15	33	31	9.0	6.6	2.8	.62	.36
3	8.6	1.3	3.9	5.5	15	31	28	8.8	6.5	2.8	.56	.30
4	3.9	1.3	5.9	5.2	16	28	26	8.6	6.3	2.8	.56	.28
5	3.7	1.4	22	5.0	16	28	25	8.3	6.8	2.7	.56	.26
6	3.2	1.4	8.3	4.8	18	25	24	8.1	7.0	2.4	.50	.24
7	2.8	1.4	7.6	4.8	18	25	22	7.8	7.0	2.3	.50	.26
8	2.4	1.3	5.8	4.8	20	28	20	7.6	7.0	2.1	.44	.24
9	2.2	1.3	5.3	5.0	26	26	20	7.6	6.5	2.1	.44	.22
10	2.1	1.4	5.2	5.2	24	24	19	7.4	6.5	2.0	.40	.20
11	2.1	1.4	5.5	5.1	22	22	18	7.4	7.2	1.8	.40	.17
12	2.0	1.4	5.1	5.1	22	21	17	7.4	6.6	1.6	.40	.15
13	2.0	1.6	4.1	5.2	22	23	16	8.3	6.5	1.5	.44	.15
14	1.9	4.2	4.2	51	21	22	15	8.8	6.2	1.5	.44	.17
15	1.9	3.1	4.2	54	20	22	15	8.1	6.0	1.5	.40	.16
16	1.9	2.8	3.9	23	27	25	14	7.6	5.8	1.4	.44	.15
17	1.8	2.7	3.8	16	69	23	14	7.2	5.5	1.3	.70	.13
18	1.8	3.0	4.1	13	41	22	13	6.8	5.2	1.2	.70	.13
19	1.8	11	4.1	12	245	22	13	6.8	5.0	1.0	3.8	.13
20	1.8	6.2	3.9	12	255	22	12	6.6	4.7	1.0	4.1	.20
21	1.8	5.1	3.8	12	220	24	12	6.6	4.6	.94	2.3	.16
22	1.9	3.9	3.8	13	235	26	12	6.8	4.4	.94	1.7	.14
23	1.9	3.6	4.1	13	112	27	11	6.6	4.2	.86	1.1	.12
24	1.8	3.3	4.8	12	72	28	11	6.5	4.0	.86	.94	.11
25	1.7	3.2	6.8	12	62	32	11	6.5	3.8	.86	.94	.10
26	1.6	3.0	10	11	54	35	11	6.3	3.7	.86	.78	.09
27	1.6	3.1	12	10	49	32	10	6.2	3.6	.78	.70	.08
28	1.7	3.5	12	9.5	44	32	9.8	6.2	3.5	.70	.56	.08
29	1.7	3.7	9.8	8.3	40	35	9.5	5.9	3.5	.70	.50	.34
30	1.5	3.8	7.8	9.3	-----	35	9.5	6.3	3.4	.62	.44	.44
31	1.4	-----	6.8	9.5	-----	33	-----	7.0	-----	.70	.36	-----
TOTAL	73.6	87.2	196.0	368.6	1,810	847	501.8	228.4	164.4	47.82	27.58	5.96
MEAN	2.37	2.91	6.32	11.9	62.4	27.3	16.7	7.37	5.48	1.54	.89	.20
MAX	8.6	11	22	54	255	36	33	9.3	7.2	3.2	4.1	.44
MIN	1.4	1.3	3.7	4.8	10	21	9.5	5.9	3.4	.62	.36	.08
AC-FT	146	173	389	731	3,590	1,680	995	453	326	95	55	12
CAL YR 1967	TOTAL	12,909.2	MEAN	35.4	MAX	367	MIN	1.2	AC-FT	25,610		
WTR YR 1968	TOTAL	4,358.36	MEAN	11.9	MAX	255	MIN	.08	AC-FT	8,640		

SACRAMENTO RIVER BASIN

11-4332. RUBICON RIVER NEAR FORESTHILL, CALIF.

LOCATION.--Lat 38°59'33", long 120°43'14", in SE¼NW¼ sec.11, T.13 N., R.11 E., on right bank 0.6 mile upstream from Ralston powerhouse, 1.2 miles upstream from confluence of Rubicon River and Middle Fork American River, and 5.6 miles southeast of Foresthill.

DRAINAGE AREA.--315 sq mi.

RECORDS AVAILABLE.--October 1958 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 1,200 ft (from topographic map). October 1958 to May 17, 1963, graphic water-stage recorder at site 2.0 miles upstream, 150 ft downstream from Ralston Bridge, and May 17, 1963, to Mar. 30, 1965, graphic water-stage recorder at site 2.1 miles upstream, 100 ft upstream from Ralston Bridge at datums 1,362.20 ft above mean sea level. Mar. 31, 1965, to Sept. 29, 1967, graphic water-stage recorder at present site and datum.

EXTREMES.--Maximum discharge during year, 1,930 cfs Feb. 20 (gage height, 9.58 ft); minimum daily, 35 cfs Sept. 20, 26-30.

1958-68: Maximum discharge, unknown Dec. 23, 1964 (gage height, 55.4 ft from floodmarks), result of failure of the partly constructed Hell Hole Dam; next highest peak discharge, 83,000 cfs Feb. 1, 1963 (gage height, 35.0 ft, former site and datum); minimum daily, 10 cfs Sept. 20-27, 1962.

Floods of December 1937, November 1950, and December 1955, had approximate discharges of 44,000, 56,000, and 73,000 cfs respectively, on basis of 1958-64 stage-discharge relation and U.S. Forest Service floodmarks.

REVISIONS.--Figure of maximum discharge for the 1967 water year has been revised to 4,780 cfs Mar. 17, 1967 (gage height, 11.27 ft), superseding figure published in Surface Water Records of California, Part 1, Vol. 2, 1967.

REMARKS.--Records good. Flow regulated by Hell Hole Reservoir (see sta. no. 11-4287.), Loon Lake (see sta. no. 11-4293.5.), and Stumpy Meadows Reservoir (capacity, 20,000 acre-ft). Water is imported from French Meadows Reservoir on Middle Fork American River through tunnel to French Meadows powerplant on shore of Hell Hole Reservoir. Water is diverted from Hell Hole Reservoir through tunnel to Middle Fork powerplant on Middle Fork American River. Robbs Peak tunnel and powerplant (see sta. no. 11-4298.) divert water to South Fork American River basin. See schematic diagram for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	39	70	70	140	460	440	165	105	68	49	41
2	61	39	57	67	154	427	446	164	104	68	48	41
3	146	40	62	62	240	401	412	162	98	68	47	41
4	66	41	125	60	238	381	390	154	98	68	47	41
5	55	41	310	58	230	370	376	147	98	68	47	39
6	53	41	160	58	235	350	365	146	98	68	45	39
7	50	41	200	57	241	342	346	140	108	68	45	39
8	47	41	151	58	232	388	337	136	108	65	44	39
9	45	41	104	60	275	377	331	134	98	65	41	39
10	45	41	90	163	322	344	325	130	94	65	41	39
11	45	41	80	126	262	316	327	125	90	64	41	39
12	45	41	72	89	237	306	320	127	90	63	41	39
13	45	41	58	79	228	365	303	149	87	63	39	39
14	44	63	49	83	224	425	282	180	87	63	39	39
15	43	61	61	532	213	400	275	161	84	63	39	37
16	43	51	59	400	204	440	262	150	84	63	39	37
17	43	49	54	243	434	471	249	143	84	62	39	37
18	43	51	68	186	507	426	239	138	84	60	39	37
19	43	146	69	157	468	399	227	130	84	60	64	37
20	43	94	62	139	1,520	382	222	127	80	58	98	35
21	43	62	59	131	1,400	360	216	126	80	58	60	39
22	43	53	58	127	1,110	355	207	123	80	57	51	39
23	62	49	60	129	1,130	355	203	123	79	55	47	39
24	67	47	69	123	883	355	199	122	77	55	47	39
25	44	47	84	119	708	367	192	119	75	55	47	37
26	43	45	99	117	616	381	187	115	70	55	45	35
27	43	47	109	126	558	364	185	114	70	55	43	35
28	41	55	103	115	517	358	176	112	69	55	45	35
29	41	62	90	113	484	376	173	109	68	55	43	35
30	41	78	79	154	-----	399	169	108	68	55	41	35
31	41	-----	74	152	-----	410	-----	108	-----	51	41	-----
TOTAL	1,557	1,588	2,845	4,153	14,010	11,850	8,381	4,187	2,599	1,896	1,442	1,142
MEAN	50.2	52.9	91.8	134	483	382	279	135	86.6	61.2	46.5	38.1
MAX	146	146	310	532	1,520	471	446	180	108	68	98	41
MIN	41	39	49	57	140	306	169	108	68	51	39	35
AC-FT	3,090	3,150	5,640	8,240	27,790	23,500	16,620	8,300	5,160	3,760	2,860	2,270
CAL YR 1967	TOTAL 166,843		MEAN 457		MAX 3,560		MIN 39		AC-FT 330,900			
WTR YR 1968	TOTAL 55,650		MEAN 152		MAX 1,520		MIN 35		AC-FT 110,400			

SACRAMENTO RIVER BASIN

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11-4332.6. NORTH FORK OF MIDDLE FORK AMERICAN RIVER NEAR FORESTHILL, CALIF.

LOCATION.--Lat 39°01'27", long 120°43'03", in NE¼NW¼ sec.35, T.14 N., R.11 E., on right bank 1.0 mile downstream from El Dorado Canyon, and 4.8 miles east of Foresthill.

DRAINAGE AREA.--88.9 sq mi.

RECORDS AVAILABLE.--July 1965 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 1,300 ft (from topographic map). Prior to Sept. 13, 1967, graphic water-stage recorder at same site and datum.

EXTREMES.--Maximum discharge during year, 3,900 cfs Feb. 20 (gage height, 8.35 ft); minimum daily, 20 cfs Aug. 10-18.

1965-68: Maximum discharge, 4,500 cfs Mar. 16, 1967 (gage height, 8.65 ft); minimum daily, 17 cfs Oct. 23 to Nov. 5, 1967.

REMARKS.--Records fair. No storage or diversion above station. See schematic diagram for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	30	53	71	261	522	528	186	71	36	24	25
2	49	28	43	66	273	476	452	185	69	36	23	25
3	112	28	43	62	385	430	405	183	70	37	22	24
4	45	28	74	59	269	400	380	181	65	36	22	25
5	40	28	254	57	269	400	352	167	65	35	21	25
6	40	28	103	54	258	342	312	157	65	34	21	25
7	37	28	132	52	282	339	298	148	71	32	21	24
8	35	28	107	49	257	342	290	139	76	32	21	24
9	34	28	75	49	410	334	294	134	69	32	21	24
10	33	28	68	100	498	273	312	131	63	31	20	24
11	33	28	65	90	344	228	352	124	60	30	20	24
12	32	28	63	70	273	206	330	124	58	30	20	24
13	32	28	52	63	273	269	294	130	56	30	20	23
14	32	38	45	68	308	308	269	141	56	30	20	23
15	32	41	45	1,070	334	285	249	126	55	30	20	23
16	31	33	45	720	334	344	220	116	54	29	20	23
17	31	31	45	372	858	390	166	110	51	28	20	23
18	31	31	45	330	912	339	157	107	50	27	20	23
19	31	81	45	312	892	298	166	105	49	27	44	22
20	31	61	45	294	2,340	270	169	105	47	26	82	23
21	31	42	45	281	2,020	274	177	104	46	26	34	25
22	31	36	45	298	1,320	285	181	102	45	26	29	25
23	31	34	45	316	1,710	312	187	97	44	25	27	23
24	31	33	49	308	1,220	334	185	93	42	25	26	23
25	31	32	63	298	966	395	182	91	41	25	26	23
26	31	32	94	285	784	436	189	85	40	24	25	23
27	31	32	135	273	680	405	190	85	39	24	26	22
28	31	38	122	265	624	430	190	79	38	24	26	22
29	31	44	105	257	568	486	188	79	38	24	26	22
30	31	65	90	269	-----	554	184	76	37	24	26	23
31	31	-----	78	269	-----	547	-----	72	-----	24	25	-----
TOTAL	1,112	1,070	2,318	7,077	19,922	11,253	7,848	3,762	1,630	899	798	707
MEAN	35.9	35.7	74.8	228	687	363	262	121	54.3	29.0	25.7	23.6
MAX	112	81	254	1,020	2,340	554	528	186	76	37	82	25
MIN	30	28	43	49	257	206	157	72	37	24	20	22
AC-FT	2,210	2,120	4,600	14,040	39,510	22,320	15,570	7,460	3,230	1,780	1,580	1,400
CAL YR 1967	TOTAL 115,480		MEAN 316		MAX 2,860	MIN 28		AC-FT 229,100				
WTR YR 1968	TOTAL 58,396		MEAN 160		MAX 2,340	MIN 20		AC-FT 115,800				

Peak discharge (base, 1,600 cfs).--Feb. 20 (0400 hrs) 3,900 cfs (8.35 ft); Feb. 23 (1300 hrs) 2,230 cfs (7.30 ft).

SACRAMENTO RIVER BASIN

11-4333. MIDDLE FORK AMERICAN RIVER NEAR FORESTHILL, CALIF.

LOCATION.--Lat 39°00'23", long 120°45'40", in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.4, T.13 N., R.11 E., on right bank 1.7 miles downstream from Oxbow Powerhouse and 3.2 miles east of Foresthill.

DRAINAGE AREA.--524 sq mi.

RECORDS AVAILABLE.--October 1958 to September 1967.

GAGE.--Digital water-stage recorder. Altitude of gage is 1,060 ft (from topographic map). Prior to Oct. 22, 1965, graphic water-stage recorder at site 3.2 miles downstream at different datum. Oct. 23, 1965, to Jan. 19, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--10 years, 1,006 cfs (728,300 acre-ft per year).

EXTREMES.--Maximum discharge during year, 8,800 cfs Feb. 20 (gage height, 10.95 ft); minimum daily, 65 cfs Oct. 1.

1958-68: Maximum discharge, 310,000 cfs Dec. 23, 1964 (gage height, 69.0 ft from floodmarks, site and datum then in use), caused by overtopping the partly constructed Hell Hole Dam on the Rubicon River, from rating curve extended above 28,000 cfs 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; minimum, 35 cfs Oct. 19, 20, 1961.

REMARKS.--Records good. Flow regulated by French Meadows Reservoir (see sta. no. 11-4274.), Hell Hole Reservoir (see sta. no. 11-4287.), Loon Lake (see sta. no. 11-4293.5.), Stumpy Meadows Reservoir (usable capacity, 20,000 acre-ft), and Ralston and Oxbow powerplants. Robbs Peak tunnel (see sta. no. 11-4298.) and Georgetown Divide ditch (capacity, about 25 cfs) divert water out of basin above station. See schematic diagram for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	215	1,080	193	684	1,420	1,370	682	474	778	393	97
2	571	506	1,070	573	836	1,050	1,240	690	294	639	384	97
3	1,190	317	1,070	542	701	975	1,200	930	735	780	95	765
4	1,080	96	1,100	632	470	1,250	1,140	582	603	139	110	723
5	1,060	102	1,280	551	872	1,230	1,140	417	467	574	490	814
6	1,020	539	1,130	353	1,080	1,070	880	684	557	152	154	828
7	803	724	1,190	184	950	983	823	715	631	153	92	405
8	75	804	1,160	645	807	1,210	998	722	238	702	257	90
9	762	615	1,120	554	937	877	980	643	262	137	245	642
10	895	647	1,120	662	837	782	1,060	614	678	573	69	795
11	998	259	1,100	847	689	1,080	1,030	343	506	331	69	909
12	998	265	1,070	587	653	1,010	1,440	329	454	260	70	759
13	924	343	1,050	224	750	897	853	743	538	128	307	902
14	67	67	1,020	205	854	1,160	790	664	694	140	525	210
15	72	74	1,040	2,090	862	1,100	1,100	698	177	200	500	76
16	630	66	279	1,370	715	969	1,250	768	193	140	520	759
17	361	77	89	939	1,570	1,080	1,240	876	562	118	105	874
18	151	183	360	778	1,710	1,250	1,320	360	608	387	96	874
19	70	285	662	694	1,670	1,210	1,310	296	484	116	587	821
20	411	607	752	354	5,430	1,120	594	600	432	134	648	821
21	69	674	793	352	4,610	1,110	557	667	356	99	510	143
22	70	459	758	631	3,350	1,090	954	572	438	126	535	93
23	772	409	190	731	3,830	908	755	564	163	137	555	795
24	1,040	612	178	586	2,920	841	804	688	483	119	535	441
25	997	1,050	214	602	2,170	1,130	701	292	460	282	248	795
26	990	1,010	268	732	1,760	1,240	1,010	261	469	114	642	723
27	758	1,050	331	732	1,530	1,160	599	602	393	121	881	821
28	989	1,060	713	430	1,360	1,150	492	728	361	112	854	88
29	757	1,060	392	840	1,460	1,230	693	747	150	134	808	87
30	256	1,100	228	878	-----	1,130	681	408	148	94	723	783
31	159	-----	234	923	-----	1,110	-----	764	-----	120	97	-----
TOTAL	19,060	15,275	23,041	20,414	46,067	33,822	29,004	18,649	13,008	8,039	12,104	17,030
MEAN	615	509	743	659	1,589	1,091	967	602	434	259	390	568
MAX	1,190	1,100	1,280	2,090	5,430	1,420	1,440	930	735	780	881	909
MIN	65	66	89	184	470	782	492	261	148	94	69	76
AC-FT	37,800	30,300	45,700	40,490	91,370	67,080	57,530	36,990	25,800	15,950	24,010	33,780
CAL YR 1967	TOTAL 624,124		MEAN 1,710		MAX 9,240		MIN 51		AC-FT 1,238,000			
WTR YR 1968	TOTAL 255,513		MEAN 698		MAX 5,430		MIN 65		AC-FT 506,800			

SACRAMENTO RIVER BASIN

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11-4334. CANYON CREEK NEAR GEORGETOWN, CALIF.

LOCATION.--Lat 38°56'03", long 120°52'21", in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.33, T.13 N., R.10 E., on right bank 0.7 mile downstream from West Canyon, and 2.6 miles northwest of Georgetown.

DRAINAGE AREA.--12.5 sq mi.

RECORDS AVAILABLE.--July 1966 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 1,995 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 231 cfs Feb. 21 (gage height, 7.55 ft); minimum daily, 2.1 cfs July 20.

1966-68: Maximum discharge, 970 cfs Jan. 21, 1967 (gage height, 10.40 ft); minimum daily, 1.8 cfs Oct. 1, 4-12, 1966.

REMARKS.--Records good. Small diversions above station for irrigation and domestic purposes. See schematic diagram for Middle Fork American and Rubicon River basins. Records water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	3.7	8.9	6.1	13	16	16	6.7	5.4	2.6	4.8	5.6
2	9.9	3.9	14	5.5	19	16	16	6.6	5.2	2.6	4.9	5.5
3	16	3.6	17	5.0	38	15	14	6.4	5.7	2.8	4.7	5.5
4	6.7	4.1	30	5.0	32	14	14	6.3	5.7	4.0	4.4	5.6
5	5.8	4.8	61	5.3	30	14	13	7.6	5.2	4.1	4.4	5.6
6	5.2	4.8	15	5.0	30	13	13	6.7	5.6	3.9	4.3	5.6
7	4.2	3.6	34	4.8	29	14	12	6.7	7.4	3.5	3.5	5.5
8	4.2	3.4	20	5.0	24	20	12	6.9	7.1	3.6	3.0	5.4
9	4.1	3.4	8.5	5.5	25	16	12	6.2	6.0	3.9	3.4	5.5
10	4.2	3.8	7.7	39	24	14	11	6.0	5.1	3.9	3.8	5.6
11	4.5	3.8	10	21	20	13	11	6.0	4.7	3.5	4.1	5.6
12	5.0	3.8	9.1	12	18	12	9.7	6.1	4.7	3.1	4.0	5.6
13	6.0	3.9	7.4	10	17	26	9.7	9.8	7.3	2.9	4.4	4.8
14	5.9	11	5.6	12	18	36	9.9	16	7.1	3.1	4.7	4.6
15	5.8	12	7.7	75	17	29	9.4	11	4.2	3.1	4.6	4.7
16	5.5	3.9	4.8	38	18	47	13	9.8	3.8	6.3	4.4	4.6
17	5.8	5.7	4.3	21	48	48	14	9.4	3.4	4.9	4.4	4.8
18	5.9	10	8.4	12	33	31	10	9.1	3.3	2.2	4.5	4.7
19	6.4	26	6.8	15	30	24	8.3	9.3	3.3	2.3	10	4.3
20	8.8	9.4	4.8	14	116	21	8.0	8.1	3.2	2.1	6.6	4.4
21	8.9	4.4	5.5	12	130	22	7.8	7.3	3.2	2.6	7.4	4.5
22	8.9	8.9	6.8	12	57	21	7.4	6.6	3.2	3.0	8.8	4.6
23	9.1	8.9	5.0	9.1	43	20	7.0	8.6	3.0	3.1	9.4	4.7
24	7.1	8.6	7.1	8.6	35	19	6.8	10	3.3	3.0	8.5	4.7
25	4.0	9.1	10	8.4	30	20	7.4	9.5	3.2	2.7	6.7	4.6
26	3.7	8.4	11	8.6	24	19	7.3	8.1	3.1	2.8	6.0	4.7
27	4.1	8.6	16	9.1	21	17	7.0	7.9	2.7	2.8	5.9	4.6
28	4.2	10	14	10	17	16	7.4	7.8	2.7	2.8	6.0	4.6
29	4.3	15	6.8	10	15	15	6.3	7.4	2.7	2.8	5.8	4.4
30	4.4	17	6.1	16	-----	14	6.5	6.5	2.7	3.1	5.6	4.9
31	4.1	-----	9.7	14	-----	14	-----	5.8	-----	3.5	5.4	-----
TOTAL	187.1	227.5	383.0	434.0	971	636	306.9	246.2	133.2	100.6	168.4	149.8
MEAN	6.04	7.58	12.4	14.0	33.5	20.5	10.2	7.94	4.44	3.25	5.43	4.99
MAX	16	26	61	75	130	48	16	16	7.4	6.3	10	5.6
MIN	3.7	3.4	4.3	4.8	13	12	6.3	5.8	2.7	2.1	3.0	4.3
AC-FT	371	451	760	861	1,930	1,260	609	488	264	200	334	297

CAL YR 1967 TOTAL 8,519.4 MEAN 23.3 MAX 370 MIN 3.3 AC-FT 16,900
WTR YR 1968 TOTAL 3,943.7 MEAN 10.8 MAX 130 MIN 2.1 AC-FT 7,820

Peak discharge (base, 170 cfs).--Feb. 21 (0700 hrs) 231 cfs (7.55 ft).

SACRAMENTO RIVER BASIN

11-4335. MIDDLE FORK AMERICAN RIVER NEAR AUBURN, CALIF.

LOCATION.--Lat 38°55'05", long 121°00'45", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.6, T.12 N., R.9 E., on right bank at Mountain Quarry Co. plant, 1.5 miles upstream from mouth, and 3.3 miles northeast of Auburn.

DRAINAGE AREA.--612 sq mi.

RECORDS AVAILABLE.--October 1911 to September 1968. Prior to October 1934, published as "near East Auburn."

GAGE.--Digital water-stage recorder. Datum of gage is 552.35 ft above mean sea level (levels by Murray Engineers). Prior to December 1930, staff gages near present site at different datums. December 1930 to Aug. 9, 1962, graphic water-stage recorder, and Aug. 10, 1962, to Mar. 1, 1963, digital water-stage recorder at site 0.4 mile upstream at different datum. Mar. 1, 1963, to Oct. 30, 1967, graphic water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--57 years, 1,333 cfs (965,100 acre-ft per year).

EXTREMES.--Maximum discharge during year, 8,060 cfs Feb. 20 (gage height, 13.84 ft); minimum daily, 62 cfs Aug. 11, 12.

1911-68: Maximum discharge, 253,000 cfs Dec. 23, 1964 (gage height, 60.4 ft from floodmarks), from rating curve extended above 69,000 cfs on basis of slope-area measurement of maximum flow (caused by overtopping of the partly constructed Hell Hole Dam); minimum, 20 cfs Sept. 6, 1931, Sept. 19, 1934.

REMARKS.--Records good. Natural flow of stream affected by French Meadows Reservoir (see sta. no. 11-4274.), Hell Hole Reservoir (see sta. no. 11-4287.), Loon Lake (see sta. no. 11-4293.5.), Stumpy Meadows Reservoir (usable capacity, 20,000 acre-ft), diversion dams on Rubicon and Little Rubicon River, and Ralston and Oxbow powerplants. Robbs Peak tunnel (see sta. no. 11-4298.) diverts water out of basin. See schematic diagram for Middle Fork American and Rubicon River basins.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	125	144	1,200	247	919	1,570	1,360	689	566	441	192	72
2	229	319	1,090	300	954	1,300	1,390	707	487	672	384	70
3	1,350	725	1,150	595	1,220	1,100	1,300	902	496	790	211	366
4	1,220	104	1,260	712	595	1,230	1,240	869	756	544	87	663
5	1,200	105	1,790	583	898	1,350	1,230	441	543	231	180	766
6	1,150	242	1,400	513	1,090	1,260	1,080	591	559	528	379	808
7	1,120	948	1,400	346	1,170	1,100	915	715	608	152	93	512
8	282	746	1,340	406	951	1,270	1,010	796	468	399	75	302
9	414	663	1,240	622	1,040	1,150	1,070	667	290	489	372	241
10	1,070	794	1,210	783	1,050	914	1,050	675	416	259	70	804
11	1,120	460	1,190	992	814	1,040	1,270	515	701	598	62	928
12	1,120	276	1,140	803	754	1,110	1,290	355	415	242	62	835
13	1,120	554	1,100	420	756	1,110	1,060	589	543	239	63	912
14	417	128	1,100	290	929	1,340	909	784	604	111	350	615
15	92	104	1,060	1,820	946	1,380	997	663	511	137	470	167
16	380	92	549	1,920	772	1,300	1,310	788	212	164	450	404
17	455	80	274	1,040	1,460	1,480	1,280	919	337	110	480	780
18	408	197	240	932	2,130	1,430	1,390	642	584	149	100	830
19	176	155	583	821	1,660	1,430	1,380	351	584	301	100	820
20	89	496	804	623	5,740	1,350	878	508	712	104	540	820
21	448	715	859	423	5,300	1,230	614	682	198	97	560	300
22	89	961	878	531	4,170	1,280	810	664	392	95	500	150
23	449	315	546	742	4,180	1,160	961	606	390	95	520	350
24	1,190	342	186	777	3,580	964	747	605	280	97	520	720
25	1,120	985	241	887	2,580	1,080	845	530	477	93	450	500
26	1,100	1,080	285	503	2,100	1,370	976	285	481	251	230	750
27	952	1,050	345	793	1,800	1,330	838	480	524	90	650	720
28	1,010	1,090	512	685	1,600	1,260	520	605	343	95	804	740
29	1,070	1,130	602	761	1,550	1,300	656	777	314	85	753	200
30	264	1,250	400	1,180	-----	1,300	667	560	144	98	638	400
31	351	-----	277	1,230	-----	1,250	-----	636	-----	86	369	-----
TOTAL	21,580	16,250	26,251	23,280	52,708	38,738	31,043	19,596	13,935	7,842	10,714	16,545
MEAN	696	542	847	751	1,818	1,250	1,035	632	465	253	346	552
MAX	1,350	1,250	1,790	1,920	5,740	1,570	1,390	919	756	790	804	928
MIN	89	80	186	247	595	914	520	285	144	85	62	70
AC-FT	42,800	32,230	52,070	46,180	104,500	76,840	61,570	38,870	27,640	15,550	21,250	32,820
CAL YR 1967	TOTAL 674,982		MEAN 1,849		MAX 10,000		MIN 80		AC-FT 1,339,000			
WTR YR 1968	TOTAL 278,482		MEAN 761		MAX 5,740		MIN 62		AC-FT 552,400			

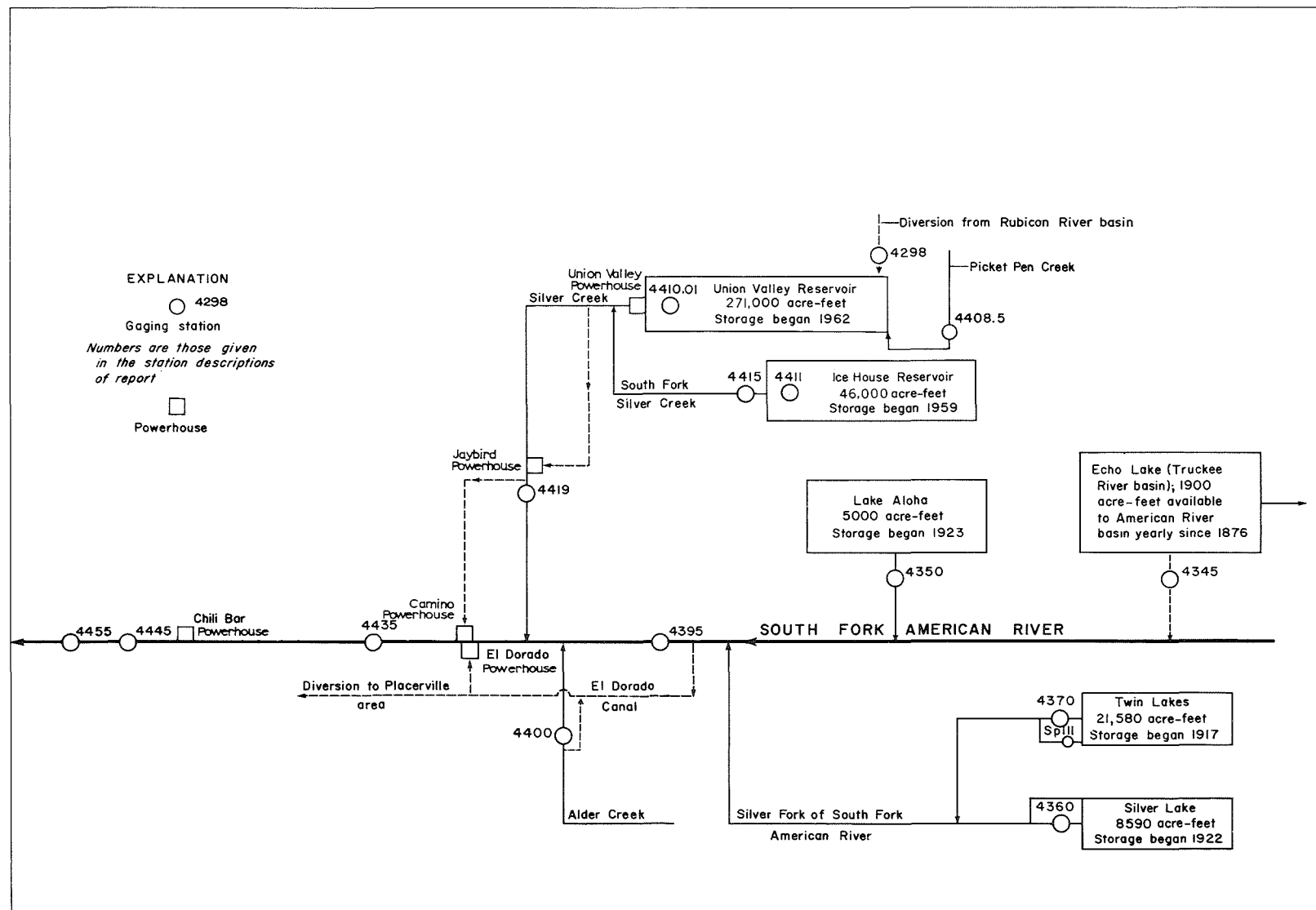


FIGURE 13.--Schematic diagram showing diversions and storage in South Fork American River basin.

