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# Water Resources Data for California

Volume 3. Southern Central Valley Basins  
and The Great Basin from  
Walker River to Truckee River

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-78-3

## WATER YEAR 1978

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

*March 1979*

*U.S. Geological Survey*

*Water Resources Division*

*San Francisco, California*

# CALENDAR FOR WATER YEAR 1978

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other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

CECIL D. ANDRUS, Secretary

GEOLOGICAL SURVEY

H. William Menard, Director

For information on the water program in California write to  
District Chief, Water Resources Division  
U.S. Geological Survey  
855 Oak Grove Avenue  
Menlo Park, California 94025

1979



## PREFACE

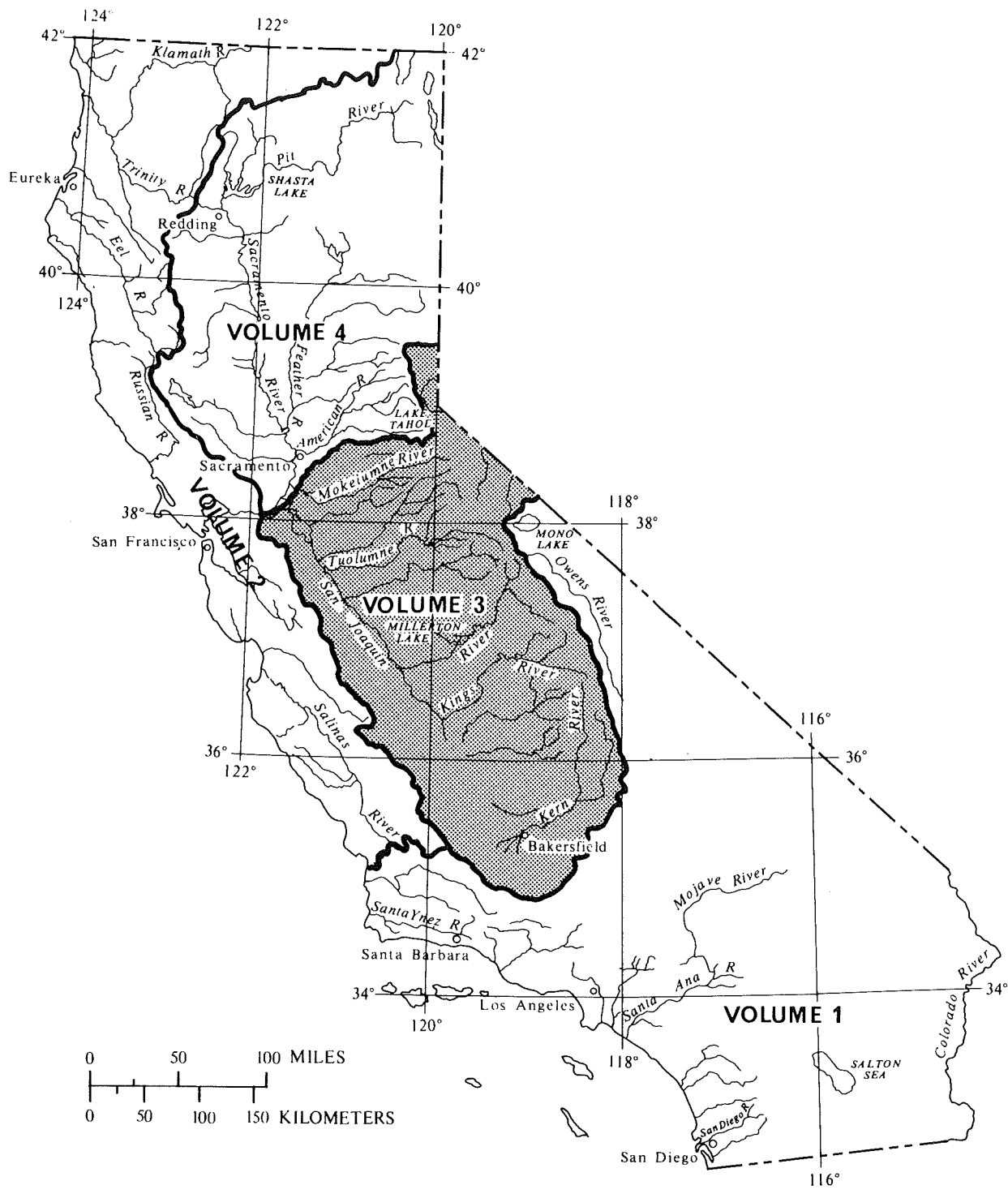
This report was prepared by personnel of the California District of the Water Resources Division, U.S. Geological Survey, under the supervision of Richard M. Bloyd, District Chief, and W. H. Robinson, Regional Hydrologist, Western Region. It was done in cooperation with the California Department of Water Resources and other agencies.

This report is one of a series issued by State. General direction for the series is by Philip Cohen, Chief Hydrologist.

Data for California are in four volumes as follows:

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

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Area covered by volumes in the annual series on water-resources data for California. Area covered by this volume is shaded.



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

IX

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

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1 B.

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A

## WATER RESOURCES DIVISION

## Sacramento Subdistrict

E. Jerre McClelland, Chief

This report was assembled by:

Edward J. Jones, Chief of Data Section  
Verrie F. Pearce, Office Engineer  
Jay R. Foulk, Chief, Sacramento Field Office  
Thomas C. Hunter, Chief, Merced Field Office  
James R. Mullen, Chief, Tahoe City Field Office  
Linda R. Zeitz, Editorial Clerk

Assisted by:

Randall D. Abbott, Hydrologic Technician  
Richard M. Adorador, Hydrologic Technician  
Robert L. Arens, Hydrologist  
Allan J. Asquith, Hydrologic Technician  
Lois M. Burdette, Computer Aide  
Dallas Childers, Hydrologist  
Dolores Dare, Clerk Typist  
John Duensing, Supervisory Hydrologic Technician  
William E. Faulkender, Hydrologic Technician  
Verne L. Gamble, Supervisory Hydrologic Technician  
Debra A. Grillo, Clerk Typist  
Jerry G. Harmon, Hydrologist  
Ray J. Hoffman, Biologist  
Randy M. Jensen, Hydrologic Technician  
Gail L. Keeter, Hydrologic Technician  
Byron R. Laurence, Hydrologic Technician  
Gordon E. Lokke, Hydrologist  
Jon C. McNulty, Hydrologic Technician  
Hugh T. Mitten, Hydrologist  
Richard N. Oltmann, Hydrologist  
Gerald L. Rockwell, Hydrologic Technician  
Gary H. Rood, Lead Hydrologic Technician  
M. Kathy Shay, Computer Technician  
Wayne V. Steuben, Hydrologic Technician  
Robert H. Taylor, Hydrologic Technician  
Donald E. Underwood, Hydrologic Technician  
Barbara Van Ummersen, Clerk Typist

# WATER RESOURCES DATA FOR CALIFORNIA, 1978

## Volume 3

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### INTRODUCTION

Water-resources data for the 1978 water year for California consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; records of water levels in selected observation wells; and selected chemical analyses of ground water. Records for a few pertinent streamflow and water-quality stations in bordering States are also included. These data, a contribution to the National Water Data System, were collected by the Geological Survey and cooperating local, State, and Federal agencies in California.

Records of discharge or stage of streams and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled, "Surface-Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled, "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled, "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, Virginia 22202.

For water years 1961 through 1974, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1974 were similarly released, either in separate reports or in conjunction with streamflow records. Beginning with the 1975 water year, water data for streamflow, water quality, and ground water are published together as an official Survey report on a State-boundary basis. These official Survey reports carry an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report CA-78-3." For archiving and general distribution, the reports for water years 1971-74 are also identified as water-data reports. Water-data reports are for sale, in paper copy or in microfiche, by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

## COOPERATION

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

California Department of Water Resources, R. B. Robie, Director.  
East Bay Municipal Utility District, J. S. Harnett, General Manager.  
Kern County Water Agency, S. T. Pyle, Engineer-Manager.  
Kings River Conservation District, Jeff L. Taylor, General Manager-Chief Engineer.  
Madera Irrigation District, Bob Standfield, General Manager-Chief Engineer.  
Merced Irrigation District, Reuben E. Schmidt, Chief Engineer and Manager.  
San Francisco, City and County, Hetch-Hetchy Water and Power, O. L. Moore, General Manager.  
Terra Bella Irrigation District, J. E. Boudreau, Engineer-Manager.  
Tulare County Flood Control District, J. L. Carlsen, Flood-Control Engineer.  
Turlock Irrigation District, Leroy J. Louchart, Secretary-General Manager.  
University of California (Berkeley), College of Natural Resources, Department of Forestry and Conservation, Dr. A. Starker Leopold.  
University of California (Davis), Division of Environmental Studies, Dr. Robert Leonard.  
Woodbridge Irrigation District, Mabel Hall, Secretary.

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

The following organizations aided in collecting records: Pacific Gas and Electric Co.; Southern California Edison Co.; Merced, Modesto, Nevada, and Oakdale-South San Joaquin Irrigation Districts.

## HYDROLOGIC CONDITIONS

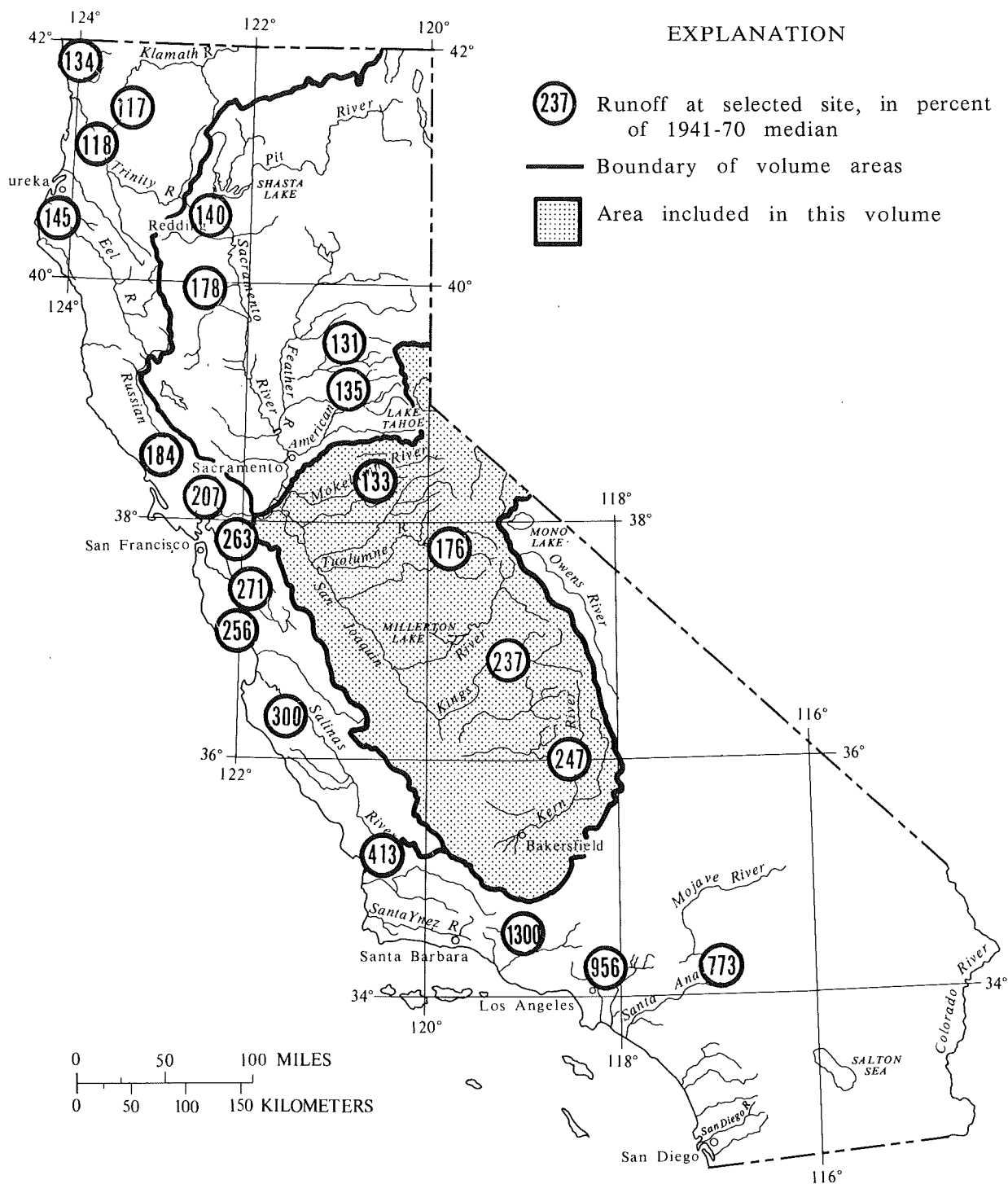
Two years of drought came to an end in November 1977 when the high pressure system which had diverted winter storms away from California began to dissipate. During November and December, rainfall from several storms in central California raised the monthly median streamflow at the index station, Kings River above North Fork, near Trimmer, from 59 to 98 percent of the 1941-70 median.

Calendar year 1978 began with major storms occurring almost continuously, and January was the wettest month on record. Stream runoff for the index station was 126 percent of the 1941-70 median, and the snowpack increased to about 150 percent of normal.

Continued heavy precipitation through March increased the combined contents of major reservoirs from 34 percent of average at the beginning of the water year to 96 percent. Excessive streamflow continued during the rest of the water year. In August, because of a late snowmelt, the index station recorded 500 percent of median streamflow for the 1941-70 period, and in September a heavy rainstorm brought a streamflow of 1,035 percent of median, establishing a new monthly mean maximum for 49 years of record.

In the area covered by this volume, runoff during the water year ranged from 133 percent of the 1941-70 median for the Mokelumne River near Mokelumne Hill to 247 percent of the median for the Kern River near Kernville. Runoff at selected sites, as shown in figure 1, was above normal for the water year.





During the latter part of December, strong winds with gusts up to 100 miles per hour caused severe damage from Bakersfield south to the Tehachapi Mountains. In an area in the foothills of the Sierra Nevada just east of Bakersfield, all the topsoil was blown from the ground.

Because of the lack of vegetation to prevent erosion, sediment discharge was heavy in many streams during the winter storm period; however, the quality of surface water improved with the increased runoff.

At the end of water year 1978, ground-water levels were rising but still below average because the effects of the heavy precipitation were not yet complete.

#### DEFINITION OF TERMS

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

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

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

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

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

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

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

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

Fecal streptococcal bacteria are bacteria found in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. For the membrane filter method they are defined as all the organisms which produce

red or pink colonies within 48 hours at  $35^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$  on KF Streptococcus agar (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

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

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

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

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

Dry mass refers to the mass of residue present after drying in an oven at  $60^{\circ}\text{C}$  for zooplankton and  $105^{\circ}\text{C}$  for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

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

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

Bottom material: See Bed material.

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

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

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

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, approximately 1.9835 acre-feet, or about 646,000 gallons or 2,445 cubic meters. It represents a runoff of approximately 0.0372 inch from 1 square mile or 0.3468 millimeter from 1 square kilometer.

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

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

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

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

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

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

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

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

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

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

Dissolved is that material in a representative water sample which passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate. It is recognized that certain kinds of samples cannot be filtered; to provide for this, procedures that are considered equivalent to filtering through a 0.45-micrometer membrane filter will be identified and announced at a later date.

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

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

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

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

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

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

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

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

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Classification	Size (mm)	Method of analysis
Clay.....	0.00024-0.004	Sedimentation
Silt.....	0.004-0.062	Sedimentation
Sand.....	0.062-2.0	Sedimentation or sieve
Gravel.....	2.0-64.0	Sieve

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

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

Periphyton are microorganisms attached to and growing upon solid surfaces. While primarily consisting of algae, the periphyton also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton are useful indicators of water quality.

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

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

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

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

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

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

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

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

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

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

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



### Primary productivity (continued)

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

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

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

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

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

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

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft or 0.09 m above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture ( $\text{mg/L}$ ).

Suspended-sediment discharge (tons per day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight, or volume, that passes a section in a given time. It is computed by multiplying discharge times milligrams per liter times 0.0027.

Suspended-sediment load (tons per day) is the quantity of suspended sediment passing a section in a specified period.

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

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

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of water to conduct an electrical current and is expressed in micromhos per centimeter at  $25^\circ\text{C}$ .

Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids concentration in water. Commonly, dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream or from well to well, and it may even vary in the same source with changes in the composition of the water.

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

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

Substrate is the physical surface upon which an organism lives.

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

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

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

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

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

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

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

Suspended (continued)

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

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

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

Kingdom.....	Animal
Phylum.....	Arthropoda
Class.....	Insecta
Order.....	Ephemeroptera
Family.....	Ephemeridae
Genus.....	<u>Hexagenia</u>
Species.....	<u>limbata</u>

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

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

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

Total load (tons) is the total amount of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

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

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the

dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Turbidity of a sample is the reduction of transparency due to the presence of particulate matter. In this report it is expressed in Nephelometric turbidity units (NTU), obtained from the Nephelometric method for turbidity determination which measures the intensity of light scattered by suspended particles at 90 degrees from the path of an incident light source (see also p. 23).

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

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

#### DOWNSTREAM ORDER AND STATION NUMBER

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

As an added means of identification, each surface-water station, water-quality station, and partial-record station has been assigned a station number. These are in the same downstream order as used in this report. In assigning station numbers, no distinction is made between partial-record and continuous-record stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Water-quality stations located at or near gaging stations or partial-record stations have the same number as the gaging or partial-record station. Gaps are left between 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 11264500, which appears just to the left of the station name, includes the 2-digit number "11" plus the 6-digit downstream order number "264500". In this report, the records are listed in downstream order by parts. The part number refers to an area whose boundaries coincide with certain natural drainage lines. Records for California are in Part 9 (Colorado River basin), Part 10 (The Great Basin), and Part 11 (Pacific slope basins in California). 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 to include all records in the basin.

## NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream-order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well- and miscellaneous-site number system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. See figure 2.

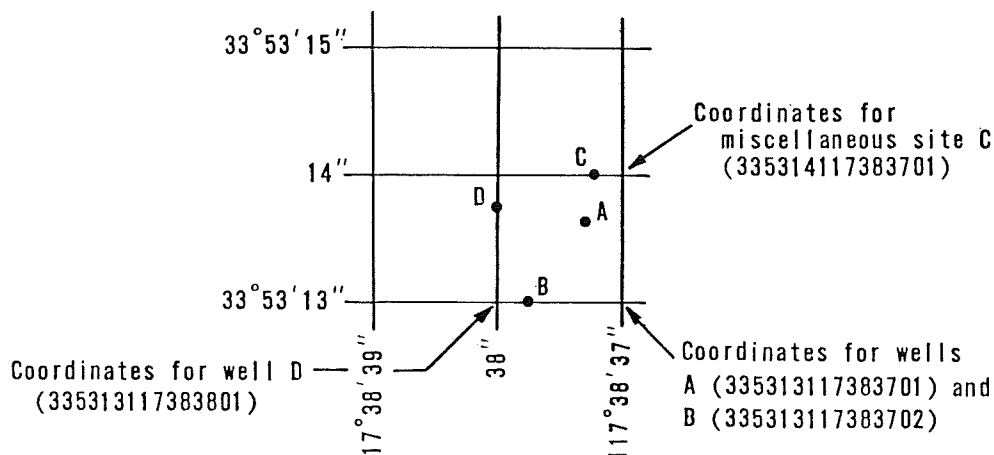


Figure 2.--System for numbering wells and miscellaneous sites (latitude and longitude).

#### Local well numbers

Wells and springs in California are assigned numbers according to their location on the rectangular system for the subdivision of public land. For example, in the number 005S/010E-22G01 M, the part of the number preceding the slash indicates the township (T.5 S.) and the number between the slash and hyphen indicates the range (R.10 E.); the digits following the hyphen indicate the section (sec.22); the letter following the section number indicates the 40-acre subdivision of the section. Within each 40-acre tract, the wells are numbered serially, as indicated by the final digit. The final letter, separated from the rest of the number by a space, indicates the base line and meridian. Base-line and meridian designations are as follows: H, Humboldt; M, Mount Diablo; S, San Bernardino. See figure 3.

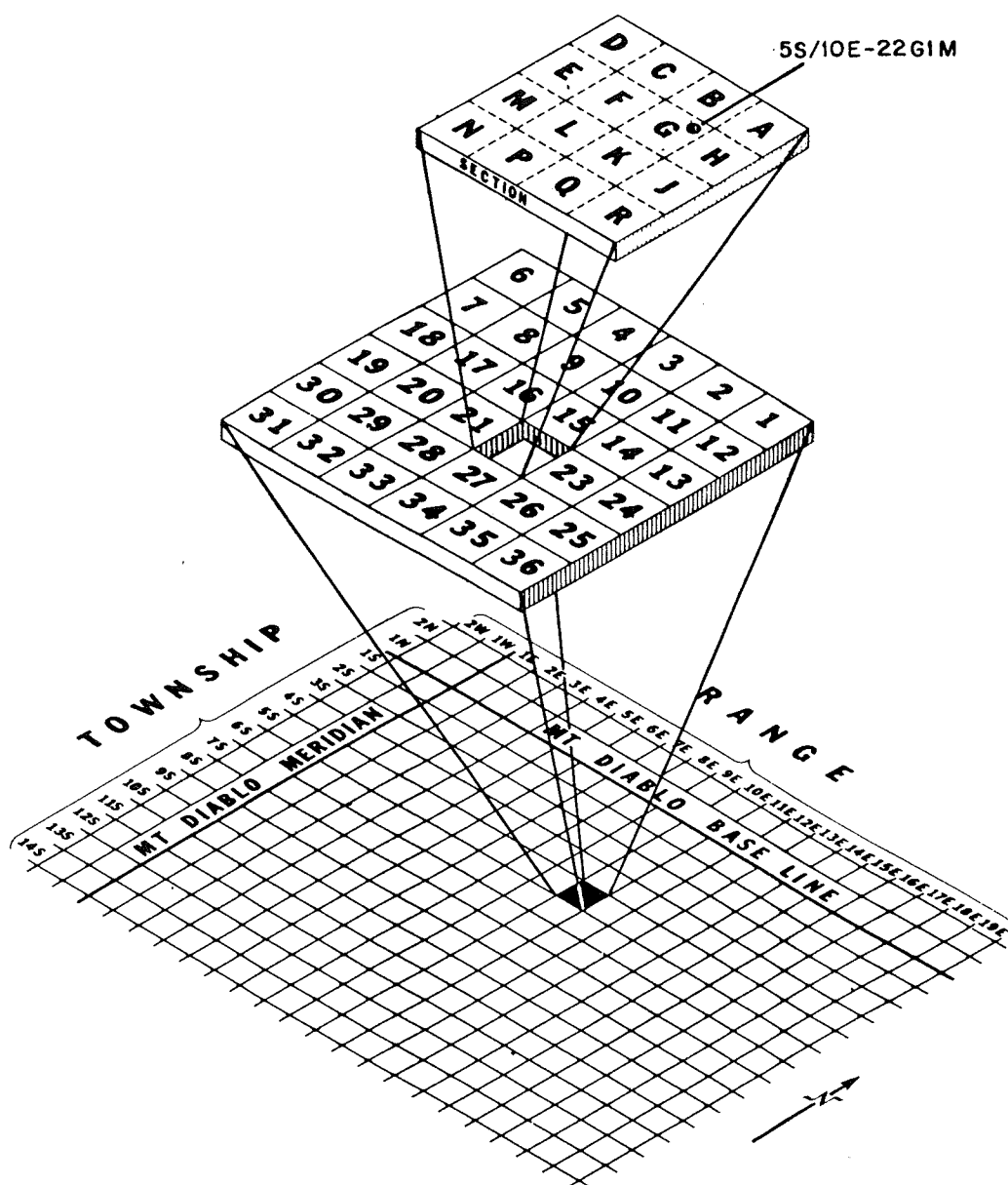


FIGURE 3.--California well-numbering system.

## SPECIAL NETWORKS AND PROGRAMS

Some of the stations for which data are published in this report are included in special networks and programs. These stations are identified by their title, set in parentheses, under the station name.

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

Volume 2:

11475500 Elder Creek near Branscomb, CA

Volume 3:

11264500 Merced River at Happy Isles Bridge, near Yosemite, CA

National stream-quality accounting network is an accounting network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated in the network design. Areal configuration of the network is based on the river-basin accounting units designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality. Stations in this network are listed below:

Volume 1:

09424190 Colorado River Aqueduct near San Jacinto, CA  
09429500 Colorado River above Imperial Dam, AZ-CA  
10254970 New River at International Boundary, at Calexico, CA  
10261500 Mojave River at lower narrows, near Victorville, CA  
10277400 Owens River below Tinemaha Reservoir, near Big Pine, CA  
11042000 San Luis River at Oceanside, CA  
11074000 Santa Ana River below Prado Dam, CA  
11103010 Los Angeles River at Willow Street Bridge, at Long Beach, CA

Volume 2:

11152300 Salinas River near Chualar, CA  
11159000 Pajaro River at Chittenden, CA  
11458000 Napa River near Napa, CA  
11467000 Russian River near Guerneville, CA  
11530500 Klamath River near Klamath, CA  
11532500 Smith River near Crescent City, CA

Volume 3:

11187000 Kern River at Kernville, CA  
11218500 Kings River below North Fork, near Trimmer, CA  
11250000 Friant-Kern Canal at Friant, CA  
11303500 San Joaquin River near Vernalis, CA  
11325500 Mokelumne River at Woodbridge, CA

Volume 4:

10356500 Susan River at Susanville, CA  
11447650 Sacramento River at Freeport, CA



Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams whose waters are used for irrigation or in streams in areas where contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal inter-agency activity.

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

## EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

### Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams and canals, and stage and contents of lakes and reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from direct readings on a nonrecording gage or from a water-stage recorder that gives a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the methods adopted by the Geological Survey. These methods are described in standard textbooks, in Water-Supply Paper 888, and in the U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

For a stream-gaging station, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharges are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

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

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

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise, daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30. A calendar for the current year is shown on the reverse side of the front cover to facilitate finding the day of the week for any date.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of published records. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "LOCATIONS" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published, along with the current records, in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1933 stands for the water year October 1, 1932, to September 30, 1933. If no daily, monthly, or annual figures of discharge are affected by the revision, that fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only the peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given.

The type of gage currently in use, the datum of the present gage referred to National Geodetic Vertical Datum of 1929, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITION OF TERMS" on page 8.

Information pertaining to the accuracy of the discharge records, and to conditions that affect the natural flow at the gaging station, is given under "REMARKS"; for reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is also given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance.

Under "EXTREMES" are given: First, the extremes for the period of record; second, information available outside the period of record; and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with EXTREMES FOR THE CURRENT YEAR; if they are, all independent peaks (including the maximum for the year) above the selected base, with the time of occurrence and corresponding gage heights, are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or 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, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

Skeleton rating tables are published, immediately following EXTREMES, for stream-gaging stations where they serve a useful purpose and the dates of applicability can be easily identified.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in acre-feet (line headed "AC-FT"). In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharges are introduced by the word "NOTE." Footnotes are used to indicate periods 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 site 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 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 for all reservoirs for which records are published on a daily basis, but it is not published for reservoirs for which only monthly data are given.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of 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 given in special tables following the tables of partial-record stations.

#### Accuracy of field data and computed results

The accuracy of discharge 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.

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

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumptive use, regulation by storage, increase or decrease 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 if adjustments or losses are large in comparison with the observed discharge.

#### Other data available

Information of a more detailed nature than that published for most of the gaging stations, such as observations of water temperatures, discharge measurements, gage-height records, and rating tables, is on file in the District Office. Also, most gaging-station records are available in computer-usable form and many statistical analyses have been made. Information on the availability of unpublished data or statistical analyses may be obtained from the District Office.

Special reports on major floods or droughts or of other hydrologic studies for the area have been issued in publications other than water-supply papers. Information relative to these reports may be obtained from the District Office.

#### Records of discharge collected by agencies other than the Geological Survey

Records of discharge not published by the Geological Survey have been collected at numerous sites by many other Federal, State, County, City, and local agencies and by private organizations. A listing of stream-gaging stations and the agencies operating them is published in California Department of Water Resources Bulletin 230-78, "Index to Sources of Hydrologic Data." The National Water Data Exchange, Water Resources Division, U.S. Geological Survey, National Center, Reston, VA 22092, maintains an index of such sites. Information on records at specific sites can be obtained upon request.

## EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface-water samples for analyses usually are collected at or near gaging stations. The water-quality records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); instrumentation; general remarks; extremes for the period of daily record; and extremes for the current year.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations, listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

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

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

Ground-water quality normally does not change significantly during short periods of time; infrequent sampling and analysis of ground water adequately defines ground-water quality at a given site.

Water temperature

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

At stations where continuously recording thermographs are present, the records consist of maximum and minimum temperatures for each day and month. Water temperatures taken at the time of discharge measurements are on file in the district office. They will be used, with all other temperature data, for reports such as the open-file reports by subregion, "Water Temperature of California Streams, 1970."

### Sediment

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

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

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

In addition to the records of suspended-sediment discharge, estimates of bedload and total-sediment discharge are included for some stations. Also included are particle-size distribution analyses of suspended sediment, surface bed material, and bedload material (sediment in transit within 0.25 ft (0.076 m) of the bed).

Computations of monthly bedload discharges are based on the relation between instantaneous water discharge and corresponding bedload discharge for the station. Values of bedload discharge used in defining this relation are based on samples obtained by use of the Helley-Smith bedload sampler or by modified-Einstein or Meyer-Peter Muller computation procedures. Application of the bedload-transport relation at a station was made on a daily basis or subdivided-day basis.

The Helley-Smith sampler is designed to collect a time-weighted sample of the sediment moving within 0.25 ft (0.076 m) of the streambed. Sediment moving in this portion of the flow cannot be sampled with standard suspended-sediment samplers. It is assumed that samples obtained by this sampler represent the bedload discharge when used in coarse-material bedded streams (median diameter coarser than about 4 mm) and that these data can be used in conjunction with theoretical computations to define the bedload-transport relation for a station.

Calibration of the Helley-Smith sampler has not been completed, and a trap efficiency of 1.0 has been assumed applicable to this device. Error sources in the theoretical methods, based on analysis of bed-material characteristics, channel geometry, and associated hydraulic factors, are also undefined. In consequence, figures of bedload discharge must be used with caution. They are estimates, at best, and are subject to revision.

### Turbidity

At some stations samples for the determination of turbidity were collected at the same frequency as samples collected for determination of suspended sediment. Turbidity, measured in Nephelometric turbidity units (NTU), is shown in relation to the concentration of sediment in the simultaneously collected sample.

Measured values of turbidity are significantly influenced by the type of instrument used. Turbidity values published in California reports prior to July 1966 were determined by means of a Hellige Turbidimeter and are not directly comparable with those published subsequently. Data published in parts per million as silica from July 1966 to September 1968, and in milligrams per liter as silica from October 1968 to September 1970, were measured with a model 1860 Hach Turbidimeter which is optically similar to the model 2100 Hach Turbidimeter used from October 1970 to September 1974, and the model 2100A Hach Turbidimeter used since October 1974. Scales are available for those instruments providing a readout in either milligrams per liter or in Nephelometric turbidity units. Hence, conversion of data for the period July 1966 through September 1970, from parts per million or milligrams per liter of silica to Nephelometric turbidity units can be made by use of table 1.

Table 1.--Conversion of turbidity values, measured by Hach Turbidimeters Model 2100 or 2100A, from parts per million or milligrams per liter of silica to Nephelometric turbidity units.

<u>Turbidity, in ppm or mg/L</u>	<u>Turbidity, in NTU</u>
5	3.0
10	6.0
50	30
100	55
200	110
500	240
1000	450

### EXPLANATION OF GROUND-WATER LEVEL RECORDS

#### Collection of the data

Only ground-water-level data from a basic national network of observation wells are published herein. These water-level measurements are intended to provide a sampling and historical record of water-level changes in the Nation's most important aquifers.

Each well is identified by means of (1) a 15-digit number that is based on the grid system of latitude and longitude as shown in figure 2, and (2) a local number that is provided for continuity with older reports and for other use as dictated by local needs (fig. 3).

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

Water-level measurements in this report are given in feet with reference to either National Geodetic Vertical Datum of 1929 (NGVD) or land-surface datum (lsd). National Geodetic Vertical Datum is the datum plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum referred to National Geodetic Vertical Datum is given in the well description. The height of the measuring point (MP above

or below land-surface datum), if known, is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (EOM).

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

#### PUBLICATIONS OF TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-four manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202 (authorized agent of the Superintendent of Documents, Government Printing Office). Prices are effective October 1978 but are subject to change.

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

- 1-D1. Water temperature-influential factors, field measurement, and data presentation, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages. \$1.60.
- 1-D2. Guidelines for collection and field analysis of ground-water samples for selected unstable constituents, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages. \$0.85.
- 2-D1. Application of surface geophysics to ground-water investigations, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages. \$1.90.
- 2-E1. Application of borehole geophysics to water-resources investigations, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages. \$1.75.
- 3-A1. General field and office procedures for indirect discharge measurements, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages. \$1.00.
- 3-A2. Measurement of peak discharge by the slope-area method, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages. \$0.35.
- 3-A3. Measurement of peak discharge at culverts by indirect methods, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3, 1968. 60 pages. \$0.40.
- 3-A4. Measurement of peak discharge at width contractions by indirect methods, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages. \$1.00.
- 3-A5. Measurement of peak discharge at dams by indirect methods, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5, 1967. 29 pages. \$0.35.
- 3-A6. General procedure for gaging streams, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6, 1968. 13 pages. \$1.00.
- 3-A7. Stage measurements at gaging stations, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages. \$1.40.



- 3-A8. Discharge measurements at gaging stations, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages. \$1.25.
- 3-A11. Measurement of discharge by moving-boat method, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages. \$1.20.
- 3-A12. Fluorometric procedures for dye tracing, by J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A12. 1968. 31 pages. \$0.35. Not currently available.
- 3-B1. Aquifer-test design, observation, and data analyses, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages. \$0.70.
- 3-B2. Introduction to ground-water hydraulics, a programmed text for self-instruction, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages. \$2.50.
- 3-C1. Fluvial sediment concepts, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages. \$2.50.
- 3-C2. Field methods for measurement of fluvial sediment, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2, 1970. 59 pages. \$2.50.
- 3-C3. Computation of fluvial-sediment discharge, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages. \$2.10.
- 4-A1. Some statistical tools in hydrology, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages. \$1.60.
- 4-A2. Frequency curves, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages. \$0.35.
- 4-B1. Low-flow investigations, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages. \$1.20.
- 4-B2. Storage analyses for water supply, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages. \$0.75.
- 4-B3. Regional analyses of streamflow characteristics, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages. \$0.65.
- 4-D1. Computation of rate and volume of stream depletion by wells, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages. \$1.10.
- 5-A1. Methods for determination of inorganic substances in water and fluvial sediments, edited by M. W. Skougstad, M. J. Fishman, L. C. Friedman, D. E. Erdmann, and S. S. Duncan: USGS--TWRI Book 5, Chapter A1. 626 p., \$10.00.
- 5-A2. Determination of minor elements in water by emission spectroscopy, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages. \$0.80.
- 5-A3. Methods for analysis of organic substances in water, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages. \$0.90.
- 5-A4. Methods for collection and analysis of aquatic biological and microbiological samples, edited by P. E. Greenson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages. \$9.25.
- 5-A5. Methods for determination of radioactive substances in water and fluvial sediments, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages. \$5.75.
- 5-C1. Laboratory theory and methods for sediment analyses, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages. \$2.10.
- 7-C1. Finite-difference model for aquifer simulation in two dimensions with results of numerical experiments, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages. \$2.30.
- 8-A1. Methods of measuring water levels in deep wells, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages. \$0.70.
- 8-B2. Calibration and maintenance of vertical-axis type current meters, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages. \$1.10.

## WALKER LAKE BASIN

## 10290300 UPPER TWIN LAKE NEAR BRIDGEPORT, CA

LOCATION.--Lat 38°09'15", long 119°20'58", in NW¼NE¼ sec.5, T.3 N., R.24 E., Mono County, Toiyabe National Forest, at outlet of upper lake dam on Robinson Creek, and 10 mi (16 km) southwest of Bridgeport.

DRAINAGE AREA.--29.5 mi<sup>2</sup> (76.4 km<sup>2</sup>).

PERIOD OF RECORD.--December 1961 to February 1964, September 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (project datum of U.S. Indian Irrigation Service).

REMARKS.--Contents regulated by dam at outlet. Figures given herein represent usable contents. Usable contents, 2,070 acre-ft (2.55 hm<sup>3</sup>) between elevations 7,200 ft (2,194.6 m) natural rim, and 7,207 ft (2,196.7 m) spillway crest.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 2,900 acre-ft (3.58 hm<sup>3</sup>) June 22, July 5, 6, 1967, elevation, 7,209.58 ft (2,197.480 m); minimum observed, 62 acre-ft (76,400 m<sup>3</sup>) Oct. 31, Nov. 1, 1964, elevation, 7,200.22 ft (2,194.627 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--No usable contents Oct. 17, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,790 acre-ft (3.44 hm<sup>3</sup>) June 9, elevation, 7,208.23 ft (2,197.069 m); minimum, 235 acre-ft (290,000 m<sup>3</sup>) Oct. 24 to Nov. 10, elevation, 7,200.84 ft (2,194.816 m).

## ELEVATION NGVD AND CONTENTS, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	--	g283	--
Oct. 31.....	7200.84	235	-48
Nov. 30.....	7201.76	493	+258
Dec. 31.....	7204.26	1210	+717
CAL YR 1977.....	--	--	+728
Jan. 31.....	7206.48	1900	+690
Feb. 28.....	7206.85	2020	+120
Mar. 31.....	7207.27	2160	+140
Apr. 30.....	7207.71	2300	+140
May 31.....	7208.63	2590	+290
June 30.....	7208.67	2600	+10
July 31.....	7208.65	2600	0
Aug. 31.....	7207.74	2310	-290
Sept. 30.....	7207.51	2230	-80
WTR YR 1978.....	--	--	+1947

g Interpolated.

## 10290400 LOWER TWIN LAKE NEAR BRIDGEPORT, CA

LOCATION.--Lat 38°10'05", long 119°19'33", in NE¼NE¼ sec.33, T.4 N., R.24 E., Mono County, Toiyabe National Forest, at outlet of lower lake dam on Robinson Creek, and 8 mi (13 km) southwest of Bridgeport.

DRAINAGE AREA.--38.9 mi<sup>2</sup> (100.8 km<sup>2</sup>).

PERIOD OF RECORD.--December 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (project datum of U.S. Indian Irrigation Service).

REMARKS.--Contents regulated by dam at outlet and by Upper Twin Lake (station 10290300). Figures given herein represent usable contents. Usable contents, 4,010 acre-ft (4.94 hm<sup>3</sup>) between elevations 7,190 ft (2,192 m) natural rim, and 7,200 ft (2,195 m) spillway crest. One diversion out of Tamarack Creek into Summers Creek.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,490 acre-ft (6.77 hm<sup>3</sup>) June 6, 1969, elevation, 7,203.51 ft (2,195.630 m); no usable contents Nov. 17, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 5,030 acre-ft (6.20 hm<sup>3</sup>) June 10, elevation, 7,202.39 ft (2,195.288 m); minimum interpolated, 570 acre-ft (703,000 m<sup>3</sup>) Nov. 30, elevation, 7,191.42 ft (2,191.945 m).

## ELEVATION NGVD AND CONTENTS, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	7192.10	840	--
Oct. 31.....	--	g575	-265
Nov. 30.....	--	g570	-5
Dec. 31.....	7192.23	892	+322
CAL YR 1977.....	--	--	-72
Jan. 31.....	7193.06	1220	+328
Feb. 28.....	7195.46	2180	+960
Mar. 31.....	7198.20	3280	+1100
Apr. 30.....	7198.81	3520	+240
May 31.....	7201.28	4550	+1030
June 30.....	7201.61	4690	+140
July 31.....	7201.66	4710	+20
Aug. 31.....	7200.63	4280	-430
Sept. 30.....	7200.39	4170	-110
WTR YR 1978.....	--	--	+3330

g Interpolated.

## 10291500 BUCKEYE CREEK NEAR BRIDGEPORT, CA

LOCATION.--Lat 38°14'20", long 119°19'30", in NE¼NE¼ sec.4, T.4 N., R.24 E., Mono County, Toiyabe National Forest, on right bank at Buckeye Hot Springs, 0.6 mi (1.0 km) downstream from Eagle Creek, and 5.5 mi (8.8 km) southwest of Bridgeport.

## WATER-DISCHARGE RECORDS

DRAINAGE AREA.--44.1 mi<sup>2</sup> (114.2 km<sup>2</sup>).

PERIOD OF RECORD.--November 1910 to September 1914 (fragmentary), October 1953 to current year.

REVISED RECORDS.--WSP 1927: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 6,900 ft (2,103 m), from topographic map. November 1910 to September 1914, nonrecording gage at site 0.5 mi (0.8 km) downstream at different datum.

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

AVERAGE DISCHARGE.--26 years (water years 1912, 1954-78), 57.9 ft<sup>3</sup>/s (1.640 m<sup>3</sup>/s), 41,950 acre-ft/yr (51.7 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (water years 1954-78): Maximum discharge, 947 ft<sup>3</sup>/s (26.8 m<sup>3</sup>/s) Feb. 1, 1963, gage height, 4.41 ft (1.344 m), from rating curve extended above 360 ft<sup>3</sup>/s (10.2 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 4.00 ft (1.219 m); minimum, 3.3 ft<sup>3</sup>/s (0.094 m<sup>3</sup>/s) Dec. 12, 1959, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1911, reached an observed stage of 4.8 ft (1.46 m), discharge not determined, site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft<sup>3</sup>/s (2.83 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 15	0100	269 7.62	3.05 0.930	July 10	0100	324 9.18	3.19 0.972
May 22	0200	242 6.85	2.97 0.905	Sept. 5	1130	170 4.81	2.71 0.826
June 14	2400	*372 10.5	3.32 1.012				

Minimum, 4.3 ft<sup>3</sup>/s (0.12 m<sup>3</sup>/s) Jan. 15, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	8.1	9.2	10	11	13	39	55	240	249	151	49
2	7.5	8.1	9.2	10	11	13	34	61	242	241	142	48
3	7.3	8.3	9.2	10	11	13	32	79	233	217	141	49
4	7.3	8.2	9.8	10	11	13	31	99	240	206	138	52
5	7.3	10	9.8	10	11	13	30	102	276	217	134	99
6	7.4	9.7	9.5	9.8	10	13	29	89	302	239	127	94
7	7.5	12	9.5	10	6.4	13	27	89	323	251	123	80
8	7.5	13	9.5	11	12	14	26	103	328	243	131	68
9	7.5	15	9.5	11	11	14	26	127	331	246	127	59
10	7.5	13	9.5	11	9.5	14	29	145	308	267	137	89
11	7.5	10	9.2	11	9.0	14	37	145	262	254	116	72
12	7.5	9.1	9.2	11	9.5	14	45	155	298	230	108	61
13	7.5	8.6	9.8	11	9.5	13	49	191	325	228	100	56
14	7.4	10	11	11	11	13	44	222	333	243	91	55
15	7.3	9.6	19	8.3	12	13	42	220	316	260	83	56
16	7.1	9.1	13	6.2	12	15	38	160	267	246	79	51
17	7.1	9.1	10	10	12	17	37	140	239	214	76	48
18	7.2	8.6	10	13	12	18	34	145	260	209	72	47
19	7.4	12	10	12	12	19	36	162	254	198	68	45
20	7.4	13	10	11	12	21	37	182	259	186	65	43
21	7.2	25	10	11	12	23	34	200	267	179	63	42
22	7.1	35	10	12	12	23	33	215	280	179	62	40
23	7.2	23	10	11	13	23	37	200	271	183	60	39
24	7.2	14	10	11	13	22	43	152	274	182	57	38
25	7.0	12	10	11	14	23	56	133	258	182	55	37
26	7.5	11	10	11	14	28	48	130	234	194	53	37
27	8.2	10	10	11	14	29	52	145	235	191	50	36
28	7.8	9.5	10	11	14	34	58	175	200	175	50	35
29	7.4	9.5	10	11	---	40	55	206	202	165	49	35
30	7.8	9.2	9.8	11	---	45	58	235	231	154	49	34
31	8.2	---	10	11	---	48	---	240	---	154	50	---
TOTAL	230.3	362.7	315.7	329.3	320.9	628	1176	4702	8088	6582	2807	1594
MEAN	7.43	12.1	10.2	10.6	11.5	20.3	39.2	152	270	212	90.5	53.1
MAX	8.2	35	19	13	14	48	58	240	333	267	151	99
MIN	7.0	8.1	9.2	6.2	6.4	13	26	55	200	154	49	34
AC-FT	457	719	626	653	637	1250	2330	9330	16040	13060	5570	3160
CAL YR 1977	TOTAL	6765.3	MEAN 18.5	MAX 118	MIN 7.0	AC-FT 13420						
WTR YR 1978	TOTAL	27135.9	MEAN 74.3	MAX 333	MIN 6.2	AC-FT 53820						

## WALKER LAKE BASIN

10291500 BUCKEYE CREEK NEAR BRIDGEPORT, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1977 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
OCT				
12...	1500	7.4	108	11.0
NOV				
28...	1400	10	113	4.5
FEB				
01...	1310	13	105	.5
MAY				
05...	1300	100	63	4.5
25...	1800	129	58	9.5
JUN				
22...	0830	294	33	4.0
JUL				
31...	1400	149	40	19.0
AUG				
30...	0830	51	65	8.0
SEP				
26...	1445	37	77	11.5

## WALKER LAKE BASIN

29

## 10292500 BRIDGEPORT RESERVOIR NEAR BRIDGEPORT, CA

LOCATION.--Lat 38°19'30", long 119°12'40", in SE¼NE¼ sec.34, T.6 N., R.25 E., Mono County, Toiyabe National Forest, at Bridgeport Dam on East Walker River, 4.5 mi (7.2 km) north of Bridgeport.

DRAINAGE AREA.--358 mi<sup>2</sup> (927 km<sup>2</sup>).

PERIOD OF RECORD.--March 1926 to current year. Monthend contents only for some periods, published in WSP 1314.

REVISED RECORDS.--WSP 1180: 1949. WSP 1927: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (project datum).

REMARKS.--Reservoir is formed by earthfill, rock-faced dam. Storage began Dec. 8, 1923. Dam completed in November 1924. Capacity, 42,460 acre-ft (52.4 hm<sup>3</sup>) between elevations 6,415 ft (1,955.3 m), approximate elevation of bottom of reservoir, and 6,461 ft (1,969.3 m), crest of spillway is at elevation 6,460.75 ft (1,969.237 m); however, there are four siphons that become operative prior to reaching the spillway. Elevation of sill of outlet gate, 6,412 ft (1,954.4 m). No dead storage. Figures given herein represent total contents. Water is used for irrigation by Walker River Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 44,880 acre-ft (55.3 hm<sup>3</sup>) June 16, 1974, elevation, 6,460.78 ft (1,969.246 m); no usable contents during fall of 1929-30, 1960, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 43,220 acre-ft (53.3 hm<sup>3</sup>) Aug. 10, elevation, 6,460.26 ft (1,969.087 m); no contents Oct. 1 to Nov. 3, elevation, 6,415.00 ft (1,955.292 m).

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

6415	0	6441	7120
6418	20	6443	9100
6421	115	6445	11380
6424	269	6447	13990
6427	539	6449	17060
6430	1130	6451	20620
6433	2050	6453	24660
6435	2920	6456	31570
6437	4050	6461	45490
6439	5440		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	1880	5260	8540	12260	25430	20160	12190	32840	42610	30360
2		0	1960	5370	8640	12440	25980	19700	12440	33220	42760	29880
3		0	2030	5480	8740	12630	26640	19150	12880	33600	42760	29400
4		10	2110	5560	8840	12900	26980	18520	13310	34110	42760	28820
5		50	2190	5680	9000	13110	27440	18180	13790	34380	42920	28470
6		100	2250	5760	9100	13310	27550	17660	14510	34640	42920	28240
7		140	2330	5800	9270	13510	27660	17060	15400	34770	42920	28240
8		180	2390	5920	9380	13720	27780	16580	16340	35040	43070	28240
9		230	2450	6080	9600	13990	27900	16190	17320	35440	43070	28240
10		280	2520	6160	9700	14290	28010	15790	18350	35960	43220	28240
11		320	2640	6280	9820	14510	28010	15320	19390	36360	42920	28360
12		370	2700	6370	9870	14730	27900	14950	20160	36760	42610	28470
13		420	2800	6500	10040	15030	27900	14730	21110	37180	42170	28580
14		460	2900	6590	10140	15250	27660	14730	22090	37590	41880	28700
15		500	3060	6770	10260	15470	27550	14510	23100	38010	41440	28930
16		550	3130	6900	10380	15710	27200	14360	24040	38290	41000	29160
17		618	3420	6980	10500	16030	26750	14140	24990	38570	40420	29160
18		658	3600	7080	10730	16260	26310	13850	25760	38980	39830	29280
19		626	3660	7260	10850	16580	25870	13650	26530	39120	39120	29520
20		602	3750	7360	10970	16980	25320	13380	27200	39400	38290	29640
21		737	3870	7500	11140	17490	24880	13240	27900	39400	37730	29760
22		1070	4020	7650	11200	17920	24350	13110	28470	39400	36900	29880
23		1160	4120	7700	11320	18440	23930	13040	29040	39690	36100	30000
24		1260	4250	7790	11500	18960	23310	12900	29520	39980	35570	30120
25		1360	4380	7880	11630	19520	22890	12630	30000	39980	34640	30120
26		1480	4510	7980	11760	20160	22480	12380	30240	40420	34110	30120
27		1560	4640	8070	11940	20620	22090	12070	30970	40850	33600	30120
28		1650	4820	8160	12130	21310	21700	11880	31700	41290	33090	30120
29		1780	4970	8260	---	22190	21210	11760	32080	41730	32330	30120
30		1810	5080	8350	---	23100	20620	11760	32590	42170	31450	30000
31		---	5150	8440	---	24560	---	11940	---	42460	30970	---
MAX	0	1810	5150	8440	12130	24560	28010	20160	32590	42460	43220	30360
MIN	0	0	1880	5260	8540	12260	20620	11760	12190	32840	30970	28240
†	6415.00	6432.30	6438.61	6442.36	6445.58	6452.93	6451.02	6445.44	6456.38	6460.02	6455.73	6455.37
‡	0	+1810	+3340	+3290	+3690	+12430	-3940	-8680	+20650	+9870	-11490	-970
CAL YR 1977	†	-3800										
WTR YR 1978	†	+30000										

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet.

## WALKER LAKE BASIN

10293000 EAST WALKER RIVER NEAR BRIDGEPORT, CA

LOCATION.--Lat 38°19'40", long 119°12'50", in SW¼NE¼ sec.34, T.6 N., R.25 E., Mono County, Toiyabe National Forest, on right bank 1,500 ft (460 m) downstream from Bridgeport Reservoir, 5 mi (8 km) north of Bridgeport, and 10 mi (16 km) upstream from Sweetwater Creek.

DRAINAGE AREA.--359 mi<sup>2</sup> (930 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1911 to September 1914 (gage heights only), October 1921 to current year. No winter record water years 1922, 1925.

REVISED RECORDS.--WSP 1927: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 6,400 ft (1,951 m) from topographic map. See WSP 2127 for history of changes prior to May 25, 1939.

REMARKS.--Records good. Diversions for irrigation of pasture lands near Bridgeport. Flow regulated by Bridgeport Reservoir (station 10292500).

AVERAGE DISCHARGE (unadjusted).--55 years (water years 1923-24, 1926-78), 136 ft<sup>3</sup>/s (3.852 m<sup>3</sup>/s), 98,530 acre-ft/yr (121 hm<sup>3</sup>/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD (water years 1922-78).--Maximum discharge, 1,390 ft<sup>3</sup>/s (39.4 m<sup>3</sup>/s) June 19, 1963, gage height, 4.64 (1.414 m); maximum gage height, 4.95 ft (1.509 m) Jan. 22, 1943, top of surge; minimum daily discharge, 0.2 ft<sup>3</sup>/s (0.006 m<sup>3</sup>/s) Nov. 2-29, Dec. 1-22, 25-28, 1955, Jan. 17-25, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 514 ft<sup>3</sup>/s (14.6 m<sup>3</sup>/s) May 3, gage height, 2.76 ft (0.841 m); minimum daily, 2.3 ft<sup>3</sup>/s (0.065 m<sup>3</sup>/s) Feb. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	30	5.3	5.3	4.0	2.8	69	381	341	283	259	341
2	23	25	5.3	5.3	3.4	2.7	69	394	332	281	294	342
3	22	24	5.3	9.3	3.4	2.7	69	454	302	281	294	339
4	23	24	5.5	13	3.2	2.6	69	475	300	281	294	337
5	23	25	5.6	13	3.2	2.7	88	456	288	289	295	320
6	23	27	5.6	12	3.2	2.7	109	455	243	317	295	264
7	24	27	5.4	8.0	3.0	2.7	109	457	194	335	297	229
8	28	27	5.4	8.0	3.4	2.7	128	456	195	309	305	213
9	27	27	5.3	8.0	3.2	2.9	168	455	214	301	338	190
10	27	27	5.3	8.0	3.2	2.9	199	456	216	296	349	177
11	27	25	5.4	8.0	2.7	3.0	233	456	216	287	379	163
12	26	25	5.3	8.1	2.7	3.1	249	453	218	288	373	123
13	29	25	5.3	8.2	2.7	3.2	282	437	211	296	373	123
14	31	25	5.4	8.4	2.7	3.4	297	424	202	308	370	123
15	30	24	5.5	8.4	3.0	3.4	330	421	190	309	370	116
16	29	23	5.6	8.4	2.7	3.4	355	409	190	319	370	98
17	31	24	5.6	8.4	2.7	3.4	394	409	192	313	370	98
18	29	24	5.3	8.4	2.7	3.7	390	409	191	308	390	98
19	29	24	5.1	8.4	2.5	10	339	406	198	308	437	98
20	26	24	4.9	8.5	2.5	15	337	431	210	302	453	98
21	7.6	24	5.0	8.9	2.3	15	348	444	210	282	450	98
22	20	25	5.0	8.9	2.5	16	378	437	217	264	450	97
23	36	25	5.3	8.9	2.4	16	377	403	234	266	444	97
24	36	17	5.1	8.9	2.4	16	376	403	249	261	421	97
25	35	7.9	5.2	8.9	2.7	16	362	400	278	253	421	104
26	35	7.6	5.3	8.9	2.7	19	341	392	286	245	412	125
27	34	7.6	5.3	8.9	2.7	25	341	389	308	247	394	125
28	34	7.4	5.3	9.1	2.7	30	341	384	299	240	390	124
29	34	7.2	5.3	9.3	---	48	349	381	284	220	393	131
30	34	6.4	5.3	6.4	---	60	382	367	282	230	389	147
31	34	---	5.3	4.0	---	63	---	336	---	242	384	---
TOTAL	869.6	641.1	164.8	264.2	80.5	403.0	7878	13030	7290	8761	11453	5035
MEAN	28.1	21.4	5.32	8.52	2.88	13.0	263	420	243	283	369	168
MAX	36	30	5.6	13	4.0	63	394	475	341	335	453	342
MIN	7.6	6.4	4.9	4.0	2.3	2.6	69	336	190	220	259	97
AC-FT	1720	1270	327	524	160	799	15630	25840	14460	17380	22720	9990
CAL YR 1977 TOTAL	15377.0			MEAN 42.1	MAX 237	MIN 2.9	AC-FT 30500					
WTR YR 1978 TOTAL	55870.2			MEAN 153	MAX 475	MIN 2.3	AC-FT 110800					

10293000 EAST WALKER RIVER NEAR BRIDGEPORT, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1959 to current year.

COOPERATION.--The letter "A" following a date indicates chemical-quality data furnished by the California Department of Water Resources.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)
OCT							
12...	1240	25	231	--	13.5	--	--
NOV							
28...	1145	7.6	505	--	9.0	--	--
JAN							
06...	1100	13	516	--	1.5	--	--
31...	1530	4.0	539	--	5.0	--	--
MAR							
28...	1130	25	520	--	5.0	--	--
APR							
11... A	1420	249	300	7.9	6.0	9.3	80
MAY							
25...	1430	397	219	--	13.5	--	--
JUN							
21...	1425	210	124	--	17.0	--	--
AUG							
29...	1215	387	157	--	17.5	--	--
SEP							
13... A	1030	122	149	7.6	14.5	7.6	54
26...	1230	123	148	--	12.5	--	--

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	ALKA- LINITY (MG/L AS CACO3)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT							
12...	--	--	--	--	--	--	--
NOV							
28...	--	--	--	--	--	--	--
JAN							
06...	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--
MAR							
28...	--	--	--	--	--	--	--
APR							
11... A	24	49	29	.8	99	5.4	204
MAY							
25...	--	--	--	--	--	--	--
JUN							
21...	--	--	--	--	--	--	--
AUG							
29...	--	--	--	--	--	--	--
SEP							
13... A	16	4.6	8.5	.5	74	.0	98
26...	--	--	--	--	--	--	--

## WALKER LAKE BASIN

10293050 EAST WALKER RIVER BELOW SWEETWATER CREEK, NEAR BRIDGEPORT, CA

LOCATION.--Lat 38°26'27", long 119°06'18", in NW¼NW¼ sec.29, T.7 N., R.26 E., Lyon County, Nevada, Toiyabe National Forest, on left bank 10 ft (3 m) downstream from bridge, 1.8 mi (2.9 km) downstream from Sweetwater Creek, and approximately 16 mi (26 km) northeast of Bridgeport.

DRAINAGE AREA.--467 mi<sup>2</sup> (1,210 km<sup>2</sup>).

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

GAGE.--Water-stage recorder. Altitude of gage is 5,760 ft (1,760 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, which are fair. Diversions for irrigation above station. Flow regulated by Bridgeport Reservoir (station 10292500).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,040 ft<sup>3</sup>/s (29.5 m<sup>3</sup>/s) Aug. 5, 1974, gage height, 7.43 ft (2.265 m); minimum daily, 5.2 ft<sup>3</sup>/s (0.15 m<sup>3</sup>/s) Mar. 8, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 582 ft<sup>3</sup>/s (16.5 m<sup>3</sup>/s) May 4, gage height, 6.48 ft (1.975 m); minimum daily, 8.5 ft<sup>3</sup>/s (0.24 m<sup>3</sup>/s) Oct. 22, Dec. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	28	9.7	12	10	20	82	443	372	351	288	375
2	25	20	9.7	13	10	24	78	460	360	351	326	359
3	25	19	9.4	12	10	21	76	506	335	355	318	364
4	25	19	9.4	16	10	31	76	551	320	351	310	368
5	25	19	9.4	17	12	28	84	502	300	342	310	359
6	25	20	9.7	18	14	26	116	492	260	395	320	288
7	25	20	10	16	14	24	116	496	250	375	330	247
8	25	21	10	16	13	29	130	492	250	365	350	221
9	25	21	9.7	15	14	31	184	499	260	360	380	198
10	25	22	10	13	15	28	237	521	265	360	400	177
11	25	23	9.7	13	14	27	267	555	267	360	410	172
12	24	22	10	14	16	24	288	510	267	364	420	130
13	25	22	10	14	14	21	322	488	260	359	420	130
14	27	21	8.8	14	12	22	342	457	255	386	420	135
15	28	22	9.1	17	14	23	390	457	243	386	420	130
16	28	22	8.5	16	14	24	430	460	240	380	420	109
17	27	21	13	17	14	26	457	460	235	370	420	107
18	26	21	12	15	13	28	474	460	230	370	450	111
19	26	23	12	15	12	30	390	460	230	365	490	111
20	27	29	13	15	13	40	381	460	230	350	510	115
21	16	26	13	14	14	48	390	455	230	330	510	113
22	8.5	29	13	14	15	48	450	450	234	310	500	115
23	20	25	13	13	14	42	443	445	240	320	490	116
24	26	22	12	13	15	39	435	440	250	310	480	118
25	27	12	12	13	15	38	424	435	299	300	470	120
26	28	11	12	12	17	38	386	435	303	300	460	135
27	28	10	12	12	16	34	390	430	359	290	440	132
28	28	10	13	11	16	34	390	435	390	270	430	135
29	28	9.7	12	11	---	51	400	440	347	275	430	137
30	28	9.7	12	10	---	81	447	424	351	285	430	157
31	28	---	11	10	---	82	---	377	---	288	430	---
TOTAL	778.5	599.4	338.1	431	380	1062	9075	14495	8432	10573	12782	5484
MEAN	25.1	20.0	10.9	13.9	13.6	34.3	303	468	281	341	412	183
MAX	28	29	13	18	17	82	474	555	390	395	510	375
MIN	8.5	9.7	8.5	10	10	20	76	377	230	270	288	107
AC-FT	1540	1190	671	855	754	2110	18000	28750	16720	20970	25350	10880
CAL YR 1977 TOTAL	16151.9		MEAN 44.3	MAX 220	MIN 5.2	AC-FT 32040						
WTR YR 1978 TOTAL	64430.0		MEAN 177	MAX 555	MIN 8.5	AC-FT 127800						



10293500 EAST WALKER RIVER ABOVE STROSNIDER DITCH, NEAR MASON, NV

LOCATION.--Lat 38°48'45", long 119°02'50", in NW¼SW¼ sec.14, T.11 N., R.26 E., Lyon County, on right bank 0.9 mi (1.4 km) upstream from head of Strosnider ditch, 12 mi (19 km) southeast of Mason, and 13.5 mi (21.7 km) southeast of Yerington.

DRAINAGE AREA.--1,100 mi<sup>2</sup> (2,850 km<sup>2</sup>), approximately.

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1947 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,574.10 ft (1,394.186 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 24, 1957, near present site at datum 0.56 ft (0.171 m) higher. Oct. 24, 1957, to Apr. 3, 1974, at site about 400 ft (120 m) downstream at same datum.

REMARKS.--Records good. Diversions for irrigation above station. Flow regulated by Bridgeport Reservoir (station 10292500).

AVERAGE DISCHARGE.--31 years, 142 ft<sup>3</sup>/s (4.021 m<sup>3</sup>/s), 102,900 acre-ft/yr (127 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,380 ft<sup>3</sup>/s (67.4 m<sup>3</sup>/s) Feb. 1, 1963, gage height, 7.60 ft (2.316 m); minimum daily, 2.3 ft<sup>3</sup>/s (0.065 m<sup>3</sup>/s) Mar. 12, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 570 ft<sup>3</sup>/s (16.1 m<sup>3</sup>/s) May 4, gage height, 4.32 ft (1.32 m); minimum daily, 5.3 ft<sup>3</sup>/s (0.150 m<sup>3</sup>/s) Feb. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	23	12	15	12	19	90	423	371	267	188	335
2	20	23	14	15	12	20	81	419	369	266	201	308
3	22	20	14	15	12	23	77	436	363	270	220	307
4	22	16	14	16	12	23	73	516	341	274	225	307
5	23	14	14	17	16	27	71	535	338	275	231	316
6	22	14	13	18	20	30	75	519	310	277	238	298
7	23	16	12	19	20	27	102	512	265	314	251	259
8	21	17	14	17	17	24	113	522	218	336	259	218
9	22	17	14	19	18	26	124	523	213	300	288	198
10	23	16	15	20	23	32	161	531	218	291	318	178
11	25	19	16	19	23	32	197	538	234	265	340	167
12	25	17	18	18	20	33	235	537	239	247	354	158
13	24	14	19	18	18	31	248	534	235	250	352	144
14	23	16	18	20	19	28	284	517	227	252	357	140
15	23	16	18	21	18	26	297	505	210	251	362	139
16	23	17	18	21	18	26	355	484	200	252	358	133
17	23	19	20	21	18	26	354	445	190	262	357	119
18	23	20	23	21	18	27	393	428	189	268	355	116
19	23	18	22	20	17	29	376	421	186	262	377	118
20	23	20	15	20	17	31	341	418	196	261	412	122
21	24	22	16	20	16	40	331	449	205	256	429	124
22	23	29	18	20	16	50	341	463	197	234	426	122
23	16	28	19	18	16	54	376	428	206	225	429	120
24	14	25	21	18	17	50	384	402	207	218	409	117
25	20	21	17	18	17	45	394	412	217	212	385	115
26	21	18	17	16	18	45	393	420	237	209	386	117
27	21	16	17	14	18	47	373	408	261	204	381	131
28	21	14	17	14	18	46	383	398	292	215	366	135
29	23	12	17	14	---	48	376	406	278	197	353	134
30	23	12	17	12	---	60	392	410	269	188	347	138
31	23	---	16	12	---	83	---	392	---	187	339	---
TOTAL	682	549	515	546	484	1108	7790	14351	7481	7785	10293	5333
MEAN	22.0	18.3	16.6	17.6	17.3	35.7	260	463	249	251	332	178
MAX	25	29	23	21	23	83	394	538	371	336	429	335
MIN	14	12	12	12	12	19	71	392	186	187	188	115
AC-FT	1350	1090	1020	1080	960	2200	15450	28470	14840	15440	20420	10580
CAL YR 1977 TOTAL	13656.2			37.4	182	MIN	2.3	AC-FT	27090			
WTR YR 1978 TOTAL	56917.0			156	538	MIN	12	AC-FT	112900			

## WALKER LAKE BASIN

10293500 EAST WALKER RIVER ABOVE STROSNIDER DITCH, NEAR MASON, NV--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1977 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
OCT				
19...	1400	23	322	14.0
DEC				
21...	1340	31	390	3.0
JAN				
12...	1340	18	435	3.0
FEB				
13...	1310	18	402	2.5
MAR				
10...	1400	33	390	12.0
APR				
12...	1400	246	310	14.0
MAY				
11...	1225	545	281	15.0
JUN				
07...	1415	255	209	22.5
JUL				
10...	1150	293	181	20.0
SEP				
13...	1240	143	237	17.5

## 10295500 LITTLE WALKER RIVER NEAR BRIDGEPORT, CA

LOCATION.--Lat 38°21'30", long 119°26'30", in NW¼NW¼ sec.22, T.6 N., R.23 E., Mono County, Toiyabe National Forest, on right bank 0.8 mi (1.3 km) north of Sonora Junction, 1.5 mi (2.4 km) upstream from mouth, and 14 mi (23 km) northwest of Bridgeport.

DRAINAGE AREA.--63.0 mi<sup>2</sup> (163.2 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to August 1910, October 1944 to current year. Prior to October 1958, published as East Fork West Walker River near Bridgeport.

GAGE.--Water-stage recorder. Altitude of gage is 6,790 ft (2,070 m), from topographic map. April to August 1910, nonrecording gage at site 1 mi (2 km) upstream at different datum.

REMARKS.--Records good except those for winter periods, which are poor. Small diversions above station.

AVERAGE DISCHARGE.--34 years (water years 1945-78), 50.0 ft<sup>3</sup>/s (1.416 m<sup>3</sup>/s), 36,220 acre-ft/yr (44.7 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,510 ft<sup>3</sup>/s (42.8 m<sup>3</sup>/s) Jan. 31, 1963, gage height, 3.22 ft (0.982 m), from rating curve extended above 350 ft<sup>3</sup>/s (9.91 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 2.80 ft (0.853 m); maximum gage height recorded, 3.63 ft (1.106 m) Jan. 3, 1945, backwater from ice; minimum discharge, 1.4 ft<sup>3</sup>/s (0.040 m<sup>3</sup>/s) Nov. 20, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft<sup>3</sup>/s (5.66 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)		Gage height (ft) (m)	
May 14	2000	216	6.12	1.84	0.561
June 8	2300	*352	9.97	2.16	0.658

Minimum, 1.4 ft<sup>3</sup>/s (0.40 m<sup>3</sup>/s) Nov. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	7.5	8.3	11	11	14	53	69	197	183	100	31
2	5.7	7.7	8.0	11	11	15	44	71	193	178	95	29
3	5.5	7.6	8.3	11	11	14	41	83	195	166	94	30
4	6.1	7.3	8.6	11	10	15	38	93	200	154	96	32
5	7.6	9.6	8.6	12	11	14	37	88	218	161	91	50
6	7.6	8.9	8.6	11	11	15	36	78	239	175	86	52
7	7.2	11	8.6	11	10	16	33	79	262	195	86	52
8	7.4	12	8.6	12	10	17	32	87	275	194	90	46
9	7.4	14	8.6	13	10	17	37	98	292	201	92	42
10	7.2	12	8.3	12	10	17	40	109	260	218	90	51
11	7.2	8.4	8.3	12	10	17	50	112	225	211	79	44
12	7.2	8.2	8.5	11	10	16	57	120	242	190	74	41
13	7.2	7.0	8.6	11	11	16	63	145	268	185	69	39
14	7.0	9.3	9.0	11	11	17	59	171	287	197	64	41
15	6.7	8.3	15	11	11	18	54	163	256	215	59	41
16	6.6	8.1	12	11	11	18	50	132	212	203	56	37
17	6.5	8.0	13	12	12	19	45	120	192	174	54	35
18	6.6	6.6	12	12	12	20	43	121	200	162	51	34
19	7.0	10	12	12	12	24	45	127	192	150	49	34
20	6.6	11	12	12	13	26	45	141	198	140	48	33
21	6.4	25	13	12	13	30	41	154	202	136	46	33
22	6.4	31	13	12	13	35	42	166	207	133	44	32
23	6.7	18	13	12	13	40	47	160	206	134	43	30
24	6.6	12	12	12	12	35	61	128	209	137	40	30
25	6.2	11	11	12	13	38	78	111	198	137	39	29
26	6.5	10	11	12	13	42	64	106	185	147	38	29
27	7.6	10	12	12	13	47	69	115	206	145	37	28
28	7.2	10	12	12	13	52	71	131	164	131	37	27
29	6.4	9.9	12	11	---	57	69	152	158	120	34	27
30	7.0	8.3	11	11	---	66	66	176	174	113	33	27
31	7.6	---	11	11	---	74	---	189	---	110	32	---
TOTAL	210.6	327.7	325.9	359	321	861	1510	3795	6492	5095	1946	1086
MEAN	6.79	10.9	10.5	11.6	11.5	27.8	50.3	122	216	164	62.8	36.2
MAX	7.6	31	15	13	13	74	78	189	292	218	100	52
MIN	5.5	6.6	8.0	11	10	14	32	69	158	110	32	27
AC-FT	418	650	646	712	637	1710	3000	7530	12880	10110	3860	2150
CAL YR 1977	TOTAL	4826.9	MEAN 13.2	MAX 75	MIN 2.6	AC-FT	9570					
WTR YR 1978	TOTAL	22329.2	MEAN 61.2	MAX 292	MIN 5.5	AC-FT	44290					

## WALKER LAKE BASIN

10295500 LITTLE WALKER RIVER NEAR BRIDGEPORT, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1977 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
NOV				
23...	1320	16	292	3.0
FEB				
23...	1020	15	389	.0
MAR				
29...	0840	49	217	3.0
MAY				
15...	1215	165	88	7.5
JUN				
22...	1130	192	63	8.5
SEP				
27...	1430	28	174	15.5

10296000 WEST WALKER RIVER BELOW LITTLE WALKER RIVER, NEAR COLEVILLE, CA

LOCATION.--Lat 38°22'47", long 119°26'57", in NE&SE4 sec.9, T.6 N., R.23 E., Mono County, Toiyabe National Forest, on right bank 150 (50 m) downstream from Little Walker River, 60 ft (20 m) upstream from bridge on U.S. Highway 395, and 13 mi (21 km) southeast of Coleville.

DRAINAGE AREA.--180 mi<sup>2</sup> (466 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1938 to current year. Prior to October 1958, published as "below East Fork."

REVISED RECORDS.--WSP 1927: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,591.39 ft (2,009.056 m) National Geodetic Vertical Datum of 1929, supplementary adjustment of 1958. Oct. 1, 1959, to Sept. 30, 1969, at site 100 ft (30 m) upstream at same datum. Prior to Oct. 1, 1939, at site 25 ft (8 m) downstream at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Station is above diversions except for a few small ranch ditches. Flow slightly regulated by Poor Lake Reservoir (capacity unknown) 7 mi (11 km) upstream.

AVERAGE DISCHARGE.--40 years, 254 ft<sup>3</sup>/s (7.193 m<sup>3</sup>/s), 184,000 acre-ft/yr (227 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,220 ft<sup>3</sup>/s (176 m<sup>3</sup>/s) Nov. 20, 1950, gage height, 8.10 ft (2.469 m), from rating curve extended above 1,900 ft<sup>3</sup>/s (53.8 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; minimum, 4.0 ft<sup>3</sup>/s (0.11 m<sup>3</sup>/s) Nov. 18, 1948, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge observed, 5,800 ft<sup>3</sup>/s (164 m<sup>3</sup>/s) Dec. 11, 1937, by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,120 ft<sup>3</sup>/s (31.7 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 15	0200	1520 43.0	4.42 1.347
June 14	0100	*2010 56.9	4.92 1.500
July 10	0200	1310 37.1	4.11 1.253

Minimum daily, 14 ft<sup>3</sup>/s (0.40 m<sup>3</sup>/s) Oct. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	18	25	41	38	54	300	349	1270	1050	511	117
2	15	18	24	42	38	57	266	361	1310	1020	467	111
3	14	18	25	38	38	55	239	454	1270	900	455	107
4	15	18	26	38	39	64	225	563	1260	827	478	120
5	17	21	26	31	40	63	207	584	1450	868	474	270
6	16	21	26	40	39	60	206	492	1590	1010	421	467
7	16	20	26	36	26	61	186	473	1700	1090	407	365
8	17	20	26	40	30	69	176	532	1690	1060	447	278
9	17	20	26	45	39	73	177	661	1740	1040	432	213
10	17	21	25	38	42	73	192	749	1550	1150	490	317
11	17	21	25	38	46	73	241	753	1280	1100	382	277
12	17	20	26	40	46	70	296	782	1450	939	342	215
13	17	20	26	43	49	68	337	963	1720	889	308	181
14	16	20	27	43	50	69	327	1150	1750	976	279	173
15	16	21	45	36	51	71	308	1050	1520	1080	246	172
16	16	20	35	36	51	76	268	617	1210	1010	236	153
17	16	21	40	40	52	86	250	532	1060	819	221	139
18	16	20	37	40	52	94	244	549	1170	786	205	130
19	16	16	37	40	53	103	249	603	1170	730	189	123
20	17	16	37	40	54	120	247	694	1170	674	176	117
21	17	25	37	41	56	131	228	795	1210	652	170	113
22	17	37	37	40	56	144	221	890	1220	663	163	106
23	17	34	41	39	56	156	233	810	1220	691	156	101
24	17	28	35	40	56	149	276	555	1230	693	146	96
25	17	25	36	40	54	155	368	452	1150	712	139	93
26	17	25	33	43	53	177	333	522	1020	781	132	90
27	18	26	41	41	55	197	338	702	998	741	130	88
28	18	25	42	40	51	228	377	902	825	655	128	86
29	18	25	42	38	---	264	356	1110	803	598	123	85
30	18	25	41	38	---	308	367	1280	957	541	121	83
31	18	---	41	38	---	348	---	1280	---	541	122	---
TOTAL	515	665	1016	1223	1310	3716	8038	22209	38963	26286	8696	4986
MEAN	16.6	22.2	32.8	39.5	46.8	120	268	716	1299	848	281	166
MAX	18	37	45	45	56	348	377	1280	1750	1150	511	467
MIN	14	16	24	31	26	54	176	349	803	541	121	83
AC-FT	1020	1320	2020	2430	2600	7370	15940	44050	77280	52140	17250	9890

CAL YR 1977	TOTAL	23026.5	MEAN	63.1	MAX	445	MIN	9.7	AC-FT	45670
WTR YR 1978	TOTAL	117623.0	MEAN	322	MAX	1750	MIN	14	AC-FT	233300

## WALKER LAKE BASIN

10296000 WEST WALKER RIVER BELOW LITTLE WALKER RIVER, NEAR COLEVILLE, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1959-66, 1970 to current year.

COOPERATION.--Chemical-quality records furnished by the California Department of Water Resources.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)
APR 11...	1315	230	103	7.4	9.0	1.0	10.9	38
SEP 13...	1330	216	139	7.7	6.0	.00	9.6	33

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	ALKA- LINITY (MG/L AS CACO3)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
APR 11...	11	2.6	6.0	.4	42	.2	56	.08
SEP 13...	9.7	2.1	16	1.2	51	2.7	94	.13

## WALKER LAKE BASIN

39

10296500 WEST WALKER RIVER NEAR COLEVILLE, CA

LOCATION.--Lat 38°30'55", long 119°27'15", in NW¼NE¼ sec.28, T.8 N., R.23 E., Mono County, Toiyabe National Forest, on left bank 0.2 mi (0.3 km) downstream from Rock Creek, and 5 mi (8 km) southeast of Coleville.

DRAINAGE AREA.--271 mi<sup>2</sup> (702 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--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 current year. Monthly discharge only for some periods, published in WSP 1314.

REVISED RECORDS.--WSP 880: 1917 (runoff in acre-feet). WSP 1514: 1918, 1923. WSP 1927: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,520 ft (1,682 m) from topographic map. See WSP 2127 for history of changes prior to Sept. 10, 1963.

REMARKS.--Records good except those for the winter periods, which are fair. Station is above diversions except for a few small ranch ditches. Flow slightly regulated by Poor Lake Reservoir (capacity unknown) 17 mi (27 km) upstream.

AVERAGE DISCHARGE.--49 years (water years 1903-7, 1910, 1916-37, 1958-78), 270 ft<sup>3</sup>/s (7.646 m<sup>3</sup>/s), 195,600 acre-ft/yr (241 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,500 ft<sup>3</sup>/s (184 m<sup>3</sup>/s) Dec. 11, 1937, from slope-area measurement of peak flow; minimum, 5 ft<sup>3</sup>/s (0.14 m<sup>3</sup>/s) Dec. 3, 1924, Aug. 27, 1931.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,120 ft<sup>3</sup>/s (31.7 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 15	0200	1600 45.3	3.39 1.03	June 9	0500	1900 53.8	3.82 1.16
May 22	0500	1430 40.5	3.19 0.972	June 14	0600	*1910 54.1	3.83 1.17
May 30	0300	1480 41.9	3.32 1.01	July 10	0400	1320 37.4	3.17 0.966

Minimum daily, 18 ft<sup>3</sup>/s (0.51 m<sup>3</sup>/s) Nov. 19

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	24	30	45	56	70	321	375	1310	1040	464	143
2	20	24	30	45	57	74	292	379	1330	1030	421	135
3	20	23	31	43	53	73	264	469	1280	886	421	131
4	20	23	31	43	52	87	249	595	1270	784	430	140
5	21	25	31	43	57	83	220	640	1420	814	449	259
6	20	25	30	43	56	80	227	525	1530	982	393	474
7	21	24	31	52	43	78	199	494	1670	1090	379	394
8	21	25	30	54	41	87	189	551	1660	1060	421	314
9	21	24	30	59	52	93	189	704	1700	1010	393	248
10	21	25	30	54	58	92	199	804	1540	1160	479	325
11	21	26	30	52	58	92	245	825	1250	1120	370	318
12	21	25	30	55	63	91	301	858	1370	938	335	253
13	21	25	32	58	64	87	354	1090	1630	850	309	216
14	22	24	32	58	64	87	343	1300	1720	944	284	205
15	22	26	52	53	63	89	332	1410	1580	1070	260	206
16	21	25	38	50	64	93	284	979	1250	1020	245	183
17	21	24	38	59	59	103	263	821	1080	791	238	167
18	21	24	37	58	61	113	244	846	1230	746	227	158
19	22	18	36	56	59	119	243	918	1190	681	213	147
20	22	22	37	56	59	136	260	1050	1170	617	199	141
21	22	31	39	56	61	149	241	1170	1210	592	193	133
22	22	48	44	54	64	163	234	1300	1220	599	186	125
23	22	32	53	54	66	180	238	1240	1180	632	183	117
24	22	32	47	54	69	173	276	862	1200	638	173	112
25	22	31	45	61	68	176	384	685	1130	640	161	107
26	22	30	43	65	71	197	348	644	1010	747	158	105
27	23	30	49	59	69	216	348	750	983	704	152	105
28	24	30	52	58	69	246	402	975	794	612	154	105
29	23	30	51	53	---	276	379	1190	743	557	148	103
30	23	30	52	54	---	319	393	1350	927	484	146	104
31	24	---	48	55	---	376	---	1340	---	484	146	---
TOTAL	668	805	1189	1659	1676	4298	8461	27139	38577	25322	8730	5673
MEAN	21.5	26.8	38.4	53.5	59.9	139	282	875	1286	817	282	189
MAX	24	48	53	65	71	376	402	1410	1720	1160	479	474
MIN	20	18	30	43	41	70	189	375	743	484	146	103
AC-FT	1320	1600	2360	3290	3320	8530	16780	53830	76520	50230	17320	11250

CAL YR 1977 TOTAL 25805 MEAN 70.7 MAX 463 MIN 14 AC-FT 51180  
WTR YR 1978 TOTAL 124197 MEAN 340 MAX 1720 MIN 18 AC-FT 246300

## WALKER LAKE BASIN

10296500 WEST WALKER RIVER NEAR COLEVILLE, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--  
CHEMICAL ANALYSES: Water years 1977 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
NOV				
23...	1020	22	192	3.0
FEB				
23...	1300	49	166	6.0
MAR				
29...	1205	273	127	7.0
APR				
26...	1200	347	111	5.5
JUN				
23...	1145	1190	41	8.5
JUL				
26...	1330	727	44	12.5
AUG				
30...	1250	152	104	16.0
SEP				
27...	1200	106	116	13.0



## WALKER LAKE BASIN

41

10297000 TOPAZ LAKE NEAR TOPAZ, CA

LOCATION.--Lat 38°41'35", long 119°31'10", in NW¼NE¼ sec.33, T.10 N., R.22 E., Douglas County, Nevada, at outlet of Topaz Lake on West Walker River, 5.5 mi (8.8 km) north of Topaz.

PERIOD OF RECORD.--December 1921 to September 1931 (monthly contents only published in WSP 1734), October 1931 to current year.

GAGE.--Float and nonrecording gages read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Walker River Irrigation District).

REMARKS.--Topaz Lake, formerly known as Alkali Lake and Topaz Reservoir, 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 the rim of the lake. Storage began about December 1921. Usable capacity, 59,440 acre-ft (73.3 hm<sup>3</sup>) between elevations 4,972.3 ft (1,515.56 m), lowest practical elevation for diversion through tunnel, bottom of outlet tunnel at elevation, 4,970 ft (1,515 m) and 5,005 ft (1,526 m), 3 ft (0.9 m) below top of levee. Usable capacity of reservoir was increased from about 45,000 acre-ft (55.5 hm<sup>3</sup>) to 59,440 acre-ft (73.3 hm<sup>3</sup>) in October 1937 by an earthfill, rock-faced levee at south end. Figures given herein represent usable contents. There is 65,000 acre-ft (80.1 hm<sup>3</sup>) of lake volume below the point of controllable storage. Water is used for irrigation in Walker River Irrigation District.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 60,310 acre-ft (74.4 hm<sup>3</sup>) June 23, 1974, elevation, 5,005.38 ft (1,525.640 m); no usable contents Oct. 31, 1924, Sept. 22, 24-30, Oct. 1-15, 1960, Aug. 19 to Dec. 23, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 58,500 acre-ft (72.1 hm<sup>3</sup>) July 17, 18, elevation, 5,004.60 ft (1,525.402 m); no usable contents Oct. 1 to Dec. 23.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

4972.3	0	4985	20390
4973	1080	4990	28970
4975	4180	4995	38100
4977	7320	5000	48350
4979	10520	5005	59440
4981	13760		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	1140	5430	10800	18900	10300	22100	54200	55700	33900
2			0	1290	5460	10900	19600	9970	23400	54500	55200	33510
3			0	1380	5620	11000	19900	9650	24600	54600	54600	32900
4			0	1410	5770	11100	20200	9520	25700	54600	53900	32300
5			0	1570	5810	11300	20400	9580	26700	54500	53500	31900
6			0	1810	5850	11500	20500	9680	28100	54500	52800	31500
7			0	1810	5900	11700	20500	9650	30600	54800	52200	31700
8			0	1880	5960	11900	20400	9620	32700	55400	51700	31800
9			0	2000	6090	12100	20300	9620	34900	55800	51000	31900
10			0	2280	6250	12300	20200	9870	37100	56300	50700	31800
11			0	2370	6500	12500	20200	10200	38700	56900	50400	31900
12			0	2430	7940	12700	19900	10800	40200	57300	49900	32000
13			0	2590	8150	12900	20400	11400	41900	57600	49200	32000
14			0	2620	8310	13200	20400	12200	43800	57700	48600	32000
15			0	2990	8530	13400	19800	13300	45700	57900	47800	32000
16			0	3050	8660	13600	19100	14200	47400	58400	47000	32000
17			0	3210	8820	13800	18500	14700	48500	58500	46300	31900
18			0	3650	8940	14000	17900	14900	49300	58500	45600	31900
19			0	3930	9150	14200	17100	15100	50200	58400	44800	31800
20			0	3990	9330	14400	16600	15500	50900	58100	44000	31700
21			0	4080	9490	14800	15900	16000	51700	57700	43300	31700
22			0	4240	9680	15000	15200	16700	52100	57500	42100	31600
23			0	4390	9840	15300	14400	17700	52600	57300	41100	31600
24			120	4490	10000	15700	13700	18200	53100	57200	40300	31500
25			280	4640	10200	16000	12900	18400	53900	57100	39500	31400
26			340	4770	10300	16300	12400	18300	54000	57000	38600	31300
27			460	4910	10500	16700	11900	18200	54000	57100	37700	31200
28			670	4990	10600	17100	11400	18400	54400	57000	37100	31100
29			670	5120	---	17500	10900	19000	54200	56800	36300	30900
30			770	5210	---	17900	10600	19900	54100	56400	35800	30700
31		---	950	5330	---	18300	---	21000	---	56100	34700	---
MAX	0	0	950	5330	10600	18300	20500	21000	54400	58500	55700	33900
MIN	0	0	0	1140	5430	10800	10600	9520	22100	54200	34700	30700
†	4971.13	4971.12	4972.92	4975.74	4979.06	4983.75	4979.02	4985.38	5002.63	5003.52	4993.23	4990.96
‡	0	0	+950	+4380	+5270	+7700	-7700	+10400	+33100	+2000	-21400	-4000
CAL YR 1977	†	-7260										
WTR YR 1978	†	+30700										

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet.

## WALKER LAKE BASIN

10297500 WEST WALKER RIVER AT HOYE BRIDGE, NEAR WELLINGTON, NV

LOCATION.--Lat 38°43'40", long 119°25'40", in NE&SE¼ sec.17, T.10 N., R.23 E., Douglas County, on left bank 20 ft (6 m) upstream from Hoyer bridge, 2 mi (3 km) upstream from head of Saroni Canal, and 4 mi (6 km) southwest of Wellington.

DRAINAGE AREA.--533 mi<sup>2</sup> (1,380 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to August 1910 (published as West Walker River near Wellington), July 1920 to September 1923, March 1924 to August 1925, October 1925 to September 1932, October 1957 to current year. Monthly discharge only for some periods published in WSP 1314.

REVISED RECORDS.--WSP 2127: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,980 ft (1,518 m), from topographic map. May to August 1910, nonrecording gage at same site at different datum. July 1, 1920, to Sept. 30, 1923, water-stage recorder at site 3 mi (5 km) downstream, 1 mi (2 km) downstream from Saroni Canal, at different datum, and supplemental nonrecording gage on Saroni Canal 1 mi (2 km) downstream from head. Mar. 1, 1924, to Sept. 30, 1932, water-stage recorder at same site at different datum.

REMARKS.--Records good. Flow regulated by off-channel storage in Topaz Lake (station 10297000) since Jan. 30, 1922. Diversions for irrigation of about 10,500 acres (42.5 km<sup>2</sup>) above station. Records include releases from Topaz Lake and all return flow from Antelope Valley.

AVERAGE DISCHARGE (unadjusted).--31 years (water years 1921-23, 1926-32, 1958-78), 229 ft<sup>3</sup>/s (6.485 m<sup>3</sup>/s), 165,900 acre-ft/yr (205 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,180 ft<sup>3</sup>/s (61.7 m<sup>3</sup>/s) June 6, 1922; minimum observed, 4.8 ft<sup>3</sup>/s (0.14 m<sup>3</sup>/s) Jan. 5, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 860 ft<sup>3</sup>/s (24.4 m<sup>3</sup>/s) June 24, gage height, 5.94 ft (1.811 m); minimum, 7.6 ft<sup>3</sup>/s (0.22 m<sup>3</sup>/s) Oct. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	16	27	19	18	15	82	379	723	737	584	330
2	17	16	29	18	18	14	88	362	750	738	601	298
3	14	16	30	18	18	14	114	351	726	744	618	302
4	13	18	30	19	19	15	116	353	676	742	615	299
5	16	19	27	20	19	14	125	367	713	741	613	299
6	16	19	25	21	19	15	162	380	696	732	608	295
7	14	19	25	17	20	14	205	384	484	702	609	251
8	11	17	24	16	20	13	206	384	535	711	603	244
9	9.0	17	23	16	33	14	207	397	617	707	576	222
10	8.2	17	23	16	40	16	179	423	668	720	571	204
11	8.6	19	24	16	32	15	150	457	591	707	535	201
12	9.4	19	25	16	29	16	155	468	644	655	511	183
13	8.6	19	25	16	26	15	198	514	762	691	491	151
14	8.6	19	24	16	26	16	349	584	739	702	496	150
15	8.2	19	26	18	25	15	464	662	657	705	519	153
16	9.4	19	23	17	25	12	459	591	615	717	498	155
17	11	19	29	24	22	12	441	564	607	712	467	133
18	11	19	53	21	20	12	403	625	656	687	469	136
19	12	19	41	18	19	12	436	625	685	672	489	133
20	12	18	30	17	18	13	426	650	738	673	489	130
21	12	22	24	15	18	14	422	686	757	657	486	129
22	13	34	22	14	17	14	457	670	808	609	483	135
23	14	37	20	12	17	14	483	679	815	608	489	138
24	14	33	19	12	17	14	466	683	835	605	461	135
25	14	33	18	11	17	15	458	660	796	598	454	136
26	14	32	18	11	17	15	444	660	780	609	442	133
27	14	30	19	16	16	16	427	641	774	631	410	134
28	14	29	20	19	14	28	411	635	806	630	405	157
29	15	28	19	18	---	42	400	666	756	607	402	185
30	15	27	19	18	---	71	390	719	761	599	399	203
31	15	---	19	18	---	77	---	740	---	583	390	---
TOTAL	391.0	668	780	523	599	602	9323	16959	21170	20931	15783	5754
MEAN	12.6	22.3	25.2	16.9	21.4	19.4	311	547	706	675	509	192
MAX	20	37	53	24	40	77	483	740	835	744	618	330
MIN	8.2	16	18	11	14	12	82	351	484	583	390	129
AC-FT	776	1320	1550	1040	1190	1190	18490	33640	41990	41520	31310	11410
CAL YR 1977	TOTAL	21625.4	MEAN	59.2	MAX	401	MIN	8.2	AC-FT	42890		
WTR YR 1978	TOTAL	93483.0	MEAN	256	MAX	835	MIN	8.2	AC-FT	185400		

## WALKER LAKE BASIN

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10297500 WEST WALKER RIVER AT HOYE BRIDGE, NEAR WELLINGTON, NV--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1977 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
OCT				
20...	0915	12	414	10.5
JAN				
10...	1105	16	428	3.0
MAR				
10...	1025	17	431	9.0
APR				
12...	1230	150	253	14.0
MAY				
11...	1300	456	219	15.0
JUN				
08...	0835	529	151	15.0
JUL				
11...	0950	696	118	18.5
AUG				
09...	1130	570	112	20.0
SEP				
12...	1030	189	149	10.5

## CARSON RIVER BASIN

10308200 EAST FORK CARSON RIVER BELOW MARKLEEVILLE CREEK, NEAR MARKLEEVILLE, CA

LOCATION.--Lat 38°42'50", long 119°45'50", in SW¼SE¼ sec:15, T.10 N., R.20 E., Alpine County, on right bank 0.5 mi (0.8 km) downstream from Markleeville Creek and 1.5 mi (2.4 km) north-northeast of Markleeville.

DRAINAGE AREA.--276 mi<sup>2</sup> (715 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1960 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,400 ft (1,646 m), from topographic map. Prior to Oct. 1, 1967, at present site at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good. A few small diversions for irrigation above station. Flow slightly regulated by several small reservoirs, total capacity, about 5,0 acre-ft (6.16 hm<sup>3</sup>).

AVERAGE DISCHARGE.--18 years, 343 ft<sup>3</sup>/s (9.71 m<sup>3</sup>/s), 248,500 acre-ft/yr (306 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,100 ft<sup>3</sup>/s (428 m<sup>3</sup>/s) Jan. 31, 1963, gage height, 10.21 ft (3.112 m), present datum; minimum daily, 9.5 ft<sup>3</sup>/s (0.27 m<sup>3</sup>/s) Nov. 19, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,300 ft<sup>3</sup>/s (36.8 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 14	2300	*2390 67.7	5.59 1.704
May 21	2300	1940 54.9	5.18 1.579
June 7	2300	2250 63.7	5.46 1.664

Minimum daily, 9.5 ft<sup>3</sup>/s (0.27 m<sup>3</sup>/s) Nov. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	26	40	82	87	146	544	565	1540	853	261	142
2	26	26	40	87	90	166	453	562	1570	823	241	139
3	25	27	39	80	87	160	409	752	1570	749	229	139
4	24	27	40	77	90	289	385	908	1610	693	265	136
5	24	34	41	77	112	292	343	905	1780	693	273	164
6	22	32	39	75	121	227	340	717	1850	721	233	232
7	22	28	40	70	121	221	310	728	1940	764	225	214
8	23	28	39	85	109	268	290	862	1930	728	214	172
9	24	28	40	118	158	264	284	1080	1970	721	206	151
10	24	30	39	112	121	253	317	1230	1740	742	206	249
11	24	33	39	95	109	235	427	1230	1510	700	181	203
12	24	30	39	85	106	208	510	1270	1680	625	175	141
13	24	29	42	87	107	187	536	1530	1870	574	171	128
14	23	28	44	121	97	181	502	1830	1850	593	164	134
15	23	29	185	151	101	182	479	1820	1590	612	175	160
16	23	29	77	151	97	207	428	1180	1310	580	168	138
17	23	29	249	158	95	253	387	1050	1180	512	164	122
18	23	29	124	124	98	268	373	1120	1220	483	151	116
19	24	28	77	119	99	272	387	1250	1170	450	142	115
20	23	20	85	111	112	310	404	1380	1140	417	139	111
21	23	63	77	101	128	363	366	1560	1140	396	133	102
22	23	103	75	100	145	372	342	1680	1120	383	127	99
23	23	46	145	88	156	372	348	1470	1090	376	133	96
24	23	45	87	86	159	341	421	1070	1080	364	130	93
25	23	48	75	114	152	356	590	903	1000	358	133	90
26	23	47	70	93	148	409	525	918	890	364	155	87
27	26	50	112	87	143	463	563	1080	899	346	148	85
28	28	47	124	87	137	517	654	1290	823	325	142	84
29	26	43	115	84	---	574	589	1540	778	304	133	82
30	26	42	118	86	---	625	638	1680	823	282	130	82
31	26	---	90	90	---	684	---	1570	---	273	142	---
TOTAL	744	1104	2446	3081	3285	9665	13144	36730	41663	16804	5489	4006
MEAN	24.0	36.8	78.9	99.4	117	312	438	1185	1389	542	177	134
MAX	28	103	249	158	159	684	654	1830	1970	853	273	249
MIN	22	20	39	70	87	146	284	562	778	273	127	82
AC-FT	1480	2190	4850	6110	6520	19170	26070	72850	82640	33330	10890	7950
CAL YR 1977 TOTAL	31186			MEAN 85.4	MAX 455	MIN 16	AC-FT 61860					
WTR YR 1978 TOTAL	138161			MEAN 379	MAX 1970	MIN 20	AC-FT 274000					

## CARSON RIVER BASIN

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10308200 EAST FORK CARSON RIVER BELOW MARKLEEVILLE CREEK, NEAR MARKLEEVILLE, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1977 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
OCT				
27...	1200	26	188	9.0
NOV				
25...	0945	48	204	3.0
JAN				
30...	1130	71	203	.5
FEB				
27...	1030	144	177	4.0
MAR				
28...	1210	466	111	7.5
MAY				
10...	1045	1120	63	5.5
JUN				
01...	1300	1380	52	9.0
27...	1040	917	50	10.5
JUL				
28...	1040	335	66	14.0
AUG				
30...	1020	133	96	12.0
SEP				
26...	1035	88	108	12.5

## CARSON RIVER BASIN

10309000 EAST FORK CARSON RIVER NEAR GARDNERVILLE, NV

LOCATION.--Lat 38°50'50", long 119°42'10", in SW¼NE¼ sec.2, T.11 N., R.20 E., Douglas County, on left bank 0.1 mi (0.2 km) downstream from Horseshoe Bend, 2 mi (3 km) east of Mud Lake Reservoir, 4.5 mi (7.2 km) downstream from Bryant Creek, and 7 mi (11 km) southeast of Gardnerville.

DRAINAGE AREA.--341 mi<sup>2</sup> (883 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1890 to December 1893, October 1900 to December 1906 (gage heights only August to December 1904, and July 1905 to December 1906), 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 current year. Monthly discharge only for some periods published in WSP 1314.

REVISED RECORDS.--WSP 1214: 1938(M), 1942-43(M), 1945(M). WSP 1514: 1909-10. WSP 1927: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,985.11 ft (1,519.462 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to May 19, 1939, nonrecording gages at several sites within 2 mi (3 km) of present site at various datums.

REMARKS.--Records good. Station is above all diversions in Carson Valley. Diversions for irrigation above station. Flow slightly regulated by several small reservoirs, total capacity, about 5,000 acre-ft (6.16 hm<sup>3</sup>).

AVERAGE DISCHARGE.--52 years (water years 1891-93, 1901-1903, 1909-10, 1926-28, 1936-37, 1940-78), 382 ft<sup>3</sup>/s (10.82 m<sup>3</sup>/s), 276,800 acre-ft/yr (341 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,600 ft<sup>3</sup>/s (498 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 11.88 ft (3.621 m), from rating curve extended above 6,000 ft<sup>3</sup>/s (170 m<sup>3</sup>/s), on basis of slope-area measurements at gage heights 9.66 ft (2.944 m) and 11.88 ft (3.621 m); minimum observed, 7.8 ft<sup>3</sup>/s (0.221 m<sup>3</sup>/s) Nov. 20, 1977, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,300 ft<sup>3</sup>/s (36.8 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 15	0100	*2360 66.8	4.27 1.301
May 22	0200	1920 54.4	3.87 1.180
June 8	0100	2200 62.3	4.13 1.259

Minimum discharge, 7.8 ft<sup>3</sup>/s (0.221 m<sup>3</sup>/s) Nov. 20, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	36	45	88	98	171	624	611	1530	857	244	133
2	31	35	46	104	108	197	510	562	1570	849	215	134
3	31	36	45	93	106	196	449	774	1570	768	212	131
4	29	35	46	89	106	320	420	965	1580	699	231	136
5	29	40	47	109	116	402	374	1010	1750	683	271	157
6	28	43	44	95	144	297	371	779	1840	715	215	225
7	28	40	45	79	149	264	342	762	1910	763	219	217
8	30	36	43	96	131	306	321	889	1910	745	202	172
9	31	37	42	129	219	323	306	1120	1940	717	191	154
10	31	38	45	136	168	305	332	1310	1750	741	196	242
11	31	40	45	114	142	293	443	1330	1500	707	176	208
12	31	40	48	102	131	259	550	1320	1610	636	159	141
13	32	37	45	102	139	224	588	1570	1820	559	154	132
14	32	36	48	119	129	215	550	1840	1850	568	157	138
15	31	36	165	208	136	212	520	1940	1630	599	167	163
16	31	37	100	198	124	233	470	1270	1340	578	160	137
17	31	36	183	237	125	288	416	1090	1210	504	158	123
18	31	36	167	167	130	312	399	1150	1240	469	154	118
19	32	31	95	153	126	304	408	1280	1200	437	143	117
20	32	31	73	142	141	350	431	1400	1170	398	136	116
21	32	54	81	127	158	403	396	1550	1160	377	132	115
22	33	122	89	129	178	422	367	1690	1140	362	128	111
23	33	63	161	114	190	422	368	1560	1100	355	130	105
24	33	49	106	95	196	385	419	1130	1100	339	130	102
25	33	55	92	109	185	390	625	941	1030	325	130	99
26	33	53	83	119	179	450	565	935	935	341	151	92
27	34	4	111	109	173	505	584	1080	897	321	149	91
28	37	142	111	166	571	713	1280	863	305	146	87	87
29	37	49	124	104	643	588	1510	785	285	134	88	88
30	35	48	132	104	698	681	1690	826	266	130	88	88
31	36	---	104	105	781	---	1600	---	258	133	---	---
TOTAL	988	1336	2642	3786	4093	11141	14130	37938	41756	16526	5253	4072
MEAN	31.9	44.5	85.2	122	146	359	471	1224	1392	533	169	136
MAX	37	122	183	237	219	781	713	1940	1940	857	271	242
MIN	28	31	42	79	98	171	306	562	785	258	128	87
AC-FT	1960	2650	5240	7510	8120	22100	28030	75250	82820	32780	10420	8080
CAL YR 1977	TOTAL	33378	MEAN	91.4	MAX	491	MIN	11	AC-FT	66210		
WTR YR 1978	TOTAL	143661	MEAN	394	MAX	1940	MIN	28	AC-FT	285000		

## CARSON RIVER BASIN

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10309000 EAST FORK CARSON RIVER NEAR GARDNERVILLE, NV--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--  
 CHEMICAL ANALYSES: Water year 1978.  
 SEDIMENT RECORDS: Water year 1978.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 27...	1055	33	--	4.0	6	.53
NOV 28...	1145	54	--	5.5	8	1.2
DEC 30...	1415	131	--	3.0	16	5.7
JAN 30...	1500	90	231	4.5	6	1.5
FEB 27...	1430	174	--	7.5	15	7.0
MAR 29...	1130	653	124	7.0	--	--
APR 27...	1300	562	--	9.5	46	70
MAY 05...	1155	994	--	4.5	220	590
MAY 15...	1300	1980	--	--	474	2530
JUN 07...	1005	1810	48	7.0	400	1960
JUL 24...	1010	357	79	19.0	7	6.7
AUG 29...	1030	131	132	15.0	5	1.8

## CARSON RIVER BASIN

10310000 WEST FORK CARSON RIVER AT WOODFORDS, CA

LOCATION.--Lat 38°46'10", long 119°49'55", in NW¼SE¼ sec.34, T.11 N., R.19 E., Alpine County, Toiyabe National Forest, on left bank 0.3 mi (0.5 km) downstream from bridge on State Highway 88-89, 0.6 mi (1.0 km) southwest of Woodfords, and 3.8 mi (6.1 km) downstream from Willow Creek.

DRAINAGE AREA.--65.6 mi<sup>2</sup> (169.9 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1900 to May 1907, 1910-11 (fragmentary), October 1938 to current year. Monthly discharge only for some periods, published in WSP 1314. January 1890 to March 1892, June 1907 to September 1920 (except portions of 1910-11), at site 0.7 mi (1.1 km) downstream; records not equivalent owing to diversions for irrigation.

REVISED RECORDS.--WSP 1927: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,760 ft (1,756 m), from river-profile map. Prior to Oct. 1, 1938, nonrecording 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 (0.311 m) lower. Nov. 13, 1958, to Jan. 30, 1963, water-stage recorder at site 150 ft (46 m) downstream at datum 3.06 ft (0.933 m) lower.

REMARKS.--Records fair. One small diversion above station for irrigation. Flow slightly regulated by several small reservoirs, total capacity, about 1,500 acre-ft (1.85 hm<sup>3</sup>).

AVERAGE DISCHARGE.--47 years (water years 1901-7, 1939-78), 111 ft<sup>3</sup>/s (3.144 m<sup>3</sup>/s), 80,420 acre-ft/yr (99.2 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,890 ft<sup>3</sup>/s (138 m<sup>3</sup>/s) Feb. 1, 1963, gage height, 9.0 ft (2.74 m), on basis of slope-area measurement of peak flow; minimum, about 5 ft<sup>3</sup>/s (0.14 m<sup>3</sup>/s) Dec. 23, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 11, 1937, reached a stage of 8.0 ft (2.44 m) present datum, from floodmarks, discharge, 3,500 ft<sup>3</sup>/s (99.1 m<sup>3</sup>/s) by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft<sup>3</sup>/s (14.2 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 14	2100	*884 25.0	3.75 1.143
May 30	0100	529 15.0	3.15 0.960

Minimum daily, 8.9 ft<sup>3</sup>/s (0.25 m<sup>3</sup>/s) Oct. 5, 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	12	17	22	24	31	144	202	380	183	86	65
2	10	12	17	21	24	33	123	248	375	182	90	33
3	9.2	12	18	19	24	33	114	321	378	167	95	23
4	9.2	12	18	19	24	35	111	356	387	154	94	21
5	8.9	14	19	16	26	33	99	304	418	152	65	27
6	8.9	14	18	16	24	33	102	245	425	160	44	73
7	9.2	14	17	17	22	34	97	280	440	173	42	73
8	9.6	14	16	18	21	36	89	333	429	166	40	53
9	9.6	14	15	21	24	37	87	408	426	161	38	47
10	9.6	14	16	19	23	37	112	435	384	162	34	100
11	9.6	15	16	20	22	37	162	426	311	157	32	49
12	9.6	14	15	20	24	37	182	430	346	142	30	68
13	9.6	14	17	20	23	36	192	495	404	123	30	69
14	10	13	21	22	22	37	189	608	407	125	33	67
15	10	14	42	21	21	38	167	560	344	133	62	36
16	10	14	29	20	24	40	146	352	270	129	83	30
17	10	14	33	19	23	44	136	322	244	114	87	28
18	10	14	24	20	22	47	132	315	248	106	87	28
19	10	11	28	21	22	52	144	330	235	100	50	28
20	11	14	22	21	23	58	146	370	227	92	27	27
21	11	19	22	21	25	71	128	410	229	88	25	26
22	11	20	20	22	26	77	124	440	224	85	24	25
23	11	17	20	22	27	86	134	370	222	79	24	24
24	11	18	19	18	28	83	162	290	222	77	23	22
25	11	21	19	23	28	90	210	270	212	74	23	22
26	11	22	19	23	28	104	197	270	195	80	22	42
27	12	24	21	23	29	118	242	294	189	73	22	42
28	12	21	20	22	29	139	239	356	184	64	21	41
29	12	19	23	22	---	155	210	417	176	60	43	40
30	12	18	24	23	---	162	224	434	179	54	63	40
31	12	---	22	24	---	172	---	404	---	62	69	---
TOTAL	322.0	468	647	635	682	2025	4544	11295	9110	3677	1508	1269
MEAN	10.4	15.6	20.9	20.5	24.4	65.3	151	364	304	119	48.6	42.3
MAX	12	24	42	24	29	172	242	608	440	183	95	100
MIN	8.9	11	15	16	21	31	87	202	176	54	21	21
AC-FT	639	928	1280	1260	1350	4020	9010	22400	18070	7290	2990	2520
CAL YR 1977	TOTAL	9530.4	MEAN 26.1	MAX 146	MIN 5.3	AC-FT 18900						
WTR YR 1978	TOTAL	36182.0	MEAN 99.1	MAX 608	MIN 8.9	AC-FT 71770						



10310000 WEST FORK CARSON RIVER AT WOODFORDS, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1959 to current year.

COOPERATION.--The letter "A" following a date indicates chemical-quality data furnished by the California Department of Water Resources.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)
OCT								
27...	1000	9.0	97	--	6.0	--	--	--
NOV								
25...	1220	17	81	--	4.0	--	--	--
DEC								
30...	1020	22	83	--	.5	--	--	--
JAN								
30...	1420	22	79	--	2.0	--	--	--
FEB								
27...	1235	28	81	--	4.0	--	--	--
MAR								
28...	1050	137	56	--	3.0	--	--	--
APR								
11... A	1115	151	57	7.2	4.5	2	10.4	22
27...	0910	254	51	--	4.0	--	--	--
JUN								
01...	1000	357	43	--	5.0	--	--	--
JUL								
28...	1400	67	52	--	16.5	--	--	--
AUG								
30...	1200	67	71	--	12.0	--	--	--
SEP								
13... A	1500	67	59	7.3	8.5	0	9.2	23
26...	1130	44	79	--	12.5	--	--	--

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	ALKA- LINITY (MG/L AS CACO3)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT							
27...	--	--	--	--	--	--	--
NOV							
25...	--	--	--	--	--	--	--
DEC							
30...	--	--	--	--	--	--	--
JAN							
30...	--	--	--	--	--	--	--
FEB							
27...	--	--	--	--	--	--	--
MAR							
28...	--	--	--	--	--	--	--
APR							
11... A	6.0	1.7	4.0	.4	24	.0	38
27...	--	--	--	--	--	--	--
JUN							
01...	--	--	--	--	--	--	--
JUL							
28...	--	--	--	--	--	--	--
AUG							
30...	--	--	--	--	--	--	--
SEP							
13... A	6.1	1.9	2.5	.2	26	.0	48
26...	--	--	--	--	--	--	--

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336500 PYRAMID LAKE NEAR NIXON, NV

LOCATION.--Lat 39°59'05", long 119°30'00", in NE¼NW¼ sec.3, T.24 N., R.22 E., Washoe County, Pyramid Lake Indian Reservation, 0.25 mi (0.40 km) north of the Pyramid, 1.6 mi (2.6 km) northeast of Anaho Island, and 13 mi (21 km) northwest of Nixon.

DRAINAGE AREA.--2,720 mi<sup>2</sup> (7,040 km<sup>2</sup>).

PERIOD OF RECORD.--1867-1925 (occasional elevations in some years), June 1926 to current year (occasional elevations in each year).

REVISED RECORDS.--WSP 880: 1934-38 (bench mark). WSP 1090: 1926(M). WDR NV-67-1: 1966.

GAGE.--Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929 (U.S. Coast and Geodetic Survey Bench Mark N 21), supplementary adjustment of 1956. See WSP 1927 for history of changes prior to Aug. 6, 1968.

REMARKS.--Truckee Canal (station 10351400) diverts water out of the basin to Lahontan Reservoir (station 10312100). Elevations are given to the nearest 0.1 ft (0.03 m) and contents to four significant figures in order to reflect trends of change. Any single observation, however, may be affected by wind and seiche movements on the lake surface. Elevations published for 1867 and 1871 may have been 9 ft (2.7 m) lower because of uncertainty of date of photograph on which they were based.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation observed, 3,884.9 ft (1,184.12 m) in 1871 (see REMARKS); minimum observed, 3,783.9 ft (1,153.33 m) Feb. 6 to Mar. 6, 1967.