SACRAMENTO RIVER BASIN

11-4345. ECHO LAKE CONDUIT NEAR PHILLIPS, CALIF.

LOCATION.--Lat 38°49'52", long 120°02'12", in NW¼ sec.6, T.11 N., R.18 E., on right bank in Berkeley Municipal Camp, 0.5 mile downstream from intake, and 2.4 miles northeast of Phillips.

RECORDS AVAILABLE.--August 1923 to December 1968 (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.--Graphic water-stage recorder. Altitude of gage is 7,420 ft (from topographic map). Prior to July 16, 1929, staff gage at site 0.4 mile upstream at different datum.

EXTREMES.--1923-68: Maximum daily discharge, 31 cfs Sept. 10, 1963; no flow for most of each year.

REMARKS.--Records good. No flow except during diversion season for which discharge is published. Conduit diverts from Echo Lake (capacity, 1,900 acre-ft) in Truckee River basin into basin of South Fork American River for power and irrigation. See schematic diagram of South Fork American River basin.

COOPERATION.--Gage-height record and five discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, SEPTEMBER TO DECEMBER 1968

DAY	SEP	OCT	NOV	DEC
1	0	27	0	3.8
2	0	26	0	1.5
3	0	26	0	1.5
4	0	25	0	1.3
5	0	23	0	.54
6	0	21	0	0
7	0	20	17	0
8	0	17	26	0
9	0	15	25	0
10	0	11	23	0
11	0	8.3	17	0
12	0	4.6	25	0
13	0	7.0	25	0
14	0	9.5	25	0
15	0	8.3	25	0
16	11	7.6	24	0
17	26	8.8	21	0
18	26	6.2	19	0
19	27	5.9	15	0
20	27	3.2	12	0
21	27	.10	9.9	0
22	28	.04	8.2	0
23	26	0	7.1	0
24	25	0	6.7	0
25	28	0	6.5	0
26	29	0	5.8	0
27	29	0	5.0	0
28	28	0	4.2	0
29	28	0	3.3	0
30	28	0	1.3	0
31	-----	0	-----	0
TOTAL	393	278.54	357.0	8.64
MEAN	13.1	8.99	11.9	.28
MAX	29	27	26	3.8
MIN	0	0	0	0
AC-FT	780	552	708	17

SACRAMENTO RIVER BASIN

957

11-4350. PYRAMID CREEK NEAR PHILLIPS, CALIF.

LOCATION.--Lat 38°50'55", long 120°07'40", in N $\frac{1}{2}$ sec.32, T.12 N., R.17 E., on left bank 0.9 mile southeast of Lake Aloha dam, 1.6 miles east of Pyramid Peak, 3.4 miles northwest of Phillips, and 4.6 miles west of Echo Lake Resort.

DRAINAGE AREA.--3.73 sq mi.

RECORDS AVAILABLE.--September 1922 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1952, published as Medley Lakes Outlet near Vade and October 1952 to September 1955 as Medley Lakes Outlet near Phillips.

GAGE.--Graphic water-stage recorder. Altitude of gage is 8,050 ft (from topographic map).

AVERAGE DISCHARGE.--46 years, 17.5 cfs (12,670 acre-ft per year).

EXTREMES.--Maximum discharge, 74 cfs Oct. 2 (gage height, 2.11 ft); minimum daily recorded, 0.44 cfs Sept. 27-30, 1922-68: Maximum discharge, 401 cfs Dec. 23, 1964 (gage height, 4.88 ft from recorded range in stage), from rating curve extended above 130 cfs; maximum gage height, 5.4 ft Jan. 31, 1963 (backwater from ice); no flow at times in some years.

REMARKS.--Records good except those for period of no gage-height record, which are poor. Flow regulated by Lake Aloha (capacity, 5,000 acre-ft); 3,200 acre-ft Sept. 30, 1967, and no contents Sept. 30, 1968. See schematic diagram of South Fork American River basin.

COOPERATION.--Gage-height record and four discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	6.2					10	15	17	2.2	58	6.8
2	65	6.0					10	14	19	2.3	57	5.5
3	67	5.8					9.4	14	19	2.3	57	4.9
4	61	5.5					9.1	15	18	9.7	55	3.7
5	61	5.5					9.1	13	16	12	54	3.2
6	60	5.3					9.1	12	16	9.1	53	2.7
7	58	5.1					9.1	13	16	7.6	53	2.3
8	57	4.9					9.1	14	16	11	52	2.2
9	56	4.7					9.4	15	16	30	56	2.0
10	56	4.5					11	15	17	35	61	1.7
11	56	4.1					12	13	17	35	61	1.7
12	56	3.9					11	13	17	35	58	1.4
13	55	3.3					11	12	16	34	57	1.3
14	54	4.3					11	11	12	34	54	1.1
15	53	3.3					11	11	6.8	34	52	1.1
16	53	2.7					11	12	6.0	34	48	1.0
17	53	2.3					9.7	14	5.8	34	45	.90
18	52	2.4					9.4	17	4.3	34	39	.90
19	51	3.3					9.1	18	3.9	36	43	.84
20	50	4.3					9.1	22	3.5	41	42	.78
21	49	4.3					9.1	18	3.3	41	41	.78
22	48	3.9					9.1	13	3.2	45	39	.58
23	47	3.7					9.1	12	3.0	57	36	.48
24	46	3.7					9.7	12	2.7	57	30	.48
25	45	3.5					10	16	2.6	57	18	.48
26	43	3.2					12	17	2.4	57	11	.48
27	41	2.7					12	19	2.4	56	9.7	.44
28	38	2.7					13	20	2.2	56	7.9	.44
29	36	3.3					15	19	2.2	56	6.8	.44
30	27	4.5					15	17	2.2	57	5.8	.44
31	7.9	-----			-----		-----	17	-----	59	5.5	-----
TOTAL	1,565.9	122.9	108.5	77.5	116.0	155.0	313.6	463	288.5	1,070.2	1,265.7	51.06
MEAN	50.5	4.10	3.50	2.50	4.00	5.00	10.5	14.9	9.62	34.5	40.8	1.70
MAX	67	6.2	-	-	-	-	15	22	19	59	61	6.8
MIN	7.9	2.3	-	-	-	-	9.1	11	2.2	2.2	5.5	.44
AC-FT	3,110	244	215	154	230	307	622	918	572	2,120	2,510	101

CAL YR 1967 TOTAL 10,159.3 MEAN 27.8 MAX 166 MIN - AC-FT 20,150
WTR YR 1968 TOTAL 5,597.86 MEAN 15.3 MAX 67 MIN - AC-FT 11,100

Note.--No gage-height record Dec. 5 to Mar. 31.

SACRAMENTO RIVER BASIN

11-4360. SILVER LAKE OUTLET NEAR KIRKWOOD, CALIF.

LOCATION.--Lat 38°40'17", long 120°07'18", in SW $\frac{1}{4}$ sec.32, T.10 N., R.17 E., on right bank 1,000 ft downstream from Silver Lake Dam, and 3.5 miles southwest of Kirkwood.

DRAINAGE AREA.--15.2 sq mi.

RECORDS AVAILABLE.--September 1922 to September 1968. Records for water year 1923 incomplete, yearly estimate published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is 7,199.5 ft above mean sea level, unadjusted.

AVERAGE DISCHARGE.--46 years, 33.6 cfs (24,330 acre-ft per year).

EXTREMES.--Maximum discharge during year, 152 cfs Apr. 28 (gage height, 2.61 ft); minimum daily, 0.40 cfs Oct. 19-28.

1922-68: Maximum discharge, 676 cfs Nov. 21, 1950 (gage height, 6.03 ft), from rating curve extended above 290 cfs; no flow for many days in February, March 1948, Jan. 13, 14, 1954, Nov. 3, 1959 to Feb. 5, 1960.

REMARKS.--Records good. Flow regulated by Silver Lake (capacity, 3,840 acre-ft at spillway level and 8,590 acre-ft with 11 ft of flashboards); contents in Silver Lake, 2,600 acre-ft Sept. 30, 1967, and 1,820 acre-ft Sept. 30, 1968. Some water, in addition to that released through dam and over spillway, escapes from Silver Lake through porous rock formation. See schematic diagram of South Fork American River basin.

COOPERATION.--Gage-height record and nine discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	.50	3.2	3.2	6.6	5.5	76	77	88	3.2	4.3	5.4
2	49	.50	3.0	3.2	3.6	5.5	70	20	89	3.2	4.0	5.4
3	49	15	2.7	3.0	3.6	5.8	53	7.7	88	2.8	4.0	37
4	48	38	2.7	2.8	3.6	6.2	45	9.1	82	2.4	4.0	75
5	47	36	3.0	2.8	3.6	13	45	19	54	2.4	4.0	86
6	46	27	2.8	2.8	3.6	19	41	15	36	2.2	4.3	84
7	45	28	3.6	2.8	3.6	22	40	6.5	26	2.2	4.3	82
8	43	26	3.8	2.8	3.6	26	43	6.8	22	2.8	4.0	80
9	42	20	3.0	3.0	3.6	26	55	7.7	21	3.2	4.0	78
10	40	16	2.8	3.2	3.6	23	76	7.7	10	3.2	3.6	76
11	38	12	2.8	3.0	3.6	21	101	9.1	2.8	3.4	3.4	75
12	33	9.1	2.7	3.0	3.6	20	109	19	2.8	3.2	3.4	74
13	25	7.2	3.2	3.0	3.6	22	107	27	3.0	3.2	3.4	71
14	18	5.0	7.2	3.0	3.6	22	107	33	3.2	3.2	3.6	70
15	12	3.2	8.2	3.2	3.6	20	117	19	3.6	3.2	3.6	69
16	8.6	3.2	8.2	3.2	3.6	21	108	6.8	3.6	3.2	3.6	68
17	4.5	3.2	8.2	3.2	3.6	23	88	13	3.2	4.0	5.4	67
18	.60	3.2	8.2	3.2	3.6	20	70	25	2.4	4.7	6.8	65
19	.40	3.2	8.2	3.2	4.1	17	60	39	2.6	4.7	7.2	64
20	.40	3.2	8.6	3.2	4.8	15	58	66	2.6	4.0	6.8	62
21	.40	3.2	8.6	3.2	4.5	14	56	84	2.8	4.0	6.8	61
22	.40	3.2	8.6	3.2	4.5	14	52	86	3.0	5.0	6.8	60
23	.40	3.2	8.6	3.2	4.8	14	53	78	3.2	5.0	6.8	58
24	.40	3.2	6.9	3.2	5.2	14	56	68	3.0	5.0	6.8	57
25	.40	3.2	3.2	3.4	5.2	16	65	64	2.8	5.0	6.5	54
26	.40	3.2	3.2	3.4	5.2	17	88	69	2.6	5.0	6.5	53
27	.40	3.2	3.2	3.4	5.2	17	114	80	3.0	5.0	6.5	51
28	.40	3.2	3.2	3.4	5.5	19	129	93	2.8	5.0	6.1	49
29	.50	3.2	3.2	3.8	5.5	28	116	101	2.8	5.4	5.8	48
30	.50	3.4	3.2	12	-----	49	116	98	2.8	4.7	5.8	45
31	.50	-----	3.2	19	-----	64	-----	93	-----	4.7	5.4	-----
TOTAL	605.20	291.70	151.2	122.0	122.3	619.0	2,314	1,347.4	574.6	118.2	157.5	1,829.8
MEAN	19.5	9.72	4.88	3.94	4.22	20.0	77.1	43.5	19.2	3.81	5.08	61.0
MAX	51	38	8.6	19	6.6	64	129	101	89	5.4	7.2	86
MIN	.40	.50	2.7	2.8	3.6	5.5	40	6.5	2.4	2.2	3.4	5.4
AC-FT	1,200	579	300	242	243	1,230	4,590	2,670	1,140	234	312	3,630
CAL YR 1967	TOTAL	19,749.80	MEAN	54.1	MAX	335	MIN	.40	AC-FT	39,170		
WTR YR 1968	TOTAL	8,252.90	MEAN	22.5	MAX	129	MIN	.40	AC-FT	16,370		

SACRAMENTO RIVER BASIN

959

11-4370. TWIN LAKES OUTLET NEAR KIRKWOOD, CALIF.

LOCATION.--Lat 38°42'29", long 120°03'00", in SW $\frac{1}{4}$ sec.18, T.10 N., R.18 E., on right bank 500 ft downstream from main dam and outlet gate of Twin Lakes and 1.3 miles east of Kirkwood.

DRAINAGE AREA.--13.5 sq mi.

RECORDS AVAILABLE.--September 1922 to September 1968. Records for water year 1945 incomplete, yearly estimate published in WSP 1315-A.

GAGE.--Graphic water-stage recorder and concrete control for outlet, and graphic water-stage recorder for spillway. Altitude of gage is 7,700 ft (from topographic map).

AVERAGE DISCHARGE.--46 years, 36.0 cfs (26,060 acre-ft per year), including flow over Twin Lakes spillway.

EXTREMES.--Maximum combined daily discharge during year for outlet and spillway, 138 cfs Nov. 18; minimum daily, 0.9 cfs Apr. 4, 5.
1922-68: Maximum combined daily discharge for outlet and spillway, 419 cfs July 2, 3, 1967; minimum daily, 0.1 cfs Mar. 25-31, 1944, Nov. 27, 28, 1956.

REMARKS.--Records good. Flow regulated by Twin Lakes (capacity, 19,750 acre-ft spillway level, 21,580 acre-ft with 3 ft of flashboards), contents of which were 18,600 acre-ft on Sept. 30, 1967, and 13,800 acre-ft on Sept. 30, 1968. There was no flow over Twin Lakes spillway during year. No diversion above station. See schematic diagram of South Fork American River basin.

COOPERATION.--Gage-height record and six discharge measurements for outlet and gage-height record for spillway furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	4.4	131	55	34	6.7	9.1	3.8	2.2	15	27	79
2	4.4	4.4	131	54	35	6.7	9.1	3.1	2.2	20	27	86
3	4.4	4.8	131	48	28	6.3	4.3	3.1	2.2	20	27	59
4	4.1	52	131	40	12	6.3	.90	3.1	2.2	25	26	25
5	3.8	52	131	40	12	6.3	.90	3.1	2.2	32	29	5.7
6	2.7	70	131	40	12	6.3	1.0	3.1	2.2	32	31	2.4
7	2.0	99	129	40	12	6.7	1.2	3.1	2.2	32	31	3.8
8	2.0	105	127	40	12	6.7	1.2	3.1	2.2	25	35	3.8
9	2.0	110	127	39	12	7.2	1.8	3.1	2.2	17	40	10
10	7.8	118	127	39	12	7.2	3.1	3.1	2.4	23	42	14
11	23	124	125	39	13	7.2	3.4	3.1	2.7	27	42	17
12	31	82	125	39	13	7.7	3.8	3.1	2.7	27	40	20
13	31	65	124	39	13	7.2	4.1	3.1	2.7	27	34	22
14	47	65	122	39	13	7.2	5.1	3.4	2.7	27	32	24
15	61	52	122	39	13	7.7	6.3	3.4	2.7	27	28	24
16	67	46	120	38	13	7.7	5.8	3.4	2.7	27	37	21
17	72	100	120	38	13	8.2	6.3	3.4	2.7	27	41	16
18	72	138	118	38	14	9.6	7.2	3.4	2.7	27	41	16
19	70	136	117	38	15	9.6	7.7	3.4	3.1	27	29	19
20	78	117	117	37	14	9.6	8.6	3.4	3.1	27	18	22
21	86	105	115	37	14	10	8.6	3.4	3.1	27	23	22
22	86	113	81	37	15	12	7.3	3.4	3.1	27	27	22
23	86	113	56	36	15	14	2.7	3.4	3.1	23	27	22
24	85	124	56	36	15	13	2.7	3.4	3.4	19	27	22
25	85	134	56	37	15	17	3.1	2.7	2.4	19	39	22
26	90	134	55	37	10	18	3.8	2.4	2.0	23	54	22
27	91	134	55	37	6.7	8.2	4.1	2.2	14	26	70	28
28	91	134	55	36	6.7	8.2	4.1	2.2	12	26	78	32
29	59	132	55	36	6.7	8.6	4.4	2.2	7.2	26	78	32
30	2.4	132	55	32	-----	9.1	4.4	2.2	6.7	26	78	32
31	3.7	-----	55	32	-----	9.6	-----	2.2	-----	26	78	-----
TOTAL	1,354.7	2,842.8	3,200	1,212	419.1	275.8	136.10	94.5	107.0	779	1,236	745.7
MEAN	43.7	94.8	103	39.1	14.5	8.90	4.54	3.05	3.57	25.1	39.9	24.9
MAX	91	138	131	55	35	18	9.1	3.8	14	32	78	86
MIN	2.0	4.4	55	32	6.7	6.3	.90	2.2	2.0	15	18	2.4
AC-FT	2,690	5,640	6,350	2,400	831	547	270	187	212	1,550	2,450	1,480
CAL YR 1967	TOTAL 23,215.9		MEAN 63.6		MAX 419		MIN 2.0		AC-FT 46,050			
WTR YR 1968	TOTAL 12,402.70		MEAN 33.9		MAX 138		MIN .90		AC-FT 24,600			

SACRAMENTO RIVER BASIN

11-4395. SOUTH FORK AMERICAN RIVER NEAR KYBURZ, CALIF.

LOCATION.--Lat 38°45'49", long 120°19'39", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.29, T.11 N., R.15 E., on right bank beside U.S. Highway 50, 0.8 mile downstream from Silver Fork of South Fork, and 1.9 miles southwest of Kyburz.

DRAINAGE AREA.--193 sq mi.

RECORDS AVAILABLE.--August to December 1907, October 1922 to September 1968. Prior to October 1956, records for river and El Dorado Canal published separately; combined only, October 1956 to September 1962.

GAGE.--Digital water-stage recorder on river; digital water-stage recorder for canal diversion. Altitude of gage is 3,840 ft (from topographic map). Prior to Oct. 1, 1962, graphic water-stage recorder at datum 1.00 ft higher. Oct. 1, 1962, to May 19, 1964, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE (river only).--46 years (1922-68), 283 cfs (204,900 acre-ft per year).
(total flv).--46 years (1922-68), 396 cfs (286,700 acre-ft per year).

EXTREMES (river only).--Maximum discharge during year, 1,640 cfs Feb. 20 (gage height, 5.32 ft); minimum daily, 3.5 cfs Dec. 29.

1907, 1923-68: Maximum discharge, 17,400 cfs Dec. 23, 1964 (gage height, 10.92 ft), from rating curve extended above 6,300 cfs on basis of contracted-opening measurement at gage height 10.40 ft; minimum daily, 0.3 cfs Nov. 9-11, 1928.

(combined).--Maximum discharge during year, 1,790 cfs Feb. 20; minimum daily, 16 cfs Dec. 23.

1907, 1923-68: Maximum discharge, 17,500 cfs Dec. 23, 1964; minimum daily, 10 cfs Oct. 17, 19, 1929.

REMARKS.--Records good. Flow at low and medium stages greatly regulated by four reservoirs since beginning of record (total usable 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. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	35	28	4.6	5.5	287	532	751	375	7.8	8.7	5.7
2	23	33	20	4.6	5.3	240	379	674	382	7.8	8.7	5.7
3	136	25	13	4.2	5.3	235	302	679	371	7.6	8.7	9.8
4	70	13	19	4.6	6.8	237	290	695	328	7.6	8.7	7.6
5	44	4.8	52	4.1	6.4	251	324	622	267	7.8	8.7	7.6
6	34	4.8	21	4.1	5.3	210	267	501	203	7.6	8.7	5.7
7	21	5.9	23	4.4	5.5	185	276	463	194	7.6	8.9	5.3
8	13	11	18	4.4	5.7	192	315	492	150	7.6	8.9	5.3
9	7.8	6.2	14	4.4	6.6	168	397	505	132	7.6	8.9	5.5
10	5.1	7.6	13	5.1	6.2	147	532	501	122	7.6	8.9	5.5
11	5.3	6.4	11	4.6	5.9	134	648	463	109	7.6	8.9	5.7
12	14	4.9	6.6	5.1	5.9	125	637	463	106	7.6	8.9	5.7
13	8.7	4.9	33	4.9	5.9	132	573	404	91	7.6	8.9	5.7
14	5.1	5.3	82	5.1	5.7	127	598	393	78	7.6	8.9	5.7
15	11	5.1	87	143	5.7	114	643	412	70	7.6	8.9	5.7
16	9.5	5.1	70	116	5.9	134	545	382	58	7.6	8.9	5.7
17	16	5.1	69	27	47	129	408	386	54	7.6	8.9	5.7
18	10	17	83	8.1	127	138	331	423	29	7.6	8.9	5.7
19	6.8	46	86	55	109	94	321	527	23	7.6	15	5.7
20	11	36	81	5.5	1,250	86	318	617	11	9.5	51	5.5
21	16	4.9	83	5.9	810	94	302	612	8.4	10	8.7	5.5
22	16	4.9	67	5.7	569	111	270	479	8.1	10	8.7	5.5
23	15	4.9	16	106	937	113	296	382	7.8	11	8.7	5.5
24	12	4.9	17	34	685	125	344	321	7.6	10	8.4	5.5
25	10	10	26	5.5	467	154	408	354	7.6	8.4	8.4	5.5
26	8.4	8.1	41	5.7	404	147	527	404	7.6	7.3	8.7	5.5
27	11	6.6	31	5.7	375	139	598	463	7.6	7.3	8.9	5.5
28	8.9	8.7	10	5.9	341	203	648	514	7.8	7.3	8.7	5.3
29	6.4	14	3.5	6.2	293	344	768	505	7.6	7.1	7.1	5.3
30	59	24	5.1	7.1	-----	467	792	439	7.6	8.1	5.7	5.3
31	55	-----	5.5	6.6	-----	492	-----	393	-----	8.9	5.7	-----
TOTAL	674.7	373.1	1,134.7	613.1	6,507.6	5,754	13,589	15,219	3,230.7	249.9	312.7	174.9
MEAN	21.8	12.4	36.6	19.8	224	186	453	491	108	8.06	10.1	5.83
MAX	136	46	87	143	1,250	492	792	751	382	11	51	9.8
MIN	5.1	4.8	3.5	4.1	5.3	86	267	321	7.6	7.1	5.7	5.3
AC-FT	1,340	740	2,250	1,220	12,910	11,410	26,950	30,190	6,410	496	620	347

CAL YR 1967 TOTAL 185,613.9 MEAN 509 MAX 3,690 MIN 3.5 AC-FT 368,200
WTR YR 1968 TOTAL 47,833.4 MEAN 131 MAX 1,250 MIN 3.5 AC-FT 94,880

Peak discharge (base, 2,000 cfs).--No peak above base.

11-4395. SOUTH FORK AMERICAN RIVER NEAR KYBURZ, CALIF.--Continued

Combined discharge, in cubic feet per second, of South Fork American River and El Dorado Canal near Kyburz, Calif., water year October 1967 to September 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	160	35	176	110	140	432	681	907	540	111	139	122
2	188	33	178	93	137	385	526	830	548	124	131	130
3	304	25	171	99	149	380	453	835	538	117	127	137
4	238	57	186	88	130	384	441	851	497	114	126	143
5	213	132	204	74	120	397	475	778	435	126	124	140
6	202	130	189	59	119	355	418	657	370	130	127	128
7	189	132	183	61	120	331	428	619	363	123	126	121
8	181	167	178	87	120	338	467	648	319	117	125	129
9	175	164	177	88	134	314	549	662	301	113	130	116
10	170	167	176	85	128	292	684	657	291	124	141	122
11	170	165	174	21	124	279	799	619	278	134	141	122
12	181	164	127	22	125	270	789	619	275	132	139	123
13	177	108	91	22	126	277	724	560	260	130	135	122
14	165	132	124	22	120	272	750	550	247	128	135	126
15	180	97	100	283	114	259	795	568	239	128	128	124
16	178	86	131	163	118	273	697	538	227	125	123	121
17	183	163	69	172	189	264	560	543	222	123	132	120
18	178	182	83	148	272	251	483	580	200	123	131	133
19	175	207	86	139	254	242	473	684	194	120	151	132
20	180	190	81	136	1,400	238	470	774	178	120	191	138
21	185	159	83	140	955	246	454	769	167	120	130	136
22	185	161	67	145	714	263	422	636	160	120	140	134
23	184	156	16	140	1,080	265	448	538	153	131	126	128
24	181	167	17	144	830	277	496	481	142	127	115	124
25	125	172	100	142	612	303	560	514	132	124	104	122
26	148	170	133	139	549	296	681	564	124	122	112	126
27	151	169	157	126	520	290	754	624	115	127	120	122
28	170	171	140	129	487	355	804	675	138	126	131	132
29	167	163	122	126	438	496	924	666	117	125	127	130
30	136	172	119	120	-----	619	948	600	112	125	124	130
31	55	-----	116	127	-----	644	-----	555	-----	140	122	-----
TOTAL	5,474	4,196	3,954	3,450	10,324	10,287	18,153	20,101	7,882	3,849	4,053	3,833
MEAN	177	140	128	111	356	332	605	648	263	124	131	128
MAX	304	207	204	283	1,400	644	948	907	548	140	191	143
MIN	55	25	16	21	114	238	418	481	112	111	104	116
AC-FT	10,860	8,320	7,840	6,840	20,480	20,400	36,010	39,870	15,630	7,630	8,040	7,600
CAL YR 1967	TOTAL	234,918		MEAN	644	MAX	3,820	MIN	16	AC-FT	466,000	
WTR YR 1968	TOTAL	95,556		MEAN	261	MAX	1,400	MIN	16	AC-FT	189,500	

SACRAMENTO RIVER BASIN

11-4400. ALDER CREEK NEAR WHITE HALL, CALIF.

LOCATION.--Lat 38°45'19", long 120°22'17", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.35, T.11 N., R.14 E., on right bank 0.9 mile upstream from mouth, and 2.2 miles southeast of White Hall.

DRAINAGE AREA.--22.1 sq mi.

RECORDS AVAILABLE.--October 1922 to September 1968 (includes diversions by pipeline). Published as "near Whitehall" prior to October 1953.

GAGE.--Digital water-stage recorder and, since Aug. 28, 1964, broad-crested weir with V-notch. Altitude of gage is 3,840 ft (from topographic map). Prior to July 23, 1924, staff gage at same site and datum. July 23, 1924, to May 5, 1966, graphic water-stage recorder, at same site and datum.

AVERAGE DISCHARGE.--46 years, 36.8 cfs (26,640 acre-ft per year), including diversions by pipeline.

EXTREMES (creek only).--Maximum discharge during year, 317 cfs Feb. 20 (gage height, 3.65 ft); minimum daily, 0.09 cfs Feb. 1, May 29.
1922-68: Maximum discharge, 5,500 cfs Dec. 23, 1955 (gage height, 8.40 ft from floodmarks), from rating curve extended above 500 cfs; no flow at times in several years.

REMARKS.--Records good. Records include computed flow in feeder pipeline that was diverted 1,300 ft above station into El Dorado Canal; from Oct. 2 to June 14.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	1.7	3.1	4.4	11	85	109	48	9.8	2.2	1.7	.57
2	3.4	1.7	3.1	4.2	11	77	98	45	8.0	2.2	1.5	.53
3	8.0	1.7	3.0	4.5	12	72	90	45	8.0	2.2	1.3	.50
4	3.9	1.7	3.4	4.3	13	69	85	44	8.3	2.2	1.2	.50
5	3.0	1.7	8.3	4.3	14	68	83	42	8.3	2.1	1.1	.50
6	3.0	1.7	5.0	4.6	14	65	77	38	8.3	2.0	.95	.47
7	2.4	1.7	4.9	4.3	14	61	75	34	8.0	2.0	.80	.47
8	2.0	1.7	4.3	4.0	14	60	74	31	7.8	1.9	.76	.44
9	2.0	1.7	4.1	4.2	17	56	75	27	7.5	1.9	.72	.44
10	2.0	1.7	4.0	4.5	18	53	78	25	7.3	1.8	.68	.41
11	2.0	1.7	3.7	4.6	18	50	83	24	7.2	1.8	.64	.44
12	2.0	1.7	3.3	4.5	18	48	83	25	6.5	1.7	.64	.44
13	1.9	2.7	2.4	4.1	17	48	80	27	7.3	1.7	.64	.44
14	1.9	2.5	2.7	3.1	16	46	77	24	6.1	1.7	.64	.44
15	1.9	2.2	3.2	36	15	44	75	21	4.3	1.7	.72	.50
16	1.9	1.8	3.6	46	16	45	71	20	3.9	1.7	.72	.47
17	1.9	1.8	3.2	20	49	45	65	19	3.9	1.7	.72	.44
18	1.8	4.7	3.3	15	60	40	58	19	3.6	1.6	.72	.41
19	1.7	5.4	3.7	13	63	38	55	19	3.6	1.6	1.3	.44
20	1.7	3.5	3.6	11	239	38	52	18	3.2	1.5	1.8	.44
21	1.7	2.6	3.5	10	224	41	50	18	3.2	1.4	1.5	.44
22	1.7	2.3	3.5	13	182	44	46	17	3.2	1.4	1.5	.47
23	1.7	2.3	3.8	14	193	45	44	17	2.9	1.4	1.4	.47
24	1.7	2.3	4.0	14	162	49	44	14	2.9	1.3	1.3	.44
25	1.7	2.3	4.3	13	132	55	43	14	2.9	1.2	1.2	.47
26	1.7	2.3	4.5	13	118	58	44	13	2.7	1.2	1.1	.50
27	1.7	2.5	5.1	12	109	58	45	13	2.4	1.1	.95	.47
28	1.7	2.5	5.4	11	100	64	45	13	2.4	1.1	.85	.50
29	1.7	2.5	5.1	10	91	75	46	12	2.4	.95	.80	.47
30	1.7	2.5	4.6	9.1	-----	88	48	12	2.4	.90	.72	.47
31	1.7	-----	4.5	8.6	-----	93	-----	14	-----	.95	.60	-----
TOTAL	69.3	69.1	124.2	328.3	1,960	1,778	1,998	752	158.3	50.10	31.17	13.99
MEAN	2.24	2.30	4.01	10.6	67.6	57.4	66.6	24.3	5.28	1.62	1.01	.47
MAX	8.0	5.4	8.3	46	239	93	109	48	9.8	2.2	1.8	.57
MIN	1.7	1.7	2.4	3.1	11	38	43	12	2.4	.90	.60	.41
AC-FT	137	137	246	651	3,890	3,530	3,960	1,490	314	99	62	28

CAL YR 1967 TOTAL 22,396.6 MEAN 61.4 MAX 484 MIN 1.7 AC-FT 44,420

WTR YR 1968 TOTAL 7,332.46 MEAN 20.0 MAX 239 MIN .41 AC-FT 14,540

Peak discharge (base, 170 cfs, creek only).--Feb. 20 (0500 hrs) 317 cfs (3.65 ft).

Note.--No gage-height record May 8 to June 26.

11-4408.5. PICKET PEN CREEK NEAR KYBURZ, CALIF.