## MONTHEND ELEVATION NGVD AND CONTENTS, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	3793.6	21020000	--
Oct. 31.....	3793.2	20970000	-50000
Nov. 30.....	3792.8	20930000	-40000
Dec. 31.....	3792.6	20910000	-20000
CAL YR 1977.....	--	--	-340000
Jan. 31.....	3792.8	20930000	+20000
Feb. 28.....	3792.6	20910000	-20000
Mar. 31.....	3792.6	20910000	0
Apr. 30.....	3792.6	20910000	0
May 31.....	3792.6	20910000	0
June 30.....	3792.4	20880000	-30000
July 31.....	3792.0	20840000	-40000
Aug. 31.....	3791.5	20780000	-60000
Sept. 30.....	3791.0	20730000	-50000
WTR YR 1978.....	--	--	-290000

NOTE.--Monthend elevations are interpolated from readings made during the month.

## 10336600 UPPER TRUCKEE RIVER NEAR MEYERS, CA

LOCATION.--Lat 38°50'35", long 120°01'25", in NE¼SE¼ sec.31, T.12 N., R.18 E., El Dorado County, on left bank 0.4 mi (0.6 km) upstream from mouth of Echo Lake outlet, 1.1 mi (1.8 km) southwest of Meyers, and 2.5 mi (4.0 km) upstream from Angora Creek.

DRAINAGE AREA.--33.1 mi<sup>2</sup> (85.7 km<sup>2</sup>).

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,325 ft (1,928 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, which are fair. No regulation. Some small diversions above station for domestic use.

AVERAGE DISCHARGE.--18 years, 62.4 ft<sup>3</sup>/s (1.767 m<sup>3</sup>/s), 45,210 acre-ft/yr (55.7 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,550 ft<sup>3</sup>/s (72.2 m<sup>3</sup>/s) Feb. 1, 1963, gage height, 12.41 ft (3.783 m); minimum daily, 1.5 ft<sup>3</sup>/s (0.042 m<sup>3</sup>/s) Aug. 31 to Sept. 7, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft<sup>3</sup>/s (5.66 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 4	2230	202 5.72	6.03 1.838	May 30	2215	423 12.0	7.38 2.249
May 14	1945	471 13.3	7.64 2.329	June 6	2330	493 14.0	7.79 2.374
May 21	2000	443 12.5	7.49 2.283	June 13	2130	*503 14.2	7.87 2.399

Minimum daily, 1.9 ft<sup>3</sup>/s (0.054 m<sup>3</sup>/s) Oct. 6, 13.

DISCHARGE, IN CUBIC FEET PER SECOND--WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	3.2	3.8	11	12	15	79	88	332	151	31	6.9
2	2.1	3.2	3.8	11	12	17	64	104	334	143	29	6.7
3	2.1	3.3	3.8	10	12	17	56	144	322	128	29	6.6
4	2.1	3.2	3.7	10	12	26	52	167	347	120	35	6.6
5	2.0	3.9	3.7	11	13	26	47	155	384	122	41	8.5
6	1.9	3.7	3.6	11	14	21	46	123	393	128	32	13
7	2.0	3.7	3.6	11	14	22	43	136	405	135	30	16
8	2.0	3.6	3.6	11	13	24	40	169	391	123	28	13
9	2.0	3.2	3.6	12	13	23	40	210	392	122	26	11
10	2.0	3.3	3.6	12	13	22	48	231	343	119	24	36
11	2.0	3.3	3.7	11	13	22	74	234	298	108	22	19
12	2.0	3.3	3.8	11	13	20	96	249	350	95	20	13
13	1.9	3.3	3.7	11	13	19	95	295	398	88	19	13
14	2.0	3.2	5.8	13	12	19	89	342	388	89	18	15
15	2.0	3.3	24	15	12	19	78	316	321	87	17	18
16	2.0	3.4	11	15	12	21	66	227	261	79	16	11
17	2.0	3.4	16	16	12	26	61	210	242	70	16	10
18	2.0	3.4	12	14	12	30	61	228	248	67	15	13
19	2.1	3.2	9.2	13	12	30	64	258	231	62	14	10
20	2.1	3.0	8.6	13	13	34	64	291	229	58	14	10
21	2.1	6.1	8.4	12	13	41	60	337	223	55	13	9.3
22	2.7	8.6	8.4	12	14	45	57	361	215	53	13	9.0
23	2.6	5.4	8.4	12	14	48	59	301	210	50	12	8.5
24	2.7	4.9	8.4	12	15	42	67	213	204	47	11	8.2
25	2.8	4.7	8.4	12	15	43	108	175	182	46	11	8.2
26	2.9	4.6	8.3	12	15	54	92	172	163	46	12	8.2
27	3.2	4.6	13	12	15	62	97	205	168	43	10	8.2
28	3.2	4.2	16	12	15	72	111	280	165	41	9.0	8.0
29	3.0	3.8	15	12	---	82	94	365	149	38	8.3	7.5
30	3.0	3.8	15	12	---	86	99	363	149	35	7.6	7.4
31	3.0	---	12	12	---	101	---	336	---	34	7.2	---
TOTAL	71.8	117.8	255.9	374	368	1129	2107	7285	8437	2582	590.1	338.8
MEAN	2.32	3.93	8.25	12.1	13.1	36.4	70.2	235	281	83.3	19.0	11.3
MAX	3.2	8.6	24	16	15	101	111	365	405	151	41	36
MIN	1.9	3.0	3.6	10	12	15	40	88	149	34	7.2	6.6
AC-FT	142	234	508	742	730	2240	4180	14450	16730	5120	1170	672

CAL YR 1977 TOTAL 5738.9 MEAN 15.7 MAX 109 MIN 1.5 AC-FT 11380  
WTR YR 1978 TOTAL 23656.4 MEAN 64.8 MAX 405 MIN 1.9 AC-FT 46920

NOTE.--No gage-height record Aug. 23 to Sept. 30.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336610 UPPER TRUCKEE RIVER AT SOUTH LAKE TAHOE, CA

LOCATION.--Lat 38°55'22", long 119°59'23", in NW¼SE¼ sec.4, T.12 N., R.18 E., El Dorado County, on right bank on downstream side of U.S. Highway 50 bridge, 1.0 mi (1.6 km) northeast of South Lake Tahoe Post Office, and 1.4 mi (2.3 km) upstream from Lake Tahoe.

DRAINAGE AREA.--54.8 mi<sup>2</sup> (141.9 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1971 to September 1974, October 1976 to June 1977, October 1977 to June 1978 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 6,240 ft (1,902 m), from topographic map.

REMARKS.--Records fair. Two small dams may cause slight regulation at times. Some small diversions above station for domestic use.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,070 ft<sup>3</sup>/s (30.3 m<sup>3</sup>/s) Nov. 12, 1973, gage height, 5.94 ft (1.811 m); minimum daily, 1.9 ft<sup>3</sup>/s (0.05 m<sup>3</sup>/s) Oct. 11, 12, 1977.

EXTREMES OCTOBER TO JUNE.--Peak discharges above base of 300 ft<sup>3</sup>/s (8.50 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 15	0215	546 15.5	4.09 1.247	June 6	0530	588 16.7	4.27 1.301
May 23	0200	496 14.0	3.87 1.180	June 9	0715	576 16.3	4.22 1.286
May 31	0415	489 13.8	3.84 1.170	June 14	0615	*610 17.3	4.36 1.329

Minimum daily, 1.9 ft<sup>3</sup>/s (0.054 m<sup>3</sup>/s) Oct. 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, OCTOBER 1977 TO JUNE 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	4.9	12	44	29	52	187	150	424			
2	2.6	4.8	12	37	28	67	153	162	432			
3	2.6	5.2	12	34	29	68	126	205	414			
4	2.6	5.6	12	32	29	119	115	237	423			
5	2.6	7.3	12	31	34	137	97	242	484			
6	2.5	5.9	12	31	38	102	98	199	491			
7	2.3	5.9	12	31	38	93	97	198	440			
8	2.4	5.9	12	31	35	102	82	229	475			
9	2.4	6.9	11	40	34	96	80	269	488			
10	2.3	6.4	9.3	40	34	88	88	295	446			
11	1.9	7.0	9.6	39	34	88	120	309	356			
12	1.9	6.7	11	38	34	77	152	311	378			
13	2.1	7.8	11	37	33	68	156	358	469			
14	2.5	6.4	16	46	32	65	151	417	528			
15	2.3	6.7	155	62	31	68	142	493	494			
16	3.7	6.7	50	67	31	76	131	362	387			
17	4.3	6.8	120	52	31	88	126	295	297			
18	3.3	6.7	100	40	31	90	115	294	283			
19	3.0	5.9	50	35	31	93	114	316	300			
20	3.2	9.3	36	34	36	104	118	342	285			
21	2.9	23	28	32	41	122	125	389	275			
22	3.4	50	25	32	44	132	114	443	270			
23	4.2	24	24	32	47	147	110	433	265			
24	3.9	17	24	32	48	136	117	301	245			
25	3.4	16	25	32	48	133	177	244	235			
26	3.5	15	25	32	49	145	160	226	210			
27	5.2	15	60	31	49	158	156	260	200			
28	4.3	15	60	30	49	169	182	327	200			
29	4.3	14	72	30	---	184	159	398	190			
30	4.6	13	81	30	---	190	164	445	180			
31	5.0	---	52	30	---	225	---	439	---			
TOTAL	97.9	330.8	1150.9	1144	1027	3482	3912	9588	10564			
MEAN	3.16	11.0	37.1	36.9	36.7	112	130	309	352			
MAX	5.2	50	155	67	49	225	187	493	528			
MIN	1.9	4.8	9.3	30	28	52	80	150	180			
AC-FT	194	656	2280	2270	2040	6910	7760	19020	20950			

WATER-QUALITY RECORDS

SEDIMENT RECORDS: Water years 1972-74, 1978 (discontinued).

SEDIMENT RECORDS: October 1971 to June 1974, October 1977 to June 1978 (discontinued).

SEDIMENT DISCHARGE: Maximum daily, 339 tons (308 metric tons) Dec. 29, 1973; minimum daily, 0 ton (0 metric ton) on several days during October 1973.

SEDIMENT DISCHARGE: Maximum daily, 156 tons (142 metric tons) May 15; minimum daily, 0.01 ton (0.009 metric ton) Oct. 1-13.

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
DAY												
1	---	---	---	---	0.5	---	---	--	5.5			
2	---	---	---	---	---	---	---	---	---			
3	---	---	---	---	---	---	---	8.5	7.5			
4	---	---	---	---	---	1.5	---	6.5	9.0			
5	---	---	---	---	---	1.0	---	---	---			
6	10.0	---	---	---	---	---	---	--	5.0			
7	---	---	---	---	---	---	---	7.0	---			
8	---	---	---	---	---	---	---	3.0	8.5			
9	---	2.5	---	---	---	---	---	3.0	6.0			
10	---	---	---	---	---	---	3.0	--	8.0			
11	---	---	---	---	---	---	11.5	--	---			
12	---	---	---	---	---	---	---	2.0	---			
13	---	---	---	---	---	---	---	---	6.0			
14	---	---	---	2.5	---	---	---	--	---			
15	---	---	---	---	---	---	---	5.0	5.0			
16	---	---	---	---	---	9.5	---	5.0	---			
17	---	---	---	---	---	8.5	---	7.0	---			
18	---	---	---	---	---	---	---	---	---			
19	---	---	---	---	---	---	---	4.0	7.0			
20	---	---	0.0	---	---	---	---	7.5	---			
21	---	---	---	---	---	4.0	8.0	--	---			
22	---	---	---	---	---	---	---	6.0	---			
23	---	---	---	---	---	---	---	---	---			
24	---	---	---	---	---	8.0	---	2.0	---			
25	---	---	---	---	---	---	6.5	1.5	---			
26	---	---	1.0	0.5	5.5	---	---	--	---			
27	---	---	2.0	---	---	---	---	8.5	---			
28	---	---	---	---	5.5	8.5	6.5	--	---			
29	---	3.0	1.5	---	---	7.0	---	5.0	---			
30	---	---	2.0	---	---	5.0	---	6.0	---			
31	---	---	---	1.0	---	3.5	---	7.0	---			
MONTH	---	---	---	---	---	---	---	--	---			

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336610 UPPER TRUCKEE RIVER AT SOUTH LAKE TAHOE, CA--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), OCTOBER 1977 TO JUNE 1978

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	2.7	2	.01	4.9	2	.03	12	4	.13
2	2.6	2	.01	4.8	2	.03	12	4	.13
3	2.6	2	.01	5.2	3	.04	12	4	.13
4	2.6	2	.01	5.6	3	.05	12	4	.13
5	2.6	2	.01	7.3	4	.08	12	4	.13
6	2.5	2	.01	5.9	3	.05	12	3	.10
7	2.3	2	.01	5.9	2	.03	12	3	.10
8	2.4	2	.01	5.9	2	.03	12	3	.10
9	2.4	2	.01	6.9	2	.04	11	3	.09
10	2.3	2	.01	6.4	2	.03	9.3	3	.08
11	1.9	2	.01	7.0	2	.04	9.6	4	.10
12	1.9	2	.01	6.7	2	.04	11	4	.12
13	2.1	2	.01	7.8	4	.08	11	5	.15
14	2.5	3	.02	6.4	2	.03	16	9	.39
15	2.3	3	.02	6.7	2	.04	155	145	84
16	3.7	5	.05	6.7	2	.04	50	38	6.1
17	4.3	5	.06	6.8	2	.04	120	53	20
18	3.3	3	.03	6.7	2	.04	100	30	8.1
19	3.0	2	.02	5.9	2	.03	50	30	4.1
20	3.2	2	.02	9.3	2	.05	36	23	2.2
21	2.9	2	.02	23	115	7.1	28	18	1.4
22	3.4	2	.02	50	20	2.7	25	20	1.4
23	4.2	3	.03	24	15	.97	24	23	1.5
24	3.9	3	.03	17	10	.46	24	30	1.9
25	3.4	3	.03	16	8	.35	25	25	1.7
26	3.5	3	.03	15	7	.28	25	10	.68
27	5.2	4	.06	15	6	.24	60	18	2.9
28	4.3	3	.03	15	5	.20	60	7	1.1
29	4.3	2	.02	14	4	.15	72	15	2.9
30	4.6	2	.02	13	4	.14	81	14	3.1
31	5.0	2	.03	---	---	---	52	8	1.1
TOTAL	97.9	---	.67	330.8	---	13.43	1150.9	---	146.06

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	44	7	.83	29	10	.78	52	10	1.4
2	37	6	.60	28	10	.76	67	15	2.7
3	34	5	.46	29	10	.78	68	12	2.2
4	32	5	.43	29	10	.78	119	75	29
5	31	5	.42	34	10	.92	137	60	23
6	31	5	.42	38	10	1.0	102	10	2.8
7	31	5	.42	38	15	1.5	93	10	2.5
8	31	5	.42	35	15	1.4	102	10	2.8
9	40	15	1.6	34	10	.92	96	9	2.3
10	40	10	1.1	34	10	.92	88	10	2.4
11	39	9	.95	34	10	.92	88	10	2.4
12	38	8	.82	34	10	.92	77	10	2.1
13	37	8	.80	33	10	.89	68	10	1.8
14	46	20	2.5	32	10	.86	65	10	1.8
15	62	26	4.4	31	10	.84	68	11	2.0
16	67	18	3.3	31	10	.84	76	11	2.3
17	52	15	2.1	31	10	.84	88	11	2.6
18	40	12	1.3	31	10	.84	90	13	3.2
19	35	11	1.0	31	10	.84	93	15	3.8
20	34	10	.92	36	10	.97	104	16	4.5
21	32	10	.86	41	8	.89	122	18	5.9
22	32	10	.86	44	8	.95	132	18	6.4
23	32	10	.86	47	8	1.0	147	21	8.3
24	32	10	.86	48	6	.78	136	16	5.9
25	32	10	.86	48	6	.78	133	21	7.5
26	32	10	.86	49	5	.66	145	26	10
27	31	10	.84	49	6	.79	158	27	12
28	30	10	.81	49	7	.93	169	27	12
29	30	10	.81	---	---	---	184	28	14
30	30	10	.81	---	---	---	190	26	13
31	30	10	.81	---	---	---	225	52	32
TOTAL	1144	---	34.03	1027	---	25.30	3482	---	224.6

10336610 UPPER TRUCKEE RIVER AT SOUTH LAKE TAHOE, CA--Continued  
 SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), OCTOBER 1977 TO JUNE 1978

DAY	APRIL				MAY			JUNE	
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	187	27	14	150	11	4.5	424	39	45
2	153	16	6.6	162	13	5.7	432	34	40
3	126	12	4.1	205	22	12	414	29	32
4	115	10	3.1	237	28	18	423	27	31
5	97	8	2.1	242	38	25	484	33	43
6	98	8	2.1	199	17	9.1	491	34	45
7	97	6	1.6	198	13	6.9	440	30	36
8	82	6	1.3	229	26	16	475	30	38
9	80	5	1.1	269	56	41	488	31	41
10	88	7	1.7	295	58	46	446	32	39
11	120	10	3.2	309	54	45	356	24	23
12	152	18	7.4	311	59	50	378	25	26
13	156	15	6.3	358	81	78	469	28	35
14	151	12	4.9	417	101	114	528	38	54
15	142	10	3.8	493	117	156	494	27	36
16	131	10	3.5	362	56	55	---	---	---
17	126	10	3.4	295	45	36	---	---	---
18	115	10	3.1	294	46	37	---	---	---
19	114	10	3.1	316	46	39	---	---	---
20	118	10	3.2	342	61	56	---	---	---
21	125	15	5.1	389	59	62	---	---	---
22	114	15	4.6	443	52	62	---	---	---
23	110	14	4.2	433	57	67	---	---	---
24	117	14	4.4	301	30	24	---	---	---
25	177	26	12	244	16	11	---	---	---
26	160	21	9.1	226	14	8.5	---	---	---
27	156	16	6.7	260	21	15	---	---	---
28	182	16	7.9	327	34	30	---	---	---
29	159	9	3.9	398	44	47	---	---	---
30	164	11	4.9	445	41	49	---	---	---
31	---	---	---	439	38	45	---	---	---
TOTAL	3912	---	142.4	9588	---	1270.7	6742	---	564
PERIOD	27474.6		2421.19						

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, OCTOBER 1977 TO JUNE 1978

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC						
30...	1255	2.0	75	9	1.8	46
JAN						
26...	1005	.5	32	11	.95	40
MAR						
29...	0935	3.0	179	29	14	40
MAY						
09...	0630	3.0	292	70	55	26
15...	0015	5.0	460	140	174	50
JUN						
06...	0340	5.0	562	54	82	36

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336625 FALLEN LEAF LAKE NEAR CAMP RICHARDSON, CA

LOCATION.--Lat 38°54'00", long 120°04'14", in NE¼SW¼ sec.11, T.12 N., R.17 E., El Dorado County, Eldorado National Forest, on left bank near center of lake, 200 ft (61 m) north of Cathedral Creek, 1.5 mi (2.4 km) south of Fallen Leaf Dam, 2.9 mi (4.7 km) southwest of Camp Richardson, and 3.7 mi (6.0 km) west of South Lake Tahoe Post Office.

DRAINAGE AREA.--16.7 mi<sup>2</sup> (43.3 km<sup>2</sup>).

PERIOD OF RECORD.--October 1968 to current year. Prior to October 1973, published as "near Tahoe Valley."

GAGE.--Water-stage recorder. Datum of gage is 6,372.30 ft (1,942.277 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Lake levels regulated by a concrete dam at the outlet constructed in 1934. Regulation is for maintenance of lake level and enhancement of fishery.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 5.51 ft (1.679 m) Jan. 22, 1970; minimum, 1.79 ft (0.546 m) Jan. 2, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 4.55 ft (1.387 m) July 15, 16; minimum, 1.89 ft (0.576 m) Nov. 20.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.76	2.18	2.17	2.97	2.62	2.63	2.97	2.87	3.37	3.36	3.97	3.32
2	2.73	2.17	2.16	2.92	2.61	2.65	2.92	2.90	3.37	3.45	3.95	3.31
3	2.72	2.13	2.14	2.89	2.60	2.67	2.86	2.96	3.38	3.53	3.94	3.28
4	2.68	2.12	2.14	2.90	2.60	2.86	2.83	3.03	3.40	3.60	3.93	3.26
5	2.63	2.15	2.13	3.02	2.63	2.90	2.77	3.03	3.45	3.68	3.93	3.35
6	2.61	2.12	2.11	2.98	2.70	2.88	2.79	3.00	3.50	3.81	3.93	3.38
7	2.60	2.11	2.10	2.94	2.80	2.87	2.76	3.01	3.53	3.92	3.93	3.42
8	2.58	2.10	2.10	2.90	2.83	2.85	2.71	3.06	3.54	4.04	3.92	3.43
9	2.56	2.09	2.10	2.96	2.87	2.84	2.67	3.13	3.52	4.14	3.92	3.51
10	2.55	2.08	2.08	2.93	2.87	2.82	2.66	3.19	3.48	4.24	3.90	3.71
11	2.53	2.04	2.12	2.89	2.84	2.82	2.68	3.22	3.43	4.36	3.87	3.76
12	2.51	2.01	2.11	2.87	2.84	2.82	2.72	3.27	3.45	4.42	3.82	3.78
13	2.51	1.99	2.10	2.85	2.83	2.79	2.75	3.37	3.56	4.47	3.78	3.80
14	2.49	1.99	2.26	2.93	2.80	2.77	2.77	3.53	3.60	4.52	3.77	3.82
15	2.47	1.98	2.55	2.93	2.76	2.76	2.82	3.45	3.53	4.55	3.73	3.82
16	2.46	1.97	2.62	3.04	2.73	2.75	2.83	3.32	3.42	4.55	3.70	3.83
17	2.45	1.95	2.89	3.07	2.72	2.75	2.79	3.23	3.32	4.50	3.67	3.82
18	2.43	1.92	2.90	3.05	2.70	2.76	2.76	3.20	3.27	4.45	3.65	3.81
19	2.42	1.90	2.90	3.02	2.69	2.77	2.72	3.21	3.23	4.42	3.62	3.79
20	2.41	1.89	2.90	2.97	2.68	2.77	2.80	3.26	3.21	4.37	3.59	3.78
21	2.40	2.27	2.93	2.92	2.67	2.78	2.77	3.31	3.20	4.32	3.53	3.77
22	2.38	2.25	2.95	2.88	2.65	2.78	2.73	3.35	3.17	4.30	3.51	3.77
23	2.36	2.24	2.96	2.83	2.63	2.80	2.72	3.30	3.14	4.26	3.48	3.76
24	2.34	2.23	2.92	2.80	2.62	2.78	2.75	3.19	3.14	4.21	3.45	3.76
25	2.32	2.22	2.87	2.78	2.61	2.77	2.83	3.11	3.13	4.17	3.42	3.75
26	2.31	2.21	2.89	2.75	2.60	2.77	2.85	3.06	3.10	4.16	3.40	3.73
27	2.31	2.20	2.97	2.73	2.60	2.79	2.85	3.06	3.08	4.13	3.39	3.69
28	2.28	2.19	3.00	2.70	2.60	2.83	2.87	3.13	3.09	4.11	3.38	3.66
29	2.24	2.18	3.11	2.69	---	2.87	2.87	3.25	3.15	4.07	3.37	3.63
30	2.22	2.18	3.06	2.68	---	2.94	2.88	3.33	3.25	4.03	3.34	3.60
31	2.20	---	3.02	2.65	---	2.99	---	3.35	---	4.00	3.34	---
MEAN	2.47	2.10	2.56	2.89	2.70	2.80	2.79	3.18	3.33	4.13	3.68	3.64
MAX	2.76	2.27	3.11	3.07	2.87	2.99	2.97	3.53	3.60	4.55	3.97	3.83
MIN	2.20	1.89	2.08	2.65	2.60	2.63	2.66	2.87	3.08	3.36	3.34	3.26

CAL YR 1977 MAX 4.49 MIN 1.80  
WTR YR 1978 MAX 4.55 MIN 1.89



## 10336626 TAYLOR CREEK NEAR CAMP RICHARDSON, CA

LOCATION.--Lat 38°55'18", long 120°03'37", in NE¼NW¼ sec.2, T.12 N., R.17 E., El Dorado County, Eldorado National Forest, on left bank 0.1 mi (0.2 km) downstream from Fallen Leaf Lake outlet, and 1.4 mi (2.3 km) southwest of Camp Richardson.

DRAINAGE AREA.--16.7 mi<sup>2</sup> (43.3 km<sup>2</sup>).

PERIOD OF RECORD.--October 1968 to current year. Prior to October 1973, published as "near Tahoe Valley."

GAGE.--Water-stage recorder. Datum of gage is 6,361.08 ft (1,938.857 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Fallen Leaf Lake Dam (station 10336625).

AVERAGE DISCHARGE (unadjusted).--10 years, 43.3 ft<sup>3</sup>/s (1.226 m<sup>3</sup>/s), 31,370 acre-ft/yr (38.7 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,180 ft<sup>3</sup>/s (33.4 m<sup>3</sup>/s) Nov. 12, 1973, gage height, 5.72 ft (1.743 m); minimum daily, 0.20 ft<sup>3</sup>/s (0.006 m<sup>3</sup>/s) Oct. 4-7, 1970, Sept. 4-6, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 283 ft<sup>3</sup>/s (8.01 m<sup>3</sup>/s) June 14, gage height, 4.64 ft (1.414 m); minimum daily, 0.20 ft<sup>3</sup>/s (0.006 m<sup>3</sup>/s) Sept. 4-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	5.3	6.7	48	19	17	85	62	196	26	26	.42
2	6.0	5.3	6.7	45	18	19	75	62	200	26	18	.38
3	5.2	5.0	6.6	41	17	20	66	67	205	26	14	.38
4	5.2	5.2	6.5	39	17	27	60	78	208	18	11	.20
5	5.1	5.3	6.2	45	18	36	55	90	223	9.9	9.3	.20
6	5.3	5.3	6.2	50	20	36	53	89	236	9.5	8.4	.20
7	5.3	4.9	6.2	45	26	34	51	84	248	9.2	7.7	1.5
8	5.3	4.9	6.0	42	29	33	47	85	257	9.2	7.0	1.6
9	5.3	5.0	5.7	43	34	31	42	97	260	9.2	6.9	1.3
10	5.3	4.9	5.5	44	35	30	39	119	249	9.2	7.0	3.6
11	5.3	4.9	5.6	41	33	30	39	132	231	9.9	6.8	4.9
12	5.4	4.9	5.7	37	31	29	42	143	224	12	6.7	5.9
13	5.5	4.6	5.5	36	31	28	46	159	241	15	6.5	6.5
14	5.2	4.3	6.0	36	29	27	49	202	272	30	7.4	7.6
15	4.7	4.7	6.7	43	27	25	52	250	269	41	7.1	7.9
16	4.9	4.6	6.7	46	25	24	57	232	235	52	7.3	8.6
17	4.9	3.8	9.3	55	23	24	55	185	201	73	7.0	8.9
18	4.9	4.1	13	52	22	24	51	153	178	71	7.3	7.7
19	4.9	3.2	14	51	21	24	49	144	161	61	7.3	6.7
20	5.1	3.1	15	47	20	33	49	148	151	59	7.3	6.0
21	4.9	5.1	15	43	18	42	52	167	147	57	7.3	5.5
22	5.1	7.2	28	39	18	43	50	193	144	56	6.3	7.9
23	5.1	7.2	38	34	18	45	46	202	141	55	3.7	9.7
24	5.2	7.2	36	31	17	44	44	174	133	52	3.8	8.6
25	5.1	7.2	34	29	17	42	50	137	125	45	3.7	6.0
26	5.1	7.2	33	27	16	42	56	111	116	37	3.7	9.4
27	5.4	7.2	40	25	16	43	57	103	108	37	3.6	20
28	5.3	7.2	46	23	15	46	60	113	74	37	3.6	19
29	5.5	7.0	53	22	---	50	62	144	34	37	3.1	19
30	5.3	6.7	58	21	---	55	64	177	27	37	.94	19
31	5.5	---	53	20	---	77	---	193	---	29	.51	---
TOTAL	163.6	162.5	583.8	1200	630	1080	1603	4295	5494	1055.1	226.25	204.58
MEAN	5.28	5.42	18.8	38.7	22.5	34.8	53.4	139	183	34.0	7.30	6.82
MAX	7.3	7.2	58	55	35	77	85	250	272	73	26	20
MIN	4.7	3.1	5.5	20	15	17	39	62	27	9.2	.51	.20
AC-FT	325	322	1160	2380	1250	2140	3180	8520	10900	2090	449	406
CAL YR 1977 TOTAL	3609.08			MEAN 9.89	MAX 69	MIN .89	AC-FT 7160					
WTR YR 1978 TOTAL	16697.83			MEAN 45.7	MAX 272	MIN .20	AC-FT 33120					

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA

LOCATION.--Lat 39°06'27", long 120°09'40", in NW¼NE¼ sec.36, T.15 N., R.16 E., Placer County, on right bank 300 ft (91 m) upstream from bridge on State Highway 89, 1,000 ft (305 m) upstream from Lake Tahoe, and 4.6 mi (7.4 km) south of Tahoe City.

DRAINAGE AREA.--11.2 mi<sup>2</sup> (29.0 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,240 ft (1,902 m), from topographic map. Oct. 1, 1960, to Sept. 30, 1964, at site 400 ft (122 m) downstream at datum 10.25 ft (3.124 m) lower, and Oct. 1, 1964, to Aug. 27, 1970, at datum 12 ft (3.7 m) lower.

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

AVERAGE DISCHARGE.--18 years, 35.9 ft<sup>3</sup>/s (1.017 m<sup>3</sup>/s), 26,010 acre-ft/yr (32.1 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,100 ft<sup>3</sup>/s (59.5 m<sup>3</sup>/s) Dec. 22 or 24, 1964, from indirect measurement of peak flow; maximum gage height, 9.90 ft (3.018 m) Dec. 22, 1964; minimum discharge, 0.30 ft<sup>3</sup>/s (0.008 m<sup>3</sup>/s) Sept. 19, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft<sup>3</sup>/s (5.66 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 14	1915	*301 8.52	2.39 0.728	June 7	1745	298 8.44	2.38 0.725
May 21	1900	260 7.36	2.24 0.683	June 13	1830	233 6.60	2.12 0.646
May 29	1830	276 7.82	2.30 0.701				

Minimum daily, 1.3 ft<sup>3</sup>/s (0.037 m<sup>3</sup>/s) on many days during October and November.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.4	1.7	12	8.9	12	82	72	175	85	11	2.5
2	1.3	1.3	1.7	11	9.2	16	64	91	175	82	10	2.4
3	1.3	1.3	1.7	10	8.9	17	56	114	180	72	9.0	2.3
4	1.3	1.3	1.7	9.4	8.8	20	51	129	200	67	8.4	2.3
5	1.3	1.7	1.7	9.2	8.9	21	46	119	217	68	7.9	3.2
6	1.3	1.5	1.7	9.2	9.2	19	43	99	226	72	7.4	5.1
7	1.3	1.5	1.7	9.2	9.4	19	39	104	239	75	7.9	6.8
8	1.3	1.4	1.7	9.6	9.6	20	37	125	222	69	6.7	4.8
9	1.3	1.4	1.7	13	9.8	20	37	148	216	70	6.1	4.2
10	1.3	1.4	1.7	13	10	20	44	163	186	68	5.3	15
11	1.3	1.4	1.8	11	10	20	57	167	167	62	4.9	7.0
12	1.3	1.4	1.8	10	10	20	70	171	176	55	4.7	5.0
13	1.3	1.4	1.8	9.6	10	19	74	194	192	50	4.5	5.2
14	1.3	1.4	2.9	14	9.6	18	71	227	187	50	4.5	6.0
15	1.3	1.4	21	18	9.4	18	62	234	156	48	4.2	7.3
16	1.3	1.4	6.6	20	9.2	20	55	142	132	43	4.1	4.3
17	1.3	1.4	12	20	9.0	24	49	122	125	38	3.9	3.8
18	1.3	1.4	9.7	14	8.8	27	47	129	128	36	3.9	5.6
19	1.3	1.4	8.0	13	8.8	27	49	144	120	33	3.7	3.8
20	1.3	1.4	6.5	11	8.9	32	52	163	120	30	3.5	4.1
21	1.3	5.0	5.7	11	9.2	41	45	193	119	28	3.4	4.0
22	1.3	2.4	5.6	10	9.3	49	42	204	115	27	3.3	3.5
23	1.3	2.1	5.6	9.5	10	52	42	164	116	25	3.3	3.5
24	1.3	1.9	5.5	9.4	11	46	46	114	111	23	3.2	3.3
25	1.3	1.7	5.5	9.4	11	48	85	94	99	22	3.1	3.2
26	1.3	1.7	5.3	9.3	11	54	75	97	90	20	3.4	3.2
27	1.6	1.8	17	9.0	11	64	79	121	88	19	2.9	3.2
28	1.3	1.9	16	8.8	11	73	84	162	80	17	2.6	3.2
29	1.3	1.8	24	8.8	---	78	78	204	76	15	2.6	3.0
30	1.3	1.8	22	8.9	---	87	77	203	81	13	2.6	3.0
31	1.3	---	15	8.9	---	107	---	183	---	12	2.6	---
TOTAL	40.6	50.3	216.3	349.2	269.9	1108	1738	4596	4514	1394	154.6	133.8
MEAN	1.31	1.68	6.98	11.3	9.64	35.7	57.9	148	150	45.0	4.99	4.46
MAX	1.6	5.0	24	20	11	107	85	234	239	85	11	15
MIN	1.3	1.3	1.7	8.8	8.8	12	37	72	76	12	2.6	2.3
AC-FT	81	100	429	693	535	2200	3450	9120	8950	2760	307	265

CAL YR 1977	TOTAL	3271.6	MEAN	8.96	MAX	70	MIN	1.1	AC-FT	6490
WTR YR 1978	TOTAL	14564.7	MEAN	39.9	MAX	239	MIN	1.3	AC-FT	28890

WATER-QUALITY RECORDS

WATER TEMPERATURES: Water years 1975-78 (discontinued).  
SEDIMENT RECORDS: Water years 1975-78 (discontinued).

SEDIMENT RECORDS: October 1974 to June 1978 (1977-78 storm season only), discontinued.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 247 mg/L Oct. 26, 1975; minimum daily mean, 0 mg/L on many days each year.

SEDIMENT DISCHARGE: Maximum daily, 172 tons (156 metric tons) May 31, 1975; minimum daily, 0 ton (0 metric ton) on many days each year.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 64 mg/L Oct. 2; minimum daily mean, 0 mg/L on many days during October to December.

SEDIMENT DISCHARGE: Maximum daily, 5.8 tons (5.3 metric tons) June 1; minimum daily, 0 ton (0 metric ton) on many days during October to January.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 142 mg/L May 14; minimum daily mean, 1 mg/L on many days during October to February.

SEDIMENT DISCHARGE: Maximum daily, 96 tons (87 metric tons) May 14; minimum daily, 0 ton (0 metric ton) on many days during October to December.

[illegible]

## SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	3.2	3	.06	2.4	0	0	2.1	1	.01
2	6.5	64	1.4	2.4	0	0	2.1	1	.01
3	3.4	4	.04	2.4	0	0	2.1	1	.01
4	2.7	2	.01	2.5	0	0	2.1	1	.01
5	2.7	1	.01	2.4	0	0	2.1	1	.01
6	2.7	1	.01	2.4	0	0	2.1	1	.01
7	2.7	1	.01	2.4	0	0	2.1	1	.01
8	2.7	1	.01	2.4	0	0	2.1	1	.01
9	2.6	1	.01	2.4	0	0	2.2	1	.01
10	2.5	0	0	2.3	0	0	2.2	1	.01
11	2.5	0	0	2.3	0	0	2.1	1	.01
12	2.5	0	0	2.3	0	0	2.0	1	.01
13	2.5	0	0	2.3	0	0	1.9	1	.01
14	2.4	0	0	3.1	1	.01	1.8	1	0
15	2.4	0	0	2.8	1	.01	1.8	1	0
16	2.4	0	0	2.7	0	0	1.8	1	0
17	2.4	0	0	2.6	0	0	1.8	1	0
18	2.4	0	0	2.5	0	0	1.8	1	0
19	2.4	0	0	2.5	0	0	1.8	1	0
20	2.4	0	0	2.4	0	0	1.8	1	0
21	2.4	0	0	2.3	0	0	1.8	1	0
22	2.5	0	0	2.3	0	0	1.8	1	0
23	2.7	1	.01	2.3	0	0	1.8	1	0
24	2.6	0	0	2.3	0	0	1.7	0	0
25	2.5	0	0	2.2	0	0	1.7	0	0
26	2.5	0	0	2.2	0	0	1.7	0	0
27	2.5	0	0	2.1	1	.01	1.7	0	0
28	2.4	0	0	2.1	1	.01	1.7	0	0
29	2.4	0	0	2.1	1	.01	1.7	0	0
30	2.4	0	0	2.1	1	.01	1.7	0	0
31	2.4	0	0	---	---	---	1.7	0	0
TOTAL	83.3	---	1.57	71.5	---	.06	58.8	---	.13

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1.8	1	0	2.0	1	.01	3.0	1	.01
2	2.1	1	.01	2.0	1	.01	3.0	1	.01
3	2.1	1	.01	2.0	1	.01	3.0	1	.01
4	2.1	1	.01	2.0	1	.01	2.9	1	.01
5	2.1	1	.01	2.1	1	.01	3.0	1	.01
6	2.1	1	.01	2.0	1	.01	3.0	1	.01
7	2.1	1	.01	2.1	1	.01	3.1	1	.01
8	2.1	1	.01	2.3	1	.01	3.2	1	.01
9	2.0	1	.01	2.2	1	.01	3.2	1	.01
10	2.1	1	.01	2.2	1	.01	3.3	1	.01
11	2.1	1	.01	2.2	1	.01	3.3	1	.01
12	2.1	1	.01	2.2	1	.01	3.4	1	.01
13	2.1	1	.01	2.3	1	.01	3.4	1	.01
14	2.0	1	.01	2.3	1	.01	3.4	1	.01
15	2.0	1	.01	2.3	1	.01	3.5	1	.01
16	2.1	1	.01	2.4	1	.01	3.4	1	.01
17	2.1	1	.01	2.3	1	.01	3.3	1	.01
18	2.1	1	.01	2.3	1	.01	3.3	1	.01
19	2.0	1	.01	2.4	1	.01	3.3	1	.01
20	2.0	1	.01	2.4	1	.01	3.4	1	.01
21	2.0	1	.01	5.0	2	.03	3.7	2	.02
22	1.9	1	.01	4.5	2	.02	4.4	2	.02
23	1.9	1	.01	3.9	1	.01	5.2	2	.03
24	2.0	1	.01	3.5	1	.01	4.9	2	.03
25	2.0	1	.01	3.2	1	.01	4.9	2	.03
26	2.0	1	.01	3.1	1	.01	4.7	2	.03
27	2.1	1	.01	3.0	1	.01	5.1	2	.03
28	2.0	1	.01	3.0	1	.01	5.2	2	.03
29	2.0	1	.01	---	---	---	5.3	2	.03
30	2.0	1	.01	---	---	---	5.3	2	.03
31	2.0	1	.01	---	---	---	5.3	2	.03
TOTAL	63.1	---	.30	73.2	---	.31	118.4	---	.51

## PYRAMID AND WINNEMUCCA LAKES BASIN

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10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA--Continued

## SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	5.4	2	.03	29	3	.23	70	28	5.8
2	5.6	2	.03	24	2	.13	64	16	2.8
3	5.9	2	.03	22	2	.12	57	9	1.4
4	6.9	2	.04	19	2	.10	60	9	1.5
5	12	3	.10	19	2	.10	60	8	1.3
6	18	8	.39	17	2	.09	59	7	1.1
7	24	13	.84	16	2	.09	53	5	.72
8	26	11	.77	16	2	.09	44	4	.48
9	20	8	.43	16	2	.09	54	14	2.0
10	17	5	.23	15	2	.08	45	8	.97
11	17	5	.23	14	2	.08	34	4	.37
12	20	5	.27	15	2	.08	29	3	.23
13	25	6	.41	19	4	.21	26	2	.14
14	26	5	.35	28	5	.38	23	2	.12
15	27	4	.29	28	3	.23	21	2	.11
16	35	5	.47	24	2	.13	19	2	.10
17	33	4	.36	20	2	.11	17	2	.09
18	28	3	.23	20	3	.16	15	1	.04
19	24	3	.19	23	5	.31	14	1	.04
20	25	4	.27	34	14	1.6	14	1	.04
21	26	4	.28	45	17	2.3	12	1	.03
22	29	5	.39	46	13	1.6	12	1	.03
23	33	5	.45	40	5	.54	11	1	.03
24	35	5	.47	34	3	.28	10	1	.03
25	32	4	.35	35	3	.28	9.7	2	.05
26	31	4	.33	40	6	.65	8.5	2	.05
27	30	3	.24	49	6	.79	7.8	2	.04
28	32	4	.35	46	5	.62	7.8	2	.04
29	31	3	.25	49	9	1.2	7.4	3	.06
30	29	3	.23	55	16	2.7	7.0	2	.04
31	---	---	---	64	22	4.2	---	---	---
TOTAL	708.8	---	9.30	921	---	19.57	871.2	---	19.75
PERIOD	2969.3		51.20						

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM
APR 07...	1730	8.0	31	25	2.1	82	94	100

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	3.0	8.5	5.0	---	---	---
2	---	---	2.0	---	---	3.5	---	---	---	---	---	---
3	---	---	---	---	---	---	---	6.0	6.5	---	---	---
4	---	---	---	---	---	---	---	5.5	6.0	---	---	---
5	---	---	---	---	---	---	---	6.0	7.0	---	---	13.5
6	---	---	---	---	---	---	---	6.5	6.0	---	---	---
7	---	---	---	---	---	---	---	7.5	7.0	---	---	---
8	---	---	1.0	---	---	---	---	7.5	---	---	---	---
9	---	4.5	---	---	---	---	---	6.5	6.5	---	---	---
10	---	---	---	---	---	---	---	6.5	---	---	---	---
11	---	---	---	---	---	---	---	6.5	10.0	11.0	---	---
12	---	---	---	---	---	---	---	4.0	---	---	---	---
13	---	---	---	---	---	---	---	7.0	6.0	---	---	---
14	9.5	---	2.0	2.5	---	5.0	---	5.0	9.0	---	---	---
15	---	---	0.5	---	0.0	---	---	3.0	9.0	---	---	---
16	---	---	---	0.5	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	4.0	9.5	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	6.0	---	---	---	---
20	---	---	---	---	---	---	---	6.0	---	---	---	---
21	---	---	0.0	---	---	---	---	6.0	10.0	---	---	---
22	---	---	---	---	---	4.5	---	3.0	---	---	---	---
23	---	---	---	---	---	---	---	---	11.0	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	4.5	7.0	---	---	---	---
26	---	---	---	---	---	---	---	---	9.0	---	---	---
27	---	---	---	---	---	---	6.0	7.5	---	---	---	---
28	---	---	---	---	3.0	7.0	5.5	3.0	---	---	---	---
29	---	---	---	---	---	---	---	6.0	---	---	---	---
30	---	---	---	---	---	---	---	7.5	11.0	---	---	---
31	---	---	---	2.0	---	---	---	7.0	---	---	---	---
MONTH	---	---	---	---	---	---	---	6.0	---	---	---	---

## SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1.3	1	0	1.4	2	.01	1.7	1	0
2	1.3	1	0	1.3	1	0	1.7	1	0
3	1.3	1	0	1.3	1	0	1.7	1	0
4	1.3	1	0	1.3	1	0	1.7	1	0
5	1.3	1	0	1.7	2	.01	1.7	1	0
6	1.3	1	0	1.5	1	0	1.7	1	0
7	1.3	1	0	1.5	1	0	1.7	1	0
8	1.3	1	0	1.4	1	0	1.7	1	0
9	1.3	1	0	1.4	2	.01	1.7	1	0
10	1.3	1	0	1.4	1	0	1.7	1	0
11	1.3	1	0	1.4	1	0	1.8	1	0
12	1.3	1	0	1.4	1	0	1.8	1	0
13	1.3	1	0	1.4	1	0	1.8	1	0
14	1.3	1	0	1.4	1	0	2.9	20	.31
15	1.3	1	0	1.4	1	0	21	49	3.2
16	1.3	1	0	1.4	1	0	6.6	4	.07
17	1.3	1	0	1.4	1	0	12	12	.39
18	1.3	1	0	1.4	1	0	9.7	2	.05
19	1.3	1	0	1.4	1	0	8.0	2	.04
20	1.3	1	0	1.4	1	0	6.5	2	.04
21	1.3	1	0	5.0	10	.14	5.7	2	.03
22	1.3	1	0	2.4	10	.06	5.6	2	.03
23	1.3	1	0	2.1	3	.02	5.6	2	.03
24	1.3	1	0	1.9	2	.01	5.5	2	.03
25	1.3	1	0	1.7	2	.01	5.5	2	.03
26	1.3	1	0	1.7	2	.01	5.3	2	.03
27	1.6	2	.01	1.8	1	0	17	6	.28
28	1.3	1	0	1.9	1	.01	16	10	.43
29	1.3	1	0	1.8	1	0	24	20	1.3
30	1.3	1	0	1.8	1	0	22	16	.95
31	1.3	1	0	---	---	---	15	5	.20
TOTAL	40.6	---	.01	50.3	---	.29	216.3	---	7.44

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA--Continued

## SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	12	4	.13	8.9	1	.02	12	2	.06
2	11	4	.12	9.2	1	.02	16	3	.13
3	10	3	.08	8.9	1	.02	17	3	.14
4	9.4	3	.08	8.8	1	.02	20	5	.27
5	9.2	2	.05	8.9	2	.05	21	4	.23
6	9.2	2	.05	9.2	1	.02	19	4	.21
7	9.2	2	.05	9.4	1	.03	19	3	.15
8	9.6	2	.05	9.6	1	.03	20	3	.16
9	13	5	.18	9.8	1	.03	20	3	.16
10	13	4	.14	10	1	.03	20	2	.11
11	11	4	.12	10	1	.03	20	2	.11
12	10	3	.08	10	1	.03	20	2	.11
13	9.6	3	.08	10	1	.03	19	2	.10
14	14	5	.19	9.6	1	.03	18	2	.10
15	18	4	.19	9.4	1	.03	18	3	.15
16	20	4	.22	9.2	1	.02	20	4	.22
17	20	4	.22	9.0	1	.02	24	4	.26
18	14	4	.15	8.8	1	.02	27	3	.22
19	13	3	.11	8.8	1	.02	27	3	.22
20	11	3	.09	8.9	1	.02	32	4	.35
21	11	2	.06	9.2	1	.02	41	6	.66
22	10	2	.05	9.3	1	.03	49	6	.79
23	9.5	1	.03	10	1	.03	52	6	.84
24	9.4	1	.03	11	1	.03	46	6	.75
25	9.4	1	.03	11	1	.03	48	7	.91
26	9.3	1	.03	11	1	.03	54	9	1.3
27	9.0	1	.02	11	1	.03	64	12	2.1
28	8.8	1	.02	11	1	.03	73	20	3.9
29	8.8	1	.02	---	---	---	78	22	4.6
30	8.9	1	.02	---	---	---	87	22	5.2
31	8.9	1	.02	---	---	---	107	21	6.1
TOTAL	349.2	---	2.71	269.9	---	.75	1108	---	30.61

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	82	11	2.4	72	8	1.6	175	25	12
2	64	7	1.2	91	17	4.2	175	30	14
3	56	6	.91	114	27	8.3	180	38	20
4	51	5	.69	129	30	10	200	62	39
5	46	4	.50	119	18	5.8	217	61	40
6	43	3	.35	99	14	3.7	226	63	43
7	39	2	.21	104	18	5.1	239	62	44
8	37	2	.20	125	35	13	222	63	42
9	37	4	.40	148	69	30	216	59	38
10	44	5	.59	163	93	45	186	44	23
11	57	9	1.4	167	81	37	167	38	17
12	70	13	2.5	171	48	25	176	42	20
13	74	10	2.0	194	91	54	192	44	23
14	71	7	1.3	227	142	96	187	28	14
15	62	5	.84	234	127	89	156	25	11
16	55	4	.59	142	30	12	132	20	7.1
17	49	3	.40	122	22	7.2	125	22	7.4
18	47	3	.38	129	26	9.1	128	22	7.6
19	49	4	.53	144	33	13	120	20	6.5
20	52	3	.42	163	42	21	120	20	6.5
21	45	3	.36	193	54	33	119	20	6.4
22	42	3	.34	204	51	30	115	20	6.2
23	42	3	.34	164	27	12	116	21	6.6
24	46	5	.72	114	14	4.3	111	20	6.0
25	85	13	3.0	94	12	3.0	99	18	4.8
26	75	8	1.6	97	20	5.2	90	15	3.6
27	79	12	2.6	121	29	11	88	15	3.6
28	84	13	2.9	162	47	24	80	14	3.0
29	78	7	1.5	204	67	44	76	12	2.5
30	77	6	1.2	203	49	29	81	12	2.6
31	---	---	---	183	24	12	---	---	---
TOTAL	1738	---	32.37	4596	---	697.5	4514	---	480.4
PERIOD	12882.3		1252.08						

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA--Continued

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
MAY										
04...	1830	5.5	139	51	19	43	--	--	--	--
10...	1715	6.5	180	153	74	32	--	--	--	--
11...	1630	7.5	164	59	26	42	--	--	--	--
21...	1810	6.0	233	112	70	39	--	--	--	--
30...	1740	7.5	223	50	30	46	61	81	95	100
JUN										
07...	1750	7.0	290	113	88	48	65	87	98	100



## PYRAMID AND WINNEMUCCA LAKES BASIN

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10336676 WARD CREEK AT STATE HIGHWAY 89, NEAR TAHOE PINES, CA

LOCATION. Lat 39°07'56", long 120°09'24", in NW¼SE¼ sec. 24, T.15 N., R.16 E., Placer County, Tahoe National Forest, on right bank 165 ft (50 m) downstream from State Highway 89 bridge, 2.1 mi (3.4 km) north of Tahoe Pines, and 2.6 mi (4.2 km) southwest of Tahoe City.

DRAINAGE AREA.--9.70 mi<sup>2</sup> (25.1 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year. Previously reported discontinued May 1977.

GAGE.--Water-stage recorder. Altitude of gage is 6,230 ft (1,899 m), from topographic map.

REMARKS.--Records good except those for the winter periods, which are poor. Minor diversion for local water supply.

AVERAGE DISCHARGE.--6 years, 22.4 ft<sup>3</sup>/s (0.634 m<sup>3</sup>/s), 16,230 acre-ft/yr (20.0 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 800 ft<sup>3</sup>/s (22.7 m<sup>3</sup>/s) Nov. 12, 1973, gage height, 6.65 ft (2.027 m), from rating extended above 310 ft<sup>3</sup>/s (8.78 m<sup>3</sup>/s); maximum gage height, 7.18 ft (2.188 m) Dec. 17, 1972 (backwater from ice); no flow on many days during 1977.

EXTREMES FOR PERIOD JUNE TO SEPTEMBER 1977.--Maximum discharge, 51 ft<sup>3</sup>/s (1.44 m<sup>3</sup>/s) June 1, gage height, 4.85 ft (1.48 m); no peak above base of 100 ft<sup>3</sup>/s (2.83 m<sup>3</sup>/s); no flow Aug. 4 to Sept. 19, Sept. 22-29.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft<sup>3</sup>/s (2.83 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 14	1745	226 6.40	5.70 1.737	June 7	1800	*271 7.67	5.81 1.771
May 21	1800	202 5.72	5.62 1.713	June 13	1845	202 5.72	5.62 1.713
May 30	1815	206 5.83	5.63 1.716				

Minimum daily, no flow Oct. 1-8.

DISCHARGE, IN CUBIC FEET PER SECOND, JUNE TO SEPTEMBER 1977  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									38	3.7	.03	0
2									38	4.4	.04	0
3									33	3.7	.01	0
4									33	3.2	0	0
5									36	2.5	0	0
6									36	2.3	0	0
7									33	1.9	0	0
8									30	1.6	0	0
9									31	1.4	0	0
10									29	1.4	0	0
11									21	1.3	0	0
12									18	1.1	0	0
13									17	.96	0	0
14									15	.85	0	0
15									14	.75	0	0
16									13	.66	0	0
17									12	.57	0	0
18									10	.50	0	0
19									10	.44	0	0
20									9.6	.38	0	.04
21									8.6	.33	0	.02
22									7.9	.29	0	0
23									7.3	.26	0	0
24									6.6	.19	0	0
25									6.3	.19	0	0
26									5.4	.13	0	0
27									4.9	.13	0	0
28									4.4	.11	0	0
29									4.1	.07	0	0
30									3.7	.07	0	.08
31									---	.05	0	---
TOTAL									533.8	35.43	.08	.14
MEAN									17.8	1.14	.003	.005
MAX									38	4.4	.04	.08
MIN									3.7	.05	0	0
AC-FT									1060	70	.2	.3

CAL YR 1976	TOTAL 3379.06	MEAN 9.23	MAX 68	MIN .47	AC-FT 6700
WTR YR 1977	TOTAL 1929.77	MEAN 5.29	MAX 38	MIN 0	AC-FT 3830

10336676 WARD CREEK AT STATE HIGHWAY 89, NEAR TAHOE PINES, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973-78.

WATER TEMPERATURES: Water years 1973 to June 1978 (discontinued).

SEDIMENT RECORDS: Water years 1973 to June 1978 (discontinued).

PERIOD OF DAILY RECORD. --

WATER TEMPERATURES: October 1972 to June 1978 (discontinued), storm season record only for water years 1977-78.

SEDIMENT RECORDS: October 1972 to June 1978 (discontinued), storm season record only for water years 1977-78.

COOPERATION.--Selected sediment samples and temperature observations furnished by University of California at Davis.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATIONS: Maximum daily mean, 481 mg/L Nov. 12, 1973; minimum daily mean, 0 mg/L on many days each year.

SEDIMENT DISCHARGE: Maximum daily, 646 tons (586 metric tons) Nov. 12, 1973; minimum daily, 0 ton (0 metric ton) on many days each year.

EXTREMES FOR OCTOBER 1976 TO JUNE 1977.--

SEDIMENT CONCENTRATIONS: Maximum daily mean, 26 mg/L Oct. 2; minimum daily mean, 0 mg/L on many days.

SEDIMENT DISCHARGE: Maximum daily, 1.1 tons (1.0 metric ton) Apr. 7; minimum daily, 0 ton (0 metric ton) on many days.

EXTREMES FOR OCTOBER 1977 TO JUNE 1978.--

SEDIMENT CONCENTRATION: Maximum daily mean, 118 mg/L May 14; minimum daily mean, 0 mg/L on many days.

SEDIMENT DISCHARGE: Maximum daily, 63 tons (57 metric tons) May 14; minimum daily, 0 ton (0 metric ton) on many days.

TEMPERATURE (DEG. C) OF WATER, OCTOBER 1976 TO JUNE 1977  
ONCE-DAILY

[illegible]

## PYRAMID AND WINNEMUCCA LAKES BASIN

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10336676 WARD CREEK AT STATE HIGHWAY 89, NEAR TAHOE PINES, CA--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), OCTOBER 1976 TO JUNE 1977

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	2.3	10	.19	1.6	0	0	.80		
2	5.9	26	.47	1.6	0	0	.80		
3	2.7	5	.04	1.6	0	0	.80		
4	1.7	4	.02	1.4	0	0	.80		
5	1.6	3	.01	1.4	0	0	.80		
6	1.4	2	.01	1.4	0	0	.80		
7	1.3	1	0	1.4	0	0	.80		
8	1.1	1	0	1.4	0	0	.80		
9	1.1	1	0	1.4	0	0	.80		
10	1.0	0	0	1.4	0	0	.80		
11	1.1	0	0	1.4	0	0	.80		
12	1.0	0	0	1.4	0	0	.80		
13	1.0	0	0	1.4	0	0	.80		
14	1.0	0	0	2.4	2	.01	.80		
15	1.0	0	0	2.2	2	.01	.80		
16	1.0	0	0	2.2	1	.01	.80		
17	1.0	0	0	2.1	2	.01	.80		
18	1.0	0	0	2.0	2	.01	.80		
19	1.0	0	0	1.9	1	.01	.80		
20	1.0	0	0	1.8	1	0	.80		
21	1.3	1	0	1.7	1	0	.80		
22	1.6	1	0	1.6	1	0	.80		
23	1.4	1	0	1.4	1	0	.80		
24	1.4	0	0	1.3	1	0	.80		
25	1.4	0	0	1.1	0	0	.80		
26	1.6	0	0	.95	0	0	.80		
27	1.6	0	0	.90	0	0	.80		
28	1.4	0	0	.85	0	0	.80		
29	1.4	0	0	.82	0	0	.80		
30	1.4	0	0	.80	0	0	.80		
31	1.4	0	0	---	---	---	.80		
TOTAL	46.1	---	.74	44.82	---	.06	24.80	0	0

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.90	0		1.2	0	0	2.0	1	.01
2	1.1	0		1.2	0	0	2.0	1	.01
3	1.5	1		1.2	0	0	1.9	1	.01
4	1.5	1		1.3	0	0	1.9	1	.01
5	1.5	1		1.3	0	0	1.9	1	.01
6	1.5	1		1.3	0	0	1.9	1	.01
7	1.5	1		1.4	1	0	2.0	1	.01
8	1.5	1		1.5	1	0	2.1	1	.01
9	1.5	1		1.4	1	0	2.4	1	.01
10	1.5	1		1.4	1	0	2.3	1	.01
11	1.5	1		1.5	1	0	2.2	1	.01
12	1.5	1		1.7	1	0	2.1	1	.01
13	1.5	1		1.8	1	0	2.0	1	.01
14	1.5	1		2.0	1	.01	2.0	1	.01
15	1.5	1		2.1	1	.01	2.1	1	.01
16	1.5	1		2.1	1	.01	2.1	1	.01
17	1.5	1		2.1	1	.01	2.0	1	.01
18	1.5	1		2.1	1	.01	2.1	1	.01
19	1.4	0		2.1	1	.01	2.3	1	.01
20	1.4	0		2.2	1	.01	2.4	1	.01
21	1.3	0		4.0	2	.02	2.5	2	.01
22	1.2	0		3.0	2	.02	2.8	3	.02
23	1.2	0		2.6	1	.01	3.4	2	.02
24	1.2	0		2.3	1	.01	3.8	3	.03
25	1.2	0		2.1	1	.01	3.4	2	.02
26	1.2	0		2.1	1	.01	3.3	2	.02
27	1.2	0		2.1	1	.01	3.5	2	.02
28	1.2	0		2.0	1	.01	3.5	2	.02
29	1.2	0		---	---	---	3.4	2	.02
30	1.2	0		---	---	---	3.4	2	.02
31	1.2	0		---	---	---	3.4	2	.02
TOTAL	42.10	---	0	53.1	---	.17	78.1	---	.42

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336676 WARD CREEK AT STATE HIGHWAY 89, NEAR TAHOE PINES, CA--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), OCTOBER 1976 TO JUNE 1977

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	3.4		.02	17		.09	38		.86
2	3.4		.02	15		.08	36		.68
3	4.0		.03	13		.07	33		.27
4	8.0		.11	13		.07	33		.45
5	10		.24	12		.06	36		.49
6	15		.61	10		.03	36		.49
7	18		1.1	10		.03	33		.27
8	19		.36	10		.03	30		.32
9	15		.12	10		.03	31		.92
10	12		.06	9.6		.03	29		.31
11	13		.14	9.3		.03	21		.17
12	16		.22	9.6		.05	18		.15
13	20		.27	12		.10	17		.14
14	20		.16	17		.18	15		.12
15	22		.18	17		.14	14		.11
16	31		.33	14		.08	13		.11
17	27		.22	13		.07	12		.10
18	20		.16	13		.11	10		.05
19	17		.09	16		.32	10		.05
20	17		.14	24		.72	9.6		.05
21	17		.09	30		.66	8.6		.05
22	17		.14	30		.71	7.9		.04
23	20		.11	27		.22	7.3		.04
24	20		.11	23		.19	6.6		.04
25	19		.10	21		.17	6.3		.03
26	17		.09	26		.42	5.4		.03
27	18		.10	32		.43	4.9		.03
28	18		.15	29		.23	4.4		.01
29	17		.09	30		.49	4.1		.01
30	17		.09	32		.52	3.7		.01
31	---	---	---	36		.71	---	---	---
TOTAL	490.8	---	5.65	580.5	---	7.07	533.8	---	6.40
PERIOD 1894.12		---	20.51						

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, OCTOBER 1976 TO JUNE 1977

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM
APR 07...	1700	1.0	25	60	4.0	82	92	100

10336676 WARD CREEK AT STATE HIGHWAY 89, NEAR TAHOE PINES, CA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.38	1.6	6.2	5.2	7.2	45	44	139	54	9.7	1.6
2	0	.38	1.4	5.6	5.2	8.7	35	56	139	53	9.0	1.6
3	0	.44	1.6	5.1	5.1	8.9	30	70	142	49	8.6	1.4
4	0	.51	1.7	4.6	5.1	11	28	81	164	46	8.1	1.4
5	0	.86	1.7	4.6	5.2	12	24	74	181	46	7.7	3.1
6	0	.78	1.7	4.7	5.3	11	24	59	191	48	7.5	6.4
7	0	.64	1.7	4.9	5.4	12	21	64	201	50	7.1	4.8
8	0	.64	1.6	5.2	5.5	12	19	79	186	46	6.4	3.3
9	.06	.58	1.4	9.6	5.6	12	20	100	183	48	5.9	3.4
10	.06	.59	1.3	9.0	5.7	12	25	115	148	47	5.5	10
11	.06	.65	1.3	7.4	5.8	12	32	116	131	43	5.0	5.8
12	.06	.66	1.3	6.6	5.8	11	39	115	142	38	4.7	4.1
13	.13	.64	1.6	5.6	5.8	10	41	138	158	35	4.4	3.3
14	.19	.59	6.3	8.9	5.7	10	38	166	155	34	4.2	3.6
15	.13	.62	17	12	5.6	10	33	163	122	34	3.7	3.1
16	.13	.61	10	12	5.5	11	29	94	97	30	3.5	2.7
17	.13	.73	17	11	5.4	13	26	81	90	28	3.1	2.6
18	.19	.66	11	9.3	5.3	14	25	87	87	26	3.1	2.5
19	.19	.64	7.0	7.4	5.2	14	26	98	80	24	2.8	2.5
20	.19	1.1	4.0	6.5	5.2	16	27	115	79	22	2.6	2.5
21	.19	3.0	3.3	6.5	5.5	21	25	140	77	20	2.6	2.4
22	.19	2.1	3.2	6.1	5.8	25	23	147	73	19	2.6	2.4
23	.19	1.9	2.8	5.7	6.1	25	23	110	73	18	2.6	2.2
24	.19	1.8	2.6	5.6	6.3	23	25	74	72	17	2.4	2.1
25	.19	1.7	2.6	5.6	6.3	24	42	63	64	16	2.3	2.1
26	.19	1.7	2.6	5.6	6.3	27	38	70	59	16	2.2	2.0
27	.44	1.9	11	5.4	6.3	32	43	90	58	15	2.2	1.9
28	.38	1.7	10	5.2	6.7	37	47	125	54	14	2.0	1.9
29	.38	1.6	12	5.2	---	41	44	163	52	12	1.8	1.8
30	.38	1.6	8.0	5.2	---	48	45	164	53	12	1.7	1.7
31	.38	---	7.3	5.2	---	61	---	140	---	11	1.7	---
TOTAL	4.62	31.70	157.6	207.5	157.9	591.8	942	3201	3450	971	136.7	90.2
MEAN	.15	1.06	5.08	6.69	5.64	19.1	31.4	103	115	31.3	4.41	3.01
MAX	.44	3.0	17	12	6.7	61	47	166	201	54	9.7	10
MIN	0	.38	1.3	4.6	5.1	7.2	19	44	52	11	1.7	1.4
AC-FT	9.2	63	313	412	313	1170	1870	6350	6840	1930	271	179
CAL YR 1977 TOTAL	2007.97			MEAN 5.50	MAX 38	MIN 0	AC-FT 3980					
WTR YR 1978 TOTAL	9942.02			MEAN 27.2	MAX 201	MIN 0	AC-FT 19720					

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336676 WARD CREEK AT STATE HIGHWAY 89, NEAR TAHOE PINES, CA--Continued

TEMPERATURE (DEG. C) OF WATER, OCTOBER 1977 TO JUNE 1978  
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	10.5	3.0	5.5	5.0			
2	---	---	1.0	---	---	---	---	---	---			
3	---	---	---	---	---	---	---	5.0	6.5			
4	---	---	---	---	---	---	---	4.5	6.0			
5	---	---	---	---	---	---	---	5.0	6.5			
6	---	---	---	---	---	---	---	5.5	6.0			
7	---	---	---	---	---	---	---	6.0	7.0			
8	---	---	0.5	---	---	---	---	5.0	---			
9	---	2.5	---	---	---	---	---	5.0	6.5			
10	---	---	---	---	---	---	---	4.0	---			
11	---	---	---	---	---	---	---	4.0	10.0			
12	---	---	---	0.0	---	---	6.5	4.0	---			
13	---	---	---	---	---	0.0	---	6.0	6.0			
14	10.0	---	0.0	---	---	---	---	3.0	8.0			
15	---	---	0.0	---	0.0	---	---	2.5	9.0			
16	---	---	---	0.5	---	---	---	---	---			
17	---	---	---	---	---	---	---	3.0	9.0			
18	---	---	---	---	---	---	---	---	---			
19	---	---	---	---	---	---	---	5.0	---			
20	---	---	---	---	---	---	---	5.0	---			
21	---	---	0.0	---	---	---	---	5.0	11.0			
22	---	---	---	---	---	2.5	---	2.0	---			
23	---	---	---	---	---	---	---	---	11.0			
24	---	---	---	---	---	---	---	---	---			
25	---	---	---	---	---	---	4.0	7.0	---			
26	---	---	---	---	---	---	---	---	8.0			
27	---	---	---	---	---	---	5.0	7.0	---			
28	---	---	---	---	1.5	5.5	4.0	2.5	---			
29	---	---	---	---	---	---	---	7.0	---			
30	---	---	---	---	---	---	---	5.5	12.0			
31	---	---	---	0.5	---	---	---	6.0	---			
MONTH	---	---	---	---	---	---	---	5.0	---			

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), OCTOBER 1977 TO JUNE 1978

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	0	0		.38	0	0	1.6	1	0
2	0	0		.38	0	0	1.4	1	0
3	0	0		.44	0	0	1.6	1	0
4	0	0		.51	0	0	1.7	2	.01
5	0	0		.86	0	.01	1.7	2	.01
6	0	0		.78	0	0	1.7	2	.01
7	0	0		.64	0	0	1.7	2	.01
8	0	0		.64	0	0	1.6	1	0
9	.06	1		.58	0	0	1.4	1	0
10	.06	1		.59	0	0	1.3	1	0
11	.06	1		.65	0	0	1.3	1	0
12	.06	1		.66	0	0	1.3	1	0
13	.13	1		.64	0	0	1.6	1	0
14	.19	1		.59	2	0	6.3	17	.44
15	.13	1		.62	1	0	17	22	1.2
16	.13	1		.61	2	0	10	5	.14
17	.13	1		.73	2	0	17	9	.41
18	.19	1		.66	1	0	11	4	.12
19	.19	1		.64	1	0	7.0	3	.06
20	.19	1		1.1	1	.01	4.0	2	.02
21	.19	1		3.0	1	.03	3.3	1	.01
22	.19	1		2.1	1	.02	3.2	1	.01
23	.19	1		1.9	1	.01	2.8	1	.01
24	.19	1		1.8	1	.01	2.6	1	.01
25	.19	1		1.7	0	.01	2.6	1	.01
26	.19	1		1.7	0	.01	2.6	2	.01
27	.44	2		1.9	0	.01	11	8	.24
28	.38	1		1.7	0	0	10	6	.16
29	.38	1		1.6	0	0	12	8	.26
30	.38	1		1.6	0	0	8.0	4	.09
31	.38	1		---	---	---	7.3	3	.06
TOTAL	4.62	---	0	31.70	---	.12	157.6	---	3.30

10336676 WARD CREEK AT STATE HIGHWAY 89, NEAR TAHOE PINES, CA--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), OCTOBER 1977 TO JUNE 1978

DAY	JANUARY				FEBRUARY				MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)		
1	6.2	3	.05	5.2	1	.01	7.2	1	.02		
2	5.6	3	.05	5.2	1	.01	8.7	1	.02		
3	5.1	3	.04	5.1	1	.01	8.9	1	.02		
4	4.6	3	.04	5.1	1	.01	11	3	.09		
5	4.6	4	.05	5.2	1	.01	12	2	.06		
6	4.7	6	.08	5.3	1	.01	11	2	.06		
7	4.9	4	.05	5.4	1	.01	12	2	.06		
8	5.2	3	.04	5.5	2	.03	12	2	.06		
9	9.6	5	.13	5.6	2	.03	12	2	.06		
10	9.0	4	.10	5.7	2	.03	12	2	.06		
11	7.4	4	.08	5.8	2	.03	12	2	.06		
12	6.6	4	.07	5.8	2	.03	11	2	.06		
13	5.6	4	.06	5.8	2	.03	10	2	.05		
14	8.9	6	.14	5.7	2	.03	10	2	.05		
15	12	5	.16	5.6	2	.03	10	2	.05		
16	12	4	.13	5.5	2	.03	11	2	.06		
17	11	3	.09	5.4	2	.03	13	3	.11		
18	9.3	3	.08	5.3	2	.03	14	4	.15		
19	7.4	2	.04	5.2	2	.03	14	4	.15		
20	6.5	2	.04	5.2	2	.03	16	5	.22		
21	6.5	2	.04	5.5	2	.03	21	5	.28		
22	6.1	2	.03	5.8	1	.02	25	6	.41		
23	5.7	2	.03	6.1	1	.02	25	6	.41		
24	5.6	2	.03	6.3	1	.02	23	6	.37		
25	5.6	1	.02	6.3	1	.02	24	5	.32		
26	5.6	1	.02	6.3	1	.02	27	5	.36		
27	5.4	1	.01	6.3	1	.02	32	5	.43		
28	5.2	1	.01	6.7	1	.02	37	5	.50		
29	5.2	1	.01	---	---	---	41	5	.55		
30	5.2	1	.01	---	---	---	48	6	.78		
31	5.2	1	.01	---	---	---	61	7	1.2		
TOTAL	207.5	---	1.74	157.9	---	.63	591.8	---	7.08		
DAY	APRIL				MAY				JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)		
1	45	5	.61	44	8	.95	139	19	8.0		
2	35	5	.47	56	14	2.4	139	15	5.6		
3	30	4	.32	70	19	3.8	142	15	6.5		
4	28	4	.30	81	22	5.0	164	37	20		
5	24	4	.26	74	13	2.6	181	42	23		
6	24	3	.19	59	8	1.3	191	40	23		
7	21	3	.17	64	10	1.7	201	38	23		
8	19	3	.15	79	18	4.5	186	30	17		
9	20	2	.11	100	30	9.6	183	25	14		
10	25	3	.20	115	48	18	148	18	7.2		
11	32	4	.35	116	31	10	131	15	5.3		
12	39	5	.53	115	25	9.1	142	17	6.5		
13	41	3	.33	138	58	26	158	17	7.3		
14	38	3	.31	166	118	63	155	15	6.3		
15	33	2	.18	163	84	43	122	8	2.6		
16	29	2	.16	94	11	2.8	97	8	2.1		
17	26	2	.14	81	8	1.7	90	8	1.9		
18	25	2	.14	87	14	3.3	87	7	1.6		
19	26	2	.14	98	14	4.0	80	7	1.5		
20	27	2	.15	115	21	7.5	79	7	1.5		
21	25	2	.14	140	27	12	77	7	1.5		
22	23	2	.12	147	25	11	73	7	1.4		
23	23	2	.12	110	12	3.6	73	6	1.2		
24	25	4	.27	74	10	2.0	72	5	.97		
25	42	11	1.2	63	8	1.4	64	5	.86		
26	38	4	.41	70	10	1.9	59	4	.64		
27	43	8	.93	90	14	3.4	58	5	.78		
28	47	8	1.0	125	29	12	54	4	.58		
29	44	8	.95	163	44	23	52	5	.70		
30	45	7	.85	164	29	13	53	4	.57		
31	---	---	---	140	15	5.7	---	---	---		
TOTAL	942	---	11.20	3201	---	309.25	3450	---	193.10		
PERIOD	8744.12	---	526.42								

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336676 WARD CREEK AT STATE HIGHWAY 89, NEAR TAHOE PINES, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, OCTOBER 1977 TO JUNE 1978

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDEO (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDEO (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM
MAY											
10...	1750	4.0	146	151	60	43	--	--	--	--	--
13...	1650	6.0	164	103	46	29	--	--	--	--	--
20...	1900	5.0	161	53	23	39	--	--	--	--	--
29...	1710	7.0	222	138	83	54	--	--	--	--	--
30...	1505	9.0	148	20	8.0	32	--	--	--	--	--
JUN											
06...	1800	6.0	263	100	71	62	73	82	89	93	100



10336698 THIRD CREEK NEAR CRYSTAL BAY, NV

LOCATION.--Lat 39°14'26", long 119°56'41", in SW¼NE¼ sec.22, T.16 N., R.18 E., Washoe County, on right bank 50 ft (15 m) upstream from culvert on Lakeshore Boulevard, 600 ft (180 m) upstream from mouth, and 3 mi (5 km) east of Crystal Bay.

DRAINAGE AREA.--6.05 mi<sup>2</sup> (15.7 km<sup>2</sup>), revised.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1969 to September 1973, February to September 1975, October 1977 to September 1978.

REVISED RECORDS.--WDR CA-75-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,234.03 ft (1,900.132 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter months and period of no gage-height record, which are poor. One transmountain diversion to Washoe Valley.

AVERAGE DISCHARGE.--5 years (water years 1970-73, 1978), 7.66 ft<sup>3</sup>/s (0.217 m<sup>3</sup>/s), 5,550 acre-ft/yr (6.84 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 110 ft<sup>3</sup>/s (3.12 m<sup>3</sup>/s) June 26, 1971, gage height, 3.17 ft (0.966 m); maximum gage height, 3.77 ft (1.149 m) Jan 23, 1973, backwater from ice; minimum discharge, 0.66 ft<sup>3</sup>/s (0.019 m<sup>3</sup>/s) Oct. 13, 14, 16-19, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft<sup>3</sup>/s (0.85 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 15	0500	45 1.27	2.72 0.829
May 23	0200	*62 1.76	2.84 0.866

Minimum daily, 0.66 ft<sup>3</sup>/s (0.019 m<sup>3</sup>/s) on several days during October and November.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.81	.66	1.1	2.3	1.5	3.3	10	3.5	20	11	2.9	1.6
2	.73	.66	1.1	2.0	1.4	3.7	7.7	3.7	20	11	2.0	1.6
3	.73	.66	1.2	1.7	1.4	3.5	6.9	5.3	19	11	2.0	1.6
4	.73	.66	1.7	1.7	1.6	5.3	6.7	5.8	19	10	2.1	1.6
5	.81	.81	2.3	1.6	1.7	4.9	6.3	6.1	20	11	2.3	2.7
6	.90	.81	2.1	3.3	1.7	4.2	6.1	5.1	21	11	2.3	2.9
7	.90	.77	3.0	2.5	1.4	4.2	6.2	5.3	22	13	2.7	3.5
8	.90	.73	2.5	2.3	3.7	4.2	5.7	7.1	22	12	2.3	2.5
9	.73	.81	2.5	2.5	2.5	3.7	5.4	9.0	22	11	1.4	2.9
10	.73	.73	2.8	2.5	2.0	3.7	5.8	9.6	22	10	1.6	4.0
11	.73	.73	3.0	1.7	2.5	3.7	7.2	11	20	9.4	1.4	3.3
12	.73	.73	3.3	1.6	2.8	3.1	8.9	11	19	8.4	1.4	2.9
13	.66	.73	4.2	1.7	4.0	3.5	9.7	13	19	7.9	1.6	2.7
14	.66	.73	4.0	2.5	3.0	2.9	9.5	25	19	7.5	1.6	4.0
15	.73	.73	4.6	2.7	1.7	3.5	8.9	41	18	7.1	1.6	3.1
16	.66	.73	5.8	2.9	2.7	4.6	8.1	32	18	6.4	1.4	2.9
17	.66	.73	3.3	3.3	2.3	5.2	6.8	25	18	5.8	1.6	2.9
18	.66	.73	2.5	3.3	1.2	5.0	6.1	24	18	5.4	1.4	2.9
19	.66	2.0	2.0	2.3	1.7	6.4	6.4	27	16	4.9	1.2	2.8
20	.73	4.0	2.2	3.1	2.3	6.9	6.4	30	15	4.4	1.4	2.6
21	.73	3.1	2.3	2.1	2.5	7.8	6.4	36	15	4.8	1.4	2.5
22	.73	6.1	2.3	2.5	3.1	6.7	5.2	50	15	5.4	1.4	2.5
23	.73	4.2	2.9	1.8	3.3	5.9	4.8	40	16	4.6	1.4	2.3
24	.73	4.4	3.2	1.3	2.9	5.8	4.8	18	15	4.3	1.4	2.3
25	.73	1.6	2.9	1.5	2.7	6.7	5.7	13	14	4.2	2.0	2.1
26	.73	1.4	2.5	1.8	2.7	7.2	5.1	12	12	4.0	1.6	2.0
27	1.7	1.4	3.1	1.5	2.7	7.8	4.2	14	11	3.9	1.4	2.0
28	1.1	1.2	2.9	1.6	2.7	8.2	5.1	17	12	3.8	1.4	1.7
29	.90	1.2	2.9	2.0	---	8.8	4.4	20	11	3.8	1.4	1.7
30	.73	1.2	2.8	1.7	---	8.9	3.7	25	20	4.2	1.6	2.0
31	.73	---	2.7	1.8	---	11	---	20	---	4.7	1.6	---
TOTAL	24.39	44.94	85.7	67.1	65.7	170.6	194.2	564.5	518	225.9	52.8	76.1
MEAN	.79	1.50	2.76	2.16	2.35	5.50	6.47	18.2	17.3	7.29	1.70	2.54
MAX	1.7	6.1	5.8	3.3	4.0	11	10	50	22	13	2.9	4.0
MIN	.66	.66	1.1	1.3	1.2	2.9	3.7	3.5	10	3.8	1.2	1.6
AC-FT	48	89	170	133	130	338	385	1120	1030	448	105	151

CAL YR 1977	TOTAL	--	MEAN	--	MAX	--	MIN	--	AC-FT	--
WTR YR 1978	TOTAL	2089.93	MEAN	5.73	MAX	50	MIN	.66	AC-FT	4150

NOTE.--No gage-height record May 28 to July 8.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336698 THIRD CREEK NEAR CRYSTAL BAY, NV--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1970-73, 1975, 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO- MHOS)	PH  (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUN 20...	1200	E15	28	7.8	10.0	9.1	15	0	5.2	.6	1.7
SEP 19...	1211	2.8	64	8.1	5.0	10.1	22	0	6.1	1.6	4.0
DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
JUN 20...	18	.2	.9	16	3.2	.9	.0	13	36	.05	.01
SEP 19...	27	.4	1.4	29	.8	1.3	.0	17	50	.07	.01
DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	
JUN 20...	.01	.01	.06	.07	.08	.03	.01	.03	9	90	
SEP 19...	.02	.01	.11	.12	.13	.01	.00	.00	4	230	

## PYRAMID AND WINNEMUCCA LAKES BASIN

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10336710 MARLETTE LAKE NEAR CARSON CITY, NV

LOCATION.--Lat 39°10'22", long 119°54'15", in SW¼SE¼ sec.12, T.15 N., R.18 E., Washoe County, Toiyabe National Forest, on west shore about 1,000 ft (305 m) upstream from left side of dam, and 7.5 mi (12.1 km) west of Carson City.

DRAINAGE AREA.--2.86 mi<sup>2</sup> (7.41 km<sup>2</sup>).

PERIOD OF RECORD.--November 1973 to current year.

REVISED RECORDS.--WDR CA-77-3: Drainage area.

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

REMARKS.--Lake is formed by earthfill dam across the outlet of a small natural lake (at one time called Goodwin Lake) on Marlette Creek, built in 1873 to provide water for fluming lumber from Spooner Summit to Carson City. The dam was built higher in 1876 and used to divert water by flume and siphon to Virginia City, until the flume was abandoned prior to 1963. The dam was raised to its present elevation in 1959. Present capacity, 11,780 acre-ft (14.5 hm<sup>3</sup>) at spillway elevation 7,838.0 ft (2,389.02 m). Figures given herein represent total contents. Stored water is used for spawning fish for Pyramid and Walker Lakes (stations 10336500, 10288500) and in dry years is pumped over the mountain to the Hobart system for municipal and domestic use outside the basin in Virginia City and Carson City.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 12,000 acre-ft (14.8 hm<sup>3</sup>) June 5, 1978, elevation, 7,838.52 ft (2,389.17 m); minimum, 10,970 acre-ft (13.5 hm<sup>3</sup>) Nov. 10-13, 1976, elevation, 7,835.8 ft (2,388.35 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 12,000 acre-ft (14.8 hm<sup>3</sup>) June 5, 1978, elevation, 7,838.5 ft (2,389.17 m); minimum, 11,300 acre-ft (13.9 hm<sup>3</sup>) Nov. 18-20, elevation, 7,836.7 ft (2,388.63 m).

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

7835	10650	7837	11410
7836	11030	7838.5	12000

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11400	11330	11460	11770	11820	11750	11680	11660	11940	11960	11860	11700
2	11400	11330	11470	11770	11810	11750	11680	11660	11950	11960	11860	11690
3	11400	11320	11470	11780	11800	11750	11680	11670	11970	11960	11850	11690
4	11390	11320	11470	11790	11790	11770	11670	11670	11960	11960	11850	11680
5	11380	11330	11470	11860	11800	11790	11660	11670	12000	11960	11850	11690
6	11380	11330	11470	11870	11820	11790	11680	11680	11970	11960	11850	11700
7	11380	11320	11470	11870	11860	11780	11670	11680	11970	11960	11840	11700
8	11370	11320	11470	11870	11860	11770	11660	11690	11970	11960	11840	11700
9	11370	11330	11470	11910	11880	11760	11660	11700	11960	11960	11830	11690
10	11360	11330	11470	11910	11890	11760	11660	11710	11960	11950	11820	11700
11	11370	11320	11470	11910	11890	11760	11650	11720	11970	11940	11810	11700
12	11370	11320	11490	11900	11880	11760	11650	11730	11970	11940	11790	11690
13	11370	11320	11490	11890	11880	11750	11640	11750	11970	11940	11790	11700
14	11360	11320	11490	11890	11870	11740	11640	11760	11970	11930	11790	11710
15	11360	11320	11540	11910	11870	11730	11640	11780	11970	11930	11770	11710
16	11360	11320	11550	11920	11860	11730	11640	11790	11970	11930	11760	11710
17	11360	11320	11640	11960	11850	11720	11640	11800	11970	11920	11760	11700
18	11360	11300	11650	11950	11840	11710	11630	11810	11970	11920	11760	11700
19	11360	11300	11640	11950	11830	11710	11620	11820	11970	11910	11750	11690
20	11350	11300	11650	11930	11830	11700	11650	11830	11970	11910	11740	11690
21	11350	11440	11660	11920	11820	11700	11650	11850	11970	11910	11730	11690
22	11350	11450	11690	11910	11810	11700	11640	11860	11960	11900	11730	11690
23	11350	11460	11710	11890	11800	11690	11640	11870	11950	11900	11720	11700
24	11340	11460	11710	11890	11790	11690	11630	11870	11940	11900	11710	11690
25	11340	11460	11710	11880	11780	11680	11650	11900	11950	11890	11710	11690
26	11340	11460	11720	11870	11770	11680	11650	11900	11940	11880	11710	11690
27	11350	11460	11730	11860	11760	11670	11650	11910	11960	11880	11710	11690
28	11340	11460	11740	11850	11760	11670	11650	11920	11960	11870	11710	11690
29	11330	11460	11760	11840	---	11660	11650	11920	11960	11870	11710	11690
30	11330	11460	11760	11830	---	11660	11650	11930	11960	11870	11700	11690
31	11330	---	11760	11830	---	11680	---	11940	---	11870	11700	---
MAX	11400	11460	11760	11960	11890	11790	11680	11940	12000	11960	11860	11710
MIN	11330	11300	11460	11770	11760	11660	11620	11660	11940	11870	11700	11680
†	7836.80	7837.14	7837.93	7838.10	7837.92	7837.70	7837.64	7838.36	7838.40	7838.20	7837.76	7837.73
‡	-80	+130	+300	+70	-70	-80	-30	+290	+20	-90	-170	-10
CAL YR 1977	‡ +750											
WTR YR 1978	‡ +280											

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336715 MARLETTE CREEK NEAR CARSON CITY, NV

LOCATION.--Lat 39°10'20", long 119°54'25", in SE¼SW¼ sec.12, T.15 N., R.18 E., Washoe County, Toiyabe National Forest, on left bank about 300 ft (90 m) below dam on Marlette Lake, 0.7 mi (1.1 km) upstream from Marlette Reservoir, and 7 mi (11 km) west of Carson City.

DRAINAGE AREA.--2.86 mi<sup>2</sup> (7.41 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1973 to current year.

REVISED RECORDS.--WDR CA-77-3: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 7,760 ft (2,365 m), from topographic map.

REMARKS.--Records fair except those for period of no gage-height record, which are poor. Flow regulated by Marlette Lake (station 10336710).

AVERAGE DISCHARGE.--5 years, 2.00 ft<sup>3</sup>/s (0.057 m<sup>3</sup>/s), 1,450 acre-ft/yr (1.79 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8.5 ft<sup>3</sup>/s (0.24 m<sup>3</sup>/s) June 8-10, 1975, gage height, 2.23 ft (0.679 m); no flow July 12-15, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7.1 ft<sup>3</sup>/s (0.201 m<sup>3</sup>/s) Feb. 28, gage height, 2.10 ft (0.640 m); maximum gage height, 2.25 ft (0.686 m) Jan. 17, backwater from ice; minimum daily discharge, 0.03 ft<sup>3</sup>/s (<0.001 m<sup>3</sup>/s) Dec. 27 to Jan. 2, Sept. 12, 25-31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.09	.08	.03	5.5	7.1	5.1	3.1	2.0	.57	.27	.04
2	.05	.09	.08	.03	5.6	6.9	5.1	3.1	1.9	.72	.27	.04
3	.05	.09	.08	.04	5.6	6.8	5.1	3.0	1.9	.89	.13	.04
4	.05	.08	.08	.04	5.5	6.8	5.1	3.0	1.8	.98	.18	.06
5	.05	.08	.07	.04	5.7	6.6	5.2	3.0	1.8	.98	.11	.06
6	.05	.07	.07	.04	5.6	6.6	5.2	2.9	1.7	.89	.18	.06
7	.06	.07	.05	.04	5.9	6.5	5.2	2.9	1.6	.80	.32	.06
8	.06	.07	.05	.06	5.7	6.5	5.2	2.9	1.6	.80	.27	.06
9	.05	.07	.05	.11	6.1	6.4	5.2	2.8	1.5	.80	.06	.04
10	.05	.07	.06	.40	6.1	6.4	5.3	2.8	1.4	1.4	.06	.06
11	.06	.08	.06	2.2	6.4	6.2	5.3	2.8	1.4	1.3	.06	.04
12	.06	.08	.05	4.6	6.4	6.1	5.3	2.7	1.3	1.1	.11	.03
13	.06	.07	.06	4.7	6.4	6.1	5.3	2.7	1.1	.89	.09	.04
14	.06	.07	.06	4.7	6.4	6.0	5.4	2.7	1.1	.98	.06	.06
15	.06	.07	.06	5.1	6.4	6.0	5.4	2.6	2.9	.98	.06	.04
16	.05	.07	.05	5.4	6.5	5.9	5.4	2.6	3.7	.80	.09	.04
17	.05	.07	.05	6.3	6.4	5.9	5.4	2.6	3.4	.43	.06	.04
18	.05	.07	.04	6.0	6.5	5.7	5.6	2.5	2.4	.80	.04	.05
19	.05	.07	.05	5.9	6.5	5.6	5.6	2.5	1.4	1.3	.04	.06
20	.05	.07	.05	5.8	6.5	5.6	5.6	2.4	1.2	1.2	.04	.06
21	.05	.07	.04	5.7	6.8	5.5	5.6	2.4	1.0	.98	.04	.05
22	.06	.06	.04	5.6	6.6	5.5	5.7	2.4	.87	.72	.04	.04
23	.05	.06	.05	5.5	6.9	5.3	5.6	2.3	1.1	.64	.04	.04
24	.05	.07	.04	5.5	6.8	5.3	4.4	2.3	1.1	.57	.06	.04
25	.06	.07	.04	5.3	7.0	5.2	3.5	2.2	.38	.50	.06	.03
26	.06	.07	.04	5.3	6.9	5.2	3.5	2.2	.43	.57	.06	.03
27	.06	.07	.03	5.2	7.0	5.1	3.5	2.2	.43	.57	.04	.03
28	.07	.07	.03	5.2	7.1	5.1	3.4	2.1	.50	.50	.04	.03
29	.08	.07	.03	5.3	---	4.9	3.3	2.1	.57	.43	.04	.03
30	.08	.07	.03	5.3	---	5.1	3.2	2.0	.64	.43	.04	.03
31	.08	---	.03	5.5	---	5.0	---	2.0	---	.32	.04	---
TOTAL	1.77	2.18	1.60	110.93	176.8	182.9	147.7	79.8	44.12	24.84	3.00	1.33
MEAN	.057	.073	.052	3.58	6.31	5.90	4.92	2.57	1.47	.80	.097	.044
MAX	.08	.09	.08	6.3	7.1	7.1	5.7	3.1	3.7	1.4	.32	.06
MIN	.05	.06	.03	.03	5.5	4.9	3.2	2.0	.38	.32	.04	.03
AC-FT	3.5	4.3	3.2	220	351	363	293	158	88	49	6.0	2.6

CAL YR 1977 TOTAL 22.57 MEAN .062 MAX .30 MIN .02 AC-FT 45  
WTR YR 1978 TOTAL 776.97 MEAN 2.13 MAX 7.1 MIN .03 AC-FT 1540

NOTE.--No gage-height record Apr. 24 to June 12.

## PYRAMID AND WINNEMUCCA LAKES BASIN

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10336715 MARLETTE CREEK NEAR CARSON CITY, NV--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1977 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
JAN 11...	1435	4.9	45	2.0
MAR 29...	1340	5.0	46	2.0
APR 24...	1105	3.5	45	1.5
AUG 08...	1530	.05	56	12.0

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336780 TROUT CREEK NEAR TAHOE VALLEY, CA

LOCATION. --Lat 38°55'12", long 119°58'17", in NW¼SE¼ sec.3, T.12 N., R.18 E., El Dorado County, on left bank 5 ft (1.52 m) upstream from Martin Avenue Bridge, 500 ft (152 m) upstream from Heavenly Valley Creek, and 1.8 mi (2.9 km) east of Tahoe Valley.

DRAINAGE AREA. -- 36.7 mi<sup>2</sup> (95.05 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,250 ft (1,905 m), from topographic map.

REMARKS.--Records good except those for the winter period, which are fair. Minor diversions for local water supply.

AVERAGE DISCHARGE.--18 years, 34.9 ft<sup>3</sup>/s (0.988 m<sup>3</sup>/s), 25,290 acre-ft/yr (31.2 hm<sup>3</sup>/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 535 ft<sup>3</sup>/s (15.2 m<sup>3</sup>/s) Feb. 1, 1963, gage height, 11.14 ft (3.395 m), from rating curve extended above 250 ft<sup>3</sup>/s (7.08 m<sup>3</sup>/s) on basis of computation of peak flow (weir formula); no flow for part of Sept. 11, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 126 ft<sup>3</sup>/s (3.57 m<sup>3</sup>/s) June 9, gage height, 7.86 ft (2.396 m), no other peak above base of 100 ft<sup>3</sup>/s (2.83 m<sup>3</sup>/s); minimum daily, 3.6 ft<sup>3</sup>/s (0.10 m<sup>3</sup>/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	7.1	7.6	11	10	13	40	38	82	64	26	14
2	3.9	7.1	7.3	11	10	14	34	41	83	62	25	14
3	3.7	7.5	7.2	11	10	14	32	49	83	59	26	13
4	3.6	6.6	7.1	11	9.8	19	30	53	86	56	29	13
5	3.9	6.8	7.6	7.9	10	18	28	51	94	55	29	17
6	3.8	6.5	7.2	8.7	11	19	27	44	101	53	26	22
7	4.0	6.2	6.8	9.5	12	19	26	45	109	56	26	20
8	4.1	6.1	6.6	11	12	20	25	51	113	53	25	17
9	4.2	6.0	6.5	12	12	21	24	58	117	52	24	16
10	4.3	5.8	6.5	12	12	20	27	62	115	50	22	21
11	4.4	5.7	6.6	11	12	19	33	65	106	49	22	17
12	5.3	5.6	6.7	11	11	17	36	66	109	46	21	16
13	6.4	5.5	7.3	11	11	16	35	74	112	44	21	16
14	6.4	5.7	9.3	12	11	16	33	82	112	43	20	21
15	6.4	6.0	38	12	10	17	33	82	108	42	20	18
16	6.2	6.0	18	12	10	18	30	68	101	41	19	16
17	6.2	6.0	17	12	10	20	30	64	97	40	19	15
18	5.7	5.4	16	12	10	20	29	71	96	39	18	16
19	5.9	4.4	11	12	10	21	30	71	92	37	17	16
20	6.0	3.9	11	11	10	23	31	73	90	35	17	16
21	6.1	7.8	10	11	11	27	30	77	88	34	17	16
22	6.6	22	11	11	11	28	28	82	87	33	16	15
23	6.4	10	10	11	11	28	29	78	84	31	16	14
24	6.5	9.7	10	11	12	28	31	67	82	31	16	15
25	6.6	9.8	10	12	12	28	38	60	80	30	15	14
26	6.9	9.4	10	11	12	30	34	59	77	31	15	15
27	7.8	9.3	16	11	12	33	36	63	78	30	15	14
28	7.4	8.9	14	11	13	35	41	71	76	29	15	14
29	7.2	8.3	14	11	---	38	38	79	71	28	14	14
30	7.3	7.8	13	11	---	40	40	83	67	28	14	14
31	7.4	---	12	10	---	50	---	82	---	26	14	---
TOTAL	174.4	222.9	341.3	342.1	307.8	729	958	2009	2796	1307	619	479
MEAN	5.63	7.43	11.0	11.0	11.0	23.5	31.9	64.8	93.2	42.2	20.0	16.0
MAX	7.8	22	38	12	13	50	41	83	117	64	29	22
MIN	3.6	3.9	6.5	7.9	9.8	13	24	38	67	26	14	13
AC-FT	346	442	677	679	611	1450	1900	3980	5550	2590	1230	950
CAL YR 1977	TOTAL	3627.0	MEAN	9.94	MAX	38	MIN	2.8	AC-FT	7190		
WTR YR 1978	TOTAL	10285.5	MEAN	28.2	MAX	117	MIN	3.6	AC-FT	20400		

WATER-QUALITY RECORDS

WATER TEMPERATURES: Water years 1974, 1978 (discontinued).  
SEDIMENT RECORDS: Water years 1974, 1978 (discontinued).

SEDIMENT RECORDS: October 1973 to September 1974, October 1977 to June 1978 (discontinued).

SEDIMENT CONCENTRATIONS: Maximum daily mean, 223 mg/L July 9, 1974; minimum daily mean, 0 mg/L Oct. 15, 16, 1973.

SEDIMENT DISCHARGE: Maximum daily, 67 tons (61 metric tons) July 9, 1974; minimum daily, 0 ton (0 metric ton) Oct. 15, 16, 1973.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 87 mg/L Dec. 15; minimum daily mean, 3 mg/L on many days.

SEDIMENT DISCHARGE: Maximum daily, 18 tons (16 metric tons) June 7, 8; minimum daily, 0.03 ton (0.03 metric ton) Oct. 1-6, Nov. 20.

TEMPERATURE (DEG. C) OF WATER, OCTOBER 1977 TO JUNE 1978  
ONCE-DAILY

[illegible]

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336780 TROUT CREEK NEAR TAHOE VALLEY, CA--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), OCTOBER 1977 TO JUNE 1978

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	3.8	3	.03	7.1	4	.08	7.6	4	.08
2	3.9	3	.03	7.1	4	.08	7.3	4	.08
3	3.7	3	.03	7.5	3	.06	7.2	4	.08
4	3.6	3	.03	6.6	3	.05	7.1	4	.08
5	3.9	3	.03	6.8	3	.06	7.6	5	.10
6	3.8	3	.03	6.5	3	.05	7.2	5	.10
7	4.0	4	.04	6.2	3	.05	6.8	5	.09
8	4.1	4	.04	6.1	3	.05	6.6	5	.09
9	4.2	4	.05	6.0	3	.05	6.5	5	.09
10	4.3	4	.05	5.8	3	.05	6.5	5	.09
11	4.4	4	.05	5.7	3	.05	6.6	5	.09
12	5.3	4	.06	5.6	3	.05	6.7	5	.09
13	6.4	5	.09	5.5	3	.04	7.3	5	.10
14	6.4	5	.09	5.7	3	.05	9.3	11	.41
15	6.4	5	.09	6.0	3	.05	38	87	11
16	6.2	4	.07	6.0	3	.05	18	7	.34
17	6.2	4	.07	6.0	3	.05	17	11	.50
18	5.7	4	.06	5.4	3	.04	16	9	.39
19	5.9	4	.06	4.4	3	.04	11	8	.24
20	6.0	4	.06	3.9	3	.03	11	7	.21
21	6.1	4	.07	7.8	16	.57	10	7	.19
22	6.6	5	.09	22	25	1.6	11	6	.18
23	6.4	5	.09	10	6	.16	10	6	.16
24	6.5	5	.09	9.7	5	.13	10	5	.14
25	6.6	5	.09	9.8	5	.13	10	5	.14
26	6.9	5	.09	9.4	5	.13	10	4	.11
27	7.8	6	.13	9.3	5	.13	16	11	.48
28	7.4	5	.10	8.9	5	.12	14	5	.19
29	7.2	5	.10	8.3	4	.09	14	4	.15
30	7.3	5	.10	7.8	4	.08	13	4	.14
31	7.4	4	.08	---	---	---	12	4	.13
TOTAL	174.4	---	2.09	222.9	---	4.17	341.3	---	16.26

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	11	4	.12	10	4	.11	13	10	.35
2	11	4	.12	10	4	.11	14	10	.38
3	11	4	.12	10	4	.11	14	8	.30
4	11	4	.12	9.8	4	.11	19	17	.87
5	7.9	4	.09	10	4	.11	18	20	.97
6	8.7	4	.09	11	5	.15	19	17	.87
7	9.5	4	.10	12	5	.16	19	10	.51
8	11	4	.12	12	5	.16	20	10	.54
9	12	4	.13	12	5	.16	21	9	.51
10	12	4	.13	12	5	.16	20	9	.49
11	11	4	.12	12	5	.16	19	9	.46
12	11	4	.12	11	4	.12	17	9	.41
13	11	4	.12	11	4	.12	16	8	.35
14	12	4	.13	11	4	.12	16	8	.35
15	12	4	.13	10	4	.11	17	7	.32
16	12	4	.13	10	4	.11	18	7	.34
17	12	4	.13	10	4	.11	20	7	.38
18	12	4	.13	10	4	.11	20	7	.38
19	12	4	.13	10	4	.11	21	7	.40
20	11	5	.15	10	4	.11	23	7	.43
21	11	5	.15	11	4	.12	27	10	.73
22	11	5	.15	11	4	.12	28	8	.60
23	11	5	.15	11	4	.12	28	7	.53
24	11	5	.15	12	4	.13	28	6	.45
25	12	5	.16	12	4	.13	28	6	.45
26	11	5	.15	12	3	.10	30	9	.73
27	11	5	.15	12	3	.10	33	15	1.3
28	11	5	.15	13	8	.28	35	17	1.6
29	11	4	.12	---	---	---	38	23	2.4
30	11	4	.12	---	---	---	40	22	2.4
31	10	4	.11	---	---	---	50	37	5.0
TOTAL	342.1	---	3.99	307.8	---	3.62	729	---	25.80



## PYRAMID AND WINNEMUCCA LAKES BASIN

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10336780 TROUT CREEK NEAR TAHOE VALLEY, CA--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), OCTOBER 1977 TO JUNE 1978

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	40	15	1.6	38	16	1.6	82	24	5.3
2	34	9	.83	41	16	1.8	83	26	5.8
3	32	7	.60	49	21	2.8	83	26	5.8
4	30	5	.41	53	20	2.9	86	29	6.7
5	28	4	.30	51	16	2.2	94	42	11
6	27	4	.29	44	11	1.3	101	63	17
7	26	6	.42	45	13	1.6	109	60	18
8	25	4	.27	51	18	2.5	113	59	18
9	24	4	.26	58	23	3.6	117	54	17
10	27	5	.36	62	25	4.2	115	42	13
11	33	6	.53	65	25	4.4	106	35	10
12	36	5	.49	66	26	4.6	109	33	9.7
13	35	4	.38	74	31	6.2	112	35	11
14	33	4	.36	82	36	8.0	112	32	9.7
15	33	4	.36	82	34	7.5	108	27	7.9
16	30	4	.32	68	14	2.6	---	---	---
17	30	4	.32	64	14	2.4	---	---	---
18	29	4	.31	71	22	4.2	---	---	---
19	30	4	.32	71	24	4.6	---	---	---
20	31	4	.33	73	23	4.5	---	---	---
21	30	7	.57	77	26	5.4	---	---	---
22	28	4	.30	82	27	6.0	---	---	---
23	29	4	.31	78	22	4.6	---	---	---
24	31	5	.42	67	14	2.5	---	---	---
25	38	6	.62	60	13	2.1	---	---	---
26	34	5	.46	59	14	2.2	---	---	---
27	36	6	.58	63	19	3.2	---	---	---
28	41	16	1.8	71	25	4.8	---	---	---
29	38	11	1.1	79	30	6.4	---	---	---
30	40	12	1.3	83	27	6.1	---	---	---
31	---	---	---	82	29	6.4	---	---	---
TOTAL	958	---	16.52	2009	---	123.2	1530	---	165.9
PERIOD	6614.5		361.55						

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, OCTOBER 1977 TO JUNE 1978

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. FINER THAN .062 MM
MAY						
14...	2335	6.5	96	75	19	38
22...	2350	6.0	92	44	11	39
31...	0155	6.0	87	42	9.9	30
JUN						
06...	0100	7.5	108	75	22	40
10...	0030	7.5	126	64	22	34

## PYRAMID AND WINNEMUCCA LAKES BASIN

10337000 LAKE TAHOE AT TAHOE CITY, CA

LOCATION.---Lat 39°10'51", long 120°07'06", in NE¼NE¼ sec.5, T.15 N., R.17 E., Placer County, on U.S. Coast  
Guard pier at Lake Forest, 1.1 mi (1.8 km) northeast of Tahoe City, and 1.8 mi (2.9 km) northeast of Lake Tahoe  
outlet dam on Truckee River at Tahoe City.

DRAINAGE AREA.--506 mi<sup>2</sup> (1,311 km<sup>2</sup>), at lake outlet.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1900 to current year. Monthend 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 (1,895.856 m) Bureau of Reclamation datum, 6,218.86 ft  
(1,895.508 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1957, nonrecording 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. May 9, 1958, to Sept. 30, 1968, water-stage recorder on pier,  
1,000 ft (300 m) east of dam at lake outlet.

REMARKS.--Lake levels regulated by a 17-gate concrete dam at outlet of lake; storage began about 1874. Monthly  
figures given herein represent usable contents. Usable capacity, 744,600 acre-ft (918 hm<sup>3</sup>) between elevations  
6,223 ft (1,896.8 m), natural rim of lake and 6,229.1 ft (1,898.63 m), maximum permissible elevation by  
Federal Court decree. 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. There are minor diversions  
for domestic purposes, irrigation, and power.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 6,231.26 ft (1,899.288 m) July 14, 15, 17, 18, 1907; minimum,  
6,221.74 ft (1,896.386 m) Dec. 26, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 6,225.19 ft (1,897.438 m) July 8; minimum, 6,222.28 ft  
(1,896.551 m) Nov. 20.

## Capacity table (elevation, in feet, and contents, in acre-feet)

6223	0	6227	486800
6224	121400	6228	609300
6225	243000	6229	732300
6226	364800		

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.89	2.58	2.52	2.92	3.32	3.58	3.95	4.19	4.70	5.12	5.10	4.47
2	2.88	2.58	2.52	2.90	3.32	3.60	3.96	4.20	4.73	5.12	5.10	4.44
3	2.87	2.51	2.51	2.92	3.32	3.63	3.94	4.20	4.76	5.12	5.10	4.43
4	2.85	2.54	2.50	2.94	3.30	3.73	3.95	4.20	4.78	5.12	5.08	4.42
5	2.82	2.51	2.51	3.05	3.43	3.74	3.92	4.23	4.80	5.15	5.07	4.42
6	2.80	2.47	2.48	3.06	3.44	3.75	3.98	4.23	4.83	5.17	5.07	4.40
7	2.77	2.48	2.48	3.06	3.50	3.75	3.98	4.23	4.86	5.18	5.07	4.37
8	2.78	2.45	2.48	3.05	3.58	3.75	3.97	4.25	4.88	5.19	5.05	4.37
9	2.76	2.45	2.47	3.13	3.62	3.75	3.98	4.26	4.88	5.18	5.03	4.38
10	2.77	2.45	2.45	3.13	3.60	3.75	3.98	4.27	4.90	5.17	5.02	4.34
11	2.75	2.40	2.50	3.13	3.60	3.76	3.99	4.28	4.92	5.17	4.97	4.34
12	2.75	2.40	2.49	3.14	3.60	3.77	4.00	4.32	4.92	5.17	4.92	4.29
13	2.73	2.39	2.48	3.13	3.60	3.77	3.99	4.33	4.95	5.18	4.89	4.30
14	2.74	2.39	2.54	3.20	3.59	3.77	3.98	4.35	4.97	5.17	4.87	4.28
15	2.72	2.38	2.63	3.20	3.59	3.77	4.02	4.40	4.97	5.16	4.83	4.28
16	2.73	2.38	2.64	3.34	3.58	3.77	4.05	4.43	5.01	5.16	4.80	4.25
17	2.72	2.37	2.78	3.36	3.58	3.78	4.06	4.43	5.03	5.16	4.77	4.25
18	2.72	2.29	2.76	3.37	3.58	3.78	4.05	4.45	5.04	5.16	4.73	4.21
19	2.70	2.30	2.76	3.37	3.58	3.78	3.95	4.47	5.05	5.16	4.69	4.18
20	2.69	2.28	2.74	3.37	3.58	3.78	4.09	4.49	5.05	5.16	4.67	4.17
21	2.68	2.60	2.78	3.35	3.57	3.82	4.10	4.51	5.07	5.16	4.63	4.14
22	2.68	2.54	2.81	3.35	3.57	3.83	4.10	4.52	5.07	5.16	4.60	4.14
23	2.67	2.54	2.85	3.35	3.57	3.83	4.11	4.55	5.08	5.16	4.58	4.13
24	2.67	2.53	2.85	3.34	3.57	3.84	4.13	4.56	5.08	5.16	4.54	4.13
25	2.67	2.53	2.84	3.34	3.57	3.84	4.14	4.57	5.08	5.15	4.53	4.12
26	2.66	2.55	2.88	3.34	3.56	3.85	4.14	4.58	5.08	5.15	4.52	4.11
27	2.68	2.52	2.90	3.34	3.55	3.86	4.15	4.59	5.12	5.14	4.52	4.10
28	2.60	2.52	2.92	3.34	3.55	3.87	4.16	4.62	5.12	5.13	4.51	4.10
29	2.59	2.52	2.91	3.34	---	3.87	4.17	4.63	5.12	5.12	4.49	4.10
30	2.60	2.51	2.92	3.34	---	3.89	4.18	4.67	5.12	5.12	4.47	4.10
31	2.58	---	2.92	3.33	---	3.94	---	4.67	---	5.10	4.46	---
MEAN	2.73	2.47	2.67	3.21	3.53	3.78	4.04	4.41	4.97	5.15	4.80	4.26
MAX	2.89	2.60	2.92	3.37	3.62	3.94	4.18	4.67	5.12	5.19	5.10	4.47
MIN	2.58	2.28	2.45	2.90	3.30	3.58	3.92	4.19	4.70	5.10	4.46	4.10
†	0	0	0	40100	66800	114100	143300	202900	257600	255200	177300	133600
‡	0	0	0	+40100	+26700	+47300	+29200	+59600	+54700	-2400	-77900	-43700

CAL YR 1977 ‡ -184600

WTR YR 1978 ‡ +133600

† Usable contents, in acre-feet, at end of month.

‡ Change in contents, in acre-feet.

NOTE.--Add 6,220 ft to obtain elevation, Bureau of Reclamation datum, at 2400 hours.