LOCATION.--Lat 38°52'03", long 120°22'22", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.23, T.12 N., R.14 E., on left bank 1 mile upstream from mouth and 7.7 miles northwest of Kyburz.

DRAINAGE AREA.--0.49 sq mi.

RECORDS AVAILABLE.--January 1964 to September 1968.

GAGE.--Graphic water-stage recorder, crest-stage gage, and float-operated recording rain gage. Altitude of gage is 5,060 ft (from topographic map).

EXTREMES.--Maximum discharge during year, 11 cfs Feb. 20 (gage height, 8.52 ft); minimum daily, 0.03 cfs many days.

1964-68: Maximum discharge, 111 cfs Dec. 23, 1964 (gage height, 13.47 ft), from rating curve extended above 37 cfs on basis of computations of flow through culvert at gage heights 10.52, 11.89, 13.09, and 13.47 ft; no flow Sept. 17, 1966.

Flood of Jan. 31, 1963, reached a stage of 10.52 ft (from floodmarks); discharge, 53 cfs, from computation of flow through culvert.

REMARKS.--Records good. No storage or diversion above station. See schematic diagram for South Fork American River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.06	.11	.11	.11	3.8	4.4	.33	.21	.08	.04	.04
2	.14	.06	.08	.11	.08	3.6	3.7	.33	.21	.11	.03	.04
3	.08	.06	.08	.11	.11	3.4	3.3	.29	.21	.11	.04	.04
4	.06	.06	.11	.11	.11	3.4	3.1	.29	.21	.11	.04	.04
5	.06	.06	.17	.11	.08	3.3	3.1	.29	.21	.08	.04	.04
6	.06	.04	.11	.11	.11	3.0	2.8	.29	.21	.08	.04	.03
7	.06	.04	.11	.11	.21	2.7	2.6	.29	.21	.08	.04	.03
8	.06	.04	.11	.11	.21	2.6	2.5	.29	.21	.08	.04	.03
9	.06	.04	.11	.11	.25	2.2	2.4	.29	.17	.06	.04	.03
10	.06	.04	.11	.11	.29	2.0	2.1	.29	.17	.04	.04	.03
11	.06	.04	.11	.11	.33	1.9	2.0	.29	.17	.04	.04	.03
12	.06	.04	.08	.11	.33	1.8	1.8	.29	.17	.04	.04	.03
13	.04	.04	.08	.08	.33	1.8	1.4	.38	.17	.04	.04	.03
14	.04	.06	.11	.11	.33	1.8	1.3	.56	.17	.04	.04	.03
15	.04	.04	.08	.33	.33	1.8	1.3	.56	.17	.04	.04	.03
16	.04	.04	.08	.44	.38	1.5	1.3	.44	.17	.04	.04	.03
17	.04	.04	.08	.50	2.0	1.5	1.2	.33	.14	.06	.04	.03
18	.04	.06	.08	.29	2.2	1.4	1.1	.33	.14	.06	.04	.03
19	.04	.11	.08	.25	2.3	1.2	.98	.33	.14	.04	.08	.03
20	.04	.08	.08	.25	7.7	1.2	.98	.33	.14	.06	.08	.03
21	.04	.08	.08	.25	7.8	1.2	.90	.33	.14	.04	.06	.03
22	.04	.08	.08	.25	6.3	1.3	.90	.33	.14	.06	.06	.03
23	.04	.08	.08	.25	7.8	1.5	.90	.33	.11	.06	.06	.03
24	.04	.11	.11	.25	5.7	1.6	.82	.33	.11	.06	.04	.03
25	.04	.11	.14	.21	5.1	2.0	.75	.33	.11	.06	.04	.03
26	.04	.11	.14	.21	4.8	2.1	.68	.25	.11	.06	.04	.03
27	.04	.11	.13	.21	4.6	2.4	.68	.21	.11	.06	.04	.03
28	.04	.11	.11	.17	4.4	2.7	.56	.21	.11	.06	.04	.03
29	.06	.11	.11	.17	4.1	3.3	.50	.25	.11	.06	.04	.03
30	.06	.11	.11	.33	-----	3.7	.38	.25	.11	.04	.04	.03
31	.06	-----	.11	.17	-----	3.8	-----	.25	-----	.04	.04	-----
TOTAL	1.62	2.06	3.16	6.04	68.39	71.5	50.43	9.89	4.76	1.89	1.37	0.95
MEAN	.052	.069	.10	.19	2.36	2.31	1.68	.32	.16	.061	.044	.032
MAX	.14	.11	.17	.50	7.8	3.8	4.4	.56	.21	.11	.08	.04
MIN	.04	.04	.08	.08	.08	1.2	.38	.21	.11	.04	.03	.03
AC-FT	3.2	4.1	6.3	12	136	142	100	20	9.4	3.8	2.7	1.9
(a)	1.48	1.86	-	-	-	4.19	.41	.65	.22	0	-	-

CAL YR 1967 TOTAL 496.37 MEAN 1.36 MAX 12 MIN .03 AC-FT 985
WTR YR 1968 TOTAL 222.06 MEAN .61 MAX 7.8 MIN .03 AC-FT 441

a Precipitation, in inches (some precipitation falling as snow may not be included).

SACRAMENTO RIVER BASIN

11-4410.01. UNION VALLEY RESERVOIR NEAR RIVERTON, CALIF.

LOCATION.--Lat 38°52'00", long 120°26'25", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.20, T.12 N., R.14 E., in valve control house near left bank at Union Valley Dam on Silver Creek, 0.6 mile upstream from Little Silver Creek, and 6.6 miles north of Riverton.

DRAINAGE AREA.--83.6 sq mi.

RECORDS AVAILABLE.--October 1962 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Sacramento Municipal Utility District).

EXTREMES.--Maximum contents during year, 233,300 acre-ft May 19-21 (elevation, 4,855.9 ft); minimum, 128,500 acre-ft Feb. 2 (elevation, 4,806.4 ft).
1962-68: Maximum contents, 270,400 acre-ft June 10, 1963 (elevation, 4,869.8 ft); minimum since reservoir first filled, 90,900 acre-ft Jan. 27, 1967 (elevation, 4,782.1 ft).

REMARKS.--Reservoir is formed by earthfill dam completed in December 1962. Storage began in May 1962. Usable capacity, 264,000 acre-ft between elevations 4,645.0 (minimum operating level) and 4,870.0 ft (top of radial spillway gates) above mean sea level. Dead storage, 7,000 acre-ft. Reservoir receives water from the South Fork Rubicon River via Robbs Peak powerplant (see sta. no. 11-4298.). Water is used for power development in the South Fork American River basin. Records, including extremes, represent total contents at 2400 hours. See schematic diagram for Middle Fork American and Rubicon River basins, and South Fork American River basin.

COOPERATION.--Thirteen staff gage readings furnished by Sacramento Municipal Utility District.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN THOUSANDS OF ACRE-FEET)

4,700	25.0	4,800	117.0
4,720	35.0	4,820	153.0
4,740	48.0	4,840	196.0
4,760	65.0	4,870	271.0
4,780	88.0		

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	217.8	198.0	153.2	140.8	129.6	165.0	193.1	225.5	232.3	227.1	207.4	189.4
2	218.0	196.4	152.3	140.4	128.5	166.2	194.5	226.8	232.3	226.3	207.0	189.6
3	218.5	194.9	152.3	139.9	129.1	167.3	195.3	228.4	232.3	225.3	206.1	190.3
4	218.5	193.4	151.7	140.2	129.6	168.3	196.4	229.7	232.3	225.5	206.3	190.7
5	218.5	192.0	150.8	140.9	130.0	169.6	197.5	231.0	232.3	225.0	205.5	191.2
6	218.5	190.3	149.8	141.7	130.0	170.4	198.4	231.3	232.3	224.5	204.6	191.8
7	218.8	188.7	148.9	142.6	130.1	171.3	199.3	231.5	232.3	224.5	203.7	192.3
8	219.0	187.2	147.6	141.8	130.3	172.3	200.2	231.5	232.6	223.5	202.8	192.9
9	219.0	185.4	146.3	141.3	130.9	173.0	201.5	231.8	233.1	222.7	201.9	193.4
10	219.0	183.9	146.5	141.1	131.0	173.8	203.0	231.8	232.8	221.9	201.3	193.8
11	219.0	182.4	144.9	140.8	131.4	174.7	204.8	232.0	232.6	221.1	201.5	194.5
12	219.0	180.6	143.5	140.6	131.8	175.3	206.1	232.8	232.3	219.8	200.8	194.7
13	219.0	179.1	142.0	139.7	132.1	176.2	207.4	233.1	232.3	218.8	200.0	194.7
14	218.0	177.5	140.9	140.0	132.5	176.9	208.8	232.8	232.0	218.8	199.1	194.7
15	216.9	176.0	140.4	140.4	132.7	177.5	210.1	232.8	232.3	217.8	198.4	194.7
16	215.6	174.7	140.0	140.4	133.0	178.4	211.4	232.6	232.6	217.1	197.5	194.2
17	214.5	173.4	141.1	139.7	134.3	179.1	212.1	232.6	232.3	216.5	196.7	193.1
18	212.9	172.1	141.1	138.6	135.9	179.5	212.9	232.6	232.0	215.8	196.9	192.3
19	211.4	170.8	140.6	137.7	137.5	179.9	213.6	233.3	232.3	214.9	196.9	191.2
20	209.9	169.6	140.0	136.8	142.9	180.6	214.3	233.3	231.8	214.3	196.4	190.1
21	208.8	168.1	139.7	137.2	146.9	181.0	215.1	233.3	231.8	214.3	195.3	189.0
22	208.7	166.6	139.1	136.6	149.4	181.7	215.8	233.1	231.3	213.6	194.7	188.7
23	207.2	165.2	138.8	135.7	153.4	182.4	216.5	232.8	231.5	212.7	193.8	187.4
24	206.8	163.7	139.7	134.6	156.2	183.0	217.1	232.3	231.3	212.1	192.9	186.3
25	206.1	162.0	140.6	134.1	158.0	184.1	218.5	232.3	231.0	211.4	193.1	185.0
26	205.7	160.4	140.2	133.4	159.5	184.8	219.8	233.1	230.5	210.7	192.0	183.9
27	205.5	158.9	139.7	132.8	161.2	185.4	221.1	232.8	229.7	210.1	191.6	182.8
28	204.1	157.2	139.7	133.0	162.4	186.5	222.4	232.6	228.9	210.1	190.9	181.7
29	202.4	155.9	139.3	132.1	163.9	187.9	224.0	232.3	228.1	209.4	190.3	181.3
30	200.8	154.5	139.1	131.6	-----	189.6	224.8	232.8	227.9	209.0	189.6	180.2
31	199.3	-----	139.9	130.5	-----	191.2	-----	232.6	-----	208.3	189.0	-----
(a)	4,841.5	4,820.7	4,812.7	4,807.5	4,825.2	4,837.8	4,852.6	4,855.6	4,853.8	4,845.6	4,836.8	4,832.8
(b)	18.0	-44.8	-14.6	-9.4	+33.4	+27.3	+33.6	+7.8	-4.7	-19.6	-19.3	-8.8
MAX	219.0	198.0	153.2	142.6	163.9	191.2	224.8	233.3	232.8	227.1	207.4	194.7
MIN	199.3	154.5	138.8	130.5	128.5	165.0	193.1	225.5	227.9	208.3	189.0	180.2
CAL YR 1967	b +30.7		MAX -		MIN -							
WTR YR 1968	b -37.1		MAX 233.3		MIN 128.5							

a Elevation, in feet, at end of month.

b Change in contents, in thousands of acre-feet.

SACRAMENTO RIVER BASIN

965

11-4411. ICE HOUSE RESERVOIR NEAR KYBURZ, CALIF.

LOCATION.--Lat 38°49'26", long 120°21'34", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.1, T.11 N., R.14 E., on left bank at Ice House Dam on South Fork Silver Creek, 0.5 mile upstream from Peavine Creek, and 4.75 miles northwest of Kyburz.

DRAINAGE AREA.--27.2 sq mi.

RECORDS AVAILABLE.--October 1959 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Sacramento Municipal Utility District).

EXTREMES.--Maximum contents during year, 38,900 acre-ft June 9, 10 (elevation, 5,439.5 ft); minimum, 12,800 acre-ft Sept. 29, 30 (elevation, 5,388.2 ft).

1959-68: Maximum contents, 46,200 acre-ft Aug. 15, 1965 (elevation, 5,450.3 ft); minimum since reservoir first filled, 1,740 acre-ft Oct. 5-9, 1962 (elevation, 5,349.85 ft).

REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 15, 1959. Usable capacity, 45,800 acre-ft between elevations 5,327.5 (centerline of fishwater outlet) and 5,450.0 ft (top of spillway gates). Dead storage, 160 acre-ft. Records, including extremes, represent total contents at 2400 hours. See schematic diagram for South Fork American River basin.

REVISIONS (water year).--1967 report: 1960.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

5,349	1,600	5,400	17,600
5,350	1,760	5,420	27,400
5,360	3,840	5,450	46,000
5,380	9,600		

CONTENTS, IN ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35,700	28,500	24,800	21,400	15,000	19,200	23,300	30,700	38,000	34,900	29,800	25,200
2	35,700	28,400	24,800	21,100	14,900	19,400	23,500	31,000	38,200	34,700	29,600	25,000
3	35,800	28,200	24,600	20,800	15,000	19,600	23,600	31,400	38,300	34,600	29,400	24,400
4	35,800	28,000	24,600	20,600	15,000	19,700	23,800	31,800	38,500	34,500	29,300	23,400
5	35,900	28,000	24,500	20,600	15,000	19,800	24,000	32,100	38,500	34,300	29,100	23,100
6	35,900	27,800	24,400	20,600	15,100	20,000	24,200	32,400	38,500	34,100	29,000	21,600
7	35,900	27,700	24,300	20,600	15,100	20,100	24,300	32,700	38,700	33,900	28,800	20,700
8	35,900	27,600	24,200	20,400	15,100	20,300	24,500	33,000	38,800	33,800	28,600	19,800
9	35,900	27,400	24,100	20,200	15,100	20,400	24,800	33,200	38,900	33,600	28,500	18,800
10	35,900	27,300	24,000	19,900	15,100	20,500	25,100	33,500	38,900	33,400	28,300	18,400
11	35,900	27,200	23,900	19,600	15,100	20,600	25,400	33,700	38,700	33,300	28,200	17,000
12	35,900	27,000	23,700	19,400	15,200	20,700	25,700	33,900	38,500	33,000	28,000	16,100
13	35,900	26,900	23,600	19,100	15,200	20,800	26,000	34,000	38,400	32,900	27,800	15,300
14	35,900	26,800	23,400	18,900	15,200	20,900	26,300	34,300	38,300	32,700	27,600	14,500
15	35,900	26,700	23,400	18,700	15,200	21,000	26,600	34,500	38,100	32,500	27,400	13,600
16	35,800	26,600	23,200	18,500	15,300	21,100	26,800	34,800	38,000	32,400	27,300	13,200
17	35,800	26,400	23,100	18,300	15,400	21,200	27,000	35,000	37,800	32,200	27,200	13,200
18	35,800	26,400	23,000	18,100	15,500	21,300	27,200	35,200	37,700	32,100	27,000	13,100
19	35,700	26,200	22,900	17,900	15,600	21,400	27,300	35,400	37,500	31,900	26,900	13,100
20	35,700	26,200	22,800	17,600	16,100	21,500	27,400	35,700	37,200	31,700	26,800	13,100
21	35,700	26,000	22,600	17,400	16,600	21,600	27,600	35,900	37,000	31,500	26,800	13,100
22	35,200	25,900	22,600	17,200	17,000	21,600	27,800	36,100	36,800	31,400	26,600	13,100
23	34,100	25,800	22,500	17,000	17,500	21,800	28,000	36,300	36,600	31,200	26,400	13,000
24	33,000	25,700	22,400	16,700	18,000	21,800	28,200	36,400	36,500	31,000	26,400	13,000
25	31,900	25,600	22,200	16,500	18,200	22,000	28,400	36,600	36,300	30,900	26,200	13,000
26	30,900	25,400	22,100	16,200	18,500	22,000	28,700	36,800	36,100	30,700	26,100	13,000
27	30,000	25,300	22,000	16,000	18,700	22,200	29,100	37,000	35,900	30,600	26,000	12,900
28	29,600	25,200	21,800	15,800	18,900	22,400	29,400	37,300	35,500	30,400	25,800	12,900
29	29,200	25,000	21,800	15,600	19,000	22,600	29,800	37,500	35,400	30,300	25,600	12,800
30	28,800	25,000	21,600	15,400	-----	22,800	30,200	37,700	35,100	30,100	25,400	12,800
31	28,600	-----	21,500	15,200	-----	23,100	-----	37,800	-----	29,900	25,300	-----
(a)	5,422.4	5,415.1	5,408.2	5,394.3	5,403.2	5,411.4	5,425.3	5,437.8	5,433.6	5,424.8	5,415.8	5,388.2
(b)	-7.2	-3.6	-3.5	-6.3	+3.8	+4.1	+7.1	+7.6	-2.7	-5.2	-4.6	-12.5
MAX	35,900	28,500	24,800	21,400	19,000	23,100	30,200	37,800	38,900	34,900	29,800	25,200
MIN	28,600	25,000	21,500	15,200	14,900	19,200	23,300	37,000	35,100	29,900	25,300	12,800
CAL YR 1967		b +5.4			MAX 46,000		MIN 7,660					
WTR YR 1968		b -23.0			MAX 38,900		MIN 12,800					

a Elevation, in feet, at end of month.

b Change in contents, in thousands of acre-feet.

SACRAMENTO RIVER BASIN

11-4415. SOUTH FORK SILVER CREEK NEAR ICE HOUSE, CALIF.

LOCATION.--Lat 38°49'08", long 120°21'51", in NW¼NW¼ sec.12, T.11 N., R.14 E., on right bank 300 ft upstream from Peavine Creek, 0.4 mile downstream from Ice House Dam, and 4.8 miles northwest of Kyburz.

DRAINAGE AREA.--27.5 sq mi.

RECORDS AVAILABLE.--October 1924 to September 1968.

GAGE.--Graphic water-stage recorder and concrete control. Altitude of gage is 5,290 ft (from topographic map). Prior to Oct. 1, 1959, at site 0.3 mile downstream at different datum.

AVERAGE DISCHARGE.--44 years, 73.4 cfs (53,140 acre-ft per year), adjusted for change in contents in Ice House Reservoir.

EXTREMES.--Maximum discharge during year, 592 cfs Oct. 22-24 (gage height, 4.59 ft); minimum daily, 5.1 cfs Mar. 12.

1924-59 (prior to regulation by Ice House Reservoir): Maximum discharge, 3,940 cfs Dec. 23, 1955 (gage height, 6.71 ft, site and datum then in use), from rating curve extended above 540 cfs on basis of slope-area measurement at gage height 6.69 ft; no flow Oct. 31 to Nov. 9, 1958.

1960-68: Maximum discharge, 802 cfs June 11, 1962 (gage height, 4.72 ft); minimum, 0.3 cfs Nov. 3, 1959.

REMARKS.--Records excellent. Flow regulated by Ice House Reservoir beginning in December 1959 (see sta. no. 11-4411.). See schematic diagram for South Fork American River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1	9.1	68	69	67	143	8.2	5.5	7.9	11	132	84	84	
2	9.8	66	69	127	92	8.2	5.3	9.2	11	102	84	84	
3	9.5	66	69	162	7.7	7.9	5.3	9.2	11	87	84	351	
4	9.1	68	71	101	7.4	7.9	5.7	9.2	11	87	83	478	
5	9.1	68	71	7.7	7.4	6.8	6.0	9.2	11	87	83	478	
6	9.1	68	69	7.4	7.4	5.3	6.0	9.2	11	87	83	464	
7	9.1	69	69	7.4	7.4	5.5	5.7	10	11	87	83	458	
8	9.1	71	69	94	7.4	5.5	5.7	11	11	87	83	452	
9	8.8	71	69	150	7.7	5.5	5.7	11	11	87	83	452	
10	8.8	71	69	150	7.7	5.3	5.7	11	79	87	83	458	
11	8.8	71	69	150	7.7	5.3	5.7	11	132	87	83	458	
12	8.8	71	69	148	7.7	5.1	5.5	11	132	86	83	458	
13	8.8	71	69	145	7.7	5.3	5.5	11	132	86	83	458	
14	8.8	71	69	145	7.7	5.3	5.5	11	132	86	83	445	
15	8.8	69	69	148	7.7	5.3	6.0	11	132	86	83	439	
16	9.1	69	69	148	7.9	5.3	6.0	11	132	86	83	210	
17	9.1	71	68	148	9.2	5.3	5.5	11	132	86	83	9.6	
18	9.1	71	68	148	7.9	5.3	5.5	11	132	86	83	10	
19	9.1	71	68	148	8.9	5.3	5.5	11	132	86	83	10	
20	9.1	71	68	148	10	5.3	5.3	11	132	86	83	11	
21	9.1	71	68	148	10	5.5	5.3	11	132	86	81	10	
22	245	71	68	148	9.2	5.5	5.3	11	132	86	81	10	
23	592	71	68	148	9.9	5.5	5.3	11	132	84	81	10	
24	592	71	66	148	8.9	5.5	5.3	11	132	84	81	10	
25	584	71	66	148	8.5	6.0	6.0	11	132	84	81	10	
26	584	71	68	148	8.5	5.5	6.5	11	132	84	83	10	
27	437	69	68	148	8.5	5.5	6.5	11	132	84	84	10	
28	226	69	66	148	8.5	5.5	6.5	11	132	84	84	10	
29	222	69	66	148	8.2	5.3	6.3	11	132	84	84	10	
30	222	69	66	148	-----	5.3	6.0	11	132	84	84	10	
31	126	-----	66	148	-----	5.3	-----	11	-----	84	84	-----	
TOTAL	4,020.1	2,094	2,116	3,977.5	457.7	179.3	171.6	327.9	2,818	2,719	2,571	6,367.6	
MEAN	130	69.8	68.3	128	15.8	5.78	5.72	10.6	93.9	87.7	82.9	212	
MAX	592	71	71	162	143	8.2	6.5	11	132	132	84	478	
MIN	8.8	66	66	7.4	7.4	5.1	5.3	7.9	11	84	81	9.6	
AC-FT	7,970	4,150	4,200	7,890	908	356	340	650	5,590	5,390	5,100	12,630	
Mean a	12.5	9.24	11.4	25.9	81.9	72.5	125	134	48.6	3.09	8.13	2.18	
Ac-ft a	770	550	700	1,590	4,710	4,460	7,440	8,240	2,890	190	500	130	
CAL YR 1967	TOTAL	36,339.9	MEAN	99.6	MAX	654	MIN	3.8	AC-FT	72,080	MEAN a	107	
WTR YR 1968	TOTAL	27,816.7	MEAN	76.0	MAX	592	MIN	5.1	AC-FT	55,170	MEAN a	44.3	
											AC-FT a	77,470	
												AC-FT a	32,180

a Adjusted for change in contents in Ice House Reservoir.

Note.--When inflow from reservoir is small and other quantities are large, discordant figures of net runoff may occur. Data for evaporation from Ice House Reservoir are not available.

11-4419. SILVER CREEK BELOW CAMINO DIVERSION DAM, CALIF.

LOCATION.--Lat 38°49'26", long 120°32'18", on line between secs.4 and 5, T.11 N., R.13 E., on right bank 300 ft downstream from Round Tent Canyon, 0.4 mile downstream from diversion dam, and 5 miles northeast of Pollock Pines.

DRAINAGE AREA.--171 sq mi.

RECORDS AVAILABLE.--October 1960 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 2,754.06 ft above mean sea level (Sacramento Municipal Utility District bench-mark). Prior to Oct. 1, 1962, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--8 years, 142 cfs (102,800 acre-ft per year), unadjusted.

EXTREMES.--Maximum discharge during year, 170 cfs Dec. 4 (gage height, 3.68 ft); minimum daily, 12 cfs Jan. 5-7, Mar. 12, Apr. 14, 18, 19.

1960-68: Maximum discharge, 19,300 cfs Jan. 31, 1963 (gage heights, 11.28 ft in gage well, 11.9 ft from floodmarks), from rating curve extended above 1,400 cfs on basis of slope-area measurement of maximum flow; minimum daily, 4.6 cfs July 1, 1964.

REMARKS.--Records good. Flow regulated by storage, diversions, and powerplants. See schematic diagram for South Fork American River basin. Records not adjusted for diversions or changes in storage.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	31	14	14	17	17	18	18	16	14	18	14
2	27	21	14	14	18	16	17	22	16	15	17	13
3	29	14	14	14	18	15	17	18	16	15	17	14
4	28	14	17	13	20	15	16	18	17	17	19	16
5	29	14	27	12	20	14	15	19	16	15	17	17
6	26	15	22	12	20	13	13	19	16	15	17	17
7	23	14	19	12	21	13	13	18	16	16	18	17
8	24	14	17	13	23	15	14	17	16	15	18	17
9	27	15	15	14	24	14	14	18	14	15	18	16
10	31	15	14	16	21	13	14	18	15	16	18	16
11	31	16	14	15	20	13	14	18	16	15	17	16
12	31	16	13	14	19	12	14	17	16	15	17	15
13	31	16	13	14	17	13	14	19	17	15	18	16
14	24	17	13	15	16	14	12	19	17	16	19	17
15	27	16	14	34	15	14	13	20	16	15	17	17
16	27	16	14	26	15	15	13	20	16	15	17	16
17	27	15	14	22	32	16	13	18	15	15	17	16
18	28	16	15	20	30	14	12	17	16	15	16	16
19	27	19	15	19	32	14	12	17	16	15	17	16
20	30	16	15	18	73	14	13	18	16	16	17	16
21	31	15	14	19	68	15	14	18	17	17	17	16
22	31	15	14	16	51	15	14	19	16	14	17	16
23	30	17	14	17	54	16	13	18	15	16	16	17
24	31	16	14	18	42	16	13	18	15	17	15	16
25	32	17	15	18	32	17	13	18	14	18	15	17
26	32	16	15	18	27	18	14	17	14	17	15	17
27	32	19	15	17	23	18	13	17	14	17	16	17
28	30	14	15	17	20	20	13	17	14	18	15	16
29	31	15	15	16	18	20	13	17	14	17	17	16
30	31	14	16	17	-----	19	15	17	16	17	15	16
31	31	-----	15	17	-----	18	-----	17	-----	17	15	-----
TOTAL	894	488	475	521	806	476	416	561	468	490	522	482
MEAN	28.8	16.3	15.3	16.8	27.8	15.4	13.9	18.1	15.6	15.8	16.8	16.1
MAX	32	31	27	34	73	20	18	22	17	18	19	17
MIN	23	14	13	12	15	12	12	17	14	14	15	13
AC-FT	1,770	968	942	1,030	1,600	944	825	1,110	928	972	1,040	956
CAL YR 1967	TOTAL	36,808.1	MEAN	101	MAX	1,030	MIN	9.5	AC-FT	73,010		
WTR YR 1968	TOTAL	6,599	MEAN	18.0	MAX	73	MIN	12	AC-FT	13,090		

SACRAMENTO RIVER BASIN

11-4435. SOUTH FORK AMERICAN RIVER NEAR CAMINO, CALIF.

LOCATION.--Lat 38°46'20", long 120°42'05", in NE¼SW¼ sec.25, T.11 N., R.11 E., on right bank 500 ft upstream from Iowa Canyon Creek, and 2.8 miles northwest of Camino.

DRAINAGE AREA.--493 sq mi.

RECORDS AVAILABLE.--October 1922 to September 1968. Monthly discharge only for October 1922, published in WSP 1315-A. Records for the river and the 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.

GAGE.--Digital water-stage recorder. Altitude of gage is 1,620 ft (from topographic map). Nov. 1, 1950, to Dec. 5, 1951, staff gage, Dec. 6, 1951, to May 16, 1963, graphic water-stage recorder, and May 17, 1963, to May 27, 1964, digital water-stage recorder at site 100 ft downstream at different datum. May 28, 1964, to Oct. 11, 1966, digital water-stage recorder at site 1,000 ft downstream at datum 11.37 ft lower.

AVERAGE DISCHARGE.--37 years (1922-59, prior to extensive regulation and transbasin diversion in South Fork American River basin), 961 cfs (695,700 acre-ft per year), combined flow of South Fork American River and American River flume.

EXTREMES.--Maximum discharge during year, 1,700 cfs Feb. 21 (gage height, 9.27 ft); minimum daily, 18 cfs many days in March.

1922-68: Maximum discharge, 49,800 cfs Dec. 23, 1955 (gage height, 32.6 ft from floodmarks, site and datum then in use), from rating curve extended above 24,000 cfs on basis of computation of maximum flow over dam; minimum daily, 1.3 cfs Aug. 24, 1931.

REMARKS.--Records good. Flow regulated principally by six reservoirs (total usable capacity, 347,000 acre-ft). Echo Lake conduit (see sta. no. 11-4345.) imports up to 1,900 acre-ft each year from Truckee River basin. Variable amounts of El Dorado Canal water (up to 40 cfs, May to October, and about 7 cfs remainder of the year) diverted for irrigation and domestic use between Pollock Pines and Placerville. Water from Jenkinson Lake in North Fork Consumnes 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 tunnel (see sta. no. 11-4298.). See schematic diagram for South Fork American River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	1,020	999	279	985	25	45	40	61	43	29	27
2	24	1,010	822	665	1,040	25	50	40	61	33	29	27
3	58	1,010	470	807	560	25	47	40	61	33	29	26
4	136	1,070	822	817	320	22	47	39	61	33	29	26
5	125	1,140	1,310	391	396	21	43	38	62	33	29	26
6	146	1,080	1,070	221	316	20	35	38	61	33	29	26
7	149	1,140	1,040	221	205	20	35	38	61	33	29	26
8	155	1,160	1,040	327	160	20	35	49	60	33	29	26
9	157	1,160	1,010	788	30	20	35	55	60	33	29	26
10	160	1,170	508	943	30	19	34	58	61	33	29	26
11	171	1,160	760	825	30	19	34	62	61	33	29	26
12	175	1,180	963	819	29	19	34	62	61	33	28	26
13	179	1,130	906	914	29	18	34	62	61	33	27	26
14	186	1,130	873	425	29	18	34	62	61	33	27	26
15	201	1,110	966	1,150	29	18	34	62	61	34	27	26
16	190	1,100	888	1,440	29	18	34	62	60	34	27	26
17	207	1,090	412	1,180	29	18	35	62	60	34	27	26
18	215	1,130	798	1,070	29	18	36	62	60	34	27	26
19	222	1,190	999	997	29	20	36	62	60	34	27	26
20	227	1,110	1,000	1,040	29	20	35	62	61	34	26	26
21	231	1,050	960	418	1,090	19	35	62	60	34	26	26
22	970	1,020	960	134	948	19	36	62	60	30	26	26
23	1,180	1,010	891	48	1,140	18	36	61	60	29	26	26
24	1,170	1,020	422	408	1,030	18	36	61	60	29	26	27
25	1,050	1,020	252	1,030	355	18	37	61	60	29	27	27
26	1,050	1,030	692	970	269	18	37	61	60	29	27	27
27	951	1,050	785	988	118	18	38	61	60	29	27	27
28	1,040	1,070	685	446	26	18	39	61	59	29	27	28
29	1,130	1,070	785	738	25	19	40	61	59	29	27	28
30	1,060	1,160	870	1,010	-----	20	40	61	59	29	27	28
31	1,040	-----	492	965	-----	20	-----	61	-----	29	27	-----
TOTAL	14,050	32,790	25,450	22,474	9,334	608	1,126	1,728	1,812	1,001	855	792
MEAN	453	1,093	821	725	322	19.6	37.5	55.7	60.4	32.3	27.6	26.4
MAX	1,180	1,190	1,310	1,440	1,140	25	50	62	62	43	29	28
MIN	24	1,010	252	48	25	18	34	38	59	29	26	26
AC-FT	27,870	65,040	50,480	44,580	18,510	1,210	2,230	3,430	3,590	1,990	1,700	1,570

CAL YR 1967 TOTAL 626,956 MEAN 1,718 MAX 6,500 MIN 24 AC-FT 1,244,000
WTR YR 1968 TOTAL 112,020 MEAN 306 MAX 1,440 MIN 18 AC-FT 222,200

SACRAMENTO RIVER BASIN

969

11-4445. SOUTH FORK AMERICAN RIVER NEAR PLACERVILLE, CALIF.