10337000 LAKE TAHOE AT TAHOE CITY, CA--Continued

## WATER-QUALITY RECORDS

LAKE TAHOE SITE NO. 3 AT SOUTH LAKE TAHOE, CA

LOCATION.--Lat 38°57'11", long 119°59'43", El Dorado County, 1.5 mi (2.4 km) northwest of South Lake Tahoe Post Office.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water year 1978.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		SAM- PLING DEPTH (M) 1/	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)				
JUN											
	21...	1250	.50	79	8.1	13.9	8.8 105				
	21...	1251	1.0	78	8.1	13.9	8.7 104				
	21...	1252	2.0	80	8.1	13.7	8.7 104				
	21...	1253	3.0	79	8.1	13.6	8.7 103				
	21...	1254	4.0	79	8.1	13.4	8.7 103				
	21...	1255	5.0	79	8.1	13.3	8.6 102				
	21...	1256	6.0	79	8.1	13.2	8.6 101				
	21...	1257	8.0	79	8.1	13.1	8.6 101				
	21...	1258	10.0	79	8.1	13.0	8.6 101				
	21...	1259	15.0	80	8.1	12.3	8.7 101				
	21...	1300	20.0	82	8.2	10.3	9.0 100				
	21...	1301	25.0	82	8.2	10.0	9.1 100				
	21...	1302	30.0	82	8.2	9.6	9.1 99				
	21...	1303	35.0	81	8.2	8.8	9.2 99				
	21...	1304	40.0	81	8.2	8.5	9.2 98				
	21...	1305	45.0	80	8.2	8.2	9.2 97				
	21...	1306	50.0	81	8.3	7.9	9.2 96				
	21...	1307	60.0	81	8.3	7.2	9.3 96				
	21...	1308	70.0	80	--	6.8	9.2 98				
	21...	1309	74.0	79	8.2	6.8	9.2 98				
	21...	1310	75.0	80	8.2	6.7	9.2 98				
SEP											
	20...	1315	.50	89	8.1	14.0	8.2 97				
	20...	1316	1.0	88	8.1	13.8	8.1 95				
	20...	1317	2.0	88	8.1	13.7	8.1 95				
	20...	1318	4.0	89	8.1	13.6	8.1 95				
	20...	1319	6.0	89	8.1	13.6	8.0 94				
	20...	1320	8.0	89	8.1	13.6	8.0 94				
	20...	1321	10.0	89	8.1	13.5	8.0 94				
	20...	1322	12.0	89	8.1	13.5	8.0 94				
	20...	1323	14.0	88	8.1	13.5	8.0 94				
	20...	1324	16.0	88	8.1	13.5	8.0 94				
	20...	1325	18.0	88	8.1	13.4	7.9 92				
	20...	1326	20.0	89	8.1	13.4	7.9 92				
	20...	1327	25.0	88	8.0	13.4	7.9 92				
	20...	1328	30.0	89	8.1	13.4	7.8 91				
	20...	1329	35.0	88	8.1	13.2	7.8 91				
	20...	1330	40.0	90	8.1	11.2	8.4 94				
	20...	1331	45.0	90	8.1	8.8	8.9 94				
	20...	1332	50.0	90	8.1	7.8	9.0 93				
	20...	1333	55.0	88	8.1	7.4	9.0 92				
	20...	1334	60.0	88	8.1	7.0	9.0 91				
	20...	1335	70.0	88	8.1	6.7	9.0 91				
	20...	1336	72.0	87	8.1	6.7	9.0 91				
DATE	TIME	SAM- PLING DEPTH (M) 1/	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUN											
	21...	1315	1.0	79	8.1	13.9	8.7	36	0	11	2.0 5.9
	21...	1320	20.0	82	8.2	10.3	9.0	24	0	6.2	2.0 5.9
	21...	1325	50.0	81	8.3	7.9	9.2	32	0	9.2	2.1 6.0
SEP											
	20...	1340	1.0	88	8.1	13.8	8.1	32	0	8.9	2.3 6.8
	20...	1350	40.0	90	8.1	11.2	8.4	31	0	8.6	2.3 6.8
	20...	1355	60.0	90	8.1	7.0	9.0	31	0	8.6	2.4 6.8

1. To convert meters to feet, multiply by 3.281.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10337000 LAKE TAHOE AT TAHOE CITY, CA--Continued

LAKE TAHOE SITE NO. 3 at SOUTH LAKE TAHOE, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
JUN										
21...	25	.4	1.7	43	2.3	.7	.0	11	60	.08
21...	33	.5	1.7	28	2.2	1.2	.0	8.0	44	.06
21...	28	.5	1.7	39	2.5	1.7	.1	11	58	.08
SEP										
20...	30	.5	1.8	39	2.3	1.9	.0	12	59	.08
20...	31	.5	1.8	43	2.3	1.8	.0	12	61	.08
20...	31	.5	1.8	43	2.1	1.8	.0	11	60	.08

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
JUN										
21...	.00	.02	.00	.35	.35	.35	.01	.02	20	0
21...	.00	.02	.00	.21	.21	.21	.00	.01	20	10
21...	.00	.02	.00	.08	.08	.08	.00	.02	30	0
SEP										
20...	.01	.01	.01	.33	.34	.35	.00	.00	20	10
20...	.01	.02	.01	.14	.15	.16	.00	.00	30	10
20...	.01	.02	.00	.17	.17	.18	.00	.00	30	10

## LAKE TAHOE SITE NO. 2 AT EMERALD BAY, NEAR SOUTH LAKE TAHOE, CA

LOCATION.--Lat 38°57'23", long 120°05'39", El Dorado County, at Emerald Bay, 7.0 mi (11.3 km) west of South Lake Tahoe Post Office.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water year 1978.

DATE	TIME	SAM- PLING DEPTH (M) <u>1</u> /	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
21...	1448	.50	47	7.8	15.0	8.6	105
21...	1449	1.0	47	7.8	15.0	8.7	106
21...	1450	2.0	47	8.1	15.0	8.7	106
21...	1451	3.0	47	8.0	15.0	8.8	108
21...	1452	4.0	47	7.8	14.9	8.8	107
21...	1453	5.0	47	7.8	14.9	8.8	107
21...	1454	6.0	47	7.8	14.7	8.7	106
21...	1455	8.0	47	7.9	13.2	9.2	108
21...	1456	10.0	44	7.9	12.4	9.4	109
21...	1457	12.0	46	8.0	10.1	9.7	107
21...	1458	14.0	51	8.0	9.4	9.8	106
21...	1459	15.0	55	8.0	8.8	9.7	104
21...	1500	16.0	56	8.0	8.2	9.7	102
21...	1501	18.0	59	8.0	8.0	9.7	102
21...	1502	20.0	59	8.0	7.6	9.7	101
21...	1503	25.0	63	8.0	7.0	9.4	97
21...	1504	30.0	63	7.9	6.7	9.4	96
21...	1505	35.0	63	7.9	6.4	9.2	93
21...	1506	40.0	64	7.9	6.2	9.0	91
21...	1507	45.0	64	7.9	6.1	9.0	90
21...	1508	50.0	64	7.8	6.0	8.9	89
21...	1509	55.0	65	7.8	5.8	8.6	86
21...	1510	58.0	65	7.3	5.8	7.8	78

1. To convert meters to feet, multiply by 3.281.

## PYRAMID AND WINNEMUCCA LAKES BASIN

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10337000 LAKE TAHOE AT TAHOE CITY, CA--Continued

LAKE TAHOE SITE NO. 2 AT EMERALD BAY, NEAR SOUTH LAKE TAHOE, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAM- PLING DEPTH (M) 1/	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
20...	1445	.50	70	8.1	14.0	7.8	92
20...	1446	1.0	70	8.0	14.0	7.7	91
20...	1447	2.0	70	8.0	14.0	7.7	91
20...	1448	4.0	70	8.0	13.8	7.7	91
20...	1449	6.0	--	8.0	13.8	7.7	91
20...	1450	8.0	70	8.0	13.7	7.8	92
20...	1451	10.0	70	8.0	13.7	7.8	92
20...	1452	15.0	70	8.1	13.6	7.7	90
20...	1453	16.0	68	8.0	13.4	7.9	92
20...	1454	18.0	70	8.0	11.1	9.0	100
20...	1455	20.0	73	8.0	8.8	8.9	94
20...	1456	25.0	74	7.9	7.3	8.5	87
20...	1457	30.0	79	7.9	6.5	8.1	81
20...	1458	35.0	76	7.8	6.0	7.7	76
20...	1459	40.0	76	7.7	5.7	7.2	71
20...	1500	45.0	76	7.6	5.6	7.0	69
20...	1501	50.0	76	7.6	5.5	6.7	66
20...	1502	55.0	76	7.5	5.5	6.4	63
20...	1503	58.0	76	7.5	5.4	5.9	58

DATE	TIME	SAM- PLING DEPTH (M) 1/	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUN											
21...	1515	1.0	47	7.8	15.0	8.7	23	0	6.3	1.8	3.9
21...	1520	15.0	55	8.0	8.8	9.7	45	3	16	1.3	3.0
21...	1525	50.0	64	7.8	6.0	8.9	29	0	8.5	1.8	5.0
SEP											
20...	1510	1.0	70	8.1	14.0	7.7	24	0	7.0	1.7	5.0
20...	1515	20.0	70	8.0	5.7	7.7	24	0	7.0	1.7	4.2
20...	1520	40.0	73	8.0	8.8	8.9	19	0	4.5	1.5	5.3

DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
JUN										
21...	26	.4	1.1	27	3.4	1.3	.0	8.2	43	.06
21...	12	.2	1.3	42	3.1	1.7	.1	11	63	.09
21...	26	.4	1.5	35	4.0	1.6	.1	9.5	53	.07
SEP										
20...	29	.4	1.4	29	1.5	1.4	.0	10	46	.06
20...	26	.4	1.4	34	1.9	1.6	.0	9.8	48	.07
20...	35	.5	1.7	24	2.8	1.2	.0	11	43	.06

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
JUN										
21...	.06	.15	.00	.08	.08	.14	.00	.01	20	10
21...	.00	.04	.00	.37	.37	.37	.01	.01	30	10
21...	.00	.00	.01	.28	.29	.29	.00	.01	20	0
SEP										
20...	.01	.07	.00	.15	.15	.16	.00	.00	20	20
20...	.01	.02	.00	.38	.38	.39	.01	.03	20	20
20...	.01	.01	.01	.14	.15	.16	.00	.00	20	20

1. To convert meters to feet, multiply by 3.281.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10337000 LAKE TAHOE AT TAHOE CITY, CA--Continued

LAKE TAHOE SITE NO. 1 NEAR TAHOE CITY, CA

LOCATION.--Lat 39°14'07", long 119°56'53", Washoe County, Nevada, at Incline Beach, 11.1 mi (17.9 km) northeast of Tahoe City.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water year 1978.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)				PH	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)		
DATE	TIME	SAM- PLING DEPTH (M) 1/				(UNITS)					
JUN											
21...	0928	.50	78	8.6	14.2	9.0	108				
21...	0929	1.0	78	8.5	14.3	9.0	108				
21...	0930	2.0	78	8.4	14.2	9.0	108				
21...	0931	3.0	78	8.2	14.1	9.0	108				
21...	0932	4.0	78	8.1	14.1	9.0	108				
21...	0933	5.0	79	8.1	14.1	9.0	108				
21...	0934	10.0	79	8.1	13.9	9.0	108				
21...	0935	12.0	78	8.1	13.8	9.0	107				
21...	0936	14.0	79	8.1	12.5	9.2	107				
21...	0937	15.0	79	8.1	12.3	9.3	108				
21...	0938	17.0	80	8.1	11.8	9.4	108				
21...	0939	19.0	80	8.1	11.3	9.4	106				
21...	0940	20.0	80	8.1	11.2	9.5	107				
21...	0941	25.0	80	8.2	10.5	9.5	106				
21...	0942	30.0	80	8.2	10.0	9.6	106				
21...	0943	35.0	80	8.2	9.6	9.7	106				
21...	0944	40.0	82	8.2	8.6	9.8	104				
21...	0945	45.0	80	8.2	8.3	9.8	104				
21...	0946	50.0	79	8.2	8.1	9.9	104				
21...	0947	60.0	79	8.2	7.4	9.9	103				
21...	0948	70.0	79	8.2	6.9	9.9	102				
21...	0949	73.0	79	8.2	6.7	9.9	101				
21...	0950	75.0	79	8.2	6.7	9.9	101				
SEP											
20...	0945	.50	89	7.9	13.7	7.9	93				
20...	0946	1.0	89	7.9	13.7	7.8	92				
20...	0947	2.0	89	7.9	13.7	7.8	78				
20...	0948	4.0	89	7.9	13.7	7.8	92				
20...	0949	6.0	89	8.0	13.7	7.8	92				
20...	0950	8.0	89	8.0	13.7	7.8	92				
20...	0951	10.0	89	8.0	13.7	7.7	90				
20...	0952	12.0	89	8.0	13.7	7.7	90				
20...	0953	14.0	89	8.0	13.7	7.7	90				
20...	0954	16.0	89	8.0	13.7	7.7	90				
20...	0955	18.0	89	8.0	13.7	7.7	90				
20...	0956	20.0	89	8.0	13.6	7.7	90				
20...	0957	25.0	90	8.0	12.7	7.9	91				
20...	0958	30.0	90	8.0	11.2	8.4	94				
20...	0959	35.0	90	8.1	10.3	8.6	94				
20...	1000	40.0	89	8.1	9.5	8.7	94				
20...	1001	45.0	90	8.1	8.2	8.9	93				
20...	1002	50.0	89	8.1	7.4	9.0	92				
20...	1003	60.0	88	7.9	6.6	9.0	90				
20...	1004	70.0	88	7.7	6.2	8.9	88				
20...	1005	80.0	88	7.6	5.7	8.7	86				
20...	1006	90.0	87	7.5	5.5	8.6	84				
20...	1007	100	87	7.5	5.4	8.6	84				
DATE	TIME	SAM- PLING DEPTH (M) 1/	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATF (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUN											
21...	0955	1.0	78	8.5	14.3	9.0	35	10	10	2.4	5.9
21...	1000	15.0	79	8.1	12.3	9.3	33	0	9.2	2.4	6.0
21...	1005	50.0	79	8.2	8.1	9.9	32	0	9.0	2.4	5.9
SEP											
20...	1010	1.0	89	7.9	13.7	7.8	32	0	8.8	2.4	6.6
20...	1015	60.0	88	7.9	6.6	9.0	31	0	8.6	2.4	6.6

1. To convert meters to feet, multiply by 3.281.

## PYRAMID AND WINNEMUCCA LAKES BASIN

87

10337000 LAKE TAHOE AT TAHOE CITY, CA--Continued

LAKE TAHOE SITE NO. 1 NEAR TAHOE CITY, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
JUN										
21...	26	.4	1.7	25	5.1	1.8	.1	11	54	.07
21...	27	.5	1.7	38	3.8	1.6	.0	11	59	.08
21...	27	.5	1.6	42	4.0	1.7	.0	11	61	.08
SEP										
20...	30	.5	1.8	38	2.0	1.8	.0	12	58	.08
20...	31	.5	1.8	43	2.0	1.8	.0	12	62	.08

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
JUN										
21...	.04	.11	.01	.10	.11	.15	.01	.04	30	90
21...	.02	.03	.01	.23	.24	.26	.01	.01	20	0
21...	.01	.04	.01	.08	.09	.10	.01	.02	30	10
SEP										
20...	.00	.02	.01	.21	.22	.22	.00	.00	20	10
20...	.01	.00	.01	.13	.14	.15	.00	.00	20	10

## 10337500 TRUCKEE RIVER AT TAHOE CITY, CA

LOCATION.--Lat 39°09'59", long 120°08'36", in NE¼NW¼ sec.7, T.15 N., R.17 E., Placer County, on left bank 510 ft (155 m) downstream from dam at outlet of Lake Tahoe at Tahoe City.

DRAINAGE AREA.--507 mi<sup>2</sup> (1,313 km<sup>2</sup>).

PERIOD OF RECORD.--July 1895 to February 1896, March 1900 to current year. Monthly discharge only for some periods, published in WSP 1314 and 1734. Prior to October 1961, published as "at Tahoe."

REVISED RECORDS.--WSP 2127: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,216.59 ft (1,894.817 m), revised, National Geodetic Vertical Datum of 1929. Prior to Nov. 12, 1912, nonrecording gage at site 370 ft (113 m) upstream at different datum. Nov. 12, 1912, to Sept. 30, 1937, nonrecording gage, Oct. 1, 1937, to Aug. 21, 1957, water-stage recorder at datum 2.26 ft (0.689 m) higher and Aug. 22, 1957, to July 10, 1960, at datum 2.42 ft (0.738 m) higher; all at site 270 ft (82 m) upstream.

REMARKS.--Records good except those below 16 ft<sup>3</sup>/s (0.45 m<sup>3</sup>/s), which are poor. Flow regulated by Lake Tahoe, operating capacity, 744,600 acre-ft (918 hm<sup>3</sup>). There are several diversions for irrigation, power, and domestic water supply. In addition, sewer effluent is pumped from the Lake Tahoe basin. Discharge prior to Jan. 27, 1978, is local inflow between the dam and the station.

AVERAGE DISCHARGE (unadjusted).--78 years (water years 1901-78), 246 ft<sup>3</sup>/s (6.967 m<sup>3</sup>/s), 178,200 acre-ft/yr (220 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,630 ft<sup>3</sup>/s (74.5 m<sup>3</sup>/s) June 19, 1969, gage height, 9.32 ft (2.841 m); no flow for parts of many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 493 ft<sup>3</sup>/s (14.0 m<sup>3</sup>/s) Aug. 9, gage height, 4.74 ft (1.445 m); minimum daily, 0.02 ft<sup>3</sup>/s (>0.001 m<sup>3</sup>/s) on many days during October and November.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.02	.05	.22	16	29	40	53	55	47	275	372
2	.06	.02	.05	.22	16	30	43	53	56	47	296	365
3	.05	.02	.05	.22	17	29	44	53	55	46	300	353
4	.04	.02	.05	.21	17	30	46	55	55	45	298	344
5	.04	.05	.05	.33	19	30	49	53	56	47	302	342
6	.02	.04	.05	.40	20	29	46	52	56	50	306	340
7	.02	.02	.05	.21	27	30	47	53	55	51	358	337
8	.02	.02	.04	.21	27	30	62	54	56	50	404	331
9	.02	.02	.04	.60	26	30	81	54	57	48	463	315
10	.02	.02	.04	.50	26	31	81	54	57	45	452	324
11	.02	.04	.04	.40	26	31	82	53	56	40	401	311
12	.02	.04	.04	.33	26	30	62	53	57	39	368	306
13	.02	.02	.05	.40	26	30	49	54	57	46	368	294
14	.02	.02	.33	.84	26	30	49	55	57	59	365	296
15	.02	.02	1.8	1.0	26	31	49	55	57	61	365	291
16	.02	.02	.22	2.0	27	31	48	53	57	59	404	287
17	.02	.02	1.8	2.0	27	40	49	53	57	59	432	275
18	.02	.02	.40	1.0	27	44	52	52	59	59	426	267
19	.02	.02	.22	.84	27	41	53	53	58	60	424	263
20	.02	.02	.22	.58	27	39	52	53	59	88	421	245
21	.02	.20	.22	.48	27	35	52	59	56	91	414	241
22	.02	.08	.22	.48	28	36	52	64	52	84	419	236
23	.02	.06	.70	.40	28	37	52	61	51	95	419	234
24	.02	.05	.27	.40	28	36	52	59	51	129	409	232
25	.02	.05	.22	.40	28	36	52	58	51	154	399	199
26	.02	.05	.22	.48	28	37	54	53	50	176	396	119
27	.02	.05	.48	5.7	28	38	55	47	51	201	394	84
28	.02	.05	.48	16	28	40	54	47	50	203	389	76
29	.02	.05	1.4	16	---	38	54	50	49	208	387	75
30	.02	.05	.58	16	---	38	54	54	48	208	382	74
31	.02	---	.33	16	---	40	---	55	---	228	375	---
TOTAL	.77	1.18	10.71	84.85	699	1056	1615	1675	1641	2823	11811	7828
MEAN	.025	.039	.35	2.74	25.0	34.1	53.8	54.0	54.7	91.1	381	261
MAX	.06	.20	1.8	16	28	44	82	64	59	228	463	372
MIN	.02	.02	.04	.21	16	29	40	47	48	39	275	74
AC-FT	1.5	2.3	21	168	1390	2090	3200	3320	3250	5600	23430	15530
CAL YR 1977	TOTAL	45480.86	MEAN 125	MAX 268	MIN .02	AC-FT 90210						
WTR YR 1978	TOTAL	29245.51	MEAN 80.1	MAX 463	MIN .02	AC-FT 58010						



## PYRAMID AND WINNEMUCCA LAKES BASIN

89

10338000 TRUCKEE RIVER NEAR TRUCKEE, CA

LOCATION.--Lat 39°17'46", long 120°12'17", in SW¼NE¼ sec.28, T.17 N., R.16 E., Placer County, Tahoe National Forest, on left bank 1.4 mi (2.3 km) downstream from Cabin Creek and 2.5 mi (4.0 km) southwest of Truckee.

DRAINAGE AREA.--553 mi<sup>2</sup> (1,432 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1944 to September 1961, June 1977 to current year. Monthly discharge only for some periods, published in WSP 1314.

REVISED RECORDS.--WDR CA-77-3: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,860 ft (1,786 m), from topographic map.

REMARKS.--Records excellent. Flow regulated by Lake Tahoe (station 10337000), operating capacity, 744,600 acre-ft (918 hm<sup>3</sup>).

AVERAGE DISCHARGE.--17 years (water years 1946-61, 1978), 336 ft<sup>3</sup>/s (9.516 m<sup>3</sup>/s), 243,400 acre-ft/yr (300 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,760 ft<sup>3</sup>/s (220 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 7.92 ft (2.414 m), from rating curve extended above 2,500 ft<sup>3</sup>/s (70.8 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 7.62 ft (2.323 m) and 7.92 ft (2.414 m); minimum daily, 7.7 ft<sup>3</sup>/s (0.22 m<sup>3</sup>/s) Nov. 19, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 627 ft<sup>3</sup>/s (17.8 m<sup>3</sup>/s) May 14, gage height, 2.52 ft (0.768 m); minimum daily, 7.7 ft<sup>3</sup>/s (0.22 m<sup>3</sup>/s) Nov. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	9.4	13	55	58	98	321	279	413	228	307	376
2	8.9	9.3	12	49	56	117	267	314	412	219	320	371
3	8.6	9.4	12	44	58	116	235	358	411	196	325	362
4	8.4	9.4	13	44	57	150	219	389	440	184	325	354
5	8.4	12	15	44	65	155	199	365	475	190	327	359
6	8.5	11	14	44	74	131	189	319	496	206	330	366
7	8.9	9.9	13	44	72	129	171	322	516	220	356	360
8	8.9	9.4	12	41	81	132	166	353	489	205	404	348
9	8.9	9.3	11	68	85	130	193	405	481	205	446	341
10	8.9	9.4	12	69	77	126	214	443	429	203	456	377
11	8.9	9.3	12	55	73	128	251	447	391	190	415	339
12	8.9	9.4	12	48	71	117	279	434	421	170	379	337
13	8.9	9.7	13	48	71	107	281	473	463	165	376	316
14	8.9	9.3	32	83	67	105	268	531	450	179	374	323
15	8.8	9.3	217	95	66	108	247	551	378	185	372	314
16	8.7	9.3	58	90	64	120	221	398	328	170	377	313
17	8.8	8.9	106	80	63	150	205	345	312	160	426	302
18	9.0	8.8	70	70	62	176	197	348	315	157	425	295
19	8.8	7.7	41	68	63	173	201	369	298	153	422	288
20	8.9	8.5	36	59	66	190	207	398	297	162	417	279
21	8.9	12	34	54	69	217	193	442	292	179	411	267
22	8.9	30	43	50	75	225	185	467	279	165	412	262
23	9.0	19	61	45	82	245	185	415	280	166	414	260
24	8.9	15	42	43	89	224	199	334	273	195	412	259
25	9.1	14	35	43	90	222	276	286	248	219	400	244
26	9.3	14	31	41	90	241	260	276	228	239	396	164
27	11	14	83	40	90	264	286	310	229	267	394	106
28	10	14	73	49	91	291	304	382	218	264	391	92
29	9.8	13	117	57	---	305	288	450	212	263	391	86
30	9.8	13	108	58	---	328	294	464	222	260	385	85
31	9.8	---	69	59	---	391	---	429	---	262	380	---
TOTAL	280.4	346.7	1420	1737	2025	5611	7001	12096	10696	6226	11965	8545
MEAN	9.05	11.6	45.8	56.0	72.3	181	233	390	357	201	386	285
MAX	11	30	217	95	91	391	321	551	516	267	456	377
MIN	8.4	7.7	11	40	56	98	166	276	212	153	307	85
AC-FT	556	688	2820	3450	4020	11130	13890	23990	21220	12350	23730	16950

CAL YR 1977 TOTAL -- MEAN -- MAX -- MIN -- AC-FT --  
WTR YR 1978 TOTAL 67949.1 MEAN 186 MAX 551 MIN 7.7 AC-FT 134800

10338000 TRUCKEE RIVER NEAR TRUCKEE, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961-65, 1977 to current year.

CHEMICAL ANALYSES: Water years 1951-66.

SPECIFIC CONDUCTANCE: Water years 1977 to current year.

WATER TEMPERATURES: Water years 1977 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1977 to current year.

WATER TEMPERATURES: July 1977 to current year.

INSTRUMENTATION.--Water-quality monitor recording specific conductance and water temperatures since July 1977.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 231 micromhos Oct. 14, 1977; minimum recorded, 40 micromhos

June 7, 9, 14, 1978.

WATER TEMPERATURES: Maximum recorded, 24.0°C Aug. 4, 1978; minimum recorded, 0.0°C on many days in 1977-78.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 231 micromhos Oct. 14; minimum recorded, 40 micromhos June 7, 9, 14.

WATER TEMPERATURES: Maximum recorded, 24.0°C Aug. 4; minimum recorded, 0.0°C on many days during November to February.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	196	221	207	157	156	135	---	74	54	---	88	86
2	198	219	205	163	161	129	---	75	52	---	88	75
3	210	221	207	170	160	132	---	71	51	---	88	85
4	212	223	206	170	157	122	---	---	49	---	88	86
5	213	218	204	162	153	123	---	67	45	---	88	90
6	216	216	192	166	149	131	---	69	49	52	88	88
7	214	210	196	173	149	131	---	68	50	53	88	89
8	213	215	199	175	147	128	---	66	44	55	88	88
9	211	214	202	153	143	128	---	64	46	54	88	89
10	211	206	203	154	149	128	---	62	---	56	90	87
11	210	211	200	170	150	134	---	60	---	58	91	89
12	214	222	200	176	150	131	---	---	---	58	91	89
13	223	222	201	176	147	130	---	---	---	62	91	---
14	223	220	178	165	150	130	---	---	---	62	91	---
15	222	220	105	142	148	128	---	---	45	62	92	---
16	219	221	131	149	147	123	---	---	48	62	92	---
17	212	213	127	143	146	115	---	---	47	68	92	---
18	220	206	142	148	145	109	---	---	47	74	92	---
19	218	214	165	153	146	109	---	---	47	80	91	---
20	216	196	168	151	147	104	89	63	48	78	91	92
21	212	183	166	144	146	101	89	56	---	78	90	92
22	210	168	162	146	144	99	90	54	---	73	84	93
23	209	172	149	154	140	97	88	56	---	77	70	93
24	221	186	164	156	138	101	87	61	---	88	85	92
25	224	195	174	---	136	100	77	64	---	94	86	93
26	220	198	179	---	135	96	81	65	---	82	82	96
27	213	203	143	---	136	92	92	61	---	84	88	99
28	214	201	128	---	135	88	89	56	---	88	88	100
29	220	199	124	---	---	84	78	53	---	84	78	100
30	216	205	130	157	---	---	75	54	---	89	82	100
31	210	---	148	156	---	---	---	56	---	90	84	---
MONTH	214	207	171	159	147	116	---	---	---	72	88	---
YEAR	MAX	224	MIN	44	MEAN	130						

10338000 TRUCKEE RIVER NEAR TRUCKEE, CA--Continued

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	15.5	6.0	11.5	4.0	4.5	1.0	2.5	0.5	2.5	0.5	6.0	3.5
2	15.5	6.0	11.0	3.5	6.0	1.0	4.0	2.5	3.5	1.0	5.5	3.5
3	15.5	5.5	10.5	4.5	5.5	1.0	4.0	2.0	5.0	0.5	5.5	2.5
4	15.0	5.5	11.0	5.0	6.5	1.5	3.0	0.0	5.0	1.0	4.0	1.0
5	14.5	5.5	7.0	4.0	6.0	2.0	0.0	0.0	4.0	1.0	3.5	0.5
6	13.0	6.5	9.0	3.0	5.5	0.5	0.5	0.0	1.5	0.0	7.0	2.0
7	14.0	4.0	7.5	2.0	5.5	1.5	1.0	0.0	0.5	0.0	7.5	2.5
8	14.5	5.0	7.0	1.5	3.5	0.5	1.0	0.5	1.0	0.0	6.5	3.0
9	14.5	5.0	8.0	1.0	4.0	1.0	0.5	0.0	1.0	0.0	5.5	3.5
10	14.5	5.5	7.5	1.5	4.0	1.0	1.0	0.5	1.0	0.0	7.5	3.5
11	14.5	5.5	8.0	3.5	3.5	1.0	4.0	1.5	3.0	0.5	6.5	3.0
12	14.0	6.0	8.0	1.5	4.0	0.5	3.5	1.5	1.0	0.0	6.5	3.0
13	14.5	5.0	8.5	2.5	6.0	2.0	5.0	2.5	2.5	0.5	6.0	1.5
14	14.5	5.5	7.0	2.0	6.0	3.0	3.0	0.5	2.0	0.5	8.0	2.0
15	14.5	7.0	8.5	2.0	3.0	0.0	0.5	0.0	4.0	0.5	8.5	2.0
16	14.5	7.5	9.0	2.0	1.0	0.0	0.5	0.0	2.5	0.5	9.0	2.5
17	14.5	6.0	7.0	2.5	1.0	0.0	1.0	0.0	2.5	0.5	8.5	3.0
18	12.5	6.0	6.5	1.0	1.0	0.5	3.0	0.5	5.5	1.0	6.5	3.5
19	13.0	7.0	3.0	0.5	1.0	0.0	4.0	1.0	6.0	1.0	7.5	4.0
20	13.0	5.5	3.5	1.0	1.0	0.0	4.5	1.5	6.5	1.0	7.5	3.5
21	12.5	5.0	2.5	0.0	1.0	0.0	3.5	0.5	7.0	1.5	5.5	4.0
22	12.5	4.5	1.5	0.0	1.0	0.0	5.0	1.5	7.0	1.5	7.5	4.0
23	11.0	6.5	3.0	0.5	1.0	0.0	2.0	0.5	7.0	1.5	6.0	3.5
24	14.0	7.0	5.0	1.5	2.0	0.5	1.0	0.5	6.5	2.5	8.0	2.5
25	13.5	5.5	5.0	1.0	3.0	0.5	1.0	0.5	7.0	2.0	8.5	3.0
26	13.5	7.0	7.0	1.5	2.0	0.0	3.0	0.5	7.0	1.5	8.0	3.5
27	12.5	6.5	6.5	2.5	2.0	0.5	3.5	0.5	7.0	2.5	9.0	4.0
28	8.5	5.5	5.5	0.5	3.0	0.5	3.5	0.5	7.0	1.5	9.0	3.5
29	8.5	4.5	5.0	1.0	3.0	2.0	3.5	0.5	---	---	7.5	4.0
30	10.5	5.0	5.5	1.5	3.0	1.0	3.0	0.5	---	---	7.0	4.5
31	11.0	4.0	---	---	2.5	0.5	3.5	0.5	---	---	5.0	3.5
MONTH	15.5	4.0	11.5	0.0	6.5	0.0	5.0	0.0	7.0	0.0	9.0	0.5

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	5.5	3.0	9.5	4.5	11.5	5.0	---	---	19.0	16.0	19.5	14.5
2	7.5	2.5	11.0	4.0	11.0	4.5	---	---	22.0	16.0	19.5	15.0
3	7.0	3.0	10.5	4.0	10.0	5.0	---	---	23.0	17.0	19.0	15.0
4	6.5	3.0	9.5	4.0	12.0	5.0	---	---	24.0	18.0	17.5	15.5
5	6.5	2.0	8.5	3.5	12.5	5.0	---	---	23.5	18.0	16.0	14.5
6	3.5	1.5	9.5	3.0	12.0	5.5	16.5	8.5	23.0	18.0	16.0	14.0
7	6.0	1.5	11.0	4.0	12.0	5.5	17.0	10.0	23.5	18.0	16.5	13.0
8	7.5	2.5	11.0	4.0	12.5	5.0	17.0	9.0	23.0	18.0	17.0	12.0
9	9.5	3.0	11.0	4.5	12.5	5.5	18.5	10.0	23.0	18.0	15.0	13.0
10	11.0	4.5	10.5	4.5	---	---	18.0	9.5	22.5	18.0	14.5	12.0
11	10.5	4.5	10.0	4.0	---	---	17.5	9.5	22.0	17.5	16.0	11.5
12	10.5	4.0	10.5	3.5	---	---	17.0	8.5	20.5	16.0	16.0	12.0
13	9.5	4.0	11.0	4.0	---	---	19.0	11.0	18.5	14.5	---	---
14	7.0	4.5	10.0	4.0	---	---	19.5	11.5	19.5	13.0	---	---
15	5.0	2.5	5.5	3.0	12.0	4.5	19.0	11.5	20.5	15.0	---	---
16	4.0	1.5	8.5	3.0	13.0	5.0	18.5	10.0	19.5	16.0	---	---
17	8.5	2.0	10.5	3.5	13.5	5.5	19.5	11.5	18.0	13.5	---	---
18	10.0	3.0	11.0	4.0	13.5	7.0	19.5	11.5	18.5	13.5	---	---
19	10.0	4.0	11.0	4.5	14.0	5.0	19.5	12.0	19.5	14.0	---	---
20	5.0	1.0	11.5	4.5	14.5	6.0	20.0	12.0	19.5	14.5	14.5	9.5
21	8.0	1.0	11.5	4.5	---	---	20.5	13.5	18.5	14.5	15.0	10.5
22	9.5	2.5	11.0	4.0	---	---	21.5	14.0	17.5	12.5	16.0	11.0
23	9.0	4.0	6.5	4.0	---	---	21.0	14.5	17.5	12.5	17.5	12.0
24	8.5	5.0	6.5	3.0	---	---	21.5	14.0	17.5	13.0	17.0	12.5
25	6.5	4.5	10.5	3.0	---	---	21.0	16.0	18.0	13.0	17.5	12.5
26	9.0	4.0	11.5	4.5	---	---	22.5	16.5	18.0	13.5	17.0	12.5
27	11.0	5.0	12.5	4.5	---	---	22.0	15.5	19.0	13.5	17.0	12.0
28	7.5	4.0	12.5	5.0	---	---	21.5	15.5	19.5	14.5	17.5	11.0
29	9.5	4.0	12.5	5.0	---	---	22.0	15.5	19.5	15.0	17.5	11.5
30	7.0	4.5	11.5	4.5	---	---	22.5	15.5	18.5	15.0	17.5	11.5
31	---	---	11.0	4.5	---	---	22.5	16.0	19.5	14.0	---	---
MONTH	11.0	1.0	12.5	3.0	---	---	22.5	8.5	24.0	12.5	---	---

## PYRAMID AND WINNEMUCCA LAKES BASIN

10338500 DONNER CREEK AT DONNER LAKE, NEAR TRUCKEE, CA

LOCATION. --Lat 39°19'25", long 120°14'00", in SW¼NW¼ sec.17, T.17 N., R.16 E., Nevada County, in Donner Memorial State Park, on left bank 10 ft (3 m) downstream from bridge on Donner Memorial State Park road, 0.2 mi (0.3 km) downstream from outlet of Donner Lake, 0.7 mi (1.1 km) upstream from Cold Creek, and 2.5 mi (4.0 km) west of Truckee.

DRAINAGE AREA. --14.6 mi<sup>2</sup> (37.8 km<sup>2</sup>).

PERIOD OF RECORD.--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 current year. Monthly discharge only prior to October 1958, published in WSP 1314 and 1734.

REVISED RECORDS.--WSP 2127: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,930 ft (1,807 m), from topographic map. Nov. 1, 1909, to Aug. 31, 1910, nonrecording gage at different datum. January 1929 to December 1957, water-stage recorder at same site at unknown datum.

REMARKS.--Records good. Flow regulated by dam at outlet of Donner Lake, usable capacity, 9,500 acre-ft (11.7 hm<sup>3</sup>).

AVERAGE DISCHARGE (unadjusted), --41 years (water years 1930-35, 1937, 1940-42, 1944-52, 1956-57, 1959-78), 33.3 ft<sup>3</sup>/s (0.943 m<sup>3</sup>/s), 24,130 acre-ft/yr (29.8 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 700 ft<sup>3</sup>/s (19.8 m<sup>3</sup>/s), estimated, Nov. 21, 1950; maximum gage height observed, 4.55 ft (1.387 m) Dec. 25, 1964; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 397 ft<sup>3</sup>/s (11.2 m<sup>3</sup>/s) May 15, gage height, 4.02 ft (1.225 m); minimum daily, 0.66 ft<sup>3</sup>/s (0.019 m<sup>3</sup>/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	8.8	12	23	49	25	117	3.6	154	15	10	8.4
2	12	8.8	7.7	23	49	25	118	35	170	15	10	8.4
3	12	10	1.5	23	47	26	133	93	178	15	9.9	8.4
4	12	13	1.2	23	47	27	145	175	164	14	9.9	8.4
5	12	13	1.1	23	46	28	153	209	149	14	10	8.4
6	11	11	1.1	24	38	29	158	212	140	14	10	8.0
7	7.9	11	1.1	24	24	29	132	215	140	14	10	8.0
8	7.9	12	.84	24	24	29	93	149	140	14	10	8.4
9	7.9	14	.86	25	25	29	91	84	140	14	10	8.4
10	7.9	13	.74	33	25	29	89	87	140	13	10	8.0
11	8.3	11	.72	65	25	30	88	88	138	14	9.9	8.0
12	8.6	11	.72	78	25	30	87	153	103	14	9.9	8.0
13	8.3	10	.66	76	25	30	87	201	77	14	9.9	7.5
14	7.9	9.7	.74	76	25	30	47	201	77	14	10	7.5
15	7.5	10	.89	76	25	30	6.4	267	77	14	10	7.5
16	7.1	11	.80	76	25	32	6.4	367	77	14	10	7.5
17	7.1	8.3	1.2	76	24	32	6.4	360	77	14	9.6	7.5
18	8.1	5.2	.97	109	24	34	6.2	340	76	10	9.4	7.5
19	9.2	3.7	.97	130	24	34	5.9	301	61	10	9.4	16
20	9.2	2.6	.97	122	24	35	4.9	261	58	10	9.8	24
21	9.2	2.4	.97	114	24	35	4.5	255	65	10	9.4	35
22	9.2	7.7	.97	107	24	35	4.3	168	64	10	9.4	44
23	9.2	11	1.1	99	24	35	4.1	43	63	10	9.4	44
24	9.2	8.1	1.2	95	24	43	3.8	34	62	10	9.4	41
25	9.2	3.8	1.2	93	24	53	3.8	24	61	10	9.1	38
26	8.8	3.1	1.2	69	24	53	3.8	24	48	10	8.9	40
27	8.8	2.6	1.3	53	25	53	3.8	24	22	10	8.9	43
28	8.8	2.2	2.0	52	25	66	3.6	24	16	10	8.9	42
29	8.8	6.9	31	52	---	79	3.6	24	16	10	8.9	52
30	8.8	11	38	51	---	92	3.6	44	16	10	8.7	61
31	8.8	---	23	50	---	111	---	102	---	10	8.3	---
TOTAL	282.7	255.9	138.72	1964	814	1248	1613.1	4567.6	2769	380	297.0	623.8
MEAN	9.12	8.53	4.47	63.4	29.1	40.3	53.8	147	92.3	12.3	9.58	20.8
MAX	12	14	38	130	49	111	158	367	178	15	10	61
MIN	7.1	2.2	.66	23	24	25	3.6	3.6	16	10	8.3	7.5
AC-FT	561	508	275	3900	1610	2480	3200	9060	5490	754	589	1240
CAL YR 1977	TOTAL	1323.76	MEAN	3.63	MAX	40	MIN	0	AC-FT	2630		
WTR YR 1978	TOTAL	14953.82	MEAN	41.0	MAX	367	MIN	.66	AC-FT	29660		

10339250 MARTIS CREEK AT STATE HIGHWAY 267, NEAR TRUCKEE, CA

LOCATION.--Lat 39°18'08", long 120°07'13", in SW¼SW¼ sec.20, T.17 N., R.17 E., Placer County, 4.0 mi (6.4 km) southwest of Truckee. Water-quality samples are collected 150 ft (50 m) downstream from State Highway 267. Thermograph records are obtained about 300 ft (90 m) upstream from highway, off north bank immediately downstream from confluence of main stem and Middle Martis Creek.

DRAINAGE AREA.--25.9 mi<sup>2</sup> (67.1 km<sup>2</sup>).

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

CHEMICAL ANALYSES: Water years 1975 to current year.

WATER TEMPERATURES: Water years 1975 to current year.

SEDIMENT RECORDS: Water years 1975, 1977 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October to November 1974, August 1975 to current year.

INSTRUMENTATION.--Temperature recorder October to November 1974, and since August 1975.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURES: Maximum recorded, 27.5°C July 30, Aug. 3, 1977; minimum recorded, 0.0°C for many days each year.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 26.0°C July 21, 24, 30; minimum recorded, 0.0°C on many days during January to April.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)
MAY 26...	0800	23	79	--	4.5	1.6	10.3	1.2	.02
SEP 07...	0930	4.1	130	8.0	8.5	1.1	8.3	.21	.00

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)
MAY 26...	1.2	.00	1.0	1.0	2.2	.01	.02	8	5
SEP 07...	.21	.00	.82	.82	1.0	.03	.01	3	5

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
MAY 26...	210	80	6	3	30	20	180	--
SEP 07...	200	170	10	10	10	10	60	70

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)
MAY 26...	0800	23	4.5	10	.62
SEP 07...	0930	4.1	8.5	68	.76

10339250 MARTIS CREEK AT STATE HIGHWAY 267, NEAR TRUCKEE, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	15.5	2.0	12.0	1.5	5.5	0.5	1.5	0.5	3.0	0.5	4.5	1.0
2	16.5	2.0	12.0	1.0	7.0	1.0	4.0	1.0	5.5	0.5	3.5	1.0
3	16.0	2.0	11.5	1.5	7.0	0.5	5.0	1.0	5.5	0.5	5.0	0.5
4	16.0	1.5	9.0	3.5	7.5	1.0	3.0	0.5	5.0	0.5	1.5	0.0
5	15.5	3.5	7.0	3.5	7.5	0.5	0.5	0.5	3.5	0.0	3.0	0.0
6	14.5	4.5	9.0	1.5	6.5	0.5	0.5	0.5	1.5	0.0	6.0	0.0
7	14.5	1.0	7.5	0.5	6.5	0.5	0.5	0.5	1.0	0.5	7.0	0.5
8	15.5	1.5	7.0	0.5	1.5	0.5	2.0	0.5	1.5	0.0	5.0	0.5
9	15.5	2.0	7.0	0.5	2.5	0.5	1.5	0.5	1.5	0.0	4.0	1.0
10	15.0	2.0	6.5	0.5	6.0	0.5	2.0	0.5	1.5	0.0	7.5	1.0
11	15.5	2.0	8.0	1.5	5.0	0.5	4.5	0.5	3.0	0.0	6.5	1.0
12	14.5	2.5	8.5	0.5	4.5	0.5	3.0	0.5	0.5	0.0	7.0	0.0
13	14.5	2.0	9.0	1.0	7.0	2.0	4.0	1.5	3.5	0.0	7.0	0.0
14	15.5	2.0	7.0	0.5	7.5	2.5	2.0	0.0	2.5	0.0	9.5	0.0
15	14.0	4.5	8.5	0.5	4.0	0.5	1.0	0.5	3.5	0.0	9.5	0.0
16	15.5	4.5	8.0	0.5	2.0	0.5	0.5	0.5	1.5	0.0	11.0	0.0
17	14.5	2.5	7.5	0.5	2.0	0.5	2.0	0.5	2.0	0.0	11.0	0.5
18	12.0	2.0	6.0	0.5	3.0	0.5	2.5	0.5	5.0	0.0	8.0	0.5
19	13.0	4.5	1.0	0.5	1.0	0.5	3.0	1.0	4.5	0.0	9.0	1.0
20	13.0	2.0	1.0	0.5	1.0	0.5	3.5	0.5	5.0	0.0	11.0	0.5
21	12.5	1.5	2.5	0.5	1.0	0.5	3.0	0.5	5.0	0.0	6.0	2.0
22	12.5	1.0	3.5	0.5	3.0	0.5	3.5	0.0	5.5	0.0	10.5	1.5
23	12.0	4.0	5.5	0.5	1.5	0.5	0.5	0.0	5.5	0.0	9.5	1.5
24	15.5	5.5	8.0	1.5	3.5	0.5	0.5	0.0	5.5	0.0	12.0	0.5
25	14.5	2.5	7.5	1.0	3.5	0.5	0.5	0.5	6.0	0.5	13.0	0.5
26	14.0	4.5	8.5	1.5	2.5	0.5	3.0	0.5	5.5	0.0	11.5	1.0
27	11.5	4.0	7.0	1.0	3.0	0.5	3.0	0.5	5.5	0.5	13.5	2.0
28	9.0	3.0	6.5	0.5	3.5	1.0	4.0	0.0	5.0	0.0	13.0	1.0
29	10.0	3.0	6.0	0.5	3.5	1.0	3.5	0.5	---	---	11.5	1.5
30	10.5	2.5	7.0	1.0	3.5	1.0	3.0	0.5	---	---	8.5	3.5
31	10.5	2.0	---	---	3.0	0.5	3.5	0.0	---	---	6.0	2.5
MONTH	16.5	1.0	12.0	0.5	7.5	0.5	5.0	0.0	6.0	0.0	13.5	0.0

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.0	2.0	13.0	3.5	16.5	6.0	23.0	8.5	25.5	9.5	21.0	7.0
2	10.5	1.0	14.5	2.5	16.5	5.5	20.5	8.0	25.5	9.0	21.0	7.0
3	10.0	1.0	13.5	2.5	16.0	6.5	19.0	7.0	25.5	10.5	21.5	8.5
4	9.0	1.0	13.0	3.0	18.5	6.5	23.0	7.0	25.0	13.5	17.5	10.5
5	8.5	0.0	11.0	2.0	20.0	7.0	24.5	8.5	25.5	11.0	13.5	11.0
6	6.0	0.5	12.5	1.5	21.0	8.0	23.5	9.0	25.5	11.0	16.0	9.5
7	8.0	0.0	14.5	2.5	21.0	8.5	23.5	11.0	25.5	11.5	15.5	8.0
8	7.0	1.0	15.0	2.5	22.0	7.0	24.0	9.5	25.0	11.5	16.5	3.5
9	13.0	0.5	13.5	3.5	21.0	8.0	25.5	10.5	25.5	11.5	13.5	8.0
10	15.0	1.0	15.0	4.5	20.5	7.5	24.5	10.0	24.0	10.0	15.0	7.5
11	13.5	1.5	14.5	4.0	21.5	6.5	24.0	10.0	23.5	9.5	16.5	5.0
12	12.0	1.5	15.0	3.0	21.0	9.5	23.0	8.0	22.5	10.0	16.0	4.0
13	11.5	2.0	16.0	3.5	21.5	9.5	25.0	11.0	22.0	9.0	13.0	3.5
14	11.0	2.5	15.0	5.0	20.5	9.0	25.5	10.5	22.5	6.5	12.0	7.5
15	5.5	2.0	8.5	4.0	19.5	5.5	25.0	10.0	22.0	7.0	17.0	5.0
16	6.5	0.0	13.5	2.5	21.0	5.5	24.5	7.5	21.0	9.0	18.5	6.0
17	11.5	0.5	15.0	3.0	21.5	6.5	25.5	9.0	21.0	5.5	13.5	5.0
18	13.0	0.5	15.5	3.0	21.5	9.5	25.0	9.0	21.5	5.0	12.5	1.0
19	12.5	1.5	15.5	4.0	22.0	5.5	24.5	9.0	20.5	6.0	13.0	0.5
20	5.5	0.0	16.5	4.0	22.0	7.5	24.5	8.5	21.0	6.0	13.5	1.0
21	11.5	0.0	16.0	5.0	22.5	6.5	26.0	9.5	20.0	6.5	15.0	2.0
22	12.5	0.0	16.0	4.5	21.5	6.5	25.5	10.5	20.0	6.5	16.0	2.5
23	11.5	1.5	10.0	4.0	22.0	8.5	24.0	10.5	19.5	5.5	16.5	4.0
24	10.5	3.0	10.5	3.0	21.5	8.0	26.0	10.0	20.0	7.0	17.5	4.5
25	9.5	4.0	15.0	2.5	22.0	5.5	22.5	11.5	19.5	5.0	17.0	5.0
26	12.0	3.0	14.0	4.0	17.0	10.0	24.5	13.5	18.5	5.5	16.5	5.5
27	13.5	4.0	17.5	4.5	18.5	9.5	25.5	11.0	21.0	5.5	17.5	6.0
28	8.0	2.5	19.0	6.0	15.0	8.0	25.5	10.5	22.5	7.0	17.0	4.0
29	11.0	2.5	19.5	6.5	21.5	7.5	25.0	9.0	21.5	7.5	17.5	4.5
30	8.5	3.0	18.0	6.0	22.5	7.5	26.0	10.0	17.5	8.0	17.0	5.0
31	---	---	17.0	5.0	---	---	25.5	10.0	20.0	6.0	---	---
MONTH	15.0	0.0	19.5	1.5	22.5	5.5	26.0	7.0	25.5	5.0	21.5	0.5

## 10339380 MARTIS CREEK LAKE NEAR TRUCKEE, CA

LOCATION.--Lat 39°19'38", long 120°06'48", in NE¼NW¼ sec.17, T.17 N., R.17 E., Nevada County, Tahoe National Forest, in control house at Martis Creek Dam, 2.0 mi (3.2 km) upstream from mouth, and 3.5 mi (5.6 km) east of Truckee.

DRAINAGE AREA.--40.0 mi<sup>2</sup> (103.6 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to May 1972 (occasional readings only), June 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Lake is formed by rolled-earthfill dam. Storage began Oct. 7, 1971. Total capacity, 20,400 acre-ft (25.2 hm<sup>3</sup>) between elevations 5,745 ft (1,751.1 m), streambed elevation at dam, and 5,838 ft (1,779.4 m), elevation of spillway crest. Figures given herein represent total contents, which include 817 acre-ft (1.01 hm<sup>3</sup>) of inactive storage below elevation, 5,780 ft (1,761.7 m), intake crest. Reservoir is used for flood control, enhancement of fishery, and recreation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,450 acre-ft (5.49 hm<sup>3</sup>) Apr. 2, 1974, elevation, 5,805.14 ft (1,769.407 m); minimum (since storage began), 808 acre-ft (996,000 m<sup>3</sup>) Aug. 24, 1977, elevation, 5,779.88 ft (1,761.707 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,050 acre-ft (4.99 hm<sup>3</sup>) June 4-6, elevation, 5,803.60 ft (1,768.937 m); minimum, 814 acre-ft (1.00 m<sup>3</sup>) Oct. 1-4, elevation, 5,779.97 ft (1,761.735 m).

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

5779	748	5790	1708
5780	817	5800	3224
5785	1211	5810	5919

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	814	819	1180	2070	3280	859	912	2160	4030	1700	1730	1820
2	814	820	1190	2100	3200	877	901	2260	4040	1710	1740	1830
3	814	819	1200	2120	3120	873	908	2370	4040	1720	1740	1830
4	814	819	1210	2150	3040	934	887	2480	4050	1730	1740	1830
5	818	822	1220	2180	3000	919	882	2580	4050	1730	1750	1840
6	823	822	1230	2190	2900	899	883	2680	4050	1740	1750	1840
7	821	822	1240	2210	2780	908	877	2760	4040	1760	1760	1850
8	819	829	1250	2230	2660	911	871	2850	4030	1770	1760	1850
9	817	840	1260	2320	2560	896	870	2940	4010	1770	1760	1860
10	817	853	1260	2380	2460	900	874	3030	3990	1780	1760	1870
11	817	865	1280	2410	2340	887	879	3110	3980	1780	1770	1880
12	817	876	1290	2440	2220	878	884	3200	3960	1790	1770	1880
13	817	887	1300	2480	2090	879	887	3280	3940	1790	1770	1890
14	817	898	1330	2660	1960	879	887	3370	3880	1790	1770	1890
15	817	909	1420	2800	1820	883	887	3480	3800	1780	1770	1900
16	817	921	1440	3010	1670	890	882	3550	3700	1770	1780	1900
17	817	930	1540	3140	1520	890	876	3600	3580	1750	1780	1910
18	817	940	1570	3220	1370	885	873	3650	3460	1740	1780	1910
19	817	948	1580	3270	1220	890	930	3700	3310	1730	1780	1910
20	817	957	1600	3300	1070	895	1040	3740	3140	1720	1790	1920
21	817	1010	1620	3310	927	911	1150	3790	2970	1710	1790	1920
22	818	1060	1640	3320	856	905	1240	3840	2810	1700	1790	1930
23	818	1080	1750	3330	852	906	1320	3880	2620	1710	1800	1930
24	818	1090	1780	3330	853	899	1410	3920	2400	1710	1800	1930
25	819	1110	1800	3330	856	899	1520	3940	2190	1720	1800	1940
26	819	1120	1820	3340	857	899	1620	3950	1990	1720	1800	1940
27	822	1130	1860	3340	856	905	1730	3960	1790	1720	1810	1940
28	821	1140	1900	3340	856	907	1840	3980	1670	1730	1810	1950
29	819	1160	1970	3340	---	909	1950	3990	1680	1730	1820	1950
30	819	1170	2020	3340	---	916	2050	4010	1690	1730	1820	1950
31	819	---	2050	3340	---	936	---	4020	---	1730	1820	---
MAX	823	1170	2050	3340	3280	936	2050	4020	4050	1790	1820	1950
MIN	814	819	1180	2070	852	859	870	2160	1670	1700	1730	1820
†	5780.04	5784.49	5792.84	5800.54	5780.54	5781.62	5792.85	5803.50	5789.86	5790.23	5790.98	5792.07
‡	+5	+351	+880	+1290	-2484	+80	+1114	+1970	-2330	+40	+90	+130
CAL YR 1977	†	+1225										
WTR YR 1978	†	+1136										

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet.

## PYRAMID AND WINNENUCCA LAKES BASIN

10339380 MARTIS CREEK LAKE NEAR TRUCKEE, CA--Continued

## WATER-QUALITY RECORDS

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

CHEMICAL ANALYSES: Water years 1975 to current year.

SEDIMENT RECORDS: Water years 1975-76, 1978.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)
MAY 26...	1110	74	7.3	14.0	--	9.5	11	.02
SEP 07...	1115	105	8.2	17.0	2.4	11.0	18	.01

DATE	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DIS-SOLVED (MG/L AS P)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)
MAY 26...	11	.00	.98	.98	12	.03	.02	13	8
SEP 07...	18	.12	2.0	2.1	20	.11	.02	8	3

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DIS-SOLVED (UG/L AS MN)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
MAY 26...	150	50	12	8	10	10	250	240
SEP 07...	710	340	38	3	110	60	130	40

DATE	TIME	TEMPERATURE (DEG C)	SEDIMENT, SUSPENDED (MG/L)
MAY 26...	1110	14.0	5
SEP 07...	1115	17.0	7



## PYRAMID AND WINNEMUCCA LAKES BASIN

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10339400 MARTIS CREEK NEAR TRUCKEE, CA

LOCATION.--Lat 39°19'44", long 120°07'00", in NE¼NW¼ sec.17, T.17 N., R.17 E., Nevada County, Tahoe National Forest, on left bank 0.2 mi (0.3 km) downstream from Martis Creek Lake Dam, 1.8 mi (2.9 km) upstream from mouth, and 3.5 mi (5.6 km) east of Truckee.

DRAINAGE AREA.--40.2 mi<sup>2</sup> (104.1 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1958 to current year.

REVISED RECORDS.--WDR CA-77-3: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,730 ft (1,747 m), from topographic map. Prior to July 10, 1972, at site 1.0 mi (1.6 km) downstream at different datum.

REMARKS.--Records excellent. Flow subject to regulation by Martis Creek Lake Dam since Oct. 7, 1971.

AVERAGE DISCHARGE (unadjusted).--20 years, 23.1 ft<sup>3</sup>/s (0.654 m<sup>3</sup>/s), 16,740 acre-ft/yr (20.6 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,880 ft<sup>3</sup>/s (53.2 m<sup>3</sup>/s) Feb. 1, 1963, gage height, 6.16 ft (1.878 m), site and datum then in use; minimum, 1.1 ft<sup>3</sup>/s (0.031 m<sup>3</sup>/s) July 19, 20, 1961. Maximum discharge since construction of Martis Creek Lake Dam in 1971, 648 ft<sup>3</sup>/s (18.4 m<sup>3</sup>/s) Apr. 2, 1974, gage height, 6.01 ft (1.832 m); minimum daily, 0.20 ft<sup>3</sup>/s (0.006 m<sup>3</sup>/s) Nov. 9-14, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 143 ft<sup>3</sup>/s (4.05 m<sup>3</sup>/s) Mar. 4, gage height, 3.59 ft (1.094 m); minimum daily, 0.20 ft<sup>3</sup>/s (0.006 m<sup>3</sup>/s) Nov. 9-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	4.9	.64	2.2	37	34	118	2.7	17	10	4.0	2.6
2	3.7	4.9	.64	2.3	55	43	92	2.9	17	9.8	3.9	2.5
3	3.7	5.1	.74	2.4	54	52	72	3.1	17	9.6	3.9	2.5
4	3.7	5.0	.74	2.5	54	95	76	3.3	17	9.4	3.9	2.6
5	2.1	5.4	.74	2.7	54	128	61	3.5	17	8.9	3.8	2.6
6	1.3	5.6	.74	2.7	77	95	59	3.8	17	8.3	3.8	2.6
7	4.8	5.6	.86	2.7	97	83	54	4.2	17	8.3	3.7	2.6
8	4.7	2.7	.86	2.9	96	99	48	4.8	17	8.3	3.7	2.6
9	4.4	.20	.86	3.4	95	89	43	5.5	18	8.0	3.6	2.6
10	4.2	.20	.86	3.2	94	79	44	6.3	18	7.9	3.6	2.6
11	4.2	.20	1.0	3.2	93	77	50	7.2	18	7.7	3.5	2.5
12	4.2	.20	1.0	3.3	92	63	56	8.1	18	8.1	3.4	2.5
13	4.1	.20	1.0	3.5	89	55	62	9.2	18	7.3	3.4	2.5
14	4.2	.20	1.2	4.4	88	56	64	10	37	12	3.3	2.7
15	4.2	.24	1.3	4.1	94	58	64	11	51	16	3.3	2.7
16	4.1	.27	1.2	5.0	101	63	60	12	62	15	3.3	2.7
17	4.1	.24	1.7	5.2	99	69	53	13	71	15	3.2	2.7
18	4.2	.24	1.2	6.1	97	67	47	13	70	14	3.2	2.7
19	4.3	.27	1.2	8.4	95	68	24	14	87	14	3.2	2.7
20	4.2	.32	1.2	11	91	73	.60	14	100	14	3.1	2.7
21	4.3	.94	1.3	12	88	92	.80	14	98	14	3.0	2.7
22	4.4	.62	1.4	12	56	93	1.0	15	97	9.3	3.0	2.7
23	4.4	.34	2.0	11	30	93	1.2	15	113	5.3	3.0	2.7
24	4.5	.40	1.5	9.9	30	87	1.4	15	128	4.9	2.9	2.7
25	4.5	.40	1.5	10	31	81	1.6	16	125	4.8	2.8	2.7
26	4.7	.46	1.7	10	34	83	1.8	16	123	4.7	2.8	2.9
27	5.4	.46	1.8	10	33	86	2.0	16	120	4.6	2.7	2.9
28	5.4	.46	1.9	10	31	91	2.2	16	87	4.5	2.7	3.0
29	5.0	.54	2.1	11	---	95	2.4	16	11	4.4	2.7	2.9
30	4.9	.64	2.0	11	---	100	2.5	16	10	4.3	2.6	3.0
31	4.9	---	2.0	11	---	126	---	17	---	4.3	2.6	---
TOTAL	130.6	47.24	38.88	199.1	1985	2473	1164.50	323.6	1616	276.7	101.6	80.4
MEAN	4.21	1.57	1.25	6.42	70.9	79.8	38.8	10.4	53.9	8.93	3.28	2.68
MAX	5.4	5.6	2.1	12	101	128	118	17	128	16	4.0	3.0
MIN	1.3	.20	.64	2.2	30	34	.60	2.7	10	4.3	2.6	2.5
AC-FT	259	94	77	395	3940	4910	2310	642	3210	549	202	159
CAL YR 1977 TOTAL	2116.12			5.80	23	MIN	.20	AC-FT	4200			
WTR YR 1978 TOTAL	8436.62			23.1	128	MIN	.20	AC-FT	16730			

## PYRAMID AND WINNEMUCCA LAKES BASIN

10339400 MARTIS CREEK NEAR TRUCKEE, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

CHEMICAL ANALYSES: Water years 1975 to current year.

WATER TEMPERATURES: Water years 1975 to current year.

SEDIMENT RECORDS: Water year 1975 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1974 to current year.

INSTRUMENTATION.--Temperature recorder since October 1974.

REMARKS.--Unpublished chemical-quality and sediment data prior to October 1974, and water temperatures prior to October 1974, available at district office in Carson City, NV.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURES: Maximum recorded, 24.0°C on several days in 1977; minimum recorded, 1.0°C on several days in 1975, 1976, and 1978.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 20.5°C July 22; minimum recorded, 1.0°C Nov. 19, 20.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)
MAY 26...	1315	16	92	7.9	12.0	--	8.7	.17	.01
SEP 07...	1240	2.6	121	7.5	13.5	1.6	12.0	1.1	.00

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)
MAY 26...	.18	.00	.35	.35	.53	.02	.05	10	2
SEP 07...	1.1	.01	.66	.67	1.8	.03	.02	4	2

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
MAY 26...	180	30	25	4	10	10	30	30
SEP 07...	160	50	6	2	20	10	40	10

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)
MAY 26...	1315	16	12.0	6	.26
SEP 07...	1240	2.6	13.5	7	.05

## PYRAMID AND WINNEMUCCA LAKES BASIN

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10339400 MARTIS CREEK NEAR TRUCKEE, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	15.0	10.0	11.5	7.5	7.0	3.5	8.0	5.5	6.5	4.0	3.5	2.5
2	15.0	9.5	11.0	7.0	8.0	3.5	9.0	7.0	5.0	4.0	3.5	2.5
3	15.5	9.5	10.5	7.0	8.0	3.5	9.0	6.5	5.0	4.0	3.0	2.5
4	15.0	10.0	10.0	7.5	8.5	4.5	8.0	6.0	5.0	4.0	3.0	2.0
5	15.5	10.0	8.5	7.0	8.5	5.0	6.0	4.5	4.5	3.5	2.0	1.5
6	15.0	8.5	9.0	6.5	8.0	4.0	9.0	5.5	4.0	3.5	2.5	1.5
7	14.0	9.5	8.5	6.0	8.0	4.5	8.5	5.5	4.0	3.5	3.0	1.5
8	14.0	9.5	8.5	4.0	6.5	3.0	10.0	7.0	4.0	3.5	3.5	2.0
9	14.0	9.5	9.5	2.5	7.5	3.0	8.0	7.0	4.0	3.5	3.0	2.5
10	14.0	9.0	8.5	2.5	7.5	4.5	9.0	6.5	3.5	3.5	4.0	2.5
11	14.0	9.0	9.0	4.0	7.0	5.0	9.5	7.0	4.0	3.0	4.0	3.0
12	13.5	9.0	9.0	2.5	6.5	4.0	9.0	6.5	3.5	3.0	4.0	3.0
13	13.5	8.5	8.5	3.0	8.5	6.0	10.0	7.5	3.5	3.0	4.5	3.0
14	14.5	8.5	7.5	2.5	8.5	6.5	8.5	5.5	3.5	3.0	4.5	3.5
15	13.0	9.0	9.0	2.5	6.5	4.5	8.0	5.0	3.5	3.0	5.0	3.5
16	13.5	9.5	9.0	3.0	5.5	3.5	7.0	4.5	3.0	3.0	5.0	3.5
17	14.0	9.0	8.0	3.0	5.5	4.0	9.5	6.5	3.0	2.5	5.5	4.0
18	13.5	9.0	7.5	2.0	6.5	3.5	9.0	7.5	3.0	2.5	5.5	4.5
19	13.5	9.0	4.5	1.0	5.5	2.5	10.0	7.0	3.0	2.5	5.5	4.5
20	13.0	9.0	5.5	1.0	6.5	4.0	8.5	6.5	3.0	2.0	7.0	4.5
21	13.5	9.0	3.0	1.5	7.5	4.5	8.5	6.5	3.0	2.0	6.0	5.0
22	13.0	8.5	6.0	2.5	7.5	4.5	8.0	6.5	3.0	2.0	6.0	5.0
23	12.0	8.5	6.5	2.0	7.5	4.5	8.5	6.0	4.0	2.5	6.5	5.5
24	13.5	9.0	8.5	4.5	8.0	4.5	9.0	6.5	4.0	2.5	6.5	5.5
25	13.0	8.5	9.0	4.5	8.0	5.5	8.5	6.5	4.0	2.5	7.0	6.0
26	13.0	9.0	9.0	4.5	7.0	5.5	9.0	6.5	4.0	2.5	8.5	6.5
27	12.0	9.0	8.0	4.5	9.0	6.0	9.0	6.5	4.0	2.5	8.0	6.0
28	10.5	8.5	8.0	3.0	8.0	6.5	8.0	6.5	4.0	2.5	10.0	7.0
29	11.5	8.5	7.0	3.5	9.0	7.0	8.5	6.0	---	---	10.0	8.0
30	11.5	8.5	8.0	4.5	8.0	6.0	8.0	6.0	---	---	9.0	8.0
31	11.0	8.0	---	---	8.5	5.5	8.0	5.5	---	---	8.0	7.0
MONTH	15.5	8.0	11.5	1.0	9.0	2.5	10.0	4.5	6.5	2.0	10.0	1.5

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.0	6.0	13.0	6.5	13.5	10.5	17.5	12.5	18.0	11.5	17.0	11.0
2	6.5	5.5	14.0	6.0	14.0	10.5	17.0	12.5	18.0	11.5	16.5	11.0
3	10.0	6.0	13.5	6.0	13.5	11.0	17.0	12.0	18.0	12.0	17.5	11.0
4	7.0	6.0	13.0	6.5	14.5	11.0	17.0	12.0	17.5	12.5	15.0	11.5
5	7.0	6.0	12.5	6.0	14.5	11.5	17.5	12.0	17.5	12.0	13.0	12.0
6	6.0	5.5	13.5	5.5	15.0	11.5	18.0	12.0	17.5	12.0	15.0	11.5
7	5.5	5.0	13.5	6.0	15.0	11.5	17.0	12.5	17.0	12.0	14.0	11.0
8	5.5	5.0	14.0	6.0	15.5	12.0	18.0	12.0	17.5	12.0	16.0	10.0
9	6.0	4.5	12.0	6.5	15.5	12.0	18.0	12.5	18.5	12.0	13.0	10.0
10	8.5	5.0	12.5	7.0	15.5	12.0	17.5	12.0	18.0	11.5	14.5	10.5
11	8.0	7.0	12.0	6.5	16.0	12.0	17.0	12.0	18.0	11.5	15.5	10.0
12	10.0	8.0	12.0	6.5	16.0	12.5	18.0	11.5	17.0	11.0	15.5	9.5
13	10.0	8.5	12.0	6.5	16.0	13.0	17.5	12.0	17.0	11.0	14.0	9.5
14	9.0	8.0	11.5	7.0	16.5	13.0	18.0	12.0	17.0	10.5	13.5	11.0
15	8.0	7.5	10.0	7.0	16.5	14.5	19.5	15.5	17.0	10.5	16.0	10.5
16	7.5	7.0	11.0	7.0	15.5	14.5	19.0	15.5	17.0	11.0	16.5	10.5
17	8.5	6.5	11.5	7.0	16.0	14.5	19.0	15.5	16.5	10.0	14.5	10.0
18	9.5	6.5	11.5	7.5	17.0	14.5	19.0	15.5	17.0	10.0	13.0	8.5
19	12.5	7.0	11.5	8.0	16.0	14.5	19.0	15.5	17.0	10.5	14.5	8.5
20	8.0	4.5	12.0	8.0	17.5	14.5	19.0	15.5	17.0	10.5	15.0	8.5
21	13.5	4.0	12.0	8.0	17.5	15.5	19.5	15.5	16.0	10.5	15.0	9.0
22	13.5	5.0	12.0	8.0	18.0	15.5	20.5	13.5	16.5	10.5	16.0	9.5
23	12.5	5.5	10.5	8.0	17.5	16.0	18.0	12.0	16.5	10.5	16.0	10.0
24	9.5	7.0	11.0	8.0	17.0	16.0	18.0	11.5	16.5	10.5	16.0	10.0
25	10.0	7.0	12.0	9.0	16.5	15.5	16.5	12.0	16.5	10.0	16.0	10.5
26	13.0	6.0	13.0	9.5	16.0	15.5	16.5	12.5	16.5	10.0	15.5	10.5
27	14.5	7.5	13.5	9.5	16.5	15.5	18.0	12.0	17.0	10.5	16.0	10.5
28	10.0	6.5	13.5	10.0	16.0	13.5	18.0	11.5	17.5	11.0	16.0	10.0
29	12.0	6.0	14.0	10.0	17.0	13.0	18.0	11.5	17.5	11.0	16.0	10.0
30	10.0	6.5	13.5	10.0	17.5	13.0	18.0	11.5	15.5	11.0	16.0	10.5
31	---	---	13.5	10.0	---	---	18.0	11.5	17.0	10.5	---	---
MONTH	14.5	4.0	14.0	5.5	18.0	10.5	20.5	11.5	18.5	10.0	17.5	8.5

## PYRAMID AND WINNEMUCCA LAKES BASIN

## 10340300 PROSSER CREEK RESERVOIR NEAR TRUCKEE, CA

LOCATION.--Lat 39°22'45", long 120°08'25", in NW¼SW¼ sec.30, T.18 N., R.17 E., Nevada County, in control house at Prosser Creek Dam on Prosser Creek, 1.5 mi (2.4 km) upstream from mouth, and 4.2 mi (6.8 km) northeast of Truckee.

DRAINAGE AREA.--50.5 mi<sup>2</sup> (130.8 km<sup>2</sup>).

PERIOD OF RECORD.--January 1963 to current year. Prior to October 1976, published as "near Boca".

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REVISED RECORDS.--WDR CA-76-3: 1975.

REMARKS.--Reservoir is formed by rolled-earth and rockfill dam. Storage began Jan. 30, 1963. Usable capacity, 28,640 acre-ft (35.3 hm<sup>3</sup>) between elevations, 5,660.6 ft (1,725.35 m) top of inactive storage, and 5,741.2 ft (1,749.92 m) spillway crest. Inactive storage, 1,200 acre-ft (1.48 hm<sup>3</sup>), includes 83 acre-ft (102,000 m<sup>3</sup>) dead storage below elevation 5,660.6 ft (1,725.35 m). Elevation of streambed at dam axis, 5,622 ft (1,713.6 m). Figures given herein represent total contents. Reservoir is used for flood control, enhancement of fishery, and recreation.

COOPERATION.--Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 31,070 acre-ft (38.3 hm<sup>3</sup>) June 1, 1973, elevation, 5,744.33 ft (1,750.872 m); minimum observed, 83 acre-ft (0.10 hm<sup>3</sup>) Aug. 18, 1976, to Apr. 18, July 8 to Dec. 26, 1977, Feb. 19 to Mar. 21, 1978; minimum elevation observed, 5,637.01 ft (1,718.161 m) July 20 to Dec. 19, 1977, Feb. 24 to Mar. 17, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 28,673 acre-ft (35.4 hm<sup>3</sup>) July 24, elevation, 5,739.62 ft (1,749.436 m); minimum observed, 83 acre-ft (0.10 hm<sup>3</sup>) Oct. 1 to Dec. 26, Feb. 19 to Mar. 21; minimum elevation observed, 5,637.01 ft (1,718.161 m) Oct. 1 to Dec. 19, Feb. 24 to Mar. 17.

## MONTHEND ELEVATION AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Date	Elevation (feet NGVD)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	5637.01	83	--
Oct. 31.....	5637.01	83	0
Nov. 30.....	5637.01	83	0
Dec. 31.....	5669.24	2132	+2049
CAL YR 1977.....	--	--	+2049
Jan. 31.....	5682.50	4264	+2132
Feb. 28.....	5637.01	83	-4181
Mar. 31.....	5684.12	4588	+4505
Apr. 30.....	5704.40	10071	+5483
May 31.....	5715.05	14285	+4214
June 30.....	5735.75	25943	+11658
July 31.....	5739.31	28447	+2504
Aug. 31.....	5739.07	28272	-175
Sept. 30.....	5734.80	25301	-2971
WTR YR 1978.....	--	--	+25218

## 10340500 PROSSER CREEK BELOW PROSSER CREEK DAM, NEAR TRUCKEE, CA

LOCATION.--Lat 39°22'24", long 120°07'50", NW¼NE¼ sec.31, T.18 N., R.17 E., Nevada County, on left bank 1.0 mi (1.6 km) upstream from mouth, 0.2 mi (0.3 km) downstream from Prosser Creek Dam, and 4.2 mi (6.7 km) northeast of Truckee.

DRAINAGE AREA.--53.2 mi<sup>2</sup> (137.8 km<sup>2</sup>).

PERIOD OF RECORD.--October 1902 to June 1903 (gage heights only), October 1942 to December 1950, June 1951 to current year. Prior to October 1976, published as "near Boca". Monthly discharge only for October 1942 to December 1950, published in WSP 1734. 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.

REVISED RECORDS.--WSP 2127: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,602.31 ft (1,707.584 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). See WSP 2127 for history of changes prior to September 1956. October 1956 to May 1976, water-stage recorder at site 0.8 mi (1.3 km) downstream at datum 29.69 ft (9.050 m) lower.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by Prosser Creek Dam since Jan. 31, 1963.

AVERAGE DISCHARGE (adjusted for change in contents in Prosser Creek Reservoir).--35 years (water years 1943-50, 1952-78), 85.6 ft<sup>3</sup>/s (2.424 m<sup>3</sup>/s), 62,020 acre-ft/yr (76.5 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (water years 1943-78): Maximum discharge, 4,560 ft<sup>3</sup>/s (129 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 10.13 ft (3.088 m) present datum, from rating curve extended above 910 ft<sup>3</sup>/s (25.8 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; maximum gage height, 11.0 ft (3.35 m) from floodmarks, present datum, Nov. 20, 1950, discharge, 4,320 ft<sup>3</sup>/s (122 m<sup>3</sup>/s) by slope-area measurement; minimum daily discharge, 0.02 ft<sup>3</sup>/s (<0.001 m<sup>3</sup>/s) Jan. 2, 1975, result of temporary closing of Prosser Creek Dam for spillway maintenance.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,300 ft<sup>3</sup>/s (36.8 m<sup>3</sup>/s) May 21, gage height, 6.31 ft (1.923 m), from rating curve extended above 400 ft<sup>3</sup>/s (11.3 m<sup>3</sup>/s) on basis of reported release at Prosser Creek Dam; minimum daily, 0.91 ft<sup>3</sup>/s (0.026 m<sup>3</sup>/s) Dec. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	7.3	9.2	1.0	73	58	43	153	11	105	48	12
2	6.8	7.4	9.2	.97	46	71	11	146	11	116	50	12
3	6.5	7.4	9.4	.95	72	77	11	173	11	98	50	12
4	6.5	7.2	10	.94	89	91	10	190	11	86	27	12
5	6.5	9.9	12	.95	89	105	77	191	11	86	12	12
6	6.2	9.7	9.0	.95	102	108	123	192	12	86	12	7.4
7	6.2	8.9	8.0	1.0	111	108	123	193	12	41	12	12
8	6.2	9.0	7.5	1.0	109	111	123	193	12	10	12	12
9	6.5	9.7	7.0	1.8	108	112	123	193	12	10	12	12
10	6.5	9.3	6.8	1.6	107	114	69	194	12	10	12	12
11	6.5	8.5	6.7	1.2	105	116	34	195	12	10	12	12
12	6.5	9.2	6.6	1.0	104	115	34	219	105	10	12	12
13	6.5	8.2	6.6	1.2	119	111	34	235	169	10	12	12
14	6.5	8.6	31	2.6	127	108	70	235	133	10	12	13
15	6.5	8.6	72	2.9	144	107	98	104	109	10	12	12
16	6.5	8.6	74	4.7	149	108	98	12	92	10	12	12
17	6.5	8.4	51	5.5	144	78	129	11	80	10	12	12
18	6.8	8.0	1.8	2.1	138	60	150	11	80	55	12	56
19	6.8	9.5	1.3	1.7	132	63	150	262	39	86	12	78
20	6.5	12	1.1	1.5	123	68	150	915	12	60	12	90
21	6.4	36	1.0	1.4	116	72	151	1160	12	47	12	135
22	6.5	45	1.2	1.3	105	39	151	901	12	47	12	155
23	6.7	28	1.3	20	64	14	150	149	12	47	12	155
24	6.5	14	1.0	27	52	101	150	12	12	57	12	155
25	6.5	13	.95	40	51	160	150	133	12	65	12	174
26	6.6	12	.91	50	53	161	150	199	55	65	12	204
27	9.3	12	1.1	89	53	197	151	187	86	65	12	184
28	8.3	11	.92	117	54	218	159	187	103	65	12	155
29	7.4	9.5	1.4	117	---	155	165	207	151	65	12	136
30	7.7	9.2	1.5	114	---	117	164	169	113	64	12	90
31	7.7	---	1.1	114	---	98	---	62	---	51	12	---
TOTAL	210.5	365.1	352.58	726.26	2739	3221	3201	7383	1514	1557	499	1967.4
MEAN	6.79	12.2	11.4	23.4	97.8	104	107	238	50.5	50.2	16.1	65.6
MAX	9.3	45	74	117	149	218	165	1160	169	116	50	204
MIN	6.2	7.2	.91	.94	46	14	10	11	11	10	12	7.4
AC-FT	418	724	699	1440	5430	6390	6350	14640	3000	3090	990	3900

CAL YR 1977 TOTAL 8231.58 MEAN 22.6 MAX 152 MIN .30 AC-FT 16330 MEAN ‡ 25.4 AC-FT ‡ 18,380  
WTR YR 1978 TOTAL 23735.84 MEAN 65.0 MAX 1160 MIN .91 AC-FT 47080 MEAN ‡ 99.8 AC-FT ‡ 72,300

‡ Adjusted for change in contents in Prosser Creek Reservoir.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10343000 INDEPENDENCE CREEK NEAR TRUCKEE, CA

LOCATION.--Lat 39°27'20", long 120°17'13", in SW¼NW¼ sec.35, T.19 N., R.15 E., Sierra County, Tahoe National Forest, on left bank 0.3 mi (0.5 km) downstream from Independence Lake outlet, and 10.5 mi (16.9 km) northwest of Truckee.

DRAINAGE AREA.--8.20 mi<sup>2</sup> (21.24 km<sup>2</sup>).

PERIOD OF RECORD.--November 1902 to September 1907, November 1909 to June 1910, August 1968 to current year.

REVISED RECORDS.--WDR CA-77-3: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 6,940 ft (2,115 m), from topographic map. July 1, 1904, to June 30, 1910, water-stage recorder 75 ft (25 m) downstream from Independence Lake outlet; prior to July 1, 1904, water-stage recorder 600 ft (180 m) downstream at approximately same datum.

REMARKS.--Records excellent. Flow regulated by Independence Lake, usable capacity, 17,500 acre-ft (21.6 hm<sup>3</sup>).

AVERAGE DISCHARGE (unadjusted).--15 years (water years 1903-7, 1969-78), 28.1 ft<sup>3</sup>/s (0.796 m<sup>3</sup>/s), 20,360 acre-ft/yr (25.1 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 286 ft<sup>3</sup>/s (8.10 m<sup>3</sup>/s) June 23, 1907, gage height, 3.9 ft (1.19 m) site and datum then in use; no flow Sept. 28 to Nov. 10, 1905, June 1, 1906.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 132 ft<sup>3</sup>/s (3.74 m<sup>3</sup>/s) June 14, 16, gage height, 4.48 ft (1.366 m); minimum daily, 6.9 ft<sup>3</sup>/s (0.20 m<sup>3</sup>/s) Dec. 16, 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	8.0	7.6	7.4	8.6	7.7	8.6	11	36	57	21	18
2	8.2	8.0	7.4	7.4	8.6	7.7	8.7	12	56	34	21	19
3	8.1	7.9	7.4	7.7	8.6	7.7	8.8	13	56	32	21	18
4	8.1	7.7	7.4	7.8	8.6	7.4	8.6	13	55	34	21	18
5	8.1	7.6	7.4	8.0	8.2	7.5	8.5	12	56	37	21	19
6	8.0	7.7	7.4	8.0	7.7	7.4	8.3	12	56	41	21	18
7	8.0	7.7	7.2	8.0	7.7	7.4	8.3	12	56	62	21	18
8	8.0	7.7	7.2	8.0	7.7	7.4	8.3	13	70	74	21	18
9	8.0	7.7	7.2	8.2	7.7	7.4	8.3	13	86	64	21	18
10	8.1	7.9	7.2	8.1	7.7	7.4	8.5	14	92	54	21	18
11	8.1	8.0	7.2	8.0	7.7	7.2	9.1	13	93	67	21	18
12	8.1	7.7	7.2	8.0	7.7	7.2	9.5	14	100	43	21	18
13	8.1	7.7	7.1	8.1	7.7	7.2	10	13	105	33	21	18
14	8.1	7.7	7.2	8.3	7.7	7.2	10	14	121	33	21	18
15	8.2	7.8	7.1	8.8	7.7	7.2	10	12	122	34	20	18
16	8.2	7.8	6.9	8.5	7.7	7.3	9.8	11	122	33	20	18
17	8.2	7.7	7.0	8.6	7.7	7.4	9.7	12	114	32	20	18
18	7.9	7.8	6.9	8.6	7.7	7.2	9.6	12	99	30	20	18
19	8.0	7.7	6.9	8.8	7.7	7.2	9.7	12	89	29	20	18
20	8.1	7.7	7.2	8.8	7.7	7.2	9.7	13	86	25	20	18
21	8.3	7.7	7.1	8.8	7.7	7.4	9.5	13	85	22	20	18
22	8.3	7.7	7.2	8.8	7.7	7.4	9.4	12	70	22	20	18
23	8.3	7.7	7.2	8.8	7.7	7.5	9.5	12	37	22	20	18
24	8.3	7.8	7.2	8.8	7.7	7.7	10	11	28	22	20	18
25	8.3	7.7	7.2	8.8	7.7	7.7	11	11	27	22	20	18
26	8.4	7.7	7.2	8.8	7.7	7.9	11	11	30	22	20	18
27	8.3	7.7	7.2	8.8	7.7	8.1	11	11	35	22	20	17
28	8.1	7.4	7.2	8.8	7.7	8.2	11	11	41	22	20	17
29	8.0	7.4	7.3	8.8	---	8.4	11	11	35	22	20	17
30	8.0	7.5	7.2	8.6	---	8.4	11	11	32	22	20	17
31	8.0	---	7.3	8.6	---	8.6	---	10	---	21	20	---
TOTAL	252.1	231.8	223.4	259.5	219.7	234.6	286.4	375	2090	1089	634	538
MEAN	8.13	7.73	7.21	8.37	7.85	7.57	9.55	12.1	69.7	35.1	20.5	17.9
MAX	8.4	8.0	7.6	8.8	8.6	8.6	11	14	122	74	21	19
MIN	7.9	7.4	6.9	7.4	7.7	7.2	8.3	10	27	21	20	17
AC-FT	500	460	443	515	436	465	568	744	4150	2160	1260	1070

CAL YR 1977 TOTAL 3714.4 MEAN 10.2 MAX 137 MIN 1.1 AC-FT 7370  
WTR YR 1978 TOTAL 6433.5 MEAN 17.6 MAX 122 MIN 6.9 AC-FT 12760

## 103

LOCATION. --Lat 39°25'54", long 120°14'07", in NE¼NE¼ sec.7, T.18 N., R.16 E., Nevada County, on left bank 2.2 mi (3.5 km) upstream from bridge on State Highway 89, and 7.5 mi (12.1 km) north of Truckee.

PERIOD OF RECORD.--October 1953 to current year.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 765 ft<sup>3</sup>/s (21.7 m<sup>3</sup>/s) Feb. 1, 1963, gage height, 4.64 ft (1.414 m) from floodmarks, from rating curve extended above 130 ft<sup>3</sup>/s (3.68 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 4.28 ft (1.305 m); minimum, 0.6 ft<sup>3</sup>/s (0.017 m<sup>3</sup>/s) Aug. 8, 1960, Aug. 7, 1961, result of temporary regulation.

Date	Time	Discharge (ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	Gage height (ft)	(m)
Apr. 27	1800	55	1.56	2.65	0.808
May 3	1730	72	2.04	2.81	0.856
May 14	1630	*114	3.23	3.11	0.948

Minimum daily, 1.7 ft<sup>3</sup>/s (0.048 m<sup>3</sup>/s) on many days during October and November.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	1.8	2.1	3.8	3.1	3.8	23	40	50	15	3.4	2.1
2	1.7	1.8	2.2	3.6	3.1	4.4	19	48	48	14	3.3	2.0
3	1.7	1.8	2.2	3.5	3.1	4.6	18	55	45	13	3.2	2.0
4	1.7	1.8	2.4	3.4	3.1	5.8	17	57	47	13	3.1	2.0
5	1.7	2.0	2.4	2.8	3.9	5.9	14	49	49	12	3.1	3.4
6	1.7	1.9	2.3	3.6	4.1	5.2	13	46	50	12	2.9	3.6
7	1.7	1.9	2.3	3.2	3.7	5.4	12	51	51	15	2.8	3.0
8	1.7	1.9	2.1	3.6	3.7	5.7	10	58	49	12	2.8	2.6
9	1.8	1.9	2.0	6.6	3.6	5.7	11	66	49	11	2.8	2.9
10	1.8	1.9	2.0	5.3	3.5	5.8	15	72	45	10	2.5	4.1
11	1.8	1.9	2.1	4.3	3.3	5.9	20	72	41	9.5	2.5	2.9
12	1.8	1.8	2.1	3.9	3.3	5.3	25	72	41	8.9	2.4	2.6
13	1.8	1.8	2.6	3.9	3.3	5.0	29	79	41	8.3	2.5	2.5
14	1.8	1.8	7.1	7.1	3.1	4.9	27	88	39	7.9	2.5	2.8
15	1.8	1.8	18	7.0	3.1	5.0	22	86	35	7.6	2.5	2.5
16	1.8	1.8	5.0	6.1	3.1	5.6	19	64	32	7.2	2.4	2.4
17	1.7	1.8	8.5	5.5	3.0	6.5	17	61	29	6.9	2.4	2.3
18	1.7	1.8	4.9	4.7	3.0	7.0	17	62	28	6.5	2.4	2.4
19	1.7	1.7	3.6	4.4	3.0	7.6	19	63	26	6.1	2.4	2.4
20	1.7	1.8	3.3	4.1	3.2	8.4	18	64	25	5.8	2.3	2.4
21	1.7	2.7	3.0	3.9	3.2	11	16	67	23	5.6	2.3	2.4
22	1.7	4.6	3.0	3.7	3.3	12	16	67	22	5.3	2.3	2.3
23	1.7	2.8	3.7	3.6	3.5	13	19	57	21	5.0	2.3	2.2
24	1.7	2.8	3.0	3.7	3.6	12	24	52	19	4.8	2.3	2.1
25	1.7	2.6	2.7	3.4	3.7	13	30	44	18	4.6	2.2	2.1
26	1.7	2.7	2.7	3.4	3.7	15	31	43	18	4.4	2.2	2.1
27	2.4	2.7	4.9	3.3	3.7	17	39	46	20	4.3	2.2	2.1
28	1.9	2.4	4.2	3.3	3.7	20	37	50	19	4.1	2.2	2.1
29	1.9	2.3	6.8	3.3	---	22	38	54	17	3.9	2.2	2.1
30	1.9	2.2	6.4	3.2	---	25	35	53	16	3.7	2.1	2.1
31	1.9	---	4.4	3.1	---	29	---	51	---	3.6	2.1	---
TOTAL	55.0	64.5	124.0	128.3	94.7	302.5	650	1837	1013	251.0	78.6	74.5
MEAN	1.77	2.15	4.00	4.14	3.38	9.76	21.7	59.3	33.8	8.10	2.54	2.48
MAX	2.4	4.6	18	7.1	4.1	29	39	88	51	15	3.4	4.1
MIN	1.7	1.7	2.0	2.8	3.0	3.8	10	40	16	3.6	2.1	2.0
AC-FT	109	128	246	254	188	600	1290	3640	2010	498	156	148
CAL YR 1977	TOTAL	1005.9	MEAN	2.76	MAX	18	MIN	1.3	AC-FT	2000		
WTR YR 1978	TOTAL	4673.1	MEAN	12.8	MAX	88	MIN	1.7	AC-FT	9270		

## 10344300 STAMPEDE RESERVOIR NEAR TRUCKEE, CA

LOCATION.--Lat 39°28'24", long 120°06'06", in NW¼NW¼ sec.28, T.19 N., R.17 E., Sierra County, Tahoe National Forest, in control house on Stampede Dam on Little Truckee River, just downstream from mouth of Davies Creek, and 11.0 mi (17.7 km) northeast of Truckee.

DRAINAGE AREA.--136 mi<sup>2</sup> (352 km<sup>2</sup>).

PERIOD OF RECORD.--August 1969 to current year. August 1969 to September 1977 (monthend elevations and contents only). Prior to October 1976, published as "near Boca".

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by rolled-earth and rockfill dam. Storage began Aug. 1, 1969. Total capacity, 226,500 acre-ft (279 hm<sup>3</sup>) at elevation, 5,948.7 ft (1,813.16 m), spillway crest. Inactive storage, 5,010 acre-ft (6.18 hm<sup>3</sup>), includes 660 acre-ft (814,000 m<sup>3</sup>) dead storage below elevation 5,798.3 ft (1,767.32 m). Figures given herein, including extremes, represent total contents. Reservoir is used for flood control, municipal water supply, enhancement of fishery, and recreation.

COOPERATION.--Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 226,500 acre-ft (279 hm<sup>3</sup>) June 19, 21, 1974, elevation, 5,948.7 ft (1,813.16 m); minimum since reservoir first filled, 30,772 acre-ft (37.9 hm<sup>3</sup>) Jan. 31, Feb. 1, 1978, elevation, 5,853.60 ft (1,784.177 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 65,075 acre-ft (80.2 hm<sup>3</sup>) July 10, elevation, 5,883.28 ft (1,793.224 m); minimum, 30,772 acre-ft (37.9 hm<sup>3</sup>) Jan. 31, Feb. 1, elevation, 5,853.60 ft (1,784.177 m).

Capacity table (elevation, in feet NGVD, and contents in acre-feet)

5850.00	27915	5900.00	94535
5855.00	31951	5910.00	115865
5860.00	36470	5920.00	140141
5865.00	41505	5930.00	167355
5870.00	47204	5940.00	197630
5875.00	53295	5950.00	231005
5880.00	60185	5960.00	267386
5890.00	76008		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31382	31382	31712	31866	30772	31551	42146	51361	39151	63946	63538	62014
2	31382	31382	31708	31712	30781	31602	43123	50801	40360	64311	63523	61989
3	31382	31382	31704	31619	30789	31653	44285	50243	41561	64463	63576	61964
4	31382	31382	31700	31526	30822	31758	45130	49663	42761	64570	63417	61940
5	31391	31382	31695	31462	30855	31863	45975	49085	43961	64676	63357	61903
6	31382	31382	31695	31398	30889	31968	46673	48699	45334	64791	63297	61866
7	31382	31382	31695	31334	30968	32067	47310	48314	46739	64906	63237	61815
8	31382	31381	31695	31270	31047	32166	47865	47927	48090	65013	63177	61763
9	31382	31380	31695	31206	31114	32312	48420	47310	49439	65044	63117	61763
10	31382	31379	31695	31180	31181	32355	48975	46693	50599	65075	63021	61763
11	31382	31377	31695	31156	31223	32338	49809	45793	51758	65020	62922	61763
12	31382	31376	31721	31076	31265	32162	50642	44892	52917	64967	62788	61734
13	31382	31375	31708	30997	31307	31985	51462	43619	53980	64822	62654	61704
14	31382	31374	31695	31123	31323	31781	52282	42346	55088	64676	62519	61704
15	31402	31381	31695	31249	31340	31577	52791	41071	55989	64554	62466	61704
16	31421	31388	31695	31374	31340	31425	53300	39326	56890	64440	62424	61684
17	31441	31395	31695	31543	31340	31273	53808	37579	57544	64326	62340	61665
18	31451	31403	31695	31712	31346	31259	54086	36176	58198	64196	62266	61645
19	31460	31410	31695	31703	31351	31245	54365	35008	58852	64067	62246	61616
20	31470	31417	31943	31695	31357	31231	54199	34150	59396	63931	62226	61586
21	31480	31424	32192	31622	31366	31527	54033	33808	59940	63855	62207	61564
22	31490	31556	32261	31549	31374	31823	53295	33979	60426	63825	62155	61542
23	31499	31687	32330	31475	31395	32504	52346	34568	60911	63840	62103	61552
24	31509	31661	32269	31374	31416	33186	51298	34962	61308	63885	62066	61562
25	31492	31636	32209	31273	31450	33998	50720	34898	61709	63916	62029	61571
26	31475	31661	32149	31180	31484	34810	50143	34972	62103	63931	62029	61571
27	31458	31686	32110	31089	31517	35621	50412	35101	62453	63878	62029	61571
28	31509	31712	32071	30988	31526	36673	50680	35556	62802	63825	62029	61534
29	31424	31712	32089	30888	---	37726	51020	36015	63163	63755	62044	61497
30	31408	31712	32106	30789	---	39127	51184	36901	63522	63685	62058	61483
31	31391	---	32045	30772	---	40527	---	38021	---	63613	62029	---
MAX	31509	31712	32330	31866	31526	40527	54365	51361	63522	65075	63576	62014
MIN	31382	31374	31695	30772	30772	31231	42146	33808	39151	63613	62029	61483
†	5854.34	5854.72	5855.11	5853.60	5854.50	5864.07	5873.36	5861.60	5882.26	5882.32	5881.26	5880.89
‡	0	+320	+333	-1273	+754	+9001	+10657	-13163	+25501	+91	-1584	-546
CAL YR 1977	† -13245											
WTR YR 1978	‡ +30093											

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet.



## 10344400 LITTLE TRUCKEE RIVER ABOVE BOCA RESERVOIR, NEAR TRUCKEE, CA

LOCATION.--Lat 39°26'09", long 120°05'00", in SW¼SW¼ sec.3, T.18 N., R.17 E., Nevada County, on left bank 1 mi (2 km) upstream from Boca Reservoir, 1.5 mi (2.4 km) upstream from Dry Creek, 3.0 mi (4.8 km) downstream from Stampede Dam, and 5.5 mi (8.8 km) east of Truckee.

DRAINAGE AREA.--146 mi<sup>2</sup> (378 km<sup>2</sup>).

PERIOD OF RECORD.--June 1903 to October 1910, September 1939 to current year. Monthly discharge only for some periods, published in WSP 1314 and 1734. Published as "at Pine Station" June 1903 to December 1907, as "at Starr" January 1908 to October 1910, and as "near Boca" September 1939 to September 1976.

REVISED RECORDS.--WSP 1564: 1903-4, 1906-7, 1910, drainage area at site used in 1903-7.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 5,618.67 ft (1,712.571 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). June 1903 to October 1910, nonrecording gages at different sites and datums.

REMARKS.--Records good. Flow regulated by Independence Lake, capacity, 17,500 acre-ft (21.6 hm<sup>3</sup>), one transbasin diversion to Sierra Valley, and Stampede Reservoir (station 11344300), capacity, 226,500 acre-ft (279 hm<sup>3</sup>).

AVERAGE DISCHARGE (adjusted for change in contents in Stampede Reservoir).--46 years (water years 1904-10, 1940-78), 189 ft<sup>3</sup>/s (5.352 m<sup>3</sup>/s), 136,900 acre-ft/yr (169 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,300 ft<sup>3</sup>/s (377 m<sup>3</sup>/s) Feb. 1, 1963, gage height, 9.00 ft (2.743 m), from rating curve extended above 1,600 ft<sup>3</sup>/s (45.3 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; minimum daily, 0.30 ft<sup>3</sup>/s (0.008 m<sup>3</sup>/s) Sept. 16-21, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,740 ft<sup>3</sup>/s (49.3 m<sup>3</sup>/s) May 16, gage height, 3.21 ft (0.978 m); minimum, 12 ft<sup>3</sup>/s (0.34 m<sup>3</sup>/s) Oct. 1-7, 14-23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	20	30	148	64	81	79	497	48	48	32	30
2	12	18	30	129	64	84	57	912	36	91	52	30
3	12	18	30	114	64	105	52	902	36	118	54	30
4	12	18	31	114	64	128	49	912	35	128	56	30
5	12	18	36	116	66	130	47	781	35	138	54	31
6	12	18	42	114	68	126	46	717	35	158	54	31
7	12	18	42	113	68	127	43	720	44	164	54	31
8	13	18	41	113	65	131	42	720	52	183	54	30
9	13	18	41	117	66	154	41	1050	52	196	54	30
10	13	18	41	116	66	205	42	1230	52	196	54	31
11	13	18	42	115	64	249	44	1230	52	196	54	30
12	13	18	42	115	64	267	92	1270	52	212	54	30
13	13	18	42	86	64	264	157	1520	62	207	54	31
14	12	18	43	67	64	264	184	1620	93	183	49	31
15	12	18	49	69	64	265	222	1660	109	163	35	31
16	12	18	44	72	64	269	221	1680	109	154	33	31
17	12	18	49	69	62	273	218	1460	109	154	30	30
18	12	18	46	96	62	273	218	1160	109	154	30	31
19	12	18	44	118	62	279	350	1090	110	135	30	31
20	12	18	44	118	62	254	428	874	110	110	30	31
21	12	21	44	118	63	237	545	679	110	82	30	31
22	12	19	45	117	64	181	784	481	110	62	30	31
23	12	35	67	115	65	145	814	409	87	39	30	31
24	19	50	81	115	66	110	834	465	71	32	28	31
25	27	37	80	115	64	89	722	397	71	44	22	31
26	27	22	80	115	65	89	327	306	72	54	22	31
27	28	21	81	115	74	91	326	247	72	54	22	31
28	27	26	81	115	81	93	328	265	71	54	26	31
29	27	30	84	115	---	94	356	243	71	54	30	31
30	27	30	101	93	---	97	381	149	51	54	30	31
31	24	---	133	65	---	103	---	82	---	54	30	---
TOTAL	488	653	1686	3317	1829	5257	8049	25728	2126	3671	1217	921
MEAN	15.7	21.8	54.4	107	65.3	170	268	830	70.9	118	39.3	30.7
MAX	28	50	133	148	81	279	834	1680	110	212	56	31
MIN	12	18	30	65	62	81	41	82	35	32	22	30
AC-FT	968	1300	3340	6580	3630	10430	15970	51030	4220	7280	2410	1830

CAL YR 1977 TOTAL 19213.1 MEAN 52.6 MAX 162 MIN 5.9 AC-FT 38110 MEAN ‡ 34.3 AC-FT ‡ 24860  
WTR YR 1978 TOTAL 54942.0 MEAN 151 MAX 1680 MIN 12 AC-FT 109000 MEAN ‡ 192 AC-FT ‡ 139090

‡ Adjusted for change in contents in Stampede Reservoir.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10344490 BOCA RESERVOIR NEAR TRUCKEE, CA

LOCATION.--Lat 39°23'20", long 120°05'45", in NE¼NW¼ sec.28, T.18 N., R.17 E., Nevada County, in control house at Boca Dam on Little Truckee River 1,800 ft (550 m) upstream from mouth, and 6.5 mi (10.5 km) northeast of Truckee.

DRAINAGE AREA.--172 mi<sup>2</sup> (445 km<sup>2</sup>).

PERIOD OF RECORD.--December 1938 to current year. Prior to October 1976 published as "at Boca". Monthend contents only for December 1938 to September 1957, published in WSP 1734.

REVISED RECORDS.--WSP 1634: Drainage area.

GAGE.--Pressure gage with mercury column read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by earthfill, rock-faced dam. Storage began Dec. 8, 1938. Usable capacity, 40,870 acre-ft (50.4 hm<sup>3</sup>) between elevations 5,521 ft (1,682.8 m) outlet sill, and 5,605 ft (1,708.4 m) top of spillway gates. Elevation of spillway (gate open) is 5,589.01 ft (1,703.530 m). Dead storage, 241 acre-ft (297,000 m<sup>3</sup>). Figures given herein represent usable contents at 0800 hours. Water is used for irrigation in the State of Nevada and for power development.

COOPERATION.--Daily elevations furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 41,440 acre-ft (51.1 hm<sup>3</sup>) Dec. 23, 1955, elevation, 5,605.55 ft (1,708.572 m); minimum, 37 acre-ft (45,600 m<sup>3</sup>) Mar. 4-9, 1955, elevation, 5,521.65 ft (1,682.999 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 40,870 acre-ft (50.4 hm<sup>3</sup>) June 30 to July 16, elevation, 5,605.0 ft (1,708.40 m); minimum, 4,720 acre-ft (5.82 hm<sup>3</sup>) Oct. 1, elevation, 5,549.2 ft (1,691.40 m).

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

5548	4350	5576	17360
5552	5640	5580	20000
5556	7110	5585	23590
5560	8780	5590	27490
5564	10630	5600	36130
5568	12670	5605	40870
5572	14920		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4720	5740	7270	11220	18790	23070	31440	34310	38370	40870	39940	40380
2	4750	5780	7310	11520	18920	23220	31520	34310	38130	40870	39900	40380
3	4780	5830	7410	11800	19050	23440	31720	34310	37900	40870	39990	40332
4	4800	5860	7470	12010	19260	23810	31940	34220	37750	40870	39990	40332
5	4810	5920	7530	12300	19390	24190	32110	34630	37610	40870	40090	40240
6	4840	5970	7610	12590	19520	24570	32240	35080	37610	40870	40040	40140
7	4860	5980	7670	12830	19730	24920	32240	35440	37660	40870	39990	40090
8	4890	6020	7740	13080	19930	25420	32200	35850	37710	40870	39990	39990
9	4920	6060	7840	13320	20280	25730	32200	35490	37800	40870	39990	39940
10	4940	6100	7920	13600	20280	25890	32200	35620	37900	40870	40040	39900
11	4970	6130	8050	13820	20420	26210	32070	35850	37940	40870	40090	39800
12	4990	6170	8090	14110	20560	26400	31890	35940	37990	40870	40140	39700
13	5020	6200	8190	14340	20760	26560	31940	35940	38080	40870	40190	39560
14	5040	6240	8300	14510	20900	26680	32020	36220	38220	40870	40140	39420
15	5070	6280	8450	14770	21050	26840	32200	36450	38370	40870	40140	39220
16	5100	6310	8560	15030	21150	26960	32370	37190	38560	40870	40140	39080
17	5120	6350	8690	15330	21260	27080	32590	38410	38750	40770	40140	38940
18	5150	6420	8890	15540	21470	27160	32720	38650	39030	40720	40140	38650
19	5160	6420	8960	15900	21610	27240	32760	38560	39180	40770	40140	38560
20	5200	6480	9040	16110	21760	27280	33160	38270	39420	40770	40190	38410
21	5210	6560	9160	16360	21860	27410	33160	37800	39560	40770	40190	38370
22	5230	6710	9320	16670	21970	27650	33340	37620	39800	40670	40190	38220
23	5260	6720	9450	16850	22120	28100	33600	37570	39990	40530	40240	38130
24	5300	6820	9630	17140	22330	28470	33780	37660	40140	40280	40280	38080
25	5330	6920	9820	17330	22480	28880	33960	37940	40190	40140	40280	37850
26	5400	7000	9960	17650	22630	29300	34090	38080	40380	40040	40280	37660
27	5500	7050	10170	17810	22740	29640	34180	38040	40530	39990	40330	37430
28	5530	7090	10390	18070	22850	30060	34310	37940	40670	39990	40330	37290
29	5600	7150	10550	18260	---	30490	34310	38180	40770	39990	40330	36960
30	5640	7190	10720	18520	---	30920	34310	38370	40870	40040	40380	36680
31	5710	---	10950	18660	---	31310	---	38460	---	40040	40330	---
MAX	5710	7190	10950	18660	22850	31310	34310	38650	40870	40870	40380	40380
MIN	4720	5740	7270	11220	18790	23070	31440	34220	37610	39990	39900	36680
†	5552.20	5556.20	5564.65	5578.00	5584.00	5594.55	5598.00	5602.50	5605.00	5604.15	5604.45	5600.60
‡	+1020	+1480	+3760	+7710	+4190	+8460	+3000	+4150	+2410	-830	+290	-3650

CAL YR 1977 † -13130

WTR YR 1978 ‡ +31990

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet.

## 10344500 LITTLE TRUCKEE RIVER BELOW BOCA DAM, NEAR TRUCKEE, CA

LOCATION.--Lat 39°23'13", long 120°05'40", in NE¼NW¼ sec.28, T.18 N., R.17 E., Nevada County, on right bank 800 ft (244 m) upstream from mouth, 1,000 ft (305 m) downstream from Boca Dam, and 6.2 mi (10.0 km) northeast of Truckee.

DRAINAGE AREA.--172 mi<sup>2</sup> (445 km<sup>2</sup>).

PERIOD OF RECORD.--April to October 1890 (monthly discharge only), January 1911 to September 1915, January 1939 to current year. Prior to October 1976 published as "at Boca". Monthly discharge only for January 1939 to September 1957, published in WSP 1734.

REVISED RECORDS.--WSP 1564: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,500 ft (1,676 m), from topographic map. Jan. 1, 1911, to Sept. 30, 1915, nonrecording gage at site 650 ft (200 m) 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.

REMARKS.--Records good. Flow regulated by Boca Reservoir (station 10344490), capacity, 40,870 acre-ft (50.4 hm<sup>3</sup>), Independence Lake, capacity, 17,500 acre-ft (21.6 hm<sup>3</sup>), one transmountain diversion to Sierra Valley, and Stampede Reservoir (station 10344300), capacity, 226,500 acre-ft (279 hm<sup>3</sup>) since Aug. 1, 1969.

AVERAGE DISCHARGE (unadjusted).--43 years (water years 1912-15, 1940-78), 185 ft<sup>3</sup>/s (5.239 m<sup>3</sup>/s), 134,000 acre-ft/yr (165 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,800 ft<sup>3</sup>/s (249 m<sup>3</sup>/s) Dec. 24, 1955, from records of Washoe County Water Conservation District; no flow many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,420 ft<sup>3</sup>/s (40.2 m<sup>3</sup>/s) May 15, gage height, 5.10 ft (1.554 m); minimum, 0.05 ft<sup>3</sup>/s (0.001 m<sup>3</sup>/s) Jan. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	.14	.12	.05	.09	26	149	483	153	72	60	31
2	.14	.16	.11	.06	.09	26	49	932	207	98	15	43
3	.14	.16	.11	.06	.08	26	.64	946	147	122	22	43
4	.14	.16	.11	.07	.08	26	.69	754	103	126	54	45
5	.19	.17	.11	.10	.11	27	26	573	79	138	69	72
6	.23	.16	.12	.07	.12	27	86	504	24	150	69	60
7	.20	.18	.14	.07	.14	27	101	509	2.1	164	69	47
8	.23	.18	.13	.07	.12	61	101	692	2.1	190	50	53
9	.26	.18	.13	.11	.14	156	101	1090	2.1	200	25	70
10	.23	.18	.12	.09	.13	200	143	1090	2.1	215	.10	70
11	.23	.18	.14	.07	.12	239	160	1100	2.1	229	.10	70
12	.20	.18	.13	.06	.12	244	147	1150	2.0	239	20	69
13	.23	.18	.11	.08	.11	256	147	1380	1.9	244	43	98
14	.19	.16	.13	.14	.11	296	147	1400	1.8	244	37	121
15	.19	.16	.18	.15	.10	298	148	1180	1.8	245	23	118
16	.18	.16	.11	.20	.09	299	148	1060	1.8	232	23	118
17	.18	.17	.20	.17	.09	315	187	1170	1.9	210	23	116
18	.17	.18	.11	.16	.09	338	249	1210	1.9	164	12	109
19	.20	.18	.09	.16	.10	346	296	1210	1.9	133	.10	79
20	.18	.18	.08	.15	.10	325	352	1130	1.9	109	.10	67
21	.21	.33	.08	.13	.10	237	462	867	1.9	120	.10	81
22	.19	.21	.10	.12	.10	137	683	548	1.9	147	.10	91
23	.14	.14	.13	.11	.11	104	710	383	2.0	148	.10	91
24	.16	.13	.08	.10	12	.75	766	348	2.0	135	.10	91
25	.15	.12	.07	.11	25	.68	657	310	2.2	109	.10	112
26	.16	.12	.06	.11	26	.72	316	344	2.4	88	.10	132
27	.18	.12	.08	.09	26	.75	310	348	2.5	44	13	132
28	.16	.12	.08	.09	26	.70	331	244	2.4	32	22	149
29	.15	.12	.08	.09	---	.71	367	128	2.4	43	22	171
30	.14	.12	.08	.09	---	.70	369	106	23	43	22	206
31	.14	---	.06	.10	---	102	---	107	---	64	22	---
TOTAL	5.63	4.93	3.38	3.23	117.44	4143.01	7709.33	23296	783.1	4497	716.00	2755
MEAN	.18	.16	.11	.10	4.19	134	257	751	26.1	145	23.1	91.8
MAX	.26	.33	.20	.20	26	346	766	1400	207	245	69	206
MIN	.14	.12	.06	.05	.08	.68	.64	106	1.8	32	.10	31
AC-FT	11	9.8	6.7	6.4	233	8220	15290	46210	1550	8920	1420	5460
CAL YR 1977 TOTAL	25900.96			MEAN 71.0	MAX 337	MIN .06	AC-FT 51370					
WTR YR 1978 TOTAL	44034.05			MEAN 121	MAX 1400	MIN .05	AC-FT 87340					

## PYRAMID AND WINNEMUCCA LAKES BASIN

10346000 TRUCKEE RIVER AT FARAD, CA

LOCATION.--Lat 39°25'41", long 120°01'59", in SE¼NE¼ sec.12, T.18 N., R.17 E., Nevada County, on left bank 0.5 mi (0.8 km) upstream from Mystic Canyon, 0.7 mi (1.1 km) downstream from Farad powerplant, 2.5 mi (4.0 km) north of Floriston, 3.4 mi (5.5 km) downstream from Bronco Creek, and 3.5 mi (5.6 km) upstream from California-Nevada State line.

DRAINAGE AREA.--932 mi<sup>2</sup> (2,414 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to October 1890 (monthly discharge only), September 1899 to current year. Monthly discharge only for January 1944 to July 1957, published in WSP 1734. 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.

REVISED RECORDS.--WSP 1714: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,153.21 ft (1,570.698 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). See WSP 2127 for history of changes prior to Aug. 26, 1957.

REMARKS.--Records good. Flow regulated by Lake Tahoe (station 10337000), Martis Creek Lake (station 10339380), Stampede and Boca Reservoirs (stations 19343300 and 10344490), Donner and Independence Lakes, and by several powerplants.

AVERAGE DISCHARGE.--79 years (water years 1900-78), 791 ft<sup>3</sup>/s (22.40 m<sup>3</sup>/s), 573,100 acre-ft/yr (707 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft<sup>3</sup>/s (496 m<sup>3</sup>/s) Nov. 21, 1950, gage height, 14.5 ft (4.420 m) present datum, from floodmarks, from slope-area measurement of peak flow; minimum, 28 ft<sup>3</sup>/s (0.793 m<sup>3</sup>/s) Dec. 18, 1930.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,330 ft<sup>3</sup>/s (94.3 m<sup>3</sup>/s) May 21, gage height, 6.19 ft (1.887 m); minimum, 37 ft<sup>3</sup>/s (1.05 m<sup>3</sup>/s) Nov. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	54	71	153	281	319	1030	1060	1120	646	495	488
2	57	53	70	142	272	351	764	1650	1190	672	490	497
3	56	53	63	137	280	386	629	1830	1160	646	505	493
4	54	54	58	134	303	468	625	1830	1130	600	509	487
5	52	61	61	141	313	586	635	1650	1190	610	497	495
6	49	67	63	121	353	526	745	1470	1180	640	497	507
7	49	61	61	135	373	494	721	1480	1200	656	508	503
8	50	59	54	131	362	547	656	1650	1170	608	559	489
9	49	55	54	158	386	631	656	2100	1160	604	546	498
10	49	57	59	187	377	650	674	2200	1080	615	574	539
11	48	56	56	182	368	700	720	2250	975	625	526	510
12	49	53	60	197	358	676	768	2330	1040	615	494	500
13	50	52	60	192	365	649	790	2760	1160	590	513	491
14	49	51	75	233	364	687	797	2930	1150	595	511	529
15	49	51	326	321	375	690	740	2710	1030	601	491	514
16	47	52	216	316	388	707	698	2260	894	569	490	511
17	45	52	229	334	381	739	701	2270	851	535	531	500
18	43	50	181	302	375	791	770	2310	857	522	537	514
19	48	39	105	315	368	799	798	2520	804	523	520	521
20	50	37	101	293	364	822	865	3100	747	472	513	515
21	50	75	95	274	360	803	922	3200	758	477	509	548
22	50	130	89	260	341	709	1160	2740	725	484	497	596
23	50	109	136	247	290	671	1180	1490	731	474	511	594
24	50	84	119	249	278	623	1250	1090	742	485	506	589
25	50	78	99	260	297	675	1270	1000	709	491	488	608
26	50	70	88	263	305	708	894	1090	698	494	485	600
27	57	70	101	253	307	770	894	1140	693	485	496	531
28	58	68	162	290	304	860	984	1160	693	464	502	492
29	55	65	157	297	---	874	993	1200	615	474	497	498
30	54	68	262	298	---	863	1030	1240	615	465	497	506
31	54	---	178	297	---	1090	---	1140	---	462	488	---
TOTAL	1581	1884	3509	7112	9488	20864	25359	58850	28067	17199	15782	15663
MEAN	51.0	62.8	113	229	339	673	845	1898	936	555	509	522
MAX	60	130	326	334	388	1090	1270	3200	1200	672	574	608
MIN	43	37	54	121	272	319	625	1000	615	462	485	487
AC-FT	3140	3740	6960	14110	18820	41380	50300	116700	55670	34110	31300	31070

CAL YR 1977 TOTAL 106011 MEAN 290 MAX 463 MIN 37 AC-FT 210300  
WTR YR 1978 TOTAL 205358 MEAN 563 MAX 3200 MIN 37 AC-FT 407300

10346000 TRUCKEE RIVER AT FARAD, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-61, 1964 to current year. Published as Truckee River at Floriston (station 10345900) for period January 1964 to September 1971.

CHEMICAL ANALYSES: Water years 1951-61, 1964 to current year.

BIOLOGICAL DATA: Water years 1975-77.

SPECIFIC CONDUCTANCE: Water year 1964 to current year.

WATER TEMPERATURES: Water years 1964 to current year.

SEDIMENT RECORDS: Water years 1974 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1964 to current year.

WATER TEMPERATURES: January 1964 to current year.

REMARKS.--Water-quality at this site is considered comparable with that of Truckee River at Floriston (station 10345900), which was operated 2.5 mi (4.0 km) upstream. Daily specific conductance and temperature data are collected at Farad powerplant, 0.7 mi (1.1 km) upstream from gage. Unpublished specific conductance records are included in extremes and are available in files of district office. This station is part of a National Water Quality Surveillance System.

COOPERATION.--Biological determinations made by Nevada Bureau of Laboratories and Research. Conductivity and temperature data furnished by Sierra Pacific Power Company.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily recorded, 190 micromhos Nov. 20, 1977; minimum daily recorded, 39 micromhos Dec. 23, 1964.

WATER TEMPERATURES: Maximum recorded, 21.0°C Aug. 2, 6, 1971; minimum recorded, 0.0°C on several days during winter periods of most years.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily recorded, 190 micromhos Nov. 20; minimum daily recorded, 61 micromhos June 13-15.

WATER TEMPERATURES: Maximum recorded, 16.0°C Aug. 10, 12, 29, Sept. 1; minimum recorded, 0.0°C Dec. 20, 21.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L)	HARD- NESS (MG/L AS CACO3)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA)
OCT										
11...	1045	48	--	8.5	8.0	3.2	--	37	--	--
NOV										
07...	1100	59	163	8.6	5.5	1.9	11.8	14	61	15
22...	1120	134	145	8.5	3.0	4.0	11.8	8	--	--
DEC										
06...	1100	62	156	--	3.5	1.0	11.2	15	--	--
19...	1100	111	153	8.8	.5	4.2	12.6	28	--	--
JAN										
03...	0945	140	153	8.2	3.5	1.1	11.4	56	58	13
17...	1410	319	153	7.7	2.5	7.1	11.6	15	--	--
FEB										
08...	1030	347	132	--	1.5	4.5	11.7	15	--	--
MAR										
09...	1050	661	114	--	5.0	5.9	11.0	--	--	--
APR										
03...	1000	635	98	8.1	6.0	1.9	10.7	80	35	9.5
19...	1200	770	91	8.1	8.0	1.7	10.1	5	--	--
MAY										
02...	0900	1580	88	8.6	7.5	2.0	10.2	22	--	--
17...	1000	2340	81	8.6	8.5	1.7	9.9	50	--	--
JUN										
06...	1100	1040	56	8.3	9.0	2.6	10.0	34	36	16
20...	0915	693	70	8.6	10.0	1.2	8.4	--	--	--
JUL										
06...	1100	600	67	8.2	13.0	1.0	8.7	--	--	--
24...	1240	471	85	8.2	16.5	.90	7.4	19	--	--
AUG										
02...	1420	458	95	8.2	19.0	3.4	8.0	11	--	--
16...	1345	471	96	8.0	17.0	1.2	7.5	29	--	--
SEP										
06...	0920	529	104	7.9	13.0	.40	8.2	21	37	10
21...	0930	497	107	--	9.5	1.5	9.3	28	--	--

PYRAMID AND WINNEMUCCA LAKES BASIN  
10346000 TRUCKEE RIVER AT FARAD, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, TOTAL RECOV- ERABLE (MG/L AS NA)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, TOTAL RECOV- ERABLE (MG/L AS K)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS CO3)
OCT 11...	--	--	--	--	--	--	--	--	--	--
NOV 07...	15	5.6	5.6	11	9.8	.5	2.2	2.1	77	0
22...	--	--	--	--	--	--	--	--	--	--
DEC 06...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
JAN 03...	15	4.5	5.1	9.1	9.0	.5	1.7	1.9	55	0
17...	--	--	--	--	--	--	--	--	--	--
FEB 08...	--	--	--	--	--	--	--	--	--	--
MAR 09...	--	--	--	--	--	--	--	--	--	--
APR 03...	9.1	--	2.9	5.9	5.3	.4	1.2	1.3	42	0
19...	--	--	--	--	--	--	--	--	--	--
MAY 02...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
JUN 06...	11	2.6	2.1	3.7	3.1	.2	1.5	1.1	--	--
20...	--	--	--	--	--	--	--	--	--	--
JUL 06...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
AUG 02...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
SEP 06...	10	2.9	3.0	5.9	5.9	.4	1.5	1.7	56	0
21...	--	--	--	--	--	--	--	--	--	--

DATE	ALKA- LINITY (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
OCT 11...	--	--	--	--	--	--	1	.84	.01	.85
NOV 07...	63	3.6	9.4	23	100	106	2	.30	.01	.31
22...	--	--	--	--	--	--	17	--	--	.54
DEC 06...	--	--	--	--	--	--	6	.59	.01	.60
19...	--	--	--	--	--	--	13	.62	.01	.63
JAN 03...	45	14	14	21	107	107	15	.88	.00	.88
17...	--	--	--	--	--	--	14	.58	.01	.59
FEB 08...	--	--	--	--	--	--	22	.36	.01	.37
MAR 09...	--	--	--	--	--	--	26	.33	.01	.34
APR 03...	34	3.9	6.7	18	68	68	5	.10	.01	.11
19...	--	--	--	--	--	--	5	.08	.01	.09
MAY 02...	--	--	--	--	--	--	17	.98	.01	.99
17...	--	--	--	--	--	--	13	.24	.00	.24
JUN 06...	--	3.4	2.2	8.3	--	--	55	.03	.01	.04
20...	--	--	--	--	--	--	8	.02	.00	.02
JUL 06...	--	--	--	--	--	--	--	.08	.00	.08
24...	--	--	--	--	--	--	3	.13	.02	.15
AUG 02...	--	--	--	--	--	--	20	.05	.00	.05
16...	--	--	--	--	--	--	5	.05	.00	.05
SEP 06...	46	2.9	3.7	14	68	69	3	.05	.01	.06
21...	--	--	--	--	--	--	0	.05	.01	.06

## PYRAMID AND WINNEMUCCA LAKES BASIN

111

10346000 TRUCKEE RIVER AT FARAD, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)
OCT									
11...	.02	.05	.07	.92	.00	--	1.2	--	--
NOV									
07...	.11	.05	.16	.47	.00	.00	1.4	--	--
22...	.00	.23	.23	.77	.02	--	--	--	--
DEC									
06...	.03	.28	.31	.91	.01	--	.9	--	--
19...	.00	.17	.17	.80	.03	--	1.9	--	--
JAN									
03...	.02	.21	.23	1.1	.02	.01	1.2	.530	.000
17...	.03	.02	.05	.64	.05	--	--	--	--
FEB									
08...	.02	.39	.41	.78	.03	--	2.4	--	--
MAR									
09...	.01	.76	.77	1.1	.08	--	2.6	--	--
APR									
03...	.01	.34	.35	.46	.01	.01	3.2	1.21	.000
19...	.00	.66	.66	.75	.00	--	2.9	--	--
MAY									
02...	.32	.09	.41	1.4	.03	--	5.8	3.00	.000
17...	.01	.29	.30	.54	.02	--	1.8	--	--
JUN									
06...	.01	.46	.47	.51	.02	.02	2.0	.950	.000
20...	.03	1.2	1.2	1.2	.02	--	2.4	--	--
JUL									
06...	.03	.70	.73	.81	.02	--	2.7	--	--
24...	.00	2.1	2.1	2.3	.01	--	1.6	--	--
AUG									
02...	.03	.31	.34	.39	.03	--	3.6	--	--
16...	.01	.15	.16	.21	.02	--	2.0	--	--
SEP									
06...	.02	.35	.37	.43	.02	.01	2.5	1.87	.000
21...	.01	.32	.33	.39	.01	--	1.8	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	BARIIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT							
11...	1045	--	--	--	--	--	110
NOV							
07...	1100	--	300	23	4	3	130
22...	1120	--	--	--	--	--	770
DEC							
06...	1100	5	100	0	0	5	140
19...	1100	--	--	--	--	--	320
JAN							
03...	0945	3	0	0	0	10	320
17...	1410	--	--	--	--	--	550
FEB							
08...	1030	2	0	0	0	7	330
MAR							
09...	1050	2	0	0	0	5	720
APR							
03...	1000	2	100	1	0	3	250
19...	1200	--	--	--	--	--	110
MAY							
02...	0900	1	0	0	0	8	160
17...	1000	--	--	--	--	--	290
JUN							
06...	1100	6	200	1	0	8	490
20...	0915	--	--	--	--	--	280
JUL							
06...	1100	4	200	1	10	4	180
24...	1240	--	--	--	--	--	190
AUG							
02...	1420	2	200	3	0	12	200
16...	1345	--	--	--	--	--	330
SEP							
06...	0920	3	0	1	0	4	270
21...	0930	1	0	0	10	5	180

## PYRAMID AND WINNEMUCCA LAKES BASIN

10346000 TRUCKEE RIVER AT FARAD, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
OCT						
11...	--	--	--	--	--	--
NOV						
07...	2	20	--	--	0	20
22...	--	--	--	--	--	--
DEC						
06...	6	30	.0	0	0	30
19...	--	--	--	--	--	--
JAN						
03...	5	40	.0	0	1	20
17...	--	--	--	--	--	--
FEB						
08...	4	40	.1	0	0	20
MAR						
09...	6	70	.0	0	1	10
APR						
03...	4	20	.0	0	0	10
19...	--	--	--	--	--	--
MAY						
02...	3	40	.0	0	0	20
17...	--	--	--	--	--	--
JUN						
06...	14	30	.1	0	0	30
20...	--	--	--	--	--	--
JUL						
06...	18	30	.0	0	1	30
24...	--	--	--	--	--	--
AUG						
02...	23	30	.0	0	0	160
16...	--	--	--	--	--	--
SEP						
06...	6	30	.0	0	0	10
21...	5	40	.0	0	0	90

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN, TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)
NOV												
07...	1100	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
JAN												
03...	0945	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
APR												
03...	1000	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
JUN												
06...	1100	--	--	--	--	--	--	.00	--	--	--	.00
SEP												
06...	0920	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00

DATE	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	MIREX, TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
NOV												
07...	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	--	.00
JAN												
03...	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	--	.00
APR												
03...	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	--	.00
JUN												
06...	--	--	--	.00	.00	.00	--	.00	.00	.00	--	.00
SEP												
06...	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.00	.00



## 10346000 TRUCKEE RIVER AT FARAD, CA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	177	174	173	---	151	138	93	93	---	68	98	106
2	175	177	173	---	---	125	99	93	74	66	99	106
3	173	176	---	168	---	126	101	90	72	69	---	105
4	176	176	---	173	147	112	103	91	71	74	99	106
5	175	173	179	---	150	126	107	90	64	73	102	100
6	173	168	180	180	136	128	100	90	63	71	103	103
7	177	170	182	---	135	126	100	91	---	69	103	105
8	178	170	182	---	135	118	104	---	64	74	101	105
9	182	171	---	181	127	116	103	---	---	75	101	105
10	176	169	---	182	---	116	103	81	64	74	105	103
11	176	172	---	182	138	113	---	81	68	76	105	103
12	176	171	179	---	149	117	102	---	70	76	106	103
13	176	146	178	173	149	117	99	80	61	80	105	100
14	176	171	179	162	151	116	98	---	61	79	105	101
15	176	168	106	157	146	---	97	---	61	79	106	101
16	176	168	113	108	143	---	100	79	---	81	108	102
17	180	174	---	152	145	113	111	85	74	86	106	103
18	179	185	---	150	145	112	100	84	73	---	106	103
19	178	187	167	159	146	109	100	---	79	83	107	96
20	179	190	184	170	145	---	99	74	---	85	107	---
21	177	174	185	170	143	---	101	72	---	88	107	---
22	178	173	172	169	142	88	101	69	---	88	108	91
23	178	174	172	170	139	100	98	---	79	89	107	91
24	179	---	---	175	133	106	96	---	80	88	107	91
25	178	---	---	173	---	103	96	---	---	88	108	91
26	177	---	---	147	132	101	---	---	---	90	108	86
27	175	---	189	---	131	99	---	80	84	90	108	84
28	176	177	161	156	132	94	93	74	84	95	108	88
29	176	176	163	153	---	92	94	67	---	94	108	86
30	176	172	156	153	---	92	94	63	82	94	109	89
31	---	---	---	154	---	92	---	67	---	95	107	---
MONTH	177	173	---	---	141	111	100	---	---	81	105	98

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	7.0	4.0	---	1.5	6.0	6.0	10.0	---	9.5	13.0	16.0
2	8.0	7.0	4.0	---	---	5.0	5.0	9.5	7.5	9.5	13.0	13.0
3	8.0	7.5	---	---	---	4.0	5.5	11.5	8.0	9.5	---	15.0
4	9.0	8.0	---	---	7.0	6.0	5.5	6.5	7.5	9.0	15.5	13.0
5	10.0	7.0	5.0	---	4.5	4.0	4.5	7.0	6.5	9.5	14.5	13.0
6	12.0	5.5	3.5	---	5.0	4.5	---	7.0	8.0	9.5	15.0	11.5
7	7.0	5.0	3.0	---	3.0	4.0	6.0	7.5	---	9.5	15.0	10.5
8	8.0	4.0	1.0	---	1.0	8.0	5.0	---	7.5	12.0	15.0	9.5
9	9.0	4.5	---	3.0	1.0	5.0	10.0	---	---	11.0	15.5	11.0
10	8.0	3.0	---	3.0	---	5.5	7.5	8.0	10.0	13.0	16.0	10.0
11	7.5	6.0	---	2.5	---	5.0	---	8.0	8.0	9.0	15.0	9.5
12	7.0	6.5	3.0	---	4.0	4.0	7.5	---	9.5	10.0	16.0	9.5
13	9.0	7.0	5.0	5.0	6.0	3.0	9.0	9.5	8.5	10.0	15.0	9.0
14	8.0	5.0	6.0	6.0	3.0	5.0	9.0	---	11.0	14.0	12.5	11.0
15	8.0	5.0	2.0	3.0	5.0	---	7.5	---	7.0	13.5	12.0	10.0
16	8.5	4.5	2.0	4.0	3.5	---	5.0	7.0	---	10.0	13.0	11.0
17	8.0	5.0	---	5.0	2.0	4.5	6.0	8.0	9.0	---	15.0	11.0
18	8.0	1.5	---	3.0	6.5	5.0	9.5	9.0	10.0	---	11.0	8.0
19	8.0	1.5	1.0	4.0	7.0	6.0	10.0	---	10.5	10.0	15.0	7.5
20	7.5	1.0	0.0	4.5	7.0	---	7.0	8.0	---	10.0	14.0	---
21	7.0	1.5	0.0	4.5	4.5	---	8.0	9.0	---	15.0	12.0	---
22	8.0	1.5	1.5	3.5	8.0	6.5	6.0	9.0	---	12.0	11.0	9.0
23	8.5	2.0	2.5	3.0	3.5	7.0	7.0	---	10.0	11.5	13.0	10.0
24	9.0	---	---	3.0	7.0	5.5	7.5	---	10.0	15.5	11.0	11.0
25	8.0	---	---	1.0	---	8.0	9.0	---	---	12.0	11.0	11.0
26	9.0	---	---	4.0	3.0	8.0	---	---	---	13.5	14.0	11.0
27	10.5	---	3.5	---	4.0	7.0	---	8.5	9.0	15.0	15.0	11.0
28	7.0	3.0	4.0	3.0	7.0	6.0	7.5	8.5	9.0	13.5	15.0	10.5
29	7.0	5.0	5.0	2.0	---	7.0	6.5	8.0	---	13.5	16.0	13.0
30	7.0	4.0	4.5	1.0	---	7.0	7.0	7.0	9.5	13.0	13.0	10.5
31	---	---	---	---	---	7.0	---	9.0	---	13.0	15.0	---
MONTH	8.5	4.5	---	---	4.5	5.5	7.0	---	---	11.5	14.0	11.0

## PYRAMID AND WINNEMUCCA LAKES BASIN

10346000 TRUCKEE RIVER AT FARAD, CA--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 11...	1045	48	8.0	3	.39



PYRAMID AND WINNEMUCCA LAKES BASIN  
10348000 TRUCKEE RIVER AT RENO, NV--Continued  
WATER-QUALITY RECORDS

PERIOD OF RECORD.--  
CHEMICAL ANALYSES: Water years 1977 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
OCT				
14...	1030	18	414	9.0
DEC				
20...	1010	100	195	1.0
JAN				
19...	1130	364	174	4.0
FEB				
17...	1050	396	141	2.5
APR				
18...	0915	746	105	9.5
MAY				
15...	1015	2720	76	8.5
AUG				
29...	1045	214	134	15.5

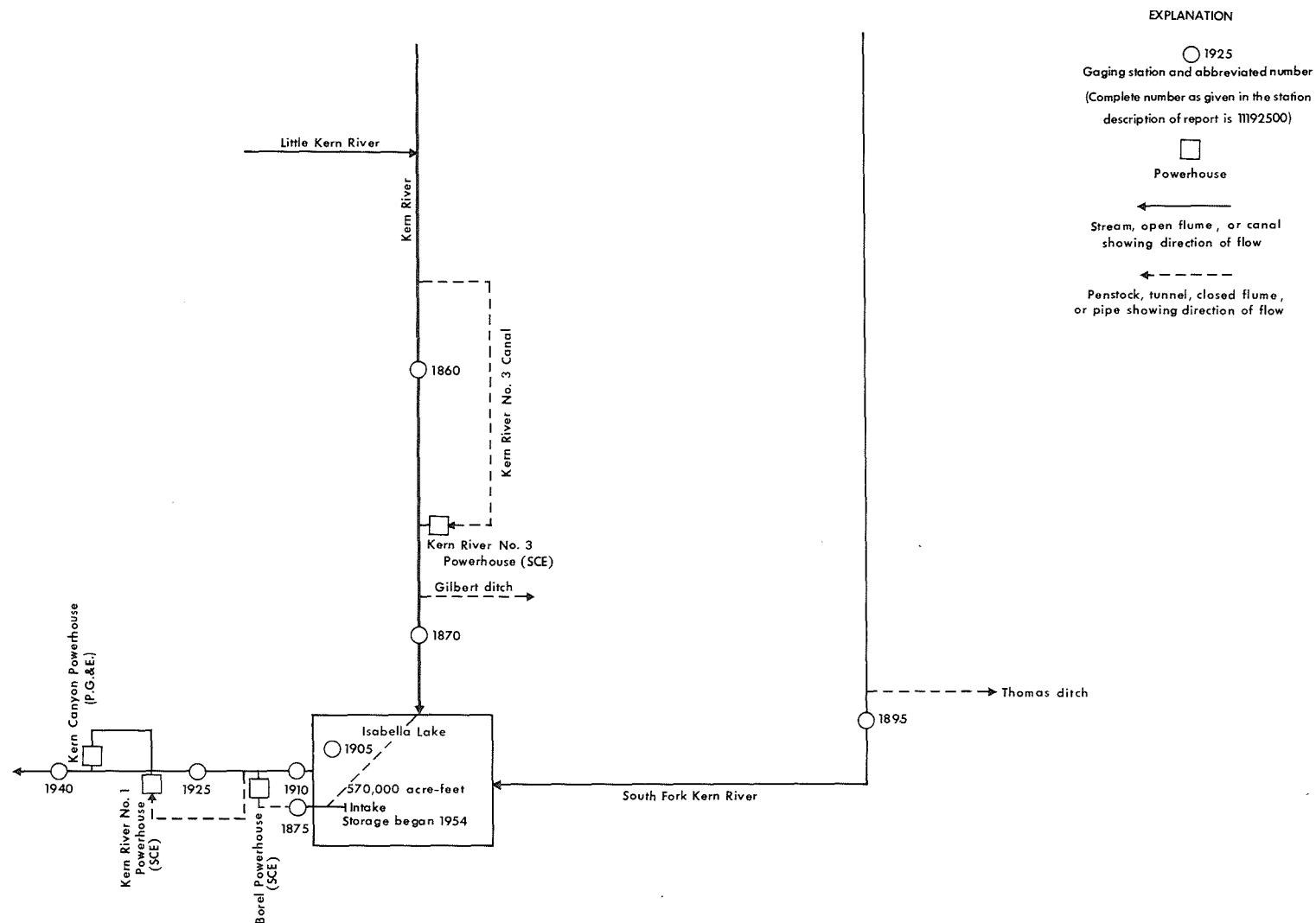


FIGURE 4.--Schematic diagram showing diversions and storage in Kern River basin.

## 11186000 KERN RIVER NEAR KERNVILLE, CA

LOCATION.--Lat 35°56'43", long 118°28'36", unsurveyed, Tulare County, on left bank at Packsaddle Canyon Creek, 30 ft (9 m) upstream from sand trap sluice gates, 100 ft (30 m) downstream from diversion dam, and 13.4 mi (21.6 km) north of Kernville.

DRAINAGE AREA.--846 mi<sup>2</sup> (2,191 km<sup>2</sup>).

PERIOD OF RECORD.--January 1912 to current year. Records for water year 1912 incomplete, yearly estimates published in WSP 1315-A. March 1921 to October 1953, records for river and canal published separately; combined flow only, October 1953 to September 1960.

REVISED RECORDS.--WSP 1445: 1912, 1916(M). WSP 1930: 1914(M), 1918(M).

GAGE.--Water-stage recorder on river; water-stage recorder and rectangular concrete-line flume for canal diversion. Altitude of gage is 3,620 ft (1,103 m), from topographic map. Prior to Apr. 1, 1913, at site 1.4 mi (2.3 km) downstream at different datum. Apr. 1 to Sept. 14, 1913, nonrecording gage and Sept. 15, 1913, to Sept. 30, 1967, water-stage recorder, at site 1.2 mi (1.9 km) downstream at different datum.

REMARKS.--Records good. Since 1921 Kern River No. 3 Canal diverts up to 630 ft<sup>3</sup>/s (17.8 m<sup>3</sup>/s) 100 ft (30 m) upstream from station, from left bank of Kern River for power development; water is returned to river 15 mi (24 km) downstream from station. See schematic diagram of Kern River basin. For records of combined discharge of river and canal, see following page.

COOPERATION.--Gage-height record and 16 discharge measurements for Kern River and gage-height record and 13 discharge measurements for canal furnished by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--River only: 9 years (water years 1912-20), 790 ft<sup>3</sup>/s (22.37 m<sup>3</sup>/s), 571,900 acre-ft/yr (705 hm<sup>3</sup>/yr); 51 years (water years 1921-53, 1961-78), 363 ft<sup>3</sup>/s (10.28 m<sup>3</sup>/s), 263,000 acre-ft/yr (324 hm<sup>3</sup>/yr).  
Combined river and diversion: 58 years (water years 1921-78), 711 ft<sup>3</sup>/s (20.14 m<sup>3</sup>/s), 515,100 acre-ft/yr (635 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 60,000 ft<sup>3</sup>/s (1,700 m<sup>3</sup>/s) Dec. 6, 1966, gage height, 22.77 ft (6.940 m) site and datum then in use, from floodmarks, from rating curve extended above 6,000 ft<sup>3</sup>/s (170 m<sup>3</sup>/s) on basis of computed flow over dam at gage height 17.55 ft (5.349 m), 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 river and diversion: Maximum discharge, 60,000 ft<sup>3</sup>/s (1,700 m<sup>3</sup>/s) Dec. 6, 1966; minimum daily, 78 ft<sup>3</sup>/s (2.21 m<sup>3</sup>/s) Aug. 30, 31, Sept. 17, 19, 1924.

EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 7,300 ft<sup>3</sup>/s (207 m<sup>3</sup>/s) June 9, gage height, 9.70 ft (2.957 m); minimum daily, 20 ft<sup>3</sup>/s (0.57 m<sup>3</sup>/s) Feb. 20.  
Combined river and diversion: Maximum discharge, 7,880 ft<sup>3</sup>/s (223 m<sup>3</sup>/s) June 9; minimum daily, 96 ft<sup>3</sup>/s (2.72 m<sup>3</sup>/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	26	25	27	25	417	1450	1450	5010	3380	1260	79
2	28	26	25	26	26	1010	1220	1490	4880	3060	1270	71
3	28	26	25	26	26	919	1090	1770	4760	2710	1240	71
4	27	26	25	26	26	2030	1020	2150	5020	2410	1140	84
5	34	27	25	25	28	1580	868	2440	5310	2460	1130	2260
6	26	26	25	26	329	1020	860	2310	5480	2670	962	3200
7	26	26	25	25	343	798	805	2110	5710	2850	872	1560
8	26	27	25	25	301	694	709	2180	6150	2720	890	923
9	26	27	25	26	895	634	640	2420	6340	2720	865	647
10	25	27	25	27	545	550	711	2630	6100	2950	828	493
11	26	27	25	25	249	543	941	2890	5810	2810	798	424
12	26	27	25	24	131	453	1160	3210	5890	2460	751	331
13	26	27	25	25	74	378	1340	3840	5740	2290	644	262
14	26	27	25	90	28	363	1360	4110	5280	2630	559	218
15	27	27	25	292	27	369	1390	4140	4840	2790	472	231
16	27	27	25	204	28	410	1310	3870	4400	2740	419	173
17	27	27	53	204	27	488	1100	3600	4130	2350	379	109
18	27	27	65	43	26	554	1060	3650	4210	2100	333	69
19	27	27	25	43	24	547	1080	3760	4320	1910	287	68
20	26	27	26	25	20	668	1130	3860	4260	1750	250	68
21	26	27	26	24	45	879	1110	3960	4390	1630	209	64
22	26	27	26	27	128	1160	1110	4130	4310	1640	173	64
23	26	26	26	26	170	894	1200	4100	3960	1740	117	63
24	26	27	26	26	196	853	1310	3500	3780	1780	77	64
25	26	27	26	25	177	885	1600	3110	3480	1630	87	64
26	26	26	27	25	143	975	1450	2910	3470	2000	98	64
27	26	27	709	25	141	964	1270	3000	3430	2300	99	64
28	26	27	445	25	159	1020	1420	3430	3040	1880	94	63
29	26	27	27	25	---	1130	1580	4010	3120	1440	91	64
30	26	26	24	24	---	1250	1610	4580	3350	1280	92	64
31	26	---	27	24	---	2010	---	5100	---	1320	91	---
TOTAL	850	801	1958	1510	4337	26445	34904	99710	139970	70400	16577	11979
MEAN	27.4	26.7	63.2	48.7	155	853	1163	3216	4666	2271	535	399
MAX	53	27	709	292	895	2030	1610	5100	6340	3380	1270	3200
MIN	25	26	24	24	20	363	640	1450	3040	1280	77	63
AC-FT	1690	1590	3880	3000	8600	52450	69230	197800	277600	139600	32880	23760
CAL YR 1977 TOTAL	25845			70	709		24	51260				
WTR YR 1978 TOTAL	409441			1122	6340		20	812100				

## 11186000 KERN RIVER NEAR KERNVILLE, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF KERN RIVER AND KERN RIVER  
NO. 3 CANAL NEAR KERNVILLE, CA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	114	124	305	322	1020	2050	2050	5620	3970	1860	608
2	98	113	123	278	317	1610	1820	2090	5490	3650	1870	595
3	97	113	122	279	317	1520	1690	2370	5360	3300	1840	595
4	96	111	122	285	324	2630	1620	2750	5630	3000	1740	654
5	99	124	122	272	413	2180	1470	3050	5920	3050	1730	2860
6	104	132	122	389	935	1620	1460	2920	6080	3260	1560	3800
7	124	123	119	349	944	1400	1400	2720	6320	3440	1470	2150
8	133	127	121	300	898	1300	1310	2790	6760	3310	1490	1520
9	127	130	121	388	1500	1240	1240	3030	6950	3310	1460	1240
10	123	127	119	446	1150	1150	1310	3230	6710	3540	1430	1090
11	121	126	118	364	846	1150	1550	3490	6410	3410	1390	1020
12	119	125	116	311	732	1060	1760	3810	6490	3060	1350	925
13	118	123	120	305	676	976	1940	4440	6340	2890	1240	856
14	116	122	120	536	600	961	1960	4710	5880	3230	1160	812
15	115	122	152	892	581	965	1990	4740	5440	3390	1070	825
16	113	123	167	785	569	1010	1910	4470	5000	3340	1020	767
17	113	122	415	807	542	1090	1700	4200	4730	2950	980	703
18	112	122	461	588	529	1160	1660	4250	4810	2700	930	662
19	111	122	197	636	544	1150	1680	4360	4920	2510	884	627
20	113	116	161	555	576	1270	1730	4460	4860	2350	847	606
21	116	109	183	467	650	1480	1710	4560	4990	2230	806	566
22	116	125	191	441	732	1760	1710	4730	4910	2240	769	553
23	114	130	231	396	774	1490	1800	4690	4560	2340	713	533
24	113	126	245	347	800	1450	1910	4100	4380	2380	673	522
25	113	127	201	346	781	1480	2200	3710	4080	2230	659	510
26	113	126	265	348	748	1570	2050	3510	4070	2600	649	500
27	112	127	1310	333	745	1570	1870	3590	4020	2900	639	492
28	112	129	1010	325	762	1620	2020	4030	3640	2480	627	484
29	113	128	543	322	---	1730	2170	4610	3710	2040	632	479
30	114	125	432	328	---	1850	2200	5190	3940	1880	621	472
31	114	---	355	326	---	2610	---	5710	---	1920	623	---
TOTAL	3502	3689	8208	13049	19307	45072	52890	118360	158020	88900	34732	28026
MEAN	113	123	265	421	690	1454	1763	3818	5267	2868	1120	934
MAX	133	132	1310	892	1500	2630	2200	5710	6950	3970	1870	3800
MIN	96	109	116	272	317	961	1240	2050	3640	1880	621	472
AC-FT	6950	7320	16280	25880	38300	89400	104900	234800	313400	176300	68890	55590
CAL YR 1977 TOTAL	83159			228	MAX	1310	MIN 85	AC-FT	164900			
WTR YR 1978 TOTAL	573755			1572	MAX	6950	MIN 96	AC-FT	1138000			

## BUENA VISTA LAKE BASIN

11187000 KERN RIVER AT KERNVILLE, CA  
(National stream-quality accounting network station)

LOCATION.--Lat 35°45'34", long 118°25'12", in NE¼NW¼ sec.15, T.25 S., R.33 E., Kern County, on left bank 0.5 mi (0.8 km) upstream from highway bridge at Kernville, 1.7 mi (2.7 km) upstream from Caldwell Creek, 9.5 mi (15.3 km) upstream from Isabella Dam, and 42 mi (68 km) northeast of Bakersfield.

DRAINAGE AREA.--1,009 mi<sup>2</sup> (2,613 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1905 to December 1912, October 1953 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,621.57 ft (799.055 m) National Geodetic Vertical Datum of 1929. January 1905 to September 1912, nonrecording gage at two sites 3.5 mi (5.6 km) downstream at different datums October 1953 to Feb. 20, 1967, at present site and datum. Feb. 20, 1967, to Oct. 11, 1976, water-stage recorder 0.6 mi (1.0 km) upstream at datum 2,634.57 ft (803.017 m) National Geodetic Vertical Datum of 1929.

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 ft<sup>3</sup>/s (0.20 m<sup>3</sup>/s) around station during irrigation season.

COOPERATION.--Four discharge measurements furnished by Southern California Edison Co.

AVERAGE DISCHARGE.--32 years, 849 ft<sup>3</sup>/s (24.04 m<sup>3</sup>/s), 615,100 acre-ft/yr (758 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 74,000 ft<sup>3</sup>/s (2,100 m<sup>3</sup>/s) Dec. 6, 1966, gage height, 19.32 ft (5.889 m) from floodmarks, present site, from rating curve extended above 11,000 ft<sup>3</sup>/s (312 m<sup>3</sup>/s) on basis of slope-area measurement of maximum flow; minimum, 70 ft<sup>3</sup>/s (1.98 m<sup>3</sup>/s) Sept. 29, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known from at least 1912 to December 1966, 18.4 ft (5.61 m) from floodmarks, Nov. 19, 1950, site and datum then in use, discharge, 38,700 ft<sup>3</sup>/s (1,100 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft<sup>3</sup>/s (56.6 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 27	1900	2080 58.9	6.96 2.121	Apr. 16	0100	2640 74.8	7.39 2.252
Feb. 9	0830	4190 119	8.44 2.573	May 23	1545	5030 142	8.89 2.710
Mar. 4	0815	4990 141	8.89 2.710	June 9	1015	*7790 221	10.18 3.103
Mar. 22	0515	2390 67.7	7.21 2.198	Sept. 6	1300	3600 102	8.05 2.454
Mar. 31	1145	3650 103	8.09 2.466				

Minimum daily, 79 ft<sup>3</sup>/s (2.24 m<sup>3</sup>/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	111	106	128	362	380	1270	2520	2360	5590	3690	1850	584
2	91	104	127	324	371	2150	2200	2370	5360	3560	1830	558
3	82	104	125	334	369	2160	1990	2640	4930	3320	1810	554
4	81	103	123	350	373	4160	1930	3080	5100	3170	1700	612
5	79	116	124	324	466	3520	1740	3350	5380	3220	1700	713
6	97	138	123	505	973	2480	1710	3220	5630	3430	1560	3100
7	110	121	119	459	1320	2040	1660	2970	6360	3680	1510	2220
8	128	123	121	371	1510	1810	1530	2990	6700	3650	1500	1540
9	116	130	121	466	3530	1690	1440	3190	7210	3570	1440	1220
10	114	124	118	602	2900	1560	1530	3350	7040	3820	1390	1050
11	109	121	117	471	1670	1510	1720	3560	6290	3620	1410	969
12	107	120	115	386	1320	1400	2000	3870	6300	3140	1350	872
13	105	117	120	360	1270	1270	2230	4230	6040	2950	1230	802
14	104	116	120	572	1110	1220	2300	4640	5720	3190	1150	758
15	101	116	157	1430	1020	1210	2300	4840	5460	3350	1050	755
16	99	117	198	1160	976	1240	2280	4410	5370	3320	988	728
17	98	116	539	1400	925	1330	1950	4150	5310	3010	950	685
18	97	116	629	943	889	1420	1900	4140	5340	2770	902	653
19	96	116	249	938	905	1380	1950	4230	5190	2580	855	613
20	99	115	186	822	957	1530	2020	4290	4960	2430	819	608
21	104	106	205	655	1040	1730	1990	4350	5120	2310	789	583
22	104	117	218	588	1090	2160	1970	4550	5170	2300	763	562
23	102	132	252	515	1140	1830	2060	4490	5050	2390	725	525
24	102	126	283	444	1160	1760	2200	3980	4870	2390	690	510
25	101	126	234	428	1150	1750	2450	3630	4700	2270	648	499
26	100	127	282	423	1110	1890	2350	3320	4530	2500	632	493
27	100	129	1550	402	1110	1850	2110	3370	4360	2820	618	488
28	100	132	1600	388	1040	1920	2300	3790	4180	2500	599	488
29	101	131	842	381	---	2020	2470	4430	4000	2060	602	475
30	102	129	566	386	---	2200	2530	4930	3840	1900	591	461
31	106	---	435	389	---	3080	---	5290	---	1910	594	---
TOTAL	3146	3594	10126	17578	32074	58540	61330	118010	161100	90820	34245	24678
MEAN	101	120	327	567	1146	1888	2044	3807	5370	2930	1105	823
MAX	128	138	1600	1430	3530	4160	2530	5290	7210	3820	1850	3100
MIN	79	103	115	324	369	1210	1440	2360	3840	1900	591	461
AC-FT	6240	7130	20080	34870	63620	116100	121600	234100	319500	180100	67920	48950
CAL YR 1977 TOTAL	83905			230	MAX 1600	MIN 70	AC-FT 166400					
WTR YR 1978 TOTAL	615241			MEAN 1686	MAX 7210	MIN 79	AC-FT 1220000					



## 11187000 KERN RIVER AT KERNVILLE, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962 to current year.  
 CHEMICAL ANALYSES: Water years 1975 to current year.  
 BIOLOGICAL DATA: Water year 1978.  
 WATER TEMPERATURES: Water years 1962 to current year.  
 SEDIMENT RECORDS: Water years 1967-74.

PERIOD OF DAILY RECORD.--  
 WATER TEMPERATURES: June 1962 to current year.

INSTRUMENTATION.--Temperature recorder since June 1962.

COOPERATION.--The letter "A" following a date indicates chemical-quality records furnished by California Department of Water Resources.

EXTREMES FOR PERIOD OF DAILY RECORD.--  
 WATER TEMPERATURES: Maximum recorded, 28.5°C Aug. 20, 1972; minimum recorded, 0.0°C Jan. 2, 4, 7, 1976.

EXTREMES FOR CURRENT YEAR.--  
 WATER TEMPERATURES: Maximum recorded, 20.0°C Aug. 2, 3, 5, 6; minimum recorded, 2.0°C Dec. 22.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
NOV										
22... A	1215	125	180	8.0	9.5	--	11.2	--	--	--
JAN										
05... A	1125	327	166	--	4.5	1.0	--	--	--	--
25... A	1215	428	148	7.5	4.0	--	12.7	--	--	--
FEB										
07...	1300	992	114	7.3	4.5	8.0	12.1	--	--	K9000
MAR										
08...	1300	1790	109	7.3	8.5	5.0	11.1	--	--	530
21... A	1500	1740	83	7.4	10.0	--	10.1	5	1.0	--
APR										
06...	1400	1720	96	6.8	8.0	6.0	10.8	--	--	<5
MAY										
03...	1400	2610	70	6.8	12.0	3.0	10.2	--	--	K13
24... A	1255	3860	48	7.2	8.5	--	10.6	--	--	--
JUN										
15...	1300	5550	37	5.8	11.0	3.2	11.0	--	--	K5
JUL										
10...	1400	4160	32	7.2	16.0	2.4	9.3	--	--	K7
26... A	0900	2370	42	7.2	16.0	--	8.9	--	--	--
AUG										
08...	1400	1450	53	6.8	18.5	1.1	9.0	--	--	14
24... A	1245	690	85	7.2	14.5	--	9.4	--	.5	--
SEP										
06...	1345	3600	37	6.5	15.0	7.1	8.6	--	--	K89
19... A	1500	613	86	7.4	12.0	--	10.0	2	.7	--

DATE	STREP- TOCOCCEI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
NOV									
22... A	--	--	--	--	--	--	--	--	--
JAN									
05... A	--	45	0	14	2.4	15	41	1.0	1.7
25... A	--	--	--	--	--	--	--	--	--
FEB									
07...	10000	36	0	11	2.1	10	36	.7	1.4
MAR									
08...	K5	37	0	11	2.2	8.8	33	.6	1.4
21... A	--	--	--	--	--	--	--	--	--
APR									
06...	<5	30	0	9.6	1.5	7.6	34	.6	1.3
MAY									
03...	K13	25	0	8.7	.9	5.4	31	.5	1.0
24... A	--	--	--	--	--	--	--	--	--
JUN									
15...	16	15	2	4.9	.6	2.5	26	.3	.7
JUL									
10...	22	13	1	4.4	.4	2.5	29	.3	.5
26... A	--	--	--	--	--	--	--	--	--
AUG									
08...	14	16	0	5.2	.7	4.2	35	.5	.6
24... A	--	25	--	10	.0	6.8	36	.6	.9
SEP									
06...	41	12	1	4.5	.3	2.2	26	.3	.9
19... A	--	26	--	7.4	1.8	7.6	--	.7	--

See footnotes at end of table.

## BUENA VISTA LAKE BASIN

111870000 KERN RIVER AT KERNVILLE, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ALKA- LITY (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
NOV									
22...A	--	--	--	--	--	--	--	--	.00
JAN									
05...A	50	12	6.8	.2	18	106	100	.14	--
25...A	--	--	--	--	--	--	--	--	.14
FEB									
07...A	44	9.2	4.1	.1	8.8	78	73	.11	--
MAR									
08...A	44	8.4	1.1	.2	21	78	81	.11	--
21...A	--	--	--	--	--	--	--	--	.08
APR									
06...A	40	6.2	2.8	.1	19	71	72	.10	--
MAY									
03...A	29	4.4	1.5	.1	16	48	55	.07	--
24...A	--	--	--	--	--	--	--	--	.03
JUN									
15...A	13	3.8	.8	.1	9.3	23	31	.03	--
JUL									
10...A	12	1.1	.9	.1	8.3	20	25	.03	--
26...A	--	--	--	--	--	--	--	--	.01
AUG									
08...A	18	3.6	1.5	.1	8.6	30	36	.04	--
24...A	31	4.3	2.4	--	--	56	--	.08	.06
SEP									
06...A	11	2.9	1.1	.1	6.1	28	25	.04	--
19...A	32	4.9	1.5	--	--	62	--	.08	.02

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
NOV									
22...A	.00	--	--	.10	--	--	--	.03	--
JAN									
05...A	--	--	--	--	--	--	--	--	--
25...A	.00	--	--	.10	--	--	--	.03	--
FEB									
07...A	--	.11	.22	.27	--	--	.38	.06	.03
MAR									
08...A	--	.33	.30	.31	.13	.18	.64	.12	.09
21...A	.01	--	--	.20	--	--	--	.06	--
APR									
06...A	--	.11	.10	.13	--	--	.24	.06	.02
MAY									
03...A	--	.01	.18	.19	.02	.17	.20	.03	.00
24...A	.00	--	.10	--	--	--	--	.06	--
JUN									
15...A	--	.07	1.2	1.2	.52	.68	1.3	.04	.01
JUL									
10...A	--	.03	.15	.22	.05	.17	.25	.05	.00
26...A	.00	--	--	.10	--	--	--	.02	--
AUG									
08...A	--	.02	.27	.27	.03	.24	.29	.02	.00
24...A	.01	--	.20	--	--	--	--	.02	--
SEP									
06...A	--	.05	.63	.63	.27	.36	.68	.10	.04
19...A	.00	--	--	.10	--	--	--	.00	--

11187000 KERN RIVER AT KERNVILLE, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDED TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDED RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDED RECOV. (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDED RECOV- ERABLE (UG/L AS CO)
FEB 07...	1300	4	1	3	0	0	0	0	0	0	1	0
MAY 03...	1400	3	2	1	0	0	0	0	0	0	0	0
AUG 08...	1400	3	1	2	100	0	100	0	0	0	3	2

DATE	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDED RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDED RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDED RECOV. (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)
FEB 07...	1	12	10	2	790	730	60	30	20	10	1.9
MAY 03...	0	6	3	3	650	590	60	30	20	10	.0
AUG 08...	<1	26	22	4	200	130	70	0	0	8	.0

DATE	MERCURY SUS- PENDED RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, SUS- PENDED TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDED RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)
FEB 07...	1.9	.0	0	0	0	1	40	30	10	--	--
MAY 03...	.0	.0	0	0	0	0	20	10	10	5.3	.0
AUG 08...	.0	.0	0	0	0	0	50	30	20	--	.4

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

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
PHYTOPLANKTON

DATE TIME	MAR 8,78 1300	MAY 3,78 1400	JUN 15,78 1300	JUL 10,78 1400	AUG 8,78 1400	SEP 6,78 1345						
TOTAL CELLS/ML	300	2700	72	180	1500	1000						
DIVERSITY: DIVISION	0.5	1.4	0.0	0.4	0.5	0.7						
..CLASS	0.5	1.4	0.0	0.4	0.5	0.7						
...ORDER	0.5	1.4	0.0	0.4	0.5	0.8						
...FAMILY	2.6	2.3	1.9	1.0	0.8	2.5						
...GENUS	2.7	2.7	1.9	1.9	1.1	2.9						
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT				
CHLOROPHYTA (GREEN ALGAE)												
..CHLOROPHYCEAE												
...CHLOROCOCCALES												
...OOCYSTACEAE												
....KIRCHNERIELLA	--	-	61	2	--	-	--	-				
...OOCYSTIS	--	-	120	5	--	-	--	-				
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	14	1				
...ULOTRICHALES												
...ULOTRICHACEAE												
....ULOTHRIX	--	-	--	-	--	-	150	14				
CHRYSOPHYTA												
..BACILLARIOPHYCEAE												
...PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	22	7	--	-	--	-	66	5	400# 38			
...COCCONEIS	--	-	91	3	--	-	--	-	14	1		
...RHOICOSPHEMIA	7	2	--	-	--	-	--	-	--	-		
...CYMBELLACEAE												
....AMPHORA	--	-	--	-	--	-	14	8	--	-		
...CYMBELLA	22	7	61	2	14#	20	14	8	22	2	83	8
...EPITHEMIA	8	0	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
...DIATOMA	--	-	61	2	--	-	--	-	--	-	--	-
...EUNOTIACEAE												
...EUNOTIA	--	-	--	-	14#	20	--	-	--	-	--	-
...FRAGILARIACEAE												
...FRAGILARIA	--	-	--	-	--	-	82#	46	--	-	--	-
...HANNAEA	--	-	61	2	--	-	55#	31	--	-	28	3
...SYNEDRA	22	7	30	1	29#	40	--	-	22	2	69	7
...GOMPHONEMATACEAE												
...GOMPHONEMA	88#	29	--	-	--	-	--	-	--	-	55	5
...NAVICULACEAE												
...CALONEIS	--	-	--	-	--	-	--	-	--	-	28	3
...DIPLONEIS	--	-	--	-	--	-	--	-	--	-	28	3
...NAVICULA	73#	24	300	11	--	-	--	-	66	5	120	12
...PINNULARIA	--	-	30	1	14#	20	--	-	--	-	--	-
...NITZSCHIIACEAE												
....NITZSCHIA	29	10	730#	27	--	-	--	-	--	-	41	4
CYANOPHYTA (BLUE-GREEN ALGAE)												
..CYANOPHYCEAE												
...CHROCCOCCOLES												
...CHROCCOCCOAEAE												
...ANACYSTIS	36	12	--	-	--	-	--	-	--	-	--	-
...HORMOGONALES												
...OSCILLATORIAEAE												
...LYNGBYA	--	-	940#	35	--	-	--	-	1200#	82	--	-
...OSCILLATORIA	--	-	150	6	--	-	--	-	89	6	--	-
EUGLENOPHYTA (EUGLENOIDS)												
..EUGLENOPHYCEAE												
...EUGLENALES												
...EUGLENACEAE												
....TRACHELOMONAS	--	-	30	1	--	-	14	8	--	-	14	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

11187000 KERN RIVER AT KERNNVILLE, CA--Continued

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	19.5	15.5	13.5	9.5	9.0	6.5	5.0	3.5	6.5	5.0	9.0	7.5
2	19.0	14.5	13.5	9.5	9.0	5.5	4.0	3.5	6.0	4.5	8.5	6.5
3	19.0	14.0	13.5	9.5	8.5	6.0	4.5	4.0	6.5	4.5	8.0	6.0
4	16.0	14.0	12.0	9.5	8.5	6.0	4.5	4.0	7.0	5.5	7.5	6.5
5	18.5	13.5	10.5	9.0	9.0	6.0	4.5	4.0	7.5	6.5	7.5	6.5
6	19.5	15.5	11.0	8.0	9.0	6.0	6.0	5.0	7.0	5.5	9.0	6.0
7	18.5	14.5	10.5	7.5	8.5	5.5	6.0	4.5	5.5	4.5	9.0	6.5
8	16.5	14.0	11.0	7.5	8.0	5.5	6.0	4.5	5.5	4.0	9.0	7.5
9	17.5	13.5	10.0	7.5	7.5	5.0	6.0	5.5	5.5	4.5	9.0	8.0
10	17.5	13.5	9.5	7.0	8.0	5.0	6.5	5.5	5.5	5.0	9.0	7.5
11	17.5	13.5	10.0	7.5	7.5	4.5	6.5	5.0	6.0	4.5	8.5	7.0
12	17.5	13.5	10.5	7.5	8.0	5.0	6.0	5.0	5.0	3.5	8.5	6.0
13	17.5	13.5	9.5	7.5	7.5	5.0	7.0	5.5	5.5	3.0	9.0	6.5
14	18.0	13.5	10.0	6.5	8.0	5.0	7.0	6.5	5.5	4.0	9.5	6.5
15	17.5	13.5	10.0	7.0	8.5	6.5	6.5	6.0	6.0	3.5	9.5	7.0
16	17.5	13.5	10.5	7.0	7.5	5.5	6.0	5.0	6.0	4.0	10.0	7.0
17	17.5	13.5	10.5	7.0	7.5	6.5	6.5	5.0	6.0	4.0	10.5	7.5
18	17.0	13.5	11.0	7.5	6.5	5.0	6.5	5.0	6.5	4.0	9.0	8.0
19	15.5	13.0	10.0	6.5	5.0	3.0	7.0	6.0	7.0	4.5	10.5	7.0
20	16.5	12.5	7.5	5.0	3.5	2.5	6.5	5.0	7.5	5.0	10.0	8.5
21	16.0	12.5	7.5	4.5	3.0	2.5	6.0	5.0	8.0	5.5	10.0	9.0
22	16.0	12.0	9.5	6.0	3.5	2.0	6.0	4.5	8.0	6.0	9.0	8.0
23	15.0	12.0	10.0	7.0	5.0	3.5	5.5	4.5	8.0	6.0	10.0	7.0
24	15.5	11.5	10.0	7.0	5.0	4.5	4.5	3.5	7.5	6.0	10.0	7.5
25	16.0	11.5	10.5	7.0	5.5	4.5	4.5	2.5	7.5	5.5	10.5	8.0
26	16.0	12.0	10.0	7.0	6.0	5.5	5.5	3.5	8.0	6.5	9.5	8.5
27	15.5	12.0	10.0	7.5	6.5	6.0	5.5	4.0	7.5	7.0	10.5	8.0
28	13.0	10.5	10.5	8.0	6.5	5.5	6.5	4.5	8.5	7.0	10.5	8.0
29	13.5	10.0	10.0	7.5	6.0	5.5	7.5	5.5	---	---	10.5	9.0
30	13.0	9.5	9.0	7.0	7.0	6.0	6.5	5.5	---	---	10.5	9.0
31	13.0	9.0	---	---	6.5	4.5	7.0	5.5	---	---	9.0	7.5
MONTH	19.5	9.0	13.5	4.5	9.0	2.0	7.5	2.5	8.5	3.0	10.5	6.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.5	6.5	11.0	8.0	11.5	10.0	14.0	12.5	19.5	16.5	18.0	16.0
2	9.5	7.5	12.0	9.5	11.5	10.0	13.5	12.0	20.0	17.0	18.0	16.5
3	9.0	7.0	12.5	10.5	12.0	10.0	13.5	12.0	20.0	17.5	19.0	17.0
4	8.5	6.5	12.5	11.0	12.0	10.5	14.0	12.0	19.5	16.5	18.0	16.5
5	7.5	5.0	11.5	10.0	12.0	11.0	15.0	12.5	20.0	17.0	17.5	15.0
6	8.0	7.0	10.0	8.0	12.5	10.5	15.5	13.5	20.0	17.0	15.0	14.0
7	8.5	6.0	10.5	8.5	12.5	11.0	15.5	14.0	19.5	17.0	15.5	14.0
8	7.5	6.0	11.5	9.5	13.0	11.0	15.0	13.5	19.0	17.5	15.0	12.5
9	10.0	5.5	11.5	10.0	13.0	11.0	15.5	13.5	19.5	17.0	15.5	12.5
10	11.5	8.5	11.5	10.0	12.5	10.5	16.0	14.0	19.5	17.0	16.0	13.0
11	11.5	9.0	12.0	10.0	12.5	10.5	15.0	13.5	19.0	16.5	15.5	13.0
12	12.0	10.0	12.5	10.0	12.5	11.5	15.0	13.0	18.5	16.0	16.0	13.5
13	11.5	9.5	12.5	10.0	12.5	11.0	16.0	13.5	18.5	16.0	16.0	14.0
14	10.5	8.5	12.0	9.5	12.0	11.0	16.5	15.0	18.0	15.5	15.0	14.0
15	9.5	7.5	12.0	9.5	11.5	11.0	17.0	15.0	18.5	15.5	15.0	13.0
16	7.5	6.0	10.0	8.0	11.5	11.0	17.0	15.0	18.5	16.0	15.0	13.0
17	9.0	6.0	11.0	8.5	12.0	11.0	16.5	14.5	18.5	16.0	15.0	13.5
18	10.5	7.5	11.5	9.5	13.0	12.0	16.0	14.0	18.0	15.0	14.0	12.0
19	11.0	9.0	11.5	9.5	12.5	11.5	16.5	13.5	18.0	15.5	12.0	10.5
20	10.0	8.5	11.5	10.0	12.5	12.0	16.5	14.0	18.0	15.5	12.0	10.0
21	10.0	7.5	12.0	9.5	13.0	12.0	17.5	14.5	17.5	15.5	12.0	10.0
22	10.5	7.5	12.0	9.5	13.0	12.0	18.0	15.5	17.5	15.5	13.5	11.0
23	11.0	8.5	11.0	9.5	12.5	12.0	18.0	15.5	16.5	14.5	14.5	12.0
24	10.5	9.5	9.0	7.5	13.0	12.0	18.0	15.5	16.0	14.0	15.0	13.0
25	10.0	8.5	9.0	7.5	13.0	12.0	17.5	15.5	16.5	14.0	15.5	14.0
26	9.5	7.5	10.5	8.5	13.5	12.0	18.5	15.5	17.5	15.0	16.0	14.5
27	11.5	8.5	11.5	9.5	13.5	12.0	18.0	16.0	17.5	15.5	16.0	14.5
28	12.0	10.0	12.0	11.0	13.5	12.0	17.5	14.5	18.0	15.5	16.0	14.5
29	11.0	9.0	12.5	11.0	14.5	12.5	18.0	15.0	18.5	16.0	16.5	14.5
30	10.5	8.0	12.5	11.0	14.5	13.5	18.5	15.5	18.5	16.5	16.5	14.5
31	---	---	12.5	10.5	---	---	19.5	16.0	18.5	16.5	---	---
MONTH	12.0	5.0	12.5	7.5	14.5	10.0	19.5	12.0	20.0	14.0	19.0	10.0

## BUENA VISTA LAKE BASIN

11187000 KERN RIVER AT KERNVILLE, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
FEB						
07...	1300	992	4.5	18	48	73
MAR						
08...	1300	1790	8.5	31	150	47
APR						
06...	1400	1720	8.0	45	209	78
MAY						
03...	1400	2610	12.0	82	578	37
JUN						
15...	1300	5550	11.0	150	2250	22
JUL						
10...	1400	4160	16.0	91	1020	19
AUG						
08...	1400	1450	18.5	10	39	27
SEP						
06...	1345	3600	15.0	190	1850	32

## 11187500 BOREL CANAL BELOW ISABELLA DAM, CA

LOCATION.--Lat 35°38'32", long 118°28'09", in SW¼NE¼ sec.30, T.26 S., R.33 E., Kern County, on right bank 500 ft (152 m) downstream from Isabella Dam, and 3 mi (5 km) upstream from point where canal crosses Erskine Creek.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1910 to September 1914, October 1925 to current year. 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.--Water-stage recorder. Altitude of gage is 2,540 ft (774 m), from topographic map. Prior to Apr. 29, 1952, at site 4 mi (6 km) upstream at different datum.

REMARKS.--Records good. Canal diverts from right bank of Kern River 5.5 mi (8.8 km) upstream from Isabella Dam, and above South Fork Kern River. When capacity of Isabella Reservoir is above 110,000 acre-ft (136 hm<sup>3</sup>), the diversion is at the dam. Canal is used to supply Borel powerplant of Southern California Edison Co., 6 mi (10 km) downstream from station, at which point water is returned to the Kern River.

COOPERATION.--Fifteen discharge measurements furnished by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--57 years, 370 ft<sup>3</sup>/s (10.48 m<sup>3</sup>/s), 268,100 acre-ft/yr (331 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 634 ft<sup>3</sup>/s (18.0 m<sup>3</sup>/s) Mar. 13, 14, 1952; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	103	274	367	321	560	597	560	547	573	586
2		0	102	275	360	275	573	598	560	549	582	589
3		0	101	275	356	514	572	598	558	547	585	589
4		0	100	275	357	485	573	595	559	546	584	589
5		0	100	275	399	494	576	595	560	551	586	572
6		0	102	277	489	515	589	592	555	551	583	564
7		21	99	275	518	564	595	592	548	547	584	579
8		92	101	275	515	570	586	591	547	538	588	587
9		103	102	276	222	550	581	591	549	543	588	591
10		100	98	276	24	549	583	589	548	544	580	585
11		97	96	277	125	547	586	588	548	546	582	585
12		96	97	275	187	539	583	586	548	545	586	586
13		93	110	274	238	560	593	585	547	545	584	586
14		92	113	276	54	571	592	584	546	547	583	587
15		92	129	277	.80	569	589	584	546	548	585	586
16		93	196	275	.80	570	588	580	549	549	586	586
17		92	262	384	.60	572	593	582	547	548	588	586
18		92	308	442	.40	570	594	580	549	550	587	587
19		92	260	411	.30	568	595	576	550	553	586	588
20		90	184	444	304	570	595	577	520	553	587	586
21		81	186	442	533	551	593	575	553	553	591	585
22		92	207	437	571	546	597	575	555	554	589	590
23		108	223	437	573	573	596	574	555	555	587	588
24		103	281	433	574	572	598	573	555	560	589	588
25		102	232	419	574	572	590	572	554	562	586	586
26		103	230	411	573	572	593	570	549	560	586	587
27		104	282	395	575	573	592	568	544	560	590	586
28		107	276	384	542	572	595	566	546	563	589	585
29		106	277	375	---	572	595	564	547	562	588	587
30		104	275	375	---	543	596	563	545	566	589	588
31		---	275	375	---	532	---	562	---	566	587	---
TOTAL	0	2255	5507	10571	9032.90	16651	17641	18022	16497	17108	18158	17564
MEAN	0	75.2	178	341	323	537	588	581	550	552	586	585
MAX	0	108	308	444	575	573	598	598	560	566	591	591
MIN	0	0	96	274	.30	275	560	562	520	538	573	564
AC-FT	0	4470	10920	20970	17920	33030	34990	35750	32720	33930	36020	34840
CAL YR 1977	TOTAL	59010.50	MEAN	162	MAX	412	MIN	0	AC-FT	117000		
WTR YR 1978	TOTAL	149006.90	MEAN	408	MAX	598	MIN	0	AC-FT	295600		

## BUENA VISTA LAKE BASIN

11187500 BOREL CANAL BELOW ISABELLA DAM, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1958 to current year.

INSTRUMENTATION.--Temperature recorder since October 1958.

COOPERATION.--Temperature recorder graph furnished by Southern California Edison Co.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 27.0°C Aug. 13, 1977; minimum recorded, 0.5°C Jan. 17, 18, 1960.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 22.0°C Aug. 15; minimum recorded, 3.5°C Jan. 25.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1			---	---	8.5	7.5	6.5	5.0	7.5	6.0	9.5	9.0
2			---	---	8.5	7.5	5.5	5.0	7.0	5.0	9.5	9.0
3			---	---	8.5	7.5	5.0	5.0	7.5	5.0	9.0	8.5
4			---	---	9.0	7.5	5.5	5.5	7.0	5.5	9.0	8.5
5			---	---	9.5	7.5	6.5	6.0	7.5	6.5	9.0	8.5
6			---	---	10.0	8.0	8.0	6.5	7.0	6.5	9.0	8.5
7			---	---	9.0	7.5	7.5	6.5	6.5	5.0	9.5	8.5
8			10.5	8.5	9.0	8.0	7.5	6.0	5.0	4.5	10.5	9.5
9			10.5	8.5	9.0	7.0	7.0	6.5	5.0	4.5	10.0	9.0
10			10.5	8.0	8.5	7.0	7.0	6.5	7.0	5.0	9.0	8.5
11			10.5	8.5	8.5	7.0	8.0	6.5	7.0	6.5	8.5	8.5
12			10.5	8.5	9.5	7.5	7.0	6.5	6.5	6.0	8.5	8.5
13			10.5	8.5	9.5	7.5	7.5	6.5	6.0	6.0	9.0	8.5
14			9.5	8.0	9.5	7.5	7.5	7.5	---	---	10.0	9.0
15			10.0	8.5	9.5	9.0	7.5	7.0	---	---	10.5	9.0
16			10.0	8.5	9.5	7.5	7.0	6.5	---	---	11.0	10.0
17			10.5	8.5	9.5	8.0	7.0	6.0	---	---	11.5	10.5
18			10.5	9.0	8.5	7.0	7.0	6.5	---	---	11.5	11.5
19			10.5	7.5	7.0	5.5	7.5	6.5	---	---	11.5	10.5
20			7.5	6.5	6.0	4.0	7.0	6.0	---	---	11.5	10.5
21			7.5	6.5	4.5	4.0	6.5	5.5	9.0	7.5	11.5	10.5
22			10.5	7.5	5.5	4.0	7.0	5.5	8.5	8.0	11.5	11.0
23			10.5	8.5	6.5	5.0	6.5	5.0	10.0	8.5	11.0	10.5
24			10.5	8.0	6.5	6.0	6.0	4.5	9.5	8.0	11.5	10.5
25			10.5	8.5	6.5	6.0	5.0	3.5	8.0	7.5	12.0	10.5
26			10.5	8.5	7.0	6.5	6.0	4.0	8.5	7.5	12.5	11.5
27			10.0	8.5	7.5	7.0	6.0	4.5	8.0	8.0	12.0	10.5
28			10.5	8.5	7.0	7.0	7.0	5.0	8.5	8.0	12.0	10.5
29			10.5	8.5	7.5	6.5	8.0	6.0	---	---	13.5	11.5
30			10.0	8.0	8.0	7.0	7.0	6.5	---	---	12.0	11.5
31			---	---	7.0	6.5	8.0	6.0	---	---	12.5	12.0
MONTH			---	---	10.0	4.0	8.0	3.5	---	---	13.5	8.5



11187500 BOREL CANAL BELOW ISABELLA DAM, CA--Continued

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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

## BUENA VISTA LAKE BASIN

11189500 SOUTH FORK KERN RIVER NEAR ONYX, CA

LOCATION.--Lat 35°44'22", long 118°10'33", unsurveyed, T.25 S., R.35 E., Kern County, on left bank 0.8 mi (1.3 km) north of State Highway 178, 1.6 mi (2.6 km) upstream from Canebrake Creek, and 5 mi (8 km) northeast of Onyx.

DRAINAGE AREA.--530 mi<sup>2</sup> (1,370 km<sup>2</sup>).

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

REVISED RECORDS.--WSP 1151: 1948(M). WSP 1445: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,900 ft (884 m), from topographic map. Sept. 12, 1911, to Aug. 31, 1914, nonrecording gage and Jan. 23, 1919, to Apr. 17, 1936, water-stage recorder, at site 140 ft (43 m) upstream at datum 2.88 ft (0.878 m) lower. Apr. 18, 1936, to September 1942, and October 1947 to Feb. 8, 1967, at datum 6.88 ft (2.097 m) higher. Feb. 9, 1967, to May 31, 1972, at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good. Lowell and Thomas ditches divert above station for irrigation of 160 acres (64.8 hm<sup>2</sup>) below station; combined capacity, 7 ft<sup>3</sup>/s (0.20 m<sup>3</sup>/s).

AVERAGE DISCHARGE.--54 years (water years 1912-13, 1920-25, 1927, 1930-42, 1947-78), 116 ft<sup>3</sup>/s (3.285 m<sup>3</sup>/s), 84,040 acre-ft/yr (104 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,700 ft<sup>3</sup>/s (813 m<sup>3</sup>/s) Dec. 6, 1966, gage height, 18.9 ft (5.76 m) from floodmarks, present datum, from rating curve extended above 3,300 ft<sup>3</sup>/s (93.5 m<sup>3</sup>/s) on basis of slope-area measurement of maximum flow; no flow for several days in 1929, 1934, 1960-61.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 180 ft<sup>3</sup>/s (5.10 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 28	1100	468 13.3	5.54 1.689	Mar. 4	1430	2550 72.2	8.07 2.460
Jan. 15	0545	688 19.5	5.96 1.817	Mar. 22	0015	821 23.3	6.26 1.908
Feb. 10	0345	1430 40.5	7.07 2.155	Mar. 31	1230	2270 64.3	7.86 2.396
Feb. 22	0215	299 8.47	5.02 1.530	May 13	1045	*3590 102	8.75 2.667
Mar. 2	2230	1120 31.7	6.70 2.042				

Minimum daily, 0.26 ft<sup>3</sup>/s (0.007 m<sup>3</sup>/s) Oct. 1, 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.26	7.8	13	51	72	694	1190	1190	1430	340	102	45
2	.30	9.8	13	47	71	952	1010	1220	1350	326	96	45
3	.26	10	13	53	71	715	928	1430	1260	312	91	44
4	.35	11	13	56	74	1730	889	1770	1220	299	89	45
5	.38	12	13	53	95	1300	792	2020	1160	284	87	50
6	.43	13	13	65	160	864	724	1970	1120	275	84	270
7	.49	13	13	64	230	740	686	1740	1090	263	80	250
8	.55	12	13	54	600	665	640	1750	1060	252	77	190
9	.55	11	13	55	900	591	591	1940	1040	239	76	150
10	.55	12	13	91	820	523	610	2020	1020	229	76	130
11	.59	13	13	81	411	486	686	2220	962	220	76	115
12	.55	13	13	66	293	436	803	2530	915	212	75	110
13	1.9	13	13	59	265	391	909	2870	870	202	73	105
14	3.6	13	13	108	213	384	928	2990	809	190	71	100
15	3.7	12	14	406	199	381	915	3110	757	180	68	88
16	3.6	9.4	16	253	183	404	846	2810	697	172	66	82
17	3.7	7.1	50	284	171	439	763	2240	645	164	62	74
18	3.8	9.2	58	196	168	454	746	2080	610	155	61	71
19	4.2	10	33	182	185	436	757	2020	572	147	59	69
20	4.4	10	25	151	215	494	852	2040	545	141	57	66
21	4.5	11	22	120	245	601	916	2020	519	135	54	65
22	4.6	11	22	107	264	670	922	2010	490	129	53	64
23	7.2	11	25	96	262	582	975	1920	466	124	52	63
24	9.9	13	28	79	260	563	1080	1580	443	120	51	62
25	9.8	12	24	77	248	591	1160	1400	421	136	50	62
26	6.8	12	30	76	233	630	1030	1300	408	181	50	61
27	3.9	12	127	74	224	625	941	1260	394	159	48	60
28	2.4	14	280	71	261	681	1050	1300	384	178	48	57
29	2.1	15	132	72	---	763	1250	1340	374	158	48	57
30	2.6	15	81	72	---	870	1320	1430	362	129	47	56
31	3.7	---	63	74	---	1610	---	1450	---	115	46	---
TOTAL	91.66	347.3	1212	3293	7393	21265	26909	58970	23393	6166	2073	2706
MEAN	2.96	11.6	39.1	106	264	686	897	1902	780	199	66.9	90.2
MAX	9.9	15	280	406	900	1730	1320	3110	1430	340	102	270
MIN	.26	7.1	13	47	71	381	591	1190	362	115	46	44
AC-FT	182	689	2400	6530	14660	42180	53370	117000	46400	12230	4110	5370

CAL YR 1977 TOTAL 8632.45 MEAN 23.7 MAX 280 MIN .20 AC-FT 17120  
WTR YR 1978 TOTAL 153818.96 MEAN 421 MAX 3110 MIN .26 AC-FT 305100

## 11190500 ISABELLA LAKE NEAR LAKE ISABELLA, CA

LOCATION.--Lat 35°38'46", long 118°28'41", in SE¼SW¼ sec.19, T.26 S., R.33 E., Kern County, in main control tower near left abutment of main dam on Kern River, 1.5 mi (2.4 km) north of town of Lake Isabella, and 2.8 mi (4.5 km) upstream from Erskine Creek.

DRAINAGE AREA.--2,074 mi<sup>2</sup> (5,372 km<sup>2</sup>).

PERIOD OF RECORD.--October 1953 to current year. Prior to October 1968, published as Isabella Reservoir near Isabella. October 1968 to September 1970 published as "Isabella Reservoir."

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam with sidehill spillway and auxiliary earthfill dam completed in 1954. Regulation began Apr. 15, 1954. Usable capacity, 570,024 acre-ft (703 hm<sup>3</sup>) between elevations 2,470.0 ft (752.86 m), invert of main outlet and 2,605.5 ft (794.16 m), spillway crest. Dead storage, 496 acre-ft (6.12 hm<sup>3</sup>). Surcharge flood control storage, 271,687 acre-ft (335 hm<sup>3</sup>) between ungated spillway crest and elevation 2,627.0 ft (800.71 m), maximum design spillway flood pool. Capacity table revised Oct. 1, 1975. 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 (station 11187500) through concrete conduit in auxiliary dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 578,100 acre-ft (713 hm<sup>3</sup>) July 14, 1969, elevation, 2,606.21 ft (794.373 m); minimum since reservoir first filled, 34,504 acre-ft (42.5 hm<sup>3</sup>) Dec. 14, 16, 1977, elevation, 2,524.35 ft (769.422 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 491,451 acre-ft (606 hm<sup>3</sup>) July 16, elevation, 2,598.29 ft (791.959 m); minimum, 34,504 acre-ft (42.5 hm<sup>3</sup>) Dec. 14, 16, elevation, 2,524.35 ft (769.422 m).

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

2500	6546	2540	77772
2505	9556	2550	119465
2510	13717	2570	239356
2515	19300	2590	407903
2520	26580	2620	747789
2530	47292		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36407	35620	34988	44060	63957	132516	260074	284041	380265	485035	466555	383976
2	36407	35620	34967	44228	64020	138394	264790	283882	385377	485874	464396	382210
3	36345	35600	34947	44543	64051	144004	268396	283723	390149	486084	461839	380540
4	36345	35600	34987	44858	64051	156031	271332	284280	395328	486294	459385	379057
5	36303	35579	34927	45029	64177	166829	273117	286669	401019	486294	457042	382117
6	36240	35620	34907	45520	65252	173531	274830	288588	407039	487029	454606	388459
7	36261	35538	34785	45989	67375	178370	275768	289872	413298	488080	451973	391652
8	36282	35517	34885	46238	70749	182361	276080	290354	420483	488712	449550	393158
9	36282	35517	34765	46612	82683	186091	276080	290997	428321	489132	446725	394193
10	36261	35476	34745	47317	94425	189171	276002	292044	435438	489975	444118	394572
11	36240	35456	34644	47800	99669	192216	276393	294306	441415	490608	441515	395138
12	36199	35436	34644	48081	103270	194969	277255	297392	447433	490608	438619	395418
13	36178	35415	34584	48389	106423	197226	278511	301724	453188	490186	435735	395228
14	36136	35395	34504	49062	108783	199303	280085	307248	457962	490502	432863	394480
15	36116	35374	34544	51900	110632	201327	281348	313327	461635	491030	429502	393625
16	36074	35354	34504	54573	112410	203430	282851	319048	464400	491451	426158	392684
17	36033	35313	35028	57458	113928	205610	283247	322949	466556	491346	422823	391273
18	35991	35272	35702	58985	115413	207938	283089	326275	468408	490818	419897	390057
19	35929	35231	35805	60480	116816	210348	282693	329792	470574	489659	416979	388551
20	35888	35211	35743	61604	118231	212774	282297	333502	472537	488080	414360	386869
21	35826	35130	35723	62248	119560	215761	281664	337146	474712	486189	411369	385095
22	35826	35109	35764	62680	120996	220080	280874	341775	476789	484406	408670	383421
23	35805	35170	35847	63083	122442	223681	280321	346171	478245	482627	405702	381561
24	35785	35150	35888	63332	123850	226824	280558	349355	478870	480851	402735	379704
25	35764	35130	35929	63456	125269	229921	281268	351220	479078	478766	399875	377861
26	35764	35109	36033	63581	126550	233185	281664	355142	479808	477309	397504	375925
27	35723	35069	38431	63738	127838	236546	281664	357471	480747	476581	394855	374171
28	35702	35048	41634	63769	129436	240007	281743	360708	481373	475439	392499	372157
29	35620	35028	42823	63832	---	243204	282613	364414	482209	473366	390057	370236
30	35620	35008	43438	63894	---	246866	283723	369050	483589	470780	387894	368228
31	35620	---	43820	63926	---	254057	---	374636	---	468614	385844	---
MAX	38136	35620	43820	63926	129436	254057	283723	374636	483589	491451	466555	395418
MIN	35620	35008	34504	44060	63957	132516	260074	283723	380265	468614	385844	368228
†	2524.90	2524.60	2528.59	2535.88	2552.04	2572.00	2575.85	2586.46	2597.54	2596.10	2587.67	2585.76
‡	-766	-612	+8812	+20106	+65510	+124621	+29666	+90913	+108953	-14975	-82770	-17616
††	1223	731	427	338	628	1619	2699	5890	9260	10977	9940	5961

CAL YR 1977 † -23881

WTR YR 1978 ‡ +331842

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet.

†† Evaporation, in acre-feet.

## BUENA VISTA LAKE BASIN

11191000 KERN RIVER BELOW ISABELLA DAM, CA

LOCATION.--Lat 35°38'21", long 118°29'02", in SW¼NW¼ sec.30, T.26 S., R.33 E., Kern County, on right bank 200 ft (61 m) downstream from highway bridge, 0.6 mi (1.0 km) downstream from Isabella Dam, and 1.6 mi (2.6 km) south-west of town of Lake Isabella.

DRAINAGE AREA.--2,074 mi<sup>2</sup> (5,372 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1945 to current year. Prior to October 1952, published as "below Isabella damsite."

REVISED RECORDS.--WSP 1515: 1956. WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,435.07 ft (742.209 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Mar. 12, 1952, water-stage recorder at site 0.6 mi (1.0 km) upstream at different datum. Mar. 12, 1952, to July 26, 1953, nonrecording gage at present site and datum.

REMARKS.--Records good. Flow regulated by Isabella Lake (station 11190500) beginning Apr. 15, 1954. Borel Canal (station 11187500) diverts above station. Diversion for irrigation of 3,500 acres (14.2 km<sup>2</sup>) between head of Isabella Lake and upstream stations. An additional 6,500 acres (26.3 km<sup>2</sup>) in the lakebed can be irrigated when the lake is low.

AVERAGE DISCHARGE (adjusted for diversion to Borel Canal since 1945 and for change in contents in and evaporation from Isabella Lake since 1954).--33 years, 885 ft<sup>3</sup>/s (25.06 m<sup>3</sup>/s), 641,200 acre-ft/yr (791 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,000 ft<sup>3</sup>/s (1,100 m<sup>3</sup>/s) Nov. 19, 1950, gage height, 28.6 ft (8.72 m) from floodmarks, present site and datum, from rating curve extended above 1,100 ft<sup>3</sup>/s (31.2 m<sup>3</sup>/s) on basis of slope-area measurement of maximum flow; minimum, 2.1 ft<sup>3</sup>/s (0.059 m<sup>3</sup>/s), regulated, Nov. 27, 1951. Maximum discharge since construction of Isabella Dam in 1954, 7,300 ft<sup>3</sup>/s (207 m<sup>3</sup>/s) May 3, 1969, gage height, 17.67 ft (5.386 m); no flow Oct. 29, 1954, Mar. 22, 1960, Dec. 2-4, 1970, Dec. 13, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,220 ft<sup>3</sup>/s (120 m<sup>3</sup>/s) May 11, gage height, 14.21 ft (4.331 m); minimum daily, 1.9 ft<sup>3</sup>/s (0.05 m<sup>3</sup>/s) Mar. 17-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP			
1	104	119	43	5.0	46	2.4	139	2650	3420	2690	2330	957			
2	112	119	43	5.0	49	2.7	126	2940	3420	2680	2340	870			
3	121	118	43	5.4	57	2.4	272	3190	3440	2660	2400	835			
4	116	121	43	5.4	62	4.3	470	3570	3450	2570	2410	760			
5	113	128	43	5.4	44	3.1	924	3560	3440	2530	2330	317			
6	108	129	34	5.3	5.0	2.6	914	3560	3430	2480	2250	28			
7	111	126	44	5.2	4.5	2.5	1000	3560	3410	2430	2140	72			
8	114	49	44	5.2	5.5	2.4	1310	3790	3410	2470	2100	166			
9	123	41	47	5.2	53	2.3	1420	4020	3420	2560	2100	139			
10	130	40	48	5.4	9.0	2.3	1440	4180	3440	2590	2110	113			
11	130	40	47	5.4	87	2.3	1520	4020	3450	2540	2050	115			
12	130	40	47	5.3	177	2.3	1610	3900	3430	2530	1980	116			
13	130	40	47	5.2	62	2.2	1750	3900	3400	2530	1960	270			
14	130	40	44	5.3	285	2.1	1860	3910	3390	2530	1960	487			
15	130	40	39	5.2	382	2.0	1900	3920	3390	2480	1960	563			
16	130	40	41	6.2	381	2.0	1910	3930	3400	2490	1940	562			
17	130	40	34	8.8	382	1.9	1940	3910	3390	2470	1900	589			
18	130	40	6.0	4.5	381	1.9	2030	3920	3390	2440	1770	656			
19	130	40	13	3.4	381	1.9	2160	3910	3400	2490	1660	738			
20	130	40	37	3.0	161	117	2240	3910	3440	2560	1590	812			
21	126	40	6.0	2.7	2.4	174	2410	3930	3410	2610	1540	846			
22	119	29	3.8	2.8	2.4	41	2490	3760	3410	2600	1470	917			
23	119	32	12	2.8	2.3	2.7	2510	3400	3420	2620	1410	916			
24	119	43	9.0	2.8	2.3	75	2500	3400	3420	2650	1410	916			
25	119	43	4.5	2.8	2.3	147	2510	3400	3420	2650	1330	916			
26	119	43	18	2.7	2.3	148	2510	2390	3240	2640	1200	897			
27	119	43	5.8	13	2.3	148	2520	2900	3070	2630	1190	807			
28	119	43	6.0	36	2.5	148	2520	2900	2950	2590	1240	869			
29	120	43	5.2	43	---	257	2510	3080	2820	2550	1200	897			
30	120	43	5.0	42	---	503	2510	3410	2760	2550	1130	860			
31	118	---	5.0	41	---	288	---	3420	---	2430	1010	---			
TOTAL	3769	1792	867.3	296.4	3032.8	2094.3	51925	110240	100280	79240	55410	18006			
MEAN	122	59.7	28.0	9.56	108	67.6	1731	3556	3343	2556	1787	600			
MAX	130	129	48	43	382	503	2520	4180	3450	2690	2410	957			
MIN	104	29	3.8	2.7	2.3	1.9	126	2390	2760	2430	1010	28			
AC-FT	7480	3550	1720	588	6020	4150	103000	218700	198900	157200	109900	35710			
MEAN ‡	129	137	356	683	1622	2658	2863	5713	5879	3043	1189	990			
AC-FT ‡	7940	8140	21880	42000	90080	163400	170400	51300	349800	187100	73090	58900			
CAL YR 1977 TOTAL	35766.0			98	582	2.4	AC-FT	70940	MEAN ‡	253	AC-FT ‡	183500			
WTR YR 1978 TOTAL	426952.8			MEAN	1170	MAX	4180	MIN	1.9	AC-FT	846900	MEAN ‡	2105	AC-FT ‡	1524000

‡ Adjusted for change in contents in and evaporation from Isabella Lake and diversion to Borel Canal.

11191000 KERN RIVER BELOW ISABELLA DAM, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956-66, 1971 to current year.

CHEMICAL ANALYSES: Water years 1956-66.

WATER TEMPERATURES: Water years 1971 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: November 1970 to current year.

INSTRUMENTATION.--Temperature recorder since November 1970.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 24.5°C Sept. 3, 1971, Sept. 17, 1975; minimum recorded, 4.0°C Jan. 4, 1972, Feb. 1, 1973.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 22.5°C May 12, 13, minimum recorded, 6.5°C on several days during January and February.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	15.0	14.5	10.5	10.0	9.5	7.5	8.5	7.5	11.0	8.5
2	---	---	14.5	14.0	10.5	10.0	9.0	7.5	8.5	8.0	10.0	8.5
3	---	---	14.5	14.0	11.0	10.0	8.5	8.0	8.5	8.0	12.0	8.0
4	---	---	14.0	14.0	10.5	10.0	8.5	8.0	9.0	8.5	11.5	9.0
5	---	---	14.0	13.5	10.5	10.0	8.5	8.0	9.5	8.5	12.0	9.0
6	---	---	14.0	13.5	10.5	10.0	10.0	8.0	10.0	8.5	14.0	8.0
7	---	---	13.5	13.0	10.5	10.0	10.0	7.5	9.0	8.0	14.0	8.0
8	---	---	13.5	12.5	10.5	10.0	10.0	7.5	10.5	8.0	13.0	8.5
9	---	---	13.0	12.0	10.5	10.0	9.0	8.0	9.0	8.0	11.5	9.0
10	---	---	13.0	12.0	10.0	9.5	10.0	8.0	9.0	7.5	12.5	8.5
11	---	---	13.0	12.0	10.0	9.5	10.0	8.0	9.0	6.5	11.0	9.0
12	18.0	17.5	12.5	12.0	10.0	9.5	9.5	7.5	7.5	7.5	13.0	8.0
13	18.0	17.5	12.0	11.5	10.0	9.5	9.5	8.0	10.5	7.5	14.0	8.0
14	18.0	17.5	12.0	11.5	10.0	9.5	9.0	8.5	7.5	7.0	13.5	8.0
15	18.0	17.5	12.5	11.5	10.0	9.5	10.0	8.5	7.5	7.0	14.0	8.0
16	18.5	17.5	12.0	11.5	10.0	9.0	8.5	8.0	7.5	7.0	14.5	8.5
17	18.0	17.5	12.0	11.5	10.0	9.5	9.5	8.0	7.0	7.0	15.0	8.5
18	18.0	17.5	12.0	11.5	10.0	8.5	10.5	7.5	7.5	7.0	10.5	9.0
19	17.5	17.5	11.5	10.5	10.0	8.0	10.5	8.5	7.5	7.0	14.5	8.5
20	17.5	17.0	11.5	10.5	9.0	8.0	10.5	7.0	11.5	7.0	10.5	9.5
21	17.5	17.0	11.0	10.0	8.5	8.0	10.0	7.0	12.0	6.5	9.5	9.5
22	17.5	17.0	11.0	10.0	9.5	8.0	10.0	7.5	12.0	7.0	12.5	9.5
23	17.0	16.5	11.0	10.0	8.5	8.0	9.5	7.5	12.0	7.0	14.0	9.0
24	17.0	16.5	10.5	10.0	9.0	7.5	9.5	6.5	12.0	6.5	10.5	9.0
25	17.0	16.5	10.5	10.0	9.0	7.5	9.5	6.5	11.0	6.5	10.5	10.0
26	17.0	16.5	10.5	10.0	8.5	8.0	10.0	6.5	10.5	7.5	10.5	10.0
27	16.5	16.0	10.5	10.0	9.0	8.5	9.5	7.0	10.0	8.0	10.5	10.0
28	16.5	16.0	11.0	10.0	10.0	8.5	8.5	8.0	11.0	8.0	11.0	10.0
29	16.0	15.5	11.0	10.0	9.5	8.5	8.5	8.0	---	---	11.0	10.0
30	15.5	15.0	11.0	10.0	10.0	8.0	8.5	8.0	---	---	12.0	10.5
31	15.0	14.5	---	---	9.5	7.5	8.5	8.0	---	---	11.5	10.5
MONTH	---	---	15.0	10.0	11.0	7.5	10.5	6.5	12.0	6.5	15.0	8.0

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.5	10.5	13.0	12.5	---	---	16.0	15.0	---	---	19.5	19.5
2	11.0	10.5	13.0	13.0	---	---	15.5	15.0	---	---	19.5	19.5
3	11.5	10.5	13.5	13.0	---	---	16.0	15.0	---	---	19.5	19.5
4	11.0	10.5	13.0	12.5	---	---	16.5	15.0	---	---	19.5	19.5
5	11.5	11.0	13.5	12.5	---	---	16.5	15.0	---	---	19.5	19.0
6	11.5	11.0	14.0	13.5	---	---	16.5	15.5	---	---	21.0	18.5
7	11.0	11.0	13.5	13.5	---	---	16.0	15.5	---	---	19.5	18.0
8	11.0	11.0	14.0	13.5	---	---	16.0	15.5	18.5	18.0	19.0	19.0
9	11.5	11.0	14.0	13.5	---	---	16.0	15.5	18.5	18.0	19.0	18.5
10	11.5	11.0	13.5	13.0	---	---	16.0	15.5	18.5	18.0	19.0	18.5
11	11.5	11.0	13.5	13.0	---	---	16.5	15.5	19.0	18.0	19.0	18.5
12	11.5	11.0	22.5	13.5	---	---	17.0	15.5	19.0	18.0	19.0	18.5
13	11.5	11.0	22.5	16.0	---	---	17.0	16.0	19.0	18.0	19.0	18.5
14	12.0	11.0	19.5	15.0	---	---	17.0	16.0	19.0	18.0	19.0	19.0
15	12.0	11.5	20.0	18.0	15.0	14.5	17.0	16.0	19.0	18.0	19.5	19.0
16	12.0	11.5	19.5	16.5	15.0	14.5	17.0	16.0	19.0	18.5	19.5	19.0
17	12.0	11.5	20.0	15.5	15.5	14.5	17.5	16.5	19.0	18.5	19.0	19.0
18	12.0	11.5	19.0	16.0	15.0	14.5	17.0	16.5	19.5	18.5	19.0	19.0
19	12.0	11.5	20.5	14.5	15.5	14.5	17.0	16.5	19.0	18.5	19.0	19.0
20	12.0	11.5	18.5	14.5	15.5	14.5	16.5	16.5	19.0	18.5	19.0	19.0
21	12.0	11.5	14.5	14.0	15.5	14.5	17.5	16.5	19.0	18.5	19.0	19.0
22	12.5	12.0	20.0	14.0	15.5	14.5	17.5	16.5	19.0	18.5	19.0	18.5
23	12.5	12.0	---	---	15.5	14.5	17.0	16.5	19.5	18.5	19.0	18.5
24	12.5	12.5	---	---	15.0	14.5	---	---	19.5	18.5	19.0	18.5
25	12.5	12.5	---	---	15.5	14.5	---	---	19.5	19.0	18.5	18.5
26	12.5	12.0	---	---	16.0	15.0	---	--	19.5	19.0	18.5	18.5
27	12.5	12.0	---	---	16.0	15.0	---	--	19.5	19.0	19.0	18.5
28	13.0	12.5	---	---	15.5	15.0	---	--	19.5	19.5	19.0	18.5
29	13.0	12.5	---	---	16.0	14.5	---	--	20.0	19.5	19.0	18.5
30	13.0	12.5	---	---	16.0	14.5	---	--	19.5	19.5	19.0	18.5
31	---	---	---	---	---	---	---	--	19.5	19.5	---	---
MONTH	13.0	10.5	---	---	---	---	---	--	---	---	21.0	18.0

## 11192500 KERN RIVER NEAR DEMOCRAT SPRINGS, CA

LOCATION.--Lat 35°31'15", long 118°40'34", in NE&SE¼ sec.6, T.28 S., R.31 E., Kern County, on left bank 1.0 mi (1.6 km) southwest of Democrat Springs, and 2.1 mi (3.4 km) upstream from Cow Creek.

DRAINAGE AREA.--2,258 mi<sup>2</sup> (5,848 km<sup>2</sup>).

PERIOD OF RECORD.--July 1950 to current year. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder on river; water-stage recorder for conduit diversion. Datum of gage is 1,837.7 ft (560.13 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Kern River No. 1 conduit diverts up to about 420 ft<sup>3</sup>/s (11.9 m<sup>3</sup>/s) from left bank of Kern River 0.4 mi (0.6 km) upstream from station in sec.13, T.28 S., R.30 E., for power development; water is returned to river 10 mi (16 km) below station. Flow regulated by Isabella Lake 22 mi (35 km) upstream beginning in 1954 (station 11190500). Many diversions above station for irrigation. See schematic diagram of Kern River basin. For records of combined discharge of river and conduit, see following page.

COOPERATION.--Gage-height record and 11 discharge measurements for river and gage-height record and 10 discharge measurements for conduit furnished by Southern California Edison Co., in connection with a Federal Power Commission Project.

AVERAGE DISCHARGE.--River only, 28 years, 565 ft<sup>3</sup>/s (16.00 m<sup>3</sup>/s), 409,300 acre-ft/yr (505 hm<sup>3</sup>/yr).  
Combined river and diversion, 28 years, 896 ft<sup>3</sup>/s (25.37 m<sup>3</sup>/s), 649,200 acre-ft/yr (800 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 40,000 ft<sup>3</sup>/s (1,130 m<sup>3</sup>/s) Nov. 19, 1950, gage height, 30.7 ft (9.36 m), from rating curve extended above 8,700 ft<sup>3</sup>/s (246 m<sup>3</sup>/s) on basis of computation of maximum flow over dam (basic data for computation furnished by Southern California Edison Co.); minimum daily, 0.7 ft<sup>3</sup>/s (0.020 m<sup>3</sup>/s) Nov. 17-19, 1951. Maximum discharge since construction of Isabella Dam in 1954, 10,100 ft<sup>3</sup>/s (286 m<sup>3</sup>/s) Dec. 6, 1966, gage height, 18.55 ft (5.654 m); no flow May 26-28, 1977.  
Combined flow: Maximum discharge, 40,000 ft<sup>3</sup>/s (1,130 m<sup>3</sup>/s) Nov. 19, 1950; minimum daily, 123 ft<sup>3</sup>/s (3.48 m<sup>3</sup>/s) Sept. 22, 1951. Maximum discharge since construction of Isabella Dam in 1954, 10,100 ft<sup>3</sup>/s (286 m<sup>3</sup>/s) Dec. 6, 1966; minimum daily, 10 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s) Dec. 17, 1968.

EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 4660 ft<sup>3</sup>/s (132 m<sup>3</sup>/s) May 10, gage height, 14.72 ft (4.487 m); minimum daily, 0.17 ft<sup>3</sup>/s (0.005 m<sup>3</sup>/s) Oct. 5.  
Combined flow: Maximum discharge, 5050 ft<sup>3</sup>/s (143 m<sup>3</sup>/s) May 10; minimum daily, 100 ft<sup>3</sup>/s (2.83 m<sup>3</sup>/s) Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	.40	157	.32	22	263	446	2830	3710	2970	2550	1150
2	.31	.40	137	.30	17	132	409	3170	3740	2910	2550	1040
3	.26	.32	123	.43	17	308	448	3370	3750	2900	2620	989
4	.23	.30	.65	.41	18	662	640	3920	3750	2870	2650	993
5	.17	.44	.40	.36	30	568	1110	3950	3740	2740	2570	690
6	.21	.31	.37	.41	107	434	1210	3970	3700	2690	2500	231
7	.25	.32	.35	.39	212	421	1290	3950	3680	2630	2390	193
8	.26	.33	.35	.36	307	398	1590	4110	3660	2630	2320	320
9	.27	.31	.35	.41	1270	379	1730	4360	3670	2730	2330	317
10	.29	.35	.35	.47	1490	328	1770	4600	3680	2780	2330	271
11	.30	.40	.35	.42	537	331	1840	4480	3700	2720	2270	280
12	.34	.40	.32	.42	472	316	1890	4320	3700	2720	2180	274
13	.35	.38	.32	.46	429	295	2060	4340	3690	2710	2140	329
14	.39	.38	.35	.51	324	303	2150	4350	3660	2730	2140	618
15	.40	.40	.50	4.2	275	290	2210	4340	3640	2670	2130	719
16	.40	.40	.40	2.6	240	280	2210	4340	3640	2680	2130	718
17	.40	.40	.56	96	205	273	2220	4310	3640	2680	2060	725
18	.42	.45	23	154	183	269	2310	4310	3640	2630	1960	806
19	.46	.46	.36	131	165	264	2470	4300	3640	2670	1840	883
20	.49	.40	.28	136	166	272	2510	4320	3680	2750	1760	990
21	.49	.32	.37	113	247	422	2640	4330	3650	2800	1740	1000
22	.50	.30	.37	94	284	330	2790	4250	3650	2800	1690	1110
23	.46	.30	.48	73	294	274	2810	3750	3650	2810	1620	1100
24	.48	.26	.45	77	292	266	2790	3760	3660	2860	1620	1100
25	.49	.25	.42	48	285	356	2800	3760	3660	2860	1570	1100
26	.52	.26	.45	38	280	366	2800	2750	3650	2860	1480	1100
27	.50	.27	.70	21	276	366	2790	3060	3480	2860	1340	996
28	.46	26	1.1	21	272	365	2790	3060	3300	2820	1440	1030
29	.48	124	.58	25	---	371	2780	3150	3040	2770	1390	1100
30	.44	158	.45	24	---	695	2780	3710	3040	2770	1370	1040
31	.40	---	.40	22	---	773	---	3720	---	2690	1200	---
TOTAL	16.52	317.51	452.03	1085.47	8716	11370	60283	120940	108490	85710	61880	23212
MEAN	.53	10.6	14.6	35.0	311	367	2009	3901	3616	2765	1996	774
MAX	5.1	158	157	154	1490	773	2810	4600	3750	2970	2650	1150
MIN	.17	.25	.28	.30	17	132	409	2750	3040	2630	1200	193
AC-FT	33	630	897	2150	17290	22550	119600	239900	215200	170000	122700	46040
CAL YR 1977 TOTAL	11619.91			31	MAX	268	MIN	0	AC-FT	23050		
WTR YR 1978 TOTAL	482472.53			MEAN	1322	MAX	4600	MIN	.17	AC-FT	957000	

## BUENA VISTA LAKE BASIN

11192500 KERN RIVER NEAR DEMOCRAT SPRINGS, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF KERN RIVER AND KERN RIVER  
NO. 1 CONDUIT NEAR DEMOCRAT SPRINGS, CA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	102	115	157	284	425	664	844	3220	4100	3350	2940	1530
2	100	115	137	284	419	336	807	3560	4130	3290	2940	1430
3	112	115	166	298	419	709	846	3760	4140	3280	3010	1380
4	118	115	141	302	420	1070	1040	4310	4140	3250	3040	1380
5	108	125	141	293	433	965	1510	4340	4130	3120	2960	947
6	108	125	142	295	509	831	1610	4360	4090	3070	2890	480
7	102	126	136	292	611	820	1680	4340	4070	3010	2780	509
8	110	147	143	288	707	796	1980	4500	4050	3010	2710	712
9	111	133	144	288	1670	777	2120	4750	4060	3120	2720	708
10	124	144	149	295	1890	727	2160	4990	4070	3180	2720	663
11	124	138	142	290	940	731	2230	4870	4090	3110	2660	671
12	124	137	140	289	875	714	2280	4710	4090	3110	2570	665
13	124	137	146	286	831	693	2450	4730	4080	3100	2520	720
14	124	133	159	291	726	693	2530	4740	4050	3120	2520	1010
15	123	132	161	372	678	687	2600	4730	4030	3060	2510	1110
16	124	134	220	346	642	675	2600	4730	4030	3070	2510	1110
17	125	135	249	473	608	668	2610	4700	4030	3070	2440	1120
18	123	133	377	528	586	664	2700	4700	4030	3020	2340	1200
19	124	133	281	520	568	662	2860	4690	4030	3060	2220	1290
20	125	132	245	536	569	671	2900	4710	4070	3140	2140	1370
21	125	128	186	510	650	821	3030	4720	4040	3190	2120	1380
22	116	125	209	492	686	729	3180	4640	4040	3190	2070	1470
23	115	127	217	472	695	673	3200	4140	4040	3200	2000	1460
24	115	147	286	477	693	665	3180	4150	4050	3250	2000	1460
25	115	144	259	449	688	755	3190	4150	4040	3250	1950	1460
26	116	145	227	440	683	765	3190	3140	4030	3250	1860	1450
27	116	149	302	422	679	765	3180	3450	3860	3250	1720	1340
28	115	151	346	424	675	764	3180	3450	3680	3210	1820	1390
29	115	141	302	429	---	769	3170	3540	3420	3160	1770	1460
30	116	158	289	428	---	1090	3170	4100	3420	3160	1750	1410
31	115	---	285	425	---	1170	---	4110	---	3080	1580	---
TOTAL	3614	4019	6484	11818	19975	23519	72027	133030	120130	97730	73780	34285
MEAN	117	134	209	381	713	759	2401	4291	4004	3153	2380	1143
MAX	125	158	377	536	1890	1170	3200	4990	4140	3350	3040	1530
MIN	100	115	136	284	419	336	807	3140	3420	3010	1580	480
AC-FT	7170	7970	12860	23440	39620	46650	142900	263900	238300	193800	146300	68000
CAL YR 1977	TOTAL	94746	MEAN	260	MAX	650	MIN 100	AC-FT	187900			
WTR YR 1978	TOTAL	600411	MEAN	1645	MAX	4990	MIN 100	AC-FT	1191000			



## 11195500 SAN EMIGDIO CREEK AT SAN EMIGDIO RANCHHOUSE, CA

LOCATION.--Lat 34°58'54", long 119°11'03", in San Emigdio Grant, Kern County, on left bank 50 ft (15 m) downstream from unnamed tributary, 0.8 mi (1.3 km) upstream from San Emigdio Ranchhouse, and 13 mi (21 km) west of Wheeler Ridge.

DRAINAGE AREA.--48.8 mi<sup>2</sup> (126.4 km<sup>2</sup>).

PERIOD OF RECORD.--March 1959 to current year.

GAGE.--Water-stage recorder and sharp-crested weir with rectangular flume for flows below 7 ft<sup>3</sup>/s (0.2 m<sup>3</sup>/s). Datum of gage is 1,617.57 ft (493.035 m) National Geodetic Vertical Datum of 1929.

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

AVERAGE DISCHARGE.--19 years, 2.04 ft<sup>3</sup>/s (0.058 m<sup>3</sup>/s), 1,480 acre-ft/yr (1.82 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,690 ft<sup>3</sup>/s (189 m<sup>3</sup>/s) Aug. 5, 1961, gage height, 19.87 ft (6.056 m) from floodmarks, from rating curve extended above 20 ft<sup>3</sup>/s (0.57 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 10.94 ft (3.335 m) and 19.87 ft (6.056 m); minimum daily, 0.30 ft<sup>3</sup>/s (0.008 m<sup>3</sup>/s) Apr. 23, 24, 1962 and many days in 1965-66.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1938 (from information by local residents), that of Aug. 5, 1961.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25 ft<sup>3</sup>/s (0.71 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Nov. 5	1530	78 2.21	10.44 3.182	Feb. 9	Unknown	288 8.16	11.70 3.566
Dec. 27	Unknown	60 1.70	10.26 3.127	Mar. 4	Unknown	322 9.12	11.85 3.612
Jan. 15	Unknown	52 1.47	10.16 3.097	Mar. 31	Unknown	103 2.92	10.65 3.246
Jan. 16	Unknown	151 4.28	10.96 3.341	May 22	Unknown	132 3.74	10.85 3.307
Feb. 8	Unknown	*339 9.60	11.92 3.633	Sept. 5	1600	48 1.36	10.12 3.085

Minimum daily, 0.81 ft<sup>3</sup>/s (0.023 m<sup>3</sup>/s) Oct. 2-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.84	.96	1.0	1.1	1.2	20	6.4	11	30	18	12	9.8
2	.81	.96	1.1	.99	1.2	19	6.0	14	30	18	12	10
3	.81	.96	1.1	1.1	1.2	5.5	5.9	14	29	17	13	10
4	.81	.96	1.1	1.4	1.2	72	6.0	16	29	17	12	11
5	.84	4.0	1.1	1.6	1.2	16	5.3	18	28	17	14	22
6	.87	1.3	1.2	1.4	1.2	5.0	5.3	14	28	16	14	21
7	.87	1.1	1.2	1.3	1.2	4.5	5.9	14	27	16	13	16
8	.87	1.0	1.2	1.2	19	4.6	5.7	15	28	16	13	15
9	.87	.93	1.2	1.1	48	4.9	5.9	15	26	17	12	14
10	.87	.93	1.2	1.1	31	5.0	5.7	17	23	16	12	15
11	.87	.99	1.2	1.1	14	4.7	5.6	21	23	16	12	14
12	.87	.96	1.2	1.1	7.7	5.3	5.5	22	22	16	11	14
13	.87	.93	1.2	1.1	4.0	5.5	5.6	27	22	16	11	13
14	.87	.96	1.2	1.1	8.8	4.7	5.5	31	21	16	11	14
15	.87	.96	1.2	3.7	5.4	4.1	6.0	34	22	15	12	14
16	.90	.99	1.2	24	4.7	4.0	8.6	34	22	16	11	13
17	.90	.99	1.2	1.4	4.6	3.9	9.8	33	21	16	11	13
18	.93	.96	1.9	.84	4.5	4.0	8.8	33	21	16	11	13
19	.93	.96	1.4	1.3	4.2	5.0	7.9	33	22	16	11	13
20	.96	.93	1.3	1.9	4.1	4.3	7.0	33	22	16	11	13
21	.96	.90	1.4	1.2	3.8	9.0	6.4	40	22	16	12	12
22	.93	.93	1.3	1.2	3.5	8.3	6.3	50	21	15	12	11
23	.93	.96	1.3	1.2	3.4	5.5	6.0	44	21	15	12	11
24	.93	.96	1.3	1.2	3.2	5.3	5.7	36	20	15	11	11
25	.90	.96	1.3	1.2	3.1	4.6	8.1	30	20	14	11	10
26	.93	.99	1.3	1.2	2.9	3.8	6.6	29	20	14	11	11
27	.96	.99	7.0	1.2	2.8	3.6	6.5	29	19	13	9.8	10
28	.96	.99	7.6	1.2	5.5	3.7	6.5	29	19	13	9.3	10
29	.96	.99	1.6	1.2	---	3.9	6.3	30	18	13	10	9.8
30	.96	1.0	1.1	1.2	---	4.1	6.4	30	18	12	10	8.8
31	.96	---	1.0	1.2	---	46	---	31	---	12	10	---
TOTAL	27.81	32.40	50.6	63.03	196.6	299.8	193.2	827	694	479	357.1	382.4
MEAN	.90	1.08	1.63	2.03	7.02	9.67	6.44	26.7	23.1	15.5	11.5	12.7
MAX	.96	4.0	7.6	24	48	72	9.8	50	30	18	14	22
MIN	.81	.90	1.0	.84	1.2	3.6	5.3	11	18	12	9.3	8.8
AC-FT	55	64	100	125	390	595	383	1640	1380	950	708	758
CAL YR 1977	TOTAL	394.94	MEAN	1.08	MAX	8.4	MIN	.63	AC-FT	783		
WTR YR 1978	TOTAL	3602.94	MEAN	9.87	MAX	72	MIN	.81	AC-FT	7150		

## BUENA VISTA LAKE BASIN

11196400 CALIENTE CREEK ABOVE TEHACHAPI CREEK, NEAR CALIENTE, CA

LOCATION.--Lat 35°18'41", long 118°34'10", in SE¼SW¼ sec.17, T.30 S., R.32 E., Kern County, on right bank 0.5 mi (0.8 km) upstream from Harper Canyon, 1.0 mi (1.6 km) upstream from Oiler Canyon, and 3.6 mi (5.8 km) north-east of Caliente.

DRAINAGE AREA.--165 mi<sup>2</sup> (427 km<sup>2</sup>).

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,617.27 ft (492.944 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those above 20 ft<sup>3</sup>/s (0.57 m<sup>3</sup>/s), which are poor. Small diversion above station for stock and domestic use.

AVERAGE DISCHARGE.--17 years, 4.07 ft<sup>3</sup>/s (0.115 m<sup>3</sup>/s), 2,950 acre-ft/yr (3.64 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,060 ft<sup>3</sup>/s (86.7 m<sup>3</sup>/s) Feb. 10, 1978, gage height, 9.72 ft (2.963 m) from floodmarks, from rating curve extended above 190 ft<sup>3</sup>/s (5.38 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft<sup>3</sup>/s (1.42 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Feb. 10	0430	*3060 86.7	9.74 2.969	Mar. 2	2400	1120 31.7	5.42 1.652
Feb. 14	0100	729 20.6	4.62 1.408	Mar. 31	0615	457 12.9	3.94 1.201

Minimum, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	.14	.65	742	150	17	4.8	2.3	.93	1.4
2			0	.08	.65	881	146	14	5.3	2.3	1.1	1.3
3			0	.52	.64	965	112	12	5.3	2.3	1.3	1.3
4			0	.56	.61	929	66	12	5.5	2.2	1.3	1.8
5			0	.60	.61	401	40	11	5.4	2.2	1.3	2.6
6			0	.49	.64	180	36	9.1	4.7	2.1	1.2	2.6
7			0	.43	2.4	75	43	7.6	4.2	2.1	1.2	2.2
8			0	.40	5.0	54	45	7.0	4.2	1.9	1.2	1.7
9			0	.44	306	46	42	7.2	3.7	1.8	1.2	1.6
10			0	.52	1180	41	37	6.5	3.7	1.6	1.2	1.8
11			0	.41	751	37	32	6.1	4.0	1.6	1.2	1.9
12			0	.39	640	42	30	6.0	3.7	1.7	1.2	1.9
13			0	.37	670	35	28	5.8	3.5	1.7	1.3	1.9
14			0	.42	697	31	26	5.5	3.6	1.5	1.5	1.8
15			0	1.3	410	28	26	5.6	3.6	1.4	1.4	1.7
16			0	1.2	220	25	28	5.6	3.4	1.4	1.3	1.6
17			0	1.5	116	23	26	5.7	3.2	1.5	1.4	1.8
18			2.8	1.1	90	22	26	5.5	3.1	1.4	1.3	2.0
19			.55	2.2	75	22	25	5.3	3.0	1.2	1.4	2.0
20			.25	1.5	63	20	24	5.1	3.0	1.2	1.4	1.8
21			.72	1.2	54	21	22	5.0	2.7	1.1	1.5	1.7
22			.38	1.2	48	24	22	4.9	2.4	1.1	1.8	1.6
23			0	1.0	43	24	20	4.9	2.3	1.1	1.8	1.5
24			0	.93	39	22	19	4.9	2.3	1.1	1.8	1.6
25			0	.85	45	20	21	5.2	2.3	1.1	2.0	1.6
26			0	.81	39	19	21	4.8	2.4	1.1	2.2	1.5
27			.31	.76	33	18	20	4.5	2.3	1.2	2.0	1.6
28			.99	.71	29	17	19	4.5	2.3	1.2	1.8	1.5
29			.44	.68	---	17	18	4.8	2.3	1.2	1.7	1.5
30			.33	.67	---	16	17	4.7	2.3	1.2	1.7	1.5
31		---	.20	.65	---	197	---	4.4	---	1.1	1.6	---
TOTAL	0	0	6.97	24.03	5559.20	4994	1187	212.2	104.5	47.9	45.23	52.3
MEAN	0	0	.22	.78	199	161	39.6	6.85	3.48	1.55	1.46	1.74
MAX	0	0	2.8	2.2	1180	965	150	17	5.5	2.3	2.2	2.6
MIN	0	0	0	.08	.61	16	17	4.4	2.3	1.1	.93	1.3
AC-FT	0	0	14	48	11030	9910	2350	421	207	95	90	104
CAL YR 1977	TOTAL	53.97	MEAN	.15	MAX	5.6	MIN	0	AC-FT	107		
WTR YR 1978	TOTAL	12233.33	MEAN	33.5	MAX	1180	MIN	0	AC-FT	24260		

## 11196420 TEHACHAPI CREEK NEAR TEHACHAPI, CA

LOCATION.--Lat 35°10'26", long 118°28'43", in NE¼SW¼ sec.6, T.32 S., R.33 E., Kern County, on right bank 1.3 mi (2.1 km) downstream from Brite Creek, and 3.2 mi (5.1 km) northwest of Tehachapi.