LOCATION.--Lat 38°46'16", long 120°48'55", in SW $\frac{1}{4}$ sec.25, T.11 N., R.10 E., on right bank 700 ft downstream from Chili Bar Dam, 0.5 mile upstream from Big Canyon, and 2.5 miles north of Placerville.

DRAINAGE AREA.--598 sq mi.

RECORDS AVAILABLE.--August 1911 to July 1920, July 1964 to September 1968. Monthly discharge only for some periods published in WSP 1315-A.

GAGE.--Digital water-stage recorder. Datum of gage is 931.05 ft above mean sea level (levels by Pacific Gas and Electric Co.). Aug. 11, 1911, to July 31, 1920, staff gage 0.6 mile downstream at different datum.

EXTREMES.--Maximum discharge during year, 3,800 cfs Feb. 21 (gage height, 7.04 ft); minimum daily, 90 cfs Oct. 2, Feb. 14.

1911-20 (prior to regulation): Maximum discharge observed, 15,000 cfs Jan. 25, 1914 (gage height, 19.00 ft, site and datum then in use), from rating curve extended above 4,000 cfs; minimum daily observed, 50 cfs Aug. 27, 1918.

1964-68: Maximum discharge, 47,300 cfs Dec. 23, 1964 (gage height, 17.4 ft from floodmarks), from rating curve extended above 17,000 cfs on basis of computations of flow over dam of maximum flow; minimum daily, 0.2 cfs Nov. 12, 1964.

REMARKS.--Flow regulated by storage, diversions, and powerplants. See schematic diagram for South Fork American River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	196	1,050	1,400	450	1,170	1,470	1,000	1,370	1,240	1,030	925	336
2	90	1,040	1,050	611	1,280	1,350	1,050	1,380	1,050	1,230	1,140	484
3	230	1,020	681	1,080	864	1,450	1,120	1,370	1,170	895	633	700
4	437	1,060	892	723	539	1,390	1,390	1,380	1,340	307	545	643
5	100	1,130	1,680	631	545	1,410	1,400	1,310	1,330	1,080	823	701
6	101	1,100	1,140	325	541	872	1,010	1,360	1,290	992	1,020	682
7	95	1,140	1,340	325	438	865	574	1,240	1,200	315	989	608
8	304	1,160	1,160	325	805	1,330	1,020	1,190	1,030	855	1,180	328
9	138	1,160	1,150	892	848	1,430	1,230	1,200	855	692	832	569
10	366	1,170	713	1,270	781	1,400	1,390	1,250	1,080	937	1,190	689
11	93	1,160	788	983	633	1,270	950	1,280	1,020	761	832	764
12	91	1,170	1,110	970	730	1,560	1,190	669	1,290	825	1,040	881
13	206	1,150	1,050	1,060	209	533	1,200	1,430	689	691	982	816
14	260	1,160	983	640	90	1,220	1,160	757	982	323	1,270	839
15	248	1,140	1,090	1,220	746	1,230	1,210	1,250	754	757	617	322
16	330	1,120	1,050	1,760	700	1,280	1,060	1,250	666	1,070	928	738
17	325	1,110	964	1,400	1,630	414	1,200	1,250	577	770	1,220	702
18	324	1,150	467	1,250	1,550	1,090	1,060	1,240	1,030	1,090	802	734
19	333	1,400	1,130	1,170	1,520	991	1,030	580	1,080	973	902	681
20	329	1,280	1,180	1,180	2,010	957	1,030	1,240	1,150	910	876	363
21	329	1,200	1,020	894	2,880	823	322	1,260	987	455	890	333
22	481	1,180	1,070	1,400	2,850	989	960	1,220	780	809	930	333
23	1,460	1,170	1,030	973	2,800	989	334	1,380	446	880	1,300	340
24	861	1,170	621	355	2,800	372	389	1,370	924	855	620	348
25	1,070	1,170	414	1,080	1,980	792	529	1,280	987	947	323	505
26	1,070	1,180	671	1,100	1,820	591	520	652	1,350	971	641	363
27	1,000	1,490	1,050	1,120	1,690	722	618	1,260	1,550	901	865	367
28	1,050	905	964	615	1,530	584	368	1,100	1,220	320	879	394
29	1,130	1,220	892	809	1,520	516	370	1,190	548	789	961	340
30	1,100	1,350	1,050	1,380	-----	351	1,060	472	315	940	999	467
31	1,070	-----	656	1,020	-----	557	-----	1,070	-----	629	796	-----
TOTAL	15,217	34,905	30,456	29,011	37,499	30,798	27,744	36,250	29,730	24,999	27,950	16,370
MEAN	491	1,164	982	936	1,293	993	925	1,169	991	806	902	546
MAX	1,460	1,490	1,680	1,760	2,880	1,560	1,400	1,430	1,550	1,230	1,300	881
MIN	90	905	414	325	90	351	322	472	315	307	323	322
AC-FT	30,180	69,230	60,410	57,540	74,380	61,090	55,030	71,900	58,970	49,580	55,440	32,470
CAL YR 1967	TOTAL 681,948		MEAN 1,868		MAX 6,680		MIN 90		AC-FT 1,353,000			
WTR YR 1968	TOTAL 340,929		MEAN 932		MAX 2,880		MIN 90		AC-FT 676,200			

SACRAMENTO RIVER BASIN

11-4455. SOUTH FORK AMERICAN RIVER NEAR LOTUS, CALIF.

LOCATION.--Lat 38°49'05", long 120°56'45", in SW $\frac{1}{4}$ sec.11, T.11 N., R.9 E., on left bank 0.4 mile downstream from Greenwood Creek, 2.4 miles northwest of Lotus, and 3.3 miles northwest of Coloma.

DRAINAGE AREA.--673 sq mi.

RECORDS AVAILABLE.--May 1951 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 635 ft (from topographic map). Prior to June 2, 1966, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--11 years (1952-62, prior to extensive regulation and transbasin diversion), 1,109 cfs (802,900 acre-ft per year). Six years (1963-68), 1,371 cfs (992,600 acre-ft per year).

EXTREMES.--Maximum discharge during year, 4,280 cfs Feb. 21 (gage height, 8.34 ft); minimum daily, 95 cfs Oct. 12.

1951-68: Maximum discharge, 71,800 cfs Dec. 23, 1955 (gage height, 21.37 ft); minimum daily, 50 cfs Oct. 21, 22, 1964.

Maximum stage known since 1862 and prior to beginning of record, 20.4 ft from floodmarks, Nov. 21, 1950 (discharge, 64,500 cfs).

REMARKS.--Records good. Flow regulated by storage, diversions, and powerplants. See schematic diagram for South Fork American River basin. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	192	1,010	1,320	424	1,280	1,480	991	1,310	1,190	862	849	312
2	107	996	1,120	489	1,420	1,360	1,050	1,320	1,000	1,070	944	463
3	236	981	752	1,080	960	1,450	1,110	1,310	1,070	978	543	664
4	415	998	811	709	623	1,390	1,370	1,330	1,320	405	756	596
5	119	1,080	1,760	716	537	1,400	1,380	1,260	1,260	878	714	664
6	106	1,060	1,150	309	567	980	1,010	1,290	1,290	911	938	648
7	105	1,080	1,520	305	503	724	589	1,240	1,150	469	983	590
8	284	1,100	1,120	305	652	1,520	983	1,090	1,020	797	936	311
9	133	1,100	1,130	750	860	1,360	1,140	1,160	621	645	1,030	516
10	346	1,110	822	1,370	885	1,410	1,390	1,210	1,050	888	849	655
11	112	1,110	634	1,050	537	1,310	929	1,230	1,020	706	1,070	646
12	95	1,120	1,110	1,020	946	1,020	1,160	661	1,140	828	970	859
13	194	1,110	1,060	1,050	232	621	1,170	1,380	728	630	965	772
14	244	1,110	971	759	121	1,260	1,130	741	944	334	1,010	796
15	169	1,090	1,060	1,470	543	1,310	1,160	1,220	774	708	859	423
16	310	1,070	1,060	1,950	694	1,430	1,030	1,220	532	803	888	676
17	306	1,050	1,090	1,460	1,700	811	1,130	1,210	666	786	963	652
18	300	1,090	323	1,270	1,650	1,070	1,040	1,200	870	1,130	851	683
19	312	1,380	1,130	1,170	1,760	1,060	1,100	639	1,010	906	990	643
20	311	1,260	1,130	1,170	2,850	1,010	1,030	1,120	1,140	920	858	452
21	308	1,180	1,060	927	3,400	884	473	1,220	928	489	860	339
22	314	1,130	1,050	1,320	3,160	946	731	1,180	829	672	880	312
23	1,360	1,120	1,020	1,130	2,960	1,030	509	1,340	491	871	1,030	364
24	845	1,110	731	348	2,990	583	316	1,330	890	824	844	352
25	1,040	1,120	383	912	2,050	673	386	1,230	874	798	307	468
26	1,030	1,130	541	1,080	1,840	570	519	630	1,150	915	553	330
27	946	1,360	1,020	1,100	1,740	736	522	1,220	1,420	897	872	331
28	1,010	954	981	755	1,600	626	516	1,060	1,410	318	817	348
29	1,090	1,180	848	649	1,530	621	293	1,150	602	692	909	336
30	1,070	1,360	1,020	1,640	-----	399	894	571	305	829	967	408
31	1,020	-----	716	1,280	-----	359	-----	913	-----	827	805	-----
TOTAL	14,429	33,549	30,443	29,967	40,590	31,403	27,051	34,985	28,694	23,786	26,810	15,609
MEAN	465	1,118	982	967	1,400	1,013	902	1,129	956	767	865	520
MAX	1,360	1,380	1,760	1,950	3,400	1,520	1,390	1,380	1,420	1,130	1,070	859
MIN	95	954	323	305	121	359	293	571	305	318	307	311
AC-FT	28,620	66,540	60,380	59,440	80,510	62,290	53,650	69,390	56,910	47,180	53,180	30,960
CAL YR 1967	TOTAL 709,779		MEAN 1,945		MAX 7,550		MIN 94		AC-FT 1,408,000			
WTR YR 1968	TOTAL 337,316		MEAN 922		MAX 3,400		MIN 95		AC-FT 669,100			

11-4462. FOLSOM LAKE NEAR FOLSOM, CALIF.

LOCATION.--Lat 38°42'29", long 121°09'22", in NW¼NE¼ sec.24, T.10 N., R.7 E., near center of dam on American River 0.7 mile downstream from South Fork American River and 2.3 miles northeast of Folsom.

DRAINAGE AREA.--1,861 sq mi.

RECORDS AVAILABLE.--February 1955 to September 1968. Prior to October 1959, published as Folsom Reservoir near Folsom.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

EXTREMES.--Maximum contents during year, 795,500 acre-ft Oct. 1 (elevation, 446.22 ft); minimum, 537,600 acre-ft Aug. 19 (elevation, 418.75 ft).

1955-68: Maximum contents, 1,024,400 acre-ft June 15, 1963 (elevation, 467.23 ft); minimum since storage pool first filled, 261,500 acre-ft Jan. 7, 1960 (elevation, 378.23 ft).

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 (invert of lower tier of river outlets) and 466.0 ft (gross pool elevation), all of which is available for release. Spillway design flood pool elevation, 475.4 ft (capacity, 1,120,200 acre-ft). Records, including extremes, represent usable contents at 2400 hours. See schematic diagram for South Fork American River basin.

COOPERATION.--Records furnished by Bureau of Reclamation.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

370	222,300	420	548,300
380	270,700	440	732,900
390	327,800	460	942,600
400	393,300	480	1,176,000

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	795.5	731.6	659.7	551.6	599.7	719.5	654.5	687.0	774.1	691.0	553.7	545.3
2	792.9	728.8	658.9	548.7	602.3	713.4	657.0	689.7	775.1	686.3	553.0	544.1
3	792.4	727.3	657.5	547.8	606.9	706.8	658.7	692.3	776.2	681.1	551.0	543.7
4	792.2	724.3	656.8	546.3	608.8	700.0	660.9	696.3	777.2	674.3	548.7	544.0
5	791.5	721.1	660.3	544.9	610.6	693.7	663.2	698.8	777.4	666.7	546.1	544.4
6	790.3	718.1	659.1	543.7	612.7	686.0	664.5	701.8	778.5	660.3	545.6	545.7
7	788.8	716.9	658.2	541.8	614.7	678.1	664.5	704.8	777.2	652.2	544.6	545.9
8	786.5	715.1	655.8	539.8	616.2	672.7	665.1	707.6	775.8	645.0	543.2	545.4
9	783.6	713.8	652.5	539.5	618.3	667.7	666.5	710.6	773.1	640.6	542.7	544.3
10	782.7	712.5	648.6	542.6	620.9	662.4	668.9	713.7	771.0	635.2	541.7	545.1
11	780.5	710.5	643.8	544.9	621.6	657.2	670.8	716.4	769.4	630.8	541.1	546.0
12	778.1	708.1	640.1	546.2	623.9	652.2	673.3	717.5	767.6	626.0	540.0	547.7
13	775.6	706.4	635.7	546.7	624.2	647.4	675.5	720.8	765.5	620.5	539.1	548.8
14	772.2	704.1	630.8	546.7	624.5	645.6	677.0	723.2	764.6	614.2	539.0	550.1
15	768.0	701.7	626.5	555.8	625.0	644.4	678.8	726.3	763.0	608.8	538.8	549.6
16	764.2	698.1	621.4	566.7	626.2	644.8	681.2	729.6	759.0	604.8	538.6	549.2
17	761.3	692.5	615.9	571.6	632.8	646.4	683.3	733.0	755.3	601.0	538.6	550.4
18	757.9	686.8	608.8	574.5	643.3	647.8	685.0	736.3	751.3	598.3	537.8	551.6
19	753.7	682.4	603.9	576.6	652.7	648.0	687.0	738.0	748.3	596.4	537.6	552.5
20	748.9	679.0	599.0	578.1	685.1	648.2	687.9	740.5	745.8	593.1	538.6	553.5
21	745.2	676.2	594.3	578.5	710.0	647.9	686.9	744.5	741.4	589.7	540.0	553.5
22	741.3	673.6	590.4	579.7	721.1	647.4	686.2	747.9	736.9	586.2	541.0	552.2
23	739.4	670.5	586.8	581.3	732.2	647.8	686.1	751.3	731.5	583.2	541.7	551.5
24	739.2	667.2	581.7	581.3	740.7	647.0	684.8	754.6	726.8	580.5	542.4	552.3
25	739.0	665.4	576.3	582.1	740.8	646.5	684.0	757.9	722.8	577.7	542.1	551.9
26	739.0	663.7	570.8	582.7	737.9	647.4	683.7	759.2	718.8	573.9	541.4	552.4
27	738.3	662.6	567.1	584.1	734.3	648.3	683.5	761.9	715.3	570.0	542.6	552.8
28	738.0	661.1	563.8	584.6	729.8	649.0	683.5	764.6	710.7	565.3	543.7	552.7
29	737.7	660.0	559.7	584.4	724.5	650.0	682.6	768.0	704.3	561.0	544.9	552.0
30	735.9	660.0	556.7	591.2	-----	651.0	684.3	770.3	696.8	558.0	546.0	551.4
31	734.1	-----	554.1	596.4	-----	651.9	-----	772.4	-----	555.5	546.6	-----
(a)	440.12	432.44	420.68	425.51	439.15	431.57	435.00	443.95	436.30	420.84	419.81	420.37
(b)	-64.5	-74.1	-105.9	+42.3	+128.1	-72.6	+32.4	+88.1	-75.6	-141.3	-8.9	+4.8
(c)	3,380	1,310	480	620	800	2,050	3,900	4,870	6,690	6,780	4,920	4,380
MAX	795.5	731.6	660.3	596.4	740.8	719.5	687.9	772.4	778.5	691.0	553.7	553.5
MIN	734.1	660.0	554.1	539.5	599.7	644.4	654.5	687.0	696.8	555.5	537.6	543.7
CAL YR 1967	b		-7.9	MAX		1,002.6	MIN		554.1			
WTR YR 1968	b		-247.2	MAX		795.5	MIN		537.6			

a Elevation, in feet, at end of month.

b Change in contents, in thousands of acre-feet.

c Evaporation, in acre-feet.

SACRAMENTO RIVER BASIN

11-4465. AMERICAN RIVER AT FAIR OAKS, CALIF.

LOCATION.--Lat 38°38'08", long 121°13'36", in SE¼NE¼ sec.17, T.9 N., R.7 E., on right bank 2,100 ft downstream from Nimbus Dam, 2.4 miles east of Fair Oaks, 8.1 miles downstream from South Fork, and at mile 22.2.

DRAINAGE AREA.--1,888 sq mi.

RECORDS AVAILABLE.--November 1904 to September 1968. Monthly discharge only for some periods published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is 77.53 ft above mean sea level. Prior to Nov. 7, 1930, staff gages or water-stage recorders at several sites 2.25 miles downstream all at datum 11.74 ft lower. Nov. 7, 1930, to Dec. 31, 1957, at site 2.2 miles downstream at datum 12.74 ft lower.

AVERAGE DISCHARGE.--64 years, 3,721 cfs (2,694,000 acre-ft per year), adjusted for change in contents, diversions, and evaporation from Folsom Lake since 1955.

EXTREMES.--Maximum discharge during year, 8,350 cfs Mar. 8 (gage height, 4.20 ft); minimum daily, 932 cfs on many days in May and September.

1904-52 (prior to regulation by Folsom Lake): Maximum discharge, 180,000 cfs Nov. 21, 1950 (gage height, 31.85 ft, site and datum then in use); minimum, 3.6 cfs Aug. 16, 1924.

1953-68: Maximum discharge, 115,000 cfs Dec. 23-25, 1964 (gage height, 21.65 ft); minimum, 86 cfs Apr. 7, 1955.

REMARKS.--Records excellent. Flow regulated by Folsom Lake beginning Feb. 25, 1955 (see sta. no. 11-4462.). 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 powerplant. Many diversions above station for irrigation, municipal, and domestic water supply. Diversions of San Juan Suburban Water District, Cordova Water Service, city of Folsom, and State of California are made at Folsom Dam. Some inflow from Bear and Yuba River basins. Records of water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CURIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,040	2,910	3,370	2,550	2,100	7,720	2,990	2,020	1,460	4,150	1,970	946
2	2,060	2,910	3,290	2,570	2,100	7,690	3,070	2,020	1,480	4,020	1,820	932
3	2,060	2,910	3,470	2,670	2,120	7,570	3,050	2,000	1,500	4,180	1,900	932
4	2,040	2,930	3,510	2,590	2,140	7,810	3,030	1,540	1,980	4,650	2,040	946
5	2,060	2,930	3,370	2,590	2,140	7,690	2,890	1,540	2,000	4,680	2,000	946
6	2,060	2,910	3,920	2,080	2,150	7,810	2,870	1,540	2,050	4,680	1,640	932
7	2,080	2,930	4,720	2,060	2,150	7,360	2,870	1,540	2,750	4,680	1,640	932
8	2,080	2,890	4,680	2,080	2,150	7,240	2,850	1,400	2,690	4,280	1,620	932
9	2,080	2,870	4,700	2,060	2,140	6,520	2,770	1,300	2,710	3,570	1,620	946
10	2,100	2,870	4,720	2,060	2,100	5,980	2,770	1,180	2,710	3,530	1,540	960
11	2,610	2,910	4,680	2,060	2,140	6,010	2,770	1,160	2,730	3,550	1,520	960
12	2,590	2,890	4,720	2,080	2,140	5,620	2,690	1,160	2,610	3,530	1,520	946
13	2,590	2,870	4,680	2,090	2,140	5,530	2,730	1,160	2,490	3,510	1,540	960
14	2,590	2,930	4,680	2,090	2,120	5,100	2,750	1,140	2,470	3,510	1,420	960
15	2,570	3,000	4,700	2,090	2,120	5,050	2,690	1,070	2,550	3,390	1,310	946
16	2,590	3,550	4,700	2,090	2,120	4,680	2,510	1,060	3,030	2,970	1,300	946
17	2,630	3,550	4,680	2,090	2,150	4,080	2,490	932	3,090	2,630	1,300	932
18	2,790	4,500	4,650	2,090	2,200	3,590	2,490	932	3,410	2,450	1,280	932
19	2,790	4,510	4,580	2,090	2,470	3,550	2,490	932	3,270	2,470	1,250	932
20	2,610	3,870	4,620	2,090	3,310	3,530	2,490	932	3,310	2,470	1,070	946
21	2,490	3,500	4,750	2,090	4,900	3,550	2,490	932	3,430	2,490	946	960
22	2,490	3,500	4,300	2,100	7,900	3,510	2,490	932	3,710	2,450	946	946
23	2,400	3,500	4,020	2,100	7,780	3,010	2,490	946	3,730	2,510	946	932
24	2,400	3,500	4,020	2,090	7,960	3,010	2,470	960	3,550	2,490	946	946
25	2,400	3,500	3,950	2,080	8,230	3,010	2,470	960	3,310	2,510	946	946
26	2,400	3,500	4,000	2,090	8,230	2,990	2,470	960	3,750	2,810	946	932
27	2,400	3,500	4,000	2,080	8,080	3,030	2,470	960	3,770	2,850	960	932
28	2,400	3,500	4,050	2,080	8,110	3,030	2,450	960	4,100	2,830	960	932
29	2,400	3,500	4,180	2,080	7,990	3,030	2,390	960	4,100	2,790	960	946
30	2,400	3,500	3,650	2,100	-----	3,010	2,020	960	4,020	2,380	960	960
31	2,330	-----	3,110	2,100	-----	3,030	-----	1,000	-----	2,090	960	-----
TOTAL	73,530	98,640	130,470	67,160	113,380	154,340	79,470	37,088	87,760	101,100	41,776	28,296
MEAN	2,372	3,288	4,209	2,166	3,910	4,979	2,649	1,196	2,925	3,261	1,348	943
MAX	2,790	4,510	4,750	2,670	8,230	7,810	3,070	2,020	4,100	4,680	2,040	960
MIN	2,040	2,870	3,110	2,060	2,100	2,990	2,020	932	1,460	2,090	946	932
AC-FT	145,800	195,600	258,800	133,200	224,900	306,100	157,600	73,560	174,100	200,500	82,860	56,120
Mean a	1,465	2,131	2,532	2,903	6,193	3,875	3,333	2,815	1,889	1,199	1,399	1,210
Ac-ft a	90,060	126,800	155,700	178,500	356,200	238,300	198,300	173,100	112,400	73,710	86,000	72,010
(b)	5,380	4,010	2,310	2,400	2,430	2,730	4,390	6,600	7,230	7,730	7,120	6,710

CAL YR 1967 TOTAL 1,959,830 MEAN 5,369 MAX 35,900 MIN 1,460 AC-FT 3,887,000 MEAN a 5,492 AC-FT a 3,976,000
WTR YR 1968 TOTAL 1,013,010 MEAN 2,768 MAX 8,230 MIN 932 AC-FT 2,009,000 MEAN a 2,564 AC-FT a 1,861,000

a Adjusted for change in contents, diversions, and evaporation from Folsom Lake.

b Diversion, in acre-feet, to Cordova Water Service and city of Folsom (formerly published as Natomas Water Co.), San Juan Suburban Water District, and to State of California; furnished by Bureau of Reclamation.

SACRAMENTO RIVER BASIN

973

11-4473.6. ARCADE CREEK NEAR DEL PASO HEIGHTS, CALIF.

LOCATION.--Lat 38°38'28", long 121°22'38", in Del Paso Grant, on right bank 1,200 ft upstream from bridge on Interstate Highway 80 and 1.6 miles east of city limits of Del Paso Heights.

DRAINAGE AREA.--31.5 sq mi.

RECORDS AVAILABLE.--July 1963 to September 1968.

GAGE.--Graphic water-stage recorder and concrete low water control. Datum of gage is 47.98 ft above mean sea level (levels by County of Sacramento). Prior to Mar. 13, 1967, digital water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--5 years, 13.4 cfs (9,700 acre-ft per year).

EXTREMES.--Maximum discharge during year, 568 cfs Feb. 20 (gage height, 9.54 ft); minimum daily, 0.03 cfs Nov. 24, 26.

1963-68: Maximum discharge, 2,000 cfs Jan. 21, 1967 (gage height, 14.42 ft); no flow for several days in 1963-66.

REMARKS.--Records fair. Low summer flow sustained by residential and industrial waste water.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	.38	16	.61	8.4	1.2	16	2.3	2.7	3.1	2.7	2.2
2	1.8	.43	2.7	.48	9.5	1.1	6.7	2.5	3.3	3.1	2.9	2.2
3	10	.54	1.8	.90	5.6	.99	1.3	2.9	3.1	3.1	2.5	2.2
4	2.0	.43	23	4.2	2.5	.99	.89	2.2	2.9	4.1	3.1	1.8
5	1.8	.33	42	3.4	2.0	1.1	.61	2.3	2.3	3.9	4.1	2.0
6	1.1	.38	6.9	.33	1.3	.89	.70	2.7	2.5	4.4	2.7	2.2
7	.48	.28	24	.48	1.1	12	.70	2.3	4.1	4.1	2.7	1.8
8	.33	.38	10	.54	1.1	95	.70	1.6	3.3	3.1	2.7	2.2
9	.43	.16	2.0	4.0	.89	12	.79	3.1	2.7	3.1	2.7	1.8
10	.70	.13	1.1	106	.79	3.9	1.3	2.7	2.9	3.5	2.7	1.3
11	.70	.16	.61	19	.79	2.3	1.3	2.9	2.5	3.3	2.7	1.2
12	.48	.16	.38	3.9	.70	9.5	1.3	2.7	2.5	3.3	2.3	1.8
13	.38	.16	.23	1.8	.70	134	1.1	6.6	2.9	2.9	1.8	1.8
14	.43	14	.16	13	.48	80	1.3	12	3.3	2.9	1.3	.99
15	.13	3.1	.10	130	.43	24	1.3	2.5	3.7	2.9	2.0	.89
16	.54	.79	.10	22	15	76	.99	1.6	3.7	3.3	2.7	.70
17	.61	.43	.16	5.1	59	24	.89	2.3	3.5	3.5	2.0	.48
18	.61	.38	7.9	2.3	16	6.2	.89	2.5	3.9	3.9	2.0	.89
19	.54	16	2.7	1.8	41	3.9	1.1	3.1	3.9	3.7	3.5	.61
20	.70	2.5	1.1	1.1	289	2.5	1.3	2.7	3.9	3.7	4.4	.48
21	.61	.70	.70	.99	157	1.6	1.2	2.3	3.7	3.1	1.3	.43
22	.43	.16	.61	.79	20	1.2	1.2	2.2	3.3	2.9	.89	.43
23	.61	.04	.43	.79	22	1.1	1.6	2.3	3.5	3.1	1.2	.61
24	.54	.03	.48	.54	11	.89	1.5	2.5	3.3	2.9	1.8	.61
25	.54	.04	.33	.43	4.6	.99	1.8	2.3	3.3	3.1	2.2	.61
26	.61	.03	.38	.38	3.1	.99	1.8	2.7	3.3	3.5	1.3	1.3
27	.61	1.5	.38	.33	2.3	.79	1.6	3.1	3.1	3.1	1.6	1.3
28	.54	10	.38	.23	1.6	.79	2.7	3.1	3.3	2.9	1.6	2.0
29	.48	16	.28	.23	1.3	1.1	4.4	3.3	2.5	2.3	2.2	3.3
30	.38	42	.19	199	-----	1.3	2.9	3.1	1.5	2.7	2.5	2.0
31	.38	-----	.38	68	-----	1.2	-----	3.3	-----	2.5	2.5	-----
TOTAL	30.69	111.62	147.48	592.65	679.18	503.52	61.86	93.7	94.4	101.0	72.59	42.13
MEAN	.99	3.72	4.76	19.1	23.4	16.2	2.06	3.02	3.15	3.26	2.34	1.40
MAX	10	42	42	199	289	134	16	12	4.1	4.4	4.4	3.3
MIN	.13	.03	.10	.23	.43	.79	.61	1.6	1.5	2.3	.89	.43
AC-FT	61	221	293	1,180	1,350	999	123	186	187	200	144	84
CAL YR 1967	TOTAL 6,787.29		MEAN 18.6		MAX 1,020		MIN .03		AC-FT 13,460			
WTR YR 1968	TOTAL 2,530.82		MEAN 6.91		MAX 289		MIN .03		AC-FT 5,020			

PEAK DISCHARGE (BASE, 250 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-30	1730	7.84	319	02-21	0630	7.77	312
02-20	0330	9.54	568				

SACRAMENTO RIVER BASIN

11-4475. SACRAMENTO RIVER AT SACRAMENTO, CALIF.
(International hydrological decade station)

LOCATION.--Lat 38°35'20", long 121°30'15", on left bank 1,000 ft upstream from I Street Bridge, in city of Sacramento, and 0.5 mile downstream from American River.

DRAINAGE AREA.--23,530 sq mi.

RECORDS AVAILABLE.--January 1904 to July 1905 (gage heights only), June to November 1921, October 1948 to September 1968. Gage heights collected in this vicinity November 1879 to May 1888, December 1890 to September 1963 are contained in reports of U.S. Weather Bureau.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level. Prior to Oct. 15, 1912, staff gage in vicinity of I Street Bridge. Oct. 15, 1912, to Nov. 16, 1956, water-stage recorder at various sites in vicinity of I Street Bridge. Prior to Nov. 16, 1956, datum of gages at low-water mark of Oct. 23, 1856, 0.12 ft above mean sea level, and 3.10 ft above datum of Corps of Engineers. Auxiliary water-stage recorder on right bank 10.8 miles downstream, near Freepoint.

AVERAGE DISCHARGE.--20 years (1948-68), 22,950 cfs (16,620,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 66,800 cfs Feb. 29 (elevation, 20.80 ft); minimum daily, 9,780 cfs Jan. 3; minimum elevation, 2.08 ft June 3.

1948-68: Maximum discharge, 104,000 cfs Nov. 21, 1950 (elevation, 30.14 ft, site and datum then in use); minimum daily, 5,590 cfs July 20, 1949.

Maximum discharge known prior to Nov. 21, 1950, 103,000 cfs Jan. 17, 1909 (elevation, 29.6 ft, present datum), from reports of California Department of Water Resources.