DRAINAGE AREA.--53.2 mi<sup>2</sup> (137.8 km<sup>2</sup>).

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

REVISED RECORDS.--WDR CA-72-2: 1967.

GAGE.--Water-stage recorder and steel-weir control in concrete channel. Datum of gage is 3,534.48 ft (1,077.310 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 5, 1964, at site 0.2 mi (0.3 km) upstream at different datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--16 years, 0.45 ft<sup>3</sup>/s (0.013 m<sup>3</sup>/s), 326 acre-ft/yr (402,000 m<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,700 ft<sup>3</sup>/s (48.1 m<sup>3</sup>/s) Aug. 8, 1963, gage height, 5.30 ft (1.615 m) in gage well, 6.40 ft (1.951 m) from floodmarks, site and datum then in use, from slope-area measurement of maximum flow; no flow for parts of most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 10 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Feb. 10	0315	*763 21.6	2.69 .820	Mar. 11	1845	24 .68	.81 .247
Feb. 13	2045	47 1.33	.90 .274	Mar. 31	0345	67 1.90	1.01 .308
Feb. 28	2000	151 4.28	1.39 .424	Apr. 7	1700	26 .74	.75 .229
Mar. 4	1345	78 2.21	1.08 .329				

Minimum, no flow Aug. 1, 2, 6-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.02	.03	.03	.05	36	5.4	1.4	.18	.10	0	.01
2	.01	.02	.03	.02	.04	23	4.9	1.5	.17	.10	0	.01
3	.01	.02	.03	.02	.04	17	3.7	1.3	.15	.09	.01	.01
4	.02	.02	.03	.03	.04	42	4.4	1.1	.14	.08	.01	.01
5	.02	.03	.03	.03	.05	14	4.4	1.2	.12	.06	.01	.03
6	.01	.03	.03	.03	.06	11	4.2	.92	.10	.06	0	.02
7	.01	.03	.03	.04	.60	7.0	20	.85	.10	.06	0	.02
8	.01	.03	.03	.04	.28	5.6	7.8	.67	.10	.05	0	.02
9	.01	.02	.03	.06	85	5.0	4.6	.57	.09	.05	0	.02
10	.01	.02	.03	.05	172	4.8	3.5	.63	.10	.04	0	.02
11	.01	.02	.03	.04	28	7.0	2.6	.63	.09	.03	0	.02
12	.01	.03	.03	.04	15	13	2.4	.53	.07	.04	0	.01
13	.01	.03	.03	.04	32	5.8	2.3	.46	.07	.05	0	.01
14	.01	.03	.03	.04	22	4.2	1.3	.33	.07	.05	0	.01
15	.01	.03	.04	.12	10	3.4	1.7	.42	.06	.06	0	.01
16	.01	.03	.03	.75	6.1	2.9	3.6	.41	.06	.07	0	.01
17	.01	.03	.05	.16	4.8	2.2	1.9	.31	.05	.08	.01	.01
18	.01	.03	.08	.05	4.1	2.3	1.8	.29	.04	.07	.01	.01
19	.02	.03	.03	.30	3.6	1.9	2.0	.22	.04	.06	.01	.01
20	.02	.03	.03	.06	3.1	1.3	2.0	.20	.04	.06	.01	.01
21	.02	.03	.03	.06	2.2	4.0	1.7	.19	.04	.06	.01	.01
22	.02	.03	.04	.06	2.1	3.7	1.5	.15	.04	.06	.01	.01
23	.02	.03	.04	.06	2.1	2.7	1.5	.17	.04	.06	.02	.01
24	.02	.03	.04	.06	1.7	2.2	1.4	.15	.04	.06	.02	.01
25	.02	.03	.03	.06	2.0	2.1	1.8	.18	.05	.07	.02	.01
26	.02	.03	.04	.06	1.9	2.0	2.6	.19	.09	.07	.02	.01
27	.02	.03	.09	.05	1.7	2.1	1.6	.22	.13	.06	.01	.01
28	.02	.03	.09	.04	22	1.6	1.5	.24	.14	.04	.01	.01
29	.02	.03	.04	.06	---	1.3	1.3	.23	.11	.03	.01	.01
30	.02	.03	.04	.06	---	2.4	1.2	.17	.10	.02	.01	.01
31	.02	---	.03	.06	---	32	---	.16	---	.01	.01	---
TOTAL	.46	.83	1.19	2.58	422.56	265.5	100.6	15.99	2.62	1.80	.22	.38
MEAN	.015	.028	.038	.083	15.1	8.56	3.35	.52	.087	.058	.007	.013
MAX	.02	.03	.09	.75	172	42	20	1.5	.18	.10	.02	.03
MIN	.01	.02	.03	.02	.04	1.3	1.2	.15	.04	.01	0	.01
AC-FT	.9	1.6	2.4	5.1	838	527	200	32	5.2	3.6	.4	.8

CAL YR 1977 TOTAL 17.05 MEAN .047 MAX 4.3 MIN 0 AC-FT 34  
WTR YR 1978 TOTAL 814.73 MEAN 2.23 MAX 172 MIN 0 AC-FT 1620

## TULARE LAKE BASIN

11197000 TULARE LAKE IN KINGS COUNTY, CA

LOCATION.--Lat 36°02'36", long 119°38'34", in SE¼NE¼ sec.1, T.22 S., R.21 E., Kings County, at El Rico Ranch, 6.0 mi (9.7 km) southwest of Corcoran, and 14.2 mi (22.8 km) southeast of Stratford.

PERIOD OF RECORD.--March 1906 to September 1920 (incomplete), February 1937 to September 1961 (elevations only), January 1969 to current year.

GAGE.--Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929. March 1906 to September 1920, nonrecording gages at various sites at different datums. February 1937 to September 1958, water-stage recorder or nonrecording gage at various sites.

REMARKS.--Tulare Lake receives water from Kings, Kaweah, and Tule Rivers during high-water periods and occasionally from Kern River, Deer Creek, and several small intermittent streams. Its natural boundary has been greatly altered by construction of levees and other reclamation work. Elevation at lowest point of lakebed is now about 175 ft (53.3 m) lower than previously determined because of variable subsidence.

COOPERATION.--Records of elevation furnished by J. G. Boswell Co. Area-capacity curves furnished by J. B. Summers, civil engineer, Corcoran, based on surveys in 1966.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 196.8 ft (59.98 m) June 27, 28, 1941; lake dry or practically dry for parts of 1906, 1914-16, 1919, 1937, 1946, 1950-53, 1955-56, 1958, 1969, 1971, 1978; lake dry for entire years 1920-22, 1924-36, 1947-49, 1954, 1957, 1959-61, 1972-77. Lake elevation of June 27, 28, 1941, was highest known since about 1890.

EXTREMES OUTSIDE PERIOD OF RECORD.--Historical accounts indicate that Tulare Lake under natural conditions reached an elevation of 216 ft (65.8 m) NGVD in 1862 and 1868. This lake elevation was the highest since at least the early 1800's.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 35,700 acre-ft (44.0 hm<sup>3</sup>) Apr. 1, elevation, 183.22 ft (55.845 m); minimum, lake dry most of year.

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					0	26100	35700	32600	24000	1550		
2					0	25400	35100	32300	23600	---		
3					0	26500	35200	31800	23600	553		
4					0	28200	35200	30700	---	---		
5					0	29600	35100	---	24000	---		
6					0	32000	35100	30200	24000	0		
7					0	34200	35500	30100	23300	---		
8					0	35400	35400	30000	22400	---		
9					0	34800	35400	29600	21400	---		
10					0	34800	35400	29400	21000	---		
11					0	34000	35200	29200	20200	---		
12					0	32600	34900	28800	19400	---		
13					13200	33300	34600	28000	19300	---		
14					15800	33200	34500	27700	---	---		
15					18300	33200	34200	26800	18200	---		
16					20400	33800	34500	26400	17000	---		
17					21500	33800	34500	26100	16600	---		
18					22600	34000	34500	25900	---	---		
19					24100	34000	34700	---	14500	---		
20					24700	34000	35100	25400	13400	---		
21					25100	34100	34500	25100	12700	---		
22					25200	34600	34600	24700	10700	---		
23					25400	34900	34600	24100	9610	---		
24					25500	35100	34500	23600	8410	---		
25					25600	35100	34200	23400	---	---		
26					25800	34900	34200	23500	6080	---		
27					25800	34800	34300	23600	5340	---		
28					26000	34800	34200	---	4240	---		
29					---	34900	33700	---	---	---		
30					---	35100	33200	23600	2230	---		
31		---			---	35400	---	23800	---	---		---
MAX	0	0	0	0	26000	35400	35700	---	---	---	0	0
MIN	0	0	0	0	0	25400	33200	---	---	---	0	0
†	--	--	--	--	181.93	183.18	182.89	181.64	178.45	--	--	--
‡	0	0	0	0	+26000	+9400	-2200	-9400	-21570	-2230	0	0

CAL YR 1977 ‡ 0

WTR YR 1978 ‡ 0

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet.

## TULARE LAKE BASIN

141

11197250 AVENAL CREEK NEAR AVENAL, CA

LOCATION.--Lat 35°51'15", long 120°07'34", in SW¼NW¼ sec.10, T.24 S., R.17 E., Kings County, on right bank 550 ft (168 m) downstream from road ford, 0.4 mi (0.6 km) downstream from unnamed tributary, and 10 mi (16 km) south of Avenal.

DRAINAGE AREA.--57.1 mi<sup>2</sup> (147.9 km<sup>2</sup>).

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 825 ft (251.5 m), from topographic map.

REMARKS.--Records fair except those for period of no gage-height record, which are poor. Minor diversions for stock above station.

AVERAGE DISCHARGE.--17 years, 3.31 ft<sup>3</sup>/s (0.094 m<sup>3</sup>/s), 2,400 acre-ft/yr (2.96 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,600 ft<sup>3</sup>/s (74.6 m<sup>3</sup>/s) Feb. 24, 1969, gage height, 7.89 ft (2.405 m), from rating curve extended above 510 ft<sup>3</sup>/s (14.4 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 5.72 ft (1.743 m) and 7.54 ft (2.298 m); no flow for several months in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft<sup>3</sup>/s (0.85 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 27	1630	1790 50.7	6.29 1.917	Feb. 8	2300	*2330 66.0	7.37 2.246
Dec. 28	0630	750 21.2	4.31 1.314	Feb. 10	0400	2090 59.2	6.90 2.103
Jan. 5	2330	387 11.0	3.53 1.076	Feb. 12	1745	1250 35.4	5.26 1.603
Jan. 9	1100	741 21.0	4.29 1.308	Mar. 4	Unknown	2110 59.8	6.94 2.115
Jan. 14	2200	563 15.9	3.92 1.195	Mar. 21	1915	467 13.2	3.71 1.131
Jan. 16	1330	1550 43.9	5.80 1.768	Apr. 15	1845	67 1.90	2.70 .823
Feb. 6	1500	392 11.1	3.54 1.079	Apr. 25	1415	30 .85	2.51 .765
Feb. 7	1300	1280 36.2	5.32 1.622				

Minimum, no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	1.3	8.2	16	15	6.9	1.6	.59	.36	.70
2			0	1.2	8.2	54	12	6.4	1.5	.60	.35	.63
3			0	1.1	8.2	86	11	6.0	1.5	.61	.38	.61
4			0	1.0	7.9	170	16	5.8	1.4	.59	.40	1.3
5			0	18	7.9	105	12	5.6	1.4	.55	.38	1.2
6			0	40	43	88	14	5.5	1.3	.50	.37	.71
7			0	7.5	205	75	18	5.2	1.2	.47	.36	.63
8			0	4.8	337	71	12	5.0	1.2	.47	.37	.63
9			0	78	633	72	10	4.9	1.1	.45	.35	.63
10			0	9.4	805	70	9.0	4.8	1.0	.45	.33	.66
11			0	7.7	160	63	8.1	4.4	.97	.53	.38	.63
12			0	5.8	398	49	7.9	4.3	.89	.58	.41	.62
13			0	4.1	173	41	7.8	3.9	.85	.55	.45	.62
14			0	60	76	34	7.9	3.5	.83	.49	.48	.65
15			0	68	55	29	25	3.6	.84	.47	.46	.66
16			0	259	46	26	22	3.7	.82	.48	.44	.61
17			0	61	38	24	14	3.2	.81	.50	.48	.55
18			0	25	33	22	11	3.1	.71	.48	.52	.57
19			0	28	29	20	9.2	2.9	.72	.46	.48	.57
20			0	17	24	19	8.3	2.7	.69	.48	.48	.56
21			0	13	20	48	7.7	2.6	.67	.53	.50	.54
22			0	12	18	25	7.1	2.8	.59	.51	.55	.50
23			0	12	17	20	6.8	2.7	.51	.51	.62	.48
24			0	11	16	18	7.0	2.5	.59	.51	.61	.45
25			0	10	15	16	19	2.3	.60	.45	.63	.41
26			0	10	15	15	14	2.2	.66	.48	.71	.40
27			248	9.4	15	14	9.0	2.1	.74	.54	.77	.39
28			103	8.9	14	13	7.1	1.9	.71	.46	.73	.41
29			3.9	8.6	---	13	7.1	1.8	.64	.41	.67	.41
30			1.8	8.4	---	16	7.1	1.7	.61	.40	.62	.38
31		---	1.5	8.4	---	22	---	1.6	---	.41	.66	---
TOTAL	0	0	358.2	809.6	3225.4	1354	342.1	115.6	27.65	15.51	15.30	18.11
MEAN	0	0	11.6	26.1	115	43.7	11.4	3.73	.92	.50	.49	.60
MAX	0	0	248	259	805	170	25	6.9	1.6	.61	.77	1.3
MIN	0	0	0	1.0	7.9	13	6.8	1.6	.51	.40	.33	.38
AC-FT	0	0	710	1610	6400	2690	679	229	55	31	30	36
CAL YR 1977	TOTAL	358.20	MEAN	.98	MAX 248	MIN 0	AC-FT	710				
WTR YR 1978	TOTAL	6281.47	MEAN	17.2	MAX 805	MIN 0	AC-FT	12460				

NOTE.--No gage-height record Feb. 16 to Mar. 16.

## TULARE LAKE BASIN

11197800 POSO CREEK NEAR OILDALE, CA

LOCATION.--Lat 35°30'50", long 118°54'17", in SW¼SW¼ sec.6, T.28 S., R.29 E., Kern County, on downstream side of highway bridge opposite mouth of Hillvale Canyon, 10 mi (16 km) northeast of Oildale, and 12 mi (19 km) north-east of Bakersfield.

DRAINAGE AREA.--230 mi<sup>2</sup> (600 km<sup>2</sup>).

PERIOD OF RECORD.--July 1959 to current year.

REVISED RECORDS.--WSP 1735: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 700 ft (213 m), from topographic map.

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

AVERAGE DISCHARGE.--19 years, 29.6 ft<sup>3</sup>/s (0.838 m<sup>3</sup>/s), 21,450 acre-ft/yr (26.4 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,700 ft<sup>3</sup>/s (190 m<sup>3</sup>/s) Feb. 25, 1969, gage height, 12.85 ft (3.917 m), from rating curve extended above 820 ft<sup>3</sup>/s (23.2 m<sup>3</sup>/s) on basis of contracted-opening measurement at gage height 11.57 ft (3.527 m); no flow for many days in 1975-78.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 4, 1958, reached a stage of 8.6 ft (2.62 m) from floodmarks, discharge, 2,750 ft<sup>3</sup>/s (77.9 m<sup>3</sup>/s), furnished by Kern County Land Co.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 70 ft<sup>3</sup>/s (1.98 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 28	0900	77 2.18	7.89 2.405	Feb. 13	2000	1230 34.8	10.36 3.158
Jan. 15	0630	91 2.58	7.98 2.432	Mar. 2	1530	354 10.0	8.74 2.664
Jan. 16	1800	463 13.1	9.14 2.786	Mar. 4	1930	1050 29.7	10.11 3.082
Jan. 17	1330	276 7.82	8.70 2.652	Mar. 31	1400	288 8.16	8.66 2.640
Feb. 10	0330	*3570 101	12.70 3.871	Apr. 8	0400	305 8.64	8.72 2.658

Minimum, no flow several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	0	19	137	176	149	41	11		0
2			0	0	18	226	156	146	40	11		0
3			0	0	18	310	143	130	39	12		0
4			0	0	16	568	139	120	37	10		0
5			0	2.8	16	746	170	116	35	10		0
6			0	6.7	19	539	164	112	34	9.8		3.2
7			0	13	36	354	245	104	91	8.0		8.0
8			0	13	103	278	280	99	28	8.5		5.8
9			0	12	921	237	247	94	24	7.0		5.2
10			0	12	2150	228	247	91	23	6.5		3.8
11			0	17	594	212	226	86	23	6.5		4.3
12			0	16	327	286	210	86	20	6.1		4.9
13			0	13	523	252	202	82	21	6.1		4.5
14			0	13	458	212	193	79	19	7.2		3.8
15			0	44	288	186	223	76	18	6.3		3.6
16			0	147	233	171	248	79	17	5.6		3.8
17			0	192	195	154	226	74	16	5.4		3.4
18			0	174	168	139	210	68	16	5.2		2.9
19			0	127	156	133	191	65	15	4.7		2.9
20			0	179	148	125	182	62	15	4.0		2.9
21			0	114	141	146	175	61	14	3.6		2.7
22			0	80	136	168	163	60	14	3.2		2.2
23			0	62	126	141	153	59	14	2.2		1.6
24			0	48	116	122	141	59	13	1.8		1.4
25			0	41	104	113	144	59	12	.84		1.1
26			0	34	95	103	178	57	13	.17		.45
27			0	31	90	98	193	55	11	.22		.45
28			21	28	91	95	164	52	12	.11		.90
29			14	24	---	90	146	48	13	0		1.1
30			2.1	24	---	87	136	45	14	0		.42
31		---	0	21	---	208	---	43	---	0		---
TOTAL	0	0	37.1	1488.5	7305	6864	5671	2516	642	163.04	0	75.32
MEAN	0	0	1.20	48.0	261	221	189	81.2	21.4	5.26	0	2.51
MAX	0	0	21	192	2150	746	280	149	41	12	0	8.0
MIN	0	0	0	0	16	87	136	43	11	0	0	0
AC-FT	0	0	74	2950	14490	13610	11250	4990	1270	323	0	149
CAL YR 1977	TOTAL	935.77	MEAN	2.56	MAX	23	MIN	0	AC-FT	1860		
WTR YR 1978	TOTAL	24761.96	MEAN	67.8	MAX	2150	MIN	0	AC-FT	49120		

## TULARE LAKE BASIN

143

11199500 WHITE RIVER NEAR DUCOR, CA

LOCATION.--Lat 35°48'53", long 118°55'42", in SE¼NE¼ sec.27, T.24 S., R.28 E., Tulare County, on right bank 0.1 mi (0.2 km) downstream from Tyler Gulch, and 8.3 mi (13.4 km) southeast of Ducor.

DRAINAGE AREA.--92.9 mi<sup>2</sup> (240.6 km<sup>2</sup>).

PERIOD OF RECORD.--October 1942 to September 1953, February 1971 to current year. Monthly discharge only for October 1942 to September 1944, published in WSP 1315-A.

GAGE.--Water-stage recorder. Altitude of gage is 685 ft (212 m), from topographic map. October 1942 to September 1946, at site 200 ft (61 m) upstream and October 1946 to September 1953, at site 300 ft (91 m) downstream at different datum.

REMARKS.--Records fair to Feb. 10 and poor thereafter. Small diversions above station for irrigation.

AVERAGE DISCHARGE.--18 years (water years 1943-53, 1972-78), 9.77 ft<sup>3</sup>/s (0.277 m<sup>3</sup>/s), 7,080 acre-ft/yr (8.73 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,300 ft<sup>3</sup>/s (65.1 m<sup>3</sup>/s), estimated by Bureau of Reclamation, Mar. 9, 1943; no flow for several months in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft<sup>3</sup>/s (0.85 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 18	Unknown	40 1.13	3.49 1.064	Feb. 10	1130	*1330 37.7	5.30 1.615
Dec. 28	0400	79 2.24	3.60 1.097	Feb. 13	1100	352 9.97	4.33 1.320
Jan. 15	1230	143 4.05	3.80 1.158	Mar. 4	1530	363 10.3	4.11 1.253
Jan. 16	1700	296 8.38	4.22 1.286	Mar. 31	0600	182 5.15	3.41 1.039
Jan. 19	1800	163 4.62	3.87 1.180	Apr. 7	0800	121 3.43	3.14 .957
Feb. 9	0800	739 20.9	4.84 1.475				

Minimum, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	2.4	4.0	44	64	40	16	4.1		0
2			0	1.7	3.8	64	60	39	15	4.2		0
3			0	2.2	3.6	55	55	38	15	4.5		0
4			0	3.3	3.5	180	54	37	14	3.7		0
5			0	3.0	3.5	142	55	36	13	3.8		0
6			0	3.6	8.8	120	57	34	13	3.7		1.5
7			0	8.0	10	94	108	32	12	3.0		3.7
8			0	4.5	27	80	78	31	11	3.2		2.6
9			0	4.2	266	75	58	30	9.5	2.7		2.4
10			0	5.2	624	71	52	29	8.8	2.5		1.8
11			0	4.5	272	80	51	28	8.6	2.5		2.0
12			0	3.9	184	89	51	28	7.6	2.4		2.3
13			0	3.6	254	80	51	27	7.9	2.3		1.9
14			0	3.9	157	73	51	27	7.4	2.7		1.8
15			0	41	90	66	51	27	6.7	2.4		1.7
16			0	82	80	62	58	26	6.3	2.2		1.8
17			0	150	69	60	49	25	6.0	2.1		1.5
18			8.6	81	60	56	47	24	6.0	2.0		1.2
19			1.6	106	54	53	47	23	5.6	1.8		1.3
20			.06	77	51	52	47	23	5.6	1.6		1.3
21			0	12	48	60	47	23	5.3	1.4		1.1
22			0	10	46	60	46	23	5.3	1.2		.95
23			0	8.0	45	51	45	22	5.2	.85		.80
24			0	7.2	44	48	44	21	4.9	.30		.70
25			0	6.5	43	48	44	20	4.6	.10		.67
26			0	5.9	41	48	44	19	4.2	0		.65
27			8.0	5.4	40	47	44	19	4.1	0		.62
28			42	5.0	40	46	42	18	4.5	0		.60
29			15	4.7	---	45	42	17	4.8	0		.59
30			4.8	4.5	---	44	42	17	5.2	0		.58
31		---	3.9	4.2	---	106	---	16	---	0		---
TOTAL	0	0	83.96	664.4	2572.2	2199	1584	819	243.1	61.25	0	36.06
MEAN	0	0	2.71	21.4	91.9	70.9	52.8	26.4	8.10	1.98	0	1.20
MAX	0	0	42	150	624	180	108	40	16	4.5	0	3.7
MIN	0	0	0	1.7	3.5	44	42	16	4.1	0	0	0
AC-FT	0	0	167	1320	5100	4360	3140	1620	482	121	0	72
CAL YR 1977	TOTAL	280.62	MEAN	.77	MAX	42	MIN	0	AC-FT	557		
WTR YR 1978	TOTAL	8262.97	MEAN	22.6	MAX	624	MIN	0	AC-FT	16390		

## TULARE LAKE BASIN

11200800 DEER CREEK NEAR FOUNTAIN SPRINGS, CA

LOCATION.--Lat 35°56'30", long 118°49'19", in SE¼NE¼ sec.10, T.23 S., R.29 E., Tulare County, on left bank 1.0 mi (1.6 km) upstream from Pothole Creek, 6.3 mi (10.1 km) northeast of Fountain Springs, and 12 mi (19 km) east of Terra Bella.

DRAINAGE AREA.--83.3 mi<sup>2</sup> (215.7 km<sup>2</sup>).

PERIOD OF RECORD.--August 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 980 ft (299 m), from topographic map.

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

AVERAGE DISCHARGE.--10 years, 32.6 ft<sup>3</sup>/s (0.923 m<sup>3</sup>/s), 23,620 acre-ft/yr (29.1 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,340 ft<sup>3</sup>/s (94.6 m<sup>3</sup>/s) Feb. 24, 1969, gage height, 9.85 ft (3.002 m), from rating curve extended above 600 ft<sup>3</sup>/s (17.0 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 8.83 ft (2.691 m) in gage well, 9.18 ft (2.798 m) from floodmarks, and 12.54 ft (3.822 m) from floodmarks; no flow Aug. 14-22, 1968 and for several months in 1972, 1976, and 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 6, 1966, reached a stage of 12.54 ft (3.822 m), from floodmarks, discharge, 5,330 ft<sup>3</sup>/s (151 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft<sup>3</sup>/s (2.83 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 18	0415	214 6.06	4.33 1.320	Mar. 21	1100	210 5.95	4.30 1.311
Jan. 17	0100	176 4.98	4.11 1.253	Mar. 31	0715	252 7.14	4.50 1.372
Jan. 19	1345	179 5.07	4.13 1.259	Apr. 7	0330	226 6.40	4.38 1.335
Feb. 9	0630	*1320 37.4	7.16 2.182	Apr. 16	0130	267 7.56	4.57 1.393
Mar. 4	1515	736 20.8	6.03 1.838	Apr. 25	2215	134 3.79	3.88 1.183
Mar. 11	0930	345 9.77	4.92 1.500				

Minimum daily, no flow Oct. 1-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	2.4	4.9	16	18	65	110	92	41	19	6.4	4.5
2	0	2.4	4.9	14	18	147	111	83	41	20	6.2	4.7
3	0	2.5	4.9	14	17	154	97	77	41	20	6.2	4.4
4	0	2.1	4.9	22	16	469	115	76	39	19	6.0	4.8
5	0	3.3	4.9	16	16	448	104	75	38	18	5.8	14
6	0	5.4	5.0	26	31	300	118	71	37	17	5.5	33
7	.07	3.9	4.9	25	43	228	184	67	35	17	5.0	19
8	.58	3.2	4.9	18	82	187	153	65	35	16	5.0	12
9	.82	3.2	4.8	17	957	174	143	65	34	15	5.3	10
10	.49	3.0	4.6	25	870	151	143	64	33	14	5.1	9.6
11	.25	2.9	4.5	21	354	216	137	63	32	14	4.8	10
12	.69	2.8	4.3	16	220	207	129	62	31	13	4.6	9.9
13	.61	3.0	4.2	15	315	177	120	61	31	13	4.4	9.4
14	.31	3.2	4.7	15	226	158	114	61	30	12	4.5	9.1
15	.17	3.3	9.3	64	163	144	124	61	30	12	4.6	9.4
16	.23	3.4	16	66	128	132	173	59	29	11	4.6	9.0
17	.68	3.8	63	127	104	121	127	55	28	11	4.3	8.4
18	.60	4.1	91	73	88	112	121	53	27	10	4.4	8.7
19	.37	4.3	24	104	83	104	116	51	26	9.3	4.4	8.9
20	.52	4.3	12	79	76	98	111	50	25	9.4	4.1	8.7
21	.79	4.6	8.4	55	73	147	105	50	24	9.5	4.0	8.4
22	1.1	4.7	9.4	44	70	147	99	51	23	9.2	4.5	7.6
23	1.5	5.0	10	38	66	116	93	50	22	8.7	5.1	7.0
24	1.6	5.0	14	33	60	105	89	48	22	8.2	5.0	6.7
25	1.6	4.8	11	29	55	98	107	46	21	8.3	5.4	6.1
26	1.5	4.7	9.7	27	52	93	114	43	21	8.1	5.6	5.9
27	1.1	4.7	48	25	51	89	100	41	21	7.8	5.9	5.7
28	1.7	4.7	77	23	50	85	91	40	22	7.9	5.7	5.8
29	2.1	4.9	38	21	---	80	87	41	22	7.3	5.3	5.7
30	2.2	4.9	27	20	---	78	85	42	21	7.3	4.5	5.6
31	2.2	---	21	19	---	166	---	41	---	7.1	4.5	---
TOTAL	23.78	114.5	555.2	1107	4302	4996	3520	1804	882	379.1	156.7	272.0
MEAN	.77	3.82	17.9	35.7	154	161	117	58.2	29.4	12.2	5.05	9.07
MAX	2.2	5.4	91	127	957	469	184	92	41	20	6.4	33
MIN	0	2.1	4.2	14	16	65	85	40	21	7.1	4.0	4.4
AC-FT	47	227	1100	2200	8530	9910	6980	3580	1750	752	311	540
CAL YR 1977 TOTAL	1765.59			MEAN 4.84	MAX 91	MIN 0	AC-FT 3500					
WTR YR 1978 TOTAL	18112.28			MEAN 49.6	MAX 957	MIN 0	AC-FT 35930					



## 11201200 DEER CREEK DIVERSION NEAR TERRA BELLA, CA

LOCATION.--Lat 35°59'27", long 118°59'06", in NE¼NE¼ sec.30, T.22 S., R.28 E., Tulare County, on right bank 1,000 ft (305 m) downstream from diversion structure, 3.8 mi (6.1 km) northeast of Terra Bella.

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 510 ft (155 m), from topographic map.

REMARKS.--Records good. Diversion receives water from Deer Creek 1,000 ft (305 m) upstream. Water is used for ground-water recharge.

AVERAGE DISCHARGE.--8 years, 1.03 ft<sup>3</sup>/s (0.029 m<sup>3</sup>/s), 746 acre-ft/yr (920,000 m<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 15 ft<sup>3</sup>/s (0.42 m<sup>3</sup>/s) Dec. 28, 1977; no flow for several months in each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	.37	8.5	2.1	.20	.10	.01	.01		0
2			0	.04	8.3	4.7	.16	.06	4.1	0		0
3			0	.02	8.2	2.3	4.2	.04	11	0		0
4			0	.89	8.1	6.8	2.9	.99	11	0		0
5			0	2.3	7.4	6.1	.13	.52	11	0		0
6			0	2.8	8.2	1.7	.26	.20	10	0		.50
7			0	9.7	11	.46	2.3	.05	7.9	2.3		10
8			0	6.5	7.7	.42	.62	0	9.9	6.3		4.9
9			0	6.4	6.2	.32	.49	0	9.9	5.8		2.8
10			0	8.0	7.0	.26	.54	4.5	10	5.5		2.2
11			0	8.1	.32	.79	.52	10	11	5.1		2.1
12			0	7.0	.26	.39	.44	7.7	10	4.9		2.6
13			0	5.7	.26	.37	.26	7.2	10	4.6		2.4
14			0	6.6	.18	6.1	3.3	6.4	11	4.4		1.8
15			0	10	.14	1.9	.39	6.4	12	4.6		1.6
16			0	11	.10	1.2	1.5	6.3	12	4.1		2.1
17			0	11	.08	.42	5.0	5.6	12	2.6		1.6
18			7.9	7.9	.08	.34	8.3	4.7	12	2.5		1.1
19			1.1	8.5	.06	.37	1.2	2.8	11	2.0		1.4
20			.04	7.1	.06	.34	.05	.23	11	1.4		1.3
21			.03	1.6	.05	1.1	.03	.10	11	1.2		1.2
22			.02	.32	.05	1.2	.02	6.6	10	1.1		.89
23			.02	.23	.05	.39	.01	11	10	.89		.49
24			.01	4.0	.05	.37	1.2	11	9.7	.65		.05
25			.01	10	.04	.34	2.1	11	9.8	.32		.01
26			.01	9.8	.04	.32	2.1	10	9.4	.20		0
27			.88	9.4	3.2	4.6	5.1	.71	3.4	.03		0
28			15	9.2	4.2	6.5	8.6	.05	.05	.02		0
29			8.6	9.1	---	2.6	7.9	.03	.02	.02		0
30			2.5	8.9	---	.20	.10	.01	.01	.01		0
31		---	1.9	8.6	---	1.5	---	.01	---	0		---
TOTAL	0	0	38.02	191.07	89.82	56.50	59.92	114.30	260.19	60.55	0	41.04
MEAN	0	0	1.23	6.16	3.21	1.82	2.00	3.69	8.67	1.95	0	1.37
MAX	0	0	15	11	11	6.8	8.6	11	12	6.3	0	10
MIN	0	0	0	.02	.04	.20	.01	0	.01	0	0	0
AC-FT	0	0	75	379	178	112	119	227	516	120	0	81
CAL YR 1977	TOTAL	71.58	MEAN	.20	MAX	15	MIN	0	AC-FT	142		
WTR YR 1978	TOTAL	911.41	MEAN	2.50	MAX	15	MIN	0	AC-FT	1810		

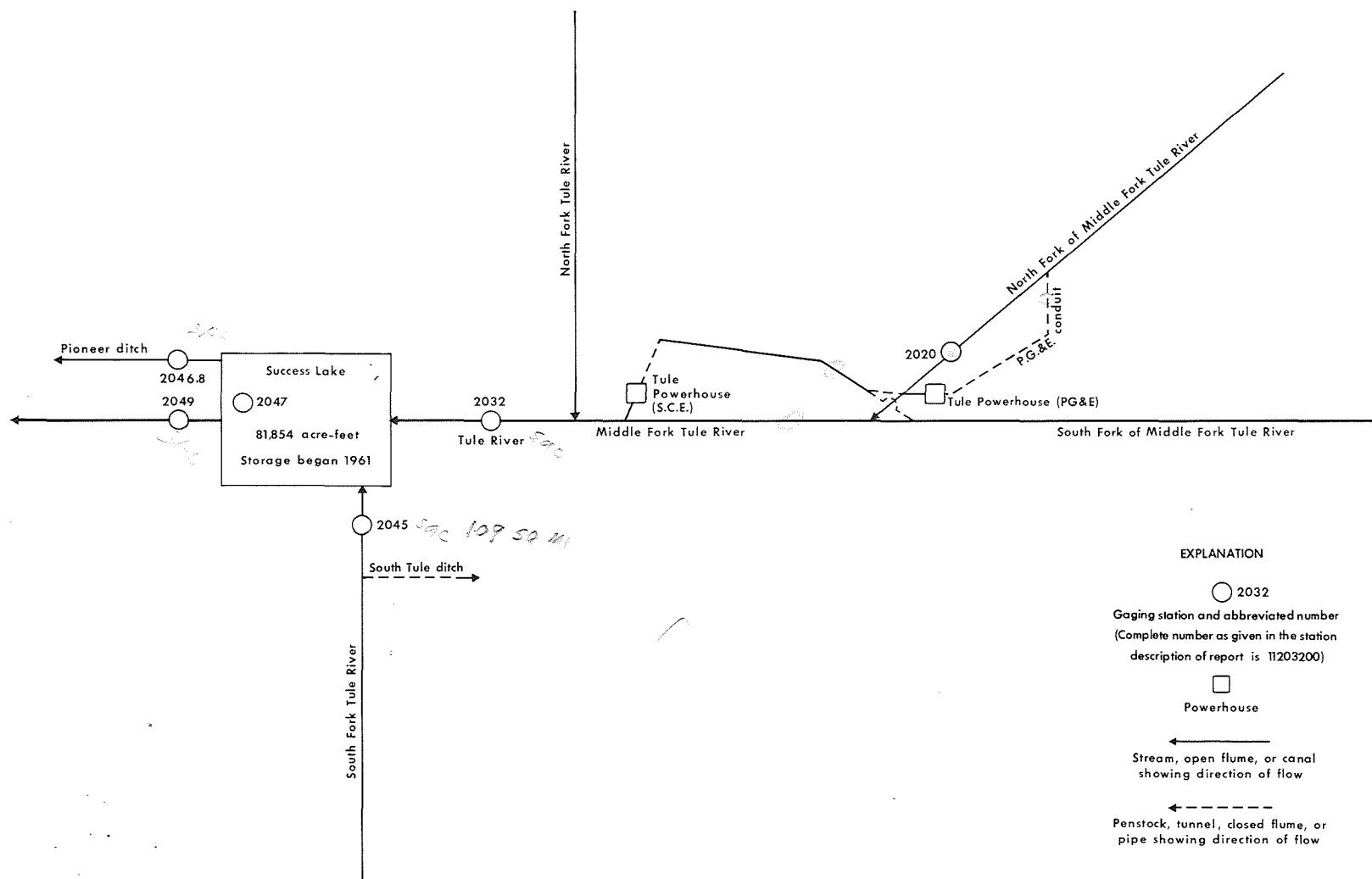


FIGURE 5.--Schematic diagram showing diversions and storage in Tule River basin.

## 11202000 NORTH FORK OF MIDDLE FORK TULE RIVER NEAR SPRINGVILLE, CA

LOCATION.--Lat 36°10'29", long 118°41'41", in T.20 S., R.30 E., unsurveyed, Tulare County, Hydrologic Unit 18030006, on right bank 1.2 mi (1.9 km) upstream from mouth, 2.2 mi (3.5 km) downstream from Hossack Creek, and 7.4 mi (11.9 km) northeast of Springville.

DRAINAGE AREA.--39.3 mi<sup>2</sup> (101.8 km<sup>2</sup>).

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1315-A. January 1909 to December 1912 at site 2 mi (3 km) upstream, records not equivalent. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960.

REVISED RECORDS.--WSP 1445: 1951.

GAGE.--Water-stage recorder. Concrete control on river since Aug. 6, 1958. Water-stage recorder and rectangular concrete channel for conduit diversion. Altitude of gage is 2,920 ft (890 m), from topographic map.

REMARKS.--Pacific Gas and Electric Co. conduit diverts 2.5 mi (4.0 km) upstream from station; water is returned to North Fork of Middle Fork Tule River 1.1 mi (1.8 km) downstream from station. See schematic diagram of Tule River basin. For records of combined discharge of river and conduit, see following page.

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

AVERAGE DISCHARGE.--River only: 39 years, 25.6 ft<sup>3</sup>/s (0.725 m<sup>3</sup>/s), 18,550 acre-ft/yr (22.9 hm<sup>3</sup>/yr).  
Combined river and diversion: 39 years, 56.7 ft<sup>3</sup>/s (1.606 m<sup>3</sup>/s), 41,080 acre-ft/yr (50.7 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 16,900 ft<sup>3</sup>/s (479 m<sup>3</sup>/s) Dec. 6, 1966, gage height, 13.83 ft (4.215 m), from floodmarks, from rating curve extended above 270 ft<sup>3</sup>/s (7.65 m<sup>3</sup>/s) on basis of critical-depth determinations at gage heights 9.67 ft (2.947 m) and 12.47 ft (3.801 m); no flow Sept. 10, 11, 1955.

Combined flow, maximum discharge, 16,900 ft<sup>3</sup>/s (479 m<sup>3</sup>/s) Dec. 6, 1966; minimum daily, 6.7 ft<sup>3</sup>/s (0.19 m<sup>3</sup>/s) Aug. 15, 1977.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 482 ft<sup>3</sup>/s (13.7 m<sup>3</sup>/s) Feb. 9, gage height, 5.16 ft (1.573 m); minimum daily, 0.51 ft<sup>3</sup>/s (0.014 m<sup>3</sup>/s) Oct. 5, 11.

Combined flow, maximum discharge, 532 ft<sup>3</sup>/s (15.1 m<sup>3</sup>/s) Feb. 9; minimum daily, 9.2 ft<sup>3</sup>/s (0.26 m<sup>3</sup>/s) Oct. 3-5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.59	.68	.85	3.3	2.2	7.7	99	77	225	72	3.5	3.0
2	.58	.56	.88	2.7	2.0	77	88	83	219	66	3.5	2.8
3	.62	.55	.89	2.6	1.9	90	71	97	213	60	3.5	2.7
4	.57	.71	.89	2.6	1.9	259	66	118	220	54	3.5	5.0
5	.51	1.5	.89	2.2	2.7	191	54	131	228	50	3.5	17
6	.95	2.0	.89	5.9	21	120	51	119	233	48	3.4	17
7	.67	1.8	.89	3.2	31	87	50	112	246	46	3.3	7.3
8	.60	1.6	.95	2.5	37	67	40	119	253	40	3.3	4.6
9	.56	1.5	.92	3.9	288	61	39	135	249	36	3.2	4.4
10	.54	.78	.89	5.7	167	47	43	139	233	34	3.2	4.3
11	.51	.58	.89	4.0	75	46	53	141	208	29	3.1	4.3
12	.52	.54	.90	3.1	43	40	67	168	200	24	3.0	4.2
13	.55	.61	.94	2.6	38	30	80	206	191	20	3.1	3.9
14	.57	.70	.80	3.6	24	24	80	230	177	18	3.1	3.9
15	.59	.70	6.2	28	17	22	101	218	164	16	3.1	5.0
16	.72	.76	2.9	34	14	24	92	175	152	14	3.0	3.5
17	.79	.78	84	52	12	32	76	164	142	10	3.0	3.3
18	.92	1.0	19	17	11	39	73	173	139	6.6	3.0	4.9
19	.98	1.2	3.1	21	10	39	75	182	138	4.4	2.9	3.0
20	.98	.88	1.7	14	9.9	48	75	188	133	3.9	2.8	2.8
21	1.0	.82	2.3	9.1	9.5	75	67	195	130	4.4	2.8	2.7
22	1.1	1.0	4.3	6.8	8.7	112	60	201	126	4.2	3.0	2.6
23	1.0	.86	2.8	5.5	8.0	73	61	186	118	4.0	2.9	2.5
24	1.0	.82	1.8	4.6	7.3	63	70	155	108	3.9	2.9	2.4
25	1.0	.82	1.3	4.0	6.9	64	89	135	104	3.9	3.0	2.5
26	1.0	.82	4.2	3.5	6.5	71	82	126	98	3.8	3.0	2.8
27	1.2	.82	145	3.1	6.3	67	70	132	91	3.8	3.0	3.5
28	1.2	.83	67	2.8	6.2	67	69	156	85	3.7	3.0	3.9
29	1.2	.82	9.5	2.6	---	77	70	193	80	3.6	2.8	4.6
30	1.4	.82	8.1	2.4	---	89	76	225	78	3.6	2.8	2.4
31	1.4	---	4.5	2.3	---	131	---	233	---	3.6	2.9	---
TOTAL	25.82	27.86	380.17	260.6	868.0	2239.7	2087	4912	4981	694.4	96.1	136.8
MEAN	.83	.93	12.3	8.41	31.0	72.2	69.6	158	166	22.4	3.10	4.56
MAX	1.4	2.0	145	52	288	259	101	233	253	72	3.5	17
MIN	.51	.54	.80	2.2	1.9	7.7	39	77	78	3.6	2.8	2.4
AC-FT	51	55	754	517	1720	4440	4140	9740	9880	1380	191	271

CAL YR 1977 TOTAL 899.17 MEAN 2.46 MAX 145 MIN .40 AC-FT 1780  
WTR YR 1978 TOTAL 16709.45 MEAN 45.8 MAX 288 MIN .51 AC-FT 33140

## TULARE LAKE BASIN

11202000 NORTH FORK OF MIDDLE FORK TULE RIVER NEAR SPRINGVILLE, CA--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, CA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.6	10	11	36	36	73	165	144	292	139	48	27
2	9.3	9.9	11	33	35	147	154	150	286	133	47	27
3	9.2	10	11	32	36	158	136	164	280	127	46	27
4	9.2	10	11	31	36	328	132	185	287	121	45	31
5	9.2	15	11	28	46	257	120	197	295	117	44	78
6	12	13	11	47	85	186	117	185	301	115	41	81
7	11	12	11	36	93	153	115	178	314	113	41	51
8	10	12	11	33	102	133	106	185	320	107	40	43
9	10	11	11	47	350	127	106	202	315	103	39	38
10	9.9	11	11	53	235	112	110	207	301	101	39	37
11	9.7	11	11	41	139	112	120	209	276	96	38	36
12	9.5	11	11	36	106	106	134	236	268	91	37	34
13	9.8	11	11	34	99	95	147	274	259	87	36	33
14	9.7	11	11	47	78	90	147	297	245	85	36	33
15	9.6	11	29	91	68	89	169	286	232	83	35	33
16	9.8	11	17	90	61	91	160	242	220	81	35	32
17	9.7	11	121	116	57	100	143	231	210	78	34	30
18	10	11	64	76	55	107	140	240	207	74	34	31
19	10	11	27	79	55	105	141	249	206	70	33	30
20	10	11	21	62	57	114	141	256	201	68	32	30
21	10	11	17	51	61	142	133	263	198	65	32	29
22	11	13	20	45	65	156	126	268	194	63	32	28
23	10	13	32	41	68	140	128	253	186	61	32	28
24	10	12	28	38	68	129	137	222	176	59	31	26
25	10	12	21	35	67	131	156	202	172	59	31	27
26	10	11	30	35	65	138	148	193	166	58	31	26
27	11	11	189	35	61	134	136	199	158	56	30	26
28	11	11	132	35	62	134	135	223	152	54	29	25
29	11	11	70	36	---	145	136	260	147	52	29	26
30	11	11	58	36	---	157	143	292	145	51	28	24
31	11	---	44	36	---	199	---	300	---	49	28	---
TOTAL	313.2	339.9	1074	1471	2346	4288	4081	6992	7009	2616	1113	1027
MEAN	10.1	11.3	34.6	47.5	83.8	138	136	226	234	84.4	35.9	34.2
MAX	12	15	189	116	350	328	169	300	320	139	48	81
MIN	9.2	9.9	11	28	35	73	106	144	145	49	28	24
AC-FT	621	674	2130	2920	4650	8510	8090	13870	13900	5190	2210	2040
CAL YR 1977	TOTAL	6027.8	MEAN	16.5	MAX	189	MIN	6.7	AC-FT	11960		
WTR YR 1978	TOTAL	32670.1	MEAN	89.5	MAX	350	MIN	9.2	AC-FT	64800		

## 11203200 TULE RIVER NEAR SPRINGVILLE, CA

LOCATION.--Lat 36°06'02", long 118°52'07", in NE¼SW¼ sec.17, T.21 S., R.29 E., Tulare County, on left bank 10 ft (3 m) downstream from highway bridge, 3.5 mi (5.6 km) southwest of Springville, and 4.1 mi (6.6 km) upstream from Success Dam.

DRAINAGE AREA.--247 mi<sup>2</sup> (640 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1957 to current year.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 680 ft (207 m), from topographic map. Prior to Mar. 20, 1968, at site 1.9 mi (3.1 km) upstream at different datum.

REMARKS.--Records good. Many small diversions above station for irrigation. Power is developed on Middle Fork and tributaries. Diversion to Tule River diversion ditch starts 400 ft (122 m) upstream most of which is returned to the river 0.5 mi (0.8 km) downstream. Records since Mar. 20, 1968, include flow diverted to Tule River diversion ditch.

AVERAGE DISCHARGE.--21 years, 139 ft<sup>3</sup>/s (3.936 m<sup>3</sup>/s), 100,700 acre-ft/yr (124 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,600 ft<sup>3</sup>/s (1,400 m<sup>3</sup>/s) Dec. 6, 1966, gage height, 17.18 ft (5.236 m) in gage well, 19.7 ft (6.00 m) from floodmarks, site and datum then in use, from rating curve extended above 7,400 ft<sup>3</sup>/s (210 m<sup>3</sup>/s) on basis of slope-area measurement of maximum flow; no flow many days in 1961 and Aug. 16, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1955 reached a stage of 13.7 ft (4.18 m) previous site and datum, from floodmarks, discharge, 21,000 ft<sup>3</sup>/s (595 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 350 ft<sup>3</sup>/s (9.91 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)		Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	
Dec. 18	0245	809	22.9	Mar. 22	0300	2120	60.0
Dec. 27	1315	1220	34.6	Mar. 31	0830	1440	40.8
Jan. 16	2230	1080	30.6	Apr. 7	0500	1080	30.6
Feb. 9	0745	*8370	237	Apr. 16	0015	1380	39.1
Feb. 13	0845	1160	32.9	May 15	0300	802	22.7
Mar. 4	1515	4670	132				

Minimum daily, 1.6 ft<sup>3</sup>/s (0.045 m<sup>3</sup>/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	7.0	14	117	106	258	692	449	617	221	56	24
2	3.6	5.8	14	95	101	587	632	441	585	206	51	22
3	2.1	4.7	14	84	96	702	561	456	566	199	50	20
4	1.6	4.5	14	84	95	2960	576	497	569	186	52	25
5	2.1	9.3	15	78	101	2200	515	547	587	178	53	94
6	2.1	14	15	124	308	1170	526	505	594	172	49	217
7	4.1	12	15	121	361	825	848	459	606	170	46	159
8	4.3	10	15	93	460	662	597	465	629	161	44	103
9	3.8	10	15	96	4760	619	527	479	622	155	41	79
10	4.0	10	16	201	3690	548	524	501	594	151	39	68
11	4.3	9.9	16	170	1190	637	515	488	534	142	38	66
12	4.0	9.3	17	129	722	611	523	541	504	133	36	63
13	3.4	10	17	110	996	530	539	630	489	131	35	57
14	3.1	11	17	117	633	464	527	701	458	124	38	54
15	3.0	12	24	598	479	431	652	719	430	118	34	53
16	3.0	11	51	489	400	414	858	584	396	118	30	52
17	3.0	10	248	838	343	423	596	534	371	115	30	51
18	2.9	9.4	420	451	306	434	556	539	353	106	32	48
19	2.9	9.9	106	519	290	413	542	557	354	101	29	48
20	2.3	11	60	375	278	424	531	573	339	91	29	50
21	2.4	12	47	270	276	707	500	573	332	89	27	49
22	2.7	12	44	215	283	1120	460	600	323	84	26	46
23	2.7	16	51	186	285	674	441	574	306	79	28	45
24	2.8	16	83	159	275	568	446	491	289	75	29	42
25	3.0	15	62	143	266	527	574	446	281	72	28	40
26	3.2	14	51	132	252	527	540	408	272	73	29	38
27	3.3	14	724	124	242	508	485	408	259	69	29	38
28	4.5	15	678	120	232	489	447	447	243	68	29	40
29	4.5	15	329	112	---	488	437	529	237	64	28	37
30	4.4	14	232	112	---	516	433	612	230	62	25	36
31	5.2	---	154	111	---	1050	---	644	---	60	24	---
TOTAL	102.6	333.8	3578	6573	17826	22486	16600	16397	12969	3773	1114	1764
MEAN	3.31	11.1	115	212	637	725	553	529	432	122	35.9	58.8
MAX	5.2	16	724	838	4760	2960	858	719	629	221	56	217
MIN	1.6	4.5	14	78	95	258	433	408	230	60	24	20
AC-FT	204	662	7100	13040	35360	44600	32930	32520	25720	7480	2210	3500

CAL YR 1977 TOTAL 8642.12 MEAN 23.7 MAX 724 MIN 0 AC-FT 17140  
WTR YR 1978 TOTAL 103516.40 MEAN 284 MAX 4760 MIN 1.6 AC-FT 205300

## TULARE LAKE BASIN

11203200 TULE RIVER NEAR SPRINGVILLE, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-67, 1969 to current year.

CHEMICAL ANALYSES: Water years 1964-66.

WATER TEMPERATURES: Water years 1966-67, 1969 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1965 to September 1967, October 1968 to current year.

INSTRUMENTATION.--Temperature recorder since October 1965.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 35.5°C July 1, 1972; minimum recorded, 2.5°C Jan. 5-8, 1971.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 29.5°C on Aug. 10; minimum recorded, 6.5°C Feb. 12.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	22.5	20.0	18.0	14.0	13.5	10.5	11.0	9.0	10.5	9.5	13.0	11.0
2	23.0	19.0	17.5	14.0	13.5	10.5	10.5	9.5	11.5	9.0	12.5	11.0
3	23.0	19.5	17.5	14.0	13.0	10.0	10.5	10.0	11.0	8.5	11.5	9.5
4	21.5	19.5	17.0	14.0	13.0	10.0	10.5	9.5	11.5	9.0	11.0	10.0
5	22.0	19.5	16.0	14.0	13.0	10.0	11.0	10.0	12.5	11.0	10.5	9.5
6	23.0	19.0	14.5	13.0	12.5	10.0	11.0	10.5	12.0	10.0	11.5	9.0
7	23.0	19.5	15.0	11.0	12.5	11.0	11.0	9.5	10.0	9.0	13.0	9.0
8	22.5	20.0	15.5	11.5	12.5	11.0	11.0	9.0	9.5	8.5	13.0	10.0
9	22.0	19.5	15.0	11.0	11.5	9.0	11.5	10.5	10.0	9.5	12.5	11.0
10	22.0	19.0	15.0	11.0	11.5	8.5	11.0	9.5	9.5	7.5	11.0	9.5
11	23.0	19.0	15.0	12.0	11.5	8.5	10.5	8.5	8.5	7.0	11.0	10.0
12	22.0	19.5	15.5	11.0	11.0	9.5	10.0	8.5	8.5	6.5	10.0	9.0
13	22.0	19.0	14.0	11.0	12.5	11.0	12.0	9.5	9.5	8.0	12.0	9.0
14	22.0	19.0	14.5	11.0	12.5	9.5	11.5	11.5	10.0	7.5	13.0	9.5
15	22.0	19.0	14.5	11.0	13.0	11.0	11.5	10.0	9.5	8.5	13.0	9.5
16	21.5	19.0	15.0	10.5	11.0	9.5	10.0	9.5	10.0	8.0	14.5	10.5
17	21.5	18.5	15.0	11.0	11.0	10.5	10.5	9.5	10.5	8.5	15.0	11.5
18	21.0	18.5	15.0	11.5	11.0	9.5	---	---	11.0	8.5	13.5	11.5
19	20.0	18.5	13.5	11.0	9.5	8.0	---	---	11.5	8.5	14.5	11.0
20	19.5	18.0	11.5	8.5	9.0	7.5	---	---	12.0	9.0	13.5	11.5
21	19.5	18.0	11.5	9.0	10.0	8.5	---	---	12.5	9.5	14.5	12.5
22	19.0	16.0	14.0	10.5	12.0	10.0	---	---	13.0	10.0	14.0	11.5
23	18.5	15.5	14.5	12.0	12.5	11.5	---	---	12.5	9.5	12.5	10.5
24	19.0	15.5	14.0	11.0	11.5	10.5	---	---	12.5	9.5	13.0	10.5
25	19.5	15.5	14.0	11.0	11.5	10.0	---	---	11.5	9.5	13.5	8.5
26	19.5	17.5	13.5	10.5	12.0	11.0	---	---	12.5	10.0	12.5	10.5
27	18.5	17.0	14.0	11.0	12.0	11.0	---	---	11.5	10.5	14.0	11.0
28	17.5	15.0	14.0	12.0	11.5	11.0	---	---	12.0	10.0	15.0	11.5
29	17.0	14.5	14.5	11.5	12.0	11.0	---	---	---	---	15.0	12.0
30	17.5	14.5	14.0	11.0	12.0	11.0	---	---	---	---	14.5	12.5
31	17.5	14.5	---	---	11.5	10.0	---	---	---	---	13.0	11.5
MONTH	23.0	14.5	18.0	8.5	13.5	7.5	---	---	13.0	6.5	15.0	8.5

## TULARE LAKE BASIN

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11203200 TULE RIVER NEAR SPRINGVILLE, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	13.0	9.5	12.0	11.0	16.5	13.0	20.5	17.5	27.0	23.0	26.5	21.0
2	11.5	10.5	15.5	10.5	16.5	13.0	20.0	17.0	27.5	23.5	27.0	21.5
3	12.5	9.5	17.0	13.0	17.0	14.0	20.0	15.0	27.0	23.5	27.5	22.0
4	12.0	10.0	16.5	14.0	17.5	14.5	20.5	15.5	27.0	24.0	24.5	21.5
5	11.0	8.5	14.0	12.0	18.0	14.5	20.5	17.0	28.0	23.5	21.5	20.0
6	10.5	10.0	14.0	10.0	18.0	15.5	22.0	18.0	28.5	24.5	21.0	19.0
7	10.5	8.5	15.0	11.0	18.5	15.0	22.0	18.5	28.5	24.5	20.5	18.5
8	11.0	8.5	16.5	12.0	18.0	14.0	23.0	19.0	28.5	25.0	20.5	17.0
9	14.0	8.5	15.5	12.5	18.0	14.5	23.0	19.0	29.0	24.0	21.0	17.5
10	15.5	11.0	16.0	12.5	17.0	14.5	23.5	19.0	29.5	25.0	20.5	18.5
11	16.0	12.5	17.0	12.5	17.0	13.5	23.0	18.5	28.0	25.0	21.0	18.0
12	17.0	13.5	16.5	12.5	18.0	15.0	22.5	18.0	27.5	23.0	21.5	18.0
13	16.0	13.5	17.0	13.0	17.5	14.5	23.0	19.0	27.0	22.5	22.0	18.5
14	14.0	12.5	17.0	13.0	17.5	15.0	24.0	19.5	26.0	21.0	21.5	18.5
15	12.5	11.0	15.0	12.0	17.5	14.0	24.5	20.5	27.0	21.5	21.5	18.0
16	12.5	9.0	14.0	10.0	17.5	13.5	24.5	21.0	26.5	21.5	22.5	18.0
17	13.0	9.0	15.0	11.0	18.0	14.5	24.5	20.5	26.0	21.5	22.0	18.5
18	14.5	10.0	16.0	12.0	18.0	14.5	25.0	20.5	25.5	19.0	20.0	16.5
19	15.0	11.5	16.5	12.5	18.0	14.5	24.5	20.0	25.5	20.5	19.5	15.0
20	13.5	12.0	15.5	12.5	17.5	14.5	24.5	20.0	26.0	21.0	19.0	14.0
21	12.0	10.0	16.5	12.5	19.0	14.5	24.5	20.5	26.0	20.5	19.5	14.5
22	13.5	9.0	16.0	12.5	19.5	15.5	25.5	21.0	25.5	20.5	20.0	14.5
23	15.0	11.0	14.5	12.0	18.5	15.0	26.0	21.5	25.0	19.5	21.0	15.5
24	14.0	12.5	13.0	10.0	19.0	14.5	25.5	22.0	24.5	19.5	21.5	17.5
25	14.5	12.5	13.5	10.0	19.0	15.0	25.0	22.5	24.5	19.0	22.5	18.5
26	13.0	11.5	14.5	10.5	19.0	16.0	26.0	22.5	25.0	19.5	23.0	18.5
27	15.0	11.0	17.0	12.0	18.5	14.5	26.5	23.0	24.5	19.5	23.0	19.5
28	15.5	12.0	17.5	13.5	19.5	15.5	27.0	23.0	25.5	20.0	23.0	19.5
29	15.5	12.0	18.0	14.0	19.5	15.5	26.0	23.0	25.5	21.0	23.0	19.0
30	14.0	12.0	18.0	14.0	20.5	17.0	26.5	22.5	27.0	22.0	23.5	18.5
31	---	---	17.0	13.5	---	---	27.0	22.5	26.5	21.0	---	---
MONTH	17.0	8.5	18.0	10.0	20.5	13.0	27.0	15.0	29.5	19.0	27.5	14.0

## 11204500 SOUTH FORK TULE RIVER NEAR SUCCESS, CA

LOCATION.--Lat 36°02'33", long 118°51'24", in NW¼SW¼ sec.4, T.22 S., R.29 E., Tulare County, on left bank 0.5 mi (0.8 km) upstream from Crew Creek, 4 mi (6 km) southeast of Success, and 5 mi (8 km) upstream from mouth.

DRAINAGE AREA.--109 mi<sup>2</sup> (287 km<sup>2</sup>).

PERIOD OF RECORD.--June 1930 to December 1954, January 1956 to current year. Monthly and yearly discharge only for some periods, published in WSP 1735.

REVISED RECORDS.--WSP 1315-A: 1931-32(M). WSP 1445: 1952-53(P), drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 770 ft (235 m), from topographic map. Prior to June 26, 1951, at site 0.4 mi (0.6 km) downstream at different datum.

REMARKS.--Records good. Diversions for irrigation of about 640 acres (92.59 km<sup>2</sup>) above station.

AVERAGE DISCHARGE.--46 years, 41.3 ft<sup>3</sup>/s (1.170 m<sup>3</sup>/s), 29,920 acre-ft/yr (36.9 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,300 ft<sup>3</sup>/s (405 m<sup>3</sup>/s) Dec. 6, 1966, gage height, 12.50 ft (3.810 m) in gage well, 13.3 ft (4.05 m) from floodmarks, from rating curve extended above 4,300 ft<sup>3</sup>/s (122 m<sup>3</sup>/s) on basis of slope-area measurement of maximum flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft<sup>3</sup>/s (5.66 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 17	1200	433 12.3	4.19 1.277	Mar. 11	1045	417 11.8	4.15 1.265
Dec. 27	1400	248 7.02	3.63 1.106	Mar. 21	2330	552 15.6	4.46 1.359
Jan. 15	0830	290 8.21	3.78 1.152	Mar. 31	0700	547 15.5	4.45 1.356
Jan. 19	1315	228 6.46	3.55 1.082	Apr. 7	0445	453 12.8	4.24 1.292
Feb. 10	1045	*3080 87.2	7.23 2.204	Apr. 15	2330	519 14.7	4.39 1.338
Mar. 4	1415	2160 61.2	6.46 1.969	Apr. 25	2030	228 6.46	3.55 1.082

Minimum, no flow Oct. 1 to Nov. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	.83	24	24	98	210	159	101	39	8.7	4.8
2		0	.90	19	23	234	213	147	101	35	8.3	4.5
3		0	.90	18	22	293	189	142	99	35	7.9	4.3
4		0	.87	30	21	1280	220	146	97	34	7.8	5.3
5		.53	.84	20	26	962	197	150	95	31	7.4	25
6		3.8	1.1	56	95	527	221	145	92	31	6.7	57
7		.89	.88	40	107	367	349	139	90	30	6.7	29
8		.48	.87	26	153	291	281	138	88	28	6.4	20
9		.43	.87	31	1860	260	255	140	85	26	6.9	16
10		.43	.87	54	1850	219	248	140	82	25	7.9	15
11		.42	.87	38	518	286	232	138	79	24	6.3	14
12		.52	.96	26	309	281	219	141	76	23	6.1	13
13		.43	.93	22	388	235	209	148	72	22	6.5	11
14		.48	.92	30	269	210	198	155	68	22	5.9	10
15		.53	7.0	166	200	192	232	161	66	20	5.9	12
16		.53	18	134	160	177	299	146	63	20	7.1	10
17		.53	130	189	132	167	220	134	59	19	6.4	9.4
18		.54	142	123	113	159	210	130	55	17	6.0	9.7
19		.57	27	162	106	149	204	126	53	16	5.7	9.3
20		.66	13	121	99	147	195	125	51	15	5.4	8.9
21		.89	10	83	96	247	183	124	49	14	5.3	8.4
22		.81	12	66	94	310	171	126	48	13	5.5	8.0
23		.88	16	54	91	207	165	123	45	12	5.7	7.6
24		1.0	25	44	85	183	162	117	44	12	5.7	6.9
25		.76	11	38	80	172	194	111	44	12	5.7	6.8
26		.87	8.6	33	76	167	187	105	42	11	6.3	6.4
27		.79	134	31	75	162	168	100	41	11	6.5	6.3
28		.78	160	29	73	152	159	99	41	10	6.3	6.4
29		.79	70	28	---	147	150	100	41	10	5.8	6.4
30		.93	48	27	---	151	147	101	39	11	5.5	6.3
31		---	33	25	---	349	---	101	---	9.4	5.2	---
TOTAL	0	20.27	877.21	1787	7145	8781	6287	4057	2006	637.4	199.5	357.7
MEAN	0	.68	28.3	57.6	255	283	210	131	66.9	20.6	6.44	11.9
MAX	0	3.8	160	189	1860	1280	349	161	101	39	8.7	57
MIN	0	0	.83	18	21	98	147	99	39	9.4	5.2	4.3
AC-FT	0	40	1740	3540	14170	17420	12470	8050	3980	1260	396	709
CAL YR 1977	TOTAL	1769.48	MEAN	4.85	MAX	160	MIN	0	AC-FT	3510		
WTR YR 1978	TOTAL	32155.08	MEAN	88.1	MAX	1860	MIN	0	AC-FT	63780		



## 11204680 PIONEER DITCH BELOW SUCCESS DAM, CA

LOCATION.--Lat 36°03'34", long 118°55'22", in SW¼NW¼ sec.35, T.21 S., R.28 E., Tulare County, on left bank 0.1 mi (0.2 km) downstream from Success Dam, and 5.5 mi (8.8 km) east of Porterville.

PERIOD OF RECORD.--April 1959 to current year. Prior to October 1960, monthly diversions only, published with Tule River near Porterville.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 549.00 ft (167.335 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Feb. 1, 1961, at site 0.5 mi (0.8 km) downstream at different datum.

REMARKS.--Records good. Ditch receives water from Success Lake (station 11204700).

AVERAGE DISCHARGE.--19 years, 6.90 ft<sup>3</sup>/s (0.195 m<sup>3</sup>/s), 5,000 acre-ft/yr (6.16 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 29 ft<sup>3</sup>/s (0.82 m<sup>3</sup>/s) Apr. 15, 1961; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	3.5	2.4		0	1.2	0	4.5	6.9	10	7.2	6.8
2	5.4	3.6	2.4		0	1.2	0	4.5	6.9	8.8	11	7.2
3	6.7	3.6	2.4		0	1.2	1.2	4.5	9.6	11	14	7.3
4	8.6	3.6	2.3		0	.40	1.8	5.8	11	12	15	8.6
5	9.0	2.6	2.7		0	0	1.8	7.7	11	12	12	3.8
6	8.1	1.7	3.1		0	0	1.8	9.5	8.8	7.8	11	2.0
7	7.9	2.3	3.1		0	0	1.8	10	9.9	6.7	11	2.3
8	7.9	2.1	3.1		0	0	1.8	11	12	6.7	11	2.4
9	7.9	1.8	3.1		0	0	1.8	12	12	12	8.3	2.4
10	7.9	2.0	2.2		0	0	1.8	12	15	14	9.7	2.3
11	5.6	2.3	1.6		0	0	1.8	9.0	15	14	13	1.9
12	2.4	2.4	1.6		0	0	1.8	8.0	14	14	13	1.6
13	2.8	2.4	1.6		0	0	1.8	8.6	9.4	14	8.6	1.6
14	3.7	2.4	1.6		0	0	1.8	8.9	7.1	13	7.0	5.3
15	4.0	2.8	1.5		0	0	1.8	8.9	7.2	12	5.3	12
16	4.9	2.7	1.4		0	0	1.8	8.9	9.1	12	6.0	11
17	5.3	2.4	.70		0	0	1.8	8.9	10	13	6.0	7.5
18	5.3	2.4	.40		0	0	1.8	11	10	14	11	9.2
19	5.2	2.4	.40		0	0	3.6	12	7.3	15	13	11
20	5.1	2.4	.40		0	1.4	4.5	12	7.3	16	13	12
21	5.1	3.3	.40		.60	3.4	4.5	12	8.0	17	11	12
22	5.1	2.6	.30		1.0	4.0	4.5	12	8.4	17	12	12
23	5.1	2.0	0		2.3	4.0	4.5	12	8.5	17	13	14
24	5.1	2.0	0		3.0	5.8	4.5	11	7.7	17	11	16
25	4.2	2.0	0		3.0	11	4.5	10	11	14	9.5	16
26	3.9	2.0	0		1.9	12	4.5	10	13	12	9.4	16
27	3.9	2.0	0		1.3	12	4.5	11	12	12	12	16
28	3.9	2.0	0		1.3	12	4.5	12	9.3	11	12	14
29	3.9	3.3	0		---	12	4.5	12	11	7.3	11	11
30	3.9	2.9	0		---	12	4.5	8.1	11	5.4	9.2	11
31	3.9	---	0		---	0	---	6.5	---	5.8	6.9	---
TOTAL	168.9	75.5	38.70	0	14.40	93.60	81.3	294.3	299.4	373.5	323.1	256.2
MEAN	5.45	2.52	1.25	0	.51	3.02	2.71	9.49	9.98	12.0	10.4	8.54
MAX	9.0	3.6	3.1	0	3.0	12	4.5	12	15	17	15	16
MIN	2.4	1.7	0	0	0	0	0	4.5	6.9	5.4	5.3	1.6
AC-FT	335	150	77	0	29	186	161	584	594	741	641	508

CAL YR 1977 TOTAL 2068.40 MEAN 5.67 MAX 15 MIN 0 AC-FT 4100  
WTR YR 1978 TOTAL 2018.90 MEAN 5.53 MAX 17 MIN 0 AC-FT 4000

## TULARE LAKE BASIN

11204700 SUCCESS LAKE NEAR SUCCESS, CA

LOCATION.--Lat 36°03'40", long 118°55'18", in SE¼NW¼ sec.35, T.21 S., R.28 E., Tulare County, in control tower near right abutment of Success Dam on Tule River, 5 mi (8 km) east of Porterville.

DRAINAGE AREA.--391 mi<sup>2</sup> (1,013 km<sup>2</sup>).

PERIOD OF RECORD.--November 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Lake is formed by earthfill dam and dike. Storage began November 1961. Usable capacity, 81,854 acre-ft (101 hm<sup>3</sup>) between elevations 559.0 ft (170.38 m), invert of outlet structure and 652.5 ft (198.88 m), spillway crest. Surge flood control storage, 117,402 acre-ft (145 hm<sup>3</sup>) between ungated spillway crest and elevation 686.8 ft (209.34 m), maximum spillway design flood pool. No dead storage. Siltation in the reservoir has eliminated dead storage. Records, including extremes, represent total contents at 2400 hours.

COOPERATION.--Records furnished by Corps of Engineers, not rounded to Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 101,300 acre-ft (125 hm<sup>3</sup>) Dec. 7, 1966, elevation, 658.63 ft (200.750 m); minimum since reservoir first filled, 3,406 acre-ft (4.20 hm<sup>3</sup>) Oct. 17, 1972, elevation, 579.52 ft (176.638 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 82,289 acre-ft (101 hm<sup>3</sup>) June 20, 21, elevation, 652.36 ft (198.839 m); minimum, 3,974 acre-ft (4.90 hm<sup>3</sup>) Nov. 4, elevation, 578.81 ft (176.421 m).

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

575	2281	620	28717
580	3543	640	55952
585	5170	660	101553
590	7197	690	213567
600	12528		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5109	3991	4315	12608	13371	35395	56943	66908	80454	81332	57203	35247
2	5030	3985	4329	12843	13596	36111	67369	67071	80832	81332	56020	34774
3	4947	3977	4344	12382	13778	37244	57581	67234	81118	81308	54818	34305
4	4864	3974	4364	11642	13988	44343	57975	67499	81378	81284	53723	34009
5	4792	3982	4379	10859	14206	49516	58138	67846	81641	81144	52926	34042
6	4755	4004	4393	10146	14938	51915	58461	68112	81787	80880	52224	34500
7	4711	4020	4468	9393	15712	53119	59756	68279	81833	80712	51309	34619
8	4665	4031	4420	9047	16808	53754	60218	68443	81833	80478	50306	34524
9	4620	4031	4443	9358	27240	54226	60571	68670	81833	80171	49139	34285
10	4536	4053	4458	9880	36522	54413	60870	69086	81787	79583	47945	34042
11	4574	4059	4470	10320	38633	54941	61132	69567	81641	78769	46856	33777
12	4554	4067	4490	10614	39428	55354	61375	70155	81523	77844	46066	33461
13	4553	4075	4511	10854	41017	55389	61604	70896	81569	76929	45343	33011
14	4541	4086	4529	11141	41540	55182	61793	71795	81715	76001	44610	32511
15	4532	4095	4580	12477	41581	54857	62382	72637	81787	75215	43748	32004
16	4499	4106	4641	13552	41433	54447	63459	73247	81858	74501	42809	31512
17	4458	4117	5211	14661	41138	54124	63887	73730	82025	73597	42033	31006
18	4414	4125	6239	14681	40790	53872	64239	74215	82144	72617	41358	30489
19	4376	4131	6516	14799	40420	53569	64514	74703	82264	71558	40867	29955
20	4341	4139	6678	14582	40026	53268	64749	75237	82289	70431	40607	29456
21	4306	4150	6790	14078	39621	53822	64987	75754	82289	69316	40346	28928
22	4272	4159	6899	13539	39195	55097	65165	76318	82217	68361	40021	28411
23	4240	4178	7035	12996	38761	55354	65284	76792	82144	67458	39671	27949
24	4206	4204	7256	12435	38254	55389	65463	77135	82071	66385	39286	27524
25	4175	4218	7417	11838	37665	55372	65942	77363	82025	65224	38856	27073
26	4145	4238	7550	11861	37035	55337	66022	77592	81954	64102	38389	26631
27	4117	4255	9057	12134	36388	55233	66283	77844	81858	62958	37924	26186
28	4086	4269	10669	12400	35739	55079	66444	78169	81665	61811	37473	25740
29	4059	4283	11438	12656	---	54924	66605	78654	81404	60683	36960	25309
30	4031	4298	11965	12898	---	54874	66727	79257	81235	59554	36401	24878
31	3996	---	12328	13136	---	56468	---	79912	---	58407	35779	---
MAX	5109	4298	12328	14799	41581	56468	67369	79912	82289	81332	57203	35247
MIN	3996	3974	4315	9047	13371	35395	56943	66908	80454	58407	35779	24878
†	578.89	579.97	598.37	599.71	625.64	639.88	645.32	651.36	651.92	640.97	625.67	615.24
‡	-1185	+302	+8030	+808	+22603	+20729	+10259	+13185	+1323	-22828	-22628	-10901
††	133	57	34	37	95	284	464	1154	1566	1752	1101	512

CAL YR 1977 ‡ +3257  
WTR YR 1978 ‡ +19697

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet.

†† Evaporation, in acre-feet.

## 11204900 TULE RIVER BELOW SUCCESS DAM, CA

LOCATION.--Lat 36°03'23", long 118°55'22", in NW¼SW¼ sec.35, T.21 S., R.28 E., Tulare County, on right bank 1,000 ft (300 m) downstream from Success Dam, and 5 mi (8 km) east of Porterville.

DRAINAGE AREA.--393 mi<sup>2</sup> (1,018 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1953 to current year. Prior to October 1960, published as "at Worth Bridge, near Porterville."

GAGE.--Water-stage recorder and broad-crested weir. Datum of gage is 536.00 ft (163.373 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to October 1960, at site 0.5 mi (0.8 km) downstream at different datum.

REMARKS.--Records good. Flow regulated by Success Lake beginning Nov. 23, 1961 (station 11204700). Discharge records during periods of high flow include flow over spillway that bypasses the gaging station. Pioneer ditch (station 11204680) diverts above station for irrigation.

AVERAGE DISCHARGE (adjusted for change in contents, evaporation, and diversion).--25 years, 176 ft<sup>3</sup>/s (4.984 m<sup>3</sup>/s), 127,500 acre-ft/yr (157 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,000 ft<sup>3</sup>/s (765 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 21.65 ft (6.599 m) site and datum then in use, from rating curve extended above 1,400 ft<sup>3</sup>/s (39.6 m<sup>3</sup>/s) on basis of studies of upstream peaks; no flow at times in 1954-57, 1959-61. Maximum discharge since construction of Success Dam in 1961, 9,050 ft<sup>3</sup>/s (256 m<sup>3</sup>/s) Dec. 6, 1966 (includes flow through spillway); no flow at times in 1962, 1965.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 19, 1950, reached a stage of 26 ft (7.9 m) from floodmarks, site and datum then in use, discharge, 32,000 ft<sup>3</sup>/s (906 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 811 ft<sup>3</sup>/s (23.0 m<sup>3</sup>/s) Mar. 16, 17, gage height, 6.67 ft (2.033 m); minimum daily, 0.10 ft<sup>3</sup>/s (0.003 m<sup>3</sup>/s) Dec. 8-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	6.2	.30	.20	17	573	631	531	377	238	653	285
2	35	.90	.20	.20	17	480	631	531	470	200	653	250
3	35	.90	.20	321	17	456	631	531	505	196	652	250
4	35	.80	.20	493	17	467	631	531	505	204	604	222
5	28	.80	.20	488	17	479	634	531	519	252	458	125
6	18	.80	.20	519	17	487	636	531	576	310	398	99
7	15	.70	.20	532	17	599	635	531	646	250	492	134
8	15	.70	.10	266	17	656	635	531	691	281	562	167
9	15	.60	.10	.40	338	656	638	531	677	296	623	201
10	11	.60	.10	.20	608	689	639	436	662	442	645	195
11	1.3	.50	.20	.20	686	718	639	402	664	561	593	204
12	5.5	.50	.20	14	701	724	639	402	624	605	419	233
13	.90	.50	.20	20	707	759	639	402	500	607	394	283
14	.60	.40	.20	20	710	795	639	402	412	603	405	303
15	.80	.40	.20	20	710	801	617	404	405	528	479	303
16	9.8	.30	.20	21	675	801	607	405	380	491	516	301
17	14	.30	.20	371	654	771	610	405	317	583	420	299
18	15	.30	.20	554	625	729	610	405	295	614	368	298
19	12	.30	.20	584	610	729	610	405	307	630	276	301
20	12	.40	.20	601	608	729	610	405	340	662	156	303
21	11	.30	.20	602	606	729	574	405	344	657	130	301
22	11	.30	.20	562	616	732	555	405	372	576	173	300
23	11	.30	.20	517	628	733	551	407	367	539	194	267
24	11	.30	.20	499	646	717	550	408	314	612	195	251
25	11	.30	.20	496	665	705	550	408	300	648	234	252
26	11	.30	.20	180	672	705	553	369	300	648	253	252
27	12	.30	.20	20	674	705	536	348	286	645	252	252
28	11	.30	.20	17	671	705	527	348	348	643	251	252
29	11	.30	.20	18	---	705	530	348	382	635	283	252
30	12	.40	.20	19	---	705	531	348	306	633	300	250
31	14	---	.20	18	---	668	---	361	---	645	340	---
TOTAL	439.90	20.00	6.00	7773.20	12946	20907	18018	13407	13191	15434	12371	7385
MEAN	14.2	.67	.19	251	462	674	601	432	440	498	399	246
MAX	35	6.2	.30	602	710	801	639	531	691	662	653	303
MIN	.60	.30	.10	.20	17	456	527	348	286	196	130	99
AC-FT	873	40	12	15420	25680	41470	35740	26590	26160	30610	24540	14650
CAL YR 1977 TOTAL	5212.60			MEAN 14.3	MAX 134	MIN .10	AC-FT 10340	MEAN ‡ 27.8	AC-FT ‡ 20150			
WTR YR 1978 TOTAL	121898.10			MEAN 334	MAX 801	MIN .10	AC-FT 241800	MEAN ‡ 377	AC-FT ‡ 272700			

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

## TULARE LAKE BASIN

11204900 TULE RIVER BELOW SUCCESS DAM, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962 to current year.

CHEMICAL ANALYSES: Water years 1962-69, 1970 to current year.

WATER TEMPERATURES: Water years 1971 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: November 1970 to current year.

INSTRUMENTATION.--Temperature recorder since November 1970.

COOPERATION.--Chemical-quality records furnished by California Department of Water Resources.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 34.0°C July 15, Sept. 9, 1977; minimum recorded, 3.0°C Jan. 3, 1975.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 28.0°C Oct. 14; minimum recorded, 6.0°C Nov. 20, Dec. 11.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
MAR 21...	1400	729	167	7.4	11.0	11.7	59	0	18	3.3	7.8

DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY (MG/L CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)
MAR 21...	21	.4	2.8	62	5.3	4.3	112	.15	.79	0

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	23.0	19.5	22.5	16.0	16.5	8.5	16.5	10.5	11.0	10.0	10.5	9.5
2	23.0	20.0	22.0	13.0	17.0	8.5	14.0	11.5	12.5	10.0	11.0	9.5
3	22.5	20.0	22.5	12.0	16.5	8.0	12.5	11.0	12.5	10.0	11.0	10.0
4	23.5	20.0	21.0	13.5	15.5	8.0	12.5	12.0	12.0	10.5	11.0	10.0
5	22.5	20.0	19.5	14.0	16.5	8.5	12.5	12.0	12.0	10.5	11.0	10.0
6	23.5	20.5	18.0	12.0	14.5	8.0	12.5	12.0	11.5	10.5	11.0	10.0
7	23.0	20.5	19.0	9.0	13.5	10.5	12.5	12.0	11.0	10.0	11.0	10.0
8	23.0	20.5	19.5	9.5	14.0	9.0	13.5	12.0	12.0	10.5	11.0	10.0
9	23.0	20.0	19.0	10.0	13.5	6.5	15.5	12.0	11.5	10.5	11.0	10.0
10	23.0	19.0	18.0	9.0	14.0	6.5	15.0	12.0	11.0	10.5	11.0	10.5
11	26.5	16.0	17.0	10.5	15.5	6.0	18.5	9.5	10.5	9.5	11.5	10.5
12	24.0	15.5	19.5	8.5	12.5	9.5	13.0	9.5	10.0	9.0	11.5	10.5
13	26.5	16.5	17.5	9.0	15.5	10.0	13.0	11.5	10.0	9.0	11.5	10.5
14	28.0	15.5	18.5	9.0	17.0	8.5	12.5	12.0	10.0	9.0	11.5	11.0
15	26.5	17.0	19.5	9.5	17.0	10.0	13.0	11.5	10.0	9.0	11.5	11.0
16	23.0	17.0	20.0	9.5	16.5	8.0	12.5	11.5	10.0	9.0	11.5	10.5
17	22.5	20.0	19.5	9.0	14.5	11.5	12.5	11.5	10.0	9.0	11.5	10.5
18	23.0	19.5	18.5	9.5	17.5	10.5	12.5	12.0	10.0	9.0	11.5	10.5
19	23.5	19.5	18.0	8.5	15.0	7.5	12.5	11.5	10.0	9.0	12.0	11.0
20	22.5	19.5	14.5	6.0	12.0	8.5	12.0	11.5	10.0	9.0	11.5	11.0
21	22.0	19.0	13.5	6.5	12.5	8.5	12.0	11.5	10.0	9.0	12.0	11.5
22	22.5	18.5	18.0	8.5	17.0	9.5	12.0	11.5	10.0	9.0	12.0	11.0
23	22.0	19.0	19.0	11.5	16.5	12.0	12.0	11.0	10.5	9.0	12.0	11.5
24	21.5	18.5	19.5	9.5	16.0	11.0	11.5	11.0	10.5	8.5	12.5	11.5
25	22.0	18.5	19.5	9.0	15.5	11.5	11.5	11.0	10.0	9.0	12.0	11.5
26	21.5	18.5	19.0	9.0	15.0	13.0	12.5	10.0	10.5	9.5	12.0	11.5
27	21.5	18.5	17.5	9.0	16.0	13.5	12.0	10.0	10.5	9.0	12.5	11.5
28	20.5	18.0	16.5	10.0	19.0	13.5	12.5	10.0	10.5	9.5	12.5	11.5
29	20.5	17.5	18.0	9.0	19.0	14.0	11.0	10.0	---	---	12.5	11.5
30	20.5	17.5	17.0	9.5	19.5	13.5	11.0	10.0	---	---	12.5	11.5
31	19.5	17.5	---	---	18.5	11.0	11.0	10.0	---	---	12.5	11.5
MONTH	28.0	15.5	22.5	6.0	19.5	6.0	18.5	9.5	12.5	8.5	12.5	9.5

11204900 TULE RIVER BELOW SUCCESS DAM, CA--Continued

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	12.5	11.5	13.5	12.0	14.5	13.5	16.0	15.0	19.0	18.5	24.5	22.5
2	12.5	11.5	14.5	12.5	15.0	13.5	16.0	14.5	19.5	18.5	24.5	23.5
3	12.5	11.5	14.5	11.5	15.0	13.5	16.5	14.5	19.5	18.5	24.5	23.5
4	12.5	11.0	14.5	12.0	15.0	13.5	16.5	14.5	20.0	18.5	24.5	23.0
5	13.0	10.5	14.5	12.0	14.5	13.5	16.5	15.0	19.5	18.5	24.5	22.5
6	13.5	11.5	14.5	12.5	15.0	14.5	16.5	14.5	20.0	18.5	24.0	22.5
7	13.0	11.0	14.0	11.5	15.0	13.5	16.5	15.5	20.0	18.5	24.5	22.5
8	12.5	11.0	14.0	12.5	15.0	14.5	16.5	14.0	20.5	19.0	24.5	22.5
9	12.5	11.0	14.5	13.0	15.0	14.5	16.5	15.5	21.0	19.5	24.5	22.5
10	12.0	11.0	14.0	12.5	15.0	14.5	16.5	14.5	21.0	20.0	24.5	23.0
11	12.5	11.5	15.0	12.5	15.5	14.5	17.0	15.5	21.0	20.0	24.5	23.0
12	12.5	11.5	15.0	12.5	15.5	15.0	17.0	15.0	21.0	20.0	24.0	23.5
13	13.5	11.5	14.5	12.0	15.5	14.5	17.0	16.0	21.5	20.5	24.0	23.5
14	13.0	10.5	14.0	12.5	15.5	14.5	17.5	16.0	21.5	20.5	24.5	23.0
15	13.0	11.0	14.5	12.5	15.5	15.0	18.0	16.0	22.0	21.0	24.5	23.0
16	13.5	11.5	14.5	13.0	15.5	15.0	17.0	15.5	22.0	20.5	24.5	23.5
17	13.0	10.5	14.5	12.5	15.5	15.0	18.0	15.5	22.5	20.5	24.0	23.5
18	13.0	11.5	15.0	13.0	15.5	15.0	18.0	15.0	22.5	20.5	24.0	23.0
19	13.0	11.0	15.0	13.0	15.5	15.0	18.5	14.5	22.5	20.5	24.0	23.0
20	13.5	11.0	15.0	13.0	16.0	15.0	19.0	15.0	22.0	20.0	23.5	22.5
21	14.0	11.0	14.5	12.5	16.0	15.0	19.0	16.0	22.0	19.5	23.5	22.5
22	13.5	11.0	15.0	13.5	16.0	15.5	19.0	15.0	22.5	20.0	23.5	22.0
23	14.0	11.0	15.0	12.5	16.0	15.5	19.0	15.5	22.5	21.0	23.5	22.5
24	14.0	11.0	15.0	14.0	16.0	15.5	19.0	17.0	23.0	20.5	23.5	22.5
25	13.5	11.0	15.0	12.5	16.0	15.5	18.0	15.5	23.5	21.0	24.0	22.0
26	13.5	11.0	14.5	13.5	16.0	15.5	19.0	17.0	24.0	20.5	23.5	22.5
27	14.0	12.0	14.5	13.5	16.0	15.0	19.0	17.0	23.5	22.0	23.5	22.0
28	14.0	11.5	14.5	13.0	16.0	15.0	18.5	17.5	23.5	22.0	23.5	23.0
29	14.0	12.5	14.5	13.0	16.0	15.5	18.5	18.0	24.0	22.5	23.5	22.5
30	14.0	11.5	14.5	13.5	16.0	15.0	18.5	18.5	24.0	23.0	23.5	22.5
31	---	---	14.5	13.5	---	---	19.0	18.5	24.5	23.0	---	---
MONTH	14.0	10.5	15.0	11.5	16.0	13.5	19.0	14.0	24.5	18.5	24.5	22.0

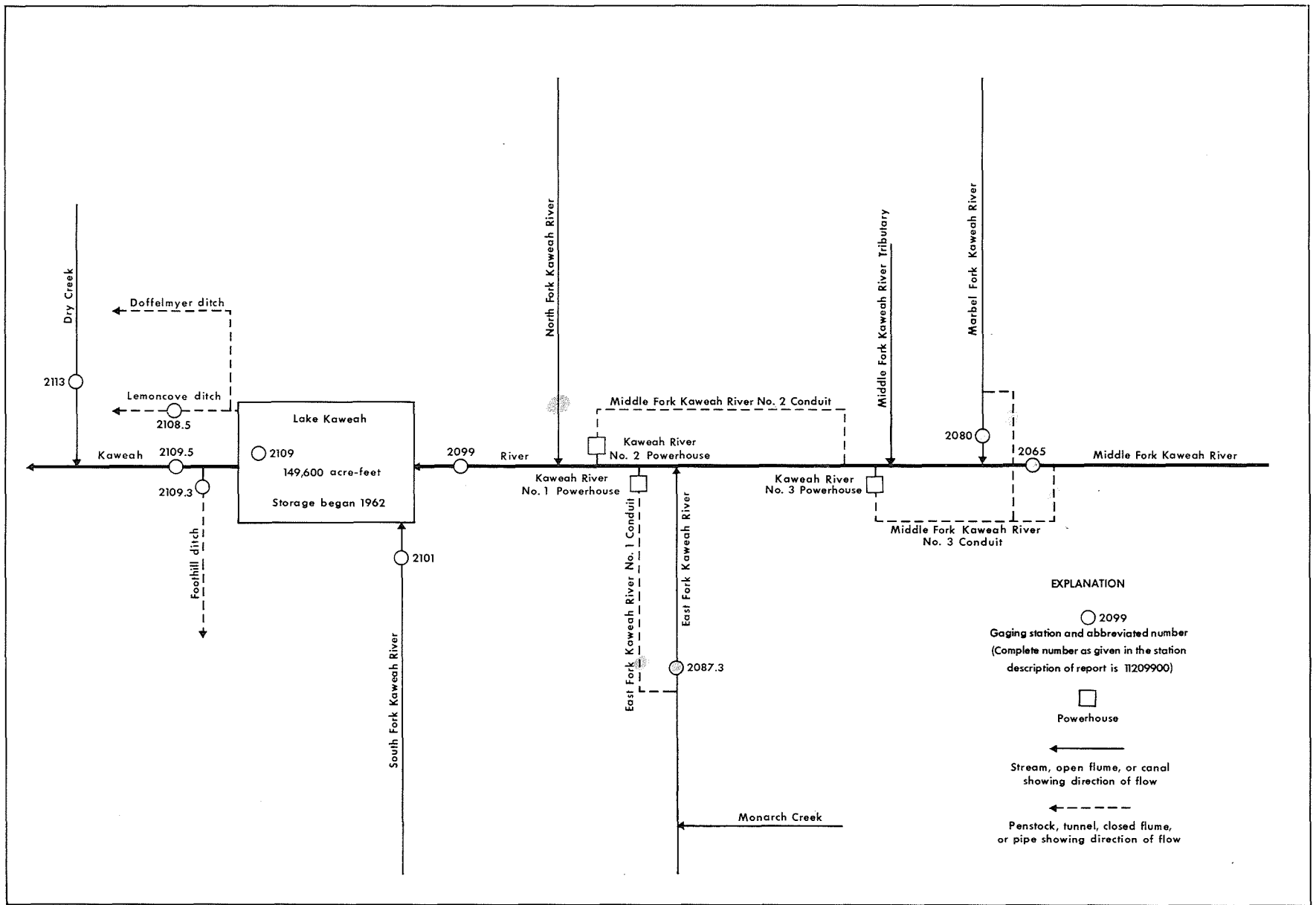


FIGURE 6.--Schematic diagram showing diversions and storage in Kaweah River basin.

## 11206500 MIDDLE FORK KAWEAH RIVER NEAR POTWISHA CAMP, CA

LOCATION.--Lat 36°30'46", long 118°47'25", in NW¼NW¼ sec.25, T.16 S., R.29 E., unsurveyed, Tulare County, Hydrologic Unit 18030007, Sequoia National Park, on right bank 0.7 mi (1.1 km) southeast of Potwisha Camp, and 0.9 mi (1.4 km) upstream from confluence with Marble Fork Kaweah River.

DRAINAGE AREA.--102 mi<sup>2</sup> (264 km<sup>2</sup>).

PERIOD OF RECORD.--July 1949 to current year. Monthly discharge only for water years 1956-57, published in WSP 1735. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960.

GAGE.--Water-stage recorder and concrete control on river; water-stage recorder and concrete-lined channel for conduit diversion. Altitude of gage is 2,100 ft (640 m), from topographic map. Prior to October 1955, at datum 0.70 ft (0.213 m) higher.

REMARKS.--Records good. Middle Fork No. 3 conduit diverts from left bank of Middle Fork Kaweah River, 0.5 mi (0.8 km) 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 mi (4.3 km) downstream from confluence of Marble and Middle Forks. See schematic diagram of Kaweah River basin. For records of combined discharge of river and conduit, see following page.

COOPERATION.--Gage-height record and 11 discharge measurements for river and gage-height record and 12 discharge measurements for conduit furnished by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--River only: 29 years, 132 ft<sup>3</sup>/s (3,738 m<sup>3</sup>/s), 95,630 acre-ft/yr (118 hm<sup>3</sup>/yr),  
Combined river and diversion: 29 years, 172 ft<sup>3</sup>/s (4,871 m<sup>3</sup>/s), 124,600 acre-ft/yr (154 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 46,800 ft<sup>3</sup>/s (1,330 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 29.0 ft (8.84 m) from floodmarks, datum then in use, by slope-area measurement of maximum flow; minimum daily, 0.1 ft<sup>3</sup>/s (0.003 m<sup>3</sup>/s) Nov. 12-15, 1949.  
Combined flow, maximum discharge, 46,800 ft<sup>3</sup>/s (1,330 m<sup>3</sup>/s) Dec. 23, 1955; minimum daily, 7.7 ft<sup>3</sup>/s (0.22 m<sup>3</sup>/s) Oct. 4, 1977.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 2,030 ft<sup>3</sup>/s (57.5 m<sup>3</sup>/s) Sept. 5, gage height, 8.57 ft (2.612 m); minimum daily, 7.7 ft<sup>3</sup>/s (0.22 m<sup>3</sup>/s) Oct. 4.  
Combined flow, maximum discharge, 2,050 ft<sup>3</sup>/s (58.1 m<sup>3</sup>/s) Sept. 5; minimum daily, 7.7 ft<sup>3</sup>/s (0.22 m<sup>3</sup>/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	10	10	48	33	116	330	306	975	565	239	15
2	8.3	10	10	38	31	251	290	318	941	546	241	11
3	8.1	10	10	33	32	258	245	389	922	498	221	12
4	7.7	10	10	31	34	804	243	475	955	469	215	77
5	8.1	12	10	27	52	632	217	512	1030	494	199	1340
6	43	13	10	79	122	392	225	472	1100	538	173	853
7	20	12	10	44	142	302	227	431	1200	569	167	404
8	13	12	11	35	155	266	202	469	1300	538	159	185
9	13	12	11	106	860	249	206	542	1290	569	147	119
10	13	11	11	95	541	215	223	553	1180	580	131	96
11	13	11	11	58	273	215	252	569	1020	494	120	82
12	12	11	10	42	217	188	290	710	1030	433	111	60
13	12	11	10	39	217	167	313	849	985	448	97	47
14	11	11	10	106	163	159	311	936	932	498	87	51
15	11	11	16	217	144	157	366	913	867	505	74	69
16	10	11	13	237	116	165	342	751	780	469	69	44
17	10	10	232	291	100	188	295	698	742	431	61	35
18	10	10	78	162	96	206	288	746	805	392	55	30
19	10	10	14	160	96	204	290	771	805	360	47	27
20	11	10	13	114	100	221	297	805	784	333	40	23
21	10	12	13	86	110	278	275	858	788	321	37	18
22	10	16	14	70	122	316	252	885	771	333	34	14
23	10	12	83	57	123	243	260	814	710	342	30	11
24	10	11	28	44	119	217	293	625	659	325	24	10
25	10	11	14	40	114	227	398	531	654	330	21	10
26	10	11	71	39	107	249	338	505	650	428	20	9.5
27	10	11	743	39	99	245	297	576	592	365	19	9.5
28	10	11	389	38	99	249	302	714	505	279	18	12
29	10	10	171	35	---	273	297	867	531	252	17	15
30	10	10	122	36	---	311	335	1010	561	247	17	14
31	10	---	72	33	---	468	---	1030	---	252	18	---
TOTAL	363.1	333	2230	2479	4417	8431	8499	20630	26064	13203	2908	3703.0
MEAN	11.7	11.1	71.9	80.0	158	272	283	665	869	426	93.8	123
MAX	43	16	743	291	860	804	398	1030	1300	580	241	1340
MIN	7.7	10	10	27	31	116	202	306	505	247	17	9.5
AC-FT	720	661	4420	4920	8760	16720	16860	40920	51700	26190	5770	7340
CAL YR 1977 TOTAL	13275.9			36.4		743		7.7		26330		
WTR YR 1978 TOTAL	93260.1			256		1340		7.7		185000		

## TULARE LAKE BASIN

11206500 MIDDLE FORK KAWEAH RIVER NEAR POTWISHA CAMP, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF MIDDLE FORK KAWEAH RIVER AND MIDDLE FORK  
KAWEAH RIVER NO. 3 CONDUIT NEAR POTWISHA CAMP, CA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	11	18	115	102	186	398	370	1040	630	304	72
2	8.3	11	17	105	100	322	357	382	1010	607	306	68
3	8.1	11	17	100	101	329	312	453	989	548	286	70
4	7.7	11	16	97	103	856	310	540	1020	533	280	141
5	8.1	21	15	93	121	682	284	577	1100	559	264	1390
6	43	22	15	146	190	460	290	536	1170	603	238	913
7	24	20	14	111	210	370	291	495	1260	634	231	463
8	17	19	14	101	225	334	267	533	1340	603	223	245
9	18	18	14	172	909	317	271	607	1340	635	211	178
10	18	16	14	160	598	283	288	618	1250	646	194	155
11	17	15	14	123	344	282	317	634	1090	561	183	144
12	15	14	13	108	288	255	356	775	1100	499	174	124
13	15	14	13	105	288	234	379	915	1050	516	159	111
14	14	14	13	173	234	226	377	1000	997	567	149	116
15	14	14	40	285	204	225	432	979	932	574	136	134
16	12	14	27	306	185	234	408	815	845	539	130	108
17	12	13	283	360	169	256	360	758	807	502	124	99
18	12	13	136	230	165	274	353	807	870	463	118	93
19	12	12	55	227	165	273	355	838	870	431	110	91
20	13	12	49	182	169	290	362	872	849	402	104	86
21	12	14	47	155	179	346	340	926	852	387	101	80
22	12	23	62	139	191	383	317	952	836	398	98	75
23	11	22	143	125	192	310	325	880	775	407	93	70
24	11	19	88	113	188	284	358	690	724	390	87	66
25	11	21	57	109	183	294	463	595	719	395	83	63
26	11	22	123	108	176	316	403	568	715	493	82	61
27	11	22	796	108	168	312	362	639	657	430	80	59
28	11	22	441	107	168	316	367	778	570	344	76	57
29	11	20	232	104	---	340	362	931	596	317	73	56
30	11	19	191	105	---	378	400	1080	626	312	74	53
31	11	---	140	102	---	536	---	1100	---	317	75	---
TOTAL	420.1	499	3117	4574	6315	10503	10464	22643	27999	15242	4846	5441
MEAN	13.6	16.6	101	148	226	339	349	730	933	492	156	181
MAX	43	23	796	360	909	856	463	1100	1340	646	306	1390
MIN	7.7	11	13	93	100	186	267	370	570	312	73	53
AC-FT	833	990	6180	9070	12530	20830	20760	44910	55540	30230	9610	10790
CAL YR 1977 TOTAL	21164.9			58.0		796		41980				
WTR YR 1978 TOTAL	112063.1			307		1390		222300				



## 11208000 MARBLE FORK KAWEAH RIVER AT POTWISHA CAMP, CA

LOCATION.--Lat 36°31'08", long 118°48'03", in SE¼ sec.23, T.16 S., R.29 E., unsurveyed, Tulare County, Hydrologic Unit 18030007, Sequoia National Park, on left bank 0.1 mi (0.2 km) north of Potwisha Camp, 0.3 mi (0.5 km) upstream from confluence with Middle Fork Kaweah River, and 7.9 mi (12.7 km) northeast of Three Rivers.

DRAINAGE AREA.--51.4 mi<sup>2</sup> (133.1 km<sup>2</sup>).

PERIOD OF RECORD.--March 1950 to current year. Monthly discharge only for March 1950, published in WSP 1315-A. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960.

GAGE.--Water-stage recorder on river; water-stage recorder and concrete control for conduit diversion. Altitude of gage is 2,150 ft (655 m), from topographic map.

REMARKS.--Records good. Marble Fork Kaweah River No. 3 conduit diverts from left bank of Marble Fork 0.3 mi (0.5 km) above station; water is returned to Kaweah River 2.7 mi (4.3 km) downstream from confluence of Marble and Middle Forks. See schematic diagram of Kaweah River basin. 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 12 discharge measurements for conduit furnished by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--River only: 28 years, 73.7 ft<sup>3</sup>/s (2.087 m<sup>3</sup>/s), 53,400 acre-ft/yr (65.8 hm<sup>3</sup>/yr).  
Combined river and diversion: 28 years, 97.7 ft<sup>3</sup>/s (2.767 m<sup>3</sup>/s), 70,780 acre-ft/yr (87.3 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 12,500 ft<sup>3</sup>/s (354 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 13.4 ft (4.08 m), from rating curve extended above 1,100 ft<sup>3</sup>/s (31.2 m<sup>3</sup>/s) on basis of slope-area measurement of maximum flow; no flow Sept. 5-15, Oct. 24-28, 1953, Oct. 26-31, 1957.  
Combined flow, maximum discharge, 12,500 ft<sup>3</sup>/s (354 m<sup>3</sup>/s) Dec. 23, 1955; minimum daily, 0.82 ft<sup>3</sup>/s (0.023 m<sup>3</sup>/s) Oct. 4, 5, 1977.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 2,790 ft<sup>3</sup>/s (79.0 m<sup>3</sup>/s) Sept. 5, gage height, 9.04 ft (2.755 m), from rating curve extended as explained above; minimum daily, 0.78 ft<sup>3</sup>/s (0.022 m<sup>3</sup>/s) Dec. 19.  
Combined flow, maximum discharge, 2,810 ft<sup>3</sup>/s (79.6 m<sup>3</sup>/s) Sept. 5, minimum daily, 0.82 ft<sup>3</sup>/s (0.023 m<sup>3</sup>/s) Oct. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	1.4	1.6	35	17	65	188	183	759	431	177	6.4
2	1.4	1.4	1.4	25	15	127	158	206	737	398	177	4.0
3	1.2	1.4	1.4	18	15	119	136	272	725	360	153	4.2
4	.82	1.3	1.4	20	18	266	131	348	750	354	145	137
5	.82	1.7	1.6	16	31	214	115	364	781	379	132	1410
6	6.7	2.2	1.8	31	59	145	117	332	785	395	115	593
7	25	1.3	2.2	17	54	119	113	293	871	412	111	285
8	3.3	3.9	2.4	11	58	103	103	329	908	386	103	117
9	2.4	3.6	2.4	43	324	103	103	389	899	416	90	74
10	1.8	3.3	2.4	44	168	92	113	395	816	445	85	62
11	1.4	3.0	2.4	20	117	85	147	402	737	367	74	52
12	1.8	2.5	2.4	12	90	76	193	525	759	322	59	37
13	1.8	.81	3.6	9.7	88	71	214	623	737	351	55	32
14	1.8	.82	3.9	45	78	71	206	683	691	373	46	40
15	1.6	.84	16	85	68	73	209	643	643	357	39	49
16	1.4	.84	5.4	79	54	85	190	532	588	325	41	35
17	1.3	.85	113	92	45	99	158	515	565	293	35	28
18	1.2	1.1	38	62	44	109	156	573	627	260	32	25
19	1.4	1.2	.78	54	45	111	161	596	611	239	29	25
20	1.3	1.3	.81	43	47	121	175	631	592	217	21	25
21	2.7	3.4	.85	35	50	154	151	675	596	225	17	14
22	1.6	14	1.1	29	57	161	138	687	565	231	15	8.5
23	1.6	9.5	30	20	59	131	154	615	525	228	11	8.5
24	1.4	2.0	6.0	15	59	119	185	483	501	209	10	8.0
25	1.4	9.8	.82	15	58	127	254	420	487	244	10	7.6
26	1.3	3.9	30	17	55	145	209	409	480	472	10	3.7
27	1.4	2.2	.439	18	51	138	178	476	449	270	10	3.6
28	1.6	2.2	198	17	54	145	183	580	370	195	10	4.7
29	1.6	2.0	94	15	---	168	185	704	398	180	11	3.4
30	1.4	1.8	64	15	---	193	193	785	445	183	11	1.2
31	1.3	---	47	17	---	260	---	785	---	177	11	---
TOTAL	77.54	85.56	1115.66	974.7	1878	3995	4916	15453	19397	9694	1845	3103.8
MEAN	2.50	2.85	36.0	31.4	67.1	129	164	498	647	313	59.5	103
MAX	25	14	439	92	324	266	254	785	908	472	177	1410
MIN	.82	.81	.78	9.7	15	65	103	183	370	177	10	1.2
AC-FT	154	170	2210	1930	3730	7920	9750	30650	38470	19230	3660	6160

CAL YR 1977 TOTAL 6511.31 MEAN 17.8 MAX 439 MIN .78 AC-FT 12920  
WTR YR 1978 TOTAL 62535.26 MEAN 171 MAX 1410 MIN .78 AC-FT 124000

## TULARE LAKE BASIN

11208000 MARBLE FORK KAWEAH RIVER AT POTWISHA CAMP, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF MARBLE FORK KAWEAH RIVER AND MARBLE FORK KAWEAH RIVER NO. 3 CONDUIT AT POTWISHA CAMP, CA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MEAN VALUES												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	3.0	7.7	84	42	87	209	214	785	456	204	31
2	1.4	3.0	7.3	73	40	148	179	235	763	423	204	30
3	1.2	2.8	6.6	68	40	136	156	300	751	385	180	29
4	.82	1.9	6.4	55	43	278	151	375	777	380	172	169
5	.82	4.1	6.1	43	56	229	140	392	808	404	160	1440
6	6.8	7.4	5.6	59	81	163	143	361	811	420	144	620
7	28	4.9	6.0	44	76	143	138	321	895	437	141	315
8	6.7	7.7	6.2	38	78	128	128	357	933	411	132	148
9	5.2	8.3	6.0	70	345	124	130	416	923	441	119	105
10	4.6	7.8	6.0	72	185	113	142	422	839	467	114	93
11	4.2	7.5	6.0	47	129	110	178	429	763	392	105	85
12	4.3	7.0	6.0	39	102	101	222	552	786	348	90	71
13	4.1	4.9	7.2	37	100	96	241	649	761	377	85	63
14	4.1	4.9	7.3	73	90	96	233	712	715	400	77	70
15	3.8	4.6	23	111	80	98	233	670	669	384	70	80
16	3.6	4.6	14	104	74	109	207	558	613	352	70	66
17	3.3	4.5	131	117	70	123	182	541	588	319	64	59
18	3.2	4.7	61	87	69	134	184	599	650	285	61	55
19	3.0	4.8	23	81	70	136	189	621	634	264	57	56
20	2.7	4.7	21	69	73	146	203	656	615	243	52	57
21	3.8	5.2	19	61	76	178	179	700	620	252	52	50
22	3.4	15	22	55	83	185	166	711	589	258	49	45
23	3.4	14	55	46	84	158	182	639	549	256	44	42
24	3.0	6.7	45	41	84	147	212	509	525	237	40	39
25	3.0	15	42	41	83	154	279	447	511	272	39	37
26	2.9	11	74	42	80	172	236	436	504	501	39	34
27	3.0	9.9	489	43	76	165	207	504	474	296	39	35
28	3.2	10	244	42	76	172	212	608	395	221	37	33
29	3.2	8.9	144	40	---	195	215	729	423	206	37	30
30	3.0	8.4	113	41	---	217	225	807	470	209	36	28
31	2.9	---	96	42	---	281	---	811	---	203	36	---
TOTAL	128.44	207.2	1706.4	1865	2485	4722	5701	16281	20139	10499	2749	4015
MEAN	4.14	6.91	55.0	60.2	88.8	152	190	525	671	339	88.7	134
MAX	28	15	489	117	345	281	279	811	933	501	204	1440
MIN	.82	1.9	5.6	37	40	87	128	214	395	203	36	28
AC-FT	255	411	3380	3700	4930	9370	11310	32290	39950	20820	5450	7960
CAL YR 1977	TOTAL	10125.89	MEAN	27.7	MAX	489	MIN	.82	AC-FT	20080		
WTR YR 1978	TOTAL	70498.04	MEAN	193	MAX	1440	MIN	.82	AC-FT	139800		

## 11208730 EAST FORK KAWEAH RIVER NEAR THREE RIVERS, CA

LOCATION.--Lat 36°27'05", long 118°47'15", in NW¼NW¼ sec.14, T.17 S., R.29 E., Tulare County, on left bank just downstream from diversion dam, and 6.6 mi (10.6 km) east of Three Rivers.

DRAINAGE AREA.--85.8 mi<sup>2</sup> (222.2 km<sup>2</sup>).

PERIOD OF RECORD.--May 1952 to September 1955, October 1957 to current year. Prior to October 1962, combined only.

GAGE.--Water-stage recorder and Parshall flume on river; water-stage recorder and Parshall flume for conduit diversion. Altitude of gage is 2,500 ft (762 m), from topographic map. May 15, 1952, to Sept. 30, 1955, at site 200 ft (61 m) downstream at different datum.

REMARKS.--East Fork Kaweah River No. 1 conduit diverts up to 30 ft<sup>3</sup>/s (0.85 m<sup>3</sup>/s) from left bank of river near diversion dam. Flow from this conduit passes through Kaweah River No. 1 powerplant of Southern California Edison Co.; water is returned to Middle Fork Kaweah River in sec.8, T.17 S., R.29 E., 1.9 mi (3.1 km) downstream from mouth of East Fork. For records of combined discharge of river and conduit, see following page.

COOPERATION.--Records furnished by Southern California Edison Co. and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--River only: 24 years, 96.2 ft<sup>3</sup>/s (2.724 m<sup>3</sup>/s), 69,700 acre-ft/yr (85.9 hm<sup>3</sup>/yr).  
Combined river and conduit: 24 years, 117 ft<sup>3</sup>/s (3.313 m<sup>3</sup>/s), 84,770 acre-ft/yr (105 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 13,000 ft<sup>3</sup>/s (368 m<sup>3</sup>/s) Dec. 6, 1966, gage height, 21 ft (6.4 m) from floodmarks, from rating curve extended as explained below; no flow Jan. 22, Oct. 18-20, 1962.

Combined flow, maximum discharge, 13,000 ft<sup>3</sup>/s (368 m<sup>3</sup>/s) Dec. 6, 1966, gage height, 21 ft (6.4 m) from floodmarks, from rating curve extended above 850 ft<sup>3</sup>/s (24.1 m<sup>3</sup>/s) on basis of critical-depth measurement of peak flow over diversion dam; minimum daily, 3.5 ft<sup>3</sup>/s (0.099 m<sup>3</sup>/s) Sept. 28, 29, 1960.