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation, and return flow from irrigated areas. A portion of the flow bypasses station during flood periods through Yolo bypass (see sta. no 11-4530.). Records of chemical analyses, water temperatures, and suspended-sediment loads at or near this gaging station for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Records collected and prepared in cooperation with the California Department of Water Resources.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15,900	15,900	14,900	14,800	37,500	65,800	21,000	10,200	10,300	12,100	12,900	11,400
2	15,200	16,900	14,900	14,500	36,100	64,800	21,100	10,500	10,000	12,300	12,900	11,300
3	15,100	17,100	15,400	14,600	33,400	62,900	21,600	10,900	9,780	12,100	12,800	11,000
4	17,400	16,800	15,800	14,300	34,200	60,500	21,200	11,700	10,500	12,300	13,200	11,400
5	17,800	16,000	18,300	14,100	34,900	56,700	20,000	12,800	10,600	12,600	13,200	11,400
6	17,700	15,200	19,600	13,800	32,400	55,300	19,200	13,800	10,500	12,800	12,800	11,900
7	17,400	14,600	21,200	13,500	30,400	44,800	18,500	14,100	11,900	13,400	12,800	12,300
8	17,200	14,700	20,900	13,200	28,300	40,400	18,000	13,600	12,700	13,100	12,900	12,900
9	16,800	14,500	21,100	13,100	26,900	36,900	16,900	13,500	13,100	12,500	12,700	13,300
10	17,200	13,600	20,900	13,700	24,800	34,000	15,800	13,400	13,200	12,500	12,800	13,900
11	16,500	13,400	19,700	15,500	24,800	32,100	15,500	13,000	12,900	12,500	12,900	14,300
12	16,600	13,200	18,300	24,000	24,400	30,000	15,000	13,300	12,700	12,500	13,100	14,600
13	15,900	13,200	17,600	23,700	23,500	29,400	15,000	13,700	11,900	12,500	12,800	15,000
14	15,400	13,600	17,200	20,000	23,900	31,500	14,800	14,500	11,100	12,800	12,900	14,900
15	15,800	14,100	16,900	19,100	23,900	34,100	14,100	15,800	11,000	13,100	12,700	15,000
16	16,000	13,900	16,900	28,400	22,000	34,200	13,200	15,500	10,900	12,900	13,000	14,600
17	16,000	14,700	16,800	33,800	21,800	34,900	12,400	14,700	11,000	12,500	12,900	14,400
18	16,000	14,900	16,700	34,700	25,200	36,800	11,600	14,100	11,200	12,200	13,100	14,200
19	15,900	15,100	16,800	33,400	34,200	36,100	10,900	14,100	10,900	12,000	13,100	13,800
20	15,800	14,900	17,000	29,800	40,200	33,300	10,300	14,000	10,700	12,100	12,600	13,300
21	15,700	14,100	17,000	26,600	51,100	29,800	10,200	14,100	10,900	12,100	12,800	13,200
22	15,600	14,100	16,600	25,000	59,700	27,300	10,400	13,600	11,200	12,200	13,500	13,300
23	15,200	14,100	16,100	23,000	63,300	25,700	10,600	14,100	11,600	12,500	14,800	13,300
24	15,600	14,000	16,000	19,900	65,000	24,500	10,600	14,200	11,500	12,500	14,700	13,100
25	15,700	14,000	15,700	18,600	66,200	23,800	10,500	14,200	11,200	12,400	13,900	13,000
26	15,900	14,200	15,600	17,900	66,100	23,300	10,600	13,800	11,400	12,600	13,400	12,700
27	16,100	14,000	15,800	17,200	66,200	22,700	11,300	13,600	11,100	12,900	13,100	12,600
28	16,300	14,000	15,900	16,600	66,600	22,000	11,500	13,100	11,500	13,200	12,800	12,500
29	16,100	14,400	15,800	16,700	66,600	21,100	11,000	12,500	11,400	13,400	12,600	12,500
30	15,600	14,600	15,600	19,000	-----	20,800	10,300	11,500	11,900	13,000	11,800	12,500
31	15,400	-----	15,500	32,300	-----	21,000	-----	10,900	-----	12,800	11,600	-----
TOTAL	500,800	437,800	532,500	634,800	1,153,6M	1,116,5M	433,100	412,800	340,580	390,400	403,100	393,600
MEAN	16,150	14,590	17,180	20,480	39,780	36,020	14,440	13,320	11,350	12,590	13,000	13,120
MAX	17,800	17,100	21,200	34,700	66,600	65,800	21,600	15,800	13,200	13,400	14,800	15,000
MIN	15,100	13,200	14,900	13,100	21,800	20,800	10,200	10,200	9,780	12,000	11,600	11,000
AC-FT	993,300	868,400	1,056M	1,259M	2,288M	2,215M	859,000	818,800	675,500	774,300	799,500	780,700

CAL YR 1967 TOTAL 11,374,000 MEAN 31,160 MAX 90,700 MIN 13,200 AC-FT 22,560,000
WTR YR 1968 TOTAL 6,749,580 MEAN 18,440 MAX 66,600 MIN 9,780 AC-FT 13,390,000

SACRAMENTO RIVER BASIN

975

11-4485. ADOBE CREEK NEAR KELSEYVILLE, CALIF.

LOCATION.--Lat 38°55'40", long 122°52'45", in SE $\frac{1}{4}$ sec.5, T.12 N., R.9 W., on left bank 2.5 miles upstream from Highland Creek, and 4.2 miles south of Kelseyville.

DRAINAGE AREA.--8.36 sq mi.

RECORDS AVAILABLE.--October 1954 to September 1968.

GAGE.--Digital water-stage recorder and concrete control. Datum of gage is 1,476.06 ft (revised) above mean sea level, datum of 1929, supplementary adjustment of 1960. Prior to Aug. 18, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--14 years, 11.8 cfs (8,540 acre-ft per year); median of yearly mean discharges, 9.6 cfs (7,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,120 cfs Jan. 29 (gage height, 8.24 ft); no flow for several months. 1954-68: Maximum discharge, 1,500 cfs Dec. 22, 1964 (gage height, 9.11 ft); maximum gage height, 9.22 ft Jan. 31, 1963; no flow at times in each year.

REMARKS.--Records good above 10 cfs and fair below. Some regulation and diversions above station for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	1.7	1.4	37	8.1	5.7	.41				
2		0	1.4	1.4	69	6.8	2.4	.40				
3		0	69	1.4	44	6.1	1.6	.39				
4		0	45	1.3	32	5.7	1.5	.39				
5		0	32	1.3	24	5.7	1.4	.38				
6		0	7.5	1.3	18	5.3	1.3	.38				
7		0	49	1.3	14	5.7	1.2	.37				
8		0	9.5	1.4	12	5.3	1.1	.36				
9		0	4.6	1.6	11	4.6	1.1	.36				
10		0	3.2	1.63	9.5	4.2	1.0	.36				
11		0	2.4	21	8.1	3.9	.98	.36				
12		0	1.8	11	6.8	50	.96	.37				
13		0	1.6	12	6.4	43	.92	.44				
14		5.3	2.7	182	5.7	51	.88	.42				
15		.56	1.5	115	5.3	37	.86	.38				
16		.23	1.5	47	12	119	.84	.36				
17		.20	4.6	24	30	56	.80	.33				
18		.20	31	15	18	37	.78	.32				
19		.20	9.5	11	84	25	.74	.33				
20		.16	5.0	8.1	80	18	.71	.35				
21		.12	3.5	6.1	87	13	.67	.34				
22		0	2.7	5.0	48	11	.65	.34				
23		0	2.2	4.2	31	8.8	.60	.32				
24		.04	2.0	3.9	22	6.1	.58	.32				
25		.11	2.0	3.5	18	5.3	.56	.32				
26		.02	1.8	3.2	14	4.2	.52	.28				
27		.12	1.6	2.9	11	3.2	.48	.25				
28		.19	1.5	21	10	2.7	.46	.19				
29		5.3	1.5	639	8.8	2.2	.44	0				
30		3.9	1.5	171	-----	1.8	.40	0				
31		-----	1.4	61	-----	1.6	-----	0	-----			-----
TOTAL	0	16.65	306.2	1,556.7	776.6	557.3	32.13	9.82	0	0	0	0
MEAN	0	.56	9.88	50.2	26.8	18.0	1.07	.32	0	0	0	0
MAX	0	5.3	69	639	87	119	5.7	.44	0	0	0	0
MIN	0	0	1.4	1.3	5.3	1.6	.40	0	0	0	0	0
AC-FT	0	33	607	3,090	1,540	1,110	64	19	0	0	0	0
CAL YR 1967	TOTAL	4,807.68	MEAN	13.2	MAX	610	MIN	0	AC-FT	9,540		
WTR YR 1968	TOTAL	3,255.40	MEAN	8.89	MAX	639	MIN	0	AC-FT	6,460		

PEAK DISCHARGE (BASE, 400 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-10	0215	7.15	688	01-29	1645	8.24	1,120
01-14	1530	6.35	425				

SACRAMENTO RIVER BASIN

11-4489. HIGHLAND CREEK ABOVE HIGHLAND CREEK DAM, CALIF.

LOCATION.--Lat 38°55'45", long 122°55'10", in NW¼SE¼ sec.36, T.13 N., R.10 W., on left bank 100 ft downstream from Pipeline Creek, 1.7 miles upstream from Highland Creek Dam, and 5.7 miles southwest of Kelseyville.

DRAINAGE AREA.--11.9 sq mi.

RECORDS AVAILABLE.--October 1962 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 1,490.07 ft above mean sea level, datum of 1929, supplementary adjustment of 1960. Prior to July 27, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--6 years, 18.6 cfs (13,470 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,320 cfs Jan. 29 (gage height, 8.70 ft); no flow for many days.
1962-68: Maximum discharge, 3,080 cfs Dec. 22, 1964 (gage height, 12.15 ft); no flow at times in each year.

REMARKS.--Records good except those for period of no gage-height record, which are fair. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	1.3	4.1	1.2	125	16	18	2.7	1.1	.19	0	.04
2	1.2	1.3	2.5	1.1	100	15	14	2.7	1.1	.16	0	.02
3	.81	1.3	117	1.0	73	14	10	2.5	1.1	.16	0	.02
4	.50	1.5	86	1.0	52	14	9.2	2.5	1.0	.13	0	.02
5	.39	1.6	64	1.0	43	13	8.8	2.5	1.2	.10	0	.03
6	.21	1.7	13	1.0	31	14	8.0	2.5	1.3	.08	0	.03
7	.19	1.7	77	.92	26	13	7.3	2.5	1.1	.06	0	.02
8	.17	2.1	19	1.1	22	12	7.0	2.3	1.0	.06	0	0
9	.16	2.3	9.6	17	20	11	6.6	2.3	.92	.06	0	0
10	.15	2.1	5.8	206	17	10	5.9	2.3	.76	.05	0	.02
11	.15	2.1	3.5	50	16	9.4	5.6	2.5	.76	.06	0	.03
12	.33	2.1	3.0	17	15	76	5.2	2.5	.76	.05	0	.03
13	.60	4.9	3.3	35	14	78	4.9	3.9	.68	.08	0	.01
14	.60	7.3	4.6	240	13	79	4.5	3.3	.68	.10	0	.06
15	.60	1.5	2.7	90	23	68	4.5	2.5	.54	.12	0	.10
16	.68	.92	2.6	45	38	205	4.3	2.3	.47	.11	0	.08
17	.76	.84	9.2	31	59	100	4.1	2.0	.37	.09	0	.02
18	.76	.76	44	27	48	64	4.1	2.0	.37	.05	0	0
19	.76	.84	22	20	135	46	4.1	2.3	.31	0	.09	0
20	.84	.76	8.6	15	125	29	4.1	2.5	.31	0	.23	.04
21	.92	.76	4.9	12	135	24	3.9	2.3	.31	0	.65	.08
22	1.0	.68	3.7	11	100	22	3.7	2.5	.31	0	.27	.08
23	1.0	.68	2.9	9.8	70	20	3.5	2.1	.31	0	.18	.06
24	1.0	.68	2.5	9.1	44	17	3.5	2.1	.27	0	.15	.04
25	1.0	.68	2.1	8.7	35	16	3.3	2.1	.23	0	.14	.02
26	1.2	.68	2.0	8.4	28	14	3.3	1.8	.21	0	.15	0
27	1.2	.92	1.7	8.2	21	13	3.1	1.8	.21	0	.14	0
28	1.3	1.0	1.6	210	20	11	2.9	1.6	.19	0	.13	0
29	1.3	8.4	1.5	822	17	11	2.7	1.3	.21	0	.11	0
30	1.3	9.6	1.3	440	-----	10	2.7	1.2	.21	0	.08	.02
31	1.3	-----	1.2	76	-----	9.2	-----	1.2	-----	0	.06	-----
TOTAL	22.42	63.00	526.9	2,416.52	1,465	1,053.6	172.8	70.6	18.29	1.71	2.38	0.87
MEAN	.72	2.10	17.0	78.0	50.5	34.0	5.76	2.28	.61	.055	.077	.029
MAX	1.3	9.6	117	822	135	205	18	3.9	1.3	.19	.65	.10
MIN	.04	.68	1.2	.92	13	9.2	2.7	1.2	.19	0	0	0
AC-FT	44	125	1,050	4,790	2,910	2,090	343	140	36	3.4	4.7	1.7
CAL YR 1967	TOTAL 6,826.95		MEAN 18.7		MAX 625	MIN 0		AC-FT 13,540				
WTR YR 1968	TOTAL 5,814.09		MEAN 15.9		MAX 822	MIN 0		AC-FT 11,530				

PEAK DISCHARGE (BASE, 500 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-10	-	-	970	01-29	-	8.70	1,320
01-14	-	-	599				

Note.--No gage-height record Jan. 9 to Mar. 19.

SACRAMENTO RIVER BASIN

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11-4490.1. HIGHLAND CREEK BELOW HIGHLAND CREEK DAM, NEAR KELSEYVILLE, CALIF.

LOCATION.--Lat 38°56'54", long 122°54'03", in NE¼ sec.30, T.13 N., R.9 W., on left bank 500 ft downstream from Highland Creek Dam, and 4.0 miles southwest of Kelseyville.

DRAINAGE AREA.--14.2 sq mi.

RECORDS AVAILABLE.--December 1965 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 1,416.52 ft above mean sea level, datum of 1929, supplementary adjustment of 1960.

EXTREMES.--Maximum discharge during year, 571 cfs Jan. 29, 30 (gage height, 4.66 ft); no flow for many days.
1965-68: Maximum discharge, 571 cfs Jan. 29, 30, 1968 (gage height, 4.66 ft); maximum gage height, 4.99 ft Jan. 4, 1966; no flow for many days in each year.

REMARKS.--Records good. Flow regulated by Highland Creek Dam (capacity, 3,500 acre-ft). No diversion above station. Records of water temperatures and suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	2.0	0	3.3	53	18	14	2.3	.53	.12	0	.56
2	1.3	1.6	0	3.3	121	17	16	2.3	.51	.15	0	.56
3	2.3	1.6	11	3.3	67	15	13	2.0	.49	0	0	.56
4	2.3	1.0	40	2.9	47	15	12	2.0	.47	0	0	.56
5	2.3	1.0	64	2.9	35	15	11	1.6	.45	0	0	.56
6	2.3	1.0	18	2.6	30	14	11	1.6	1.3	0	0	.32
7	2.0	1.0	67	2.6	25	14	9.9	1.6	1.6	0	0	.32
8	2.0	1.0	20	2.9	22	15	9.5	2.0	1.6	0	0	.32
9	1.6	1.3	11	11	20	13	9.2	1.0	.80	0	0	.56
10	1.6	1.6	8.4	269	19	13	8.8	1.3	.12	0	0	.32
11	1.6	1.6	5.5	39	18	12	8.4	1.3	0	1.3	0	.56
12	2.0	1.6	4.7	20	16	95	8.4	2.0	0	0	0	.32
13	2.0	.80	4.0	19	15	65	8.4	2.3	0	0	0	.56
14	2.0	.56	3.3	259	15	52	8.0	4.0	0	0	0	.56
15	2.0	.56	3.3	248	14	56	8.0	2.9	0	.03	0	.56
16	1.6	.56	3.3	74	23	209	7.7	2.3	0	0	0	.56
17	1.6	.56	5.2	39	61	85	7.7	1.6	0	0	0	.80
18	1.6	.32	43	27	38	53	7.3	1.6	0	0	0	.80
19	2.0	.80	25	21	134	39	7.7	1.6	0	0	0	.80
20	2.0	.35	13	18	200	32	7.3	2.3	0	0	0	1.0
21	2.0	0	10	16	151	28	6.9	2.0	0	0	0	1.0
22	2.0	0	7.3	14	80	24	6.6	2.0	0	0	0	1.0
23	2.3	0	5.8	13	54	23	6.2	1.6	0	0	.12	.80
24	2.3	0	5.5	11	40	20	5.5	1.3	0	0	.56	.42
25	2.3	0	5.1	11	31	18	5.5	1.6	.79	0	.80	0
26	2.0	0	4.7	11	27	16	5.1	2.0	.07	0	.80	0
27	2.0	0	4.3	9.9	24	15	4.7	2.0	0	0	.56	0
28	2.3	0	4.0	19	21	15	4.0	1.6	0	0	.32	0
29	2.0	0	3.6	502	20	13	3.3	1.0	.12	0	.32	0
30	2.0	0	3.6	562	-----	12	2.6	.56	0	0	.56	0
31	2.0	-----	3.3	331	-----	12	-----	.55	-----	0	.56	-----
TOTAL	60.7	20.81	406.9	2,567.7	1,421	1,043	243.7	55.81	8.85	1.60	4.60	14.38
MEAN	1.96	.69	13.1	82.8	49.0	33.6	8.12	1.80	.30	.052	.15	.48
MAX	2.3	2.0	67	562	200	209	16	4.0	1.6	1.3	.80	1.0
MIN	1.3	0	0	2.6	14	12	2.6	.55	0	0	0	0
AC-FT	120	.41	807	5,090	2,820	2,070	483	111	18	3.2	9.1	29
CAL YR 1967	TOTAL	8,041.12	MEAN	22.0	MAX	510	MIN	0	AC-FT	15,950		
WTR YR 1968	TOTAL	5,849.05	MEAN	16.0	MAX	562	MIN	0	AC-FT	11,600		

SACRAMENTO RIVER BASIN

11-4491. SCOTTS CREEK NEAR LAKEPORT, CALIF.

LOCATION.--Lat 39°03'44", long 122°56'53", in SW $\frac{1}{4}$ sec.14, T.14 N., R.10 W., 100 ft upstream from bridge on Hartley Cemetery Road, and 2.1 miles northwest of Lakeport.

DRAINAGE AREA.--52.3 sq mi.

RECORDS AVAILABLE.--October 1960 to September 1968.

GAGE.--Digital water-stage recorder, and since June 4, 1966, concrete control. Altitude of gage is 1,420 ft (from topographic map). Prior to Oct. 10, 1967, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--8 years, 70.4 cfs (50,970 acre-ft per year).

EXTREMES.--1965-66: Maximum discharge during water year, 6,000 cfs Jan. 4 (gage height, 13.78 ft); no flow for several months.

1966-67: Maximum discharge during water year, 3,340 cfs Jan. 21 (gage height, 10.97 ft); no flow for several months.

1967-68: Maximum daily discharge during water year, 3,100 cfs Jan. 29; no flow for several months.

1960-68: Maximum discharge, 8,680 cfs Dec. 22, 1964 (gage height, 17.88 ft); no flow for several months in each year.

REMARKS.--Small diversions above station for irrigation.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1965 TO SEPTEMBER 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	25	247	566	99	24	9	.20			
2		0	19	182	370	86	22	9	.20			
3		0	15	268	715	73	20	8	.20			
4		0	11	3,840	1,520	62	18	8	.10			
5		0	10	2,190	745	62	17	8	0			
6		0	9	702	467	64	19	9	0			
7		0	8	398	318	60	20	9	0			
8		0	8	270	258	58	22	9	0			
9		0	8	200	173	107	25	9	0			
10		0	7	172	129	176	28	9	0			
11		0	9	126	98	124	62	8	0			
12		0	12	96	93	107	91	8	0			
13		10	11	85	74	108	43	8	0			
14		78	9	72	63	91	33	7	0			
15		134	8	67	62	96	25	7	0			
16		45	8	62	61	108	24	6	0			
17		54	7	50	60	91	22	6	0			
18		250	7	45	60	83	21	5	0			
19		156	7	40	159	90	19	5	0			
20		70	7	35	96	71	18	4	0			
21		43	7	32	71	74	17	3	0			
22		32	7	30	69	65	16	2	0			
23		29	6	27	69	60	15	1.5	0			
24		265	78	25	88	54	14	1	0			
25		255	227	24	105	48	13	.70	0			
26		153	135	23	146	43	13	.40	0			
27		108	96	22	122	39	12	.30	0			
28		66	479	20	108	36	11	.20	0			
29		48	450	200	---	32	10	.20	0			
30		34	330	670	---	29	10	.20	0			
31		---	372	370	---	27	---	.20	---			
Total	0	1,830	2,392	10,590	6,865	2,323	704	160.70	.70	0	0	0
Mean	0	61.0	77.2	342	245	74.9	23.5	5.18	.02	0	0	0
Max	0	265	479	3,840	1,520	176	91	9	.20	0	0	0
Min	0	0	6	20	60	27	10	.20	0	0	0	0
Ac-ft	0	3,630	4,740	21,000	13,620	4,610	1,400	319	1.4	0	0	0
Cal yr 1965: Total	26,943.80	Mean	73.8	Max	4,370	Min	0	Ac-ft	53,430			
Wtr yr 1966: Total	24,865.40	Mean	68.1	Max	3,840	Min	0	Ac-ft	49,320			

SACRAMENTO RIVER BASIN

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11-4491. SCOTTS CREEK NEAR LAKEPORT, CALIF.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	41	15	518	23	276	115	15	.50		
2		0	822	13	310	23	240	104	178	.50		
3		0	372	13	209	23	216	92	66	.40		
4		0	1,010	13	156	22	188	73	42	.30		
5		0	1,040	12	123	20	161	64	32	.20		
6		0	484	10	101	19	323	62	27	.20		
7		0	284	10	89	19	314	61	24	.10		
8		0	177	9.9	78	19	257	59	21	0		
9		0	141	8.7	71	18	210	59	19	0		
10		0	248	8.1	69	58	230	62	17	0		
11		0	160	7.9	66	136	232	57	16	0		
12		0	127	7.7	62	208	190	52	15	0		
13		0	122	6.7	59	276	166	45	14	0		
14		0	100	6.4	55	234	164	41	12	0		
15		0	83	5.7	51	370	174	38	11	0		
16		0	70	5.5	49	1,650	161	36	10	0		
17		0	61	5.4	44	577	425	34	8.8	0		
18		0	50	4.9	41	204	510	30	7.5	0		
19		79	44	5.1	37	98	480	28	6.4	0		
20		275	40	602	33	97	384	26	5.4	0		
21		173	36	2,130	31	75	327	24	4.9	0		
22		119	31	652	30	60	233	23	4.2	0		
23		35	30	213	30	136	324	21	3.7	0		
24		14	28	448	28	130	371	19	3.3	0		
25		7.2	26	422	32	113	293	18	2.6	0		
26		3.7	22	1,010	27	101	238	17	1.8	0		
27		2.4	20	966	25	91	224	16	1.3	0		
28		25	19	1,040	23	94	177	16	.80	0		
29		51	19	1,610	-----	87	151	16	.50	0		
30		37	17	1,010	-----	122	130	14	.30	0		
31		-----	17	1,040	-----	254	-----	14	-----	0		
TOTAL	0	821.3	5,741	11,311.0	2,447	5,357	7,769	1,336	570.50	2.20	0	0
MEAN	0	27.4	185	365	87.4	173	259	43.1	19.0	.071	0	0
MAX	0	275	1,040	2,130	518	1,650	510	115	178	.50	0	0
MIN	0	0	17	4.9	23	18	130	14	.30	0	0	0
AC-FT	0	1,630	11,390	22,440	4,850	10,630	15,410	2,650	1,130	4.4	0	0
CAL YR 1966 TOTAL		27,205.70	MEAN	74.5	MAX	3,840	MIN	0	AC-FT	53,960		
WTR YR 1967 TOTAL		35,355.00	MEAN	96.1	MAX	2,130	MIN	0	AC-FT	70,130		

SACRAMENTO RIVER BASIN

11-4491. SCOTTS CREEK NEAR LAKEPORT, CALIF.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	4.8	232	76	49	10				
2			0	4.3	566	64	42	9.3				
3			148	3.5	378	54	36	8.9				
4			28	3.8	248	49	34	8.5				
5			186	4.0	178	48	32	8.1				
6			37	3.8	132	43	30	7.7				
7			145	3.8	105	63	29	7.7				
8			44	4.8	87	71	28	7.0				
9			18	7.0	74	48	26	6.6				
10			11	1,000	71	41	24	6.0				
11			7.7	150	60	37	24	5.7				
12			4.3	90	55	240	23	5.7				
13			3.5	83	48	278	22	6.0				
14			2.3	690	42	289	22	7.7				
15			2.5	600	39	242	22	6.0				
16			2.3	275	115	586	21	4.8				
17			2.9	180	255	370	20	4.0				
18			94	130	175	251	18	3.5				
19			57	105	887	186	18	3.5				
20			28	85	925	155	16	4.0				
21			17	75	676	125	15	3.8				
22			14	65	427	111	13	4.0				
23			12	57	303	103	13	3.3				
24			12	54	223	82	13	2.9				
25			12	50	167	76	13	2.9				
26			11	49	136	67	12	2.5				
27			8.5	47	113	57	12	1.8				
28			7.4	70	98	50	11	1.2				
29			6.3	3,100	84	44	11	.20				
30			5.7	950	-----	40	11	0				
31		-----	4.8	342	-----	38	-----	0	-----			-----
TOTAL	0	0	932.2	8,286.8	6,899	3,984	660	153.30	0	0	0	0
MEAN	0	0	30.1	267	238	129	22.0	4.95	0	0	0	0
MAX	0	0	186	3,100	925	586	49	10	0	0	0	0
MIN	0	0	0	3.5	39	37	11	0	0	0	0	0
AC-FT	0	0	1,850	16,440	13,680	7,900	1,310	304	0	0	0	0
CAL YR 1967	TOTAL 29,724.90		MEAN 81.4		MAX 2,130	MIN 0	AC-FT 58,960					
WTR YR 1968	TOTAL 20,915.30		MEAN 57.1		MAX 3,100	MIN 0	AC-FT 41,480					

Note.--No gage-height record Jan. 10-30.

SACRAMENTO RIVER BASIN

981

11-4493.5. BURNS VALLEY CREEK NEAR CLEARLAKE HIGHLANDS, CALIF.

LOCATION.--Lat 38°58'33", long 122°36'42", in SE $\frac{1}{4}$ sec.15, T.13 N., R.7 W., on right bank 500 ft downstream from unnamed tributary and 2.7 miles northeast of Clearlake Highlands.

DRAINAGE AREA.--4.37 sq mi.

RECORDS AVAILABLE.--January 1963 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 1,390.10 ft above mean sea level, datum of 1929, supplementary adjustment of 1960. Prior to Nov. 8, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--5 years, 1.33 cfs (963 acre-ft per year).

EXTREMES.--Maximum discharge during year, 552 cfs Jan. 29 (gage height, 5.86 ft); no flow for several months. 1963-68: Maximum discharge, 552 cfs Jan. 29, 1968 (gage height, 5.86 ft); no flow for several months in each year.

REMARKS.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP.
1		0	0	0	6.6	.39	.30					
2		0	0	0	36	.22	.05					
3		0	.02	0	8.4	.15	.02					
4		0	0	0	4.8	.10	.02					
5		0	0	0	3.2	.10	.01					
6		0	0	0	2.1	.05	.01					
7		0	.01	0	1.5	.10	.01					
8		0	0	0	1.1	.22	.01					
9		0	0	0	.88	.05	.01					
10		0	0	4.3	.63	.03	0					
11		0	0	.10	.39	.03	0					
12		0	0	.03	.30	1.8	.01					
13		.01	0	.50	.22	2.8	0					
14		0	0	34	.15	2.8	0					
15		0	0	16	.10	1.4	0					
16		0	0	4.8	13	34	0					
17		0	0	2.1	19	8.4	0					
18		0	0	1.1	5.3	3.8	0					
19		0	0	.50	36	1.9	0					
20		0	0	.22	20	1.0	0					
21		0	0	.10	23	.75	0					
22		0	0	.05	8.4	.50	0					
23		0	0	.03	5.0	.30	0					
24		0	0	.03	3.0	.22	0					
25		0	0	.03	2.1	.15	0					
26		0	0	.02	1.4	.10	0					
27		0	0	.02	1.0	.05	0					
28		0	0	2.1	.63	.03	0					
29		0	0	261	.50	.03	0					
30		0	0	35	-----	.02	0					
31		-----	0	9.8	-----	.02	-----		-----			-----
TOTAL	0	0.01	0.03	371.83	204.70	61.51	0.45	0	0	0	0	0
MEAN	0	.0003	.001	12.0	7.06	1.98	.015	0	0	0	0	0
MAX	0	.01	.02	261	36	34	.30	0	0	0	0	0
MIN	0	0	0	0	.10	.02	0	0	0	0	0	0
AC-FT	0	.02	.06	738	406	122	.9	0	0	0	0	0
CAL YR 1967#	TOTAL 632.00			MEAN 1.73	MAX 84	MIN 0	AC-FT 1,250					
WTR YR 1968#	TOTAL 638.53			MEAN 1.74	MAX 261	MIN 0	AC-FT 1,270					

PEAK DISCHARGE (BASE, 80 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-14	1845	2.87	89	02-21	0215	2.96	98
01-29	1000	5.86	552	03-16	0600	3.56	165
02-02	0245	3.18	121				

SACRAMENTO RIVER BASIN

11-4494.5. COPSEY CREEK NEAR LOWER LAKE, CALIF.

LOCATION.--Lat 38°53'21", long 122°35'47", in NE¼ sec.14, T.12 N., R.7 W., on left bank 1.7 miles southeast of Lower Lake, and 2.5 miles upstream from mouth.

DRAINAGE AREA.--13.2 sq mi.

RECORDS AVAILABLE.--October 1960 to September 1968 (discontinued).

GAGE.--Graphic water-stage recorder and concrete control. Altitude of gage is 1,400 ft (from topographic map).

AVERAGE DISCHARGE.--8 years, 13.6 cfs (9,850 acre-ft per year).

EXTREMES.--1965-66: Maximum discharge during water year, 1,490 cfs Jan. 4 (gage height, 9.99 ft); no flow for many days.

1966-67: Maximum discharge during water year, 1,760 cfs Jan. 21 (gage height, 10.90 ft); no flow for many days.

1967-68: Maximum discharge during water year, 1,450 cfs Jan. 29 (gage height, 9.85 ft); no flow for many days.

1960-68: Maximum discharge, 2,340 cfs Jan. 30, 1963 (gage height, 14.15 ft); no flow for many days in each year.

REMARKS.--Minor diversions above station for irrigation.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1965 TO SEPTEMBER 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	.10	.20	.23	28	123	12	3.5	1.6	.60	.20	0	.10
2	.10	.10	1.6	22	37	10	3.4	1.6	.60	.30	0	0
3	.20	.10	1.5	76	246	9.2	3.1	1.5	.60	.30	0	0
4	.10	.10	1.4	981	353	8.8	3.0	1.4	.60	.30	0	0
5	.20	.10	1.3	407	95	8.7	2.8	1.4	.50	.10	0	0
6	.20	.10	1.1	100	57	8.5	2.8	1.5	.60	.10	0	0
7	.20	.30	1.1	55	39	7.8	2.8	1.4	.60	0	0	0
8	.10	.50	1.2	41	30	7.8	2.7	1.2	.60	.10	0	0
9	.10	.30	1.1	30	23	8.1	3.4	1.4	.50	.10	0	0
10	.20	.30	1.1	24	19	8.3	4.0	1.5	.50	.10	0	.10
11	.30	.30	1.9	20	16	7.4	3.2	1.1	.40	.20	0	0
12	.20	.50	5.5	17	14	7.6	3.4	1.2	.40	.10	0	.10
13	.20	.38	2.8	16	12	7.6	2.9	1.1	.40	.10	0	.10
14	.20	.43	2.0	14	11	6.2	2.7	1.0	.40	.10	0	.10
15	.20	.21	1.7	12	9.9	6.4	2.5	.70	.40	.30	0	.10
16	.20	.30	1.4	10	9.2	6.2	2.6	.80	.30	0	0	0
17	.30	.40	1.4	9.1	9.1	5.8	2.5	.60	.40	0	0	.10
18	.30	.76	1.2	8.4	9.2	5.6	2.2	.50	.30	0	0	.10
19	.20	.48	1.1	8.2	160	5.2	2.3	.50	.30	0	0	.10
20	.30	.96	1.0	6.8	26	5.2	2.1	.50	.30	.10	0	.10
21	.20	.48	1.1	7.0	18	4.9	2.0	.60	.40	0	0	0
22	.10	.30	1.2	6.3	18	4.6	2.1	.40	.40	0	0	0
23	.20	.54	.90	6.2	18	4.7	2.1	.40	.40	0	0	0
24	.20	109	.98	5.8	26	4.7	2.1	.50	.40	0	0	0
25	.10	.25	.49	5.2	26	4.5	2.2	.30	.40	0	0	0
26	.20	.10	.20	5.0	18	4.4	2.1	.30	.40	0	0	0
27	.20	.68	.15	5.7	15	4.3	2.0	.40	.30	0	0	0
28	.20	.47	.379	5.1	13	4.1	1.9	.60	.20	0	0	0
29	.20	.38	134	66	---	4.0	1.9	.70	.30	0	0	0
30	.20	.30	.58	101	---	3.9	1.6	.70	.20	0	.10	0
31	.20	---	.52	26	---	3.7	---	.70	---	0	.20	---
Total	5.90	457.00	841.90	2,124.8	1,450.4	200.2	77.9	28.10	12.70	2.50	.30	1.00
Mean	.19	15.2	27.2	68.5	51.8	6.46	2.60	.91	.42	.08	.01	.03
Max	.30	109	379	981	353	12	4.0	1.6	.60	.30	.20	.10
Min	.10	.10	.90	5.0	9.1	3.7	1.6	.30	.20	0	0	0
Ac-ft	12	906	1,670	4,210	2,880	397	155	56	25	5.0	.60	2.0
Cal yr 1965: Total	5,238.90		Mean	14.4	Max 1,040	Min 0		Ac-ft 10,390				
Wtr yr 1966: Total	5,202.70		Mean	14.3	Max 981	Min 0		Ac-ft 10,320				

SACRAMENTO RIVER BASIN

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11-4494.5. COPSEY CREEK NEAR LOWER LAKE, CALIF.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	29	3.8	52	5.1	39	19	4.3	1.2	.61	.17
2	0	0	394	3.6	35	4.9	25	17	17	1.2	.61	.17
3	0	0	123	3.6	28	4.9	21	16	8.3	1.2	.53	.20
4	0	0	653	3.8	22	4.9	19	16	5.0	1.1	.46	.17
5	.05	0	290	3.4	18	4.4	26	15	4.2	1.1	.53	.20
6	.17	0	112	3.0	16	4.4	177	12	4.1	.97	.53	.20
7	.17	0	44	2.9	14	4.4	52	11	4.1	.87	.46	.20
8	.17	0	31	2.9	12	4.3	32	10	3.8	.87	.53	.20
9	.14	0	28	2.9	12	4.4	26	9.6	3.6	.87	.53	.25
10	.11	0	34	2.8	11	32	50	9.6	3.4	.87	.53	.25
11	.20	0	23	2.6	9.9	48	35	8.7	3.4	.77	.53	.29
12	.29	0	19	2.6	9.6	105	25	8.0	3.0	.87	.40	.25
13	.29	0	18	2.6	8.9	79	21	7.4	3.0	1.3	.46	.25
14	.25	0	15	2.6	8.1	38	19	6.9	3.0	.61	.40	.25
15	.20	3.9	14	2.4	7.8	168	25	6.6	3.0	.34	.34	.25
16	.06	4.5	12	2.3	7.3	537	20	6.2	3.0	.69	.34	.29
17	0	.61	11	2.4	7.5	86	132	6.0	2.8	.69	.34	.40
18	0	.61	9.9	2.4	6.9	46	109	5.6	2.8	.69	.34	.40
19	0	216	9.2	2.4	6.6	33	72	5.2	2.8	.69	.29	.34
20	0	183	7.3	132	5.7	33	42	4.9	2.8	.69	.25	.25
21	0	74	6.9	915	5.7	30	80	5.0	2.4	.77	.29	.29
22	0	33	6.3	108	5.7	24	53	4.7	2.2	.77	.25	.34
23	0	15	5.9	45	5.8	29	138	4.5	2.2	.77	.25	.40
24	0	10	5.7	281	5.7	20	98	4.2	2.0	.77	.25	.34
25	0	8.7	5.3	74	7.0	18	52	4.1	1.9	.77	.25	.29
26	0	7.8	5.0	127	6.9	16	39	3.9	1.7	.69	.25	.29
27	0	6.9	4.7	86	5.0	15	33	3.9	1.6	.69	.25	.29
28	0	59	4.7	279	4.8	15	27	3.3	1.6	.69	.20	.34
29	0	50	4.7	455	-----	14	23	3.4	1.4	.69	.25	.34
30	0	18	4.4	322	-----	72	21	3.4	1.3	.61	.25	.40
31	0	-----	4.1	132	-----	91	-----	3.4	-----	.61	.25	-----
TOTAL	210	691.02	1,934.1	3,011.0	344.9	1,590.7	1,531	244.5	105.7	25.42	11.75	8.30
MEAN	.07	23.0	62.4	97.1	12.3	51.3	51.0	7.89	3.52	.82	.38	.28
MAX	.29	216	653	915	52	537	177	19	17	1.3	.61	.40
MIN	0	0	4.1	2.3	4.8	4.3	19	3.3	1.3	.34	.20	.17
AC-FT	4.2	1,370	3,840	5,970	684	3,160	3,040	485	210	50	23	16
CAL YR 1966 TOTAL			6,525.12	MEAN 17.9	MAX 981	MIN 0	AC-FT 12,940					
WTR YR 1967 TOTAL			9,500.49	MEAN 26.0	MAX 915	MIN 0	AC-FT 18,840					

SACRAMENTO RIVER BASIN

11-4494.5. COPSEY CREEK NEAR LOWER LAKE, CALIF.- Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.34	.34	1.1	.61	32	12	12	1.6	.77	.34	0	
2	.69	.34	.97	.61	85	10	7.2	1.6	.77	.46	0	
3	.61	.29	11	.61	36	9.6	5.2	1.6	.97	.46	0	
4	.40	.34	31	.61	26	9.2	4.7	1.6	.97	.34	0	
5	.46	.34	8.8	.61	20	8.8	4.7	1.6	.97	.29	0	
6	.40	.34	1.7	.61	17	8.4	4.4	1.3	.87	.20	0	
7	.40	.34	30	.61	15	8.8	4.1	1.3	.61	.17	0	
8	.34	.40	2.4	.69	14	8.8	3.9	1.3	.53	.14	0	
9	.34	.46	1.2	1.1	13	8.0	3.6	1.3	.46	.17	0	
10	.34	.46	.77	219	12	6.9	3.4	1.3	.46	.17	0	
11	.34	.46	.69	15	12	6.9	3.4	1.3	.46	.14	0	
12	.34	.53	.61	11	11	25	3.4	1.3	.46	.11	0	
13	.34	1.1	.61	14	10	37	3.2	1.4	.46	.08	0	
14	.25	1.4	.53	223	9.6	37	3.0	1.4	.53	.11	.03	
15	.25	.61	.97	138	9.2	20	3.0	1.2	.40	.14	.03	
16	.29	.46	.87	40	201	171	2.8	1.2	.34	.20	.02	
17	.29	.46	.77	21	262	33	2.8	.97	.29	.17	.01	
18	.29	.53	4.4	16	48	20	2.8	.97	.20	.14	.02	
19	.29	.61	2.4	13	201	17	2.4	.97	.34	.14	.08	
20	.29	.61	1.6	10	97	14	2.4	.97	.40	.08	.25	
21	.34	.61	.87	9.2	95	13	2.2	.87	.61	.08	.40	
22	.40	.53	.77	8.4	42	12	2.2	.97	.61	.06	.20	
23	.40	.61	.69	7.6	29	11	2.2	.97	.53	.03	.08	
24	.34	.69	.69	7.6	24	9.6	2.2	1.1	.53	.06	.08	
25	.34	.69	.61	7.2	19	8.8	2.2	1.1	.53	.01	.06	
26	.34	.69	.61	6.9	17	8.4	2.2	.97	.53	.01	.11	
27	.34	.69	.61	6.9	14	7.2	2.0	.97	.46	.02	.08	
28	.34	.87	.61	12	13	6.5	1.9	.97	.40	.01	.08	
29	.29	1.4	.61	918	12	6.5	1.7	.87	.40	0	.06	
30	.25	1.6	.61	245	-----	6.5	1.7	.87	.40	0	0	
31	.34	-----	.61	53	-----	6.9	-----	.87	-----	0	0	-----
TOTAL	11.01	18.80	109.68	2,007.86	1,395.8	567.8	102.9	36.71	16.26	4.33	1.59	0
MEAN	.36	.63	3.54	64.8	48.1	18.3	3.43	1.18	.54	.14	.051	0
MAX	.69	1.6	31	918	262	171	12	1.6	.97	.46	.40	0
MIN	.25	.29	.53	.61	9.2	6.5	1.7	.87	.20	0	0	0
AC-FT	22	37	218	3,980	2,770	1,130	204	73	32	8.6	3.2	0
CAL YR 1967	TOTAL	7,012.76		MEAN	19.2	MAX	915	MIN	.17	AC-FT	13,910	
WTR YR 1968	TOTAL	4,272.74		MEAN	11.7	MAX	918	MIN	0	AC-FT	8,470	

SACRAMENTO RIVER BASIN

985

11-4494.6. SEIGLER CREEK AT LOWER LAKE, CALIF.

LOCATION.--Lat 38°54'34", long 122°36'48", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.10, T.12 N., R.7 W., on left bank 400 ft upstream from highway bridge, and 0.2 mile southwest of Lower Lake.

DRAINAGE AREA.--12.5 sq mi.

RECORDS AVAILABLE.--October 1965 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 1,364.75 ft above mean sea level, datum of 1929, supplementary adjustment of 1960.

EXTREMES.--Maximum discharge during year, 915 cfs Jan. 29 (gage height, 6.85 ft); no flow for many days.
1965-68: Maximum discharge, 915 cfs Jan. 29, 1968 (gage height, 6.85 ft); no flow for many days in each year.

REMARKS.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	.26	1.5	.99	24	9.1	18	1.9	.70	.02		
2	.86	.26	1.1	.99	51	8.4	12	1.8	.74	.02		
3	.86	.29	15	.99	24	7.6	8.6	1.6	.78	.01		
4	.44	.32	19	.90	16	7.3	7.6	1.7	.62	.01		
5	.54	.41	17	.99	13	7.1	6.8	1.7	.74	0		
6	.44	.54	3.9	.90	10	6.8	6.4	1.8	.78	0		
7	.35	.41	22	.99	9.1	7.6	6.0	1.9	.58	0		
8	.32	.41	4.5	1.3	8.1	8.1	5.8	1.8	.58	0		
9	.32	.47	2.3	3.0	7.6	6.4	5.3	1.8	.44	0		
10	.32	.44	1.6	121	7.1	5.8	5.1	1.7	.41	0		
11	.29	.47	1.4	11	6.4	5.5	4.9	1.9	.35	0		
12	.23	.44	1.3	4.9	6.0	41	4.5	2.0	.32	0		
13	.26	2.0	1.1	6.2	6.0	37	4.4	2.2	.29	0		
14	.20	4.5	.99	134	5.5	26	4.4	2.6	.23	0		
15	.15	1.1	1.2	72	4.7	15	4.0	2.2	.23	0		
16	.18	.78	1.2	25	85	94	3.9	1.9	.19	0		
17	.20	.70	1.4	12	114	33	3.9	1.5	.13	0		
18	.20	.66	11	7.6	32	21	3.7	1.4	.11	0		
19	.18	.70	4.5	5.8	90	15	3.7	1.5	.14	0		
20	.20	.70	2.5	4.5	62	13	3.7	1.6	.11	0		
21	.26	.54	1.9	4.0	52	12	3.5	1.5	.05	0		
22	.35	.54	1.6	3.3	31	11	3.3	1.6	0	0		
23	.32	.58	1.4	2.9	24	10	3.2	1.4	0	0		
24	.32	.58	1.4	2.8	19	9.4	3.3	1.5	.01	0		
25	.29	.54	1.3	2.6	15	8.6	3.0	1.6	.02	0		
26	.32	.58	1.2	2.5	13	7.8	2.8	1.4	.01	0		
27	.32	.62	1.2	2.5	11	7.3	2.4	1.2	.01	0		
28	.32	.90	1.1	11	10	6.8	2.5	1.2	.01	0		
29	.23	2.3	.99	490	9.4	6.4	2.4	.82	.01	0		
30	.23	2.8	.99	128	-----	6.2	1.7	.78	.03	0		
31	.26	-----	.99	39	-----	5.8	-----	.70	-----	0		-----
TOTAL	9.92	25.84	128.56	1,103.65	765.9	466.0	150.8	50.20	8.62	0.06	0	0
MEAN	.32	.86	4.15	35.6	26.4	15.0	5.03	1.62	.29	.002	0	0
MAX	.86	4.5	22	490	114	94	18	2.6	.78	.02	0	0
MIN	.15	.26	.99	.90	4.7	5.5	1.7	.70	0	0	0	0
AC-FT	20	51	255	2,190	1,520	924	299	100	17	.1	0	0

CAL YR 1967 TOTAL 4,555.67 MEAN 12.5 MAX 435 MIN 0 AC-FT 9,040

WTR YR 1968 TOTAL 2,709.55 MEAN 7.40 MAX 490 MIN 0 AC-FT 5,370

Peak discharge (base, 500 cfs).--Jan. 29 (1745 hrs) 915 cfs (6.85 ft).

SACRAMENTO RIVER BASIN

11-4495. KELSEY CREEK NEAR KELSEYVILLE, CALIF.

LOCATION.--Lat 38°55'45", long 122°50'35", in SE $\frac{1}{4}$ sec.34, T.13 N., R.9 W., on left bank 1.6 miles downstream from Widow Creek, and 3.5 miles south of Kelseyville.

DRAINAGE AREA.--36.6 sq mi.

RECORDS AVAILABLE.--October 1946 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 1,475.44 ft above mean sea level, datum of 1929, supplementary adjustment of 1960. Prior to July 16, 1955, graphic water-stage recorder at site 600 ft upstream at different datum. July 16, 1955, to Apr. 8, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--22 years, 71.5 cfs (51,760 acre-ft per year); median of yearly mean discharges, 60 cfs (43,400 acre-ft per year).

EXTREMES.--Maximum discharge during year, 6,420 cfs Jan. 29 (gage height, 12.12 ft); minimum daily, 3.0 cfs Sept. 29.

1946-68: Maximum discharge, 8,800 cfs Dec. 21, 1955 (gage height, 12.80 ft); maximum gage height, 13.48 ft Jan. 5, 1965; minimum discharge, 0.5 cfs Sept. 1, 1950, but may have been less during August 1950.

REMARKS.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	8.8	21	17	224	76	96	20	14	6.2	3.4	4.2
2	14	8.8	14	16	343	72	74	20	13	6.1	3.4	3.9
3	21	8.8	283	15	262	66	60	20	13	6.0	3.1	4.5
4	12	9.3	305	15	204	61	54	20	12	5.7	3.5	4.1
5	14	10	226	15	169	60	51	20	12	5.2	3.4	3.9
6	12	10	74	14	147	57	48	20	13	4.5	3.4	4.2
7	11	10	234	14	130	57	45	19	13	4.5	3.4	3.9
8	9.6	12	82	15	116	56	43	19	12	5.0	3.6	3.4
9	9.1	14	53	28	105	51	41	19	12	4.7	3.3	4.0
10	8.8	12	40	950	96	48	38	18	12	4.6	3.2	4.0
11	8.6	12	33	142	85	45	37	18	12	4.6	3.1	4.9
12	8.5	12	28	83	77	206	36	19	12	4.5	3.4	4.0
13	8.2	14	25	79	72	190	34	22	12	4.6	3.9	6.1
14	8.0	56	23	660	67	212	33	23	11	4.5	4.6	4.9
15	7.6	17	22	572	62	144	32	21	11	5.6	4.5	4.5
16	7.6	12	20	268	137	492	32	20	10	5.6	4.1	4.6
17	9.1	11	23	163	260	234	30	19	10	5.0	3.8	4.1
18	8.2	8.3	95	123	170	169	29	18	9.8	4.9	3.8	3.6
19	8.2	8.2	51	98	429	139	28	18	11	4.4	5.9	3.3
20	8.3	8.0	36	81	426	117	28	20	10	3.9	11	4.3
21	9.1	7.9	30	70	433	102	27	20	7.5	4.0	23	4.2
22	10	7.8	28	61	254	95	26	20	6.7	4.2	14	4.0
23	9.6	7.6	26	54	200	90	25	19	6.1	3.9	8.6	4.1
24	9.6	7.6	25	51	163	78	24	19	6.6	3.9	7.3	3.9
25	11	7.5	24	48	139	74	23	20	6.1	3.9	6.4	3.7
26	9.8	7.3	23	45	118	68	20	18	5.5	4.2	6.7	3.6
27	11	7.3	21	44	103	64	20	18	5.5	3.7	6.4	3.5
28	9.8	8.5	20	63	92	60	20	17	5.5	3.2	6.4	3.2
29	9.6	27	19	2,880	83	56	21	17	5.8	3.3	5.7	3.0
30	9.3	34	18	890	-----	54	21	15	5.9	3.9	4.9	3.9
31	8.8	-----	17	340	-----	51	-----	15	-----	3.7	4.4	-----
TOTAL	307.1	384.7	1,939	7,914	5,166	3,344	1,096	591	296.0	142.0	175.6	121.5
MEAN	9.91	12.8	62.5	255	178	108	36.5	19.1	9.87	4.58	5.66	4.05
MAX	21	56	305	2,880	433	492	96	23	14	6.2	23	6.1
MIN	5.7	7.3	14	14	62	45	20	15	5.5	3.2	3.1	3.0
AC-FT	609	763	3,850	15,700	10,250	6,630	2,170	1,170	587	282	348	241
CAL YR 1967	TOTAL 31,484.3		MEAN 86.3		MAX 3,630		MIN 4.7		AC-FT 62,450			
WTR YR 1968	TOTAL 21,476.9		MEAN 58.7		MAX 2,880		MIN 3.0		AC-FT 42,600			

PEAK DISCHARGE (BASE, 1,600 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
01-10	0315	10.12	3,540	01-29	1945	12.12	6,420
01-14	1700	8.26	1,630				

11-4500. CLEAR LAKE AT LAKEPORT, CALIF.

LOCATION.--Lat 39°02'21", long 122°54'44", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.25, T.14 N., R.10 W., on private pier at 410 Esplanada Street in Lakeport. Prior to Oct. 1, 1967, at site 0.4 mile north.

DRAINAGE AREA.--528 sq mi.

RECORDS AVAILABLE.--1874-1900 (incomplete), January 1913 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 1,318.65 ft (revised) above mean sea level, datum of 1929. Prior to July 8, 1947, staff gage and July 8, 1947, to Mar. 17, 1949, graphic water-stage recorder at municipal wharf at foot of Third Street in Lakeport at same datum. Mar. 18, 1949, to Sept. 30, 1967, graphic water-stage recorder at private pier at foot of Fourth Street at datum 0.06 ft lower.

EXTREMES.--Maximum daily mean gage height during year, 7.79 ft Mar. 17; minimum, 2.00 ft Sept. 30.

1913-68: Maximum gage height observed, 11.12 ft Jan. 28, 1914; minimum observed, -3.50 ft Sept. 24-27, 1920.

REMARKS.--This natural lake is regulated by a concrete overflow 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 (see sta. no. 11-4510.). Records of chemical analyses for the 1968 water year are published in Part 2 of this report.

COOPERATION.--Daily mean gage-height record furnished by Yolo County Flood Control and Water Conservation District.

MEAN GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.42	3.16	3.17	3.67	6.65	7.45	7.50	7.17	6.25	5.02	3.65	2.65
2	3.46	3.17	3.19	3.68	6.67	7.44	7.51	7.14	6.22	4.97	3.61	2.63
3	3.45	3.17	3.29	3.68	6.68	7.42	7.48	7.12	6.18	4.93	3.56	2.61
4	3.44	3.24	3.31	3.68	6.68	7.42	7.48	7.09	6.14	4.90	3.52	2.59
5	3.43	3.24	3.40	3.68	6.75	7.42	7.48	7.06	6.10	4.86	3.48	2.56
6	3.42	3.24	3.45	3.69	6.80	7.45	7.49	7.02	6.06	4.82	3.45	2.53
7	3.41	3.24	3.48	3.70	6.81	7.48	7.50	7.00	6.02	4.78	3.40	2.50
8	3.41	3.23	3.49	3.73	6.84	7.49	7.51	6.97	5.98	4.73	3.37	2.47
9	3.37	3.22	3.49	3.80	6.88	7.50	7.52	6.92	5.94	4.69	3.33	2.43
10	3.36	3.22	3.49	4.02	6.91	7.51	7.52	6.88	5.89	4.64	3.29	2.41
11	3.35	3.22	3.49	4.09	6.94	7.54	7.52	6.86	5.85	4.58	3.25	2.39
12	3.34	3.21	3.49	4.12	6.95	7.66	7.52	6.82	5.81	4.52	3.18	2.38
13	3.33	3.35	3.50	4.16	6.97	7.68	7.51	6.83	5.77	4.44	3.12	2.36
14	3.32	3.36	3.50	4.56	6.99	7.68	7.49	6.80	5.74	4.39	3.08	2.32
15	3.30	3.36	3.48	4.80	7.01	7.67	7.45	6.78	5.71	4.34	3.04	2.31
16	3.28	3.36	3.48	4.94	7.07	7.77	7.44	6.76	5.68	4.29	2.99	2.31
17	3.27	3.37	3.48	5.00	7.10	7.79	7.42	6.74	5.64	4.25	2.94	2.29
18	3.26	3.37	3.55	5.05	7.17	7.77	7.40	6.73	5.60	4.21	2.89	2.26
19	3.25	3.39	3.56	5.09	7.41	7.74	7.38	6.70	5.55	4.16	2.85	2.25
20	3.24	3.38	3.57	5.12	7.56	7.65	7.37	6.65	5.51	4.12	2.92	2.24
21	3.23	3.38	3.59	5.14	7.65	7.57	7.36	6.62	5.47	4.08	2.90	2.22
22	3.21	3.36	3.59	5.17	7.65	7.51	7.34	6.58	5.41	4.05	2.88	2.19
23	3.22	3.35	3.59	5.20	7.63	7.47	7.33	6.55	5.38	4.01	2.86	2.18
24	3.21	3.38	3.62	5.22	7.58	7.42	7.31	6.53	5.34	3.96	2.82	2.14
25	3.22	3.41	3.64	5.22	7.51	7.40	7.29	6.50	5.30	3.93	2.81	2.10
26	3.21	3.41	3.66	5.23	7.42	7.38	7.28	6.47	5.26	3.89	2.78	2.09
27	3.20	3.38	3.66	5.23	7.37	7.37	7.26	6.44	5.21	3.86	2.76	2.08
28	3.18	3.38	3.66	5.38	7.41	7.39	7.23	6.40	5.16	3.82	2.75	2.07
29	3.17	3.42	3.66	6.06	7.44	7.40	7.21	6.36	5.11	3.77	2.73	2.05
30	3.18	3.44	3.67	6.40	-----	7.40	7.18	6.32	5.06	3.73	2.70	2.00
31	3.18	-----	3.67	6.55	-----	7.41	-----	6.29	-----	3.69	2.67	-----

SACRAMENTO RIVER BASIN

11-4510. CACHE CREEK NEAR LOWER LAKE, CALIF.

LOCATION.--Lat 38°55'27", long 122°33'53", in sec.6, T.12 N., R.6 W., on left bank 500 ft downstream from Clear Lake Dam, 1.9 miles downstream from Copsey Creek, and 2.5 miles northeast of Lower Lake.

DRAINAGE AREA.--528 sq mi.

RECORDS AVAILABLE.--May 1944 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 1,280.34 ft above mean sea level, datum of 1929, supplementary adjustment of 1960. Prior to June 10, 1964, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--24 years, 318 cfs (230,200 acre-ft per year), unadjusted.

EXTREMES.--1965-66: Maximum discharge during water year, 5,120 cfs (revised) Mar. 17 (gage height, 8.01 ft); minimum daily, 1.8 cfs Dec. 30 to Jan. 3.
 1966-67: Maximum discharge during water year, 6,000 cfs (revised) Mar. 13 (gage height, 8.45 ft); minimum daily, 2.2 cfs Nov. 27, 30.
 1967-68: Maximum discharge during water year, 5,420 cfs Feb. 1 (gage height, 8.16 ft); minimum daily, 1.8 cfs Jan. 6, 7, 12.
 1944-68: Maximum discharge, 8,000 cfs Feb. 24, 1958 (gage height, 9.40 ft); minimum recorded, 0.2 cfs Mar. 15-23, 1950.

REMARKS.--Records good. Flow completely regulated by Clear Lake (see sta. no. 11-4500.).

REVISIONS.--Revised figures of discharge for the 1966 and 1967 water years, superseding those published in Basic Data Reports, are given herein.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1965 TO SEPTEMBER 1966

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	4.2	3.1	1.8	7.4	1,060	37	482	394	538	373	272
2	58	4.2	3.0	1.8	7.4	1,060	67	526	388	538	367	231
3	53	4.1	2.9	1.8	1,440	562	70	578	382	530	358	209
4	53	3.9	2.8	2.7	3,180	13	70	594	379	494	367	202
5	53	3.8	2.8	2.5	2,710	13	72	590	404	466	382	224
6	53	3.8	2.8	2.5	2,680	13	112	578	424	506	388	265
7	52	3.8	2.9	630	2,630	13	142	566	394	538	388	318
8	52	3.6	2.7	1,610	2,580	13	174	538	335	530	414	320
9	51	3.7	2.7	2,140	2,560	13	138	474	340	506	432	263
10	51	3.7	2.8	2,100	2,480	13	100	424	407	494	427	240
11	52	3.6	2.8	2,070	1,430	13	144	410	438	494	418	224
12	52	3.4	2.8	1,580	11	13	121	428	438	494	400	200
13	52	3.8	2.7	1,060	11	14	90	435	356	494	400	200
14	52	3.7	2.7	1,070	11	290	103	394	466	490	391	207
15	53	3.5	2.5	510	11	1,060	116	370	466	490	391	207
16	41	3.5	2.5	8.0	11	1,060	126	388	478	482	410	198
17	37	3.6	2.4	7.9	11	1,880	160	404	486	463	418	195
18	37	3.7	2.4	7.6	11	2,580	192	421	514	446	418	196
19	37	3.5	2.4	7.2	11	2,540	235	456	546	452	418	194
20	42	3.4	2.4	6.8	11	1,320	278	463	554	460	397	183
21	45	3.4	2.4	6.8	11	530	308	432	564	470	373	169
22	44	3.4	2.2	6.8	11	14	328	400	546	490	382	156
23	43	3.3	2.1	6.8	11	13	343	435	502	490	388	144
24	43	3.5	2.1	6.9	11	13	346	502	466	466	370	144
25	40	3.5	2.1	7.1	510	13	382	530	428	438	370	143
26	24	3.4	2.1	7.1	1,030	13	432	538	407	428	358	128
27	9.7	3.2	2.0	7.1	1,060	13	438	514	407	438	318	112
28	4.1	3.2	2.4	7.1	1,060	13	418	470	432	435	290	122
29	4.0	3.2	1.9	7.2	-----	13	397	460	478	421	298	135
30	4.2	3.1	1.8	7.1	-----	13	438	460	518	414	315	135
31	4.2	-----	1.8	7.1	-----	13	-----	421	-----	391	315	-----
TOTAL	1,259.2	107.7	77.0	12,897.7	25,507.8	14,204	6,377	14,681	13,337	14,786	11,734	5,936
MEAN	40.6	3.59	2.48	41.6	911	458	213	474	445	477	379	198
MAX	63	4.2	3.1	2,140	3,180	2,580	438	594	564	538	432	320
MIN	4.0	3.1	1.8	1.8	7.4	13	37	370	335	391	290	112
AC-FT	2,500	214	153	25,580	50,590	28,170	12,650	29,120	26,450	29,330	23,270	11,770
CAL YR 1965 TOTAL		176,800.7		MEAN 484		MAX 4,360		MIN 1.8		AC-FT 350,700		
WTR YR 1966 TOTAL		120,904.4		MEAN 331		MAX 3,180		MIN 1.8		AC-FT 239,800		

SACRAMENTO RIVER BASIN

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11-4510. CACHE CREEK NEAR LOWER LAKE, CALIF.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	35	2.3	2.9	2,840	20	1,570	690	196	514	449	343
2	84	30	3.5	2.9	2,770	20	1,560	9.3	85	506	432	318
3	74	23	2.5	2.8	2,730	20	1,560	9.0	43	490	442	318
4	73	13	3.7	2.8	2,700	20	1,560	8.7	41	482	474	315
5	73	2.8	3.4	2.8	2,700	19	1,560	7.9	9.6	466	452	305
6	73	2.8	2.9	2.8	2,600	19	2,110	7.6	5.5	466	432	320
7	73	2.7	2.8	2.8	1,890	19	2,740	7.1	5.7	478	418	310
8	72	2.7	2.8	2.8	100	19	2,690	6.6	18	482	404	272
9	72	2.5	2.7	2.8	100	19	2,650	6.4	42	460	404	232
10	72	2.4	2.8	2.8	100	21	2,640	6.4	56	432	382	207
11	72	2.4	2.8	2.8	100	20	1,320	6.1	67	414	358	207
12	67	2.5	2.8	2.8	100	21	1.2	6.1	82	414	358	205
13	59	2.6	2.8	2.8	100	1,450	11	6.1	125	424	358	202
14	53	2.6	2.8	2.8	100	2,840	11	5.9	125	438	367	200
15	47	2.7	2.8	2.8	100	2,980	11	5.9	125	452	367	200
16	46	2.6	2.8	2.8	100	3,770	11	5.9	151	460	346	200
17	41	2.6	2.8	2.8	71	3,080	1,580	5.7	229	452	346	200
18	35	2.5	2.7	2.8	25	3,050	2,900	5.5	300	482	385	194
19	35	7.9	2.6	2.8	15	2,960	2,870	11.3	343	526	424	190
20	36	4.0	2.7	2.8	20	2,920	2,770	211	367	518	428	177
21	34	2.5	2.7	2.8	20	2,860	2,810	229	370	486	428	168
22	34	2.5	2.8	2.8	20	2,820	2,830	265	370	446	432	183
23	33	2.3	2.8	2.8	20	2,810	2,880	310	364	404	428	190
24	35	2.4	2.8	2.8	20	1,530	2,880	332	385	418	410	173
25	36	2.3	2.8	2.8	20	128	2,800	332	432	449	364	158
26	36	2.3	2.8	560	20	176	2,180	332	482	456	315	158
27	36	2.2	2.8	2,510	20	176	1,660	320	498	452	325	156
28	35	2.4	2.9	2,710	20	176	1,570	280	494	452	349	156
29	35	2.3	2.8	2,910	-----	176	1,570	255	510	452	349	144
30	35	2.2	2.9	3,120	-----	550	1,560	255	510	452	346	118
31	35	-----	2.8	2,910	-----	1,410	-----	251	-----	452	352	-----
TOTAL	1,648	172.7	87.9	14,790.2	19,421	36,099	54,876	4,291.2	6,830.8	14,275	12,124	6,519
MEAN	53.2	5.76	2.84	477	694	1,164	1,829	138	228	460	391	217
MAX	107	35	3.7	3,120	2,840	3,770	2,900	690	510	526	474	343
MIN	33	2.2	2.3	2.8	20	19	11	5.5	5.5	404	315	118
AC-FT	3,270	343	174	29,360	39,520	71,600	109,800	9,510	13,550	29,310	24,050	12,930
CAL YR 1966 TOTAL		121,369.1		MEAN 333	MAX 3,180	MIN 1.8	AC-FT 240,700					
WTR YR 1967 TOTAL		171,134.8		MEAN 469	MAX 3,770	MIN 2.2	AC-FT 339,400					

Note.--Jan. 3 to Feb. 28 computed from twice-daily staff gage readings furnished by Clear Lake Water Company.