EXTREMES FOR WATER YEAR 1977.--River only, maximum discharge, 276 ft<sup>3</sup>/s (7.82 m<sup>3</sup>/s) May 31, gage height, 4.70 ft (1.433 m); minimum daily, 0.90 ft<sup>3</sup>/s (0.026 m<sup>3</sup>/s) Jan. 4.

Combined flow, maximum discharge, 301 ft<sup>3</sup>/s (8.52 m<sup>3</sup>/s) May 31; minimum daily, 10 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s) Sept. 9-15.

EXTREMES FOR WATER YEAR 1978.--River only, maximum discharge, 1,160 ft<sup>3</sup>/s (32.9 m<sup>3</sup>/s) June 8, gage height, 6.98 ft (2.128 m); minimum daily, 1.0 ft<sup>3</sup>/s (0.028 m<sup>3</sup>/s) Nov. 8.

Combined flow, maximum discharge, 1,190 ft<sup>3</sup>/s (33.7 m<sup>3</sup>/s) June 8; minimum daily, 8.7 ft<sup>3</sup>/s (0.25 m<sup>3</sup>/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	10	1.4	1.2	1.4	1.3	1.4	45	157	5.4	1.3	1.6
2	72	18	1.4	3.0	1.4	1.6	1.3	35	149	5.1	1.4	1.6
3	50	18	1.4	16	1.4	1.6	1.4	36	132	5.0	1.3	1.5
4	35	18	1.4	.90	1.5	1.4	3.2	30	125	3.7	1.4	1.5
5	24	12	1.3	1.3	1.5	1.2	12	36	115	1.9	1.2	1.4
6	18	2.9	1.3	1.1	1.4	1.2	23	25	100	1.8	1.1	1.3
7	15	2.6	1.3	1.1	1.4	1.1	43	23	91	1.2	1.9	1.3
8	13	1.8	1.3	1.1	1.4	1.5	54	22	109	1.2	1.3	1.3
9	11	1.1	1.3	1.2	1.3	2.8	52	26	135	1.2	1.5	1.2
10	9.4	1.0	1.3	1.2	1.3	2.2	36	24	106	1.3	1.5	1.2
11	8.1	1.3	1.3	1.4	1.3	1.9	36	22	77	1.5	1.5	1.2
12	7.5	1.5	1.3	1.4	1.3	1.6	38	26	65	1.4	1.5	1.2
13	5.8	1.4	1.3	1.4	1.3	1.7	41	22	60	1.4	1.7	1.2
14	4.6	6.0	1.3	1.4	1.3	1.8	45	20	54	1.4	1.4	1.2
15	3.8	4.0	1.3	1.4	1.3	2.2	65	35	48	1.4	2.6	1.2
16	2.9	3.0	1.3	1.4	1.2	1.4	88	41	43	1.4	1.4	1.2
17	2.2	1.6	1.2	1.4	1.2	1.7	100	29	36	3.4	3.7	1.2
18	1.6	1.6	1.2	1.4	1.2	1.4	91	26	32	2.8	12	1.2
19	1.5	1.5	1.3	1.4	1.2	1.3	68	32	29	1.2	2.7	1.2
20	1.7	1.2	1.3	1.4	1.2	1.2	58	45	26	1.2	8.0	1.2
21	2.8	1.2	1.2	1.4	6.2	1.3	52	77	23	1.2	1.7	1.2
22	6.3	1.2	1.2	1.4	9.4	3.5	48	106	21	1.2	1.3	1.2
23	6.0	1.1	1.2	1.4	5.7	6.6	45	97	19	1.2	1.3	1.2
24	4.7	1.1	1.2	1.4	3.2	5.8	50	82	17	1.8	1.2	1.2
25	4.1	1.1	1.2	1.4	2.4	5.1	47	70	14	1.4	1.2	1.2
26	3.4	1.2	1.2	1.4	1.7	3.1	50	70	12	1.4	1.1	1.2
27	2.8	1.1	1.2	1.4	2.4	3.2	52	77	10	1.5	1.1	1.3
28	2.6	1.1	1.2	1.4	1.4	4.2	52	97	9.0	1.4	1.1	6.7
29	2.5	1.1	1.2	1.4	---	2.0	54	132	7.6	1.4	1.7	9.7
30	2.4	1.2	1.2	1.4	---	1.3	48	138	6.6	1.4	1.6	8.2
31	2.3	---	1.2	1.4	---	2.4	---	153	---	2.1	1.6	---
TOTAL	390.0	119.9	39.4	57.50	58.9	70.6	1355.3	1699	1828.2	60.9	65.3	59.0
MEAN	12.6	4.00	1.27	1.85	2.10	2.28	45.2	54.8	60.9	1.96	2.11	1.97
MAX	72	18	1.4	16	9.4	6.6	100	153	157	5.4	12	9.7
MIN	1.5	1.0	1.2	.90	1.2	1.1	1.3	20	6.6	1.2	1.1	1.2
AC-FT	774	238	78	114	117	140	2690	3370	3630	121	130	117

CAL YR 1976 TOTAL 10262.00 MEAN 28.0 MAX 310 MIN .80 AC-FT 20350  
WTR YR 1977 TOTAL 5804.00 MEAN 15.9 MAX 157 MIN .90 AC-FT 11510

## TULARE LAKE BASIN

11208730 EAST FORK KAWEAH RIVER NEAR THREE RIVERS, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF EAST FORK KAWEAH RIVER AND EAST FORK  
KAWEAH RIVER NO. 1 CONDUIT NEAR THREE RIVERS, CA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	18	16	15	16	21	24	71	182	29	13	14
2	97	20	16	21	15	20	24	61	174	28	14	13
3	75	20	16	38	16	20	23	58	157	27	14	14
4	60	20	16	18	17	18	27	50	150	27	13	13
5	49	20	15	19	17	19	37	57	140	25	13	11
6	43	19	15	17	16	20	47	49	125	24	13	11
7	40	19	14	17	16	21	64	48	116	22	14	11
8	38	19	15	17	16	21	76	47	134	21	12	11
9	36	19	14	17	16	25	75	51	160	20	14	10
10	34	18	14	17	16	22	59	49	131	20	14	10
11	33	18	15	17	16	22	59	47	102	20	13	10
12	33	20	14	17	16	24	61	51	90	18	13	10
13	31	18	14	17	16	23	64	47	85	17	13	10
14	30	24	14	17	17	20	67	45	79	17	13	10
15	29	23	14	17	17	20	86	60	73	16	18	10
16	28	23	13	17	17	22	109	66	68	16	16	11
17	27	23	12	17	18	21	120	54	62	20	24	11
18	26	23	13	18	18	21	111	51	58	18	38	11
19	25	23	13	20	18	21	88	57	55	15	27	11
20	24	21	13	20	18	20	78	70	51	15	26	11
21	23	20	12	20	25	22	74	102	48	15	21	11
22	22	20	13	19	31	27	71	131	46	15	19	11
23	26	19	13	18	27	31	68	122	44	15	18	11
24	25	19	12	17	23	30	73	107	42	15	17	11
25	24	18	13	18	21	28	71	95	39	14	17	11
26	23	19	13	17	21	25	77	95	37	14	17	11
27	22	16	13	17	22	26	78	102	35	14	17	11
28	22	17	13	17	22	28	78	122	34	13	16	11
29	22	18	13	16	---	25	80	157	33	13	15	11
30	20	17	15	16	---	24	74	163	32	13	14	11
31	20	---	15	16	---	22	---	178	---	14	14	---
TOTAL	1095	591	431	564	524	709	2043	2463	2582	570	520	333
MEAN	35.3	19.7	13.9	18.2	18.7	22.9	68.1	79.5	86.1	18.4	16.8	11.1
MAX	97	24	16	38	31	31	120	178	182	29	38	14
MIN	20	16	12	15	15	18	23	45	32	13	12	10
AC-FT	2170	1170	855	1120	1040	1410	4050	4890	5120	1130	1030	661
CAL YR 1976	TOTAL	17637.6	MEAN	48.2	MAX	323	MIN	9.7	AC-FT	34980		
WTR YR 1977	TOTAL	12425.0	MEAN	34.0	MAX	182	MIN	10	AC-FT	24640		

11208730 EAST FORK KAWEAH RIVER NEAR THREE RIVERS, CA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.4	1.3	1.1	17	13	57	252	252	812	444	142	14
2	8.1	1.3	1.1	14	12	144	227	261	800	422	138	14
3	7.7	1.2	1.1	13	12	147	214	298	792	399	132	14
4	7.6	1.2	1.1	12	14	573	197	346	792	393	132	46
5	8.1	3.5	1.1	9.6	32	422	168	370	868	393	122	553
6	26	1.3	1.1	36	91	277	168	353	903	408	106	380
7	7.3	1.2	1.1	16	105	214	164	333	954	409	106	208
8	1.6	1.0	1.1	11	147	193	145	335	1010	391	106	125
9	1.5	1.2	1.1	24	686	184	149	373	1010	394	97	91
10	1.5	1.2	1.1	41	434	157	161	373	926	395	88	77
11	1.6	1.2	1.1	22	223	160	185	371	878	376	80	70
12	1.7	1.2	1.1	15	139	153	210	434	878	350	77	70
13	1.5	1.2	1.1	12	140	135	237	484	840	346	68	56
14	1.3	1.2	1.1	58	103	122	242	533	768	356	60	54
15	1.3	1.2	4.3	143	82	112	293	530	692	356	54	54
16	1.3	1.2	1.3	154	68	119	278	512	605	343	52	45
17	1.3	1.2	143	195	56	132	232	486	598	303	49	41
18	1.3	1.2	51	75	52	142	227	508	635	276	43	38
19	1.3	1.2	5.1	70	50	138	237	514	635	252	38	36
20	1.3	1.2	1.3	43	50	153	237	535	613	237	33	33
21	1.3	1.2	1.4	35	48	200	218	562	616	227	30	29
22	1.3	1.3	2.2	29	50	240	206	572	612	232	29	25
23	1.3	1.3	38	22	48	176	214	520	594	227	25	23
24	1.3	1.2	13	18	48	153	247	479	588	223	24	21
25	1.2	1.2	1.8	18	48	157	305	437	576	227	23	19
26	1.7	1.2	14	17	47	172	266	420	558	237	22	18
27	1.7	1.2	329	16	45	172	242	464	509	223	20	18
28	1.5	1.2	166	15	48	176	247	521	437	188	19	16
29	1.5	1.2	63	14	---	193	252	659	454	164	17	15
30	1.5	1.1	47	14	---	230	266	796	462	161	16	15
31	1.4	---	25	14	---	324	---	832	---	153	15	---
TOTAL	108.4	38.5	921.8	1192.6	2891	5927	6686	14463	21415	9505	1963	2218
MEAN	3.50	1.28	29.7	38.5	103	191	223	467	714	307	63.3	73.9
MAX	26	3.5	329	195	686	573	305	832	1010	444	142	553
MIN	1.2	1.0	1.1	9.6	12	57	145	252	437	153	15	14
CFSM	.04	.01	.35	.45	1.20	2.23	2.60	5.44	8.32	3.58	.74	.86
IN.	.05	.02	.40	.52	1.25	2.57	2.90	6.27	9.28	4.12	.85	.96
CAL YR 1977 TOTAL	6323.40			MEAN 17.3	MAX 329	MIN .90	CFSM .20	IN 2.74				
WTR YR 1978 TOTAL	67329.30			MEAN 184	MAX 1010	MIN 1.0	CFSM 2.14	IN 29.19				

## TULARE LAKE BASIN

11208730 EAST FORK KAWEAH RIVER NEAR THREE RIVERS, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF EAST FORK KAWEAH RIVER AND EAST FORK KAWEAH RIVER NO. 1 CONDUIT NEAR THREE RIVERS, CA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	11	11	41	40	83	273	278	838	470	168	40
2	9.3	10	11	38	39	169	248	286	826	448	164	39
3	8.8	10	11	36	39	172	235	324	817	425	158	39
4	8.7	9.8	11	37	41	581	218	372	817	419	158	71
5	9.2	18	11	36	59	422	192	396	894	419	148	577
6	27	16	11	63	117	289	192	379	929	434	132	406
7	17	14	10	43	130	239	189	359	980	435	132	234
8	15	14	11	38	172	218	170	361	1030	417	132	151
9	13	13	10	51	691	209	174	398	1040	420	123	117
10	13	13	10	68	434	182	186	398	952	421	114	102
11	12	13	10	49	232	185	210	396	904	402	106	95
12	11	12	10	42	161	178	237	458	904	376	103	93
13	11	12	10	39	162	160	264	509	865	372	94	81
14	11	12	11	86	125	147	268	545	793	382	86	79
15	11	12	19	170	105	137	312	543	718	382	80	80
16	10	12	16	180	91	144	296	537	631	369	78	71
17	10	11	159	222	80	157	256	512	624	329	73	67
18	10	11	67	102	76	167	251	534	661	302	69	64
19	10	11	26	97	74	163	259	540	661	278	64	62
20	10	9.7	23	70	75	178	261	561	639	263	59	59
21	11	12	21	62	73	225	243	588	642	253	56	55
22	11	15	26	56	76	265	231	597	638	258	55	51
23	10	14	61	49	72	201	239	545	620	253	50	49
24	10	12	37	45	74	178	270	505	614	249	50	47
25	10	12	25	45	74	182	330	462	602	253	49	45
26	10	12	38	44	73	197	292	445	584	263	48	44
27	10	12	346	43	71	198	268	489	535	249	46	44
28	10	13	190	42	74	202	273	547	463	214	45	42
29	10	12	87	41	---	219	278	685	478	190	43	41
30	11	12	71	41	---	255	292	822	487	187	42	41
31	11	---	49	41	---	345	---	858	---	179	41	---
TOTAL	352.0	370.5	1409	2017	3530	6647	7407	15229	22186	10311	2766	2986
MEAN	11.4	12.4	45.5	65.1	126	214	247	491	740	333	89.2	99.5
MAX	27	18	346	222	691	581	330	858	1040	470	168	577
MIN	8.7	9.7	10	36	39	83	170	278	463	179	41	39
CFSM	.13	.14	.53	.76	1.47	2.49	2.88	5.72	8.62	3.88	1.04	1.16
IN.	.15	.16	.61	.87	1.53	2.88	3.21	6.60	9.62	4.47	1.20	1.29
CAL YR 1977	TOTAL	12439.5	MEAN	34.1	MAX	346	MIN	8.7	CFSM	.40	IN	5.39
WTR YR 1978	TOTAL	75210.5	MEAN	206	MAX	1040	MIN	8.7	CFSM	2.40	IN	32.61

## 11209900 KAWEAH RIVER AT THREE RIVERS, CA

LOCATION.--Lat 36°26'38", long 118°54'09", in SW¼SW¼ sec.13, T.17 S., R.28 E., Tulare County, on right bank opposite schoolhouse in Three Rivers, 0.2 mi (0.3 km) downstream from North Fork Kaweah River.

DRAINAGE AREA.--418 mi<sup>2</sup> (1,083 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 809.62 ft (246.772 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diversions of 200 acres (80.9 hm<sup>2</sup>) above station. Power is developed on the Middle and East Fork Kaweah River.

AVERAGE DISCHARGE.--20 years, 502 ft<sup>3</sup>/s (14.22 m<sup>3</sup>/s), 363,700 acre-ft/yr (448 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,000 ft<sup>3</sup>/s (2,070 m<sup>3</sup>/s) Dec. 5, 1966, gage height, 16.69 ft (5.087 m) in gage well, 19.0 ft (5.79 m) from floodmarks, from rating curve extended above 13,000 ft<sup>3</sup>/s (368 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 13.68 ft (4.170 m) and 16.69 ft (5.087 m); minimum daily, 14 ft<sup>3</sup>/s (0.40 m<sup>3</sup>/s) Sept. 29, Oct. 4, 5, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a stage of 17.9 ft (5.46 m) from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharges above base of 1,800 ft<sup>3</sup>/s (51.0 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 17	2330	2280 64.6	6.63 2.021	Apr. 15	2245	2920 82.7	7.04 2.146
Dec. 27	0700	3940 112	7.57 2.307	Apr. 25	1400	2270 64.3	6.62 2.018
Jan. 17	0615	2990 84.7	7.08 2.158	May 15	0045	4080 116	7.63 2.326
Feb. 9	0715	9420 267	9.36 2.853	June 8	2315	5180 147	8.03 2.448
Feb. 13	0815	2320 65.7	6.66 2.030	July 26	2130	1980 56.1	6.42 1.957
Mar. 4	1300	*9460 268	9.37 2.856	Sept. 5	0730	6210 176	8.38 2.554

Minimum daily, 14 ft<sup>3</sup>/s (0.40 m<sup>3</sup>/s) Oct. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	21	36	314	284	701	1400	1420	3630	1810	694	159
2	16	20	35	273	276	1390	1300	1480	3530	1740	697	150
3	15	19	34	251	274	1720	1200	1740	3430	1600	661	147
4	14	19	33	257	281	5680	1300	2030	3530	1530	629	216
5	14	36	27	252	307	3700	1200	2170	3680	1580	603	3990
6	42	56	35	431	635	2160	1300	2040	3790	1660	539	2450
7	71	44	30	330	630	1670	1800	1840	4090	1720	518	1330
8	38	39	30	275	689	1440	1400	1930	4350	1620	502	704
9	35	39	30	453	6300	1250	1300	2200	4290	1660	472	497
10	31	36	29	599	4170	1130	1260	2250	3950	1700	429	418
11	31	34	28	401	1820	1170	1240	2240	3470	1540	407	391
12	28	33	27	318	1300	1070	1430	2660	3480	1360	382	345
13	27	32	28	287	1980	943	1540	3150	3360	1370	353	307
14	26	31	28	429	1270	881	1520	3470	3160	1490	328	318
15	23	30	47	1310	965	848	1720	3430	2980	1480	300	407
16	23	30	91	1190	812	856	1960	2790	2690	1400	287	324
17	21	29	622	2090	714	921	1480	2640	2540	1250	274	284
18	21	29	652	905	620	910	1390	2850	2680	1150	261	263
19	20	29	196	876	560	880	1400	2980	2710	1050	245	253
20	21	26	139	650	540	860	1430	3100	2590	973	230	243
21	22	26	123	515	560	1500	1310	3250	2600	944	222	229
22	22	39	140	443	560	1900	1190	3410	2520	960	216	215
23	22	45	368	390	580	1300	1200	3140	2350	966	208	201
24	21	39	339	350	580	1000	1370	2500	2190	937	198	190
25	20	39	184	335	570	960	1910	2210	2130	935	190	180
26	19	41	159	317	560	1000	1670	2110	2090	1320	187	174
27	20	41	2470	315	560	980	1430	2300	1960	1060	183	166
28	22	41	1520	305	566	930	1390	2740	1700	810	175	159
29	20	39	712	297	---	960	1400	3260	1760	743	168	156
30	22	37	553	297	---	1000	1500	3720	1850	719	163	150
31	20	---	391	287	---	1800	---	3810	---	723	162	---
TOTAL	764	1019	9136	15742	28963	43510	42940	80860	89060	39800	10883	15016
MEAN	24.6	34.0	295	508	1034	1404	1431	2608	2969	1284	351	501
MAX	71	56	2470	2090	6300	5680	1960	3810	4350	1810	697	3990
MIN	14	19	27	251	274	701	1190	1420	1700	719	162	147
AC-FT	1520	2020	18120	31220	57450	86300	85170	160400	176700	78940	21590	29780
CAL YR 1977 TOTAL	48190	MEAN	132	MAX	2470	MIN	14	AC-FT	95580			
WTR YR 1978 TOTAL	377693	MEAN	1035	MAX	6300	MIN	14	AC-FT	749200			

## TULARE LAKE BASIN

11209900 KAWEAH RIVER AT THREE RIVERS, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

CHEMICAL ANALYSES: Water years 1964-66, 1977.

WATER TEMPERATURES: Water years 1966, 1968 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1965 to December 1966, January 1968 to current year.

INSTRUMENTATION.--Temperature recorder October 1965 to December 1966, and since January 1968.

REMARKS.--Clock stopped Nov. 20 to Dec. 7; range in temperature, 7.0°C to 12.5°C.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 30.0°C July 14, 15, 1972, July 15, 18, 1977; minimum recorded, 0.5°C Jan. 7, 1971, Dec. 12, 1972.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 24.0°C Aug. 10, 30 Sept. 2, 3; minimum recorded, 4.5°C Dec. 20, Jan. 25, 26.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	23.0	17.5	16.5	12.0	---	---	7.5	5.5	9.0	7.0	12.5	10.0
2	23.0	17.0	17.0	12.0	---	---	8.0	6.0	9.0	6.5	10.5	8.5
3	23.5	17.0	17.0	12.0	---	---	9.0	8.0	9.0	5.5	10.0	8.5
4	22.5	17.0	16.5	13.0	---	---	8.5	8.0	9.5	7.0	10.0	9.0
5	21.5	17.5	13.5	11.5	---	---	8.5	8.0	10.0	8.5	10.0	8.5
6	23.0	18.0	13.0	10.5	---	---	9.5	8.0	9.5	7.5	11.0	8.0
7	20.5	17.0	13.5	9.5	---	---	10.0	7.5	8.0	7.0	11.5	8.5
8	21.0	16.0	13.5	9.5	11.0	9.0	9.5	7.0	9.0	6.5	12.0	9.5
9	20.5	15.5	13.5	9.0	9.0	6.5	9.5	8.5	9.0	8.5	11.0	10.0
10	21.0	15.5	13.0	9.0	9.5	6.0	8.5	7.0	8.5	6.0	10.0	8.0
11	21.0	15.5	13.5	10.0	9.5	6.0	9.5	7.0	7.0	5.5	9.5	8.5
12	21.0	16.0	13.5	9.0	9.5	7.0	8.5	7.0	7.0	5.5	9.0	8.0
13	21.0	16.0	12.5	9.0	11.5	9.0	10.5	8.0	8.5	6.5	10.0	7.0
14	21.0	16.0	12.5	9.0	11.0	7.5	10.0	9.5	9.0	6.0	11.0	8.0
15	21.0	16.0	13.0	9.0	11.0	8.5	9.5	7.5	8.0	7.0	12.0	7.5
16	21.0	16.0	13.0	9.0	10.0	7.5	8.5	7.5	9.0	6.5	13.0	8.5
17	21.5	15.5	13.0	9.0	9.5	9.0	9.5	8.0	8.5	7.0	13.5	10.0
18	21.0	16.0	12.5	9.5	9.0	7.0	8.5	7.0	10.0	7.0	12.0	10.0
19	19.5	16.0	12.5	10.0	7.5	5.5	10.0	8.0	10.5	6.5	13.5	10.0
20	20.0	15.0	---	---	6.5	4.5	9.0	7.5	11.0	7.0	12.5	10.5
21	19.0	15.0	---	---	7.5	6.0	9.0	7.0	11.5	8.0	13.0	11.5
22	18.5	14.0	---	---	9.5	7.5	8.0	7.0	12.0	8.0	11.5	10.5
23	19.0	14.5	---	---	10.0	8.5	7.5	6.0	11.5	8.0	11.5	9.5
24	19.0	14.5	---	---	9.5	8.0	7.5	5.0	11.0	8.0	12.0	10.0
25	19.5	15.0	---	---	9.0	7.5	7.0	4.5	10.5	7.5	12.5	10.0
26	20.0	15.5	---	---	9.5	8.5	8.0	4.5	11.0	8.5	12.0	11.0
27	18.5	15.5	---	---	10.0	8.0	8.0	5.5	10.0	8.5	12.0	10.0
28	15.5	12.5	---	---	9.5	8.5	9.0	6.0	10.5	8.5	13.0	10.5
29	17.5	13.0	---	---	10.0	8.5	9.0	7.0	---	---	13.0	10.5
30	16.0	12.0	---	---	9.5	9.0	9.5	7.5	---	---	12.0	11.0
31	16.0	12.0	---	---	9.0	7.0	8.0	7.0	---	---	11.0	8.5
MONTH	23.5	12.0	---	---	---	---	10.5	4.5	12.0	5.5	13.5	7.0



11209900 KAWEAH RIVER AT THREE RIVERS, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.5	7.5	10.5	9.0	14.0	10.0	15.5	13.0	22.5	18.5	23.5	18.5
2	10.0	8.5	13.0	9.0	14.0	10.0	15.0	12.5	22.5	19.0	24.0	18.5
3	10.5	8.5	13.0	11.0	14.5	10.5	15.0	12.0	23.5	19.5	24.0	19.0
4	9.5	7.0	13.5	11.0	15.0	10.5	16.0	12.5	22.0	19.5	21.0	17.5
5	9.5	6.0	12.5	9.5	15.0	11.0	16.5	13.0	23.5	19.0	17.5	17.5
6	8.5	7.5	11.5	8.0	15.0	11.0	17.0	13.5	23.5	19.5	17.0	16.0
7	7.5	6.5	12.5	8.5	16.0	11.5	17.0	14.0	22.5	19.5	16.5	14.5
8	9.0	6.5	13.5	9.5	15.5	11.0	17.5	14.0	23.0	19.5	17.0	14.0
9	12.0	6.5	13.0	9.5	15.5	11.0	18.0	14.5	22.0	19.5	17.5	14.0
10	13.5	9.0	13.0	9.5	14.0	10.5	18.0	15.0	24.0	19.0	18.5	15.5
11	14.0	10.0	13.5	10.0	15.0	10.5	17.0	14.0	22.0	19.5	19.0	15.5
12	14.0	11.0	13.5	9.5	15.5	11.0	17.0	13.5	22.5	18.5	19.5	15.0
13	12.5	11.0	14.0	9.5	15.5	11.0	18.0	15.0	22.5	18.5	19.0	15.5
14	11.0	10.0	14.0	9.0	15.0	11.0	19.0	15.0	22.0	17.5	18.5	16.0
15	10.0	8.0	12.0	9.0	14.5	11.0	19.5	15.5	22.5	17.5	18.5	14.5
16	9.0	6.0	11.0	7.5	14.0	10.5	19.5	16.0	22.5	17.5	19.5	14.5
17	10.5	6.5	12.5	8.5	15.0	10.5	19.5	16.0	21.5	17.5	20.5	15.5
18	12.0	8.5	13.0	9.0	15.5	12.0	19.0	16.0	21.5	16.0	17.5	14.0
19	12.5	10.0	13.0	9.0	15.0	10.5	19.0	16.0	22.0	16.5	16.5	12.0
20	11.0	9.5	13.0	9.0	15.5	11.5	19.0	16.0	22.0	16.5	16.5	12.0
21	10.0	8.0	13.5	9.5	16.0	12.0	20.0	16.5	22.0	16.5	17.0	12.0
22	11.5	7.0	13.0	9.5	16.0	12.5	20.5	17.0	21.5	17.0	18.0	12.5
23	13.0	9.0	11.5	8.5	14.5	11.5	21.0	17.0	21.5	16.5	19.0	13.5
24	12.0	9.0	10.0	7.0	15.0	11.5	19.5	17.0	21.0	16.0	20.5	15.0
25	11.5	9.0	10.5	7.0	14.5	11.5	19.0	17.5	21.0	16.0	21.0	16.0
26	10.5	8.5	12.0	8.0	14.5	11.5	21.5	17.5	21.5	16.5	21.5	17.0
27	11.5	8.5	13.5	9.0	15.0	11.5	21.5	17.0	21.5	16.5	21.5	17.0
28	13.0	10.0	14.0	10.0	16.0	12.5	21.5	18.0	22.5	16.5	21.5	16.5
29	13.0	9.5	15.0	10.5	15.5	12.5	21.5	18.0	23.5	18.0	22.0	17.0
30	11.0	9.5	14.5	10.5	16.0	13.0	22.0	18.5	24.0	19.0	22.0	17.0
31	---	---	14.0	10.0	---	---	22.0	18.5	23.5	18.5	---	---
MONTH	14.0	6.0	15.0	7.0	16.0	10.0	22.0	12.0	24.0	16.0	24.0	12.0

## 11210100 SOUTH FORK KAWEAH RIVER AT THREE RIVERS, CA

LOCATION.--Lat 36°25'00", long 118°54'48", in SW¼SE¼ sec.26, T.17 S., R.28 E., Tulare County, on right bank 200 ft (61 m) upstream from unnamed tributary, 0.5 mi (0.8 km) upstream from mouth, and 1.8 mi (2.9 km) southwest of Three Rivers.

DRAINAGE AREA.--86.7 mi<sup>2</sup> (224.6 km<sup>2</sup>).

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 807.22 ft (246.041 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several small diversions above station for irrigation.

AVERAGE DISCHARGE.--20 years, 66.0 ft<sup>3</sup>/s (1.869 m<sup>3</sup>/s), 47,820 acre-ft/yr (59.0 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft<sup>3</sup>/s (329 m<sup>3</sup>/s) Dec. 6, 1966, gage height, 9.30 ft (2.835 m) in gage well, 10.4 ft (3.17 m) from floodmarks, from rating curve extended above 2,600 ft<sup>3</sup>/s (73.6 m<sup>3</sup>/s) on basis of slope-area measurement of maximum flow; no flow at times in 1960-62.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of December 23, 1955, reached a stage of 9.5 ft (2.90 m) from floodmarks, discharge, 10,000 ft<sup>3</sup>/s (283 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft<sup>3</sup>/s (14.2 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Feb. 10	0345	1760 49.8	5.01 1.527	May 15	0130	516 14.6	3.65 1.113
Mar. 4	1145	*2220 62.9	5.27 1.606	June 7	2245	935 26.5	4.27 1.302
Apr. 15	2215	650 18.4	3.88 1.183				

Minimum daily, 0.06 ft<sup>3</sup>/s (0.002 m<sup>3</sup>/s) Oct. 3-5, 9, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	.86	3.4	29	28	100	204	174	561	261	31	6.7
2	.07	.76	2.9	25	27	214	192	175	528	222	29	6.5
3	.06	.68	2.9	23	26	202	165	190	529	201	27	6.2
4	.06	.68	2.9	24	25	1500	191	230	554	188	26	10
5	.06	2.1	3.0	22	31	888	169	263	580	188	27	154
6	.08	4.2	3.0	34	82	409	185	247	617	190	25	185
7	.07	3.3	3.0	29	90	285	239	229	660	189	23	90
8	.07	2.8	3.0	25	117	223	192	225	685	170	23	52
9	.06	2.7	2.8	39	1280	201	183	265	664	163	21	38
10	.07	2.5	3.0	65	1100	170	184	282	610	163	20	32
11	.07	2.4	3.0	48	309	179	182	298	553	149	19	31
12	.07	2.4	2.9	35	222	175	184	361	569	126	18	26
13	.07	2.0	2.7	31	280	153	183	415	540	119	17	24
14	.06	2.1	2.7	60	173	136	187	448	490	120	16	23
15	.09	1.9	3.5	205	134	124	281	437	450	114	15	23
16	.14	1.9	7.2	156	109	118	331	346	414	109	13	23
17	.10	1.9	51	248	94	118	237	336	393	94	13	21
18	.09	1.9	78	106	83	120	213	374	419	84	12	20
19	.10	1.8	22	135	79	115	201	399	417	75	11	19
20	.11	1.9	16	86	77	116	192	406	406	68	11	19
21	.12	2.0	13	62	77	215	181	413	407	64	10	18
22	.13	3.3	13	52	78	285	166	436	387	60	9.9	17
23	.14	3.5	18	45	77	181	159	417	354	57	10	15
24	.11	3.4	27	39	73	150	169	314	329	52	9.8	15
25	.13	3.3	17	36	69	138	231	276	317	55	10	13
26	.24	3.2	15	34	64	141	206	273	310	55	10	12
27	.33	3.2	167	32	62	136	178	325	286	50	9.9	12
28	.45	3.3	143	31	62	131	169	400	271	46	9.0	12
29	.58	3.5	67	30	---	134	184	485	281	40	7.6	11
30	.69	3.5	50	30	---	149	173	549	281	36	7.1	11
31	.92	---	36	29	---	320	---	571	---	33	6.9	---
TOTAL	5.41	72.98	784.9	1845	4928	7526	5891	10559	13822	3541	497.2	945.4
MEAN	.17	2.43	25.3	59.5	176	243	196	341	461	114	16.0	31.5
MAX	.92	4.2	167	248	1280	1500	331	571	665	261	31	185
MIN	.06	.68	2.7	22	25	100	159	174	281	33	6.9	6.2
AC-FT	11	145	1560	3660	9770	14930	11680	20940	27420	7020	986	1880
CAL YR 1977	TOTAL	4403.40	MEAN 12.1	MAX 167	MIN .05	AC-FT 8730						
WTR YR 1978	TOTAL	50417.89	MEAN 138	MAX 1500	MIN .06	AC-FT 100000						

## TULARE LAKE BASIN

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11210850 LEMONCOVE DITCH BELOW TERMINUS DAM, CA

LOCATION.--Lat 36°24'55", long 119°00'22", in SW¼SW¼ sec.25, T.17 S., R.27 E., Tulare County, on left bank 250 ft (76 m) downstream from outlet tunnel of Terminus Dam, and 2.4 mi (3.9 km) northeast of Lemoncove.

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

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 546.3 ft (166.51 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records excellent. Ditch receives water from Lake Kaweah (station 11210900) which is used for irrigation. At times up to 3 ft³/s (0.085 m³/s) is diverted 200 feet (61 m) upstream into Doffelmyer ditch for irrigation.

AVERAGE DISCHARGE.--16 years, 4.96 ft³/s (0.140 m³/s), 3,590 acre-ft/yr (4.43 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 8.8 ft³/s (0.25 m³/s) May 5, 1970; no flow at times in 1962, 1969, 1975.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	8.1	3.0	1.0	.90	1.0	1.1	1.1	7.9	8.0	8.0	7.8
2	8.0	8.1	4.3	.90	.90	1.0	1.1	1.1	7.9	8.1	8.0	7.7
3	8.0	8.1	5.0	1.0	.90	1.1	1.1	1.1	8.0	8.1	8.0	7.8
4	8.0	8.1	5.0	1.0	.90	1.1	1.1	1.1	7.9	8.1	8.0	7.8
5	8.0	6.8	5.0	1.0	1.0	1.1	1.1	1.2	7.9	8.1	8.0	4.1
6	8.0	6.0	5.0	1.0	.90	1.1	1.1	1.2	8.0	8.1	8.0	1.1
7	8.0	6.0	5.0	1.0	.80	1.1	1.1	1.2	8.0	8.1	8.0	1.0
8	8.0	6.0	5.1	1.0	.90	1.1	1.1	1.2	8.0	8.1	8.0	1.0
9	8.0	6.0	5.1	1.0	1.0	1.1	1.1	1.2	8.0	8.1	8.0	1.0
10	8.0	4.8	5.1	1.0	1.0	1.1	1.1	1.2	8.0	8.1	8.0	1.0
11	8.0	4.1	5.1	1.0	1.0	1.1	1.1	1.4	8.0	8.1	8.0	1.0
12	8.0	4.1	5.1	1.0	1.0	1.1	1.1	1.9	8.0	8.1	8.0	1.0
13	8.1	4.1	5.1	1.0	1.0	1.1	1.1	2.0	8.0	8.1	8.0	1.0
14	8.1	4.0	5.1	1.0	1.0	1.1	1.1	2.0	8.0	8.1	8.0	1.0
15	8.1	4.0	2.3	1.0	1.0	1.1	1.1	3.4	8.0	8.1	8.0	1.0
16	8.1	4.0	1.0	1.0	1.0	1.1	1.1	6.2	8.0	8.1	8.0	1.0
17	8.1	4.0	1.0	1.0	1.0	1.1	1.1	6.2	8.0	8.1	8.0	2.9
18	8.1	4.0	1.0	1.0	1.0	1.1	1.0	6.2	8.0	8.1	8.0	4.2
19	8.1	4.0	1.0	1.0	1.0	1.1	1.0	6.0	8.0	8.1	8.0	4.2
20	8.1	4.0	1.0	1.0	1.0	1.0	1.0	6.0	8.0	8.1	8.0	4.2
21	8.0	4.0	.90	.80	1.0	1.2	1.1	6.0	8.0	8.1	8.0	4.2
22	8.0	4.0	1.0	.80	1.0	1.1	1.1	7.3	8.0	8.1	8.0	4.2
23	8.0	2.6	1.1	.80	1.0	1.1	1.1	8.1	8.0	8.0	8.0	4.2
24	8.0	2.0	1.1	.80	1.0	1.1	1.1	8.1	8.0	8.0	8.0	4.2
25	8.0	2.0	1.1	.80	1.0	1.1	1.1	8.1	8.0	8.0	8.0	4.2
26	8.0	2.0	1.1	.90	1.0	1.1	1.1	8.0	8.0	8.0	8.0	4.9
27	8.0	2.0	1.1	.90	1.0	1.1	1.1	8.0	8.0	7.9	8.0	5.9
28	8.1	2.4	1.1	.90	1.0	1.1	1.1	8.0	8.0	7.8	8.0	5.9
29	8.1	3.0	1.1	.90	---	1.1	1.1	8.0	8.0	7.9	8.0	6.6
30	8.1	3.0	1.0	.90	---	1.1	1.1	8.0	8.0	8.0	8.0	7.0
31	8.1	---	1.0	.90	---	1.1	---	8.0	---	8.0	8.0	---
TOTAL	249.2	135.3	86.90	29.30	27.20	33.9	32.7	138.5	239.6	249.7	248.0	113.1
MEAN	8.04	4.51	2.80	.95	.97	1.09	1.09	4.47	7.99	8.05	8.00	3.77
MAX	8.1	8.1	5.1	1.0	1.0	1.2	1.1	8.1	8.0	8.1	8.0	7.8
MIN	8.0	2.0	.90	.80	.80	1.0	1.0	1.1	7.9	7.8	8.0	1.0
AC-FT	494	268	172	58	54	67	65	275	475	495	492	224
CAL YR 1977	TOTAL	2030.00	MEAN 5.56	MAX 8.4	MIN .80	AC-FT 4030						
WTR YR 1978	TOTAL	1583.40	MEAN 4.34	MAX 8.1	MIN .80	AC-FT 3140						

## TULARE LAKE BASIN

11210900 LAKE KAWEAH NEAR LEMONCOVE, CA

LOCATION.--Lat 36°24'53", long 119°00'07", in SE¼SW¼ sec.25, T.17 S., R.27 E., Tulare County, in control tower near left abutment of Terminus Dam on Kaweah River, 2.1 mi (3.4 km) northeast of Lemoncove.

DRAINAGE AREA.--560 mi<sup>2</sup> (1,450 km<sup>2</sup>).

PERIOD OF RECORD.--October 1961 to current year. Fragmentary prior to March 1962.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to May 22, 1962, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam and earthfill auxiliary dam, completed in February 1962. Usable capacity, 149,454 acre-ft (184 hm<sup>3</sup>) between elevations 520.0 ft (158.50 m) invert of outlet structure, and 694.0 ft (211.53 m) spillway crest. Dead storage, 87 acre-ft (107,000 m<sup>3</sup>). Spillway design flood pool elevation, 745.1 ft (227.11 m), capacity, 265,994 acre-ft (328 hm<sup>3</sup>). Records, including extremes, represent total contents at 2400 hours.

COOPERATION.--Records furnished by Corps of Engineers, not rounded to Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 160,200 acre-ft (198 hm<sup>3</sup>) July 3, 4, 1967, elevation, 699.39 ft (213.174 m) storage increased by a temporary sandbag dam in the ungated spillway; minimum since reservoir first filled, 7,559 acre-ft (9.32 hm<sup>3</sup>) Oct. 20, 1970, elevation, 568.38 ft (173.242 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 137,551 acre-ft (170 hm<sup>3</sup>) June 14, elevation, 687.74 ft (209.623 m); minimum, 8,983 acre-ft (11.1 hm<sup>3</sup>) Nov. 4, elevation, 572.80 ft (174.590 m).

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

520	87	580	11840
525	246	600	22842
530	513	620	39223
535	904	640	61609
540	1429	660	89866
550	2924	680	123339
560	5080	700	161452
570	8008	720	204328

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9878	8990	10252	17064	15201	47502	93544	104395	110802	132239	84839	16016
2	9813	8990	10206	15129	15170	49165	94843	103101	112982	133276	82135	14614
3	9740	8990	10319	14331	15165	51147	95305	102292	114921	133981	79155	13401
4	9672	8983	10343	14267	15206	64386	95944	102045	117066	134464	76088	12302
5	9611	9041	10300	14252	15304	74094	96088	101996	119565	134669	73211	18654
6	9589	9154	10416	14629	15920	78545	96408	101617	122247	134613	70379	22740
7	9672	9216	10478	14815	16085	81057	98001	100847	125425	134409	67460	24363
8	9657	9249	10526	14850	16186	82580	98924	100193	129041	133795	64425	24666
9	9615	9301	10570	15155	31749	83534	99574	100030	132036	133257	61203	24654
10	9566	9346	10595	16026	43864	83833	100128	99883	134092	132701	57914	24582
11	9517	9383	10607	15841	48312	84223	100732	99281	135210	131630	54623	24511
12	9465	9416	10615	15294	51284	84403	101502	99167	136331	130048	51396	24327
13	9412	9446	10615	15119	56248	84343	102358	99948	137250	128274	48268	24130
14	9360	9476	10619	15361	58838	84028	103068	101273	137551	127019	45247	24060
15	9308	9506	10675	17950	60057	83459	104445	102440	137326	125769	42314	24243
16	9253	9532	10854	18743	60346	82788	106315	102193	136706	124578	39465	24334
17	9194	9582	11880	21315	60020	82328	106954	101519	136069	122909	37029	24363
18	9138	9585	13724	20212	59396	82046	107324	101289	135938	120841	34871	24356
19	9077	9611	14086	19602	58665	81676	107611	101355	135845	118436	32969	24320
20	9048	9626	14257	19696	57840	81558	107779	101617	135546	115791	31580	24243
21	9041	9838	14375	17455	57011	82907	107560	102160	135527	113120	30402	24151
22	9030	9887	14564	16074	56019	85458	107071	103266	135415	110649	29141	24046
23	9016	9767	15175	15392	54801	86793	106584	104212	134930	108269	27761	23913
24	9012	9832	15984	15232	53422	87511	106232	103797	134055	105729	26321	23781
25	9008	9890	16358	15181	51983	87909	107105	102787	133072	103002	25033	23656
26	9008	9955	16673	15175	50500	88416	107391	101749	132165	100814	24158	23483
27	9001	10025	21283	15206	49209	88615	107021	101224	131556	98260	23428	23195
28	8994	10079	23373	15227	48202	88554	106466	101667	130967	95273	22445	22869
29	8994	10142	22525	15227	---	88369	105830	103184	130764	92504	21071	22538
30	8994	10201	20854	15222	---	88492	105295	105729	131316	89928	19419	22185
31	8994	---	19010	15216	---	91626	---	108438	---	87404	17699	---
MAX	9878	10201	23373	21315	60346	91626	107779	108438	137551	134669	84839	24666
MIN	8994	8983	10206	14252	15165	47502	93544	99167	110802	87404	17699	12302
†	572.83	576.03	593.98	587.14	628.69	661.13	669.58	671.45	684.39	658.40	591.73	599.02
‡	-954	+1207	+8809	-3794	+32986	+43424	+13669	+3143	+22878	-43912	-69705	+4486
††	217	89	56	41	109	265	371	865	1238	1501	861	348

CAL YR 1977 ‡ +6771  
WTR YR 1978 ‡ +12237

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet

†† Evaporation, in acre-feet.

## 11210930 FOOTHILL DITCH BELOW TERMINUS DAM, CA

LOCATION.--Lat 36°24'48", long 119°00'47", in NW¼NE¼ sec.35, T.17 S., R.27 E., Tulare County, on left bank 0.7 mi (1.1 km) downstream from Terminus Dam, and 2.1 mi (3.4 km) northeast of Lemoncove.

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 492.8 ft (150.21 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good. Ditch receives water from Lake Kaweah (station 11210900) which is used for irrigation.

AVERAGE DISCHARGE.--17 years, 19.2 ft<sup>3</sup>/s (0.544 m<sup>3</sup>/s), 13,910 acre-ft/yr (17.2 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 49 ft<sup>3</sup>/s (1,39 m<sup>3</sup>/s) Feb. 10, 1962; no flow many days in 1975 and 1978.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	13	16	3.6	9.2			0	28	19	24	27
2	20	12	16	3.6	9.1			0	28	18	25	26
3	19	12	17	3.3	8.9			0	28	18	26	25
4	20	12	17	2.9	8.7			0	28	18	27	25
5	20	13	18	2.8	8.9			7.0	28	18	27	25
6	20	13	21	2.8	9.8			12	28	19	27	24
7	21	20	11	2.8	9.6			12	28	19	28	22
8	22	28	3.5	2.8	9.0			12	28	19	30	22
9	22	21	8.4	2.9	7.1			12	29	19	31	21
10	22	22	13	8.1	5.1			12	29	20	31	20
11	22	24	18	8.5	4.9			13	29	20	32	20
12	22	24	19	8.7	5.4			13	29	20	33	20
13	21	24	20	8.7	4.1			13	22	21	34	19
14	20	22	20	8.7	5.0			13	22	21	34	19
15	19	17	19	8.7	6.1			21	22	21	35	19
16	19	17	16	9.3	7.2			29	22	21	36	18
17	19	18	10	9.9	7.8			28	21	21	25	18
18	19	17	9.8	10	7.9			28	22	21	25	18
19	19	16	21	10	0			28	22	22	25	18
20	17	16	30	10	0			28	22	22	24	18
21	8.6	16	30	10	0			28	22	22	24	18
22	9.6	18	28	11	0			28	22	22	25	18
23	9.8	18	26	10	0			28	21	22	26	18
24	8.3	17	23	9.4	0			28	21	23	27	18
25	6.2	19	23	8.5	0			28	21	22	26	18
26	5.8	20	23	8.3	0			28	21	23	25	18
27	5.4	20	20	8.2	0			28	21	23	25	19
28	4.6	19	3.8	8.2	0			28	20	23	26	19
29	4.7	16	4.0	8.3	---			28	20	23	28	19
30	3.9	16	3.8	8.4	---			28	19	24	28	19
31	3.8	---	3.6	8.6	---		---	28	---	24	28	---
TOTAL	473.7	540	511.9	227.0	133.8	0	0	589.0	723	648	867	608
MEAN	15.3	18.0	16.5	7.32	4.78	0	0	19.0	24.1	20.9	28.0	20.3
MAX	22	28	30	11	9.8	0	0	29	29	24	36	27
MIN	3.8	12	3.5	2.8	0	0	0	0	19	18	24	18
AC-FT	940	1070	1020	450	265	0	0	1170	1430	1290	1720	1210
CAL YR 1977 TOTAL	7222.7			MEAN 19.8	MAX 44	MIN 1.8	AC-FT 14330					
WTR YR 1978 TOTAL	5321.4			MEAN 14.6	MAX 36	MIN 0	AC-FT 10550					

## TULARE LAKE BASIN

11210950 KAWEAH RIVER BELOW TERMINUS DAM, CA

LOCATION.--Lat 36°24'51", long 119°00'42", in SE¼SE¼ sec.26, T.17 S., R.27 E., Tulare County, on left bank 0.6 mi (1.0 km) downstream from Terminus Dam, and 2.2 mi (3.5 km) northeast of Lemoncove.

DRAINAGE AREA.--561 mi<sup>2</sup> (1,453 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1961 to current year.

REVISED RECORDS.--WDR CA-71-2: 1963.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 495.90 ft (151.150 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records excellent. Flow regulated by Lake Kaweah (station 11210900). Lemoncove ditch (station 11210850) diverts water from Lake Kaweah for irrigation. Foothill ditch (station 11210930) diverts water from the gage pool for irrigation. Doffelmyer ditch diverts up to 3 ft<sup>3</sup>/s (0.085 m<sup>3</sup>/s) above station for irrigation. At times some of this water is returned to the river above the station.

AVERAGE DISCHARGE (adjusted for change in contents, evaporation, and diversion).--17 years, 628 ft<sup>3</sup>/s (17.78 m<sup>3</sup>/s), 455,000 acre-ft/yr (561 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,610 ft<sup>3</sup>/s (159 m<sup>3</sup>/s) June 3, 1969, gage height, 8.77 ft (2.673 m); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,300 ft<sup>3</sup>/s (93.5 m<sup>3</sup>/s) June 15, 16, gage height, 7.23 ft (2.204 m); no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	10	0	0	1270	306	1070	769	2030	2670	1450	1950	932		
2	9.1	0	0	1230	304	897	956	2220	2670	1300	2010	799		
3	7.9	0	0	702	284	817	1130	2240	2680	1310	2110	702		
4	7.9	0	0	314	267	317	1210	2240	2680	1340	2120	691		
5	5.5	0	0	280	268	7.8	1250	2340	2670	1520	2010	657		
6	2.4	0	0	271	376	339	1290	2350	2690	1710	1910	655		
7	8.2	0	0	276	607	718	907	2350	2700	1880	1910	662		
8	15	.60	0	280	759	887	938	2350	2740	1960	1970	606		
9	17	0	0	282	278	1040	985	2400	3000	1940	2020	538		
10	18	0	0	304	28	1170	1060	2470	3170	2000	2020	472		
11	17	0	0	534	99	1230	1130	2670	3170	2110	2010	441		
12	16	0	.80	611	165	1230	1200	2890	3170	2170	1950	441		
13	13	0	4.0	401	6.4	1190	1260	2970	3170	2190	1870	405		
14	10	0	3.9	290	225	1220	1310	3020	3230	2210	1800	346		
15	10	0	2.3	298	579	1290	1350	3060	3300	2100	1740	322		
16	9.8	0	.20	825	824	1340	1360	3080	3210	2020	1690	286		
17	9.5	0	0	1160	999	1300	1360	3110	3030	2080	1480	266		
18	9.3	0	0	1590	1050	1260	1390	3130	2960	2190	1300	262		
19	8.3	0	29	1400	1090	1260	1410	3130	2960	2260	1170	257		
20	3.5	0	48	1200	1110	1210	1500	3130	2930	2300	904	266		
21	0	0	49	1180	1130	1010	1590	3130	2840	2280	772	262		
22	0	0	37	1160	1220	722	1600	3050	2770	2190	790	253		
23	0	0	13	792	1340	747	1600	2860	2770	2150	838	253		
24	0	0	3.3	470	1400	895	1660	2860	2770	2200	853	241		
25	0	0	3.2	397	1400	1020	1700	2840	2770	2290	781	230		
26	0	0	3.3	350	1400	1070	1700	2720	2660	2340	586	241		
27	0	0	213	327	1280	1160	1760	2630	2400	2350	502	280		
28	0	0	652	318	1130	1310	1790	2680	2130	2300	602	300		
29	0	0	1180	318	---	1420	1840	2690	1970	2130	782	300		
30	0	0	1410	318	---	1420	1880	2680	1700	1980	903	300		
31	0	---	1310	313	---	995	---	2670	---	1960	952	---		
TOTAL	207.4	.60	4962.00	19461	19924.4	31561.8	40885	83990	83580	62210	44305	12666		
MEAN	6.69	.020	160	628	712	1018	1363	2709	2786	2007	1429	422		
MAX	18	.60	1410	1590	1400	1420	1880	3130	3300	2350	2120	932		
MIN	0	0	0	271	6.4	7.8	769	2030	1700	1300	502	230		
AC-FT	411	1.2	9840	38600	39520	62600	81100	166600	165800	123400	87880	25120		
MEAN ‡	18.1	44.4	324	575	1313	1730	1600	2799	5223	1346	346	528		
AC-FT ‡	1110	2640	19900	35360	72930	106400	95200	172100	191800	82770	21250	31390		
CAL YR 1977	TOTAL	37149.50	MEAN	102	MAX	1410	MIN	0	AC-FT	73690	MEAN ‡	142	AC-FT ‡	103000
WTR YR 1978	TOTAL	403753.20	MEAN	1106	MAX	3300	MIN	0	AC-FT	800800	MEAN ‡	1150	AC-FT ‡	832800

‡ Adjusted for change in contents in and evaporation from Lake Kaweah and diversion to Lemoncove and Foothill ditches.

11210950 KAWEAH RIVER BELOW TERMINUS DAM, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962 to current year.

CHEMICAL ANALYSES: Water years 1962 to current year.

WATER TEMPERATURES: Water years 1971 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: November 1970 to current year.

INSTRUMENTATION.--Temperature recorder since November 1970.

COOPERATION.--Chemical-quality records furnished by California Department of Water Resources.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 29.5°C Sept. 1, 2, 4, 1976; minimum recorded, 5.0°C Jan. 9, 10, 1971.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 24.5°C on many days during October, August, and September; minimum recorded, 8.0°C Feb. 10, 11, 13.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
MAR 21...	1145	1010	128	7.4	12.0	10.6	49	1	16	2.4	5.1
SEP 18...	1015	264	57	7.1	18.0	9.2	20	--	6.4	1.0	2.7

DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)
MAR 21...	18	.3	1.2	48	8.1	1.4	88	.12	.50	0
SEP 18...	22	.3	.9	21	2.1	2.0	41	.06	.34	0

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	24.5	19.5			---	---	11.0	11.0	10.0	9.0	---	---
2	24.5	19.5			---	---	11.0	10.5	10.0	9.0	---	---
3	24.5	19.0			---	---	11.0	10.5	10.0	9.0	---	---
4	23.5	18.5			---	---	11.0	10.0	10.0	9.5	---	---
5	23.5	19.5			---	---	11.0	9.5	10.0	9.5	---	---
6	24.5	20.0			---	---	11.0	10.0	10.0	10.0	---	---
7	23.5	19.0			---	---	11.0	10.0	10.0	10.0	---	---
8	23.5	18.5			---	---	11.0	9.5	10.5	10.0	---	---
9	23.5	18.5			---	---	11.0	10.0	10.5	9.5	---	---
10	23.5	18.5			---	---	11.0	10.5	10.0	8.0	---	---
11	23.5	18.5			---	---	11.0	9.5	8.5	8.0	10.0	10.0
12	23.5	18.5			---	---	10.5	9.5	12.0	8.5	10.0	9.5
13	23.5	18.5			13.5	11.0	10.5	9.5	10.0	8.0	10.5	9.5
14	23.0	18.5			14.0	9.0	10.5	10.0	---	---	10.5	9.5
15	23.0	18.0			13.0	11.0	11.0	9.5	---	---	10.5	10.0
16	23.0	18.0			---	---	10.5	10.0	---	---	10.5	10.0
17	22.5	18.0			---	---	10.5	9.5	---	---	10.5	10.0
18	22.5	18.0			---	---	10.5	10.0	---	---	10.5	10.5
19	20.5	17.5			---	---	10.0	9.0	---	---	10.5	10.5
20	---	---			11.5	9.0	10.5	10.0	---	---	11.0	10.5
21	---	---			11.0	8.5	10.0	10.0	---	---	11.0	10.5
22	---	---			12.5	10.5	10.0	10.0	---	---	11.0	10.5
23	---	---			11.5	10.0	10.0	9.5	---	---	11.0	10.5
24	---	---			13.0	9.5	10.0	9.0	---	---	11.0	10.5
25	---	---			12.0	9.0	10.0	9.0	---	---	11.0	11.0
26	---	---			12.0	9.5	9.5	9.0	---	---	11.0	11.0
27	---	---			11.5	11.0	9.5	8.5	---	---	11.5	11.0
28	---	---			10.5	9.5	9.5	9.0	---	---	11.5	11.0
29	---	---			11.0	9.5	9.5	9.0	---	---	11.5	11.5
30	---	---			11.0	9.0	9.5	9.0	---	---	12.0	11.5
31	---	---			11.0	10.5	9.5	9.0	---	---	11.5	11.5
MONTH	---	---			---	---	11.0	8.5	---	---	---	---

## TULARE LAKE BASIN

11210950 KAWEAH RIVER BELOW TERMINUS DAM, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.5	11.5	12.5	12.0	13.5	13.0	16.5	12.5	19.5	19.0	24.5	24.0
2	11.5	11.5	12.5	12.0	13.5	13.0	17.0	12.5	19.5	19.0	24.5	23.5
3	11.5	11.5	12.5	12.5	13.5	13.0	18.0	12.5	20.0	19.5	24.5	23.5
4	11.5	11.0	12.5	12.5	13.5	13.0	17.0	12.5	20.0	19.5	24.0	23.0
5	11.5	11.0	12.5	12.0	13.5	13.5	18.0	12.5	20.5	19.0	24.0	20.0
6	11.0	10.5	13.0	12.5	13.5	13.5	18.0	12.0	20.5	18.5	19.5	19.0
7	---	---	13.0	12.5	13.5	13.5	18.5	12.5	21.0	20.5	19.0	18.5
8	---	---	13.0	12.5	13.5	13.5	18.5	12.0	21.5	21.0	18.5	18.0
9	---	---	13.0	12.5	14.0	13.5	18.5	12.5	22.0	21.0	18.5	18.0
10	---	---	13.0	13.0	14.0	13.5	18.0	13.5	22.0	21.5	18.5	17.5
11	---	---	13.0	12.5	14.0	13.5	18.5	13.0	22.0	21.5	18.5	17.5
12	---	---	13.0	13.0	14.0	13.5	18.0	12.5	22.5	21.5	19.0	17.5
13	---	---	13.0	13.0	14.0	13.5	18.0	13.0	23.0	22.5	18.5	18.0
14	---	---	13.5	13.0	14.0	14.0	16.5	15.5	23.5	22.5	19.0	17.5
15	---	---	13.0	13.0	14.5	14.0	16.5	15.5	23.5	23.0	19.0	17.5
16	---	---	13.0	13.0	14.5	14.0	17.0	15.0	24.0	23.5	19.0	18.0
17	---	---	13.0	12.5	14.5	14.0	17.0	16.0	24.0	23.5	19.0	18.0
18	---	---	13.0	12.5	14.5	14.5	17.0	16.0	24.0	24.0	19.0	17.5
19	---	---	13.0	13.0	14.5	14.0	17.0	16.5	24.5	24.0	19.5	17.0
20	---	---	13.0	13.0	14.5	14.0	17.0	16.5	24.5	24.0	19.5	17.5
21	---	---	13.0	13.0	15.0	14.5	17.0	16.5	24.5	24.0	19.5	17.0
22	12.0	11.0	13.0	13.0	15.0	14.5	17.5	16.5	24.5	24.0	19.5	17.5
23	12.0	11.5	13.5	13.0	15.0	14.5	17.5	17.0	24.5	24.0	19.5	17.0
24	12.0	11.5	13.0	13.0	15.0	15.0	17.5	17.0	24.5	24.0	19.5	17.0
25	12.0	11.5	13.0	12.5	15.5	15.0	18.0	17.5	24.5	24.0	19.5	17.5
26	12.0	12.0	13.0	12.5	15.5	15.0	18.0	17.5	24.5	24.0	19.5	17.5
27	12.0	12.0	13.0	12.5	15.5	14.5	18.0	17.5	24.5	24.0	19.0	17.5
28	12.0	12.0	13.0	13.0	15.5	14.0	18.5	17.5	24.5	24.0	19.5	18.0
29	12.0	12.0	13.5	13.0	16.5	14.0	18.5	18.0	24.0	23.5	19.5	18.0
30	12.5	12.0	13.5	13.0	16.0	15.0	19.0	18.5	24.0	23.5	19.5	17.5
31	---	---	13.5	13.0	---	---	19.0	18.5	24.0	23.5	---	---
MONTH	---	---	13.5	12.0	16.5	13.0	19.0	12.0	24.5	18.5	24.5	17.0



## TULARE LAKE BASIN

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11211300 DRY CREEK NEAR LEMONCOVE, CA

LOCATION.--Lat 36°26'51", long 119°01'38", in NE¼SE¼ sec.15, T.17 S., R.27 E., Tulare County, on right bank 0.5 mi (0.8 km) downstream from Bequette Canyon, 2.9 mi (4.7 km) upstream from mouth, and 4.4 mi (7.1 km) north of Lemoncove.

DRAINAGE AREA.--75.6 mi<sup>2</sup> (195.8 km<sup>2</sup>).

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 570 ft (174 m), from topographic map. Prior to Mar. 8, 1969, 1.6 mi (2.6 km) downstream at different datum.

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

AVERAGE DISCHARGE.--19 years, 20.2 ft<sup>3</sup>/s (0.572 m<sup>3</sup>/s), 14,630 acre-ft/yr (18.1 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,500 ft<sup>3</sup>/s (411 m<sup>3</sup>/s) Dec. 6, 1966, gage height, 7.30 ft (2.225 m) in gage well, 8.94 ft (2.725 m) from floodmarks, site and datum then in use; no flow for several months in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a discharge of 6,070 ft<sup>3</sup>/s (172 m<sup>3</sup>/s) from slope-area measurement. Flood of 1867 is believed to have exceeded that of December 1955, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft<sup>3</sup>/s (1.42 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)		Gage height (ft) (m)		Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)		Gage height (ft) (m)	
Dec. 23	2130	120	3.40	3.20	0.975	Mar. 4	1200	1950	55.2	6.35	1.936
Dec. 27	1430	127	3.60	3.24	0.988	Mar. 11	1315	275	7.79	3.83	1.167
Jan. 6	1330	62	1.76	2.79	0.850	Mar. 21	1345	262	7.42	3.73	1.137
Jan. 9	2345	178	5.04	3.49	1.064	Mar. 31	1000	428	12.1	4.22	1.286
Jan. 15	0845	474	13.4	4.38	1.335	Apr. 4	1500	241	6.83	3.49	1.064
Jan. 17	0845	918	26.0	5.16	1.573	Apr. 7	0100	298	8.44	3.74	1.140
Feb. 9	1345	*2860	81.0	7.37	2.246	Apr. 16	0200	467	13.2	4.35	1.326
Feb. 10	1115	2050	58.1	6.46	1.969	Apr. 25	1645	220	6.23	3.39	1.033
Feb. 13	0315	1090	30.9	5.49	1.673						

Minimum, no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	9.7	17	17	153	106	31	9.7	1.6	.75
2			0	6.9	16	132	136	97	30	9.4	1.3	.62
3			0	5.6	15	165	127	91	29	9.3	1.2	.53
4			0	5.3	14	1110	179	88	28	9.1	1.0	.69
5			0	6.8	14	673	164	86	27	8.4	.95	6.5
6			0	38	32	422	165	82	24	7.9	.95	32
7			0	26	50	304	253	76	22	7.5	.77	19
8			0	16	62	234	198	72	21	7.1	.60	4.9
9			0	31	1800	195	170	70	19	6.8	.52	2.4
10			0	133	1300	162	152	68	18	6.5	.46	2.1
11			0	68	468	207	141	65	18	6.1	.42	1.9
12			0	35	321	188	128	64	18	5.7	.38	2.2
13			0	25	744	169	121	62	17	5.6	.34	2.6
14			0	33	334	133	116	60	17	5.5	.34	2.7
15			0	260	199	113	162	57	17	5.2	.40	3.5
16			0	235	136	97	272	56	16	5.0	.37	4.8
17			0	490	100	85	168	55	15	4.9	.38	3.2
18			15	146	76	79	146	52	14	4.7	.38	2.8
19			3.8	169	64	69	133	49	13	4.6	.37	2.6
20			1.0	93	54	65	124	47	13	4.0	.35	2.5
21			.41	63	46	146	116	45	12	3.9	.33	2.4
22			.17	52	39	176	110	44	12	3.7	.34	2.2
23			17	45	34	108	103	44	11	3.3	.36	2.1
24			41	39	27	88	101	43	11	3.2	.39	1.9
25			8.6	33	21	79	165	42	10	2.9	.49	1.7
26			4.5	30	18	74	165	41	10	3.0	.68	1.4
27			51	26	16	67	138	38	10	2.8	.89	1.3
28			83	24	15	62	117	37	10	2.5	.99	1.3
29			35	22	---	57	108	35	10	2.2	1.1	1.4
30			25	20	---	55	104	33	10	1.9	1.0	1.3
31		---	17	19	---	270	---	32	---	1.8	.87	---
TOTAL	0	0	302.48	2205.3	6032	5801	4435	1837	513	164.2	20.52	115.29
MEAN	0	0	9.76	71.1	215	187	148	59.3	17.1	5.30	.66	3.84
MAX	0	0	83	490	1800	1110	272	106	31	9.7	1.6	32
MIN	0	0	0	5.3	14	17	101	32	10	1.8	.33	.53
AC-FT	0	0	600	4370	11960	11510	8800	3640	1020	326	41	229
CAL YR 1977	TOTAL	401.75	MEAN	1.10	MAX	83	MIN	0	AC-FT	797		
WTR YR 1978	TOTAL	21425.79	MEAN	58.7	MAX	1800	MIN	0	AC-FT	42500		

## TULARE LAKE BASIN

11211790 COTTONWOOD CREEK NEAR ELDERWOOD, CA

LOCATION.--Lat 36°31'47", long 119°07'33", in SE&SE& sec.15, T.16 S., R.26 E., Tulare County, on left bank 25 ft (8 m) upstream from State Highway 65 bridge, 4.0 mi (6.4 km) north of Elderwood, and 8.0 mi (12.9 km) north of Woodlake.

DRAINAGE AREA.--60.4 mi<sup>2</sup> (156.4 km<sup>2</sup>).

PERIOD OF RECORD.--February 1971 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 575 ft (175.3 m), from topographic map.

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

AVERAGE DISCHARGE.--7 years, 11.3 ft<sup>3</sup>/s (0.320 m<sup>3</sup>/s), 8,200 acre-ft/yr (10.1 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,660 ft<sup>3</sup>/s (47.0 m<sup>3</sup>/s) Apr. 1, 1974, gage height, 5.56 ft (1.695 m); no flow for several months in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 24, 1969, reached a stage of 10.4 ft (3.17 m) from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 40 ft<sup>3</sup>/s (1.13 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Jan. 9	1745	143 4.05	4.24 1.292	Mar. 4	1045	1000 28.3	6.93 2.112
Jan. 14	2315	415 11.8	4.16 1.268	Mar. 22	0045	219 6.20	4.22 1.286
Jan. 16	1745	1160 32.9	5.59 1.704	Mar. 31	0730	379 10.7	4.65 1.417
Jan. 19	1130	288 8.16	3.73 1.137	Apr. 7	0215	188 5.32	4.07 1.241
Feb. 9	1445	1100 31.2	6.76 2.060	Apr. 16	0300	166 4.70	3.94 1.201
Feb. 10	0330	*1180 33.4	6.96 2.121	Apr. 25	1445	236 6.68	4.30 1.311
Feb. 13	0230	881 24.9	6.52 1.987				

Minimum, no flow Oct. 1 to Jan. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				0	32	62	86	56	16	7.9	1.1	1.2
2				0	31	127	78	52	15	7.8	.78	2.0
3				0	29	114	70	47	16	7.1	.26	.80
4				.27	30	454	103	45	15	6.5	.21	3.7
5				.55	55	284	89	43	14	6.4	.21	8.0
6				4.6	50	164	96	40	13	6.1	.21	10
7				2.0	53	134	154	36	12	5.2	1.9	5.6
8				.98	64	117	111	36	13	4.8	2.0	4.7
9				23	559	110	95	34	12	5.2	.26	3.5
10				54	682	103	86	33	12	5.4	.41	3.3
11				31	244	116	80	31	12	4.6	.80	3.8
12				7.7	182	102	75	30	12	5.0	0	3.9
13				4.9	501	95	72	31	12	4.1	0	3.6
14				50	242	83	68	29	11	3.8	.10	3.6
15				214	177	75	83	28	11	4.1	.59	4.7
16				290	146	71	115	26	11	4.1	.93	4.3
17				318	127	66	77	25	10	4.3	.79	4.3
18				182	114	63	69	24	9.5	3.8	.84	3.9
19				208	103	58	64	23	9.5	3.6	1.5	3.3
20				141	94	56	61	22	9.2	3.3	1.8	3.3
21				100	87	103	60	22	8.8	2.9	.61	3.0
22				77	81	134	56	21	8.4	2.6	.04	2.7
23				65	76	88	53	21	8.2	2.8	.09	2.7
24				56	70	77	52	20	8.4	2.6	.36	2.5
25				51	66	72	118	20	7.8	3.3	.52	1.3
26				45	63	68	100	20	8.1	2.6	1.1	.60
27				42	62	66	76	19	8.2	2.7	1.9	.88
28				39	61	63	67	19	7.7	2.6	1.5	1.3
29				37	---	60	60	19	7.5	3.2	1.4	1.9
30				35	---	57	59	18	7.6	2.5	1.1	1.9
31		---		33	---	164	---	16	---	2.3	1.5	---
TOTAL	0	0	0	2112.00	4081	3406	2433	906	325.9	133.2	24.81	100.28
MEAN	0	0	0	68.1	146	110	81.1	29.2	10.9	4.30	.80	3.34
MAX	0	0	0	318	682	454	154	56	16	7.9	2.0	.10
MIN	0	0	0	0	29	56	52	16	7.5	2.3	0	.60
AC-FT	0	0	0	4190	8090	6760	4830	1800	646	264	49	199
CAL YR 1977	TOTAL	46.68	MEAN	.13	MAX	2.2	MIN	0	AC-FT	93		
WTR YR 1978	TOTAL	13522.19	MEAN	37.0	MAX	682	MIN	0	AC-FT	26820		

## TULARE LAKE BASIN

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## 11212000 SAND CREEK NEAR ORANGE COVE, CA

LOCATION.--Lat 36°37'36", long 119°14'48", in SW¼NW¼ sec.15, T.15 S., R.25 E., Tulare County, on right bank 3.8 mi (6.1 km) east of Orange Cove.

DRAINAGE AREA.--31.6 mi<sup>2</sup> (81.8 km<sup>2</sup>).

PERIOD OF RECORD.--October 1944 to September 1954, annual maximum, water years 1956, 1967, 1969, February 1971 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 490 ft (149 m), from topographic map.

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

AVERAGE DISCHARGE.--17 years (water years 1945-54, 1972-78), 2.86 ft<sup>3</sup>/s (0.081 m<sup>3</sup>/s), 2,070 acre-ft/yr (2.55 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,050 ft<sup>3</sup>/s (29.7 m<sup>3</sup>/s) Feb. 10, 1978, gage height, 5.78 ft (1.762 m), in gage well, 6.38 ft (1.945 m) from floodmarks, from rating curve extended above 160 ft<sup>3</sup>/s (4.53 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow for several months in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 25, 1969, reached a stage of 8.35 ft (2.545 m) from floodmarks, discharge, 2,900 ft<sup>3</sup>/s (82.1 m<sup>3</sup>/s). Maximum discharge since 1944, 3,520 ft<sup>3</sup>/s (99.7 m<sup>3</sup>/s) Jan. 25, 1969, gage height, 8.75 ft (2.667 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft<sup>3</sup>/s (0.57 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)		Gage height (ft) (m)		Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)		Gage height (ft) (m)	
Jan. 9	2130	75	2.12	3.71	1.131	Mar. 4	1230	464	13.1	4.67	1.423
Jan. 15	0315	280	7.93	4.24	1.292	Mar. 21	1045	86	2.44	3.31	1.009
Jan. 16	1715	559	15.8	4.66	1.420	Mar. 31	0645	226	6.40	3.97	1.210
Jan. 19	1015	119	3.37	3.87	1.180	Apr. 4	1330	68	1.93	3.02	0.920
Feb. 9	1515	821	23.3	5.27	1.606	Apr. 7	0500	137	3.88	3.56	1.085
Feb. 10	0515	*1050	29.7	5.78	1.762	Apr. 16	0100	116	3.29	3.42	1.042
Feb. 13	0115	472	13.4	4.88	1.487	Apr. 25	1345	280	7.93	4.14	1.262
Mar. 2	0415	66	1.87	3.39	1.033	Sept. 6	2100	24	0.68	2.40	0.732

Minimum, no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				0	.18	18	29	27	5.3	3.1	1.1	.09
2				0	.14	46	25	25	4.8	3.1	.71	.09
3				0	.09	28	21	22	5.0	3.4	.56	.06
4				0	.09	267	40	21	5.4	3.0	.43	.30
5				0	.16	168	28	20	6.3	3.3	.44	11
6				.01	2.1	90	44	17	4.4	3.2	.37	21
7				.03	4.2	61	92	16	3.7	3.2	.28	11
8				.02	5.2	49	46	15	3.3	3.1	.22	4.1
9				17	362	45	35	16	2.7	2.9	.16	2.4
10				18	642	38	29	14	2.6	2.2	.10	1.7
11				5.0	150	41	26	13	2.8	1.5	.08	2.0
12				1.5	96	35	24	13	2.7	1.9	.09	1.9
13				.73	297	29	23	14	2.5	2.3	.22	1.8
14				16	114	26	23	15	2.2	1.9	.46	1.9
15				109	71	24	33	13	2.0	1.9	.46	1.9
16				180	50	23	51	14	2.0	1.7	.33	1.7
17				149	39	21	26	13	1.9	1.9	.22	1.5
18				24	32	19	24	12	1.6	1.4	.18	1.3
19				56	28	17	23	10	1.6	1.2	.16	1.5
20				15	25	15	22	10	1.4	1.0	.14	1.7
21				5.8	23	41	21	9.5	1.4	1.0	.09	1.9
22				3.4	21	30	19	10	1.5	1.1	.09	1.9
23				2.3	19	17	18	10	1.3	1.1	.17	1.9
24				1.7	18	13	23	10	1.4	1.2	.24	1.7
25				1.5	17	11	106	10	1.6	1.7	.24	1.7
26				1.3	16	9.5	65	10	1.8	3.4	.31	1.7
27				.94	16	14	42	10	2.0	2.5	.34	1.3
28				.67	16	8.8	34	9.1	2.1	1.6	.28	1.7
29				.43	---	6.6	30	8.0	2.3	1.2	.21	2.1
30				.38	---	5.7	28	6.9	2.4	1.1	.14	1.3
31		---		.24	---	80	---	5.9	---	1.1	.10	---
TOTAL	0	0	0	609.95	2064.16	1296.6	1050	419.4	82.0	64.2	8.92	86.14
MEAN	0	0	0	19.7	73.7	41.8	35.0	13.5	2.73	2.07	.29	2.87
MAX	0	0	0	180	642	267	106	27	6.3	3.4	1.1	21
MIN	0	0	0	0	.09	5.7	18	5.9	1.3	1.0	.08	.06
AC-FT	0	0	0	1210	4090	2570	2080	832	163	127	18	171
CAL YR 1977	TOTAL	12.63	MEAN	.035	MAX	.62	MIN	0	AC-FT	25		
WTR YR 1978	TOTAL	5681.37	MEAN	15.6	MAX	642	MIN	0	AC-FT	11270		

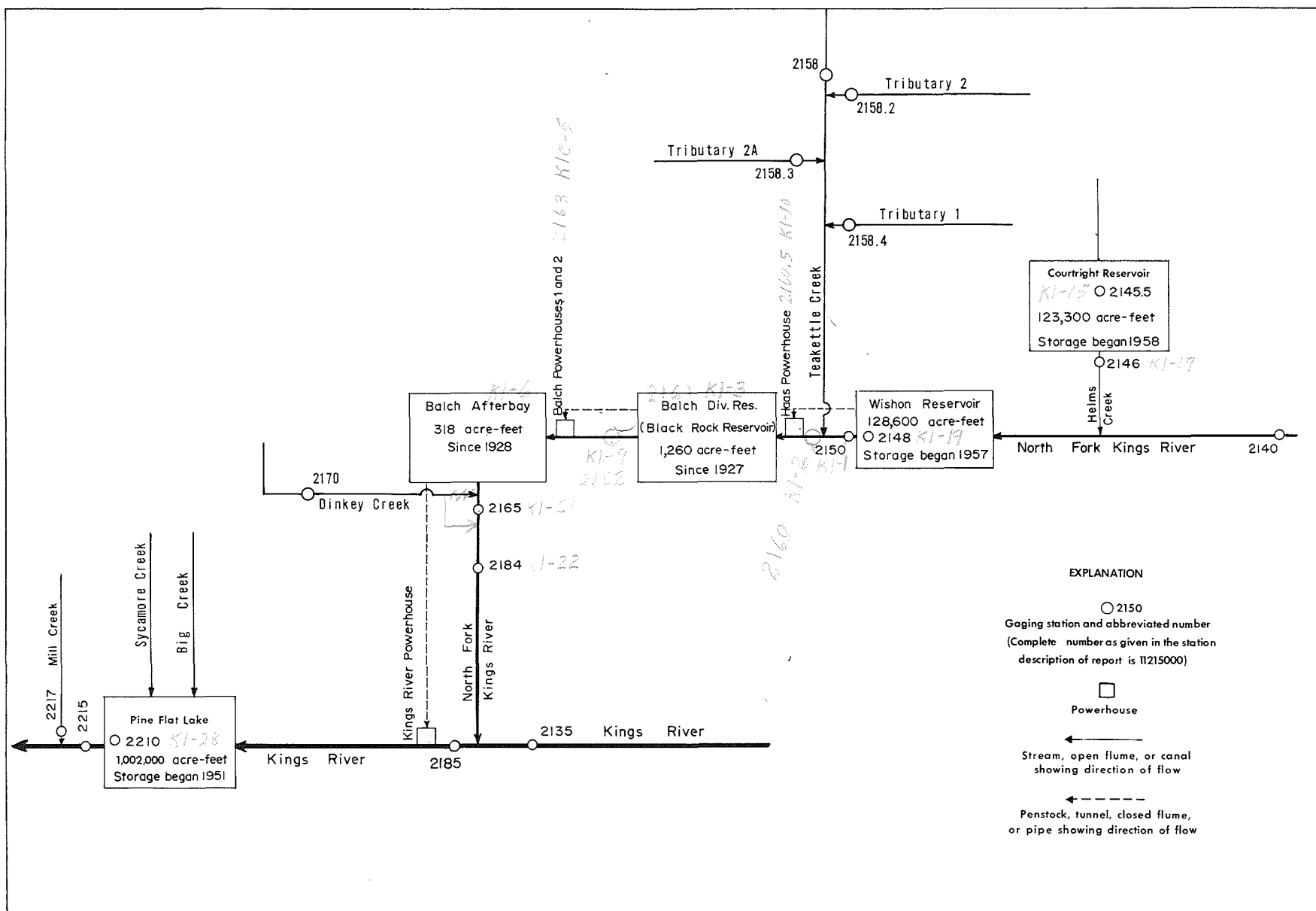


FIGURE 7.--Schematic diagram showing diversions and storage in Kings River basin.

## 11213500 KINGS RIVER ABOVE NORTH FORK, NEAR TRIMMER, CA

LOCATION.--Lat 36°51'48", long 119°07'24", in NW¼NE¼ sec.27, T.12 S., R.26 E., Fresno County, on right bank at Rogers Crossing, 0.9 mi (1.4 km) upstream from North Fork, 2.9 mi (4.7 km) south of Balch Camp, and 9.6 mi (15.4 km) southeast of Trimmer.

DRAINAGE AREA.--952 mi<sup>2</sup> (2,466 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1926 to December 1928, October 1931 to current year. Monthly figures only for some periods, published in WSP 1315-A. Prior to September 1965, published as Kings River above North Fork.

REVISED RECORDS.--WSP 1395: 1938(M), 1951(M).

GAGE.--Water-stage recorder. Datum of gage is 1,001.5 ft (305.26 m) National Geodetic Vertical Datum of 1929 (river-profile survey). March 1927 to December 1928, at site 0.5 mi (0.8 km) downstream at different datum. October 1931 to September 1965, on left bank at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good. No diversion or regulation above station. See schematic diagram of Kings River basin.

AVERAGE DISCHARGE.--49 years, 1,423 ft<sup>3</sup>/s (40.30 m<sup>3</sup>/s), 1,031,000 acre-ft/yr (1.27 km<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,100 ft<sup>3</sup>/s (1,670 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 18.26 ft (5.566 m) present datum, from rating curve extended above 19,000 ft<sup>3</sup>/s (538 m<sup>3</sup>/s) on basis of slope-area measurement of maximum flow; minimum daily, 70 ft<sup>3</sup>/s (1.98 m<sup>3</sup>/s) Jan. 14, 1963, Oct. 5, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,300 ft<sup>3</sup>/s (178 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Feb. 9	0600	6570 186	7.56 2.304	June 9	0245	14000 396	10.00 3.048
Mar. 4	1415	7370 209	7.84 2.390	July 15	0315	8540 242	8.23 2.509
May 15	0300	9230 261	8.46 2.579	Sept. 5	1100	*23400 663	12.31 3.752

Minimum daily, 70 ft<sup>3</sup>/s (1.98 m<sup>3</sup>/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	100	159	712	587	1130	2630	2960	9720	7520	4340	891
2	74	100	157	643	574	2240	2340	2990	9440	6820	4390	852
3	73	95	153	598	562	2470	2080	3420	9150	6160	4110	854
4	71	91	150	576	562	5570	2050	4240	9490	5730	3820	1140
5	70	104	148	640	650	4560	1870	4820	9920	6050	3690	14800
6	79	138	145	996	1190	2990	1890	4520	10400	6480	3130	10500
7	169	115	138	783	1180	2380	1930	4120	11200	7100	3350	5420
8	148	114	138	716	1300	2090	1770	4280	12300	6930	3550	3200
9	139	116	137	1210	5220	1950	1700	4820	12700	6850	3260	2270
10	138	116	132	1240	4300	1760	1750	5200	11700	7330	2960	1990
11	135	114	130	908	2440	1720	1970	5470	9880	6950	2980	1860
12	130	112	126	756	2020	1580	2270	6250	10300	6130	2740	1550
13	128	110	130	708	2350	1430	2660	7250	11000	6040	2350	1350
14	125	106	125	1200	1790	1360	2630	8210	10200	6940	2090	1410
15	121	106	184	2330	1500	1320	2980	8240	9400	7330	1850	1510
16	117	104	210	2220	1300	1350	2920	7140	8480	7080	1760	1270
17	113	104	804	2570	1160	1480	2460	6410	7860	6250	1660	1120
18	110	102	744	1770	1080	1580	2350	6570	8510	5750	1560	1020
19	107	102	366	1800	1050	1630	2330	6820	8970	5180	1450	960
20	105	102	326	1400	1080	1740	2360	7200	8690	4890	1370	917
21	106	91	342	1150	1130	2040	2310	7740	9030	4720	1310	859
22	106	166	464	1010	1190	2340	2200	8240	8690	4860	1220	794
23	105	164	979	884	1210	1970	2270	7980	7610	5120	1110	745
24	103	145	644	772	1200	1820	2600	6290	7550	5260	1020	637
25	102	148	486	752	1180	1810	3750	5380	7200	5040	961	681
26	100	155	514	710	1180	1950	3310	5130	7250	6380	932	660
27	100	159	3050	688	1100	1930	2880	5660	6760	6140	913	640
28	100	161	2160	662	1070	1970	2990	6780	6310	5510	907	634
29	100	161	1360	643	---	2120	3080	8170	6800	4560	908	623
30	100	161	1130	628	---	2380	3230	9620	7430	4230	925	606
31	100	---	855	606	---	3270	---	10000	---	4440	927	---
TOTAL	3350	3662	16586	32281	41155	65930	73560	191920	273940	185770	67543	61763
MEAN	108	122	535	1041	1470	2127	2452	6191	9131	5993	2179	2059
MAX	169	166	3050	2570	5220	5570	3750	10000	12700	7520	4390	14800
MIN	70	91	125	576	562	1130	1700	2960	6310	4230	907	606
AC-FT	6640	7260	32900	64030	81630	130800	145900	380700	543400	368500	134000	122500

CAL YR 1977	TOTAL	148982	MEAN	408	MAX	3050	MIN	70	AC-FT	295500
WTR YR 1978	TOTAL	1017460	MEAN	2788	MAX	14800	MIN	70	AC-FT	2018000

## TULARE LAKE BASIN

11213500 KINGS RIVER ABOVE NORTH FORK, NEAR TRIMMER, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-55, 1966 to current year.

CHEMICAL ANALYSES: Water years 1951-55, 1977.

WATER TEMPERATURES: Water years 1966 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: December 1965 to current year.

INSTRUMENTATION.--Temperature recorder since December 1965.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 29.0°C Aug. 13, 14, 1977; minimum recorded, 0.0°C Dec. 14, 15, 1967.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 21.0°C Oct. 6; minimum recorded, 4.0°C Jan. 25.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	20.5	18.0					---	---	8.0	7.0	10.0	9.0
2	20.0	17.5					---	---	7.5	6.0	10.0	8.0
3	20.0	17.5					---	---	7.5	5.5	9.0	8.0
4	19.5	17.0					---	---	8.0	6.5	8.5	8.0
5	19.0	17.5					12.5	7.5	8.5	8.0	8.5	7.5
6	21.0	18.5					8.5	7.5	8.5	7.0	9.5	7.5
7	19.5	18.0					8.0	7.0	7.0	6.5	10.0	7.5
8	18.5	16.0					7.5	6.5	7.0	6.0	10.5	8.5
9	17.5	15.5					9.0	7.5	7.5	7.0	10.0	9.0
10	17.5	15.5					8.0	7.5	7.5	6.0	9.0	8.0
11	17.5	16.0					8.0	6.5	6.5	5.5	8.5	8.0
12	17.5	16.0					7.0	6.0	6.0	5.0	8.5	7.5
13	17.5	16.0					9.0	7.5	6.5	5.0	9.5	7.0
14	17.5	16.0					9.0	8.5	7.0	5.0	10.5	8.0
15	17.5	16.0					8.5	7.5	7.0	5.5	11.0	7.5
16	17.5	15.5					8.0	7.5	7.5	6.0	12.0	8.5
17	17.5	15.5					8.5	7.5	7.5	6.5	11.5	9.0
18	17.5	15.5					7.5	6.5	8.0	7.0	11.0	9.0
19	17.0	15.5					8.0	7.5	8.0	6.5	12.0	9.5
20	17.0	15.0					7.5	6.5	8.5	7.0	11.0	10.0
21	---	---					7.0	6.0	8.5	7.0	11.0	10.5
22	---	---					7.0	6.0	8.5	7.5	10.5	9.0
23	---	---					7.0	6.0	8.5	7.5	11.0	9.0
24	---	---					6.0	5.0	8.5	7.5	11.0	8.5
25	---	---					6.0	4.0	8.5	7.0	12.0	9.0
26	---	---					7.0	5.0	9.0	8.0	11.0	9.5
27	---	---					7.5	5.5	9.0	9.0	12.0	9.0
28	---	---					8.0	6.5	9.5	8.5	12.0	9.5
29	---	---					8.0	6.5	---	---	12.0	9.5
30	---	---					8.0	6.5	---	---	12.0	10.5
31	---	---					8.0	7.0	---	---	10.5	8.5
MONTH	---	---					12.5	4.0	9.5	5.0	12.0	7.0

11213500 KINGS RIVER ABOVE NORTH FORK, NEAR TRIMMER, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.0	7.5	11.0	8.5	12.0	8.5	14.5	11.5	18.0	16.0	19.5	16.0
2	10.0	8.5	12.5	9.5	12.5	8.5	14.0	11.0	18.0	16.5	20.0	17.0
3	9.5	8.5	13.0	10.0	12.5	8.5	13.0	11.0	18.0	16.5	20.0	17.0
4	9.0	7.5	13.0	10.5	12.5	8.5	14.0	11.5	18.0	16.5	18.5	16.5
5	9.0	6.5	12.0	9.5	13.0	9.0	14.5	11.5	18.0	16.0	16.0	14.5
6	9.0	7.5	10.5	7.5	13.0	9.0	15.0	12.0	18.0	16.5	15.0	14.5
7	7.5	6.0	12.0	8.5	13.0	9.5	15.5	12.5	18.5	17.5	15.0	14.0
8	9.0	6.0	12.5	9.0	13.0	9.0	15.0	12.0	18.5	17.5	14.0	12.5
9	11.0	6.5	12.0	9.5	13.0	9.0	15.5	12.5	18.5	16.5	15.0	13.0
10	12.5	9.0	12.5	9.0	12.0	8.5	15.5	12.5	18.5	16.5	16.0	14.5
11	13.0	10.5	12.5	9.0	13.0	8.5	15.0	12.5	18.0	16.0	15.5	14.0
12	12.5	10.0	13.0	8.5	13.5	9.5	14.5	11.5	18.0	16.0	16.5	14.0
13	12.5	10.5	13.0	8.5	13.0	9.5	16.0	13.0	18.0	16.0	16.0	14.5
14	11.5	9.5	12.5	8.5	13.0	9.5	16.5	13.5	17.5	15.5	16.0	14.5
15	10.5	8.5	11.0	8.5	12.5	9.5	16.0	13.5	18.0	15.5	15.5	13.0
16	8.5	6.5	10.5	7.5	12.5	9.0	16.0	13.5	18.5	16.0	16.0	13.5
17	9.5	6.5	11.5	8.0	13.0	9.5	16.0	13.5	18.0	16.0	17.0	14.0
18	11.5	8.0	11.5	8.5	13.0	10.5	16.0	13.5	18.0	15.0	14.5	12.5
19	12.0	9.5	12.0	8.5	13.0	9.0	15.5	14.0	18.0	15.0	13.0	10.5
20	11.5	9.5	12.0	8.5	13.0	10.0	15.5	13.5	18.0	15.5	13.5	10.0
21	11.0	8.5	12.5	8.5	13.5	10.0	16.5	14.5	18.5	15.5	13.5	10.5
22	11.0	8.5	12.0	8.5	13.0	10.0	16.5	14.5	18.5	16.0	14.5	11.5
23	12.0	9.5	11.0	8.5	13.0	10.0	17.0	15.0	18.0	15.0	16.0	13.0
24	11.5	10.5	9.5	6.5	13.0	10.5	16.5	15.0	18.0	15.0	16.5	13.0
25	11.0	9.0	10.0	7.0	13.0	10.0	16.5	15.0	18.0	15.0	17.0	14.0
26	10.5	8.5	11.5	8.0	13.0	10.5	17.0	16.0	18.5	15.0	17.0	14.5
27	11.5	9.0	12.5	8.5	13.0	11.0	16.5	15.0	18.5	15.5	17.0	15.0
28	12.5	10.0	13.0	9.0	13.5	11.5	16.5	14.5	19.0	16.0	17.0	14.5
29	12.0	9.0	13.0	9.0	14.5	11.5	17.0	15.0	19.5	16.0	17.5	15.0
30	11.5	9.0	12.5	9.0	14.5	11.5	18.0	16.0	20.0	17.5	17.5	15.0
31	---	---	12.0	8.5	---	---	18.0	16.0	19.5	16.5	---	---
MONTH	13.0	6.0	13.0	6.5	14.5	8.5	18.0	11.0	20.0	15.0	20.0	10.0

## 11214000 NORTH FORK KINGS RIVER BELOW MEADOW BROOK, CA

LOCATION.--Lat 37°04'53", long 118°51'43", in NE¼NE¼ sec.12, T.10 S., R.28 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on left bank 800 ft (244 m) downstream from Nichols Canyon, 0.6 mi (1.0 km) downstream from Meadow Brook, 3.9 mi (6.3 km) west of Blackcap Mountain, 5.9 mi (9.5 km) east of Courtright Dam, and 23 mi (37 km) southeast of town of Huntington Lake.

DRAINAGE AREA.--37.7 mi<sup>2</sup> (97.6 km<sup>2</sup>).

PERIOD OF RECORD.--October 1921 to September 1935, October 1956 to current year. 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.

REVISED RECORDS.--WSP 1315-A: 1922(M). WSP 1515: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 8,144.66 ft (2,482.492 m) National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.).

REMARKS.--No regulation or diversion above station. See schematic diagram of Kings River basin.

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

AVERAGE DISCHARGE.--36 years, 72.6 ft<sup>3</sup>/s (2.056 m<sup>3</sup>/s), 52,600 acre-ft/yr (64.9 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,000 ft<sup>3</sup>/s (85.0 m<sup>3</sup>/s) Sept. 5, 1978, gage height, 6.50 ft (1.981 m), from rating curve extended above 1,100 ft<sup>3</sup>/s (31.2 m<sup>3</sup>/s); minimum recorded, 0.28 ft<sup>3</sup>/s (0.008 m<sup>3</sup>/s) Dec. 30, 1976, to Jan. 1, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a stage of 5.85 ft (1.783 m), from floodmarks, discharge, 2,000 ft<sup>3</sup>/s (56.6 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft<sup>3</sup>/s (11 m<sup>3</sup>/s) and maximum (\*) from rating curve extended above 1,100 ft<sup>3</sup>/s (31.2 m<sup>3</sup>/s):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 30	2100	805 22.8	4.64 1.414	July 27	1745	1220 34.6	5.22 1.591
June 8	1930	1130 32.0	5.11 1.558	Sept. 5	1200	*3000 85.0	6.50 1.981

Minimum daily discharge, 0.80 ft<sup>3</sup>/s (0.023 m<sup>3</sup>/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.90	1.5	7.0	17	15	17	56	76	621	574	280	24
2	.87	1.5	6.2	16	15	18	44	96	590	529	274	23
3	.82	1.4	6.2	17	15	20	39	151	588	487	252	23
4	.80	1.4	6.3	17	15	27	35	202	603	484	212	122
5	.86	1.7	6.4	19	16	30	33	205	636	516	207	1730
6	9.5	2.4	5.2	23	17	32	33	177	710	561	162	739
7	4.7	4.2	5.4	25	21	33	34	171	803	592	167	406
8	3.3	5.3	5.1	24	27	26	31	208	857	570	180	217
9	2.6	3.8	4.7	20	44	23	29	236	848	585	162	142
10	2.3	3.3	4.0	21	45	21	37	242	685	584	214	144
11	2.2	3.3	3.8	24	35	20	71	290	628	553	273	112
12	2.1	2.5	4.1	20	35	20	98	362	702	507	213	90
13	2.1	2.5	4.3	18	32	18	106	449	720	538	138	76
14	2.0	2.4	4.3	18	25	18	91	497	654	592	109	101
15	1.9	2.7	4.4	20	24	18	78	473	602	594	89	94
16	1.8	2.5	5.5	26	20	21	67	408	569	550	79	72
17	1.7	2.5	7.0	37	18	29	55	384	567	499	71	61
18	1.6	2.6	7.8	36	17	34	52	419	652	457	64	58
19	1.6	1.8	12	36	16	32	55	458	642	419	57	63
20	1.6	1.4	15	28	16	39	60	495	630	394	52	58
21	1.6	2.0	23	24	17	35	56	536	647	396	48	49
22	1.5	2.2	30	20	18	33	55	558	618	408	43	42
23	1.5	2.9	37	18	19	32	69	506	567	424	37	36
24	1.5	4.5	47	17	19	32	88	356	562	403	32	33
25	1.5	8.0	35	16	20	39	103	301	561	399	28	30
26	1.5	11	25	16	19	54	77	324	562	526	27	28
27	1.5	13	37	15	18	46	66	415	521	506	26	26
28	1.5	9.8	46	15	17	52	91	531	466	404	25	25
29	1.6	9.5	31	15	---	64	85	608	526	308	25	24
30	1.5	8.5	23	15	---	72	92	666	584	282	25	22
31	1.5	---	19	15	---	77	---	644	---	290	25	---
TOTAL	61.95	122.1	477.7	648	615	1032	1886	11444	18921	14931	3596	4670
MEAN	2.00	4.07	15.4	20.9	22.0	33.3	62.9	369	631	482	116	156
MAX	9.5	13	47	37	45	77	106	666	857	594	280	1730
MIN	.80	1.4	3.8	15	15	17	29	76	466	282	25	22
AC-FT	123	242	948	1290	1220	2050	3740	22700	37530	29620	7130	9260

CAL YR 1977	TOTAL	8914.80	MEAN	24.4	MAX	378	MIN	.28	AC-FT	17680
WTR YR 1978	TOTAL	58404.75	MEAN	160	MAX	1730	MIN	.80	AC-FT	115800



## RESERVOIRS IN TULARE LAKE BASIN, CA

- 11214550 COURTRIGHT RESERVOIR.--Lat 37°04'40", long 118°58'05", in NW¼ sec.7, T.10 S., R.28 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, at left end of dam on Helms Creek 2.5 mi (4.0 km) upstream from mouth, 4.6 mi (7.4 km) east of Nelson Mountain, and 9.7 mi (15.6 km) west of Blackcap Mountain. DRAINAGE AREA, 39.7 mi<sup>2</sup> (102.8 km<sup>2</sup>). PERIOD OF RECORD, October 1958 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.). Reservoir is formed by rockfill dam completed in 1958. Usable capacity, 123,300 acre-ft (152 hm<sup>3</sup>) between elevations 7,902 ft (2,408.5 m), invert of tunnel and 8,184 ft (2,494.5 m), elevation of spillway. Dead storage negligible. See schematic diagram of Kings River basin. Records furnished by Pacific Gas and Electric Co. in connection with a Federal Energy Regulatory Commission Project.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 124,200 acre-ft (153 hm<sup>3</sup>) July 13, 1967, elevation, 8,184.55 ft (2,494.651 m); no contents in 1961-62, 1968, 1970.
- EXTREMES FOR CURRENT YEAR.--Maximum contents, 104,000 acre-ft (128 hm<sup>3</sup>) Aug. 8, elevation, 8,171.53 ft (2,490.682 m); minimum, 400 acre-ft (493,000 m<sup>3</sup>) Mar. 16, elevation, 7,957.20 ft (2,425.355 m).
- 11214800 WISHON RESERVOIR.--Lat 37°00'20", long 118°58'00", in NW¼ sec.6, T.11 S., R.28 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right end of dam on North Fork Kings River 1.2 mi (1.9 km) north of Cliff Camp, 1.3 mi (2.1 km) upstream from Cliff Camp gaging station, and 20 mi (32 km) southeast of town of Big Creek. DRAINAGE AREA, 177 mi<sup>2</sup> (458 km<sup>2</sup>). PERIOD OF RECORD, December 1957 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.). Reservoir is formed by rockfill dam completed in 1957. Capacity, 128,600 acre-ft (159 hm<sup>3</sup>) between elevations 6,317 ft (1,925.4 m), bottom of slide gates and 6,550 ft (1,996.4 m), operating crest of spillway gates. Dead storage negligible. Water is diverted to Haas powerhouse for power. See schematic diagram of Kings River basin. Records furnished by Pacific Gas and Electric Co. in connection with a Federal Energy Regulatory Commission Project.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 129,700 acre-ft (160 hm<sup>3</sup>) July 29, 1958, elevation, 6,551.1 ft (1,996.78 m); no contents in 1960.
- EXTREMES FOR CURRENT YEAR.--Maximum contents, 129,100 acre-ft (159 hm<sup>3</sup>) July 28, elevation, 6,550.48 ft (1,996.586 m); minimum, 7,900 acre-ft (9.74 hm<sup>3</sup>) May 2, elevation, 6,375.93 ft (1,943.383 m).

## MONTHEND ELEVATION AND CONTENTS, AT 2400, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
11214550 COURTRIGHT RESERVOIR				11214800 WISHON RESERVOIR		
Sept. 30.....	7975.4	923	--	6496.9	79800	--
Oct. 31.....	7975.0	905	-18	6485.3	70400	-9400
Nov. 30.....	7976.0	946	+41	6477.0	63900	-6500
Dec. 31.....	7961.8	505	-441	6482.5	68200	+4300
CAL YR 1977.....	--	--	-34100	--	--	+15100
Jan. 31.....	7965.2	594	+89	6439.2	39000	-29200
Feb. 28.....	7968.9	702	+108	6384.2	11300	-27700
Mar. 31.....	7966.8	639	-63	6387.8	12800	+1500
Apr. 30.....	8020.3	4180	+3540	6377.0	8300	-4500
May 31.....	8114.2	41500	+37300	6446.2	43200	+34900
June 30.....	8162.4	91300	+49800	6539.2	117800	+74600
July 31.....	8171.3	103700	+12400	6548.9	127500	+9700
Aug. 31.....	8149.0	74700	-29000	6542.0	120500	-7000
Sept. 30.....	8146.1	71500	-3200	6520.7	100400	-20100
WTR YR 1978.....	--	--	+70600	--	--	+20600

## 11214600 HELMS CREEK BELOW COURTRIGHT DAM, CA

LOCATION.--Lat 37°04'35", long 118°58'04", in SW¼NW¼ sec.7, T.10 S., R.28 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on left bank 500 ft (152 m) downstream from Courtright Dam, 2.5 mi (4.0 km) upstream from North Fork Kings River, and 17 mi (27 km) southeast of town of Huntington Lake.

DRAINAGE AREA.--39.7 mi<sup>2</sup> (102.8 km<sup>2</sup>).

PERIOD OF RECORD.--October 1958 to current year.

REVISED RECORDS.--WSP 1715: 1959. WSP 2130: 1959.

GAGE.--Water-stage recorder and broad-crested weir with trapezoidal-notch. Altitude of gage is 7,840 ft (2,390 m), from Pacific Gas and Electric Co. survey.

REMARKS.--Flow regulated since October 1958 by Courtright Reservoir (station 11214550) 500 ft (152 m) upstream. No diversion above station. See schematic diagram of Kings River basin.

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

AVERAGE DISCHARGE (adjusted for storage)--20 years, 74.7 ft<sup>3</sup>/s (2.116 m<sup>3</sup>/s), 54,120 acre-ft/yr (66.7 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,340 ft<sup>3</sup>/s (37.9 m<sup>3</sup>/s) Aug. 29, 1969, gage height, 5.81 ft (1.771 m); maximum gage height, 7.70 ft (2.347 m) Aug. 23, 1978; no flow Nov. 21-24, Dec. 1, 3-6, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,030 ft<sup>3</sup>/s (29.2 m<sup>3</sup>/s) Aug. 23, gage height, 7.70 ft (2.347 m); minimum daily, 2.1 ft<sup>3</sup>/s (0.059 m<sup>3</sup>/s) Oct. 1-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	2.6	2.9	10	11	16	101	4.4	5.7	8.0	8.7	917
2	2.1	2.6	2.9	10	11	22	101	4.4	5.9	8.0	8.7	907
3	2.1	2.6	2.9	10	11	22	101	4.4	5.6	8.0	8.9	906
4	2.1	2.6	2.9	10	11	22	74	4.6	5.6	8.0	8.9	897
5	2.2	2.7	2.9	10	11	22	40	4.6	6.0	8.0	8.9	461
6	2.2	2.7	2.9	11	11	22	40	5.4	6.0	8.0	8.9	7.1
7	2.3	2.7	2.9	11	11	22	40	4.7	6.3	8.0	8.9	6.5
8	2.3	2.7	2.9	10	11	22	40	4.7	6.3	8.0	64	6.2
9	2.4	2.7	2.9	10	11	22	40	4.7	6.5	8.0	319	6.2
10	2.4	2.7	2.9	10	10	6.0	40	4.7	6.3	8.1	513	6.2
11	2.4	2.8	2.9	10	10	6.0	40	4.7	6.4	8.2	515	6.2
12	2.4	2.8	2.9	10	10	6.0	71	4.9	6.5	8.3	517	6.2
13	2.4	2.8	2.9	10	10	6.0	97	4.9	6.4	8.3	514	6.2
14	2.5	2.8	2.9	10	10	6.0	126	4.9	6.4	8.4	513	6.3
15	2.5	2.8	2.9	10	10	6.0	126	5.1	6.3	8.5	514	6.4
16	2.5	2.8	2.9	11	10	6.0	70	5.1	6.4	8.5	513	6.2
17	2.5	2.9	2.9	11	10	6.0	4.0	5.1	6.4	8.5	513	6.2
18	2.5	2.9	2.9	11	10	6.0	4.0	5.1	6.7	8.5	511	6.2
19	2.5	2.9	2.9	11	10	6.0	4.0	5.2	6.8	8.5	510	6.2
20	2.5	2.9	2.9	11	10	6.0	4.0	5.2	7.0	8.5	510	6.2
21	2.5	2.9	2.9	11	10	6.0	4.1	5.4	7.3	8.5	508	6.2
22	2.5	2.9	4.3	11	10	6.0	4.1	5.4	7.3	8.5	612	6.2
23	2.5	2.9	5.2	11	10	6.0	4.1	5.4	7.4	8.5	913	6.3
24	2.5	2.9	5.1	11	10	6.0	4.3	5.4	7.6	8.5	954	6.4
25	2.5	2.9	5.1	11	10	6.0	4.3	5.5	7.7	8.8	946	6.4
26	2.5	2.9	5.2	11	10	6.0	4.3	5.5	7.8	8.9	935	6.4
27	2.5	2.9	53	11	10	6.0	4.3	5.5	7.8	8.9	932	6.3
28	2.5	2.9	101	11	10	15	4.3	5.5	7.9	8.9	927	6.2
29	2.6	2.9	97	11	---	21	4.4	5.7	8.0	8.8	922	6.2
30	2.6	2.9	47	11	---	40	4.4	5.7	8.0	8.7	921	6.3
31	2.6	---	11	11	---	77	---	5.7	---	8.7	916	---
TOTAL	74.7	84.0	394.8	328	289	453.0	1205.6	157.5	202.3	260.0	15573.9	4245.4
MEAN	2.41	2.80	12.7	10.6	10.3	14.6	40.2	5.08	6.74	8.39	502	142
MAX	2.6	2.9	101	11	11	77	126	5.7	8.0	8.9	954	917
MIN	2.1	2.6	2.9	10	10	6.0	4.0	4.4	5.6	8.0	8.7	6.2
AC-FT	148	167	783	651	573	899	2390	312	401	516	30890	8420
CAL YR 1977	TOTAL	22263.98	MEAN 61.0	MAX 617	MIN .48	AC-FT	44160					
WTR YR 1978	TOTAL	23268.20	MEAN 63.7	MAX 954	MIN 2.1	AC-FT	46150					

## 11215000 NORTH FORK KINGS RIVER NEAR CLIFF CAMP, CA

LOCATION.--Lat 36°59'38", long 118°58'49", in NE¼NW¼ sec.12, T.11 S., R.27 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right bank at Cliff Camp bridge, 1 mi (2 km) northwest of Cliff Camp, 1.2 mi (1.9 km) downstream from Wishon Dam, and 2 mi (3 km) downstream from Woodchuck Creek.

DRAINAGE AREA.--181 mi<sup>2</sup> (469 km<sup>2</sup>).

PERIOD OF RECORD.--August 1921 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1715: 1951, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,143.95 ft (1,872.676 m) National Geodetic Vertical Datum of 1929 (levels by San Joaquin Light and Power Corp.). Prior to Nov. 24, 1922, at site 1 mi (2 km) upstream at different datum.

REMARKS.--Flow regulated since Dec. 5, 1957, by Wishon Reservoir (station 11214800), 1.2 mi (1.9 km) upstream, and since Oct. 17, 1958, by Courtright Reservoir (station 11214550). 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 collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE (adjusted for storage and diversion).--57 years, 360 ft<sup>3</sup>/s (10.20 m<sup>3</sup>/s), 260,800 acre-ft/yr (322 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (prior to regulation by Wishon Reservoir).--Maximum discharge, 14,000 ft<sup>3</sup>/s (396 m<sup>3</sup>/s) Dec. 11, 1937, gage height, 18.0 ft (5.49 m), from floodmarks, from rating curve extended above 4,200 ft<sup>3</sup>/s (119 m<sup>3</sup>/s) on basis of velocity-area studies; minimum, 0.6 ft<sup>3</sup>/s (0.017 m<sup>3</sup>/s) Dec. 30, 1930. 1957 to current year.--Maximum discharge, 5,110 ft<sup>3</sup>/s (145 m<sup>3</sup>/s) Sept. 5, 1978, gage height, 11.96 ft (3.645 m); minimum daily, 0.8 ft<sup>3</sup>/s (0.023 m<sup>3</sup>/s) Dec. 14, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,110 ft<sup>3</sup>/s (145 m<sup>3</sup>/s) Sept. 5, gage height, 11.96 ft (3.645 m); minimum daily, 16 ft<sup>3</sup>/s (0.45 m<sup>3</sup>/s) many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	16	16	23	20	30	36	44	721	136	25	23
2	17	16	16	23	20	37	31	52	731	137	25	23
3	17	16	16	22	20	27	27	59	740	137	25	23
4	17	16	16	22	20	54	26	63	750	137	25	25
5	17	17	16	22	47	33	24	48	759	138	24	698
6	18	17	16	22	38	27	24	40	770	228	24	841
7	17	16	16	22	25	27	21	43	780	458	24	333
8	17	16	16	22	22	27	20	50	792	599	24	28
9	17	16	16	28	40	26	25	52	805	600	24	27
10	17	16	16	25	26	23	35	49	813	600	24	27
11	17	16	16	22	21	21	47	292	819	619	24	26
12	17	16	16	21	19	19	67	586	696	568	24	25
13	17	16	16	22	19	18	64	599	516	372	24	25
14	17	16	16	45	18	20	50	611	521	428	24	29
15	17	16	17	39	17	23	38	614	524	757	23	26
16	17	16	16	35	17	29	30	616	527	622	23	25
17	17	16	82	32	16	32	27	620	530	217	23	24
18	17	16	23	26	16	32	31	627	533	281	23	24
19	17	16	18	25	18	41	37	634	536	210	23	24
20	17	16	17	23	19	38	33	643	540	27	23	24
21	17	16	18	22	20	52	28	653	543	26	23	23
22	17	17	20	21	21	49	32	661	546	26	23	23
23	17	16	32	21	22	39	40	666	261	26	23	23
24	17	16	22	20	21	37	68	666	25	26	23	22
25	17	16	20	20	19	42	92	664	25	26	23	22
26	17	16	52	20	19	39	41	664	26	26	23	22
27	17	16	120	20	20	42	36	666	26	26	23	22
28	17	16	58	20	22	47	40	674	31	26	23	22
29	17	16	33	20	---	52	47	686	78	26	23	22
30	17	16	31	21	---	62	40	698	135	26	23	21
31	16	---	26	21	---	71	---	710	---	25	23	---
TOTAL	527	483	829	747	622	1116	1157	13750	15099	7556	731	2522
MEAN	17.0	16.1	26.7	24.1	22.2	36.0	38.6	444	503	244	23.6	84.1
MAX	18	17	120	45	47	71	92	710	819	757	25	841
MIN	16	16	16	20	16	18	20	40	25	25	23	21
AC-FT	1050	958	1640	1480	1230	2210	2290	27270	29950	14990	1450	5000
CAL YR 1977 TOTAL	6568			18.0	120	13	AC-FT	13030				
WTR YR 1978 TOTAL	45139			124	841	16	AC-FT	89530				

## TULARE LAKE BASIN

11215800 TEAKETTLE CREEK AT SITE NO. 3, NEAR DINKEY CREEK, CA

LOCATION.--Lat 36°57'40", long 119°01'37", in SE¼NE¼ sec.21, T.11 S., R.27 E., Fresno County, Sierra National Forest, on left bank 1.8 mi (2.9 km) upstream from mouth, 2.9 mi (4.7 km) northwest of Black Rock Reservoir, and 10.6 mi (17.1 km) southeast of town of Dinkey Creek.

DRAINAGE AREA.--0.86 mi<sup>2</sup> (2.23 km<sup>2</sup>).