SACRAMENTO RIVER BASIN

11-4510. CACHE CREEK NEAR LOWER LAKE, CALIF.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93	48	2.4	2.1	432	318	3.0	432	490	518	446	320
2	93	48	2.5	2.1	2,410	680	3.0	418	460	514	446	310
3	81	48	2.8	2.1	2,290	680	2.3	400	474	514	446	310
4	70	48	2.8	2.0	1,550	407	2.8	391	510	494	435	318
5	70	48	2.8	1.9	12	229	2.8	379	518	482	404	315
6	69	52	2.7	1.8	12	112	2.6	382	510	482	379	308
7	68	56	3.0	1.8	12	13	2.6	421	498	494	370	290
8	68	45	2.8	1.9	12	13	2.6	456	470	534	385	256
9	58	33	2.7	1.9	12	13	2.5	432	446	562	404	235
10	48	29	2.7	2.3	12	13	2.2	410	446	570	385	222
11	50	29	2.8	1.9	12	13	12	410	452	578	376	209
12	50	29	2.7	1.8	12	268	94	388	452	614	400	196
13	50	29	2.5	1.9	12	1,410	128	367	438	640	404	196
14	50	29	2.4	2.2	12	1,840	126	330	422	610	367	196
15	49	29	2.2	2.2	12	1,840	141	308	442	590	340	185
16	49	29	2.4	2.2	12	1,860	156	343	452	570	340	177
17	49	29	2.5	2.2	12	1,850	188	379	474	530	325	175
18	49	29	2.5	2.2	12	1,830	242	394	526	498	310	177
19	49	29	2.4	2.3	534	2,350	265	388	570	486	310	160
20	49	14	2.3	2.5	2,360	2,700	256	370	566	474	292	138
21	49	2.8	2.3	2.5	3,040	2,590	242	358	566	463	263	136
22	49	2.4	2.3	2.4	2,920	1,790	265	397	546	452	234	136
23	49	2.4	2.3	2.4	2,870	1,070	315	442	498	428	205	136
24	49	2.1	2.3	2.4	2,850	1,070	335	432	474	418	216	141
25	49	2.2	2.3	2.4	2,800	1,070	335	397	486	438	240	156
26	49	2.2	2.2	2.4	2,730	1,040	364	397	478	435	260	168
27	49	2.2	2.2	2.5	1,110	346	407	460	470	424	272	153
28	49	2.2	2.2	2.5	15	3.7	400	534	506	432	263	134
29	49	2.4	2.1	4.1	14	3.4	397	542	502	414	258	128
30	48	2.5	2.1	3.0	-----	3.4	421	522	506	421	280	116
31	48	-----	2.1	2.7	-----	3.1	-----	510	-----	449	310	-----
TOTAL	1,749	753.4	76.3	70.6	28,093	27,428.6	5,115.4	12,789	14,648	15,528	10,365	6,097
MEAN	56.4	25.1	2.46	2.28	969	885	171	413	488	501	334	203
MAX	93	56	3.0	4.1	3,040	2,700	421	542	570	640	446	320
MIN	48	2.1	2.1	1.8	12	3.1	2.2	308	422	414	205	116
AC-FT	3,470	1,490	151	140	55,720	54,400	10,150	25,370	29,050	30,800	20,560	12,090
CAL YR 1967	TOTAL	171,804.9	MEAN	471	MAX	3,770	MIN	2.1	AC-FT	340,800		
WTR YR 1968	TOTAL	122,713.3	MEAN	335	MAX	3,040	MIN	1.8	AC-FT	243,400		

SACRAMENTO RIVER BASIN

991

11-4515. NORTH FORK CACHE CREEK NEAR LOWER LAKE, CALIF.

LOCATION.--Lat 39°01'10", long 122°34'00", in NE $\frac{1}{4}$ sec.31, T.14 N., R.6 W. (unsurveyed), on right bank 500 ft upstream from Sweet Hollow Creek, 5 miles upstream from mouth, and 7 miles northeast of Lower Lake.

DRAINAGE AREA.--197 sq mi.

RECORDS AVAILABLE.--July 1930 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 1,035.60 ft above mean sea level, datum of 1929, supplementary adjustment of 1960. Prior to June 15, 1939, graphic water-stage recorder at datum 1.00 ft higher. June 15, 1939, to Apr. 7, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--38 years, 188 cfs (136,100 acre-ft per year); median of yearly mean discharges, 140 cfs (101,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 6,640 cfs Jan. 29 (gage height, 8.30 ft); minimum daily, 1.3 cfs Sept. 15, 16.

1930-68: Maximum discharge, 20,300 cfs Dec. 11, 1937 (gage height, 13.98 ft, present datum, from flood-marks), from rating curve extended above 7,600 cfs on basis of slope-area measurement at gage height 13.9 ft for peak of Feb. 28, 1940; no flow at times in 1930-36, 1949-50, 1956-57.

REMARKS.--Records good. No regulation; several small diversions above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	3.1	35	36	512	358	250	61	24	6.4	2.8	2.2
2	4.0	3.1	26	34	1,600	325	240	59	23	6.3	2.8	2.2
3	4.4	3.1	145	30	1,360	295	210	56	23	5.7	2.7	2.4
4	3.4	3.1	148	30	906	273	195	55	23	5.2	2.8	2.2
5	4.0	3.4	316	29	740	260	185	53	23	5.5	2.8	2.1
6	3.7	3.4	137	28	680	245	178	51	24	5.2	2.8	1.8
7	3.7	3.7	230	27	610	243	165	49	23	5.2	2.5	1.8
8	3.4	3.7	154	28	516	245	155	49	21	5.0	2.5	1.5
9	3.4	4.0	96	30	428	221	150	48	21	4.6	2.5	1.7
10	3.4	4.0	71	792	382	205	140	46	20	4.3	2.5	1.7
11	3.4	4.0	59	293	322	193	132	48	17	4.1	2.5	1.8
12	3.4	4.0	49	190	283	305	125	49	17	4.1	2.7	1.7
13	3.4	5.2	42	184	253	552	118	50	14	4.1	2.8	1.5
14	3.1	11	34	1,450	227	524	110	55	13	4.3	2.8	1.4
15	3.1	11	37	1,950	205	480	106	50	14	4.3	2.5	1.3
16	3.4	10	36	730	361	1,010	103	46	14	4.3	2.4	1.3
17	3.4	8.6	35	448	1,160	840	98	43	13	4.1	2.4	1.4
18	3.4	9.2	78	305	715	645	95	41	12	4.1	2.4	1.5
19	3.4	8.6	78	238	1,700	516	93	41	11	3.9	2.7	2.2
20	3.4	8.0	61	200	1,500	475	89	41	10	3.6	3.1	3.1
21	3.4	8.0	50	173	1,780	440	80	39	9.0	3.9	7.9	2.4
22	3.4	7.6	45	150	1,350	400	83	38	8.7	4.1	8.7	1.8
23	3.4	7.6	42	131	1,050	370	80	39	8.7	4.1	4.6	2.7
24	3.4	8.0	40	120	820	340	73	37	8.3	3.9	3.6	5.3
25	3.4	8.0	49	112	700	310	72	40	6.8	3.6	3.3	5.7
26	3.4	8.0	58	105	550	285	69	37	6.8	3.6	3.3	6.1
27	3.4	8.0	53	99	475	270	67	35	6.4	3.3	3.1	6.8
28	7.2	8.6	48	99	444	255	66	32	6.1	3.0	2.8	6.4
29	3.4	13	43	2,470	391	240	63	28	6.1	2.8	2.4	6.1
30	2.8	35	40	2,180	-----	220	61	25	6.1	2.8	2.1	6.1
31	3.1	-----	38	700	-----	225	-----	25	-----	2.8	2.1	-----
TOTAL	109.4	226.0	2,373	13,391	22,020	11,565	3,651	1,366	433.0	132.2	96.9	86.2
MEAN	3.53	7.53	76.5	432	759	373	122	44.1	14.4	4.26	3.13	2.87
MAX	7.2	35	316	2,470	1,780	1,010	250	61	24	6.4	8.7	6.8
MIN	2.3	3.1	26	27	205	193	61	25	6.1	2.8	2.1	1.3
AC-FT	217	448	4,710	26,560	43,680	22,940	7,240	2,710	859	262	192	171
CAL YR 1967	TOTAL 88,813.0		MEAN 243		MAX 8,280		MIN 2.1		AC-FT 176,200			
WTR YR 1968	TOTAL 55,449.7		MEAN 152		MAX 2,470		MIN 1.3		AC-FT 110,000			

Peak discharge (base, 3,500 cfs).--Jan. 14 (2015 hrs) 4,480 cfs (7.32 ft); Jan. 29 (2000 hrs) 6,640 cfs (8.30 ft).

SACRAMENTO RIVER BASIN

11-4520. CACHE CREEK NEAR CAPAY, CALIF.

LOCATION.--Lat 38°43'40", long 122°06'15", in Canada de Capay Grant, on right bank 1.8 miles upstream from Clear Lake Water Co.'s diversion dam, 3.2 miles northwest of Capay, and 5.4 miles northwest of Esparto.

DRAINAGE AREA.--1,044 sq mi.

RECORDS AVAILABLE.--May 1942 to September 1968.

GAGE.--Digital water-stage recorder. Altitude of gage is 225 ft (from river-profile map). Prior to Dec. 2, 1963, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--26 years, 609 cfs (440,900 acre-ft per year).

EXTREMES.--Maximum discharge during year, 17,500 cfs Jan. 30 (gage height, 14.66 ft); minimum daily, 19 cfs Nov. 28.

1942-68: Maximum discharge, 51,600 cfs Feb. 24, 1958 (gage height, 20.90 ft), from rating curve extended above 20,000 cfs; minimum, 2.2 cfs Sept. 11, 12, 16, 1947.

REMARKS.--Records good. Flow partially regulated by Clear Lake beginning in 1915 (see sta. no. 11-4500.). About 3,700 acre-ft diverted annually between stations above Rumsey and near Capay for irrigation of approximately 900 acres, from data furnished by U.S. Soil Conservation Service. Records of chemical analyses for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	144	58	27	45	1,340	599	315	499	534	489	425	306
2	129	58	36	46	4,260	1,030	339	505	504	480	424	308
3	120	57	45	43	4,330	1,070	316	488	492	489	424	303
4	117	57	190	41	3,560	1,020	296	480	513	480	424	303
5	109	57	303	38	1,540	653	284	463	536	464	407	314
6	103	57	309	37	995	617	271	454	535	456	385	303
7	98	57	175	36	889	495	262	463	526	453	373	300
8	95	62	268	36	758	457	253	509	510	466	367	276
9	92	64	154	36	646	438	246	510	486	498	384	244
10	91	50	109	935	572	404	241	487	470	501	391	222
11	88	41	87	688	509	380	234	476	472	512	372	210
12	85	38	75	267	455	404	243	478	474	517	375	197
13	82	34	60	171	416	1,760	279	457	465	562	399	186
14	79	35	54	226	386	2,580	298	457	447	561	391	183
15	76	41	50	3,600	353	2,530	294	405	444	539	361	183
16	75	42	47	1,340	345	3,810	307	402	454	531	348	170
17	72	40	47	793	1,980	3,440	311	422	464	505	346	166
18	71	39	51	534	1,370	2,890	340	450	473	477	326	166
19	69	38	74	408	1,410	2,640	376	454	514	460	320	161
20	68	36	89	318	5,390	3,490	387	452	527	454	322	151
21	67	35	71	259	5,760	3,110	369	429	528	442	315	129
22	64	33	60	213	4,960	2,920	361	433	526	438	296	127
23	64	27	54	182	4,430	1,580	392	472	498	426	269	127
24	63	24	51	159	4,110	1,460	431	496	461	408	249	124
25	62	21	48	144	3,870	1,390	431	479	454	407	253	127
26	60	20	46	134	3,690	1,340	431	454	467	419	265	136
27	60	20	52	126	3,180	1,300	472	465	444	405	273	147
28	59	19	54	120	847	603	488	527	464	409	277	140
29	59	21	52	4,940	663	374	477	556	485	411	264	124
30	58	25	49	8,650	-----	345	485	548	474	394	263	122
31	58	-----	47	1,960	-----	324	-----	537	-----	416	280	-----
TOTAL	2,537	1,206	2,834	26,525	63,014	45,453	10,229	14,707	14,641	14,469	10,568	5,955
MEAN	81.8	40.2	91.4	856	2,173	1,466	341	474	488	467	341	199
MAX	144	64	309	8,650	5,760	3,810	488	556	536	562	425	314
MIN	58	19	27	36	345	324	234	402	444	394	249	122
AC-FT	5,030	2,390	5,620	52,610	125,000	90,150	20,290	29,170	29,040	28,700	20,960	11,810
CAL YR 1967	TOTAL 334,094			MEAN 915	MAX 14,800	MIN 19	AC-FT 662,700					
WTR YR 1968	TOTAL 212,138			MEAN 580	MAX 8,650	MIN 19	AC-FT 420,800					

SACRAMENTO RIVER BASIN

993

11-4525. CACHE CREEK AT YOLO, CALIF.

LOCATION.--Lat 38°43'30", long 121°48'25", in Rio Jesus Maria Grant, on left bank 800 ft upstream from highway bridge, and 0.5 mile south of Yolo.

DRAINAGE AREA.--1,139 sq mi.

RECORDS AVAILABLE.--January 1903 to September 1968. Records for water year 1903 incomplete, yearly estimate published in WSP 1315-A.

GAGE.--Digital water-stage recorder. Datum of gage is 50.27 ft above mean sea level, adjustment of 1929. Prior to summer of 1930, staff gage at datum 7.97 ft higher. Summer 1930 to June 11, 1954, graphic water-stage recorder at datum 8.00 ft higher. June 11, 1954, to July 16, 1965, graphic water-stage recorder at datum 2.00 ft higher, July 16 to Nov. 16, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--66 years, 507 cfs (367,100 acre-ft per year).

EXTREMES.--Maximum discharge during year, 16,800 cfs Jan. 30 (gage height, 24.25 ft); no flow for several months.

1903-68: Maximum discharge, 41,400 cfs Feb. 25, 1958 (gage height, 35.11 ft, present datum); maximum stage observed, 38.2 ft (present datum) Mar. 10, 1904; no flow at times in each year.

REMARKS.--Records good except those for periods of no gage-height record, which are poor. Flow regulated by Clear Lake beginning in 1915 (see sta. no. 11-4500.). Diversions for irrigating up to about 30,000 acres between stations near Capay and at Yolo, from data furnished by Clear Lake Water Co.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	0	1,200	554	163		0		0	0
2			0	0	3,660	770	164		0		0	0
3			0	0	4,560	1,000	168		0		0	0
4			0	0	3,660	975	88		0		0	0
5			0	0	2,080	731	53		0		0	0
6			0	0	1,090	543	40		0		0	.45
7		37	0	955	465	31			0		0	0
8		109	0	820	364	25			0		0	0
9		125	0	702	342	21			0		0	0
10		60	72	603	309	16			0		0	.49
11			32	939	537	284	10		0		0	.88
12			16	306	467	283	6.0		0		0	1.1
13			10	171	419	1,150	3.5		0		0	1.2
14			26	133	378	2,180	0		0		0	.10
15			11	2,600	350	2,330	0		0		0	0
16			6.6	1,550	335	3,160	0		0		0	.82
17			3.7	820	1,270	3,440	0		0		0	1.2
18			1.8	538	1,640	2,730	0		0		0	1.2
19			.61	387	1,090	2,490	0		0		0	1.0
20			.12	297	4,180	3,090	0		0		.63	1.1
21			0	240	5,450	2,860	0		0		0	.08
22			0	201	4,770	2,750	0		0		0	0
23			0	169	4,180	1,730	0		0		0	.88
24			0	143	3,840	1,350	0		0		0	1.1
25			0	124	3,590	1,280	0		0		0	.16
26			0	111	3,370	1,230	0		0		0	0
27			0	98	3,200	1,210	0		9.8		0	0
28			0	87	1,240	823	0		1.6		0	0
29			0	2,010	662	326	0		0		0	0
30			0	11,100	-----	223	0		0		0	0
31		-----	0	2,400	-----	184	-----		-----		0	-----
TOTAL	0	0	438.83	24,496	60,298	41,156	788.5	0	11.4	0	0.63	11.76
MEAN	0	0	14.2	790	2,079	1,328	26.3	0	.38	0	.020	.39
MAX	0	0	125	11,100	5,450	3,440	168	0	9.8	0	.63	1.2
MIN	0	0	0	0	335	184	0	0	0	0	0	0
AC-FT	0	0	870	48,590	119,600	81,630	1,560	0	23	0	1.3	23
CAL YR 1967	TOTAL 279,997.23			MEAN 767			MAX 13,600			MIN 0		
WTR YR 1968	TOTAL 127,201.12			MEAN 348			MAX 11,100			MIN 0		
							AC-FT 555,400					
							AC-FT 252,300					

Note.--No gage-height record Apr. 4 to June 26, June 27 to Sept. 6.

SACRAMENTO RIVER BASIN

11-4530. YOLO BYPASS NEAR WOODLAND, CALIF.

LOCATION.--Lat 38°40'40", long 121°38'35", on left bank 300 ft upstream from Sacramento and Woodland railroad bridge, 6 miles upstream from Sacramento bypass, 7 miles downstream from Fremont weir, and 7 miles east of Woodland.

RECORDS AVAILABLE.--October 1939 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Gage is set to datum of Corps of Engineers which is 3.41 ft below mean sea level. Prior to Dec. 17, 1941, staff gage, and Dec. 18-31, 1941, graphic water-stage recorder, at datum 0.73 higher. A supplementary graphic water-stage recorder 7 miles downstream at different datum is used for records of low flow.

AVERAGE DISCHARGE.--29 years, 3,709 cfs (2,685,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 19,600 cfs Feb. 28 (gage height, 24.76 ft); no flow for many days. 1939-68: Maximum discharge, 272,000 cfs Feb. 8, 1942 (gage height, 32.00 ft); no flow at times in 1939-40, 1963-68.

REMARKS.--Records fair. Flow is from Cache Creek and Knights Landing Ridge Cut plus floodwater passing over Fremont weir; during the summer months, the flow consists largely of return water from irrigation. There is some diversion for irrigation between the main and supplementary gage which affects the low flow record.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	11	22	12	5,800	14,000	368	0	3.4		0	21
2	19	12	20	10	4,760	9,400	397	0	3.4		0	18
3	19	12	17	12	6,880	5,080	332	0	3.4		0	18
4	17	12	13	12	8,110	2,640	270	0	3.4		0	18
5	18	16	17	12	7,000	1,650	244	0	3.4		0	20
6	19	12	15	19	4,760	1,200	186	0	3.4		0	19
7	21	12	18	21	3,340	1,050	113	0	3.4		0	18
8	29	13	25	34	2,480	945	72	0	3.4		0	18
9	23	19	23	56	1,860	782	51	0	3.4		0	18
10	30	19	20	62	1,310	700	46	0	3.4		0	18
11	32	19	13	69	1,020	582	58	0	3.4		0	19
12	24	12	12	282	832	498	62	0	3.4		0	20
13	25	11	11	299	662	765	44	0	3.3		0	21
14	16	12	12	261	552	1,740	36	0	3.3		0	23
15	12	12	12	294	468	2,200	31	0	3.3		0	23
16	9.0	12	19	1,880	427	2,320	30	0	5.6		0	21
17	9.0	12	17	1,660	506	2,950	27	0	7.2		0	21
18	7.8	12	12	1,350	1,820	2,720	26	0	5.1		0	20
19	7.8	18	20	1,020	2,610	2,420	30	0	2.1		0	20
20	12	15	21	851	3,650	2,370	27	0	.60		2.1	20
21	14	17	19	685	6,440	2,500	29	0	.20		11	19
22	14	16	15	462	7,840	2,410	27	0	4.1		18	18
23	12	19	13	275	10,300	2,180	27	0	7.2		20	11
24	12	13	13	200	14,900	1,560	31	259	6.1		20	2.1
25	16	12	11	156	18,600	1,340	29	217	1.2		20	11
26	18	16	8.4	136	18,100	1,240	29	75	.06		21	85
27	19	12	9.6	118	19,000	1,190	24	19	.06		21	116
28	20	15	17	99	19,000	1,120	19	3.4	.01		22	44
29	18	16	17	88	17,000	889	24	3.4	0		24	29
30	9.0	23	17	6,680	-----	560	16	3.4	0		24	25
31	7.8	-----	18	9,100	-----	419	-----	3.4	-----		23	-----
TOTAL	530.4	432	497.0	26,215	190,027	71,420	2,705	583.6	90.23	0	226.1	754.1
MEAN	17.1	14.4	16.0	846	6,553	2,304	90.2	18.8	3.01	0	7.29	25.1
MAX	32	23	25	9,100	19,000	14,000	397	259	7.2	0	24	116
MIN	7.8	11	8.4	10	427	419	16	0	0	0	0	2.1
AC-FT	1,050	857	986	52,000	376,900	141,700	5,370	1,160	179	0	448	1,500

CAL YR 1967 TOTAL 1,359,095.40 MEAN 3,724 MAX 123,000 MIN 0 AC-FT 2,696,000
WTR YR 1968 TOTAL 293,480.43 MEAN 802 MAX 19,000 MIN 0 AC-FT 582,100

SACRAMENTO RIVER BASIN

995

11-4532. DRY CREEK NEAR MIDDLETOWN, CALIF.

LOCATION.--Lat 38°44'05", long 122°38'50", in NW¼ sec.9, T.10 N., R.7 W., on right bank 0.3 mile downstream from Kroll Creek, 2.1 miles southwest of Middletown, and 2.7 miles upstream from mouth.

DRAINAGE AREA.--8.35 sq mi.

RECORDS AVAILABLE.--May 1959 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 1,172.15 ft above mean sea level, datum of 1929, supplementary adjustment of 1960. Prior to Apr. 7, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--9 years, 26.0 cfs (18,820 acre-ft per year).

EXTREMES.--Maximum discharge during year, 1,840 cfs Jan. 10 (gage height, 8.40 ft); no flow for many days.
1959-68: Maximum discharge, 3,470 cfs Feb. 8, 1960 (gage height, 9.90 ft); no flow for many days in each year.

REMARKS.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.12	5.8	4.7	72	23	22	3.6	1.3	.18	0	.06
2	.44	.10	3.3	4.5	109	20	19	3.5	1.2	.16	0	.05
3	.65	.10	142	4.3	80	19	17	3.3	1.3	.18	0	.05
4	.20	.12	159	4.1	59	17	15	3.3	1.2	.14	0	.04
5	.25	.12	74	3.9	46	17	14	3.2	1.2	.12	0	.05
6	.16	.16	23	3.8	38	15	13	3.2	1.2	.10	0	.05
7	.14	.16	128	3.8	33	16	13	3.0	1.2	.06	0	.02
8	.10	.36	32	3.8	29	15	12	2.9	1.1	.06	0	.01
9	.08	.48	19	39	26	13	11	2.9	1.0	.06	0	.02
10	.08	.28	14	385	23	12	10	2.7	1.0	.05	0	.02
11	.06	.22	12	51	21	11	10	2.7	1.0	.05	0	.02
12	.06	.25	9.1	32	19	95	9.4	2.7	.95	.05	0	.02
13	.08	1.4	8.0	28	18	103	9.1	4.7	.90	.05	0	.02
14	.06	10	7.0	161	17	137	8.3	3.9	.85	.06	0	.02
15	.05	1.7	6.5	199	15	71	8.0	3.2	.80	.06	0	.03
16	.05	1.0	6.0	108	28	188	7.8	2.9	.70	.07	0	.03
17	.05	.80	10	61	105	88	7.5	2.6	.65	.06	0	.02
18	.05	.70	40	42	53	64	7.3	2.4	.52	.05	0	.02
19	.06	.65	20	33	196	52	7.0	2.4	.48	.04	0	.02
20	.08	.60	15	27	158	44	6.5	2.6	.48	.03	.44	.02
21	.08	.56	12	23	216	39	6.3	2.4	.48	.02	1.1	.02
22	.10	.52	10	20	97	35	5.8	2.3	.40	.02	.72	.02
23	.12	.52	9.1	17	77	32	5.8	2.2	.36	.02	.41	.01
24	.12	.52	8.8	16	58	30	5.3	2.2	.32	.02	.29	.01
25	.12	.52	8.0	15	46	28	5.1	2.6	.28	.01	.26	0
26	.12	.48	7.3	14	39	25	4.7	2.2	.25	0	.26	0
27	.12	.52	6.5	13	33	23	4.5	2.0	.25	0	.18	0
28	.12	.60	6.0	18	29	21	4.1	1.8	.20	0	.14	0
29	.10	24	5.5	630	25	20	3.9	1.7	.20	0	.12	0
30	.10	13	5.3	300	-----	19	3.8	1.6	.18	.0	.09	0
31	.12	-----	4.9	107	-----	17	-----	1.4	-----	0	.07	-----
TOTAL	3.92	60.56	817.1	2,371.9	1,765	1,309	276.2	84.1	21.95	1.72	4.08	0.65
MEAN	.13	2.02	26.4	76.5	60.9	42.2	9.21	2.71	.73	.056	.13	.022
MAX	.65	24	159	630	216	188	22	4.7	1.3	.18	1.1	.06
MIN	0	.10	3.3	3.8	15	11	3.8	1.4	.18	0	0	0
AC-FT	7.8	120	1,620	4,700	3,500	2,600	548	167	44	3.4	8.1	1.3
CAL YR 1967	TOTAL 10,465.74		MEAN 28.7		MAX 1,370		MIN 0		AC-FT 20,760			
WTR YR 1968	TOTAL 6,716.18		MEAN 18.4		MAX 630		MIN 0		AC-FT 13,320			

Peak discharge (base, 1,000 cfs, revised).--Jan. 10 (0245 hrs) 1,840 cfs (8.40 ft); Jan. 29 (1815 hrs) 1,230 cfs (7.55 ft).

SACRAMENTO RIVER BASIN

11-4535. PUTAH CREEK NEAR GUENOC, CALIF.

LOCATION.--Lat 38°46'45", long 122°31'00", in Guenoc Grant, on right bank just upstream from Coyote Valley dam-site, 2.8 miles upstream from Soda Creek, 3.2 miles downstream from highway bridge at Guenoc, Lake County.

DRAINAGE AREA.--113 sq mi.

RECORDS AVAILABLE.--February 1904 to September 1906, July 1930 to September 1968. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Graphic water-stage recorder. Datum of gage is 914.18 ft above mean sea level, datum of 1929, supplementary adjustment of 1960. February 1904 to September 1906, staff gage a quarter of a mile upstream at different datum.

AVERAGE DISCHARGE.--40 years, 204 cfs (147,700 acre-ft per year); median of yearly mean discharges, 170 cfs (123,000 acre-ft per year).

EXTREMES.--Maximum discharge during year, 11,000 cfs Jan. 29 (gage height, 14.28 ft); minimum daily, 1.2 cfs Sept. 29.

1904-6, 1930-68: Maximum discharge, 32,000 cfs Dec. 11, 1937 (gage height, 22.7 ft), from rating curve extended above 13,000 cfs; no flow for many days in August and September 1964.

REMARKS.--Records good. No regulation; diversions and ground-water withdrawals for irrigation of about 1,600 acres above station. Records of water temperatures and suspended-sediment loads for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	2.5	49	37	669	222	178	32	15	6.0	5.0	2.2
2	2.2	2.5	34	36	954	208	173	28	15	6.0	5.3	2.1
3	2.5	2.5	483	35	701	190	146	28	16	6.2	4.8	2.1
4	2.5	2.7	611	34	518	176	136	28	16	6.0	4.8	2.1
5	2.6	2.7	778	33	416	167	126	25	14	6.0	4.6	2.1
6	2.5	2.7	191	32	346	158	120	25	14	6.5	4.4	2.1
7	2.5	2.7	642	31	301	157	115	23	14	6.7	4.1	2.0
8	2.5	3.0	229	31	265	158	109	23	14	6.7	4.3	2.0
9	2.4	3.4	138	35	238	144	104	22	13	6.5	3.7	2.0
10	2.6	3.9	104	2,460	214	136	99	22	12	6.2	3.7	2.0
11	2.5	3.9	86	410	194	128	95	22	11	6.0	3.4	2.0
12	2.4	4.3	72	233	178	428	90	24	11	5.8	3.4	2.0
13	2.5	5.0	64	196	167	691	88	25	11	6.0	3.4	2.0
14	2.4	17	58	1,270	155	864	82	29	10	6.0	3.4	2.0
15	2.6	19	56	1,810	148	543	81	30	9.8	5.8	3.2	2.1
16	2.7	13	52	782	483	1,410	78	25	8.9	5.8	3.2	1.7
17	2.9	11	51	447	1,340	787	72	22	8.5	5.5	3.2	1.5
18	3.0	12	160	301	646	539	71	22	7.9	5.5	3.0	1.6
19	3.0	11	125	229	1,400	416	67	20	7.5	5.3	3.0	1.5
20	3.2	11	92	186	1,680	349	63	20	7.2	5.3	3.2	1.5
21	3.2	11	76	160	1,430	303	61	20	7.0	5.3	3.4	1.5
22	3.4	11	67	138	846	275	58	20	6.7	5.0	3.2	1.4
23	3.4	12	61	122	658	256	55	20	6.7	5.0	3.0	1.4
24	3.2	12	57	107	508	229	54	20	6.2	4.8	2.9	1.4
25	3.0	13	53	99	410	212	51	20	6.2	4.6	2.9	1.4
26	3.0	13	51	109	349	198	48	20	6.2	5.0	2.7	1.3
27	2.7	13	47	88	303	184	44	19	6.2	5.0	2.6	1.3
28	2.7	14	45	85	270	171	40	19	6.0	5.0	2.7	1.3
29	2.6	26	42	5,700	244	162	37	17	6.0	4.8	2.5	1.2
30	2.5	63	41	3,130	-----	153	34	17	6.0	4.8	2.4	1.3
31	2.5	-----	39	1,040	-----	146	-----	15	-----	5.0	2.4	-----
TOTAL	83.4	323.8	4,654	19,406	16,031	10,160	2,575	702	299.0	174.1	107.8	52.1
MEAN	2.69	10.8	150	626	553	328	85.8	22.6	9.97	5.62	3.48	1.74
MAX	3.4	63	778	5,700	1,680	1,410	178	32	16	6.7	5.3	2.2
MIN	1.7	2.5	34	31	148	128	34	15	6.0	4.6	2.4	1.2
AC-FT	165	642	9,230	38,490	31,800	20,150	5,110	1,390	593	345	214	103

CAL YR 1967 TOTAL 96,364.8 MEAN 264 MAX 12,900 MIN 1.6 AC-FT 191,100

WTR YR 1968 TOTAL 54,568.2 MEAN 149 MAX 5,700 MIN 1.2 AC-FT 108,200

Peak discharge (base, 5,000 cfs).--Jan. 10 (0500 hrs) 7,650 cfs (12.25 ft); Jan. 29 (2100 hrs) 11,000 cfs (14.28 ft).

11-4539. LAKE BERRYESSA NEAR WINTERS, CALIF.

LOCATION.--Lat 38°30'50", long 122°06'15", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.29, T.8 N., R.2 W., near center of Monticello Dam on Putah Creek, 7.4 miles west of Winters.

DRAINAGE AREA.--566 sq mi.

RECORDS AVAILABLE.--January 1957 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

EXTREMES.--Maximum contents during year, 1,626,300 acre-ft Mar. 17, 18 (elevation, 441.24 ft); minimum, 1,372,700 acre-ft Sept. 30 (elevation, 427.72 ft).
1957-68: Maximum contents, 1,686,100 acre-ft Jan. 6, 1965 (elevation, 444.30 ft); minimum since irrigation pool first filled, 1,077,900 acre-ft Oct. 10, 11, 1962 (elevation, 410.60 ft).

REMARKS.--Reservoir is formed by concrete arch-gravity dam, completed November 1956. Usable capacity, 1,592,000 acre-ft between elevations 253.25 (invert of outlet valves) and 440 ft (crest of glory-hole spillway) above mean sea level. 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 year was 220,541 acre-ft. Releases for irrigation began in May 1959. Records, including extremes, show total contents at 2400 hours.

COOPERATION.--Records furnished by Bureau of Reclamation.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

400	911,200
410	1,068,100
420	1,236,000
430	1,414,200
445	1,699,900

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400 HOURS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,467.4	1,434.2	1,424.5	1,431.4	1,534.8	1,601.5	1,615.8	1,595.0	1,557.6	1,512.9	1,461.8	1,416.2
2	1,467.0	1,433.1	1,424.3	1,431.4	1,539.0	1,602.3	1,615.4	1,593.8	1,555.9	1,511.4	1,460.3	1,414.9
3	1,465.9	1,432.5	1,426.3	1,431.1	1,541.6	1,602.7	1,614.8	1,592.5	1,554.5	1,509.7	1,458.4	1,413.4
4	1,464.9	1,431.4	1,428.9	1,431.1	1,543.3	1,603.4	1,614.5	1,591.3	1,553.2	1,508.5	1,456.8	1,411.8
5	1,463.8	1,430.7	1,430.3	1,430.9	1,544.8	1,603.6	1,614.1	1,590.3	1,551.3	1,506.8	1,455.3	1,410.5
6	1,462.5	1,430.3	1,431.6	1,430.7	1,545.6	1,603.8	1,613.7	1,588.8	1,550.0	1,505.1	1,454.0	1,408.9
7	1,461.4	1,430.0	1,433.3	1,430.3	1,546.7	1,604.8	1,613.1	1,588.0	1,548.6	1,503.3	1,452.5	1,408.1
8	1,460.1	1,429.4	1,434.0	1,430.5	1,547.5	1,605.0	1,612.7	1,586.3	1,547.5	1,501.9	1,450.8	1,406.5
9	1,458.8	1,428.1	1,434.0	1,430.9	1,548.3	1,605.4	1,612.5	1,585.3	1,546.0	1,500.3	1,449.2	1,404.8
10	1,457.7	1,427.8	1,433.8	1,442.7	1,548.8	1,605.4	1,611.9	1,583.8	1,544.6	1,498.8	1,447.5	1,403.0
11	1,456.2	1,427.0	1,433.6	1,443.8	1,549.4	1,605.4	1,611.6	1,582.3	1,543.7	1,496.9	1,446.0	1,401.9
12	1,454.7	1,426.5	1,433.5	1,444.4	1,550.0	1,609.4	1,611.2	1,580.7	1,542.2	1,495.2	1,444.7	1,400.3
13	1,453.4	1,426.3	1,432.5	1,445.5	1,550.2	1,612.7	1,610.4	1,580.0	1,540.9	1,493.5	1,442.7	1,398.8
14	1,451.4	1,426.5	1,431.8	1,450.3	1,550.4	1,615.8	1,610.0	1,579.0	1,539.5	1,491.6	1,441.0	1,397.5
15	1,450.5	1,426.5	1,430.7	1,458.6	1,551.1	1,616.6	1,609.2	1,578.2	1,538.4	1,489.8	1,439.6	1,395.7
16	1,449.2	1,426.3	1,430.7	1,461.4	1,553.6	1,624.9	1,608.3	1,577.3	1,537.2	1,488.2	1,438.1	1,393.3
17	1,447.9	1,425.9	1,431.6	1,462.3	1,560.1	1,626.3	1,607.1	1,576.3	1,535.7	1,486.8	1,436.2	1,392.3
18	1,446.6	1,425.9	1,431.6	1,462.9	1,562.2	1,626.3	1,606.3	1,575.2	1,534.2	1,485.3	1,434.9	1,390.4
19	1,445.5	1,425.7	1,432.0	1,462.9	1,571.5	1,625.3	1,605.6	1,574.0	1,532.5	1,483.2	1,433.5	1,389.3
20	1,444.4	1,425.6	1,432.0	1,463.6	1,580.5	1,624.3	1,604.8	1,572.7	1,531.2	1,482.3	1,432.2	1,387.5
21	1,443.1	1,424.8	1,432.2	1,463.6	1,587.5	1,623.8	1,603.8	1,571.2	1,529.7	1,480.4	1,431.6	1,385.7
22	1,442.0	1,424.3	1,432.5	1,463.8	1,591.1	1,622.8	1,602.9	1,570.0	1,528.1	1,478.7	1,430.3	1,384.3
23	1,441.0	1,424.1	1,432.5	1,464.8	1,593.8	1,622.2	1,602.1	1,568.7	1,526.6	1,477.2	1,429.1	1,382.8
24	1,440.1	1,424.1	1,432.2	1,464.8	1,595.4	1,621.4	1,601.5	1,567.5	1,524.6	1,475.6	1,427.4	1,381.2
25	1,439.2	1,423.5	1,432.2	1,464.8	1,596.7	1,620.7	1,600.7	1,566.4	1,523.2	1,474.1	1,426.3	1,379.5
26	1,438.6	1,423.0	1,432.5	1,465.1	1,597.7	1,619.5	1,599.6	1,565.0	1,521.5	1,472.6	1,425.0	1,378.3
27	1,438.1	1,423.0	1,432.5	1,465.1	1,599.0	1,618.7	1,598.4	1,563.9	1,519.6	1,470.9	1,423.4	1,377.0
28	1,437.0	1,422.8	1,432.4	1,465.1	1,600.2	1,618.1	1,598.0	1,562.4	1,518.3	1,469.0	1,422.1	1,375.5
29	1,435.9	1,424.3	1,432.4	1,507.0	1,600.5	1,617.6	1,597.1	1,561.0	1,515.5	1,467.2	1,420.8	1,374.1
30	1,435.1	1,424.5	1,432.2	1,527.2	-----	1,617.2	1,596.1	1,559.9	1,514.4	1,465.7	1,419.5	1,372.7
31	1,434.6	-----	1,431.8	1,531.9	-----	1,616.4	-----	1,558.4	-----	1,463.8	1,417.8	-----
(a)	431.11	430.56	430.96	436.32	439.91	440.73	439.68	437.71	435.39	432.69	430.20	427.72
(b)	-33.9	-10.1	7.3	100.1	68.6	15.9	-40.3	-37.7	-44.0	-50.6	-46.0	-45.1
(c)	6,580	2,989	2,360	1,375	1,743	4,445	7,918	9,763	12,706	13,585	10,159	9,023
MAX	1,467.4	1,434.2	1,432.5	1,531.9	1,600.5	1,626.3	1,615.8	1,595.0	1,557.6	1,512.9	1,461.8	1,416.2
MIN	1,434.6	1,422.8	1,424.3	1,430.3	1,534.8	1,601.5	1,596.1	1,558.4	1,514.4	1,463.8	1,417.8	1,372.7
CAL YR 1967	b -42.6			MAX 1,679.6			MIN 1,422.8					
WTR YR 1968	b -95.8			MAX 1,626.3			MIN 1,372.7					

a Elevation, in feet, at end of month.

b Change in contents, in thousands of acre-feet.

c Evaporation, in acre-feet.

SACRAMENTO RIVER BASIN

11-4540. PUTAH CREEK NEAR WINTERS, CALIF.

LOCATION.--Lat 38°30'55", long 122°04'50", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.28, T.8 N., R.2 W., on left bank 1.3 miles downstream from Monticello Dam, 6 miles west of Winters, and 8 miles downstream from Capell Creek.

DRAINAGE AREA.--574 sq mi.

RECORDS AVAILABLE.--July 1930 to September 1968.

GAGE.--Digital water-stage recorder. Datum of gage is 160.75 ft above mean sea level (river-profile survey). June 28, 1930, to Feb. 29, 1940, at datum about 1 ft higher. Prior to Oct. 27, 1965, graphic water-stage recorder at same site and datum.

AVERAGE DISCHARGE.--38 years, 492 cfs (356,200 acre-ft per year). Adjusted for change in contents and evaporation from Lake Berryessa.

EXTREMES.--Maximum discharge during year, 1,180 cfs Mar. 17 (gage height, 9.23 ft); minimum daily, 6.1 cfs Dec. 19.

1930-57 (prior to regulation by Monticello Dam): Maximum discharge, 81,000 cfs Feb. 27, 1940 (gage height, 30.5 ft, present datum), from rating curve extended above 30,000 cfs; no flow Sept. 6-15, 1950, July 26 to Sept. 1, Sept. 6-9, 1955.

1958-68: Maximum discharge, 7,740 cfs Jan. 7, 1965 (gage height, 14.96 ft); minimum daily, 6.1 cfs Dec. 19, 1967.

Maximum stage known since at least 1905, that of Feb. 27, 1940, on basis of records for station at Winters.

REMARKS.--Records good. Flow regulated by Lake Berryessa beginning January 1957 (see sta. no. 11-4539.). Records of water temperatures for the 1968 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	330	311	8.7	64	60	51	523	525	587	638	729	598
2	368	303	8.3	60	50	54	507	542	570	635	686	578
3	397	293	9.1	60	50	61	482	564	559	652	662	602
4	419	285	39	60	54	67	463	546	538	669	606	634
5	462	280	69	60	58	67	437	518	556	656	556	635
6	500	290	69	66	61	65	408	535	582	616	580	629
7	580	287	69	71	61	72	392	548	568	577	612	617
8	558	280	69	38	67	90	367	597	534	601	586	599
9	529	266	69	9.0	77	99	347	659	506	655	571	617
10	593	267	69	13	81	107	332	647	472	693	574	623
11	578	271	69	11	81	109	318	615	478	699	582	590
12	586	271	104	9.1	82	140	307	566	479	679	564	599
13	593	128	95	8.6	81	316	355	509	468	659	575	629
14	607	59	91	8.4	78	432	401	436	488	653	570	623
15	600	38	102	39	72	526	359	423	518	635	582	596
16	568	24	98	64	58	827	385	450	538	628	582	602
17	499	53	91	76	40	1,130	407	460	577	644	576	599
18	512	71	36	86	15	1,160	384	513	590	668	550	579
19	487	76	6.1	86	37	1,130	430	525	639	636	583	559
20	485	88	6.6	77	55	1,070	432	529	684	611	557	559
21	486	95	6.8	70	31	1,020	371	559	693	594	566	587
22	462	95	7.9	66	15	966	365	583	671	605	568	629
23	429	84	8.0	64	42	910	404	594	641	575	562	650
24	332	78	7.6	64	100	862	417	623	687	590	566	677
25	321	77	41	64	93	824	410	622	681	634	555	671
26	316	67	69	75	62	764	418	607	677	665	609	632
27	300	46	69	100	53	708	456	585	712	686	662	611
28	293	25	69	80	45	665	465	579	680	662	645	596
29	293	9.2	68	67	47	621	455	561	662	732	639	582
30	287	10	68	63	-----	584	497	548	668	713	629	593
31	293	-----	69	44	-----	564	-----	551	-----	717	622	-----
TOTAL	14,063	4,527.2	1,661.1	1,723.1	1,706	16,061	12,294	17,119	17,703	20,077	18,506	18,295
MEAN	454	151	53.6	55.6	58.8	518	410	552	590	648	597	610
MAX	607	311	104	100	100	1,160	523	659	712	732	729	677
MIN	287	9.2	6.1	8.4	15	51	307	423	468	575	550	559
AC-FT	27,890	8,980	3,290	3,420	3,380	31,860	24,380	33,960	35,110	39,820	36,710	36,290
Mean a	9.27	31.4	211	1,706	1,282	849	202	979	64.2	455	14.1	3.58
Ac-ft a	570	1,870	12,950	104,900	73,720	52,200	12,000	6,020	3,820	2,800	869	213

Cal yr 1967 Total 276,390.3 Mean 757 Max 6,270 Min 6.1 Ac-ft 548,200 Mean a 811 Ac-ft a 587,400
 Wtr yr 1968 Total 143,735.4 Mean 393 Max 1,160 Min 6.1 Ac-ft 285,100 Mean a 375 Ac-ft a 271,900

a Adjusted for change in contents and evaporation from Lake Berryessa.

SACRAMENTO RIVER BASIN

999

11-4541. PLEASANTS CREEK NEAR WINTERS, CALIF.

LOCATION.--Lat 38°28'40", long 122°01'43", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.1, T.7 N., R.2 W., on left bank 0.2 mile upstream from unnamed tributary, 0.3 mile above bridge on Pleasants Valley road, 1.3 miles northeast of Pleasants Valley School, and 4.4 miles southwest of Winters.

DRAINAGE AREA.--15.9 sq mi.

RECORDS AVAILABLE.--October 1959 to September 1968.

GAGE.--Graphic water-stage recorder. Datum of gage is 150.33 ft above mean sea level.

AVERAGE DISCHARGE.--9 years, 7.99 cfs (5,780 acre-ft per year).

EXTREMES.--Maximum discharge during year, 500 cfs Jan. 29 (gage height, 5.20 ft); no flow for many days.

1959-68: Maximum discharge, 3,780 cfs Jan. 31, 1963 (gage height, 12.36 ft), from rating curve extended above 2,200 cfs on basis of slope-area measurement at gage height 10.05 ft; no flow for many days in each year.

REMARKS.--Several small reservoirs above station. Minor diversions above station for irrigation.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTERRER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.60	.30	.40	4.5	3.2	2.4	.50	.10			
2	.10	.60	.30	.40	4.7	2.9	2.5	.60	.10			
3	.20	.10	.40	.40	2.9	2.6	2.2	.50	.10			
4	.10	.10	.50	.40	2.4	2.5	2.0	.50	.10			
5	.10	.10	.60	.40	2.1	2.4	1.8	.50	.10			
6	.10	.20	.30	.50	1.8	2.4	1.8	.60	.10			
7	.10	.20	.60	.50	1.6	2.5	1.8	.50	.10			
8	.10	.20	.40	.50	1.6	2.6	1.6	.50	.10			
9	.10	.20	.30	.50	1.4	2.2	1.6	.50	.10			
10	.10	.20	.30	3.5	1.5	2.0	1.6	.50	.10			
11	.10	.20	.40	1.6	1.4	1.8	1.6	.50	.10			
12	.10	.20	.50	.90	1.3	8.2	1.4	.50	.10			
13	.10	.30	.50	.80	1.2	13	1.3	.60	.10			
14	.10	.40	.50	1.1	1.2	7.4	1.3	.80	.10			
15	.20	.30	.60	3.2	1.2	5.6	1.3	.70	0			
16	.20	.20	.60	1.8	17	32	1.2	.60	0			
17	.30	.20	.70	1.1	78	11	1.1	.50	0			
18	.30	.30	.90	.80	15	6.6	1.1	.40	0			
19	.20	.30	.60	.80	31	4.9	1.1	.40	0			
20	.20	.30	.50	.70	43	4.2	1.0	.40	0			
21	.20	.30	.40	.70	34	3.9	1.0	.40	0			
22	.30	.30	.40	.70	14	3.6	1.0	.40	0			
23	.30	.30	.40	.70	9.3	3.4	.90	.40	0			
24	.30	.30	.40	.70	6.6	3.2	.90	.40	0			
25	.30	.30	.40	.70	5.4	3.0	.80	.40	0			
26	.30	.30	.40	.70	4.5	2.9	.70	.30	0			
27	.30	.30	.40	.60	4.2	2.6	.60	.30	0			
28	.30	.30	.40	.60	3.7	2.6	.60	.20	0			
29	.40	.60	.40	97	3.4	2.4	.60	.20	0			
30	.50	.50	.40	95	-----	2.4	.50	.20	0			
31	.60	-----	.40	10	-----	2.3	-----	.20	-----			-----
TOTAL	6.70	8.70	14.20	227.70	299.9	152.3	39.30	14.00	1.40	0	0	0
MEAN	.22	.29	.46	7.35	10.3	4.91	1.31	.45	.047	0	0	0
MAX	.60	.60	.90	97	78	32	2.5	.80	.10	0	0	0
MIN	.10	.10	.30	.40	1.2	1.8	.50	.20	0	0	0	0
AC-FT	13	17	28	452	595	302	78	28	2.8	0	0	0
CAL YR 1967	TOTAL	7,421.30	MEAN	20.3	MAX	1,540	MIN	.10	AC-FT	14,720		
WTR YR 1968	TOTAL	764.20	MEAN	2.09	MAX	97	MIN	0	AC-FT	1,520		

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements, and others collected for some special reason, are called measurements at miscellaneous sites.

Crest-stage partial-record stations

As explained on page 509 the California district publishes annual maxima on small streams at 304 sites in a separate publication Floods From Small Drainage Areas. In addition, discharge measurements are generally made in times of drought or flood to give better coverage to those events. Those measurements, and others collected for some special reason, are called measurements at miscellaneous sites.

The following table contains annual maximum discharges for crest-stage stations not included in the above-mentioned report. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for the current water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been obtained.

Annual maximum discharge at crest-stage partial-record stations during water year 1968

Annual maximum discharge at crest-stage partial-record stations during water year 1968							
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
Eagle Lake basin							
10-3952.5	Pine Creek near Westwood	SE¼ sec. 5, T.31 N., R.8 E., 1 mile southwest of Bogard Guard Station and 19 miles north of Westwood.	22.6	1950-61† 1966-68	3-1-68	3.38	44.3
Buena Vista Lake basin							
11-1951.5	Bitterwater Creek near Maricopa	W½ sec. 11, T.11 N., R.24 W., 1.0 mile southwest of Maricopa.	18.5	1961-68	2-14-68	13.23	2.5
11-1953.	Santiago Creek near Maricopa	NW¼ sec. 36, T.11 N., R.23 W., 8 miles southeast of Maricopa.	34.8	1961-68	8-7-68	16.49	186
11-1973.7	Bitterwater Creek near Lost Hills	NW¼SE¼ sec. 21, T.27 S., R.18 E., 0.2 mile downstream from Cedar Canyon, 2.1 mile west of Lost Hills.	76.4	1961-68	11-4-67	---	0.4
Tulare Lake basin							
11-2251.3	Zapato Chino Creek near Avenal	SE¼SW¼ sec. 27, T.21 S., R.16 E., 7 miles northwest of Avenal.	44.5	1961-68	10-3-67	9.04	208
San Joaquin River basin							
11-2630.5	Garzas Creek near Gustine	SW¼ sec. 18, T.8 S., R.8 E., above diversion weir 7.7 miles west of Gustine.	51.2	1959-68			No flow
11-3055.	San Antonio Creek near San Andreas	NE¼ sec. 10, T.3 N., R.12 E., 800 ft below highway bridge, 1.9 miles above mouth, and 5 miles southeast of San Andreas.	48.1	1950-59† 1961-68	2-20-68	3.60	810
11-3070.	Esperanza Creek near Mokelumne Hill	NW¼ sec. 6, T.5 N., R.13 E., 600 ft above mouth, 6 miles east of Mokelumne Hill.	16.6	1951-59† 1961-68	2-20-68	4.60	1,180
11-3075	Jesus Maria Creek near Mokelumne Hill	SE¼ sec. 16, T.5 N., R.12 E., 0.6 mile above mouth, 3.2 miles southeast of Mokelumne Hill.	34.6	1950-59† 1961-68	2-20-68	2.80	232

† Operated as a continuous-record gaging station.

Measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table.

Discharge measurements made at miscellaneous sites during water year 1968

Discharge measurements made at miscellaneous sites during water year 1968						
Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Eagle Lake basin						
Pine Creek	Eagle Lake	SE¼ sec. 5, T.31 N., R.8 E., 1 mile southwest of Bogard Guard Station and 19 miles north of Westwood.	24.8	1950-61† 1964, 1967	8-28-68	*1.69
Tulare Lake basin						
Golden Trout Creek	Kern River	NW¼SW¼ sec. 10, T.18 S., R.34 E., 0.5 mile upstream from Tunnel Ranger Station and 15 miles west of Cartago.	23.6	1956-67†	10-23-67 9-30-68	16.8 *11.1
South Fork Kern	Kern River	NW¼SW¼ sec. 18, T.20 S., R.36 E., 2.0 miles downstream from Snake Creek and 9.7 miles southwest of Olancha.	146	1956-67†	9-30-68	*8.05
Kelso Creek	South Fork Kern River	NW¼ sec. 20, T.27 S., R.35 E., 0.5 mile upstream from Woolstaff Creek and 7 miles southwest of Weldon.	101	1958-67†	8-19-68	*1.62
North Fork Kaweah River	Kaweah River	SE¼ sec. 34, T.16 S., R.28 E., 1.2 miles upstream from Manniken Creek and 1.5 miles north of Kaweah.	128	1919-60† 1963-67	9-3-68	*1.22
South Fork Kings River	Kings River	NW¼ sec. 8, T.13 S., R.30 E., 0.3 mile below Grizzly Creek and 4.5 miles west of Cedar Grove.	409	1950-57† 1959-60 1963-66	8-16-68	127
Cooper Creek	South Fork Kings River	S½ sec. 11, T.13 S., R.31 E., 0.5 mile above South Fork Kings River and 5.9 miles north-east of Cedar Grove.	---	1965-67	8-16-68	.33
Sheep Creek	South Fork Kings River	SE¼ sec. 14, T.13 S., R.30 E., 0.7 mile above South Fork Kings River and 0.7 mile southwest of Cedar Grove.	---	1965-67	8-16-68	1.04
Lewis Creek	South Fork Kings River	SW¼ sec. 11, T.13 S., R.30 E., 0.3 mile above South Fork Kings River and 1.5 miles north-west of Cedar Grove.	---	1965-67	8-16-68	*2.32
Dinkey Creek	North Fork Kings River	Sec. 3, T.12 S., R.26 E., 0.5 mile above mouth and 0.5 mile northwest of Balch Camp.	136	1920-37† 1959, 1961-67	8-15-68 9-3-68 9-5-68	*11.0 *6.25 *5.61
North Fork Tule River	Tule River	SE¼ sec. 35, T.20 S., R.29 E., 0.1 mile upstream from Middle Fork Tule River, three quarters of a mile northeast of Springville.	97.6	1957-66† 1967	a10-17-66 9-9-68	*.84 *.72
San Joaquin River basin						
Tenaya Creek	Merced River	Lat 37°44'32", long 119°33'25", at bridge 0.7 mile above mouth and 1.7 miles east of Yosemite National Park Headquarters.	47	1904-09† 1912-58† 1961, 1966-67	9-17-68	*1.76
Yosemite Creek	Merced River	Lat 37°44'45", long 119°35'40", 0.3 mile above mouth and 0.7 mile west of Yosemite National Park Headquarters.	43.2	1904-09† 1912-26† 1960, 1966-67	9-16-68	*.08
Crane Creek	Merced River	NW¼SW¼ sec. 34, T.2 S., R.20 E., 100 ft above diversion and 3 miles northeast of El Portal.	---	1964-67	6-10-68 9-16-68	*3.05 *.34
Tuolumne River	Tuolumne River	NW¼ sec. 27, T.1 N., R.21 E., above Hetch Hetchy Reservoir.	---	1959-60	8-22-68	31.7
Hunter Creek	North Fork Tuolumne River	NE¼ sec. 19, T.1 N., R.17 E., at road Ford, 5.5 miles southeast of Tuolumne.	---	1911, 1964 1967	10-14-67 9-14-68	*.80 *.26
Beaver Creek	North Fork Stanislaus River	NW¼SE¼ sec. 30, T.5 N., R.16 E., at bridge 0.5 mile upstream from boundary to Calaveras Big Trees State Park and 4.7 miles east of White Pines.	---	1967	8-28-68	*5.39
San Antonio Creek	Calaveras River	NE¼ sec. 10, T.3 N., R.12 E., 800 ft below highway bridge, 1.9 miles above mouth, and 5 miles southeast of San Andreas.	48.1	1950-59† 1967	9-23-68	*.08
Esperanza Creek	Calaveras River	NW¼ sec. 6, T.5 N., R.13 E., 600 ft above mouth and 6 miles east of Mokelumne Hill.	16.6	1951-59† 1967	9-24-68	*.26
Jesus Maria Creek	Calaveras River	SE¼ sec. 16, T.5 N., R.12 E., 0.6 mile above mouth and 3.2 miles southeast of Mokelumne Hill.	34.6	1950-59† 1967	9-24-68	*.31

* Base flow.

† Operated as a continuous-record gaging station.

a. Not published previously.

Measurements at miscellaneous sites--continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Sacramento River basin						
Lost Creek	Hat Creek	NW¼SE¼ sec. 33, T.32 N., R.4 E., 0.9 mile north of boundary of Lassen Volcanic National Park and 14.5 miles northeast of Mineral.	---	1966-67	9-13-68	*5.01
McCloud River	Pit River	SW¼NE¼ sec. 12, T.29 N., R.2 W., 500 ft above Lower Falls and 6 miles southeast of McCloud.	---	---	10-11-67 9-20-68	*43.1 *34.6
Horse Creek	Pit River	NE¼ sec. 15, T.35 N., R.7 E., 100 ft downstream from railroad bridge, 0.5 mile northeast of Little Valley, and 13 miles southeast of Pittville.	237	1929-31† 1960-67†	9-12-68	*10.5
Fall Creek	Pit River	NE¼ sec. 30, T.38 N., R.4 E., 0.7 mile south-east of Dana and 1 mile downstream from large springs below Bear Creek.	(b)	1959-67†	9-19-68	*468
Squaw Creek	Pit River	SW¼ sec. 29, T.35 N., R.2 W., 1.3 miles upstream from Salt Creek, 2 miles upstream from Shasta Lake, and 10 miles west of town of Montgomery Creek.	64.0	1945-67†	9-19-68	*13.0
Clover Creek	Cow Creek	NE¼NE¼ sec. 28, T.33 N., R.1 W., 2.5 miles upstream from Coal Creek and 2.7 miles north-east of Oak Run.	19.0	1957-59† 1966-67	9-19-68	*3.51
Oak Run Creek	Cow Creek	SE¼NW¼ sec. 25, T.33 N., R.2 W., 800 ft down-stream from road bridge, 1.1 miles northwest of Oak Run, 3.2 miles upstream from Tracy Creek, and 12.2 miles northeast of Millville.	11.0	1957-67†	9-19-68	*3.51
Bear Creek	Cow Creek	SE¼NE¼ sec. 20, T.31 N., R.2 W., downstream from bridge on State Highway 44 and 3.8 miles southeast of town of Millville.	75.6	1960-67†	9-19-68	*11.3
Mill Creek	Sacramento River	NE¼ sec. 23, T.29 N., R.4 E., 200 ft above highway bridge on State Highway 36 and 3.8 miles east of Mill Creek.	---	1966-67	8-15-68	*25.0
Stony Creek	Sacramento River	SE¼ sec. 35, T.18 N., R.7 W., 0.5 mile below East Park feed canal diversion dam and 3 miles west of Stonyford.	97.0	1913-14† 1918-34† 1961-62 1964-67	9-3-68	24.3
Middle Fork Feather River	Feather River	SW¼ sec. 8, T.23 N., R.11 E., 0.6 mile downstream from Bell Bar Creek and 2.2 miles west of Sloat.	819	1940-62† 1964, 1967	8-28-68	*57.2
Downie River	North Yuba River	NW¼ sec. 35, T.20 N., R.10 E., 0.3 mile above mouth at Downieville.	72.7	1910-26† 1966-67	9-24-68	*40.1
Rock Creek	North Yuba River	SE¼ sec. 5, T.19 N., R.10 E., 600 ft above mouth at Goodyears Bar.	8.98	1910-33† 1956, 1960-67	9-24-68	*.27
Goodyear Creek	North Yuba River	NW¼ sec. 5, T.19 N., R.10 E., 300 ft above mouth and 0.5 mile north of Goodyears Bar.	12.9	1910-33† 1960-67	9-24-68	*3.72
Middle Yuba River	Yuba River	NE¼SW¼ sec. 12, T.18 N., R.10 E., 0.5 mile down-stream from Wolf Creek and 2.5 miles southeast of Alleghany.	96.6	1957-66†	10-20-67 9-25-68	44.3 *23.9
Dry Creek	Yuba River	NW¼ sec. 25, T.19 N., R.6 E., 0.2 mile down-stream from New York Creek and 0.9 mile northeast of Brownsville.	20.4	1948-60† 1961, 1964-67	8-1-68	*8.88
South Fork Rubicon River	Rubicon River	W½ sec. 27, T.13 N., R.14 E., 300 ft above Robbs Peak Tunnel entrance, 5 miles southeast of Loon Lake, and 12.3 miles northeast of Riverton.	---	1964	9-27-68	*.02
Tells Creek	Silver Creek	SE¼NE¼ sec. 11, T.12 N., R.14 E., at bridge on Loon Lake Road and 10 miles northeast of Riverton.	---	1964-67	8-22-68 9-13-68 9-13-68	*2.12 *.30 *.25
Brush Creek	South Fork American River	NE¼SE¼ sec. 10, T.11 N., R.12 E., on left bank 0.6 mile downstream from unnamed tributary and 4.1 miles northwest of Pollock Pines.	---	1964, 1967	9-24-68	*2.87

* Base flow.

[†] Operated as a continuous-record gaging station.

b More than 123 sq mi, hydrologic drainage boundaries uncertain because of ground-water exchange.

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