PERIOD OF RECORD.--October 1957 to September 1969, May 1977 to current year. Published as "near Patterson Mountain", October 1957 to September 1969.

GAGE.--Water-stage recorder, 90° sharp-crested V-notch weir, and sharp-crested Cipolletti weir. Datum of gage is 6,705.4 ft (2,043.81 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Forest Service). Prior to Oct. 1, 1961, at datum 4.00 ft (1.219 m) lower.

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 of Kings River basin.

AVERAGE DISCHARGE.--13 years (water years 1958-69, 1978), 1.59 ft<sup>3</sup>/s (0.045 m<sup>3</sup>/s), 1,150 acre-ft/yr (1.42 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 99.0 ft<sup>3</sup>/s (2.80 m<sup>3</sup>/s) Feb. 1, 1963, gage height, 3.81 ft (1.161 m); minimum daily, 0.03 ft<sup>3</sup>/s (<0.001 m<sup>3</sup>/s) Sept. 25-28, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 21 ft<sup>3</sup>/s (0.59 m<sup>3</sup>/s) June 9, gage height, 2.37 ft (0.722 m); minimum daily, 0.05 ft<sup>3</sup>/s (0.001 m<sup>3</sup>/s) Oct. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.14	.20	.67	.42	.76	4.2	5.0	15	9.0	4.2	1.5
2	.05	.14	.20	.62	.47	.86	3.8	5.3	15	8.6	4.1	1.5
3	.06	.14	.18	.56	.47	.79	3.5	5.9	16	8.2	4.1	1.5
4	.06	.15	.18	.49	.47	1.1	3.4	6.5	16	8.0	4.0	3.4
5	.07	.20	.18	.49	.62	.92	3.2	6.7	16	7.8	3.9	6.0
6	.16	.18	.18	.52	.82	.96	3.2	6.6	17	7.5	3.9	5.6
7	.10	.21	.17	.52	.67	1.0	3.1	6.7	18	7.3	3.9	6.1
8	.09	.21	.17	.49	.67	1.0	3.0	7.2	18	7.0	3.8	2.7
9	.09	.20	.17	.52	.79	.99	3.0	7.5	18	6.9	3.7	1.9
10	.09	.20	.17	.47	.67	.92	3.2	7.8	17	6.7	3.7	2.1
11	.08	.18	.17	.45	.62	.89	3.5	8.2	16	6.6	3.7	1.8
12	.08	.17	.18	.42	.62	.86	4.0	9.2	17	6.4	3.6	1.4
13	.08	.17	.18	.45	.62	.79	4.4	10	16	6.2	3.3	1.3
14	.08	.17	.18	.64	.56	.82	4.5	11	16	6.0	2.8	2.6
15	.08	.17	.55	.62	.56	.86	4.4	11	16	5.9	2.8	1.7
16	.08	.18	.24	.52	.56	.96	4.1	10	15	5.7	2.7	1.3
17	.08	.18	2.2	.62	.56	1.0	4.1	10	14	5.5	2.7	1.2
18	.08	.18	.54	.52	.59	1.1	4.0	11	14	5.4	2.6	1.1
19	.08	.18	.32	.49	.64	1.3	4.0	11	13	5.3	2.5	1.1
20	.11	.17	.27	.47	.62	1.3	3.9	12	13	5.2	2.4	1.0
21	.13	.20	.24	.45	.62	1.5	3.7	12	13	5.2	2.4	1.0
22	.13	.27	.24	.45	.62	1.7	3.7	13	12	5.0	2.5	1.0
23	.13	.23	.23	.45	.64	2.1	3.8	12	12	4.9	2.4	.99
24	.14	.24	.29	.42	.64	3.1	4.7	11	11	4.8	2.3	.96
25	.15	.26	.24	.42	.67	3.2	6.9	10	11	4.8	2.2	.92
26	.14	.26	.76	.42	.67	3.2	5.4	10	10	4.8	2.2	.92
27	.14	.24	7.0	.42	.64	3.4	5.0	11	10	4.7	2.0	.89
28	.14	.23	2.0	.42	.67	3.6	5.0	12	9.7	4.5	1.8	.89
29	.14	.21	1.2	.42	---	3.8	5.0	14	9.4	4.4	1.7	.89
30	.14	.21	.96	.42	---	4.2	5.0	15	9.2	4.3	1.7	.86
31	.14	---	.79	.42	---	4.6	---	15	---	4.2	1.6	---
TOTAL	3.17	5.87	20.58	15.26	17.19	53.58	122.7	303.6	423.3	186.8	91.2	56.12
MEAN	.10	.20	.66	.49	.61	1.73	4.09	9.79	14.1	6.03	2.94	1.87
MAX	.16	.27	7.0	.67	.82	4.6	6.9	15	18	9.0	4.2	6.1
MIN	.05	.14	.17	.42	.42	.76	3.0	5.0	9.2	4.2	1.6	.86
AC-FT	6.3	12	41	30	34	106	243	602	840	371	181	111

CAL YR 1977 TOTAL -- MEAN -- MAX -- MIN -- AC-FT --  
WTR YR 1978 TOTAL 1299.37 MEAN 3.56 MAX 18 MIN .05 AC-FT 2580

## 11215820 TEAKETTLE CREEK TRIBUTARY NO. 2 NEAR DINKEY CREEK, CA

LOCATION.--Lat 36°57'32", long 119°02'00", in SE¼NW¼ sec.21, T.11 S., R.27 E., Fresno County, Sierra National Forest, on right bank 0.8 mi (1.3 km) upstream from junction with Teakettle Creek, 2.8 mi (4.5 km) north of Black Rock Reservoir, and 10.5 mi (16.9 km) southeast of town of Dinkey Creek.

DRAINAGE AREA.--0.85 mi<sup>2</sup> (2.20 km<sup>2</sup>).

PERIOD OF RECORD.--October 1957 to September 1969, May 1977 to current year. Published as "near Patterson Mountain" October 1957 to September 1969.

GAGE.--Water-stage recorder, sharp-crested 90° V-notch weir, and sharp-crested Cipolletti weir. Datum of gage is 6,905.4 ft (2,104.77 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Forest Service). Prior to Oct. 1, 1961, at datum 2.00 ft (0.610 m) lower.

REMARKS.--Records good except those for period of no gage-height record, which are fair. 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 of Kings River basin.

AVERAGE DISCHARGE.--13 years (water years 1958-69, 1978), 1.34 ft<sup>3</sup>/s (0.038 m<sup>3</sup>/s), 971 acre-ft/yr (1.20 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70.2 ft<sup>3</sup>/s (1.99 m<sup>3</sup>/s) Dec. 6, 1966, gage height, 3.62 ft (1.103 m); minimum daily, 0.04 ft<sup>3</sup>/s (0.001 m<sup>3</sup>/s) Sept. 6-13, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20 ft<sup>3</sup>/s (0.57 m<sup>3</sup>/s) June 10, gage height, 2.29 ft (0.698 m); minimum daily, 0.05 ft<sup>3</sup>/s (0.001 m<sup>3</sup>/s) on several days during October.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.07	.12	.47	.29	.37	1.7	2.0	12	8.2	1.9	.89
2	.05	.07	.12	.42	.29	.34	1.5	2.3	12	7.9	1.9	.89
3	.05	.07	.12	.38	.29	.48	1.4	2.6	12	7.2	1.8	.89
4	.05	.07	.12	.34	.31	.39	1.3	3.2	13	6.7	1.8	1.3
5	.05	.12	.12	.36	.38	.41	1.4	3.4	13	6.5	1.7	2.9
6	.14	.13	.11	.36	.54	.44	1.3	3.2	15	6.3	1.6	2.1
7	.08	.14	.11	.34	.42	.44	1.3	3.4	16	5.9	1.7	2.1
8	.07	.12	.11	.34	.38	.43	1.3	3.6	17	5.6	1.5	1.5
9	.06	.11	.11	.34	.30	.40	1.3	3.9	17	5.4	1.5	1.3
10	.06	.11	.11	.32	.27	.38	1.4	4.0	16	5.2	1.5	1.4
11	.05	.11	.11	.31	.27	.37	1.6	4.4	16	4.9	1.5	1.3
12	.05	.10	.11	.31	.26	.34	1.7	5.2	16	4.6	1.4	1.1
13	.05	.10	.11	.32	.24	.35	1.8	6.0	16	4.3	1.4	1.2
14	.06	.10	.11	.42	.24	.38	1.6	6.4	16	4.1	1.3	1.6
15	.06	.11	.35	.40	.24	.42	1.6	6.2	15	3.9	1.3	1.3
16	.05	.11	.15	.36	.24	.43	1.5	5.5	13	3.8	1.3	1.2
17	.05	.11	1.4	.38	.26	.48	1.4	5.7	13	3.5	1.3	1.1
18	.05	.11	.60	.36	.28	.55	1.4	6.2	13	3.4	1.2	1.1
19	.05	.09	.27	.32	.27	.56	1.3	6.6	12	3.2	1.2	1.1
20	.06	.10	.24	.32	.27	.64	1.3	7.2	12	3.1	1.1	1.0
21	.06	.12	.21	.31	.27	.73	1.3	7.9	12	2.9	1.1	.99
22	.06	.17	.20	.31	.28	.88	1.2	8.4	12	2.7	1.1	.96
23	.06	.13	.21	.29	.28	1.2	1.3	7.8	11	2.6	1.1	.92
24	.06	.13	.24	.29	.29	1.4	1.8	7.0	11	2.6	1.1	.89
25	.06	.14	.21	.29	.29	1.3	3.3	6.6	10	2.5	1.1	.86
26	.06	.14	.58	.29	.28	1.4	2.2	6.6	9.7	2.4	1.1	.86
27	.08	.15	4.9	.29	.29	1.5	2.0	7.3	9.3	2.3	1.0	.82
28	.07	.14	1.5	.29	.33	1.6	2.1	8.5	8.9	2.2	.99	.82
29	.06	.13	.86	.29	---	1.8	2.1	10	8.5	2.1	.96	.79
30	.08	.13	.64	.29	---	2.0	2.0	11	8.4	2.1	.96	.79
31	.07	---	.54	.29	---	1.9	---	12	---	2.0	.92	---
TOTAL	1.91	3.43	14.69	10.40	8.35	24.31	48.4	184.1	385.8	130.1	41.33	35.97
MEAN	.062	.11	.47	.34	.30	.78	1.61	5.94	12.9	4.20	1.33	1.20
MAX	.14	.17	4.9	.47	.54	2.0	3.3	12	17	8.2	1.9	2.9
MIN	.05	.07	.11	.29	.24	.34	1.2	2.0	8.4	2.0	.92	.79
AC-FT	3.8	6.8	29	21	17	48	96	365	765	258	82	71

CAL YR 1977 TOTAL -- MEAN -- MAX -- MIN -- AC-FT --  
WTR YR 1978 TOTAL 888.79 MEAN 2.44 MAX 17 MIN .05 AC-FT 1760

NOTE.--No gage-height record Feb. 2 to Apr. 18.

## TULARE LAKE BASIN

11215830 TEAKETTLE CREEK TRIBUTARY NO. 2A NEAR DINKEY CREEK, CA

LOCATION.--Lat 36°57'22", long 119°01'57", in NE¼SW¼ sec.21, T.11 S., R.27 E., Fresno County, Sierra National Forest, on left bank 0.1 mi (0.2 km) upstream from confluence with Teakettle Creek Tributary No. 2, 2.6 mi (4.2 km) northwest of Black Rock Reservoir, and 10.7 mi (17.2 km) southeast of town of Dinkey Creek.

DRAINAGE AREA.--0.27 mi<sup>2</sup> (0.70 km<sup>2</sup>).

PERIOD OF RECORD.--October 1957 to September 1969, May 1977 to current year. Published as "near Patterson Mountain" October 1957 to September 1969.

GAGE.--Water-stage recorder and 90° sharp-crested V-notched weir. Datum of gage is 6,924 ft (2,110.4 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Forest Service). Prior to Oct. 1, 1961, at datum 4.00 ft (1.219 m) lower.

REMARKS.--Records good except those for the period January to April, which are fair. 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 of Kings River basin.

AVERAGE DISCHARGE.--13 years (water years 1958-69, 1978), 0.47 ft<sup>3</sup>/s (0.013 m<sup>3</sup>/s), 341 acre-ft/yr (420,000 m<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 60.3 ft<sup>3</sup>/s (1.71 m<sup>3</sup>/s) Dec. 6, 1966, gage height, 3.61 ft (1.100 m); no flow Sept. 9-14, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7.8 ft<sup>3</sup>/s (0.22 m<sup>3</sup>/s) June 8, gage height, 1.58 ft (0.482 m); minimum daily, 0.01 ft<sup>3</sup>/s (<0.001 m<sup>3</sup>/s) Oct. 1-5, 7-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.03	.03	.18	.12	.24	.72	.99	5.0	2.0	.49	.23
2	.01	.03	.03	.16	.13	.32	.64	1.2	5.0	1.9	.48	.23
3	.01	.03	.03	.15	.13	.29	.60	1.4	5.0	1.8	.46	.23
4	.01	.02	.03	.14	.13	.49	.57	1.6	5.2	1.6	.45	.62
5	.01	.03	.03	.13	.18	.36	.55	1.5	5.6	1.6	.44	.92
6	.02	.03	.03	.13	.23	.34	.55	1.5	5.9	1.5	.41	.89
7	.01	.04	.03	.12	.19	.38	.53	1.6	6.5	1.4	.43	.67
8	.01	.04	.03	.12	.19	.36	.51	1.7	6.7	1.3	.38	.36
9	.01	.04	.03	.13	.22	.34	.52	1.8	6.7	1.3	.38	.31
10	.01	.04	.03	.12	.19	.31	.55	1.9	5.7	1.2	.38	.38
11	.01	.04	.03	.11	.17	.29	.64	2.0	5.4	1.1	.38	.31
12	.01	.04	.03	.11	.17	.27	.70	2.2	5.4	1.1	.36	.27
13	.01	.03	.03	.11	.17	.26	.76	2.6	5.3	1.0	.36	.26
14	.01	.03	.03	.18	.16	.31	.78	2.7	5.0	.99	.34	.56
15	.01	.04	.15	.17	.15	.40	.75	2.5	4.7	.96	.34	.31
16	.01	.03	.05	.15	.15	.40	.71	2.4	4.3	.92	.32	.27
17	.01	.03	.76	.17	.15	.38	.70	2.4	4.1	.89	.32	.26
18	.01	.03	.16	.14	.16	.38	.69	2.6	4.0	.86	.31	.26
19	.01	.03	.07	.14	.18	.42	.69	2.8	3.7	.82	.29	.26
20	.01	.03	.06	.13	.17	.46	.67	3.2	3.5	.79	.29	.24
21	.01	.04	.06	.13	.16	.48	.62	3.4	3.4	.76	.29	.24
22	.01	.05	.06	.13	.16	.50	.64	3.5	3.2	.73	.29	.24
23	.01	.03	.06	.12	.16	.51	.73	3.3	3.0	.70	.29	.23
24	.01	.04	.06	.12	.17	.54	.96	3.1	3.0	.67	.27	.23
25	.01	.04	.06	.12	.17	.56	1.7	2.9	2.7	.64	.27	.21
26	.01	.05	.30	.12	.17	.55	.99	3.0	2.6	.62	.27	.21
27	.02	.05	2.6	.12	.17	.60	.89	3.4	2.4	.62	.26	.20
28	.02	.04	.76	.12	.18	.63	.92	3.6	2.2	.56	.24	.20
29	.02	.04	.38	.12	---	.67	.99	4.2	2.1	.54	.24	.20
30	.02	.03	.27	.12	---	.77	.96	4.9	2.0	.53	.24	.20
31	.02	---	.21	.12	---	.80	---	5.0	---	.52	.24	---
TOTAL	.37	1.07	6.49	4.13	4.68	13.61	22.23	80.89	129.3	31.92	10.51	10.00
MEAN	.012	.036	.21	.13	.17	.44	.74	2.61	4.31	1.03	.34	.33
MAX	.02	.05	2.6	.18	.23	.80	1.7	5.0	6.7	2.0	.49	.92
MIN	.01	.02	.03	.11	.12	.24	.51	.99	2.0	.52	.24	.20
AC-FT	.7	2.1	13	8.2	9.3	27	44	160	256	63	21	20

CAL YR 1977 TOTAL -- MEAN -- MAX -- MIN -- AC-FT --  
WTR YR 1978 TOTAL 315.20 MEAN .86 MAX 6.7 MIN .01 AC-FT 625

## 11215840 TEAKETTLE CREEK TRIBUTARY NO. 1 NEAR DINKEY CREEK, CA

LOCATION.--Lat 36°56'59", long 119°01'07", in NW¼NW¼ sec.27, T.11 S., R.27 E., Fresno County, Sierra National Forest, on left bank 2.1 mi (3.4 km) northeast of Black Rock Reservoir, and 11.5 mi (18.5 km) southeast of town of Dinkey Creek.

DRAINAGE AREA.--0.77 mi<sup>2</sup> (1.99 km<sup>2</sup>).

PERIOD OF RECORD.--October 1957 to September 1969, May 1977 to current year. Published as "near Patterson Mountain", October 1957 to September 1969.

GAGE.--Water-stage recorder, 90° sharp-crested V-notch weir, and sharp-crested Cipolletti weir. Datum of gage is 6,407.7 ft (1,953.07 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Forest Service). Prior to August 1959, at datum 4.00 ft (1.219 m) lower.

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 of Kings River basin.

AVERAGE DISCHARGE.--13 years (water years 1958-69, 1978), 1.50 ft<sup>3</sup>/s (0.042 m<sup>3</sup>/s), 1,090 acre-ft/yr (1.34 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 142 ft<sup>3</sup>/s (4.02 m<sup>3</sup>/s) Dec. 6, 1966, gage height, 4.49 ft (1.369 m); minimum daily, 0.05 ft<sup>3</sup>/s (0.001 m<sup>3</sup>/s) Sept. 5-29, Oct. 1-3, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20 ft<sup>3</sup>/s (0.57 m<sup>3</sup>/s), June 7, gage height, 2.30 ft (0.701 m); minimum daily, 0.05 ft<sup>3</sup>/s (0.001 m<sup>3</sup>/s) Oct. 1-3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.08	.13	.96	1.8	2.9	4.8	5.7	16	6.6	3.1	.86
2	.05	.09	.13	.86	1.8	3.2	4.4	6.3	16	6.4	3.0	.86
3	.05	.08	.13	.79	1.8	3.0	4.0	6.9	16	6.2	3.0	.86
4	.06	.08	.12	.86	1.8	3.8	3.8	7.4	16	5.8	3.0	1.3
5	.06	.14	.12	1.5	2.6	3.3	3.6	7.5	17	5.6	3.0	2.7
6	.14	.14	.12	2.1	3.1	3.3	3.6	7.4	17	5.4	2.9	2.5
7	.10	.14	.12	1.9	2.5	3.3	3.5	7.5	17	5.3	2.9	2.0
8	.08	.13	.12	1.9	2.5	3.2	3.4	8.0	17	5.2	2.8	1.4
9	.08	.12	.12	2.2	3.0	3.2	3.4	8.5	17	5.0	2.8	1.2
10	.07	.12	.12	1.9	2.6	3.1	3.5	8.9	16	4.9	2.7	1.3
11	.07	.12	.12	1.8	2.3	3.0	3.9	9.6	15	4.8	2.6	1.2
12	.07	.12	.13	1.7	2.3	2.9	4.4	10	15	4.6	2.4	1.1
13	.07	.11	.13	1.8	2.3	2.9	4.8	12	14	4.5	2.2	1.0
14	.07	.11	.13	2.7	2.1	2.9	5.1	12	14	4.3	1.8	1.6
15	.06	.11	.38	2.6	2.1	2.9	5.0	12	13	4.2	1.8	1.2
16	.06	.11	.17	2.2	2.1	2.9	4.7	11	12	4.2	1.6	1.1
17	.06	.11	2.6	2.5	2.1	3.0	4.6	11	12	4.1	1.6	1.1
18	.06	.11	.49	2.2	2.3	3.0	4.5	12	12	3.9	1.5	1.0
19	.07	.11	.29	2.1	2.4	3.0	4.4	12	11	3.8	1.4	1.0
20	.07	.11	.26	2.0	2.3	3.0	4.5	13	10	3.8	1.4	.99
21	.08	.13	.23	1.9	2.3	3.1	4.2	13	10	3.7	1.3	.96
22	.07	.24	.27	1.9	2.3	3.1	4.2	14	9.3	3.6	1.4	.96
23	.07	.15	.54	1.9	2.4	3.1	4.4	13	8.9	3.5	1.3	.92
24	.08	.15	.49	1.9	2.5	3.5	5.2	12	8.5	3.4	1.3	.89
25	.12	.16	.32	1.9	2.5	3.6	7.0	11	8.2	3.4	1.2	.89
26	.12	.16	2.1	1.9	2.5	3.5	5.7	11	7.9	3.4	1.2	.86
27	.15	.16	7.5	1.9	2.4	3.8	5.5	12	7.5	3.4	1.2	.86
28	.15	.15	2.6	1.9	2.6	4.1	5.5	13	7.3	3.3	1.1	.82
29	.14	.14	1.6	1.9	---	4.2	5.6	15	7.0	3.2	.96	.82
30	.12	.14	1.3	1.8	---	4.7	5.6	16	6.8	3.2	.96	.82
31	.09	---	1.1	1.8	---	5.2	---	16	---	3.1	.90	---
TOTAL	2.59	3.82	23.98	57.27	65.3	103.7	136.8	334.7	374.4	135.8	60.32	35.07
MEAN	.084	.13	.77	1.85	2.33	3.35	4.56	10.8	12.5	4.38	1.95	1.17
MAX	.15	.24	7.5	2.7	3.1	5.2	7.0	16	17	6.6	3.1	2.7
MIN	.05	.08	.12	.79	1.8	2.9	3.4	5.7	6.8	3.1	.90	.82
AC-FT	5.1	7.6	48	114	130	206	271	664	743	269	120	70

CAL YR 1977 TOTAL -- MEAN -- MAX -- MIN -- AC-FT --  
WTR YR 1978 TOTAL 1333.75 MEAN 3.65 MAX 17 MIN .05 AC-FT 2650

NOTE.--No gage-height record Mar. 14 to Apr. 19.

## 11216500 NORTH FORK KINGS RIVER ABOVE DINKEY CREEK, AT BALCH CAMP, CA

LOCATION.--Lat 36°54'12", long 119°07'14", in SE¼NE¼ sec.10, T.12 S., R.26 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on left bank 12 ft (4 m) downstream from bridge at Balch Camp, 300 ft (91 m) upstream from Dinkey Creek, and 9.3 mi (15.0 km) east of Trimmer.

DRAINAGE AREA.--250 mi<sup>2</sup> (648 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1919 to September 1930 (published as "above Dinkey Creek"), March 1960 to current year. Records for water year 1920 incomplete, yearly estimate and monthly discharge only for some months, published in WSP 1315-A.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Apr. 15, 1966. Altitude of gage is 1,240 ft (378 m), from river-profile map. October 1919 to Sept. 30, 1930, and Mar. 24, 1960, to Apr. 14, 1966, at site 100 ft (30 m) downstream at different datum.

REMARKS.--Flow regulated by Courtright Reservoir (station 11214550) and Wishon Reservoir (station 11214800), Black Rock Reservoir, capacity, 1,260 acre-ft (1.55 hm<sup>3</sup>), Balch Afterbay, capacity, 318 acre-ft (392,000 m<sup>3</sup>), 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 collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE (prior to storage and diversion).--11 years (water years 1920-30), 387 ft<sup>3</sup>/s (10.96 m<sup>3</sup>/s); 280,200 acre-ft/yr (345 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (prior to regulation by Wishon and Courtright Reservoirs): Maximum discharge, 6,080 ft<sup>3</sup>/s (172 m<sup>3</sup>/s) June 4, 1922, gage height, 12.18 ft (3.712 m) site and datum then in use; minimum, 4 ft<sup>3</sup>/s (0.11 m<sup>3</sup>/s) Aug. 29 to Sept. 1, 1924.  
1960 to current year: Maximum discharge, 14,000 ft<sup>3</sup>/s (396 m<sup>3</sup>/s) Feb. 1, 1963, gage height, 13.24 ft (4.036 m) site and datum then in use, backwater from Dinkey Creek, from rating curve extended above 890 ft<sup>3</sup>/s (25.2 m<sup>3</sup>/s); minimum daily, 0.30 ft<sup>3</sup>/s (0.008 m<sup>3</sup>/s) Nov. 3, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,430 ft<sup>3</sup>/s (97.1 m<sup>3</sup>/s) Sept. 5, gage height, 5.23 ft (1.594 m); minimum daily, 4.0 ft<sup>3</sup>/s (0.11 m<sup>3</sup>/s) Mar. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	5.6	5.1	6.9	7.5	14	19	241	1380	487	17	17
2	4.3	5.6	5.1	6.6	9.2	28	22	28	1370	460	17	17
3	5.3	5.6	5.5	6.4	9.2	33	21	215	1350	435	17	17
4	6.2	5.6	5.5	6.8	9.0	286	38	316	1430	422	17	18
5	6.2	6.0	5.5	9.8	9.4	32	23	427	1460	422	17	385
6	6.2	5.6	5.5	20	9.4	18	21	491	1480	455	17	1180
7	5.8	5.6	5.5	9.8	9.4	18	26	375	1570	614	16	513
8	5.8	5.6	5.5	8.5	9.4	21	30	436	1570	747	16	101
9	5.8	5.6	5.3	12	368	12	28	487	1550	741	16	46
10	5.8	5.6	5.3	12	269	7.7	26	619	1290	737	16	42
11	6.1	5.6	5.3	10	83	9.0	22	967	1380	727	16	30
12	6.0	5.8	5.3	9.0	62	8.1	24	1090	1220	689	16	17
13	6.1	5.8	5.3	7.9	132	7.3	32	1100	1040	530	16	17
14	6.2	5.8	5.3	19	51	4.0	20	829	1000	512	16	19
15	6.1	5.8	5.3	35	38	20	19	710	941	783	16	17
16	5.9	5.8	5.3	71	30	19	30	768	845	701	16	17
17	5.6	5.3	5.5	182	23	18	31	861	831	349	16	16
18	5.7	5.1	5.5	30	20	18	151	930	954	392	16	16
19	5.8	5.1	5.5	30	19	17	175	1060	817	348	16	16
20	6.0	5.1	5.3	17	18	17	21	1160	898	195	16	16
21	5.8	5.1	5.1	13	17	26	20	1120	900	140	16	16
22	6.0	5.1	5.1	12	17	33	19	1060	879	132	16	16
23	6.0	5.1	5.1	10	16	19	19	827	724	124	17	16
24	6.0	5.1	5.8	9.0	16	19	19	680	456	78	17	16
25	6.0	5.1	6.0	8.8	16	18	23	686	438	9.7	17	16
26	6.0	5.1	5.6	8.1	15	18	346	803	422	13	17	16
27	5.8	5.1	5.6	8.1	15	18	198	1050	405	14	17	16
28	5.8	5.1	9.2	7.7	13	17	122	1320	390	14	17	16
29	5.8	5.1	9.8	7.5	---	18	177	1430	417	14	17	16
30	5.6	5.1	9.6	7.3	---	17	255	1430	494	15	17	16
31	5.6	---	7.7	6.8	---	20	---	1410	---	18	17	---
TOTAL	179.7	162.6	182.0	608.0	1310.5	830.1	1977	24926	29901	11317.7	511	2677
MEAN	5.80	5.42	5.87	19.6	46.8	26.8	65.9	804	997	365	16.5	89.2
MAX	6.2	6.0	9.8	182	368	286	346	1430	1570	783	17	1180
MIN	4.3	5.1	5.1	6.4	7.5	4.0	19	28	390	9.7	16	16
AC-FT	356	323	361	1210	2600	1650	3920	49440	59310	22450	1010	5310
CAL YR 1977 TOTAL	2774.2			MEAN 7.60	MAX 16	MIN 4.3	AC-FT 5500					
WTR YR 1978 TOTAL	74582.6			MEAN 204	MAX 1570	MIN 4.0	AC-FT 147900					



11216500 NORTH FORK KINGS RIVER ABOVE DINKEY CREEK, AT BALCH CAMP, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: September 1967 to current year.

INSTRUMENTATION.--Temperature recorder since September 1967.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 29.5°C June 2, 1977; minimum recorded, 0.0°C Dec. 14-16, 21, 1967.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 20.5°C Oct. 6; minimum recorded, 3.5°C Nov. 20.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	19.0	10.5	13.0	7.0	10.0	6.5	8.0	5.5			---	---
2	19.5	10.5	13.0	7.0	10.0	6.0	9.0	7.0			---	---
3	20.0	11.0	13.0	7.0	11.0	6.0	9.5	8.0			---	---
4	17.5	10.5	13.0	8.0	10.5	6.5	9.0	7.5			---	---
5	17.5	11.5	10.0	7.5	9.5	5.5	9.5	8.0			---	---
6	20.5	13.5	10.0	6.0	8.5	5.0	11.5	8.0			---	---
7	18.0	10.5	11.0	6.0	9.0	6.0	10.0	7.0			11.5	10.5
8	18.0	10.0	11.5	6.5	9.5	6.0	11.0	7.5			12.0	11.5
9	17.5	10.0	11.0	6.5	8.0	4.5	10.5	9.0			12.0	12.0
10	17.5	10.0	11.5	6.5	8.0	4.5	10.5	8.0			12.0	12.0
11	18.0	10.5	11.5	7.5	9.0	4.5	---	---			12.0	12.0
12	17.5	10.5	10.5	6.0	10.0	6.0	---	---			12.0	11.5
13	17.0	10.0	10.5	6.5	9.5	7.0	---	---			11.5	11.0
14	17.0	10.0	10.5	6.0	9.5	5.5	---	---			11.5	11.0
15	15.5	10.0	11.5	6.5	11.0	7.5	---	---			11.5	11.0
16	16.0	9.5	11.0	6.5	8.5	5.5	---	---			12.0	11.0
17	16.5	9.5	11.5	7.0	10.0	7.5	---	---			12.5	11.5
18	15.5	9.5	11.0	7.0	9.0	7.0	---	---			12.5	12.0
19	15.0	9.5	9.0	5.0	6.5	4.0	---	---			13.0	12.5
20	14.5	9.0	8.0	3.5	7.0	4.0	---	---			13.5	12.5
21	14.0	8.5	9.0	5.5	7.5	6.0	---	---			14.0	12.0
22	14.0	8.0	11.5	8.0	9.0	7.0	---	---			12.5	11.0
23	13.5	8.5	10.5	6.0	10.0	8.0	---	---			13.0	10.5
24	14.0	8.5	11.5	7.0	9.5	6.5	---	---			14.0	11.5
25	14.5	8.5	10.5	6.5	9.5	6.5	---	---			14.5	12.0
26	14.5	9.0	11.0	6.5	9.5	7.5	---	---			14.5	13.0
27	13.5	9.0	11.0	7.0	11.0	7.5	---	---			14.5	12.5
28	11.5	7.0	11.5	8.0	12.0	8.5	---	---			14.5	13.0
29	12.0	7.5	10.5	7.0	11.0	8.5	---	---			15.0	13.0
30	11.5	6.5	10.0	6.5	11.0	9.5	---	---			15.0	14.5
31	12.5	7.0	---	---	10.0	7.0	---	---			14.5	10.5
MONTH	20.5	6.5	13.0	3.5	12.0	4.0	---	---			15.0	10.5

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	13.0	10.0	---	---	---	---	12.0	10.5	19.0	15.0	17.5	12.5
2	12.5	10.5	---	---	---	---	11.5	10.5	19.0	15.0	17.0	13.0
3	12.5	10.5	---	---	---	---	11.5	10.0	18.5	15.0	17.0	13.5
4	12.5	9.0	---	---	---	---	11.5	10.0	16.5	15.0	15.5	14.0
5	11.5	6.0	---	---	---	---	11.5	10.0	18.5	14.5	15.0	13.5
6	8.0	6.5	---	---	---	---	11.5	10.5	19.0	15.0	16.0	15.0
7	9.0	5.5	---	---	---	---	11.5	11.5	19.0	15.5	15.0	13.0
8	10.0	5.0	---	---	---	---	12.0	11.0	18.5	15.5	15.5	12.0
9	14.0	5.5	---	---	---	---	12.5	11.0	19.0	14.5	15.0	12.0
10	15.5	7.0	---	---	---	---	12.0	11.5	19.0	15.0	16.0	12.5
11	16.0	8.5	---	---	---	---	12.0	11.0	17.5	15.0	15.5	12.0
12	12.5	7.0	---	---	---	---	13.0	11.5	18.0	14.5	17.5	13.0
13	12.5	8.0	10.0	8.5	---	---	13.5	12.5	18.5	14.0	15.5	12.5
14	14.0	11.5	9.0	7.5	---	---	13.0	12.5	18.0	13.0	16.5	13.0
15	13.5	9.5	8.5	7.0	---	---	14.5	13.5	17.5	13.0	17.0	12.5
16	11.5	8.0	7.5	6.5	---	---	15.0	14.5	17.5	13.5	18.0	12.5
17	13.5	9.0	8.0	7.0	10.5	9.5	15.0	14.0	17.0	13.0	18.5	13.0
18	8.5	6.0	8.5	7.5	11.0	10.0	14.0	12.5	18.0	12.0	15.0	11.0
19	11.5	6.0	9.0	7.5	10.5	9.5	13.0	12.5	17.0	12.5	14.5	9.5
20	13.5	11.5	9.0	8.0	10.5	10.0	13.0	12.0	17.5	12.5	14.5	10.0
21	13.5	11.0	9.5	8.5	11.0	10.0	13.0	11.5	17.5	12.5	15.0	10.5
22	15.0	11.0	9.5	8.5	11.0	10.0	13.5	11.5	19.0	13.0	15.0	10.5
23	15.5	12.0	9.0	7.5	11.0	10.0	13.5	11.5	17.0	12.0	17.5	11.5
24	14.5	13.5	8.5	7.0	11.0	9.0	14.5	12.0	17.0	12.0	16.0	12.0
25	13.5	9.5	8.5	7.5	11.0	9.0	18.0	14.5	18.0	12.0	16.5	13.0
26	---	---	9.0	7.5	10.5	9.5	20.0	17.0	17.5	12.5	16.5	13.5
27	---	---	10.0	8.0	11.0	9.5	19.5	16.5	17.0	12.5	17.0	13.0
28	---	---	10.5	8.5	11.0	10.0	20.0	16.0	17.5	12.5	17.5	13.0
29	---	---	10.5	9.0	11.5	10.0	20.0	16.0	17.0	13.0	16.5	13.0
30	---	---	---	9.0	11.5	10.5	19.5	15.5	18.0	13.5	16.5	13.5
31	---	---	---	---	---	---	19.5	14.5	17.5	13.0	---	---
MONTH	16.0	5.0	---	---	---	---	20.0	10.0	19.0	12.0	18.5	9.5

## 11217000 DINKEY CREEK AT DINKEY MEADOW, NEAR SHAVER LAKE, CA

LOCATION.--Lat 37°02'50", long 119°08'52", in SW¼NW¼ sec.21, T.10 S., R.26 E., Fresno County, Sierra National Forest, on left bank 0.5 mi (0.8 km) downstream from Dinkey Meadow, 2.0 mi (3.2 km) south of Dinkey Creek Post Office, and 14.4 mi (23.2 km) southeast of town of Shaver Lake.

DRAINAGE AREA.--50.7 mi<sup>2</sup> (131.3 km<sup>2</sup>).

PERIOD OF RECORD.--September 1910 to September 1915 (fragmentary records), published as "near Ockenden"; October 1921 to September 1935, published as "at Dinkey Meadow; July 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,440 ft (1,658 m), from topographic map. September 1910 to September 1915, at site 1 mi (1.6 km) upstream at different datum. October 1921 to September 1935, at present site at same datum.

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

AVERAGE DISCHARGE.--15 years (water years 1922-35, 1978), 97.4 ft<sup>3</sup>/s (2.758 m<sup>3</sup>/s), 70,570 acre-ft/yr (87.0 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,660 ft<sup>3</sup>/s (75.3 m<sup>3</sup>/s) Nov. 26, 1926, gage height, 7.62 ft (2.323 m); minimum recorded, 0.2 ft<sup>3</sup>/s (0.006 m<sup>3</sup>/s) Aug. 24-30, 1931, Sept. 7-9, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft<sup>3</sup>/s (11.3 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 17	1430	1170 33.1	6.34 1.932	Mar. 31	0415	677 19.2	5.22 1.591
Dec. 27	0930	1350 38.2	6.66 2.030	Apr. 13	2015	544 15.4	4.83 1.472
Feb. 5	2000	409 11.6	4.37 1.332	Apr. 25	0500	1250 35.4	6.49 1.978
Feb. 9	0330	409 11.6	4.37 1.332	May 14	1930	1400 39.6	6.74 2.054
Mar. 4	0500	476 13.5	4.61 1.405	May 29	1930	*1530 43.3	6.96 2.121
Mar. 21	2145	417 11.8	4.40 1.341	Sept. 5	1545	756 21.4	5.43 1.655

Minimum daily, 0.69 ft<sup>3</sup>/s (0.020 m<sup>3</sup>/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.81	1.2	3.5	81	68	134	340	394	1040	477	65	9.3
2	.84	1.1	3.2	70	66	220	267	513	1030	434	61	8.8
3	.81	1.1	3.0	64	69	158	228	654	1010	380	56	8.8
4	.72	1.1	2.9	62	72	336	210	752	1020	366	52	30
5	.69	4.0	2.9	62	169	221	188	709	1080	373	48	303
6	1.1	4.6	2.8	65	170	162	186	619	1080	388	43	430
7	1.9	3.1	2.6	65	110	156	170	617	1130	380	42	245
8	1.5	2.6	2.6	63	101	147	158	705	1130	354	45	108
9	1.2	2.4	2.5	106	238	146	176	764	1100	349	41	70
10	.99	2.1	2.4	83	123	127	243	766	935	334	44	85
11	.90	2.0	2.4	65	100	118	346	805	865	292	42	65
12	.86	1.9	2.9	59	86	107	423	910	918	256	41	50
13	.83	1.8	2.8	62	81	102	460	1030	915	246	33	41
14	.81	1.7	2.7	170	82	112	421	1080	876	247	28	138
15	.81	1.7	2.8	146	74	128	388	935	800	238	24	122
16	.81	1.7	1.0	145	71	155	294	788	724	216	23	84
17	.80	1.7	231	144	67	193	251	808	696	190	21	62
18	.74	1.7	93	108	68	198	252	871	746	168	20	51
19	.75	1.7	36	105	75	229	274	904	695	150	19	45
20	.75	1.6	26	86	81	252	282	944	677	139	18	40
21	.82	2.5	22	75	90	330	234	998	663	132	17	36
22	.83	13	27	70	98	287	233	1010	624	125	16	32
23	.85	6.6	88	64	103	230	283	853	580	119	15	29
24	.83	5.2	44	60	103	222	460	671	574	112	14	26
25	.84	6.2	30	61	97	266	899	616	551	109	13	24
26	.85	4.9	155	62	91	290	497	642	497	113	12	22
27	.95	4.6	828	63	88	296	404	776	455	103	12	21
28	1.3	4.8	331	62	95	342	415	942	441	99	11	20
29	1.2	3.8	170	64	---	388	433	1110	460	84	10	18
30	1.2	3.7	151	68	---	489	431	1150	484	74	9.9	18
31	1.2	---	105	69	---	561	---	1090	---	69	9.7	---
TOTAL	29.49	96.1	2414.2	2529	2736	7102	9846	25426	23796	7116	905.6	2241.9
MEAN	.95	3.20	77.9	81.6	97.7	229	328	820	793	230	29.2	74.7
MAX	1.9	13	828	170	238	561	899	1150	1130	477	65	430
MIN	.69	1.1	2.4	59	66	102	158	394	441	69	9.7	8.8
AC-FT	58	191	4790	5020	5430	14090	19530	50430	47200	14110	1800	4450

CAL YR 1977 TOTAL -- MEAN -- MAX -- MIN -- AC-FT --  
WTR YR 1978 TOTAL 84238.29 MEAN 231 MAX 1150 MIN .69 AC-FT 167100

LOCATION.--Lat 36°52'47", long 119°07'40", in NW¼ sec.22, T.12 S., R.26 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right bank 1.1 mi (1.8 km) upstream from mouth, 1.7 mi (2.7 km) south of Balch Camp, 2.1 mi (3.4 km) downstream from Dinkey Creek, and 9 mi (14 km) east of Trimmer.

REMARKS.--Flow regulated by Courtright Reservoir (station 11214550), Wishon Reservoir (station 11214800), Black Rock Reservoir, capacity, 1,260 acre-ft (1.55 hm<sup>3</sup>), Balch Afterbay, capacity, 318 acre-ft (392,000 m<sup>3</sup>), and Haas and Balch powerplants. Diversion from Balch Afterbay to Kings River powerhouse began Mar. 1, 1962. See schematic diagram of Kings River basin.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,910 ft<sup>3</sup>/s (139 m<sup>3</sup>/s) June 7, gage height, 9.43 ft (2.874 m); minimum daily, 6.4 ft<sup>3</sup>/s (0.18 m<sup>3</sup>/s) Oct. 3.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	12	21	182	153	293	763	822	3540	1310	135	54
2	8.4	12	20	144	148	639	646	1120	3510	1210	128	52
3	6.4	12	19	125	147	585	545	1520	3490	1100	122	51
4	8.1	12	18	140	156	1860	561	1820	3490	1040	117	57
5	9.5	12	17	211	227	1090	493	1830	3640	1050	113	812
6	11	22	17	344	432	641	508	1570	3670	1100	105	2010
7	11	24	17	209	318	536	494	1530	3820	1320	104	998
8	13	22	17	173	293	477	447	1740	3840	1440	105	305
9	12	19	16	330	1850	460	449	1940	3780	1420	104	175
10	11	17	16	310	1190	410	534	1950	3390	1390	98	179
11	11	17	15	212	511	403	686	2130	3120	1330	107	164
12	11	15	15	175	417	368	864	2890	3130	1230	107	126
13	10	15	15	144	594	334	928	3270	2890	987	97	111
14	9.8	15	15	393	382	330	861	3440	2770	934	89	202
15	9.8	15	16	623	319	341	933	3150	2600	1300	84	243
16	9.8	15	56	724	281	366	794	2650	2390	1190	80	178
17	9.5	15	596	1090	257	422	636	2680	2290	648	77	136
18	9.8	15	346	411	242	439	800	2880	2400	662	76	120
19	9.8	13	96	300	246	450	672	2990	2300	589	72	112
20	9.8	14	71	291	248	514	651	3120	2220	417	70	106
21	9.8	13	66	238	255	666	562	3300	2200	351	68	100
22	10	13	100	209	265	683	520	3360	2110	328	67	94
23	11	17	411	185	270	527	578	3030	1840	308	67	88
24	11	34	184	168	271	479	778	2450	1470	263	66	83
25	10	29	101	162	260	519	2090	2270	1410	194	64	80
26	11	21	89	157	244	590	1300	2300	1320	208	63	77
27	11	23	2130	157	236	567	950	2630	1190	192	62	74
28	11	22	790	151	235	633	935	3090	1150	182	60	71
29	12	22	430	149	---	697	1070	3600	1190	162	57	69
30	12	22	370	151	---	858	1160	3780	1330	149	55	67
31	12	---	245	151	---	1200	---	3670	---	143	54	---
TOTAL	328.5	529	6335	8499	10447	18377	23208	78522	77490	24147	2673	6994
MEAN	10.6	17.6	204	274	373	593	774	2533	2583	779	86.2	233
MAX	17	34	2130	1090	1850	1860	2090	3780	3840	1440	135	2010
MIN	6.4	12	15	125	147	293	447	822	1150	143	54	51
AC-FT	652	1050	12570	16860	20720	36450	46030	155700	153700	47900	5300	13870

CAL YR 1977	TOTAL	22894,5	MEAN	62,7	MAX	2130	MIN	6,4	AC-FT	45410
WTR YR 1978	TOTAL	257549,5	MEAN	706	MAX	3840	MIN	6,4	AC-FT	510800

## TULARE LAKE BASIN

11218500 KINGS RIVER BELOW NORTH FORK, NEAR TRIMMER, CA  
(National stream-quality accounting network station)

LOCATION.--Lat 36°52'29", long 119°08'27", in SW¼NE¼ sec.21, T.12 S., R.26 E., Fresno County, on right bank 0.8 mi (1.3 km) downstream from North Fork, 2.4 mi (3.9 km) southwest of Balch Camp, and 8.5 mi (13.7 km) southeast of Trimmer.

DRAINAGE AREA.--1,342 mi<sup>2</sup> (3,476 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1951 to current year. Prior to January 1952 monthly discharge only, published in WSP 1735. Published as Kings River below North Fork, October 1951 to September 1965.

REVISED RECORDS.--WSP 1930: Drainage area. WDR CA-72-2: Adjusted data for 1971.

GAGE.--Water-stage recorder. Datum of gage is 942.42 ft (287.250 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good. Flow regulated by Courtright and Wishon Reservoirs (stations 11214550, 11214800). Records include flow diverted to Kings River powerplant since Mar. 1, 1962. This station measures inflow to Pine Flat Lake. See schematic diagram of Kings River basin.

COOPERATION.--Records of diversion to Kings River powerplant and contents for Courtright and Wishon Reservoirs furnished by Pacific Gas and Electric Co.

AVERAGE DISCHARGE (adjusted for change in contents in Wishon and Courtright Reservoirs).--27 years, 2,145 ft<sup>3</sup>/s (60.75 m<sup>3</sup>/s), 1,554,000 acre-ft/yr (1,920 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 85,200 ft<sup>3</sup>/s (2,410 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 23.08 ft (7.035 m), from rating curve extended above 22,000 ft<sup>3</sup>/s (623 m<sup>3</sup>/s) on basis of slope-area measurement of maximum flow; minimum daily, 86 ft<sup>3</sup>/s (2.44 m<sup>3</sup>/s) Oct. 1, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 19, 1950, reached a stage of 21.6 ft (6.58 m) from floodmarks, discharge, 74,200 ft<sup>3</sup>/s (2,100 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22,600 ft<sup>3</sup>/s (640 m<sup>3</sup>/s) Sept. 5; minimum daily, 86 ft<sup>3</sup>/s (2.44 m<sup>3</sup>/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86	213	334	1080	1550	1700	4360	4710	15200	10200	5210	1790
2	142	182	276	984	1440	3740	3930	5070	14900	9210	5250	1720
3	233	176	243	808	1500	3750	3530	5960	14600	8260	5000	1730
4	192	304	216	858	1450	8690	3500	7060	15000	7690	4670	1930
5	227	219	306	1290	1730	6650	3320	7680	15500	8030	4540	15600
6	230	231	269	2020	2450	4270	2720	7130	16000	8610	4020	14700
7	344	452	211	1510	2380	3370	2990	6700	16900	9640	4170	7880
8	162	700	151	1410	3810	3200	2620	7060	17900	9560	4430	4750
9	154	724	150	2190	8340	2830	2560	7910	18300	9430	4150	3600
10	241	608	202	2150	5810	2570	2910	8220	17000	10000	3840	3220
11	273	455	143	2000	3810	2530	3320	8760	14800	9470	3900	3070
12	359	137	137	1760	3670	2160	3980	10400	15200	8350	3650	2600
13	384	132	209	1700	3890	1950	4500	12000	15700	7950	3260	2370
14	349	166	227	2240	3110	1930	4430	13200	14600	9010	2990	2560
15	134	188	271	4160	2670	2060	4850	13000	13600	9860	2750	2620
16	122	117	319	3560	2410	2130	4680	11300	12400	9460	2660	2360
17	333	165	1960	4930	2200	2390	4050	10600	11700	7890	2550	2170
18	295	110	1240	3320	2090	2300	4140	11100	12500	7330	2440	2040
19	460	199	573	3210	2110	2380	3820	11600	12900	6680	2330	1940
20	361	107	452	2720	2110	2730	3760	12100	12500	6200	2240	1920
21	607	291	516	2230	2130	3310	3740	12800	12800	5920	2190	1840
22	209	261	700	2120	2220	3710	3360	13400	12300	6050	2100	1770
23	109	339	1740	1770	2240	3240	3530	12700	11100	6310	2010	1700
24	299	175	978	1750	2210	3250	4210	10200	10300	6390	1910	1570
25	458	262	745	1680	1470	3220	6800	8870	9780	6050	1860	1630
26	304	235	851	1630	1410	3430	5500	8600	9770	7460	1820	1590
27	335	240	6080	1620	1450	3240	4780	9530	9420	7200	1810	1570
28	291	279	3420	1580	1410	3160	4880	11500	8450	6530	1840	1400
29	104	242	2020	1580	---	3540	5080	13600	9110	5470	1750	1540
30	198	269	1650	1540	---	3720	5270	15300	10100	5060	1810	1520
31	288	---	1220	1530	---	5450	---	15700	---	5330	1810	---
TOTAL	8283	8178	27809	62930	73070	102600	121120	313760	400380	240600	94960	96700
MEAN	267	273	897	2030	2610	3310	4037	10120	13340	7761	3063	3223
MAX	607	724	6080	4930	8340	8690	6800	15700	18300	10200	5250	15600
MIN	86	107	137	808	1410	1700	2560	4710	8450	5060	1750	1400
AC-FT	16430	16220	55160	124800	144900	203500	240200	622300	794100	477200	188400	191800
MEAN ‡	114	165	959	1556	2112	3334	4020	11290	15440	8120	2480	2830
AC-FT ‡	7020	9800	58960	95690	117300	205000	239200	694500	918500	499300	152500	168400

CAL YR 1977 TOTAL 215133 MEAN 589 MAX 6080 MIN 86 AC-FT 426700 MEAN ‡ 563 AC-FT ‡ 407700  
WTR YR 1978 TOTAL 1550340 MEAN 4248 MAX 18300 MIN 86 AC-FT 3075000 MEAN ‡ 4373 AC-FT ‡ 3166000

‡ Adjusted for change in contents in Courtright and Wishon Reservoirs

11218500 KINGS RIVER BELOW NORTH FORK, NEAR TRIMMER, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956 to current year.

CHEMICAL ANALYSES: Water years 1956-66, 1968-70, 1973 to current year.

BIOLOGICAL DATA: Water year 1978.

WATER TEMPERATURES: Water years 1967 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1966 to current year.

INSTRUMENTATION.--Temperature recorder since October 1966.

REMARKS.--Quality of water samples are obtained at the gaging station upstream from the powerplant. Temperature recorder located 1 mi (2 km) downstream from gaging station. Temperature subject to fluctuation because of powerplant operation upstream. Temperature sensor inundated by Pine Flat Lake from June 9 to Aug. 19, and Sept. 12-30.

COOPERATION.--The letter "A" following a date indicates chemical-quality records furnished by California Department of Water Resources.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 26.5°C Sept. 2, 1977; minimum recorded, 0.0°C on several days in 1966 and 1967.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 22.0°C Oct. 12; minimum recorded, 6.0°C on several days during December to February.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT										
26...	A 0830	104	54	7.1	15.0	--	9.6	0	.1	--
FEB										
06...	1400	1720	79	7.3	8.0	9.0	11.5	--	--	290
22...	A 1300	1300	70	7.3	11.0	--	10.5	--	--	--
MAR										
07...	1500	2900	78	7.0	13.0	2.0	11.0	--	--	270
APR										
07...	1030	2520	49	7.0	6.0	1.0	12.4	--	--	<1
MAY										
04...	1130	5800	31	6.5	13.0	1.0	11.4	--	--	32
JUN										
16...	1100	11300	14	5.6	17.0	1.4	11.4	--	--	12
21...	A 0845	12000	19	7.0	10.0	--	11.0	--	--	--
JUL										
11...	1000	9150	16	6.2	14.0	1.6	11.0	--	--	K9
AUG										
09...	1030	3530	24	5.5	17.0	1.0	9.6	--	--	14
SEP										
07...	1015	6890	26	6.5	14.5	15	9.5	--	--	K7
21...	1100	1010	35	6.4	13.0	.90	10.4	--	--	K7

DATE	STREP- TOCOC- FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
OCT									
26...	A --	19	1	6.2	.8	4.0	30	.4	1.3
FEB									
06...	300	18	1	5.5	1.0	3.0	26	.3	.9
22...	A --	27	1	9.1	1.1	4.0	23	.3	.9
MAR									
07...	K5	27	2	8.7	1.3	3.5	21	.3	1.1
APR									
07...	<1	18	0	5.7	.8	2.8	25	.3	.9
MAY									
04...	K14	10	0	3.5	.3	1.8	27	.2	.7
JUN									
16...	15	--	--	--	.1	1.0	--	--	.3
21...	A --	5	--	2.1	.0	1.0	27	.2	.4
JUL									
11...	33	5	1	1.9	.1	1.0	28	.2	.4
AUG									
09...	10	9	3	3.6	.0	2.0	32	.3	.3
SEP									
07...	28	10	2	3.2	.4	.9	16	.1	.6
21...	15	--	--	--	.3	1.8	--	--	.7

See footnotes at end of table.

## TULARE LAKE BASIN

11218500 KINGS RIVER BELOW NORTH FORK, NEAR TRIMMER, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ALKA- LINITY (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	
OCT 26... A	18	6.2	2.9	--	--	63	--	.09	.00	
FEB 06... A	16	5.8	1.4	.1	12	45	40	.06	--	
22... A	26	7.1	1.5	--	--	64	--	.09	.36	
MAR 07... A	25	7.9	1.3	.1	16	50	55	.07	--	
APR 07... A	21	2.8	1.3	.1	14	41	41	.06	--	
MAY 04... A	13	2.2	.6	.0	10	21	27	.03	--	
JUN 16... A	5	1.6	.8	.0	3.1	8	--	.01	--	
21... A	6	.2	.0	--	--	27	--	.04	.02	
JUL 11... A	4	.9	.4	.0	4.5	7	12	.01	--	
AUG 09... A	6	2.9	.5	.0	1.4	14	14	.02	--	
SEP 07... A	8	1.7	.4	.0	4.5	16	17	.02	--	
21... A	--	2.4	.8	.1	10	18	--	.02	--	
DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	
OCT 26... A	.00	--	.00	.02	--	--	--	.00	--	
FEB 06... A	--	.09	.23	.24	.08	.16	.33	.03	.01	
22... A	--	--	--	--	--	--	--	--	--	
MAR 07... A	--	.26	.15	.15	.06	.09	.41	.08	.07	
APR 07... A	--	.10	.20	.23	.06	.17	.33	.01	.00	
MAY 04... A	--	.02	.20	.21	.13	.08	.23	.00	.00	
JUN 16... A	--	.28	.19	.20	.00	.26	.48	.02	.02	
21... A	--	--	--	--	--	--	--	--	--	
JUL 11... A	--	.04	.11	.14	.01	.13	.18	.01	.01	
AUG 09... A	--	.08	--	--	--	.22	--	.01	.00	
SEP 07... A	--	.07	.34	.35	.09	.26	.42	.12	.03	
21... A	--	.04	--	--	--	.25	--	.01	.01	
DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDE TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDE RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM SUS- PENDE RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
FEB 06... A	1400	1	0	1	0	0	0	0	0	0
MAY 04... A	1130	2	1	1	0	0	0	--	--	1
AUG 09... A	1030	1	1	0	100	100	<2	--	--	<1
DATE	TIME	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDE RECOV. (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDE RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)
FEB 06... A		0	0	0	0	0	1	11	7	4
MAY 04... A		10	0	10	0	0	2	7	5	2
AUG 09... A		10	10	0	1	0	<1	10	9	1

See footnotes at end of table.

11218500 KINGS RIVER BELOW NORTH FORK, NEAR TRIMMER, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE RECOV- ERABLE (UG/L AS HG)
FEB 06...	740	--	50	0	30	30	0	.9	.8
MAY 04...	400	--	40	0	30	20	10	.0	.0
AUG 09...	140	130	<10	--	10	8	2	.0	.0

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SELE- NIUM, SUS- PENDE TOTAL RECOV- ERABLE (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)
FEB 06...	.1	0	0	0	1	70	50	20	--
MAY 04...	.0	0	0	0	0	30	20	10	3.0
AUG 09...	.0	0	0	0	0	40	35	5	4.8

&lt; Actual value is known to be less than the value shown.

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

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PHYTOPLANKTON

DATE TIME	MAR 7,78 1500	MAY 4,78 1130	JUN 16,78 1100	JUL 11,78 1000
TOTAL CELLS/ML	250	700	86	29
DIVERSITY: DIVISION	0.0	0.9	0.9	0.0
..CLASS	0.0	0.9	0.9	0.0
..ORDER	0.0	0.9	0.9	0.0
...FAMILY	1.5	2.6	1.3	1.0
....GENUS	1.7	2.6	1.3	1.0

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
....SCENEDESMACEAE								
.....SCENEDESMUS	--	-	--	-	57#	67	--	-
...VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	78	11	--	-	--	-
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...CENTRALES								
...COSCINODISCACEAE								
....MELOSIRA	--	-	--	-	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	150#	58	--	-	14#	17	--	-
...COCCONEIS	7	3	--	-	--	-	--	-
...RHOICOSPHEA	--	-	100	15	--	-	--	-
...CYMBELLACEAE								
....CYMBELLA	14	6	52	7	--	-	15#	50
...EUNOTIACEAE								
....EUNOTIA	--	-	--	-	--	-	--	-
...FRAGILARIACEAE								
....HANNAEA	--	-	78	11	--	-	--	-
...SYNEDRA	--	-	--	-	--	-	--	-
...GOMPHONEMACEAE								
....GOMPHONEMA	28	11	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	56#	22	78	11	--	-	--	-
...NEIDIUM	--	-	--	-	14#	17	--	-
...NITZSCHIA								
...NITZSCHIA	--	-	260#	37	--	-	--	-
...TABELLARIACEAE								
....TABELLARIA	--	-	--	-	--	-	15#	50
EUGLENOPHYTA (EUGLENOIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	--	-	52	7	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

## TULARE LAKE BASIN

11218500 KINGS RIVER BELOW NORTH FORK, NEAR TRIMMER, CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PHYTOPLANKTON

DATE TIME	AUG 9,78 1030	SEP 7,78 1015	SEP 21,78 1100			
TOTAL CELLS/ML	160	260	240			
DIVERSITY: DIVISION	0.0	0.0	0.9			
..CLASS	0.0	0.0	0.9			
...ORDER	0.0	1.0	0.9			
...FAMILY	1.8	2.3	1.3			
....GENUS	1.8	2.4	1.3			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
...SCENEDESMACEAE						
....SCENEDESMUS	--	-	--	-	88#	36
...VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	--	-	--	-
CHRYSOPHYTA						
..BACILLARIOPHYCEAE						
...CENTRALES						
...COSCINODISCAEAE						
....MELOSIRA	--	-	110#	42	--	-
...PENNALES						
...ACHNANTHACEAE						
....ACHNANTHES	67#	43	69#	26	130#	55
...COCCONEIS	--	-	--	-	--	-
...RHOICOSPHEA	--	-	--	-	--	-
...CYMBELLACEAE						
....CYMBELLA	44#	29	--	-	--	-
...EUNOTIACEAE						
....EUNOTIA	--	-	14	5	--	-
...FRAGILARIACEAE						
....HANNAEA	22	14	14	5	--	-
...SYNEDRA	--	-	--	-	22	9
...GOMPHONEMATACEAE						
....GOMPHONEMA	--	-	14	5	--	-
...NAVICULACEAE						
....NAVICULA	--	-	14	5	--	-
...NEIDIUM	--	-	14	5	--	-
...NITZSCHIAEAE						
....NITZSCHIA	22	14	14	5	--	-
...TABELLARIACEAE						
....TABELLARIA	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENACEAE						
....TRACHELONAS	--	-	--	-	--	-
NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%						

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%



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TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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

## TULARE LAKE BASIN

11218500 KINGS RIVER BELOW NORTH FORK, NEAR TRIMMER, CA--Continued

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
FEB						
06...	1400	8.0	1720	14	65	86
MAR						
07...	1500	13.0	2900	17	133	39
APR						
07...	1030	6.0	2520	6	41	47
MAY						
04...	1130	13.0	5800	61	955	16
JUN						
16...	1100	17.0	11300	48	1460	24
JUL						
11...	1000	14.0	9150	26	642	28
AUG						
09...	1030	17.0	3530	5	48	38
SEP						
07...	1015	14.5	6890	190	3540	45
21...	1100	13.0	1010	2	5.5	49

## 11221000 PINE FLAT LAKE NEAR PIEDRA, CA

LOCATION.--Lat 36°49'58", long 119°19'29", in SE¼NE¼ sec.2, T.13 S., R.24 E., Fresno County, near center of Pine Flat Dam on Kings River, 1.9 mi (3.1 km) upstream from Mill Creek, 3.5 mi (5.6 km) northeast of Piedra, and 16 mi (26 km) northeast of Sanger.

DRAINAGE AREA.--1,545 mi<sup>2</sup> (4,002 km<sup>2</sup>).

PERIOD OF RECORD.--October 1951 to current year. Prior to October 1970, published as "Pine Flat Reservoir."

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Apr. 8, 1952, nonrecording mercury gage on dam at same datum.

REMARKS.--Reservoir is formed by gravity-type concrete dam; regulation of discharge from reservoir began Dec. 4, 1951. Total capacity, 1,001,055 acre-ft (1.23 km<sup>3</sup>) between elevations 565.5 ft (172.36 m), bottom of lower tier of river outlets, and 951.5 ft (290.02 m), 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 of Kings River basin.

COOPERATION.--Records furnished by Corps of Engineers, not rounded to Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,009,000 acre-ft (1.24 km<sup>3</sup>) July 15, 1967, June 8, 9, 1974, elevation, 952.76 ft (290.401 m); minimum since gross pool elevation first obtained, 66,339 acre-ft (81.8 hm<sup>3</sup>) Sept. 12, 1977, elevation, 691.29 ft (210.705 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 930,650 acre-ft (1.15 km<sup>3</sup>) July 16, elevation, 939.42 ft (286.335 m); minimum, 67,746 acre-ft (83.5 hm<sup>3</sup>) Oct. 2, elevation, 692.28 ft (211.007 m).

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

690	64528	820	383196
700	74248	840	457481
710	95542	860	538559
720	113424	890	673065
740	154021	920	823775
760	201186	950	992146
780	255055	960	1052445
800	315716		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67832	79900	93115	154767	313063	511257	546956	484885	620785	889135	871423	648164
2	67746	80150	93604	156819	316164	521217	546318	481808	634968	892301	866169	644633
3	67804	80337	93909	158595	319314	531235	544277	479498	648622	893692	860242	641291
4	68104	80759	94078	160359	322286	559506	543555	478742	663042	894137	853217	639623
5	68420	81120	94485	163579	325663	578672	541901	479299	678250	895531	845964	669275
6	68722	81402	94910	169474	331355	590129	539827	478782	694175	898375	837627	695772
7	69212	82017	95132	173045	337032	596436	538517	476915	711326	903353	829989	710110
8	69429	83268	95302	176161	343026	598130	534680	475329	730690	907728	823198	718343
9	69574	84835	95439	181714	371732	598710	529726	474695	750842	911610	816087	724553
10	69806	86077	95559	187188	395057	598085	524962	473944	768132	916687	808565	729743
11	70126	87050	95661	191712	405863	597104	520470	473311	780949	920648	801291	734416
12	70822	87246	95712	195672	415784	595457	517072	475091	794144	922348	794034	737557
13	71222	87393	95798	199423	430558	593101	514923	479577	807202	922802	786628	739939
14	71824	87540	96003	205630	439185	589731	512656	486166	817525	924845	779358	742607
15	71957	87768	96312	217479	446519	585709	512326	492358	825900	928144	772072	745509
16	72001	87965	96776	229490	452832	581570	513480	495347	831547	930650	764720	747868
17	72489	88210	100809	244327	458414	577358	511627	497089	835449	930251	757046	749768
18	72741	88374	104426	252201	463795	572769	509038	499971	838824	922884	749275	751244
19	73544	88670	105575	260294	468895	568200	505638	504535	847433	925868	741648	752499
20	74217	88801	106314	266496	474102	564169	501802	510928	853326	921554	733920	753396
21	75330	89164	107128	271679	479259	563390	497981	518977	859734	916800	726276	753213
22	75814	89576	108420	276496	484525	563044	493165	528554	865622	912117	718882	752701
23	75905	90189	113386	280695	489740	560842	488654	537841	869397	907784	711130	751998
24	76224	90454	115828	284715	494902	558429	485726	542537	871425	903801	703037	750644
25	77062	90753	117325	288521	498387	555721	493448	545042	872741	899325	695052	749275
26	77674	91070	118813	292261	501476	553277	495671	547893	874829	897817	686627	747275
27	78320	91370	133540	295903	504576	550155	494619	553148	877580	895865	678391	745102
28	78830	91821	141662	299444	507767	546530	492600	561662	878462	892969	670792	742357
29	78953	92156	146254	302975	---	543258	490182	574078	880502	887914	663279	739701
30	79155	92509	150079	306434	---	540250	488132	589864	884480	882047	656799	736848
31	79589	---	152664	309692	---	545467	---	606007	---	876809	652163	---
MAX	79589	92509	152664	309692	507767	598710	546956	606007	884480	930650	871423	753396
MIN	67746	79900	93115	154767	313063	511257	485726	473311	620785	876809	652163	639623
†	700.22	708.21	739.38	798.11	852.60	861.63	847.76	875.48	931.20	929.81	885.56	903.11
‡	+11700	+12920	+60155	+157028	+198075	+37700	-57335	+117875	+278473	-7671	-224646	+84685
††	607	237	103	117	212	588	745	1774	2954	4149	3547	2299

CAL YR 1977 ‡ -100705  
WTR YR 1978 ‡ +668959

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet.

†† Evaporation, in acre-feet.

## TULARE LAKE BASIN

11221500 KINGS RIVER BELOW PINE FLAT DAM, CA

LOCATION.--Lat 36°49'50", long 119°20'07", in SW¼NW¼ sec.2, T.13 S., R.24 E., Fresno County, on right bank 3,200 ft (975 m) downstream from Pine Flat Dam, and 2.9 mi (4.7 km) northeast of Piedra.

DRAINAGE AREA.--1,545 mi<sup>2</sup> (4,002 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1953 to current year. Monthly and yearly discharges only and adjusted flow for some periods published in WSP 1735.

REVISED RECORDS.--WSP 1930: Drainage area. WDR-CA-72-1: Adjusted discharge.

GAGE.--Water-stage recorder and concrete control since Sept. 1, 1956. Datum of gage is 556.97 ft (169.764 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 1, 1956, at site 0.2 mi (0.3 km) downstream at datum 3.48 ft (1.061 m) lower.

REMARKS.--Records excellent. Flow regulated by Pine Flat Lake (station 11221000) 0.6 mi (1.0 km) upstream and Wishon and Courtright Reservoirs (stations 11214550 and 11214800). See schematic diagram of Kings River basin.

AVERAGE DISCHARGE (adjusted for change in contents and evaporation).--25 years, 2,209 ft<sup>3</sup>/s (62.56 m<sup>3</sup>/s), 1,600,000 acre-ft/yr (1.97 km<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,100 (484 m<sup>3</sup>/s) June 3, 4, 8, 9, 1969, gage height, 10.73 ft (3.271 m); minimum daily, 1.1 ft<sup>3</sup>/s (0.031 m<sup>3</sup>/s) Feb. 26, 27, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,400 ft<sup>3</sup>/s (295 m<sup>3</sup>/s) June 19, gage height, 8.73 ft (2.661 m); minimum daily, 23 ft<sup>3</sup>/s (0.65 m<sup>3</sup>/s) Feb. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	130	76	50	88	108	270	4130	6890	7060	7890	8140	3920
2	130	76	50	93	89	138	4730	6960	7210	7730	8150	3540
3	115	76	83	98	103	29	4900	7350	7100	7820	8280	3480
4	116	75	90	103	173	39	4650	7600	7030	7690	8470	3020
5	91	66	81	95	175	34	4590	7690	7150	7570	8520	1220
6	75	65	71	45	132	32	4530	7640	7260	7320	8450	451
7	75	60	74	47	31	1220	4540	7790	7460	7230	8290	375
8	75	50	84	68	33	3020	5120	7990	7520	7490	8070	377
9	75	50	92	46	41	3230	5560	8320	7510	7610	7920	344
10	78	50	95	27	49	3420	5760	8790	7600	7510	7860	360
11	89	48	96	27	36	3590	5980	9070	7610	7600	7710	563
12	94	53	108	28	34	3580	6040	9410	7860	7810	7450	861
13	91	60	111	43	40	3650	5910	9520	8460	8030	7170	1030
14	94	50	106	55	34	4060	5940	9550	8790	8160	6740	1130
15	95	57	108	26	29	4560	5700	9760	8830	8330	6580	1110
16	95	50	107	36	28	4640	5030	9760	9070	8470	6450	1020
17	89	50	110	34	28	4830	5460	9500	9240	8400	6500	1110
18	82	50	67	28	28	4940	5810	9320	9230	8360	6490	1180
19	82	51	81	28	28	4940	5920	8820	9230	8480	6290	1240
20	82	51	105	27	28	4960	6030	8370	9270	8670	6280	1370
21	75	51	106	26	28	4520	6040	8190	9380	8660	6140	1870
22	70	51	99	26	28	4420	6060	8070	9280	8710	6000	1940
23	70	50	82	26	28	4730	6090	7660	9240	8760	6010	1950
24	70	50	42	36	23	4770	6140	7640	9300	8680	6140	2060
25	60	50	85	38	98	4930	5150	7530	9280	8570	5990	2360
26	50	50	95	37	153	4970	5740	7040	8960	8540	6140	2580
27	52	50	61	29	223	5080	6120	6660	8260	8490	6080	2600
28	63	50	30	34	196	5230	6450	6670	8280	8370	5790	2780
29	63	50	37	39	---	5380	6810	6690	8270	8310	5650	2820
30	63	50	40	54	---	5380	6880	6690	8120	8330	5190	2940
31	68	---	59	108	---	4000	---	6920	---	8270	4300	---
TOTAL	2557	1666	2505	1495	2024	108592	167810	249860	248860	251860	213240	51601
MEAN	82.5	55.5	80.8	48.2	72.3	3503	5594	8060	8295	8125	6879	1720
MAX	130	76	111	108	223	5380	6880	9760	9380	8760	8520	3920
MIN	50	48	30	26	23	29	4130	6660	7030	7230	4300	344
AC-FT	5070	3300	4970	2970	4010	215400	332900	495600	493600	499600	423000	102400
MEAN ‡	129	169	1123	2130	3146	4150	4627	11180	15110	8428	2700	2790
AC-FT ‡	7960	10040	69030	131000	174700	255200	275300	687500	899400	518200	166000	166000

CAL YR 1977 TOTAL 265946 MEAN 729 MAX 4770 MIN 30 AC-FT 527500 MEAN ‡ 579 AC-FT ‡ 419000  
WTR YR 1978 TOTAL 1302070 MEAN 3567 MAX 9760 MIN 23 AC-FT 2583000 MEAN ‡ 4641 AC-FT ‡ 3360000

‡ Adjusted for change in contents in Wishon and Courtright Reservoirs, Pine Flat Lake, and evaporation from Pine Flat Lake.

11221500 KINGS RIVER BELOW PINE FLAT DAM, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956-66, 1970 to current year.

CHEMICAL ANALYSES: Water years 1956-66.

WATER TEMPERATURES: Water years 1970 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1969 to current year.

INSTRUMENTATION.--Temperature recorder since October 1969.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 25.0°C Sept. 21, 1976; minimum recorded, 7.0°C Dec. 23, 24, 26, 1970, Jan. 4, 1971.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 19.0°C Aug. 5; minimum recorded, 7.5°C Jan. 17.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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

11221500 KINGS RIVER BELOW PINE FLAT DAM, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.0	9.5	10.5	10.0	11.0	11.0	15.0	14.0	18.5	16.5	12.5	12.0
2	10.0	9.0	11.0	10.0	11.0	11.0	15.0	13.5	18.0	16.5	12.5	12.0
3	10.0	9.5	11.0	10.5	11.0	11.0	15.0	14.0	18.5	16.5	12.5	12.5
4	10.0	9.5	11.0	10.5	11.5	11.0	16.0	15.0	18.5	17.5	13.0	12.5
5	10.0	9.5	11.0	10.5	11.5	11.0	16.5	15.0	19.0	11.5	13.5	13.0
6	10.0	9.5	11.0	10.5	11.5	11.0	16.5	15.0	12.0	11.5	14.0	13.0
7	10.0	9.5	11.0	10.5	11.5	11.0	16.5	15.0	12.0	12.0	14.5	12.5
8	10.0	9.5	11.0	10.5	11.5	11.0	17.0	15.0	12.0	12.0	14.5	12.5
9	10.0	9.5	11.0	11.0	11.5	11.0	17.5	15.0	12.0	12.0	14.5	13.0
10	10.0	9.5	11.0	11.0	11.5	11.0	17.0	15.0	12.0	11.5	15.0	13.0
11	10.0	9.5	11.0	11.0	11.5	11.0	16.5	15.0	12.0	11.5	14.0	13.0
12	10.0	9.5	11.0	11.0	11.5	11.0	17.0	14.5	12.0	11.5	13.5	13.0
13	10.0	9.5	11.0	11.0	11.5	11.0	17.0	15.0	12.0	11.5	13.5	13.0
14	10.0	9.0	11.0	11.0	11.5	11.5	17.0	15.0	12.0	11.5	13.0	12.5
15	10.0	8.5	11.0	10.5	11.5	11.0	17.0	15.0	12.0	11.5	13.5	12.5
16	10.0	9.5	11.5	10.5	11.5	11.0	16.5	15.0	12.0	11.5	13.5	13.0
17	10.5	9.5	11.5	11.0	11.5	11.0	17.5	15.5	12.0	11.0	13.5	12.0
18	10.5	10.0	11.5	11.0	11.5	11.0	18.0	16.0	12.0	11.5	13.0	12.0
19	10.0	10.0	11.5	11.0	16.0	11.0	18.0	16.0	12.0	11.5	12.5	12.0
20	10.5	10.0	11.0	11.0	16.5	14.5	18.0	15.5	12.0	12.0	13.0	12.0
21	10.5	10.0	11.5	11.0	16.0	15.0	18.0	16.0	12.0	12.0	13.0	12.5
22	10.5	10.0	11.5	11.0	16.5	14.5	18.0	16.0	12.0	12.0	13.0	12.5
23	10.5	10.0	11.5	11.0	15.5	14.0	18.0	16.0	12.0	12.0	13.0	13.0
24	11.0	10.5	11.5	11.0	15.5	13.5	18.0	16.0	12.0	12.0	13.0	13.0
25	11.0	10.0	11.5	11.0	15.0	14.0	18.0	16.5	12.0	12.0	13.5	13.0
26	11.0	10.5	11.5	11.0	16.0	14.0	17.0	15.5	12.0	12.0	13.5	13.0
27	10.5	10.0	11.0	10.5	14.0	13.5	17.5	16.0	12.0	12.0	13.5	13.0
28	10.5	10.0	11.0	11.0	15.0	14.0	18.0	16.0	12.5	12.0	13.0	13.0
29	10.5	10.0	11.0	11.0	15.5	14.0	18.0	16.0	12.5	12.0	13.0	13.0
30	10.5	10.0	11.0	11.0	15.0	14.0	18.0	16.0	12.5	12.0	13.0	13.0
31	---	---	11.0	11.0	---	---	18.0	16.5	12.5	12.0	---	---
MONTH	11.0	8.5	11.5	10.0	16.5	11.0	18.0	13.5	19.0	11.0	15.0	12.0

## 11221700 MILL CREEK NEAR PIEDRA, CA

LOCATION.--Lat 36°49'07", long 119°20'27", in NE¼NE¼ sec.10, T.13 S., R.24 E., Fresno County, on left bank 150 ft (46 m) upstream from road bridge, 0.7 mi (1.1 km) upstream from mouth, and 2.3 mi (3.7 km) east of Piedra.

DRAINAGE AREA.--127 mi<sup>2</sup> (329 km<sup>2</sup>).

PERIOD OF RECORD.--October 1957 to current year. November 1938 to September 1957 in reports of Kings River Water Association.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 550 ft (168 m), from topographic map. Prior to July 14, 1958, at site 150 ft (46 m) upstream at same datum.

REMARKS.--Records good. Some small diversions above station for irrigation. See schematic diagram of Kings River basin.

AVERAGE DISCHARGE.--21 years (water year 1958-78), 40.4 ft<sup>3</sup>/s (1.144 m<sup>3</sup>/s), 29,270 acre-ft/yr (36.1 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft<sup>3</sup>/s (311 m<sup>3</sup>/s) Dec. 6, 1966, gage height, 9.53 ft (2.905 m) in gage well, 10.2 ft (3.11 m) from floodmarks; maximum gage height, 9.65 ft (2.941 m) in gage well, Jan. 19, 1969 (backwater from debris); no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft<sup>3</sup>/s (7.08 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 27	1500	258 7.31	3.42 1.042	Mar. 4	1300	4090 116	6.23 1.899
Jan. 9	1900	591 16.7	3.89 1.186	Mar. 22	0030	638 18.1	3.95 1.204
Jan. 15	0300	1560 44.2	4.82 1.469	Mar. 31	0800	747 21.2	4.08 1.244
Jan. 16	1700	2660 75.3	5.49 1.673	Apr. 7	0100	729 20.6	4.06 1.237
Jan. 19	1100	898 25.4	4.24 1.292	Apr. 13	0700	558 15.8	3.85 1.173
Feb. 9	1330	*5350 152	6.76 2.060	Apr. 16	0030	1060 30.0	4.40 1.341
Feb. 13	0800	3090 87.5	5.73 1.747	Apr. 25	1330	1400 39.6	4.70 1.433
Mar. 2	2100	566 16.0	3.86 1.177				

Minimum, no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	26	36	108	248	243	50	15	1.4	0
2			0	19	33	400	228	213	48	14	1.3	0
3			0	17	30	356	191	191	47	14	1.3	0
4			0	17	28	2080	325	170	45	14	1.0	.04
5			0	23	27	1050	264	163	43	13	.91	2.0
6			0	112	62	583	324	154	40	12	1.1	17
7			0	56	118	466	600	139	37	11	.98	22
8			0	36	150	421	384	129	35	10	.76	12
9			0	190	3070	370	317	124	33	9.1	.46	8.9
10			0	255	3090	299	275	117	92	8.1	.26	7.4
11			0	137	827	317	238	110	32	7.6	.23	6.8
12			0	74	477	287	208	106	30	7.0	.13	6.5
13			0	52	2080	258	245	102	29	6.5	.13	6.1
14			0	237	679	208	187	98	27	5.9	.12	5.8
15			0	797	421	182	287	94	26	5.3	.11	6.2
16			0	973	311	163	595	91	25	4.7	.10	6.9
17			.23	1180	238	148	330	89	24	4.3	.08	5.8
18			48	429	208	142	248	84	23	4.0	.05	4.9
19			9.9	564	195	132	195	80	22	3.5	0	4.6
20			3.9	276	187	123	208	76	21	3.0	0	4.5
21			2.5	174	174	270	208	74	20	2.6	0	4.3
22			2.8	132	163	390	187	72	19	2.3	0	4.0
23			42	106	148	204	167	72	18	1.8	0	3.8
24			70	86	135	170	170	70	18	1.2	0	3.5
25			19	76	126	152	742	70	17	1.2	0	3.1
26			12	67	117	142	615	67	17	1.3	0	2.9
27			115	62	108	135	429	63	17	1.8	0	2.7
28			123	54	106	129	336	61	16	1.7	0	2.6
29			58	50	---	120	287	58	16	1.7	0	2.7
30			65	44	---	114	253	55	15	1.6	0	2.7
31		---	36	41	---	460	---	52	---	1.5	0	---
TOTAL	0	0	607.33	6362	13344	10379	9291	3287	842	190.7	10.42	159.74
MEAN	0	0	19.6	205	477	335	310	106	28.1	6.15	.34	5.32
MAX	0	0	123	1180	3090	2080	742	243	50	15	1.4	22
MIN	0	0	0	17	27	108	167	52	15	1.2	0	0
AC-FT	0	0	1200	12620	26470	20590	18430	6520	1670	378	21	317
CAL YR 1977	TOTAL	1092.33	MEAN	2.99	MAX	123	MIN	0	AC-FT	2170		
WTR YR 1978	TOTAL	44473.19	MEAN	122	MAX	3090	MIN	0	AC-FT	88210		

## TULARE LAKE BASIN

11224500 LOS GATOS CREEK ABOVE NUNEZ CANYON, NEAR COALINGA, CA

LOCATION.--Lat 36°12'53", long 120°28'11", in NW&SE& sec.5, T.20 S., R.14 E., Fresno County, on right bank 50 ft (15 m) downstream from highway bridge, 1.1 mi (1.8 km) upstream from Nunez Canyon, 3.0 mi (4.8 km) downstream from White Creek, and 8.1 mi (13.0 km) northwest of Coalinga.

DRAINAGE AREA.--95.8 mi<sup>2</sup> (248.1 km<sup>2</sup>).

PERIOD OF RECORD.--May 1945 to current year. Prior to October 1949 monthly discharge only, published in WSP 1315-A.

REVISED RECORDS.--WSP 1215: 1950. WSP 1735: 1952(M), 1956(M). WSP 1930: Drainage area. WDR CA-72-2: 1971(P).

GAGE.--Water-stage recorder. Datum of gage is 1,067.2 ft (325.28 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 2, 1959, at site 100 ft (30 m) downstream at same datum.

REMARKS.--Records fair except those for January to March, which are poor. Minor diversion for irrigation and stock ponds.

AVERAGE DISCHARGE.--33 years, 4.98 ft<sup>3</sup>/s (0.141 m<sup>3</sup>/s), 3,610 acre-ft/yr (4.45 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (SINCE 1950).--Maximum discharge, 4,360 ft<sup>3</sup>/s (123 m<sup>3</sup>/s) Feb. 24, 1969, gage height, 10.34 ft (3.152 m) in gage well, 11.30 ft (3.444 m) from floodmarks, from rating curve extended above 800 ft<sup>3</sup>/s (22 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 10.34 ft (3.152 m), maximum gage height, 10.65 ft (3.246 m) in gage well, 11.95 ft (3.642 m) from floodmarks, Jan. 16, 1978; no flow for several months in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 40 ft<sup>3</sup>/s (1.13 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 23	1100	149 4.22	5.77 1.759	Feb. 8	2200	3670 104	9.07 2.765
Dec. 27	1800	810 22.9	7.52 2.292	Feb. 9	2400	1750 49.6	6.20 1.890
Jan. 3	2300	194 5.49	5.97 1.820	Feb. 12	1800	1600 45.3	6.00 1.829
Jan. 6	0100	540 15.3	6.99 2.131	Mar. 4	0530	1140 32.3	5.29 1.612
Jan. 14	2400	833 23.6	7.56 2.304	Mar. 19	1830	92 2.61	2.96 .902
Jan. 16	1400	*3820 108	10.65 3.246	Mar. 31	0515	75 2.12	2.87 .875
Feb. 5	2200	54 1.53	5.62 1.713	Apr. 4	0915	121 3.43	3.09 .942
Feb. 6	1430	129 3.65	6.00 1.829	Apr. 15	1915	245 6.94	3.52 1.073
Feb. 7	1330	2900 82.1	8.89 2.710	Apr. 25	1145	113 3.20	3.06 .933

Minimum, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	.08	10	125	37	31	3.6	1.8	.08	.06
2			0	1.7	9.7	198	34	30	3.6	1.6	.08	.06
3			0	17	9.7	267	33	28	3.0	1.6	.08	.06
4			0	43	9.7	718	44	27	3.2	1.4	.07	.13
5			0	53	18	389	32	25	2.8	1.1	.06	.88
6			0	86	47	252	31	23	2.4	1.0	.06	.98
7			0	6.9	557	167	28	24	2.1	.76	.05	.59
8			0	2.1	937	120	24	20	2.3	.64	.05	.43
9			0	2.5	1430	101	21	11	2.1	.58	.05	.35
10			0	3.2	800	92	19	9.5	2.7	.47	.05	.36
11			0	1.5	524	80	18	8.5	3.2	.44	.05	.33
12			0	.47	703	72	18	8.6	3.5	.45	.05	.26
13			0	.15	453	62	17	8.4	3.6	.42	.05	.21
14			0	23	359	54	17	7.9	2.8	.35	.05	.20
15			0	90	263	48	59	7.7	2.3	.30	.05	.20
16			0	796	222	43	58	7.9	2.3	.30	.05	.17
17			0	129	192	39	45	7.5	2.2	.30	.04	.16
18			3.0	42	173	39	43	7.0	2.0	.26	.04	.15
19			.11	62	162	39	44	6.3	2.0	.23	.04	.14
20			0	29	152	36	43	5.7	1.9	.20	.04	.13
21			0	24	143	37	41	5.4	1.6	.18	.04	.13
22			1.1	20	136	42	39	5.4	1.6	.17	.04	.13
23			48	18	130	35	36	5.5	1.6	.15	.04	.12
24			.14	16	125	33	33	6.1	1.6	.15	.04	.12
25			0	15	122	32	60	6.2	1.6	.13	.05	.10
26			0	13	120	31	44	5.8	1.7	.10	.05	.09
27			122	12	118	30	37	5.2	2.5	.10	.05	.11
28			41	12	117	29	33	4.6	3.2	.11	.05	.11
29			2.1	11	---	28	31	4.2	2.6	.10	.05	.09
30			.39	11	---	30	31	3.9	2.1	.09	.05	.11
31		---	.15	10	---	51	---	3.8	---	.09	.05	---
TOTAL	0	0	217.99	1550.60	8042.1	3319	1050	360.1	73.7	15.57	1.60	6.96
MEAN	0	0	7.03	50.0	287	107	35.0	11.6	2.46	.50	.052	.23
MAX	0	0	122	796	1430	718	60	31	3.6	1.8	.08	.98
MIN	0	0	0	.08	9.7	28	17	3.8	1.6	.09	.04	.06
AC-FT	0	0	432	3080	15950	6580	2080	714	146	31	3.2	14
CAL YR 1977	TOTAL	224.77	MEAN	.62	MAX	122	MIN	0	AC-FT	446		
WTR YR 1978	TOTAL	14637.62	MEAN	40.1	MAX	1430	MIN	0	AC-FT	29030		



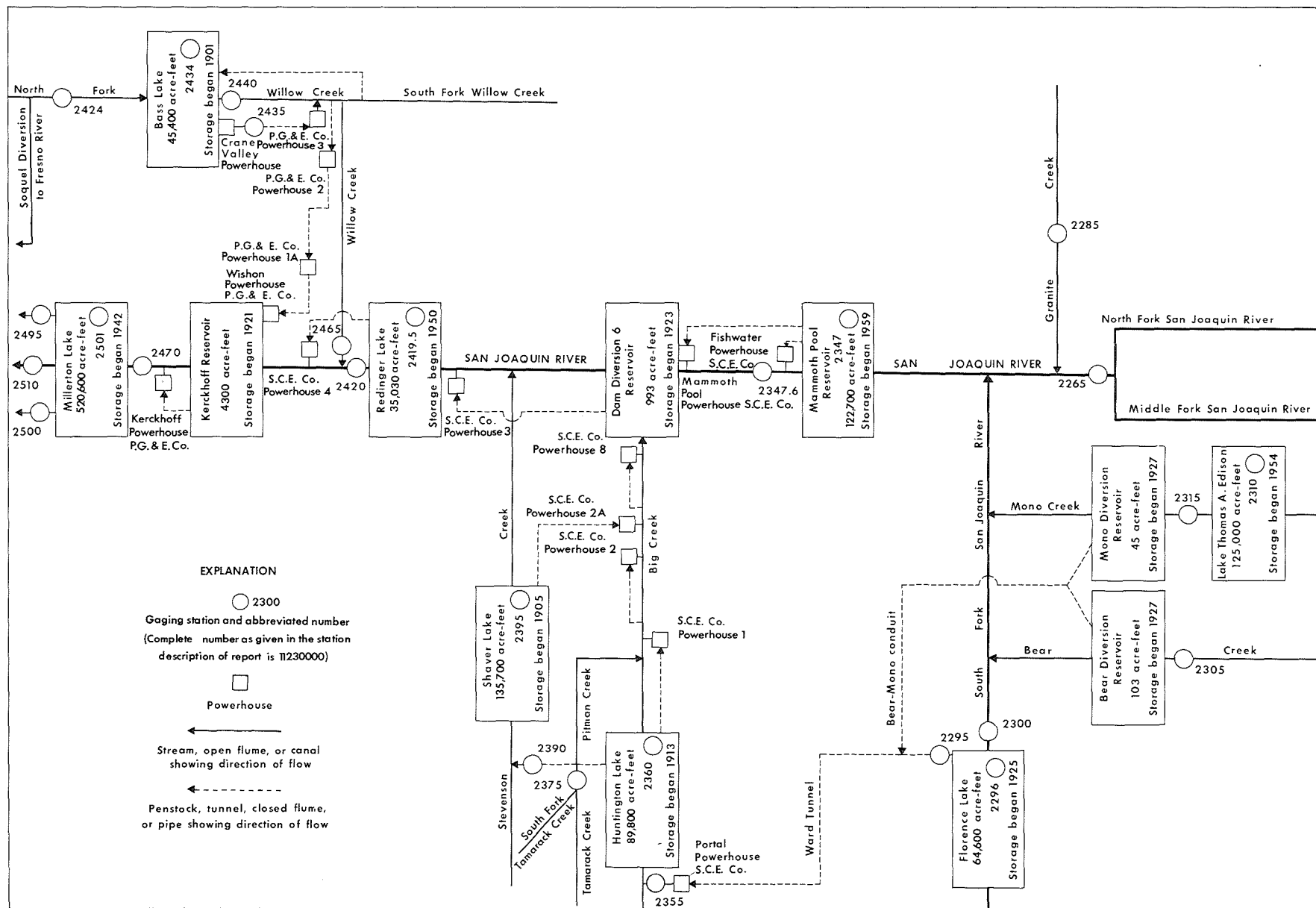


FIGURE 8.-- Schematic diagram showing diversions and storage in San Joaquin River basin.

## 11226500 SAN JOAQUIN RIVER AT MILLER CROSSING, CA

LOCATION.--Lat 37°30'38", long 119°11'47", in SE¼NE¼ sec.11, T.5 S., R.25 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank at Miller Crossing, 2.4 mi (3.9 km) downstream from North Fork San Joaquin River, 4.6 mi (7.4 km) east of Clover Meadow Ranger Station, and 23 mi (37 km) northeast of town of Bass Lake.

DRAINAGE AREA.--249 mi<sup>2</sup> (645 km<sup>2</sup>).

PERIOD OF RECORD.--October 1921 to September 1928, October 1951 to current year. 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.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,570 ft (1,393 m), from topographic map. Prior to Mar. 24, 1922, nonrecording gage at same site and datum.

REMARKS.--Records good. No regulation or diversion above station. 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 Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--34 years, 589 ft<sup>3</sup>/s (16.68 m<sup>3</sup>/s), 426,700 acre-ft/yr (526 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,600 ft<sup>3</sup>/s (470 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 21.28 ft (6.486 m), from rating curve extended above 5,200 ft<sup>3</sup>/s (147 m<sup>3</sup>/s) on basis of contracted-opening measurement of maximum flow; minimum, 19 ft<sup>3</sup>/s (0.54 m<sup>3</sup>/s) Nov. 17, 1961.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft<sup>3</sup>/s (57 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 14	2200	4390 124	16.19 4.935	July 9	2145	3740 106	15.73 4.795
June 8	2115	6460 183	17.46 5.322	Sept. 5	1545	*7170 203	17.84 5.438
June 18	2115	4410 125	16.21 4.941				

Minimum daily discharge, 23 ft<sup>3</sup>/s (0.65 m<sup>3</sup>/s) Nov. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	27	71	210	181	311	796	870	4160	3020	1590	315
2	25	26	66	195	177	487	642	1030	4030	2760	1500	292
3	24	26	67	186	176	412	516	1400	4020	2390	1410	317
4	24	25	72	192	188	491	495	1870	4130	2310	1350	767
5	24	37	77	251	401	485	439	1850	4470	2520	1250	4600
6	37	35	73	263	425	411	434	1470	4710	2890	1190	4410
7	43	34	66	253	309	374	414	1380	5070	3020	1170	2310
8	34	41	64	253	279	384	377	1610	5230	2870	1190	1260
9	33	38	61	335	277	437	397	1950	5310	3000	1170	835
10	31	36	60	263	293	376	496	2030	4360	3140	1210	1040
11	30	36	52	236	274	351	746	2180	3600	2850	1100	808
12	29	33	60	225	255	301	992	2550	4240	2460	1030	597
13	28	32	58	232	277	278	1060	3130	4800	2450	848	497
14	28	32	61	340	256	292	862	3500	4640	2770	710	513
15	27	33	251	312	251	318	837	3390	4070	2890	615	526
16	27	32	112	326	228	379	670	2350	3430	2680	602	438
17	26	32	528	319	215	474	567	2000	3270	2360	570	391
18	26	32	211	346	222	497	552	2160	3680	2140	492	344
19	26	31	140	316	251	537	599	2510	3590	1970	469	310
20	26	23	140	275	266	600	630	2890	3550	1870	458	282
21	26	44	140	248	277	687	536	3280	3590	1880	446	262
22	26	71	190	230	294	662	510	3400	3500	1960	426	244
23	26	60	373	204	301	570	584	2960	3290	2040	394	234
24	26	70	209	186	301	500	809	2050	3240	1970	347	229
25	25	79	205	186	282	553	1270	1770	3080	1970	323	227
26	25	83	267	188	263	671	856	1860	2880	2420	322	224
27	26	88	907	188	267	690	856	2360	2530	2110	325	222
28	27	80	516	183	260	809	1020	3130	2230	1860	330	218
29	28	81	394	183	---	930	939	3920	2410	1620	334	212
30	27	78	391	185	---	1230	1010	4370	2910	1530	341	210
31	27	---	255	184	---	1260	---	4310	---	1620	330	---
TOTAL	863	1375	6137	7493	7446	16757	20911	75530	114020	73340	23842	23134
MEAN	27.8	45.8	198	242	266	541	697	2436	3801	2366	769	771
MAX	43	88	907	346	425	1260	1270	4370	5310	3140	1590	4600
MIN	24	23	52	183	176	278	377	870	2230	1530	322	210
AC-FT	1710	2730	12170	14860	14770	33240	41480	149800	226200	145500	47290	45890
CAL YR 1977	TOTAL	59565	MEAN	163	MAX	1850	MIN	23	AC-FT	118100		
WTR YR 1978	TOTAL	370848	MEAN	1016	MAX	5310	MIN	23	AC-FT	735600		

## SAN JOAQUIN RIVER BASIN

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11228500 GRANITE CREEK NEAR CATTLE MOUNTAIN, CA

LOCATION.--Lat 37°31'36", long 119°15'28", in NE¼ sec.5, T.5 S., R.25 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 0.7 mi (1.1 km) downstream from confluence of East and West Forks of Granite Creek, 1.6 mi (2.6 km) northwest of Cattle Mountain, and 21 mi (34 km) northeast of town of Bass Lake.

DRAINAGE AREA.--47.8 mi<sup>2</sup> (123.8 km<sup>2</sup>).

PERIOD OF RECORD.--October 1921 to September 1928, May 1952 to current year (no winter records). Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1445: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 6,800 ft (2,073 m), from topographic map. Prior to May 14, 1922, nonrecording gage at same site at different datum.

REMARKS.--Records fair below 10 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s) and good above. Some regulation by manipulation of stoplogs in controls for fishwater purposes; no diversion above station. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and six discharge measurements furnished by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--7 years (water years 1922-28), 110 ft<sup>3</sup>/s (3.115 m<sup>3</sup>/s) 79,640 acre-ft/yr (98.2 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge recorded, 3,140 ft<sup>3</sup>/s (88.9 m<sup>3</sup>/s) Dec. 23, 1964, gage height, 9.49 ft (2.893 m), from rating curve extended above 1,100 ft<sup>3</sup>/s (31.2 m<sup>3</sup>/s); no flow at times in 1924, 1926.

EXTREMES FOR CURRENT YEAR.--Maximum discharge recorded, 1,910 ft<sup>3</sup>/s (54.1 m<sup>3</sup>/s) Sept. 5, gage height, 8.68 ft (2.646 m); minimum daily, 0.20 ft<sup>3</sup>/s (0.006 m<sup>3</sup>/s) Oct. 1-5, 16-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.36	15						---	712	199	11
2	.20	.36	12						---	589	169	10
3	.20	.36	14						---	527	148	9.4
4	.20	.36	18						---	538	135	143
5	.20	.77	21						---	652	108	1460
6	.23	1.2	18						---	786	116	955
7	.44	1.4	14						---	735	114	439
8	.91	1.4	15						---	654	108	186
9	.54	1.4	16						---	779	209	95
10	.36	1.4	14						---	719	288	337
11	.23	1.2	13						---	600	111	140
12	.23	1.1	12						---	545	83	93
13	.23	.91	10						---	597	61	65
14	.21	.77	10						---	671	55	117
15	.21	.91	---						---	644	45	132
16	.20	.91	---						---	552	40	81
17	.20	.91	---						---	508	38	60
18	.20	.91	---						---	429	33	47
19	.20	.65	---						---	400	30	41
20	.20	.44	---						---	380	28	35
21	.20	.65	---						---	403	25	30
22	.20	.91	---						---	820	417	22
23	.20	1.4	---						---	835	409	21
24	.20	2.5	---						---	831	399	12
25	.20	3.6	---						---	784	499	16
26	.20	5.2	---						---	678	525	15
27	.20	9.1	---						---	611	367	15
28	.20	13	---						---	532	274	14
29	.29	13	---						---	676	223	14
30	.36	15	---						---	778	201	13
31	.36	---	---						---	216	12	---
TOTAL	8.20	82.08	---						---	15950	2297	4660.4
MEAN	.26	2.74	---						---	515	74.1	155
MAX	.91	15	---						---	786	288	1460
MIN	.20	.36	---						---	201	12	9.4
AC-FT	16	163	---						---	31640	4560	9240

## SAN JOAQUIN RIVER BASIN

## 11229500 WARD TUNNEL INTAKE AT FLORENCE LAKE, CA

LOCATION.--Lat 37°16'27", long 118°58'23", in NW¼ sec.1, T.8 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in gatehouse at entrance to tunnel.

PERIOD OF RECORD.--April 1925 to current year. 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 1937-60.

REVISED RECORDS.--WSP 1515: 1931.

GAGE.--Water-stage recorder, concrete control, and Venturi meter. Datum of gage is 7,213.89 ft (2,198.794 m) National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Records good. Ward tunnel diverts from Florence Lake, a reservoir on South Fork San Joaquin River, to Huntington Lake via Portal powerhouse and further used 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 Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--53 years, 276 ft<sup>3</sup>/s (7.816 m<sup>3</sup>/s), 200,000 acre-ft/yr (247 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,990 ft<sup>3</sup>/s (56.4 m<sup>3</sup>/s) Apr. 30, 1926; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	11	22	97	89	105	299	337	2.9	997	833	455
2	13	11	22	95	87	110	230	359	4.2	1000	830	454
3	12	11	21	91	86	111	201	450	4.6	1000	737	470
4	11	11	20	89	86	123	190	572	4.6	1000	634	299
5	11	12	19	81	84	135	170	602	4.9	1010	603	297
6	12	12	18	86	85	164	175	610	5.0	1010	679	908
7	16	13	17	87	88	167	167	595	5.3	1020	702	1170
8	19	15	17	90	90	167	155	585	5.5	1020	585	1050
9	20	24	16	93	100	156	146	611	5.7	1020	578	678
10	21	26	16	97	114	142	176	644	5.7	1020	652	589
11	21	23	15	103	155	134	272	678	5.8	819	688	554
12	21	19	16	100	186	123	357	723	5.8	1030	733	552
13	21	16	16	97	175	116	395	789	5.8	1200	827	406
14	20	15	17	99	159	116	370	858	239	958	794	256
15	19	14	24	103	151	121	344	947	386	790	629	261
16	18	14	23	116	134	134	278	1120	459	875	596	375
17	18	12	42	130	124	171	240	1250	567	824	555	374
18	17	14	55	161	125	198	232	1290	541	868	525	374
19	16	14	44	185	152	210	243	1230	508	919	464	374
20	15	11	47	171	162	228	258	1200	662	918	372	373
21	15	11	60	148	142	219	254	1110	761	726	341	261
22	14	14	63	132	136	211	241	1120	941	575	321	195
23	14	14	64	114	132	206	270	1140	1220	620	321	195
24	14	18	66	101	131	195	343	1300	1290	630	322	331
25	14	23	72	99	125	218	501	1360	1290	613	322	472
26	14	24	76	97	113	264	449	1390	1110	614	426	514
27	13	25	99	97	109	247	345	1310	996	614	514	495
28	13	25	124	96	106	251	389	1160	1030	614	429	457
29	12	24	131	95	---	301	386	482	1080	530	379	456
30	12	24	121	93	---	356	399	1.1	993	485	406	452
31	11	---	105	92	---	395	---	2.0	---	653	444	---
TOTAL	481	500	1468	3335	3426	5794	8475	25825.1	14138.8	25972	17241	14097
MEAN	15.5	16.7	47.4	108	122	187	283	833	471	838	556	470
MAX	21	26	131	185	186	395	501	1390	1290	1200	833	1170
MIN	11	11	15	81	84	105	146	1.1	2.9	485	321	195
AC-FT	954	992	2910	6610	6800	11490	16810	51220	28040	51520	34200	27960
CAL YR 1977	TOTAL	34254.88	MEAN	93.8	MAX	533	MIN	.48	AC-FT	67940		
WTR YR 1978	TOTAL	120752.90	MEAN	331	MAX	1390	MIN	1.1	AC-FT	239500		

## 11229600 FLORENCE LAKE NEAR BIG CREEK, CA

LOCATION.--Lat 37°16'26", long 118°58'23", in NW¼ sec.1, T.8 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in gatehouse of Ward tunnel intake near dam on South Fork San Joaquin River, 16 mi (26 km) northeast of town of Big Creek.

DRAINAGE AREA.--171 mi<sup>2</sup> (443 km<sup>2</sup>).

PERIOD OF RECORD.--November 1925 to current year. Prior to October 1931, published in WSP 721.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Lake is formed by multiple-arch concrete dam; storage began in April 1925. Usable capacity, 64,400 acre-ft (79.4 hm<sup>3</sup>) between elevations 7,220.94 ft (2,200.943 m), throat of Venturi tube in Ward Tunnel intake and 7,327.50 ft (2,233.422 m), top of spillway drum gates, NGVD. Additional storage of 168 acre-ft (207,000 m<sup>3</sup>) is not available for diversion. Water is diverted through Ward tunnel to Huntington Lake via Portal powerhouse and used for further power development in Big Creek powerplants. See schematic diagram of San Joaquin River basin. Figures given herein represent usable contents.

COOPERATION.--Records furnished by Southern California Edison Co. in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 66,000 acre-ft (81.4 hm<sup>3</sup>) July 3, 1932, elevation, 7,329.14 ft (2,233.922 m); minimum occurred during period of no record, Oct. 2-4, 1926, or Nov. 30 to Dec. 2, 1927.

NOTE.--Prior to 1960, maximum and minimum daily contents were published. Maximum and minimum daily contents (water years 1926-39) summarized in WSP 881.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 65,700 acre-ft (81.0 hm<sup>3</sup>) Sept. 5, elevation, 7,328.80 ft (2,233.818 m); minimum, 271 acre-ft (334,000 m<sup>3</sup>) Apr. 9, elevation, 7,224.87 ft (2,202.140 m).

REVISIONS.--Revised contents, in acre-feet, at 2400 hours, for August and September 1977 are given below. These figures supersede those published in the report for 1977.

Aug. 1, 1977.....385	Aug. 17, 1977...375	Sept. 1, 1977...375	Sept. 16, 1977...375
2.....377	18.....375	2.....375	17.....375
3.....375	19.....375	3.....375	18.....375
4.....375	20.....375	4.....375	19.....375
5.....375	21.....375	5.....375	20.....375
6.....375	22.....375	6.....375	21.....375
7.....375	23.....375	7.....375	22.....375
8.....375	24.....375	8.....375	23.....375
9.....375	25.....375	9.....375	24.....375
10.....375	26.....375	10.....375	25.....375
11.....375	27.....375	11.....375	26.....375
12.....375	28.....375	12.....375	27.....375
13.....375	29.....375	13.....375	28.....375
14.....375	30.....375	14.....375	29.....375
15.....375	31.....375	15.....375	30.....375
16.....375			

	Maximum	Minimum	Elevation (in feet, at end of month)	Change in contents (in acre-feet)
August 1977	385	375	7225.95	-37
September	375	375	7225.95	0
WTR yr 1977	--	--	--	+3

Capacity table (elevation, in feet, and contents, in acre-feet)

7220.94	0	7235	1770	7260	11600	7290	32000
7222	63	7240	2980	7265	14600	7300	39900
7224	201	7245	4670	7270	17800	7310	48300
7227	495	7250	6650	7275	21100	7320	57300
7230	887	7255	8950	7280	24600	7330	66800

## SAN JOAQUIN RIVER BASIN

11229600 FLORENCE LAKE NEAR BIG CREEK, CA--Continued

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	375	375	375	329	316	281	525	716	22033	58094	65081	60885
2	375	375	375	329	315	281	421	873	26248	58739	65139	60413
3	375	375	375	329	311	281	340	1039	30548	59339	65033	59951
4	375	375	375	329	311	283	325	1548	34170	60129	64994	60441
5	375	375	375	328	310	304	299	1887	39982	60952	64898	64676
6	375	375	375	328	309	335	307	1772	45156	62433	64849	64686
7	375	375	375	328	308	346	294	1727	51244	63599	65168	64676
8	375	375	375	314	307	350	278	1770	56266	63944	65139	64320
9	375	375	375	305	306	331	273	2050	57275	64050	65014	64272
10	375	375	375	299	306	312	351	2346	56960	64002	65110	64301
11	375	375	375	296	328	311	529	2736	56729	63666	65178	64503
12	375	375	375	292	363	300	706	3476	57006	63207	64821	64204
13	375	375	375	291	348	294	719	4740	57043	64089	64657	64098
14	375	375	375	296	349	291	611	6040	56590	64618	64493	64050
15	375	375	375	294	342	294	528	6739	56248	64146	64320	64175
16	375	375	375	302	337	308	521	6769	54987	64638	64272	64002
17	375	375	329	331	331	352	416	6220	55814	64686	64166	63753
18	375	375	329	338	327	378	398	5828	56183	64599	64041	63456
19	375	375	329	342	336	410	432	5776	56156	64772	63944	63139
20	375	375	329	343	343	427	444	6061	56054	64772	63992	62786
21	375	375	329	343	333	425	440	6787	56008	64811	64041	62614
22	375	375	329	339	328	417	440	7685	55676	64676	64031	62548
23	375	375	329	332	319	411	511	8254	55042	64744	63964	62452
24	375	375	329	328	315	397	937	7717	54831	64821	63820	62100
25	375	375	329	325	308	467	1209	6748	54675	64744	63657	61454
26	375	375	329	323	296	495	675	5677	55078	64667	63293	60753
27	375	375	329	320	285	484	653	5177	55225	64734	62757	60054
28	375	375	329	318	301	512	719	5788	55280	64657	62376	59405
29	375	375	329	315	---	585	748	8706	56248	64657	62081	58730
30	375	375	329	315	---	699	631	13219	57377	64830	61758	58066
31	375	---	329	313	---	701	---	17677	---	64975	61350	---
MAX	375	375	375	343	363	701	1209	17677	57377	64975	65178	64686
MIN	375	375	329	291	285	281	273	716	22033	58094	61350	58066
(+)	7225.95	7225.95	7225.48	7225.32	7225.20	7228.64	7228.10	7269.88	7320.07	7328.09	7324.30	7320.81
(+)	0	0	-46	-16	-12	+400	-70	+17000	+39700	+7600	-3630	-3280

CAL YR 1977 ‡ +86  
WTR YR 1978 ‡ +57700

‡ Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet, rounded to Geological Survey standards.

## 11230000 SOUTH FORK SAN JOAQUIN RIVER NEAR FLORENCE LAKE, CA

LOCATION.--Lat 37°16'24", long 118°57'54", in SE¼ sec.36, T.7 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 0.1 mi (0.2 km) downstream from spillway of Florence Lake Dam, 6 mi (10 km) upstream from Bear Creek, and 14.7 mi (23.7 km) east of Big Creek.

DRAINAGE AREA.--171 mi<sup>2</sup> (443 km<sup>2</sup>).

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1925, published as "near Lake Florence."

GAGE.--Water-stage recorder, Parshall flume, and concrete control. Altitude of gage is 7,200 ft (2,195 m), from topographic map.

REMARKS.--Records good. Flow regulated by Florence Lake (station 11229600) 0.1 mi (0.2 km) upstream beginning in 1925 and by diversion into Ward tunnel (station 11229500). 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 Energy Regulatory Commission Project.

AVERAGE DISCHARGE (combined flow of South Fork San Joaquin River and Ward tunnel at intake).--57 years, 316 ft<sup>3</sup>/s (8.949 m<sup>3</sup>/s), 228,900 acre-ft/yr (282 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,800 ft<sup>3</sup>/s (193 m<sup>3</sup>/s) Sept. 5, 1978, gage height, 17.55 ft (5.349 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,800 ft<sup>3</sup>/s (193 m<sup>3</sup>/s) Sept. 5, gage height, 17.55 ft (5.349 m); minimum daily, 3.2 ft<sup>3</sup>/s (0.091 m<sup>3</sup>/s) Jan. 7,8, Feb. 1-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	3.6	3.8	3.9	3.2	3.3	3.5	3.9	4.9	894	665	9.9
2	3.7	3.7	3.8	3.9	3.2	3.4	3.4	3.9	5.0	626	711	9.9
3	3.7	3.7	3.7	3.9	3.2	3.4	3.4	4.0	5.2	336	794	9.9
4	3.7	3.7	3.7	3.9	3.2	3.5	3.4	4.0	5.5	263	744	10
5	3.7	3.9	3.7	3.7	3.5	3.4	3.4	3.9	5.6	328	761	2180
6	3.7	3.8	3.7	3.5	3.4	3.4	3.4	3.7	5.9	361	397	2030
7	3.7	3.8	3.7	3.2	3.3	3.4	3.4	3.7	6.1	655	226	356
8	3.8	3.8	3.7	3.2	3.3	3.5	3.4	3.7	676	1100	885	48
9	3.8	3.8	3.7	3.6	3.3	3.5	3.6	3.7	2710	1260	681	17
10	3.8	3.7	3.7	3.4	3.3	3.5	3.8	3.8	2850	1430	437	16
11	3.8	3.7	3.7	3.4	3.3	3.4	3.8	3.8	2590	1740	837	14
12	3.8	3.7	3.7	3.3	3.3	3.4	3.9	3.9	2610	1280	610	8.6
13	3.7	3.7	3.7	3.3	3.3	3.5	3.9	3.9	2810	480	103	6.1
14	3.7	3.7	3.8	3.7	3.3	3.4	3.8	4.0	2640	1200	36	6.4
15	3.7	3.7	4.0	3.4	3.3	3.4	3.6	4.1	2230	2210	12	6.7
16	3.7	3.7	3.7	3.4	3.3	3.5	3.5	4.2	1880	1360	9.0	6.5
17	3.7	3.7	4.7	3.4	3.3	3.6	3.5	4.1	1630	724	9.5	6.3
18	3.7	3.7	3.9	3.4	3.3	3.6	3.6	4.1	1770	1040	10	6.3
19	3.7	3.7	3.8	3.4	3.3	3.6	3.6	4.0	2040	1240	10	6.2
20	3.7	3.7	3.8	3.4	3.3	3.6	3.6	4.1	1910	1260	10	6.2
21	3.7	3.9	3.8	3.4	3.3	3.6	3.6	4.1	1880	1110	10	6.1
22	3.7	3.9	3.9	3.4	3.3	3.6	3.6	4.2	1730	794	10	6.1
23	3.7	3.7	3.9	3.6	3.3	3.6	3.8	4.2	1230	794	10	6.0
24	3.7	3.7	3.8	4.3	3.3	3.6	4.2	4.2	936	858	10	6.0
25	3.7	3.7	3.8	3.3	3.3	3.7	4.0	4.2	805	1240	10	6.0
26	3.7	3.8	4.0	3.3	3.3	3.7	3.9	4.1	724	1540	10	5.9
27	3.7	3.8	4.5	3.3	3.3	3.6	4.0	4.0	842	794	10	5.7
28	3.7	3.8	4.1	3.3	3.3	3.8	3.8	4.0	660	719	10	7.3
29	3.7	3.8	4.0	3.3	---	3.8	3.9	4.1	375	1040	10	12
30	3.8	3.8	4.0	3.3	---	3.8	3.6	4.5	714	1030	10	15
31	3.8	---	4.0	3.3	---	3.8	---	4.6	---	869	9.9	---
TOTAL	115.4	112.4	119.8	108.1	92.3	109.9	109.9	124.7	38280.2	30575	8057.4	4836.1
MEAN	3.72	3.75	3.86	3.49	3.30	3.55	3.66	4.02	1276	986	260	161
MAX	3.8	3.9	4.7	4.3	3.5	3.8	4.2	4.6	2850	2210	885	2180
MIN	3.7	3.6	3.7	3.2	3.2	3.3	3.4	3.7	4.9	263	9.0	5.7
AC-FT	229	223	238	214	183	218	218	247	75930	60650	15980	9590

CAL YR 1977 TOTAL 1537.9 MEAN 4.21 MAX 6.7 MIN 3.5 AC-FT 3050  
WTR YR 1978 TOTAL 82641.2 MEAN 226 MAX 2850 MIN 3.2 AC-FT 163900

## SAN JOAQUIN RIVER BASIN

11230500 BEAR CREEK NEAR LAKE THOMAS A. EDISON, CA

LOCATION.--Lat 37°20'18", long 118°58'23", in SW¼ sec.12, T.7 S., R.27 E., unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 0.2 mi (0.3 km) upstream from diversion dam, 1.7 mi (2.7 km) upstream from mouth, 2.1 mi (3.4 km) south of Lake Thomas A. Edison, and 2.4 mi (3.9 km) northeast of Mono Hot Springs.

DRAINAGE AREA.--52.5 mi<sup>2</sup> (136.0 km<sup>2</sup>).

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1954, published as "near Vermilion Valley."

REVISED RECORDS.--WSP 611: 1922(M). WSP 1345: 1931-35. WSP 1515: 1922-30. WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7,366.94 ft (2,245.443 m) National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Records fair. No storage or diversion above station. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and six discharge measurements furnished by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--57 years, 89.6 ft<sup>3</sup>/s (2.537 m<sup>3</sup>/s), 64,920 acre-ft/yr (80.0 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,520 ft<sup>3</sup>/s (99.7 m<sup>3</sup>/s) Sept. 5, 1978, gage height, 7.90 ft (2.408 m), from rating curve extended above 570 ft<sup>3</sup>/s (16.1 m<sup>3</sup>/s); minimum recorded, 1.2 ft<sup>3</sup>/s (0.034 m<sup>3</sup>/s) Sept. 29 to Oct. 5, 1924.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 440 ft<sup>3</sup>/s (12 m<sup>3</sup>/s) and maximum (\*) from rating curve extended above 570 ft<sup>3</sup>/s (16.1 m<sup>3</sup>/s):

Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)
May 14	2100	611	17.3	5.09	1.551	July 9	2200	651	18.4	5.15	1.570
May 21	2100	527	14.9	4.95	1.509	July 26	0715	618	17.5	5.10	1.554
June 8	2145	841	23.8	5.43	1.655	Sept. 5	1530	*3,520	99.7	7.90	2.408
June 20	2000	644	18.2	5.14	1.567						

Minimum daily discharge, 2.6 ft<sup>3</sup>/s (0.074 m<sup>3</sup>/s) Oct. 5, Nov. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	3.2	6.6	50	37	26	72	101	608	511	434	69
2	2.9	3.2	6.4	39	36	28	61	121	586	466	427	66
3	2.8	3.2	6.1	32	37	31	54	172	579	431	391	66
4	2.7	3.2	6.0	32	38	36	50	256	607	418	370	121
5	2.6	3.3	6.0	31	36	50	46	248	664	457	358	1830
6	3.1	3.6	5.5	41	45	54	46	194	688	495	297	1390
7	5.2	4.2	5.9	65	56	43	46	185	712	546	293	594
8	5.2	5.5	6.0	63	73	40	45	226	735	552	329	321
9	4.8	4.9	5.4	47	82	37	46	260	724	570	313	198
10	4.5	4.5	5.2	56	126	35	59	271	656	589	289	164
11	4.2	4.8	4.9	59	168	33	95	308	580	570	422	132
12	4.0	4.0	5.7	50	127	33	121	374	633	508	311	100
13	4.0	3.7	5.5	38	95	31	129	455	645	526	246	87
14	4.0	3.9	6.1	34	94	31	110	481	613	595	205	81
15	3.8	4.2	7.2	51	69	33	90	452	576	610	176	73
16	3.8	4.1	6.8	92	56	41	79	373	520	599	159	66
17	3.6	3.8	9.8	130	48	55	71	324	518	543	149	60
18	3.6	3.9	16	164	42	59	70	359	579	485	138	54
19	3.6	3.7	39	154	41	63	77	397	586	453	128	51
20	3.6	2.6	54	83	45	72	79	436	598	439	120	48
21	3.5	3.1	82	63	50	63	72	465	607	434	113	45
22	3.4	4.0	64	51	53	55	71	467	585	448	103	43
23	3.4	4.5	63	47	53	54	90	426	498	465	91	39
24	3.4	5.2	133	61	44	53	110	300	471	471	81	38
25	3.4	9.2	202	55	36	67	124	251	478	448	74	37
26	3.4	9.7	123	46	30	80	92	247	490	589	72	36
27	3.4	9.7	137	44	28	71	90	308	442	510	69	36
28	3.4	8.8	101	39	27	83	117	439	398	453	70	36
29	3.4	8.2	77	38	---	99	110	553	421	406	72	36
30	3.3	7.5	53	39	---	111	112	622	492	397	74	36
31	3.2	---	49	35	---	106	---	632	---	430	72	---
TOTAL	112.2	147.4	1298.1	1829	1672	1673	2434	10703	17289	15414	6446	5953
MEAN	3.62	4.91	41.9	59.0	59.7	54.0	81.1	345	576	497	208	198
MAX	5.2	9.7	202	164	168	111	129	632	735	610	434	1830
MIN	2.6	2.6	4.9	31	27	26	45	101	398	397	69	36
AC-FT	223	292	2570	3630	3320	3320	4830	21230	34290	30570	12790	11810
CAL YR 1977 TOTAL	13109.1			35.9	288	2.6	AC-FT	26000				
WTR YR 1978 TOTAL	64970.7			178	1830	2.6	AC-FT	128900				



## 11231000 LAKE THOMAS A. EDISON NEAR BIG CREEK, CA

LOCATION.--Lat 37°22'13", long 118°59'13", in sec.26, T.6 S., R.27 E., unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in outlet works of dam on Mono Creek at lower end of Vermilion Valley, 18.1 mi (29.1 km) northeast of town of Big Creek.

DRAINAGE AREA.--90.0 mi<sup>2</sup> (233.1 km<sup>2</sup>).

PERIOD OF RECORD.--October 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Lake is formed by earthfill dam; dam completed and storage began on Oct. 12, 1954. Usable capacity, 125,000 acre-ft (154 hm<sup>3</sup>) between elevations 7,508.9 ft (2,288.71 m), invert of outlet works and 7,642.50 ft (2,329.434 m), top of gates in service spillway, NGVD. Dead storage negligible. 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.--Records furnished by Southern California Edison Co. in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 125,900 acre-ft (155 hm<sup>3</sup>) Aug. 18, 1958, elevation, 7,642.95 ft (2,329.571 m); minimum since appreciable storage was attained, 5,080 acre-ft (6.26 hm<sup>3</sup>) Mar. 27, 1969, elevation, 7,553.09 ft (2,302.182 m).

NOTE.--Prior to 1960, maximum and minimum daily contents were published.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 125,600 acre-ft (155 hm<sup>3</sup>) Sept. 5, elevation, 7,642.83 ft (2,329.535 m); minimum, 5,380 acre-ft (6.63 hm<sup>3</sup>) Mar. 27, Apr. 11, elevation, 7,553.65 ft (2,302.353 m).

## Capacity table (elevation, in feet, and contents, in acre-feet)

7508.9	0	7535	513	7560	9520	7610	68600
7515	18	7540	928	7570	18100	7620	85000
7520	64	7545	1830	7580	28500	7630	102400
7525	156	7550	3570	7590	40500	7640	120400
7530	297	7555	6150	7600	53800	7643	126000

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5998	5826	5803	6766	8566	5866	5963	7461	40721	102031	125257	124591
2	5992	5820	5803	6811	8609	5803	6165	7461	42870	103664	125257	124591
3	5981	5803	5803	6855	8630	5694	6359	7799	44847	105090	125276	124702
4	5975	5791	5803	6913	8673	5699	6535	8431	46838	106393	125220	124998
5	5963	5803	5803	6983	8758	5648	6692	9105	49078	107880	125220	125442
6	5981	5797	5768	7035	8846	5584	6674	9683	51409	109460	125220	124924
7	5986	5803	5774	7073	8957	5519	6365	10269	53854	111190	125294	125313
8	5986	5797	5774	7124	8987	5497	6067	10768	56708	112926	125294	125479
9	5986	5797	5774	7214	8927	5619	5757	11215	59536	114632	125276	125405
10	5986	5797	5774	7252	8824	5711	5486	11810	62025	116490	125313	125331
11	5986	5791	5768	7291	8701	5797	5400	12410	64134	118225	125257	125146
12	5986	5791	5774	7329	8587	5877	5513	13223	66651	119856	125331	125109
13	5986	5791	5774	7374	8502	5952	5653	14448	69169	121527	125313	125276
14	5986	5791	5780	7501	8353	6009	5762	15859	71502	123260	125313	125220
15	5986	5785	5797	7555	8197	5992	5912	17185	73770	124461	125331	125183
16	5981	5785	5803	7630	8008	5969	5975	18329	75688	124702	125165	125128
17	5981	5785	5946	7704	7819	5906	6015	19392	77574	124646	125109	125072
18	5981	5785	5958	7920	7630	5889	6049	20477	79511	124739	125165	124979
19	5975	5780	5969	8008	7440	5883	6107	21655	81497	124720	125220	124924
20	5963	5780	6004	8069	7291	5883	6177	23022	83568	124646	125183	124887
21	5958	5780	6067	8133	7111	5894	6220	24493	85703	124757	125035	124665
22	5952	5774	6124	8197	6945	5889	6256	26090	87682	124850	124924	124257
23	5929	5774	6220	8232	6779	5768	6341	27408	89517	124905	124905	124054
24	5917	5774	6256	8275	6632	5573	6474	28627	91309	124850	124794	123961
25	5912	5774	6305	8318	6486	5573	6836	29602	92987	124924	124609	123887
26	5900	5768	6438	8353	6329	5513	7111	30546	94063	124813	124535	123887
27	5889	5768	6505	8396	6177	5383	7329	31628	96066	125072	124702	123814
28	5871	5762	6577	8431	6032	5448	7407	32984	97377	125016	124831	123795
29	5860	5762	6632	8467	---	5519	7447	34629	98764	124998	124776	123777
30	5849	5762	6686	8495	---	5579	7461	36632	100350	125202	124683	123740
31	5831	---	6717	8530	---	5734	---	38672	---	125239	124591	---
MAX	5998	5826	6717	8530	8987	6009	7461	38672	100350	125239	125331	125479
MIN	5831	5762	5768	6766	6032	5383	5400	7461	40721	102031	124535	123740
(+)	7554.45	7554.33	7555.94	7558.65	7554.80	7554.28	7557.10	7588.58	7628.86	7642.61	7642.26	7641.80
(+)	-178	-69	+955	+1810	-2500	-298	+1730	+31200	+61700	+24900	-648	-851

CAL YR 1977 † -3359

WTR YR 1978 † +117731

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet, rounded to Geological Survey standards.

## SAN JOAQUIN RIVER BASIN

11231500 MONO CREEK BELOW LAKE THOMAS A. EDISON, CA

LOCATION.--Lat 37°21'40", long 118°59'26", in SW¼ sec.35, T.6 S., R.27 E., unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 0.6 mi (1.0 km) upstream from diversion dam, 1 mi (2 km) downstream from Lake Thomas A. Edison Dam, and 1.9 mi (3.1 km) northeast of Mono Hot Springs.

DRAINAGE AREA.--92.5 mi<sup>2</sup> (239.6 km<sup>2</sup>).

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1954, published as "near Vermilion Valley."

REVISED RECORDS.--WSP 1011: 1943. WSP 1515: 1956.

GAGE.--Water-stage recorder. Altitude of gage is 7,400 ft (2,256 m), from topographic map.

REMARKS.--Records good. Flow regulated by Lake Thomas A. Edison (station 11231000) 1 mi (2 km) upstream beginning Oct. 12, 1954. No diversion above station. 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 Energy Regulatory Commission Project.

AVERAGE DISCHARGE (adjusted for storage).--57 years, 151 ft<sup>3</sup>/s (4.276 m<sup>3</sup>/s), 109,400 acre-ft/yr (135 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,880 ft<sup>3</sup>/s (53.2 m<sup>3</sup>/s) Sept. 5, 1978, gage height, 8.73 ft (2.661 m); minimum daily, 0.3 ft<sup>3</sup>/s (0.008 m<sup>3</sup>/s) Nov. 11, 12, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,880 ft<sup>3</sup>/s (53.2 m<sup>3</sup>/s) Sept. 5, gage height, 8.73 ft (2.661 m); minimum daily, 10 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s) Oct. 1-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	15	15	15	16	125	14	193	32	19	500	82
2	10	15	15	15	16	123	14	188	30	19	469	74
3	10	15	15	15	16	113	13	88	30	19	412	76
4	10	15	15	15	16	102	13	29	29	19	442	100
5	10	15	15	15	16	102	13	28	29	19	372	1080
6	10	15	15	15	16	102	132	24	27	19	322	1130
7	10	15	15	15	16	102	236	24	27	19	273	306
8	10	15	15	15	62	60	219	133	26	19	372	234
9	10	15	15	16	130	13	217	179	24	19	316	244
10	10	15	15	16	130	13	216	161	23	19	325	286
11	10	15	15	16	130	13	153	186	22	19	370	294
12	10	15	16	16	130	13	104	141	22	19	253	145
13	10	15	16	16	130	13	104	97	21	19	305	106
14	10	15	16	16	130	27	104	73	21	19	198	163
15	10	15	16	16	130	61	104	94	20	338	212	163
16	10	15	16	18	129	69	104	64	20	759	266	163
17	10	15	19	16	128	80	104	29	20	744	173	133
18	10	15	16	16	128	80	104	31	19	608	122	118
19	10	15	15	16	128	80	104	33	19	645	147	119
20	18	15	15	16	128	80	104	35	19	594	163	118
21	16	15	15	16	128	80	104	36	19	485	209	222
22	16	15	15	16	125	99	104	35	19	553	170	283
23	16	15	16	16	125	141	106	31	19	586	130	188
24	16	15	16	16	125	161	105	27	19	686	167	133
25	16	15	16	16	125	91	20	25	19	525	187	121
26	16	15	15	16	125	133	17	26	19	912	93	101
27	15	15	16	16	125	146	46	28	19	563	16	97
28	15	15	15	16	125	87	153	31	19	624	93	91
29	15	15	15	16	---	105	172	34	19	462	138	91
30	15	15	15	16	---	133	179	34	19	398	138	91
31	15	---	15	16	---	101	---	33	---	473	111	---
TOTAL	379	450	479	490	2728	2648	3182	2170	670	10221	7464	6552
MEAN	12.2	15.0	15.5	15.8	97.4	85.4	106	70.0	22.3	330	241	218
MAX	18	15	19	18	130	161	236	193	32	912	500	1130
MIN	10	15	15	15	16	13	13	24	19	19	16	74
AC-FT	752	893	950	972	5410	5250	6310	4300	1330	20270	14800	13000
CAL YR 1977	TOTAL	19067	MEAN	52.2	MAX	350	MIN	10	AC-FT	37820		
WTR YR 1978	TOTAL	37433	MEAN	103	MAX	1130	MIN	10	AC-FT	74250		

## 11234700 MAMMOTH POOL RESERVOIR NEAR BIG CREEK, CA

LOCATION.--Lat 37°19'45", long 119°19'40", in SW¼ sec.10, T.7 S., R.24 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, in gatehouse of power tunnel intake near dam on San Joaquin River, 10 mi (16 km) northwest of town of Big Creek.

DRAINAGE AREA.--995 mi<sup>2</sup> (2,577 km<sup>2</sup>).

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Reservoir is formed by an earthfill dam; storage began Oct. 8, 1959. Usable capacity, 119,900 acre-ft (148 hm<sup>3</sup>) between elevations 3,100.00 ft (944.880 m), invert of power tunnel and 3,330.00 ft (1,014.984 m), crest of spillway, NGVD. Additional storage of 2,780 acre-ft (3.43 hm<sup>3</sup>) is not available for release. Water is diverted through tunnel for power development; water is returned to river 8.5 mi (13.7 km) downstream from dam. See schematic diagram of San Joaquin River basin. Figures given herein represent usable contents.

COOPERATION.--Records furnished by Southern California Edison Co. in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 126,500 acre-ft (156 hm<sup>3</sup>) June 2, 3, 1969; maximum elevation, 3,335.86 ft (1,016.770 m) June 3, 1969; minimum contents since appreciable storage was attained, 4,580 acre-ft (5.65 hm<sup>3</sup>) Apr. 5, 1973, elevation, 3,139.87 ft (957.032 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 125,200 acre-ft (154 hm<sup>3</sup>) June 10, elevation, 3,334.74 ft (1,016.429 m); minimum, 10,400 acre-ft (12.8 hm<sup>3</sup>) Mar. 19, elevation, 3,167.19 ft (965.360 m).

Capacity table (elevation, in feet, and contents, in acre-feet)

3100	0	3130	3110	3180	14100	3260	56400
3105	417	3140	4600	3190	17400	3280	72100
3110	861	3150	6400	3200	21400	3300	89800
3115	1360	3160	8620	3220	31100	3320	109300
3120	1900	3170	11200	3240	42800	3335	125500

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19708	20826	22143	36799	36338	14471	27817	60456	123817	122216	120947	86447
2	19740	20872	22052	36060	34790	16938	28671	63069	123738	121871	120781	84131
3	19664	20922	22253	35231	32802	18157	28785	67431	123772	121559	120737	81695
4	19672	20955	22460	34521	31380	20763	28780	74236	123862	121437	120538	79834
5	19708	21078	22421	34925	31002	22523	28222	81196	124109	121737	120482	94679
6	19772	21201	22231	35612	31266	22394	27741	85964	124165	122004	120029	114881
7	19857	21239	22113	37095	31326	21703	27126	89949	124367	122104	119438	120593
8	19938	21035	22017	38448	30836	20788	26155	95011	124683	122127	119285	120062
9	19999	21086	21929	40830	34885	20177	25094	101544	125135	122473	119984	119219
10	20055	21175	22108	42530	36622	19302	24495	108503	124266	122641	120051	118968
11	20108	21264	22279	42398	35979	18439	25117	115771	124064	122440	120150	118979
12	20160	21358	22187	42391	34969	17178	27644	122328	124593	122049	120117	118459
13	20210	21439	22052	42190	34197	15646	30185	123189	124695	121759	118545	117564
14	20259	21526	22021	44202	33294	14132	31940	123357	124424	122283	117029	116793
15	20300	21608	22425	46451	32445	12757	34108	122909	123840	122853	116452	115676
16	20345	21694	21920	49419	31494	11575	35089	122294	123357	122518	115527	113654
17	20386	21764	25715	52477	30419	10911	35265	122160	123334	122294	114606	111343
18	20432	21846	26608	52935	29363	10582	35356	122339	123626	122049	113359	108904
19	20469	21916	26373	53076	28335	10438	35566	122596	123458	121737	112087	106409
20	20378	21986	25912	52590	27639	10879	36100	122898	123435	121559	110811	103781
21	20378	21751	25279	51642	27106	11720	36233	123155	123402	121403	109481	101225
22	20432	21443	25331	50466	26658	12800	36071	123110	123189	121659	108102	98530
23	20481	21006	27996	49093	25604	13327	36285	122417	122876	121693	106045	96354
24	20526	21247	28196	47420	23830	13386	37689	121848	122741	121670	103941	94215
25	20572	21448	28238	45923	21960	13534	44814	121626	122495	121648	101842	92128
26	20617	21712	28412	44337	19950	14331	48138	121815	122249	122406	99871	89958
27	20672	21977	33024	43111	17871	15034	50514	122417	122182	121782	97466	87794
28	20738	22239	35801	41835	15813	16144	53479	123121	121837	121637	95239	86009
29	20797	22483	36617	40603	---	17921	55914	123761	121904	121236	93145	83806
30	20851	22363	37278	39293	---	20951	58631	123997	122194	120925	90975	81615
31	20901	---	37254	37885	---	25734	---	123952	---	121047	88716	---
MAX	20901	22483	37278	53076	36622	25734	58631	123997	125135	122853	120947	120593
MIN	19664	20826	21920	34521	15813	10438	24495	60456	121837	120925	88716	79834
(+)	3198.82	3202.21	3230.94	3232.00	3185.40	3209.56	3263.03	3333.60	3332.03	3331.00	3298.85	3291.03
(±)	+939	+1460	+14900	+631	-22100	+9920	+32900	+65300	-1760	-1150	-3230	-7100

CAL YR 1977 †+23320

WTR YR 1978 †+61653

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet, rounded to Geological Survey standards.

## 11234760 SAN JOAQUIN RIVER ABOVE SHAKEFLAT CREEK, NEAR BIG CREEK, CA

LOCATION.--Lat 37°19'00", long 119°19'37", in NW¼SW¼ sec.14, T.7 S., R.24 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 1,500 ft (457 m) upstream from Shakeflat Creek, 4,900 ft (1,494 m) downstream from Mammoth Pool Dam, and 10 mi (16 km) northwest of town of Big Creek.

DRAINAGE AREA.--1,003 mi<sup>2</sup> (2,598 km<sup>2</sup>).

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,865.50 ft (873.404 m) National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Records good. Flow regulated by Mammoth Pool Reservoir (station 11234700) 4,900 ft (1,494 m) upstream. Flow partly regulated by Florence Lake (station 11229600), Lake Thomas A. Edison (station 11231000) and diversions through Ward tunnel (station 11229500), and through Mono-Bear conduit to Ward tunnel. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and 22 discharge measurements furnished by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,400 ft<sup>3</sup>/s (521 m<sup>3</sup>/s) June 3, 1969, gage height, 18.38 ft (5.602 m); minimum daily, 0.3 ft<sup>3</sup>/s (0.008 m<sup>3</sup>/s) Oct. 14, Dec. 5, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,800 ft<sup>3</sup>/s (334 m<sup>3</sup>/s) June 10, gage height, 15.74 ft (4.798 m); minimum daily, 9.1 ft<sup>3</sup>/s (0.26 m<sup>3</sup>/s) Nov. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	13	10	13	14	15	9.6	51	7250	4000	1270	27
2	14	12	12	13	13	23	9.6	51	6940	3640	889	27
3	14	12	12	13	13	21	14	53	6780	2600	859	27
4	14	12	12	13	12	47	33	53	7100	2090	592	27
5	13	12	12	13	15	30	33	55	7400	2340	516	27
6	14	12	13	13	18	22	33	58	7730	2900	233	28
7	14	12	13	13	19	35	31	60	8090	3370	46	85
8	13	12	13	13	19	39	35	60	8390	3590	34	396
9	13	12	13	21	41	40	33	60	10100	3820	30	46
10	13	12	13	14	24	38	31	53	10100	4960	125	45
11	13	12	13	13	17	40	31	63	7850	4630	66	34
12	13	12	13	13	16	37	33	1330	8210	4240	147	25
13	13	12	13	14	18	37	35	5700	9310	2960	50	24
14	13	12	12	27	16	36	35	6750	9030	3340	26	23
15	13	9.1	13	26	16	35	35	7090	8490	4750	28	24
16	14	11	13	39	16	34	37	4850	7620	5200	28	24
17	14	11	12	36	15	25	37	3680	6510	4260	28	24
18	14	11	11	22	15	13	37	3470	7060	3770	28	18
19	14	11	11	22	15	13	37	3820	7440	2970	28	27
20	14	11	13	19	15	13	37	4480	7130	2770	28	44
21	14	11	13	18	15	13	33	5140	7080	2370	28	44
22	13	11	13	17	15	13	33	5510	6900	2560	27	44
23	13	11	13	16	15	13	33	5150	6040	2790	27	37
24	13	11	13	16	14	13	33	3420	5280	2900	27	33
25	13	11	13	16	14	13	33	2700	4900	2790	27	33
26	13	10	13	15	14	13	42	2570	4560	3360	27	33
27	13	10	13	15	14	13	51	3340	3920	3400	27	33
28	13	10	13	14	14	13	51	4360	3450	2850	27	33
29	13	10	13	14	---	15	51	5900	2600	2220	27	33
30	13	10	13	14	---	24	47	7240	3250	1240	27	33
31	13	---	13	14	---	11	---	7440	---	1190	27	---
TOTAL	415	338.1	390	539	462	747	1023.2	94557	206510	99870	5349	1358
MEAN	13.4	11.3	12.6	17.4	16.5	24.1	34.1	3050	6884	3222	173	45.3
MAX	14	13	13	39	41	47	51	7440	10100	5200	1270	396
MIN	13	9.1	10	13	12	11	9.6	51	2600	1190	26	18
AC-FT	823	671	774	1070	916	1480	2030	187600	409600	198100	10610	2690
CAL YR 1977 TOTAL	4817.1			13		17		9550				
WTR YR 1978 TOTAL	411558.3			1128		10100		816300				

## 11235500 WARD TUNNEL OUTLET AT HUNTINGTON LAKE, CA

LOCATION.--Lat 37°15'25", long 119°09'38", in SE¼SW¼ sec.5, T.8 S., R.26 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, at tunnel outlet at east end of Huntington Lake, 0.9 mi (1.4 km) east of Lakeshore Post Office, and 6 mi (10 km) northeast of Big Creek.

PERIOD OF RECORD.--October 1927 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1960, published as Ward tunnel at outlet.

GAGE.--Pressure-differential recorder to record discharge through penstock. November 1927 to May 23, 1956, water-stage recorder at datum 6,999.00 ft (2,133.295 m) National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.). May 24, 1956, to Sept. 30, 1968, no recorder, see REMARKS below.

REMARKS.--Daily discharge for the period May 24, 1956, to Sept. 30, 1968, 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 via Portal powerhouse, receives diversions from Bear and Mono Creeks and at times from several other small tributaries of South Fork San Joaquin River. See record for station 11229500 Ward tunnel intake at Florence Lake.

COOPERATION.--Records collected by Southern California Edison Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--51 years, 478 ft<sup>3</sup>/s (13.54 m<sup>3</sup>/s), 346,300 acre-ft/yr (427 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,080 ft<sup>3</sup>/s (58.9 m<sup>3</sup>/s) June 21, 1935; no flow at times many years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	39	0	140	130	284	431	681	144	1550	1360	584
2	39	0	77	142	134	268	221	704	168	1540	1350	573
3	0	40	0	130	124	175	319	710	190	1520	1280	625
4	42	71	80	123	87	270	228	859	188	1490	1170	466
5	0	0	0	98	163	317	223	937	184	1520	1100	955
6	56	0	52	103	144	331	350	880	272	1550	1200	1470
7	0	52	42	133	146	268	510	806	198	1540	1210	1640
8	28	49	44	177	201	322	492	965	282	1540	1120	1580
9	48	0	0	144	209	169	420	990	260	1530	1050	1170
10	44	124	96	150	269	148	448	1120	192	1440	1150	1080
11	0	0	32	152	271	286	619	1200	168	886	1190	1010
12	62	40	18	154	456	178	552	1240	188	1100	1240	808
13	0	0	39	134	284	143	624	1250	181	1310	1390	573
14	0	64	0	152	312	254	619	1380	370	1080	1050	434
15	51	0	120	138	406	181	624	1520	518	886	1010	509
16	0	64	24	90	233	273	443	1590	576	897	984	585
17	60	0	48	33	232	359	416	1610	718	912	821	547
18	0	21	45	237	232	331	423	1690	706	944	770	519
19	42	0	82	293	380	332	479	1700	654	919	737	527
20	0	40	79	225	371	383	436	1700	772	977	616	517
21	61	81	100	170	248	394	435	1690	892	1000	673	557
22	0	0	136	187	381	392	438	1690	979	1030	602	557
23	60	0	98	164	262	423	438	1680	1370	1050	507	394
24	0	65	104	102	327	438	631	1680	1440	1060	542	428
25	40	87	128	125	311	400	710	1680	1440	1090	572	495
26	0	0	147	106	278	440	577	1690	1240	1090	538	606
27	85	74	143	134	274	533	486	1700	1100	1080	564	675
28	0	56	168	136	288	426	700	1700	1330	1070	567	627
29	0	52	224	144	---	424	699	952	1620	969	571	527
30	0	73	159	137	---	632	705	164	1490	1020	592	498
31	63	---	153	124	---	655	---	124	---	1200	609	---
TOTAL	781	1092	2438	4477	7153	10429	14696	38282	19830	36790	28135	21536
MEAN	25.2	36.4	78.6	144	255	336	490	1235	661	1187	908	718
MAX	85	124	224	293	456	655	710	1700	1620	1550	1390	1640
MIN	0	0	0	33	87	143	221	124	144	886	507	394
AC-FT	1550	2170	4840	8880	14190	20690	29150	75930	39330	72970	55810	42720
CAL YR 1977	TOTAL	68981.80	MEAN 189	MAX 607	MIN 0	AC-FT 136800						
WTR YR 1978	TOTAL	185639.00	MEAN 509	MAX 1700	MIN 0	AC-FT 368200						

## SAN JOAQUIN RIVER BASIN

11236000 HUNTINGTON LAKE NEAR BIG CREEK, CA

LOCATION.--Lat 37°14'03", long 119°12'41", in SW¼ sec.14, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in gate tower of dam 1 on Big Creek, 2 mi (3 km) northeast of town of Big Creek.

DRAINAGE AREA.--80.5 mi<sup>2</sup> (208.5 km<sup>2</sup>).

PERIOD OF RECORD.--April 1913 to current year. Prior to October 1926, monthly contents only, published in WSP 1315-A; 1926-31, published in WSP 721.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.). Prior to June 19, 1920, nonrecording gage at same site and datum.

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 (110 hm<sup>3</sup>) between elevations 6,819.90 ft (2,078.706 m), invert of outlet tunnel No. 1 and 6,950.00 ft (2,118.360 m), spillway crest at dam 1, NGVD. Additional storage of 600 acre-ft (740,000 m<sup>3</sup>) is not available for release. Huntington-Shaver conduit (station 11239000) has diverted water from Huntington Lake to Shaver Lake since Apr. 21, 1928. Water is used for power development in Big Creek powerplants. See schematic diagram of San Joaquin River basin. Figures given herein represent usable contents.

COOPERATION.--Records furnished by Southern California Edison Co. in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 90,500 acre-ft (112 hm<sup>3</sup>) May 31, 1926, elevation, 6,950.92 ft (2,118.640 m); minimum, 2,100 acre-ft (2.59 hm<sup>3</sup>) Nov. 6, 1937, elevation, 6,838.53 ft (2,084.384 m).  
NOTE.--Prior to 1960, maximum and minimum daily contents were published. Maximum and minimum daily contents (water years 1913-39) were summarized in WSP 881.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 89,310 acre-ft (110 hm<sup>3</sup>) Aug. 4-6, elevation, 6,950.10 ft (2,118.390 m); minimum, 10,600 acre-ft (13.1 hm<sup>3</sup>) Apr. 10, elevation, 6,868.28 ft (2,093.452 m).

Capacity table (elevation, in feet, and contents, in acre-feet)

6819.90	0	6835	1550	6870	11300	6920	50800
6820	8	6840	2350	6880	16400	6930	62600
6822	142	6845	3320	6890	22900	6940	75300
6825	382	6850	4480	6900	30900	6950	89200
6830	899	6860	7430	6910	40200	6951	90610

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79627	71791	65169	59061	46637	22702	12939	17731	65231	82679	88809	88637
2	79682	71399	64944	58500	45835	22114	12463	18519	65482	83317	89095	88580
3	79245	71063	64944	57845	45060	21466	12105	19486	65845	83735	89252	88723
4	78866	70765	65106	57254	44114	21053	11696	20881	66221	84014	89310	88780
5	78432	70843	64683	56617	43541	20657	11058	22415	66840	84364	89310	88422
6	78215	70843	64322	56008	42889	20138	10827	23455	67662	84769	89310	88222
7	77783	70558	63974	55435	42508	19730	10870	24252	68566	85106	89296	88022
8	77823	70260	63628	54925	42199	19176	10861	25266	69707	85303	89296	87424
9	77904	69848	63208	54520	42930	18475	10670	26488	70739	85852	89166	87822
10	77567	69681	63393	53921	42868	17651	10624	27565	71037	86615	89166	88880
11	77150	69283	63467	53462	42611	17062	10979	28669	70933	86473	89166	89066
12	76854	69373	63147	53187	42734	16262	11280	29873	71192	86799	89166	89037
13	76439	69360	62826	52799	42570	15401	11792	31439	71477	87779	89224	89023
14	76012	69091	62445	52868	42333	14684	12240	33149	71908	88294	89209	88880
15	76105	68706	62445	52868	41182	14075	12749	35002	72469	88394	89137	88866
16	76092	68426	62176	53072	38928	13767	12798	36728	72809	88451	88952	88966
17	75785	68018	62789	53577	36900	13659	12725	38447	73177	88465	88809	88994
18	75318	67725	62950	53795	34667	13403	12667	40478	73795	88465	88737	88937
19	74933	67713	62654	53863	33167	13007	12739	42683	74046	88394	88794	88909
20	74483	67776	62188	53680	32127	12691	12769	45124	74443	88380	88780	88837
21	74205	67751	61821	53382	31176	12486	12749	47782	75026	88351	88880	88780
22	74085	67496	61589	53106	30732	12245	12837	50567	75731	88337	88866	88708
23	74191	66966	61613	52731	29687	12064	12866	52947	76841	88337	88723	88480
24	73795	66663	61186	52549	28303	11939	13414	54671	78052	88322	88651	88308
25	73480	66398	60823	52106	26984	11719	14352	56195	79137	88380	88637	88351
26	73072	66398	60677	51700	25709	11633	14797	57774	79641	88480	88565	88465
27	72822	66499	61041	50879	24593	11764	15003	59782	79641	88494	88637	88594
28	72430	66171	60810	50045	23565	11683	15690	62420	80037	88494	88623	88708
29	72430	65845	60507	49183	---	11902	16388	64235	81022	88408	88594	88623
30	72417	65595	60107	48381	---	12349	17098	64733	81835	88465	88594	88480
31	72156	---	59590	47521	---	12973	---	65019	---	88508	88637	---
MAX	79682	71791	65169	59061	46637	22702	17098	65019	81835	88508	89310	89066
MIN	72156	65595	59590	47521	23565	11633	10624	17731	65231	82679	88565	87424
(†)	6937.58	6932.45	6927.56	6917.01	6890.93	6873.61	6881.24	6931.99	6944.79	6949.54	6949.63	6949.52
(‡)	-7490	-6560	-6010	-12100	-24000	-10600	+4130	+47900	+16800	+6670	+129	-157

CAL YR 1977 † +7620

WTR YR 1978 ‡ +8840

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet, rounded to Geological Survey standards.

## 11237500 PITMAN CREEK BELOW TAMARACK CREEK, CA

LOCATION.--Lat 37°11'54", long 119°12'48", in NW¼NW¼ sec.35, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 250 ft (76 m) upstream from Huntington-Shaver conduit tunnel, 0.8 mi (1.3 km) downstream from confluence of Tamarack Creek and South Fork Tamarack Creek, 1.4 mi (2.3 km) upstream from mouth, and 1.9 mi (3.1 km) east of town of Big Creek.

DRAINAGE AREA.--22.9 mi<sup>2</sup> (59.3 km<sup>2</sup>).

PERIOD OF RECORD.--October 1927 to current year. Records for water year 1928 incomplete, yearly estimate published in WSP 1315-A.

REVISED RECORDS.--WSP 931: 1940. WSP 1315-A: 1944. WSP 1395: 1928-29, 1938. WSP 1515: 1929.

GAGE.--Water-stage recorder, Parshall flume, and concrete control. Altitude of gage is 7,005 ft (2,135 m), from Southern California Edison Co. contour map. Prior to Sept. 29, 1940, at site 10 ft (3 m) downstream at same datum.

REMARKS.--Records fair. 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 nine discharge measurements furnished by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--51 years, 39.5 ft<sup>3</sup>/s (1.119 m<sup>3</sup>/s), 28,620 acre-ft/yr (35.3 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,670 ft<sup>3</sup>/s (104 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 11.20 ft (3.414 m), from rating curve extended above 1,100 ft<sup>3</sup>/s (31.2 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 10.77 ft (3.283 m); no flow Oct. 15-18, 1931.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft<sup>3</sup>/s (5.7 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	Gage height (ft)	(m)	Date	Time	Discharge (ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	Gage height (ft)	(m)
Apr. 25	2230	233	6.60	5.51	1.679	May 29	1900	*990	28.0	7.68	2.341
May 4	2330	374	10.6	6.18	1.884	June 8	1900	907	25.7	7.50	2.286
May 14	2015	696	19.7	7.17	2.185	June 12	1915	669	18.9	6.92	2.109
May 21	2015	715	20.2	7.22	2.201						

Minimum daily discharge, 0.18 ft<sup>3</sup>/s (0.005 m<sup>3</sup>/s) Oct. 3-5, 17-20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.22	.53	13	7.6	16	90	123	587	175	13	3.0
2	.19	.22	.55	11	7.6	21	77	158	588	157	12	2.8
3	.18	.22	.55	9.5	7.6	20	71	221	580	139	11	2.8
4	.18	.22	.54	8.8	7.7	18	60	277	593	130	10	9.5
5	.18	.47	.53	8.3	8.2	16	55	280	621	130	9.9	67
6	.32	.42	.51	8.1	11	16	54	235	615	132	9.2	94
7	.30	.37	.48	7.4	10	17	51	240	627	126	9.1	67
8	.24	.39	.44	7.6	9.8	17	46	280	622	117	9.1	31
9	.22	.36	.44	7.7	9.1	16	44	311	594	114	8.5	20
10	.20	.35	.44	7.7	10	15	52	319	480	105	9.0	24
11	.20	.36	.39	7.0	9.9	15	70	338	451	92	8.7	20
12	.20	.34	.49	7.0	9.2	14	102	383	481	80	7.9	16
13	.20	.33	.49	7.0	8.8	14	121	454	464	74	7.5	14
14	.20	.31	.51	7.4	13	14	121	491	436	72	6.9	20
15	.20	.33	2.2	8.0	12	14	115	414	392	67	7.1	19
16	.19	.33	2.3	7.4	12	16	93	341	353	70	7.5	16
17	.18	.32	6.3	7.0	11	21	74	355	336	46	7.3	14
18	.18	.32	5.6	7.5	12	25	68	391	355	42	7.0	13
19	.18	.29	5.0	7.2	12	28	69	417	319	37	6.5	13
20	.18	.23	4.9	7.0	12	34	75	448	309	34	6.2	12
21	.19	.32	4.0	7.0	13	39	68	518	298	31	5.8	12
22	.20	.70	3.3	7.0	13	41	64	518	274	29	5.7	11
23	.20	.70	2.9	7.0	13	41	72	452	249	26	5.7	9.9
24	.20	.58	2.7	7.1	14	37	103	364	240	24	5.1	9.3
25	.20	.58	2.3	7.2	14	44	211	339	222	23	4.8	8.9
26	.20	.57	2.5	7.2	14	53	178	360	200	24	4.5	8.5
27	.28	.58	13	7.2	14	56	134	446	188	21	4.2	8.1
28	.28	.58	29	7.2	14	62	133	548	178	19	3.9	7.8
29	.26	.56	24	7.2	---	69	133	648	174	16	3.5	7.5
30	.21	.55	21	7.3	---	85	143	670	182	15	3.3	7.3
31	.21	---	16	7.6	---	106	---	616	---	14	3.2	---
TOTAL	6.55	12.12	153.89	240.6	309.5	1000	2747	11955	12008	2181	223.1	568.4
MEAN	.21	.40	4.96	7.76	11.1	32.3	91.6	386	400	70.4	7.20	18.9
MAX	.32	.70	29	13	14	106	211	670	627	175	13	94
MIN	.18	.22	.39	7.0	7.6	14	44	123	174	14	3.2	2.8
AC-FT	13	24	305	477	614	1980	5450	23710	23820	4330	443	1130
CAL YR 1977 TOTAL	2290.81			6.28	MAX 68	MIN .11	AC-FT 4540					
WTR YR 1978 TOTAL	31405.16			MEAN 86.0	MAX 670	MIN .18	AC-FT 62290					

## SAN JOAQUIN RIVER BASIN

11239000 HUNTINGTON-SHAVER CONDUIT OUTLET NEAR SHAVER LAKE, CA

LOCATION.--Lat 37°09'18", long 119°13'53", in NW¼NW¼ sec.15, T.9 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank at tunnel outlet, 2.3 mi (3.7 km) northeast of Shaver Lake, and 3.5 mi (5.6 km) south of town of Big Creek.

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for October 1928, published in WSP 1315-A. Prior to October 1960, published as Huntington-Shaver conduit at outlet.

REVISÉD RECORDS, --WSP 931: 1940.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 6,680 ft (2,036 m), from topographic map.

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 16 discharge measurements furnished by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--50 years, 219 ft<sup>3</sup>/s (6.202 m<sup>3</sup>/s), 158,700 acre-ft/yr (196 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,780 ft<sup>3</sup>/s (50.4 m<sup>3</sup>/s) June 3, 4, 1938; minimum daily, 0.57 ft<sup>3</sup>/s (0.016 m<sup>3</sup>/s) Nov. 8, 1976.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	.93	1.1	13	7.6	196	96	141	1560	1480	706	33
2	1.2	.93	1.1	11	7.6	107	84	183	1560	1470	696	32
3	1.1	.93	1.1	9.5	7.6	40	78	248	1560	1470	677	32
4	1.1	.93	1.1	8.8	7.6	18	64	313	1560	1460	611	53
5	1.1	.98	1.1	8.3	8.2	16	57	347	1570	1460	546	1010
6	1.1	1.1	1.1	8.1	11	16	56	439	1560	1470	650	1450
7	1.1	1.0	1.1	7.3	10	17	53	544	1560	1470	664	1440
8	1.1	1.0	1.1	7.6	9.8	17	48	682	1560	1460	575	1430
9	1.1	1.0	1.1	7.7	9.1	16	46	859	1560	1280	580	502
10	1.1	1.0	1.1	7.7	9.8	15	54	978	1540	1070	652	147
11	1.1	1.0	1.1	7.0	9.9	15	76	1110	1530	926	663	447
12	1.1	1.0	1.1	7.0	9.2	14	107	1250	1540	797	692	375
13	1.1	1.0	1.2	7.0	8.8	14	129	1390	1540	697	738	113
14	1.1	1.0	1.2	7.4	52	14	132	1520	1540	643	649	50
15	1.1	1.0	2.0	8.0	589	14	124	1500	1530	651	503	51
16	1.1	1.0	2.3	7.4	1010	16	100	1480	1520	646	550	47
17	1.1	1.0	5.8	7.2	926	21	81	1490	1510	640	394	44
18	.98	1.0	5.6	7.5	873	25	76	1510	1520	635	293	43
19	.84	1.0	4.8	7.2	592	28	77	1520	1510	630	173	42
20	.84	1.0	4.9	7.0	348	34	84	1540	1510	627	78	42
21	.84	1.0	3.9	7.0	204	39	75	1550	1510	639	78	40
22	.84	1.1	3.2	7.0	69	41	70	1550	1500	646	78	40
23	.84	1.2	2.8	7.0	236	41	80	1510	1500	644	57	39
24	.84	1.1	2.6	7.1	469	39	114	1480	1490	642	35	38
25	.84	1.1	2.4	7.2	419	44	247	1470	1490	641	34	37
26	.84	1.1	2.3	7.2	356	54	204	1480	1480	651	34	36
27	.85	1.1	13	7.2	276	57	154	1510	1480	657	34	36
28	.93	1.1	29	7.2	248	65	152	1540	1480	639	34	35
29	.93	1.1	24	7.2	---	74	153	1570	1470	543	33	35
30	.93	1.1	21	7.3	---	89	166	1570	1480	523	33	35
31	.93	---	16	7.6	---	109	---	1560	---	696	33	---
TOTAL	31.47	30.80	161.2	240.7	6783.2	1305	3037	35834	45720	27903	11573	7754
MEAN	1.02	1.03	5.20	7.76	242	42.1	101	1156	1524	900	373	258
MAX	1.5	1.2	29	13	1010	196	247	1570	1570	1480	738	1450
MIN	.84	.93	1.1	7.0	7.6	14	46	141	1470	523	33	32
AC-FT	62	61	320	477	13450	2590	6020	71080	90690	55350	22960	15380
CAL YR 1977	TOTAL	1990.69	MEAN	5.45	MAX	66	MIN	.84	AC-FT	3950		
WTR YR 1978	TOTAL	140373.37	MEAN	385	MAX	1570	MIN	.84	AC-FT	278400		



## 11239500 SHAVER LAKE NEAR BIG CREEK, CA

LOCATION.--Lat 37°08'40", long 119°18'08", in SE¼ sec.13, T.9 S., R.24 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, near center of dam on Stevenson Creek, 6 mi (10 km) southwest of town of Big Creek.

DRAINAGE AREA.--29.1 mi<sup>2</sup> (75.4 km<sup>2</sup>).

PERIOD OF RECORD.--November 1909 to current year. Prior to January 1927, monthly contents only, published in WSP 1315-A, January 1927 to September 1931, published in WSP 721.

REVISED RECORDS.--WSP 1565: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.). Prior to Jan. 11, 1927, gage on rockfilled dam a short distance upstream at different datum.

REMARKS.--Storage began prior to 1905. Original lake formed by rockfilled dam, usable capacity, 5,500 acre-ft (6.78 hm<sup>3</sup>). 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, 135,600 acre-ft (167 hm<sup>3</sup>) between elevations 5,225 ft (1,592.6 m), trash-rack foundation and 5,370.13 ft (1,636.816 m), crest of spillway, NGVD. Additional storage of 92 acre-ft (113,000 m<sup>3</sup>) is not available for release. 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.--Records furnished by Southern California Edison Co. in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 135,900 acre-ft (168 hm<sup>3</sup>) July 5, 1946, Aug. 4, 1978; maximum elevation, 5,370.28 ft (1,636.861 m) Aug. 4, 1978; minimum contents, 652 acre-ft (804,000 m<sup>3</sup>) Mar. 7, 1942, elevation, 5,249.38 ft (1,600.011 m).

NOTE.--Prior to 1960, maximum and minimum daily contents were published. Maximum and minimum daily contents (water years 1928-39) were summarized in WSP 881.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 135,900 acre-ft (168 hm<sup>3</sup>) Aug. 4, elevation, 5,370.28 ft (1,636.861 m); minimum, 5,230 acre-ft (6.45 hm<sup>3</sup>) May 5, elevation, 5,271.33 ft (1,606.701 m).

## Capacity table (elevation, in feet, and contents, in acre-feet)

5225	0	5250	700	5280	9190	5330	60900
5230	42	5255	1250	5290	15600	5340	76700
5235	97	5260	2070	5300	24000	5350	94600
5240	191	5265	3210	5310	34500	5360	114200
5245	379	5270	4750	5320	46800	5371	137500

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28589	28424	28496	33068	39582	41484	22141	5976	57915	119771	135787	127177
2	28579	28424	28496	33190	39668	41595	21524	5556	60346	121580	135853	126794
3	28568	28424	28496	32978	39766	41012	20803	5332	62610	123338	135875	126371
4	28558	28424	28496	33101	39876	41822	20155	5267	64918	125104	135809	126266
5	28548	28506	28506	33001	40415	41670	19403	5237	67278	126858	135831	127729
6	28568	28517	28506	33123	40875	40925	18716	5317	69611	128622	135787	130567
7	28558	28496	28506	33246	41210	40170	17931	5624	71940	130374	135809	133000
8	28548	28496	28506	33347	41658	39386	17101	6209	74249	132116	135678	134848
9	28548	28496	28506	33607	42692	38634	16196	7224	76541	133521	135524	135480
10	28537	28496	28506	33822	43137	37755	15540	8442	78903	134326	135524	135087
11	28527	28496	28537	33969	43381	36957	14943	9874	81217	134892	135546	134848
12	28527	28486	28537	34082	43777	36051	14364	11702	83357	135218	135612	134544
13	28517	28486	28527	34195	43637	35123	13817	13915	85478	135371	135744	133674
14	28517	28486	28486	35341	42869	34184	13268	16316	87581	135393	135787	132806
15	28506	28486	28579	35864	42844	33279	13140	18692	89622	135458	135524	132440
16	28506	28486	28599	36790	43713	32399	12798	20881	91637	135480	135502	132526
17	28496	28496	29477	37374	44485	31551	12123	23100	93662	135502	135174	132634
18	28486	28486	29593	37684	45393	30703	11440	25377	95597	135524	134652	132698
19	28486	28486	29646	37958	45812	29899	10748	27653	97545	135502	133869	132741
20	28475	28486	29657	38139	45589	29108	10074	29941	99504	135502	132892	132806
21	28475	28558	29720	38284	45121	28692	9315	32354	101378	135502	131944	132763
22	28465	28641	29983	38441	44369	28113	8544	34754	103268	135502	131017	132828
23	28455	28517	30628	38574	43829	27379	7776	37100	105173	135524	130674	132310
24	28455	28527	30725	38683	43675	26612	7389	39203	106975	135546	130289	131728
25	28455	28496	30778	38804	43406	25865	8197	41421	108850	135546	129968	131146
26	28455	28496	31101	38924	43035	25142	8151	43521	110697	135568	129369	130567
27	28455	28517	31968	39033	42528	24423	7771	45733	112495	135634	129027	129989
28	28444	28506	32321	39142	41973	23752	7342	48090	114343	135634	128664	129391
29	28434	28506	32544	39239	---	23128	6907	50561	116161	135590	128324	128813
30	28434	28486	32811	39362	---	22625	6508	53059	117971	135568	127942	128176
31	28434	---	32956	39472	---	22670	---	55493	---	135656	127581	---
MAX	28589	28641	32956	39472	45812	41822	22141	55493	117971	135656	135875	135480
MIN	28434	28424	28486	32978	39582	22625	6508	5237	57915	119771	127581	126266
(†)	5304.47	5304.52	5308.67	5314.24	5316.26	5298.56	5274.47	5326.30	5361.83	5370.17	5366.42	5366.70
(‡)	-165	+52	+4470	+6520	+2500	-19300	-16200	+49000	+62500	+17700	-8080	+595

CAL YR 1977 ‡ +5840

WTR YR 1978 ‡ +99600

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet, rounded to Geological Survey standards.

## SAN JOAQUIN RIVER BASIN

11241950 REDINGER LAKE NEAR AUBERRY, CA

LOCATION.--Lat 37°08'42", long 119°26'58", in SW¼ sec.15, T.9 S., R.23 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on upstream face of dam No. 7 on San Joaquin River, 4.2 mi (6.8 km) northeast of Auberry.

DRAINAGE AREA.--1,295 mi<sup>2</sup> (3,354 km<sup>2</sup>).

PERIOD OF RECORD.--November 1950 to current year. Prior to October 1965, monthend contents only, published in WSP 1930.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Lake is formed by a concrete dam; storage began Nov. 19, 1950. Usable capacity, 26,120 acre-ft (32.2 hm<sup>3</sup>) between elevations 1,320.00 ft (402.336 m), invert of tunnel and 1,403.00 ft (427.634 m), top of radial gates, NGVD. Additional storage of 8,914 acre-ft (11.0 hm<sup>3</sup>) 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 furnished by Southern California Edison Co. in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 26,600 acre-ft (32.8 hm<sup>3</sup>) Aug. 5, 1978, elevation, 1,404.00 ft (427.939 m); minimum since appreciable storage was attained, 6,280 acre-ft (7.74 hm<sup>3</sup>) Mar. 3, 1956, elevation, 1,347.98 ft (410.864 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 26,600 acre-ft (32.8 hm<sup>3</sup>) Aug. 5, elevation, 1,404.00 ft (427.939 m); minimum, 9,320 acre-ft (11.5 hm<sup>3</sup>) Sept. 30, elevation, 1,358.88 ft (414.187 m).

Capacity table (elevation, in feet, and contents, in acre-feet)

1320	0	1330	2010	1355	8200	1380	16500
1322	384	1335	3120	1360	9650	1385	18400
1324	778	1340	4280	1365	11200	1390	20400
1326	1180	1345	5520	1370	12900	1400	24700
1328	1590	1350	6810	1375	14600	1403	26119

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10053	14072	15672	20966	23755	24381	25291	25087	24829	25064	25694	24983
2	9835	14328	16074	20806	23790	25712	25488	25237	24870	24636	25994	25037
3	10342	14403	15650	21017	22836	25657	25529	25662	25342	24721	26222	24979
4	10619	14531	15117	21059	22198	24951	25502	25561	24942	24834	26553	24979
5	10989	13833	15469	22641	21903	25483	25419	25365	25051	25173	26259	24038
6	11181	13532	15936	24251	22318	25479	25712	25064	24988	25310	26133	24074
7	11445	13672	16199	22728	21830	25593	25575	25046	24775	25488	26324	23746
8	11165	13826	16527	20831	20806	25556	25305	25337	25092	25051	26353	24457
9	10922	13892	16925	20262	23940	25474	25301	25699	25060	24856	26264	23671
10	11219	14030	16508	19089	24176	25406	25483	25433	24318	25483	26343	22555
11	11481	14303	16236	19154	23500	25639	25671	25132	24897	24942	26315	21630
12	11673	14076	16493	19057	22801	25465	25186	24893	25200	25119	26399	21151
13	11896	13889	16886	19065	22633	25287	25355	25096	25024	24605	26343	20084
14	12221	14069	17291	20183	22129	25186	25474	24798	24992	25173	26091	19065
15	11992	14282	16959	23329	21430	25123	25406	24569	24636	25465	25643	18033
16	11784	14439	17582	24367	20740	25150	25314	24708	24376	24798	25429	17217
17	11952	14639	17923	25019	20410	25470	25214	24793	24528	24784	25460	17958
18	12254	14863	16611	22858	20715	25786	25301	24988	24875	24870	25556	17384
19	12408	14650	15705	22365	21050	25465	25502	24730	24735	24466	25561	16859
20	12920	14467	16600	23101	20966	25200	25671	25173	24915	24372	25529	16319
21	13247	14693	17264	23931	20781	25310	25749	24793	24924	24866	25401	15727
22	13113	14874	17148	24457	20602	25342	25648	24524	24694	25488	25010	14989
23	12916	15642	19190	23803	20544	25128	25634	24439	24578	25492	24929	14165
24	13244	15557	19291	23250	21261	25662	25369	24929	24735	25552	24920	13424
25	13469	15543	18940	22866	22009	25547	25001	24780	24578	25182	24911	12903
26	13731	15135	18715	22576	22563	25429	25037	25502	24766	25694	25015	12372
27	13854	14707	20878	22966	23193	25305	25119	24807	24524	25465	25064	11873
28	14016	14946	21113	23399	23936	25200	25237	24748	24956	25566	25060	10903
29	13763	14931	21067	23737	---	25110	25232	24452	24906	25397	25051	9488
30	13556	15212	21435	23892	---	25200	25246	24879	24974	25470	24911	9319
31	13836	---	21240	23963	---	25451	---	24493	---	25666	24942	---
MAX	14016	15642	21435	25019	24176	25786	25749	25699	25342	25694	26553	25037
MIN	9835	13532	15117	19057	20410	24381	25001	24439	24318	24372	24911	9319
(†)	1372.82	1376.66	1391.94	1398.24	1398.18	1401.55	1401.10	1399.43	1400.50	1402.02	1400.43	1358.88
(‡)	+3790	+1380	+6030	+2720	-27	+1520	-205	-753	+481	+692	-724	-15,600

CAL YR 1977 † -4090

WTR YR 1978 † -728

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet, rounded to Geological Survey standards.

11242000 SAN JOAQUIN RIVER ABOVE WILLOW CREEK, NEAR AUBERRY, CA

LOCATION.--Lat 37°08'40", long 119°27'13", in SW¼SW¼ sec.15, T.9 S., R.23 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 1,000 ft (305 m) downstream from Redinger Lake Dam, 0.4 mi (0.6 km) upstream from Willow Creek, and 4.2 mi (6.8 km) northeast of Auberry.

DRAINAGE AREA.--1,295 mi<sup>2</sup> (3,354 km<sup>2</sup>).

PERIOD OF RECORD.--March 1951 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,175.54 ft (358.305 m) National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Records good. Flow regulated by nine powerplants and six reservoirs with combined capacity of about 559,900 acre-ft (690 hm<sup>3</sup>). Conduit to powerhouse No. 4 diverts 1,000 ft (305 m) above station. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and seven discharge measurements furnished by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--27 years, 424 ft<sup>3</sup>/s (12.01 m<sup>3</sup>/s), 307,200 acre-ft/yr (379 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,200 ft<sup>3</sup>/s (2,070 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 54.2 ft (16.52 m) from floodmarks, from rating curve extended above 7,000 ft<sup>3</sup>/s (198 m<sup>3</sup>/s) on basis of computed flow over dam; no flow Sept. 25, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,700 ft<sup>3</sup>/s (360 m<sup>3</sup>/s) June 10, gage height, 21.90 ft (6.675 m); minimum daily, 3.6 ft<sup>3</sup>/s (0.10 m<sup>3</sup>/s) Jan. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	25	22	4.2	3.9	24	853	858	8120	4020	1240	20
2	24	25	22	4.1	4.0	179	593	706	7810	4050	838	20
3	24	24	22	4.0	4.0	563	590	604	7330	2640	841	20
4	24	23	22	4.0	3.9	5800	784	853	7760	2040	582	20
5	24	23	22	4.1	4.1	2370	685	852	7880	2050	693	20
6	24	23	22	4.3	4.3	1270	613	845	8460	2730	537	20
7	24	23	22	4.2	4.3	846	856	708	9120	3280	124	20
8	24	23	22	4.1	4.1	904	855	581	9110	3870	186	20
9	24	23	22	4.2	13	908	715	582	11200	3910	202	20
10	24	23	23	3.9	26	760	595	850	11600	4560	193	20
11	24	23	23	3.8	25	714	584	840	8650	4950	193	20
12	24	23	23	3.8	25	837	555	1530	9270	4340	223	20
13	24	23	23	3.6	25	733	577	5930	10900	3190	250	20
14	24	23	23	4.3	24	711	567	7360	10600	2860	171	21
15	24	23	23	4.2	68	568	936	7730	9530	4600	24	22
16	24	23	23	4.8	24	391	965	5310	7610	5570	21	21
17	24	23	19	12	15	186	801	4270	6290	4400	20	20
18	24	23	3.8	4.3	4.1	193	658	4270	6530	3830	20	19
19	24	23	10	4.1	4.4	585	553	5000	7330	3190	20	18
20	25	23	17	3.9	4.4	568	556	5250	6790	2690	20	18
21	25	23	17	3.9	4.4	709	556	6380	6810	1970	20	15
22	25	22	18	4.0	4.4	836	552	6920	6790	2080	20	14
23	25	18	11	4.1	4.3	691	550	6390	6050	2640	20	14
24	25	20	9.4	4.0	15	232	829	3850	5270	2710	20	13
25	25	21	9.3	3.9	24	566	3130	3260	5070	2470	20	13
26	25	21	9.4	3.9	24	561	1590	2420	4600	2990	20	13
27	25	21	9.7	3.9	24	560	1040	3970	4140	3560	20	13
28	25	21	9.5	3.9	24	558	867	5190	3320	2690	20	13
29	25	22	9.5	3.9	---	554	860	6900	2630	2100	20	13
30	25	22	9.5	3.9	---	543	861	8240	3230	1150	20	12
31	25	---	7.9	3.9	---	1040	---	9120	---	1110	20	---
TOTAL	756	676	529.0	133.2	414.6	25960	24726	117569	219800	98240	6618	532
MEAN	24.4	22.5	17.1	4.30	14.8	837	824	3793	7327	3169	213	17.7
MAX	25	25	23	12	68	5800	3130	9120	11600	5570	1240	22
MIN	24	18	3.8	3.6	3.9	24	550	581	2630	1110	20	12
AC-FT	1500	1340	1050	264	822	51490	49040	233200	436000	194900	13130	1060

CAL YR 1977 TOTAL 7744.0 MEAN 21 MAX 28 MIN 3.8 AC-FT 15360  
WTR YR 1978 TOTAL 495953.8 MEAN 1359 MAX 11600 MIN 3.6 AC-FT 983700

LOCATION. --Lat 37°23'52", long 119°33'55", in SW¼NE¼ sec.21, T.6 S., R.22 E., Madera County, on right bank at road bridge 0.6 mi (1.0 km) downstream from Sequel Campground, 3.0 mi (4.8 km) upstream from Chilkooot Creek, and 4.7 mi (7.6 km) southeast of Sugar Pine.

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

REVISED RECORDS.--WDR CA-72-2: 1970-71.

GAGE.--Water-stage recorder. Altitude of gage is 5,200 ft (1,580 m), from topographic map.

REMARKS.--Records good. No storage above station. Madera Irrigation District diverts up to 50 ft<sup>3</sup>/s (1.42 m<sup>3</sup>/s) through Soquel ditch to the Fresno River basin 2.2 mi (3.5 km) upstream.

AVERAGE DISCHARGE.--13 years, 19.7 ft<sup>3</sup>/s (0.558 m<sup>3</sup>/s), 14,270 acre-ft/yr (17.6 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,600 ft<sup>3</sup>/s (453 m<sup>3</sup>/s) Dec. 6, 1966, gage height, 5.90 ft (1.798 m), from rating curve extended above 250 ft<sup>3</sup>/s (7.08 m<sup>3</sup>/s) on basis of a step-backwater survey; minimum daily, 0.29 ft<sup>3</sup>/s (0.008 m<sup>3</sup>/s) Sept. 11, Oct. 3-5, 12-17, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft<sup>3</sup>/s (2.83 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 17	1400	274	7.76	Mar. 4	0515	*318	9.01
Dec. 23	0900	210	5.95	Mar. 31	0530	198	5.61
Dec. 27	0300	143	4.05	Apr. 25	0430	*318	9.01
Jan. 9	1400	115	3.26	May 13	2015	167	4.73
Jan. 14	2400	278	7.87	May 21	1945	185	5.24
Jan. 16	1800	192	5.44	May 30	1830	222	6.29
Feb. 5	1845	182	5.15	June 7	1815	260	7.36
Feb. 9	1015	182	5.15	June 27	0930	131	3.71
Mar. 2	1200	124	3.51				

Minimum daily, 0.29 ft<sup>3</sup>/s (0.008 m<sup>3</sup>/s) Oct 3-5, 12-17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.37	.69	1.2	18	5.1	21	71	63	165	105	21	7.3
2	.34	.71	1.3	17	4.8	80	51	64	160	99	20	6.9
3	.29	.71	1.2	16	4.8	44	41	75	164	90	20	7.1
4	.29	.71	1.1	18	5.0	223	39	83	170	87	19	18
5	.29	1.6	1.1	33	49	130	33	83	181	85	18	35
6	.40	1.0	1.1	38	40	58	29	67	187	85	16	38
7	.38	.91	1.1	25	25	42	29	65	201	83	15	29
8	.36	.91	1.1	20	22	35	28	73	199	80	15	18
9	.34	.85	1.0	58	108	39	30	84	195	78	15	14
10	.31	.82	1.0	34	31	32	34	88	158	75	14	20
11	.31	.79	1.1	24	20	32	42	91	145	69	13	16
12	.29	.77	1.4	20	14	27	48	107	147	63	13	14
13	.29	.77	1.2	21	16	24	51	131	145	59	13	13
14	.29	.77	1.2	94	15	23	48	143	137	56	12	18
15	.29	.77	23	85	12	22	59	134	124	55	12	16
16	.29	.77	4.6	85	11	24	47	115	111	53	11	14
17	.29	.77	96	76	10	26	47	113	107	50	11	13
18	.31	.77	22	45	9.7	27	45	118	111	47	11	13
19	.34	.77	12	38	9.8	30	42	125	99	43	10	13
20	.36	.79	6.3	24	9.9	30	42	133	95	39	9.7	12
21	.45	3.6	6.3	11	10	63	36	146	92	37	9.5	11
22	.49	17	18	9.3	11	58	32	145	87	35	9.5	11
23	.49	3.1	107	7.9	11	37	33	132	83	33	9.4	10
24	.51	2.0	24	6.9	11	32	54	98	77	31	9.2	9.7
25	.51	1.8	14	6.5	10	32	197	88	71	30	9.0	9.4
26	.51	1.4	30	6.1	11	34	108	87	65	35	9.0	9.1
27	.74	1.4	101	5.8	11	35	76	98	94	33	8.8	8.8
28	.64	1.3	51	5.7	12	39	69	126	83	28	8.4	8.8
29	.61	1.3	32	5.7	---	44	71	159	99	26	7.8	8.5
30	.66	1.3	39	5.6	---	68	73	177	105	24	7.5	8.5
31	.69	---	23	5.3	---	127	---	174	---	23	7.5	---
TOTAL	12.73	50.85	625.3	864.8	509.1	1538	1605	3385	3857	1736	384.3	430.1
MEAN	.41	1.70	20.2	27.9	18.2	49.6	53.5	109	129	56.0	12.4	14.3
MAX	.74	17	107	94	108	223	197	177	201	105	21	38
MIN	.29	.69	1.0	5.3	4.8	21	28	63	65	23	7.5	6.9
AC-FT	25	101	1240	1720	1010	3050	3180	6710	7650	3440	762	853
CAL YR 1977	TOTAL	1112.50	MEAN	3.05	MAX 107	MIN .29	AC-FT	2210				
WTR YR 1978	TOTAL	14998.18	MEAN	41.1	MAX 223	MIN .29	AC-FT	29750				

## 11243400 BASS LAKE NEAR BASS LAKE, CA

LOCATION.--Lat 37°17'36", long 119°31'40", in NE¼ sec.26, T.7 S., R.22 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, at outlet tower at dam on North Fork Willow Creek, 2.2 mi (3.5 km) southeast of town of Bass Lake, and 5 mi (8 km) north of town of North Fork.

DRAINAGE AREA.--50.4 mi<sup>2</sup> (130.5 km<sup>2</sup>).

PERIOD OF RECORD.--January 1911 to current year. Bass Lake was formerly called Crane Valley Reservoir.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.).

REMARKS.--Reservoir formed by earthfill and rockfill dam; completed in 1901 and raised in 1910. Since 1910 usable contents 45,100 acre-ft (55.6 hm<sup>3</sup>) between elevations, 3,280.22 ft (999.811 m), invert of outlet conduit No. 3 and 3,376.40 ft (1,029.127 m), top of spillway gates, NGVD. Additional storage of 300 acre-ft (370,000 m<sup>3</sup>) 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 ft<sup>3</sup>/s (1.42 m<sup>3</sup>/s) from North Fork Willow Creek through Soquel ditch (station 11242350) into Nelder Creek (Fresno River basin) during October and March to July each year. Chilkoot ditch can divert up to 7 ft<sup>3</sup>/s (0.20 m<sup>3</sup>/s) 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.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 45,960 acre-ft (56.7 hm<sup>3</sup>) June 17, 1923, elevation, 3,376.8 ft (1,029.25 m); minimum, 35 acre-ft (43,200 m<sup>3</sup>) Nov. 19, 1953, elevation, 3,270.2 ft (996.76 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 45,560 acre-ft (56.2 hm<sup>3</sup>) June 28, elevation, 3,376.53 ft (1,029.166 m); minimum, 17,360 acre-ft (21.4 hm<sup>3</sup>) Dec. 1, elevation, 3,346.70 ft (1,020.074 m).

## MONTHEND CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Date	Contents
Sept. 30.....	17700
Oct. 31.....	17480
Nov. 30.....	17360
Dec. 31.....	24270
Jan. 31.....	30760
Feb. 28.....	32540
Mar. 31.....	34170
Apr. 30.....	37860
May 31.....	42600
June 30.....	45410
July 31.....	42320
Aug. 31.....	35270
Sept. 30.....	32610

## SAN JOAQUIN RIVER BASIN

11243500 PACIFIC GAS AND ELECTRIC CO. CONDUIT NO. 3 NEAR BASS LAKE, CA

LOCATION.--Lat 37°17'21", long 119°31'44", in SE¼ sec.26, T.7 S., R.22 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 1,000 ft (305 m) downstream from Crane Valley powerhouse and dam, and 2.5 mi (4.0 km) southeast of town of Bass Lake.

PERIOD OF RECORD.--October 1940 to current year. Prior to October 1954, published as "near Crane Valley Reservoir."

GAGE.--Water-stage recorder and concrete flume. Altitude of gage is 3,300 ft (1,006 m), from topographic map.

REMARKS.--Conduit diverts from Bass Lake in sec.26, T.7 S., R.22 E. Water passes through Crane Valley powerhouse, then to powerhouse No. 3, and is stored temporarily at Manzanita Lake on North Fork Willow Creek; flow then diverts to powerhouses No. 2 and 1A before it enters San Joaquin River at Kerckhoff Reservoir through Wishon powerhouse No. 1. See schematic diagram of San Joaquin River basin.

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

AVERAGE DISCHARGE.--38 years, 67.9 ft<sup>3</sup>/s (1.923 m<sup>3</sup>/s), 49,190 acre-ft/yr (60.7 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 167 ft<sup>3</sup>/s (4.73 m<sup>3</sup>/s) June 23, 24, 1965; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	0	.02	.03	151	148	147	159	150	160	123	94
2	0	0	0	.03	150	146	148	159	150	160	125	97
3	0	0	0	.06	150	148	147	160	150	160	132	97
4	0	0	0	.68	150	148	148	160	150	157	160	97
5	.02	.03	.04	100	151	148	148	156	150	160	162	94
6	.08	.10	.10	45	151	148	148	157	152	160	125	113
7	.09	.20	.17	7.1	150	148	149	157	152	158	160	129
8	1.3	.27	.23	0	150	148	148	157	153	158	153	153
9	3.0	.31	.30	.02	150	149	148	157	153	158	159	160
10	3.0	.40	.39	63	150	149	148	157	154	158	158	157
11	3.0	.52	.45	118	151	149	149	157	153	160	151	160
12	2.9	.65	.32	119	152	149	148	158	153	160	158	160
13	2.9	16	6.5	120	133	149	147	154	159	160	158	160
14	2.9	.04	.03	120	150	149	148	159	156	160	159	160
15	2.9	.03	.03	120	152	149	153	159	154	160	158	160
16	2.9	.03	.02	133	148	149	158	159	155	160	159	160
17	2.9	.03	.07	64	147	149	159	158	155	159	154	160
18	2.9	.02	.03	38	147	149	160	157	152	159	153	58
19	1.5	.14	.03	115	146	149	160	157	152	139	152	0
20	0	.40	.03	130	145	149	160	157	152	158	154	0
21	0	48	.32	148	144	144	159	158	152	159	122	0
22	0	43	.49	148	144	144	158	158	151	158	97	0
23	0	1.0	27	148	143	142	157	155	151	158	97	0
24	0	1.0	27	148	142	140	157	150	151	158	95	0
25	0	1.0	.01	148	142	141	157	112	152	156	94	0
26	0	1.0	.01	149	141	145	158	148	152	141	99	0
27	0	1.0	.03	149	141	145	158	150	152	123	102	0
28	0	1.0	.03	149	142	145	158	151	155	118	88	0
29	0	51	.03	149	---	145	158	151	160	124	96	0
30	0	65	.03	149	---	145	158	151	160	113	96	0
31	0	---	.03	142	---	145	---	151	---	127	99	---
TOTAL	32.30	232.17	63.74	2987.24	4113	4551	4599	4789	4591	4699	4098	2369
MEAN	1.04	7.74	2.06	96.4	147	147	153	154	153	152	132	79.0
MAX	3.0	65	27	149	152	149	160	160	160	160	162	160
MIN	0	0	0	0	133	140	147	112	150	113	88	0
AC-FT	64	461	126	5930	8160	9030	9120	9500	9110	9320	8130	4700
CAL YR 1977	TOTAL	2758.12	MEAN	7.56	MAX	121	MIN	0	AC-FT	5470		
WTR YR 1978	TOTAL	37124.45	MEAN	102	MAX	162	MIN	0	AC-FT	73640		

LOCATION.--Lat 37°17'20", long 119°31'45", in SE¼ sec.26, T.7 S., R.22 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 1,500 ft (457 m) downstream from Bass Lake spillway, and 2.5 mi (4.0 km) southeast of town of Bass Lake.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.30	.29	.27	.49	11	4.0	100	1.8	3.3	24	1.4	.73
2	.29	.29	.27	.44	3.2	4.9	80	1.9	3.4	22	1.4	.71
3	.29	.29	.27	.43	2.2	420	50	1.8	3.4	18	1.4	.74
4	.29	.29	.27	.53	5.3	690	45	1.7	2.5	6.9	1.4	.86
5	.29	.49	.27	1.7	12	430	40	1.7	2.3	2.4	1.4	.96
6	.29	.28	.27	3.6	9.7	390	1.7	1.6	2.5	1.1	1.4	1.0
7	.28	.28	.27	1.2	7.0	300	1.8	1.6	45	.99	1.4	19
8	.28	.28	.27	.68	4.0	250	1.6	1.6	60	.94	1.3	.81
9	.28	.28	.27	1.4	1.8	200	1.5	1.6	61	.90	1.3	.77
10	.28	.28	.27	.92	1.3	150	1.4	1.6	61	.88	1.3	.78
11	.28	.28	.27	.62	1.3	100	1.4	1.6	61	.87	1.3	.74
12	.27	.28	.27	.53	1.2	90	1.5	1.6	61	.85	1.1	.71
13	.27	.27	.27	.50	1.2	70	1.5	1.6	61	1.3	1.1	.70
14	.27	.27	.27	2.6	1.1	50	1.5	1.6	60	1.9	1.1	.74
15	.27	.27	.35	3.8	1.1	40	2.4	1.5	59	1.8	1.0	.67
16	.27	.27	.29	23	1.1	40	1.7	1.5	16	1.8	.99	.64
17	.28	.27	1.4	15	1.0	45	1.6	1.6	1.1	1.8	.98	.60
18	.29	.27	1.4	1.0	1.0	50	1.6	1.6	1.2	1.7	.95	.70
19	.29	.27	.48	.83	.97	50	1.6	1.6	1.1	1.6	.93	.81
20	.29	.27	.38	.79	.97	60	1.6	1.6	1.2	1.6	.90	.84
21	.29	.28	.34	.76	.97	70	1.6	1.6	1.2	1.6	.88	.85
22	.29	.60	.57	.72	.97	100	1.6	1.6	37	1.6	.88	.86
23	.30	.31	4.8	.69	.97	70	1.6	1.6	53	1.6	.86	.85
24	.30	.29	1.4	.66	.94	50	2.7	1.7	44	1.6	.85	.85
25	.30	.28	.59	.63	.94	40	4.0	33	35	1.5	.83	.83
26	.30	.28	.45	.59	.94	45	3.0	.85	17	1.5	.82	.83
27	.31	.28	3.1	.57	.94	50	2.6	2.1	1.2	1.5	.81	.84
28	.29	.28	2.0	1.1	1.3	55	2.4	3.0	37	1.5	.78	.83
29	.29	.28	.84	2.3	---	60	2.2	3.0	39	1.5	.77	.86
30	.29	.27	.95	2.6	---	70	2.0	3.1	24	1.4	.76	.86
31	.29	---	.61	6.4	---	200	---	3.3	---	1.4	.74	---
TOTAL	8.90	8.92	23.73	77.08	76.41	4243.9	363.1	87.55	855.4	110.03	33.03	41.97
MEAN	.29	.30	.77	2.49	2.73	137	12.1	2.82	28.5	3.55	1.07	1.40
MAX	.31	.60	4.8	23	12	690	100	33	61	24	1.4	19
MIN	.27	.27	.27	.43	.94	4.0	1.4	.85	1.1	.85	.74	.60
AC-FT	18	18	47	153	152	8420	720	174	1700	218	66	83
CAL YR 1977	TOTAL	108.80	MEAN	.30	MAX	4.8	MIN	.20	AC-FT	216		
WTR YR 1978	TOTAL	5930.02	MEAN	16.2	MAX	690	MIN	.27	AC-FT	11760		

## SAN JOAQUIN RIVER BASIN

11246500 WILLOW CREEK AT MOUTH, NEAR AUBERRY, CA

LOCATION.--Lat 37°09'03", long 119°27'34", in SE¼NE¼ sec.16, T.9 S., R.23 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 40 ft (12 m) upstream from bridge, 0.4 mi (0.6 km) upstream from mouth, 1.3 mi (2.1 km) downstream from Whiskey Creek, and 4.3 mi (6.9 km) northeast of Auberry.

DRAINAGE AREA.--130 mi<sup>2</sup> (337 km<sup>2</sup>).

PERIOD OF RECORD.--January 1952 to current year.

REVISED RECORDS.--WSP 2130: 1956-58(M).

GAGE.--Water-stage recorder. Concrete control since Oct. 22, 1964. Datum of gage is 1,174.69 ft (358.046 m) National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Records good. Flow regulated by Bass Lake (station 11243400) 10 mi (16 km) upstream and diversion into Pacific Gas and Electric Co. conduit No. 1. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and 10 discharge measurements furnished by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--26 years, 56.9 ft<sup>3</sup>/s (1.611 m<sup>3</sup>/s), 41,220 acre-ft/yr (50.8 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft<sup>3</sup>/s (445 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 28.5 ft (8.69 m), from floodmarks, from rating curve extended above 4,700 ft<sup>3</sup>/s (133 m<sup>3</sup>/s); no flow at times in 1955, 1959-62, 1964-66, 1968, 1972, 1976-77.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,380 ft<sup>3</sup>/s (124 m<sup>3</sup>/s) Feb. 9, gage height, 14.92 ft (4.548 m); no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978.  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	.78	31	29	131	809	468	325	42	27	2.9
2		0	.78	25	27	672	616	471	270	40	27	2.8
3		0	.73	23	26	709	445	501	241	38	28	2.8
4		0	.73	25	26	2200	465	523	232	38	28	3.4
5		0	.73	53	95	1980	360	495	234	27	32	15
6		0	.68	247	314	1300	355	398	217	22	38	22
7		0	.68	76	270	839	404	393	221	21	38	15
8		0	.68	76	218	576	329	420	272	20	27	10
9		0	.49	139	2300	541	309	445	258	18	14	7.4
10		0	.54	170	1320	454	327	439	239	18	9.7	7.4
11		0	.54	181	481	325	355	439	245	17	16	7.9
12		0	.68	163	401	406	373	451	241	20	15	7.3
13		.02	.68	156	776	378	380	498	237	19	15	6.6
14		.02	.89	321	387	320	348	510	198	16	9.8	7.4
15		.04	6.1	965	280	287	423	498	196	15	4.8	9.0
16		.04	10	1210	221	277	494	406	183	15	4.4	7.0
17		.07	298	1910	179	281	343	375	117	18	4.3	6.3
18		.07	181	562	159	277	339	380	102	18	4.3	6.8
19		.07	14	446	154	266	322	375	92	17	4.1	11
20		.07	7.5	214	146	289	320	378	50	17	3.9	16
21		.20	5.8	100	141	519	289	383	38	18	3.7	20
22		4.0	10	74	138	634	258	385	47	18	3.6	19
23		4.2	545	60	143	346	262	355	70	19	3.9	18
24		1.6	67	48	136	363	306	272	77	31	3.9	15
25		1.2	22	43	125	343	1380	267	60	32	3.9	13
26		1.0	20	40	115	343	986	237	55	33	3.9	14
27		.94	820	37	114	327	623	239	39	28	3.7	14
28		.89	249	36	109	331	513	277	36	28	3.6	14
29		.89	61	32	---	456	492	315	70	28	3.4	14
30		.89	87	31	---	648	545	318	51	32	3.0	14
31		---	46	30	---	1090	---	298	---	28	3.0	---
TOTAL	0	16.21	2459.01	7524	8830	17908	13770	12209	4713	751	389.9	329.0
MEAN	0	.54	79.3	243	315	578	459	394	157	24.2	12.6	11.0
MAX	0	4.2	820	1910	2300	2200	1380	523	325	42	38	22
MIN	0	0	.49	23	26	131	258	237	36	15	3.0	2.8
AC-FT	0	32	4880	14920	17510	35520	27310	24220	9350	1490	773	653
CAL YR 1977	TOTAL	2969.97	MEAN	8.14	MAX	820	MIN	0	AC-FT	5890		
WTR YR 1978	TOTAL	68899.12	MEAN	189	MAX	2300	MIN	0	AC-FT	136700		



## 11247000 SAN JOAQUIN RIVER BELOW KERCKHOFF POWERHOUSE, NEAR PRATHER, CA

LOCATION.--Lat 37°04'45", long 119°33'36", in NE¼NW¼ sec.10, T.10 S., R.22 E., Fresno County, Hydrologic Unit 18040006, on left bank 1.1 mi (1.8 km) downstream from Kerckhoff powerhouse, 1.4 mi (2.3 km) upstream from Big Sandy Creek, and 3.8 mi (6.1 km) southeast of Prather.

DRAINAGE AREA.--1,480 mi<sup>2</sup> (3,833 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1910 to September 1914, December 1936 to December 1937, December 1942 to current year. Published as "near North Fork" 1910-14 and as "below Kerckhoff powerhouse" 1915-60.

GAGE.--Water-stage recorder. Datum of gage is 563.4 ft (171.72 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Oct. 1, 1914, at site 11 mi (18 km) upstream at different datum.

REMARKS.--Records good. Flow regulated by 12 powerplants and eight reservoirs with total usable capacity of 609,300 acre-ft (751 hm<sup>3</sup>). Earliest storage began in 1901 at Bass Lake (station 11243400). See records for Florence Lake, 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.

COOPERATION.--Gage-height record, telemark readings, and seven discharge measurements furnished by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--39 years (water years 1911-14, 1944-78), 2,330 ft<sup>3</sup>/s (65.99 m<sup>3</sup>/s), 1,688,000 acre-ft/yr (2.08 km<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92,200 ft<sup>3</sup>/s (2,610 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 51.0 ft (15.54 m), from floodmarks, from rating curve extended above 20,000 ft<sup>3</sup>/s (566 m<sup>3</sup>/s) on basis of records for San Joaquin River above Willow Creek, near Auberry and Willow Creek at mouth, near Auberry; minimum daily, 14 ft<sup>3</sup>/s (0.40 m<sup>3</sup>/s) Mar. 4, 6, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,500 ft<sup>3</sup>/s (439 m<sup>3</sup>/s) June 10, gage height, 25.35 ft (7.727 m); minimum daily, 18 ft<sup>3</sup>/s (0.51 m<sup>3</sup>/s) Oct. 6, 7, 10, 15-17, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	97	227	286	1660	2450	3640	5060	4860	11300	7040	4730	2520
2	20	62	340	1650	2190	4530	4580	4750	10900	7220	4450	2500
3	19	20	24	1650	2730	5560	4500	4580	10500	6180	4170	2570
4	19	485	338	1650	2730	9920	4740	4850	10800	5510	4210	2580
5	145	275	187	1660	2730	8250	4720	4860	10900	5500	4050	2960
6	18	401	216	1680	2830	6240	4500	4760	11500	5910	4110	2620
7	18	231	272	1660	3510	5220	4930	4640	12000	6470	3560	3070
8	517	65	175	1660	3800	4940	4800	4470	12100	6890	3600	3410
9	19	137	119	1760	6460	4890	4650	4490	13600	6990	3620	3410
10	18	28	129	1680	6010	4850	4490	4720	14400	7060	3650	3400
11	243	74	260	1660	4420	4800	4460	4750	11600	7970	3610	3250
12	232	171	142	1430	4200	4900	4490	4930	11800	7340	3630	2770
13	147	20	283	1380	5000	4770	4470	9160	13100	6630	3690	3120
14	65	215	299	1520	4210	4540	4460	10800	13100	6050	3620	3120
15	18	64	372	2260	4010	4410	4570	11200	12200	7360	2940	3120
16	18	172	909	2780	3840	4280	5350	9110	10700	8660	2720	3110
17	18	163	1030	6030	3570	4040	4690	7640	9550	7520	2600	2140
18	377	125	1630	4120	3110	4020	4570	7690	9470	6990	2550	2850
19	19	20	1570	3540	3070	4310	4410	8380	10400	6410	2580	2700
20	86	383	707	2430	3270	4370	4400	8530	9840	6110	2600	2720
21	104	321	629	2050	3300	4700	4370	9610	9860	5540	2630	2750
22	226	659	900	2010	3270	5020	4340	10200	9840	5450	2720	2790
23	20	566	1670	2590	3400	4750	4330	9890	9300	5900	2610	2850
24	20	315	1730	2620	3600	4140	4480	7400	8270	6060	2530	2810
25	92	307	1370	2450	3610	4370	8030	6730	8140	6160	2500	2670
26	91	21	955	2390	3600	4410	6430	6160	7600	6060	2470	2690
27	387	368	1770	2200	3600	4380	5460	7240	7270	6920	2510	2670
28	20	250	1740	1980	3610	4380	4990	8240	6570	5970	2530	2820
29	18	206	1710	1980	---	4370	4940	10100	6130	5610	2530	2930
30	365	235	1660	2050	---	4440	4940	11400	6350	4730	2530	2540
31	20	---	1660	2120	---	5240	---	11900	---	4500	2530	---
TOTAL	3476	6586	25082	68300	102130	152680	145150	228040	309090	198710	98780	85460
MEAN	112	220	809	2203	3648	4925	4838	7356	10300	6410	3186	2849
MAX	517	659	1770	6030	6460	9920	8030	11900	14400	8660	4730	3410
MIN	18	20	24	1380	2190	3640	4330	4470	6130	4500	2470	2140
AC-FT	6890	13060	49750	135500	202600	302800	287900	452300	613100	394100	195900	169500
CAL YR 1977 TOTAL	181959		MEAN 499		MAX 1770	MIN 14	AC-FT 360900					
WTR YR 1978 TOTAL	1423484		MEAN 3900		MAX 14400	MIN 18	AC-FT 2823000					

## SAN JOAQUIN RIVER BASIN

11247000 SAN JOAQUIN RIVER BELOW KERCKHOFF POWERHOUSE, NEAR PRATHER, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961-68, 1970-74, 1978.

CHEMICAL ANALYSES: Water year 1978.

WATER TEMPERATURES: Water years 1961-68, 1970-74.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: November 1960 to September 1968, January 1970 to September 1974.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUN 26...	1502	7630	16	7.8	13.5	11.4	8	1	2.9	.1	1.2
AUG 22...	1511	2730	18	7.8	16.0	10.2	4	0	1.3	.2	1.2

DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
JUN 26...	24	.2	.4	7	2.1	.6	.0	7.1	18	.02	.00
AUG 22...	37	.3	.3	5	1.0	.8	.0	6.0	14	.02	.03

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
JUN 26...	.01	.00	.68	.68	.68	.01	.00	.00	9	30
AUG 22...	.04	.01	.27	.28	.31	.03	.01	.03	30	20

## SAN JOAQUIN RIVER BASIN

235

11249500 MADERA CANAL AT FRIANT, CA

LOCATION.--Lat 37°00'10", long 119°42'21", in NW¼SW¼ sec.5, T.11 S., R.21 E., Madera County, at Friant Dam 0.9 mi (1.4 km) northeast of Friant.

PERIOD OF RECORD.--October 1943 to current year. Monthly discharge only for October 1943 to September 1950 published in WSP 1315-A. October 1954 to September 1966 published as Friant-Madera Canal at Friant.

REVISED RECORDS.--WSP 1151: 1944-48.

GAGE.--Discharge computed on basis of valve openings in dam and head on valves. Prior to Oct. 1, 1948, water-stage recorder at several sites at various datums. Oct. 1, 1948, to Sept. 30, 1949, water-stage recorder at site 8.8 mi (14.2 km) downstream.

REMARKS.--Canal diverts from Millerton Lake (station 11250100) at right end of Friant Dam for irrigation between San Joaquin and Fresno Rivers.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by the Geological Survey, rounded to Geological Survey standards.

AVERAGE DISCHARGE.--35 years, 296 ft<sup>3</sup>/s (8.383 m<sup>3</sup>/s), 214,500 acre-ft/yr (264 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,330 ft<sup>3</sup>/s (37.7 m<sup>3</sup>/s) July 2, 1973; no flow many days in each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					0	643	745	1100	1280	1280	1260	412
2					0	733	794	1120	1270	1280	1260	397
3					0	603	820	1090	1270	1280	1260	356
4					0	758	815	1060	1270	1270	1200	331
5					0	914	811	1130	1270	1270	1170	279
6					0	779	1010	1150	1270	1270	1160	427
7					157	695	1160	1110	1270	1280	1120	501
8					473	693	1150	1060	1270	1270	1090	440
9					515	690	1140	1080	1290	1270	1090	409
10					1070	826	1130	1170	1280	1280	1090	410
11					1090	967	1120	1190	1280	1270	1090	411
12					884	1000	1110	1200	1290	1270	1080	411
13					639	999	1100	1210	1290	1270	1080	370
14					546	998	1140	1250	1280	1280	1080	348
15					544	997	1160	1260	1280	1280	1070	348
16					542	996	1150	1270	1270	1260	1010	349
17					542	851	1140	1260	1280	1260	853	349
18					540	627	1130	1270	1280	1260	759	349
19					540	556	1110	1260	1280	1270	614	320
20					539	684	1140	1260	1280	1270	549	302
21					465	754	1150	1270	1280	1270	547	301
22					277	754	1130	1300	1280	1270	483	301
23					202	754	1120	1280	1280	1270	448	301
24					202	754	1100	1260	1280	1270	446	301
25					202	880	1090	1270	1280	1280	444	302
26					203	948	1090	1310	1270	1280	443	302
27					203	945	1080	1300	1280	1270	441	302
28					332	942	1070	1270	1270	1260	439	508
29					---	939	1050	1250	1270	1260	437	607
30					---	936	1030	1280	1270	1260	435	538
31		---			---	786	---	1280	---	1260	433	---
TOTAL	0	0	0	0	10707	25401	31785	37570	38310	39390	25881	11282
MEAN	0	0	0	0	382	819	1060	1212	1277	1271	835	376
MAX	0	0	0	0	1090	1000	1160	1310	1290	1280	1260	607
MIN	0	0	0	0	0	556	745	1060	1270	1260	433	279
AC-FT	0	0	0	0	21240	50380	63050	74520	75990	78130	51330	22380

CAL. YR 1977 TOTAL 15969.00 MEAN 43.8 MAX 634 MIN 0 AC-FT 31670  
WTR YR 1978 TOTAL 220326.00 MEAN 604 MAX 1310 MIN 0 AC-FT 437000

## SAN JOAQUIN RIVER BASIN

11250000 FRIANT-KERN CANAL AT FRIANT, CA  
(National stream-quality accounting network station)

LOCATION.--Lat 36°59'53", long 119°42'11", in SE&SW¼ sec.5, T.11 S., R.21 E., Fresno County, at Friant Dam 0.9 mi (1.4 km) northeast of Friant.

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

## WATER-DISCHARGE RECORDS

GAGE.--Discharge computed on basis of valve openings in dam and head on valves. Prior to July 8, 1949, nonrecording gages at various sites and datums. July 8 to Sept. 30, 1949, water-stage recorder at site 0.2 mi (0.3 km) downstream.

REMARKS.--Canal diverts from Millerton Lake (station 11250100) at left end of Friant Dam for irrigation in upper San Joaquin Valley.

COOPERATION.--Records of discharge furnished by Bureau of Reclamation and reviewed by Geological Survey, rounded to Geological Survey standards.

AVERAGE DISCHARGE.--29 years, 1,333 ft<sup>3</sup>/s (37.75 m<sup>3</sup>/s), 965,800 acre-ft/yr (1.19 km<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,564 ft<sup>3</sup>/s (129 m<sup>3</sup>/s) Apr. 17, 1962, Aug. 4, 1971; no flow for several months in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	300	181			424	1610	0	822	2810	3950	3890	3850
2	367	0			1140	1460	189	950	2790	3920	2890	3700
3	414	81			1310	1280	247	1060	2830	3930	3880	3660
4	411	0			536	299	201	1160	2810	3940	3890	3630
5	409	0			1260	0	200	1150	2770	3950	3890	2460
6	385	0			1610	365	116	1160	2960	3950	3910	1680
7	312	0			1610	319	0	1250	3170	3930	3910	1920
8	237	84			1280	0	0	1400	3250	3930	3910	2140
9	251	0			460	0	127	1580	3160	3960	3910	2180
10	269	67			63	84	170	1700	3080	3950	3900	2130
11	289	33			88	0	115	1660	3220	3950	3890	2150
12	320	0			361	0	222	1690	3320	3960	3880	2150
13	331	67			105	0	200	1810	3470	3950	3900	2180
14	318	134			499	92	131	1920	3580	3940	3900	2220
15	301	117			498	157	180	1930	3670	3960	3890	2200
16	376	167			529	173	198	1850	3650	3950	3900	2180
17	454	221			818	80	284	2030	3620	3960	3910	2370
18	451	147			1050	50	414	2160	3740	3960	3890	2530
19	433	65			1150	189	396	2200	3790	3950	3900	2670
20	415	50			1280	240	454	2210	3820	3940	3910	2760
21	357	100			1460	71	477	2310	3940	3930	3890	2380
22	271	0			1610	0	471	2440	3950	3930	3900	2210
23	270	0			1690	0	552	2460	3870	3940	3910	2130
24	312	0			1710	0	629	2390	3730	3940	3890	2190
25	332	130			1740	0	567	2420	3830	3950	3870	2230
26	259	0			1880	123	505	2390	3940	3960	3850	2350
27	203	130			1850	326	579	2330	3960	3930	3880	2530
28	251	0			1670	341	619	2260	3960	3900	3890	2560
29	298	0			---	347	615	2290	3960	3910	3870	2480
30	296	0			---	300	696	2510	3960	3910	3890	2410
31	282	---			---	199	---	2720	---	3900	3900	---
TOTAL	10174	1774	0	0	29681	8105	9554	58212	104610	122130	119690	74230
MEAN	328	59.1	0	0	1060	261	318	1878	3487	3940	3861	2474
MAX	454	221	0	0	1880	1610	696	2720	3960	3960	3910	3850
MIN	203	0	0	0	63	0	0	822	2770	3900	2890	1680
AC-FT	20180	3520	0	0	58870	16080	18950	115500	207500	242200	237400	147200
CAL YR 1977 TOTAL	130253.00			MEAN 357	MAX 1760	MIN 0	AC-FT 258400					
WTR YR 1978 TOTAL	538160.00			MEAN 1474	MAX 3960	MIN 0	AC-FT 1067000					

11250000 FRIANT-KERN CANAL AT FRIANT, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.  
 CHEMICAL ANALYSES: Water years 1975 to current year.  
 BIOLOGICAL DATA: Water years 1975 to current year.  
 SEDIMENT RECORDS: Water years 1975 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCEI, FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
OCT											
04...	1030	412	47	7.4	21.5	--	--	K5	K3	--	--
NOV											
01...	1000	231	46	6.9	18.5	--	9.8	<1	<1	--	--
APR											
05...	1100	200	50	5.8	17.0	3.0	11.4	<1	--	13	0
MAY											
05...	1100	1200	63	6.5	16.0	2.0	10.6	12	K4	17	0
JUN											
07...	1100	3070	26	6.8	17.5	1.0	12.0	K5	K4	15	--
JUL											
07...	0930	3960	20	6.8	15.0	.80	10.8	K4	K3	5	0
AUG											
07...	1030	3910	19	5.5	17.0	1.0	10.8	<1	<1	2	0
SEP											
05...	1130	2800	26	6.0	17.5	3.1	9.6	K4	<1	4	0

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
OCT											
04...	--	--	--	--	--	--	--	--	--	--	--
NOV											
01...	--	--	--	--	--	--	--	--	--	--	--
APR											
05...	3.9	.8	3.3	34	.4	.9	19	1.7	3.1	.0	13
MAY											
05...	5.5	.7	5.2	38	.6	1.2	24	2.2	3.1	.1	8.6
JUN											
07...	4.3	1.0	2.4	25	.3	.7	11	2.2	1.4	.1	9.7
JUL											
07...	1.9	.1	1.4	34	.3	.5	6	1.4	1.0	.0	7.1
AUG											
07...	.6	.1	3.0	73	.9	.4	6	1.3	.8	.0	2.2
SEP											
05...	1.5	.1	1.1	33	.2	.6	7	1.1	.7	.0	6.0

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
OCT											
04...	--	--	--	--	--	--	--	--	--	--	--
NOV											
01...	--	--	--	.03	--	.23	--	--	.26	.02	--
APR											
05...	41	38	.06	.50	.53	.53	.12	.41	1.0	.05	.01
MAY											
05...	30	41	.04	.04	.43	.44	.24	.20	.48	.01	.00
JUN											
07...	23	28	.03	.03	.14	.15	.00	.16	.18	.03	.00
JUL											
07...	15	17	.02	.12	.16	.16	.00	.27	.28	.00	.00
AUG											
07...	14	12	.02	.03	.19	.19	.00	.24	.22	.02	.00
SEP											
05...	13	15	.02	.01	.66	.68	.39	.29	.69	.01	.01

See footnotes at end of table.

## SAN JOAQUIN RIVER BASIN

11250000 FRIANT-KERN CANAL AT FRIANT, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC		ARSENIC		BARIUM,		BARIUM,		CHRO-		CHRO-		CHRO-		COBALT,		COBALT,	
		TOTAL	PENDE	TOTAL	DIS-	TOTAL	RECOV-	TOTAL	RECOV-	TOTAL	RECOV-	TOTAL	RECOV-	TOTAL	RECOV-	TOTAL	RECOV-	TOTAL	RECOV-
		(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L
		AS AS)	AS AS)	AS AS)	AS AS)	AS BA)	AS BA)	AS BA)	AS BA)	AS CR)	AS CR)	AS CR)	AS CR)	AS CR)	AS CR)	AS CO)	AS CO)	AS CO)	AS CO)
MAY																			
05...	1100	2	1	1	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0
AUG																			
07...	1030	1	1	0	100	100	3	0	0	0	0	0	1	<1					

DATE	COBALT,		COPPER,		COPPER,		IRON,		IRON,		IRON,		MANGA-		MANGA-		MANGA-		MERCURY	
	DIS-	TOTAL	DIS-	TOTAL	DIS-	TOTAL	DIS-	TOTAL	DIS-	TOTAL	DIS-	TOTAL	DIS-	TOTAL	DIS-	TOTAL	DIS-	TOTAL	DIS-	TOTAL
	SOLVED	ERABLE	SOLVED	ERABLE	SOLVED	ERABLE	SOLVED	ERABLE	SOLVED	ERABLE	SOLVED	ERABLE	SOLVED	ERABLE	SOLVED	ERABLE	SOLVED	ERABLE	SOLVED	ERABLE
	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L
	AS CO)	AS CU)	AS CU)	AS CU)	AS CU)	AS FE)	AS FE)	AS FE)	AS FE)	AS FE)	AS FE)	AS MN)	AS MN)	AS MN)	AS MN)	AS MN)	AS MN)	AS HG)	AS HG)	AS HG)
MAY																				
05...	1	6	6	0	210	170	40	10	10	0	.0									
AUG																				
07...	<1	8	6	2	0	0	<10	20	16	4	.0									

DATE	MERCURY		SELE-		SELE-		SILVER,		ZINC,		ZINC,		ZINC,		CARBON,		CARBON,	
	SUS-	MERCURY	SELE-	SUS-	SELE-	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	SUS-	ZINC,	ORGANIC	ORGANIC	SUS-	ORGANIC	SUS-	ORGANIC
	PENDE	DIS-	NIUM,	PENDE	NIUM,	RECOV-	RECOV-	RECOV-	RECOV-	RECOV-	PENDE	DIS-	DIS-	DIS-	PENDE	DIS-	PENDE	DIS-
	ERABLE	SOLVED	TOTAL	ERABLE	TOTAL	ERABLE	ERABLE	ERABLE	ERABLE	ERABLE	ERABLE	SOLVED	SOLVED	SOLVED	ERABLE	SOLVED	ERABLE	SOLVED
	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(MG/L	(MG/L	(MG/L	(MG/L
	AS HG)	AS HG)	AS SE)	AS SE)	AS SE)	AS AG)	AS ZN)	AS ZN)	AS ZN)	AS ZN)	AS ZN)	AS ZN)	AS C)	AS C)	AS C)	AS C)	AS C)	AS C)
MAY																		
05...	.0	.0	0	0	0	0	20	10	10	3.1	.2							
AUG																		
07...	.0	.0	0	0	0	0	30	25	5	2.5	.2							

&lt; Actual value is known to be less than the value shown.

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

## 11250000 FRIANT-KERN CANAL AT FRIANT, CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PHYTOPLANKTON

DATE TIME	OCT 4,77 1030	NOV 1,77 1000	MAY 5,78 1100	JUL 7,78 0930	AUG 7,78 1030	SEP 5,78 1130				
TOTAL CELLS/ML	1400	190	630	600	890	1000				
DIVERSITY: DIVISION	1.0	1.8	0.9	1.7	0.9	0.8				
..CLASS	1.0	1.8	0.9	1.8	0.9	0.8				
..ORDER	1.2	2.2	0.9	2.0	0.9	0.8				
...FAMILY	1.2	2.6	1.6	2.4	0.9	0.9				
....GENUS	1.3	2.6	1.7	2.6	1.5	0.9				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
....OOCYSTACEAE										
...ANKISTRODESMUS	--	-	--	-	86	14	--	-	--	-
...DICTYOSPHAERIUM	--	-	--	-	29	5	--	-	--	-
...QUADRIGULA	*	0	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
...CRUCIGENIA	280#	19	56#	29	--	-	--	-	--	-
...SCENEDESMUS	13	1	--	-	57	10	--	-	--	-
...TETRASPORALES										
...PALMELLACEAE										
...SPHAEROCYSTIS	--	-	28	14	230#	36	29	5	--	-
CHRYSOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...COSCINODISCACEAE										
...CYCLOTELLA	*	0	--	-	--	-	--	-	--	-
..PENNALES										
...ACHNANTHACEAE										
...COCCONEIS	*	0	--	-	--	-	--	-	--	-
...CYMBELLACEAE										
...CYMBELLA	--	-	--	-	14	2	--	-	--	-
...FRAGILARIACEAE										
...ASTERIONELLA	--	-	28	14	14	2	220#	25	--	-
...FRAGILARIA	--	-	--	-	86	14	--	-	--	-
...SYNEDRA	44	3	--	-	--	-	400#	45	87	9
...NAVICULACEAE										
...NAVICULA	*	0	14	7	14	2	--	-	--	-
...NITZSCHIAEAE										
...NITZSCHIA	--	-	14	7	--	-	29	5	--	-
...TABELLARIACEAE										
...TABELLARIA	--	-	--	-	290#	45	--	-	--	-
..CHRYSOPHYCEAE										
...CHRYSONOMADALES										
...CHROMULINACEAE										
...CHRYSOCOCCUS	*	0	--	-	--	-	--	-	--	-
...OCHROMONADACEAE										
...DINOBRYON	--	-	--	-	14	2	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
..CRYPTOPHYCEAE										
...CRYPTOMONIDALES										
...CRYPTOCHRYSIDACEAE										
...CHROOMONAS	--	-	14	7	--	-	--	-	--	-
...CRYPTOMONODACEAE										
...CRYPTOMONAS	--	-	--	-	14	2	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCCOCCALES										
...CHROCCOCCAEAE										
...ANACYSTIS	49	3	--	-	--	-	270#	30	850#	83
...HORMOGONALES										
...NOSTOCACEAE										
...ANABAENA	--	-	--	-	290#	48	--	-	--	-
...OSCILLATORIACEAE										
...SCHIZOTHRIX	1000#	72	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
..EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENACEAE										
...TRACHELOMONAS	--	-	--	-	29	5	--	-	43	4
PYRRHOPHYTA (FIRE ALGAE)										
..DINOPHYCEAE										
...PERIDINIALES										
...PERIDINIACEAE										
...PERIDINIUM	--	-	42#	21	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## SAN JOAQUIN RIVER BASIN

11250000 FRIANT-KERN CANAL AT FRIANT, CA--Continued

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 04...	1030	21.5	412	2	2.2	71
NOV 01...	1000	18.5	231	4	2.5	56
APR 05...	1100	17.0	200	4	2.2	83
MAY 05...	1100	16.0	1200	5	16	72
JUN 07...	1100	17.5	3070	4	33	77
JUL 07...	0930	15.0	3960	4	43	64
AUG 07...	1030	17.0	3910	1	11	76
SEP 05...	1130	17.5	2800	2	15	56



## 11250100 MILLERTON LAKE AT FRIANT, CA

LOCATION.--Lat 37°00'00", long 119°42'13", in SW¼SW¼ sec.5, T.11 S., R.21 E., Fresno County, near center of Friant Dam on San Joaquin River just upstream from Cottonwood Creek, 0.9 mi (1.4 km) northeast of Friant.

DRAINAGE AREA.--1,638 mi<sup>2</sup> (4,242 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1941 to current year. Monthend contents only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to May 29, 1944, nonrecording gage on left bank at same datum.

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 (620 hm<sup>3</sup>) between elevations 375.4 ft (114.42 m) invert of river outlet, and 578.0 ft (176.17 m) top of drum-type spillway gates. Not available for release, 17,400 acre-ft (21.5 hm<sup>3</sup>). 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 528,700 acre-ft (652 hm<sup>3</sup>) June 12, 1973, elevation, 579.66 ft (176.680 m); minimum since lake first filled, 133,600 acre-ft (165 hm<sup>3</sup>) Apr. 11, 1969, elevation, 467.81 ft (142.588 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 482,500 acre-ft (595 hm<sup>3</sup>) July 29, elevation, 570.07 ft (173.757 m); minimum, 149,800 acre-ft (185 hm<sup>3</sup>) May 12, elevation, 475.00 ft (144.780 m).

## Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

400	36400	500	215600
420	57000	520	279400
440	83300	540	353000
460	117500	560	436500
480	161700	580	530400

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	196700	176200	179400	229700	379400	438500	418900	232600	202800	406300	478600	377500
2	195800	176100	180000	232900	381600	443800	413800	223600	207500	410600	477000	374300
3	194700	175700	179900	236100	384500	449200	408100	213900	211100	412600	474900	371400
4	193600	176200	180400	239500	388900	469700	403600	205000	215600	413100	473000	368900
5	192800	176700	180600	242900	392000	475200	398700	196100	220400	413600	470900	369300
6	191800	177500	180800	246800	394800	473400	393700	186900	226100	415200	468700	370300
7	191000	177600	181000	250200	399200	469200	388800	178000	232100	417900	465600	371500
8	191400	177300	181300	253400	404100	464800	382700	169700	239400	421400	462700	373000
9	190800	177400	181300	257300	420200	460200	376100	163000	251700	425100	459900	374500
10	190000	177100	181300	260800	431600	454900	369200	157300	266700	428900	457000	376000
11	189700	177000	181600	264000	432300	450900	362800	152800	275000	434700	454200	377300
12	189200	177100	181700	266700	432600	448500	355400	149800	284300	439200	451400	377700
13	188500	176900	182000	269300	435900	446700	348400	154400	297400	442300	448800	378800
14	187600	176800	182500	272800	434400	445900	341500	159300	310200	444100	445900	379900
15	186700	176500	183000	279100	430700	445000	334500	163200	320900	448600	442000	380900
16	185800	176300	184600	286500	427600	443800	329800	162300	328200	455900	437600	381900
17	184700	176000	187100	302800	425800	442500	322900	157500	333500	460800	433200	380900
18	184400	175700	190200	311900	424500	441600	315600	153400	338100	464500	428900	380700
19	183400	175400	193200	320300	423900	441200	308000	152200	344700	466800	424800	380000
20	182500	175500	194500	325600	424000	440600	300300	152700	350800	468600	421100	379200
21	181800	175700	195700	330100	424200	441000	292600	155500	357600	469100	417300	379100
22	181500	176600	197400	334300	425000	441900	284700	159300	365300	469500	414000	379500
23	180800	177600	201000	339500	426800	442100	276700	162700	373200	470900	410300	380300
24	179900	178000	204400	344900	429100	440700	269200	161100	380000	472700	406400	381000
25	179300	178100	207000	349900	431100	438700	271400	159200	386300	474600	402900	381100
26	178700	178100	208800	354700	432900	436400	268400	159100	391400	476300	399100	381200
27	178800	178200	212700	359200	434800	433400	262300	163100	395600	480100	395500	380800
28	178100	178600	216400	363200	436900	430400	255300	169200	398500	481500	391900	380200
29	177400	178700	219800	367100	---	426900	248000	179000	400300	482500	388300	379900
30	177100	179000	223200	371300	---	423500	240900	189500	402500	481300	384600	379000
31	176400	---	226500	375500	---	422200	---	197700	---	479700	381100	---
MAX	196700	179000	226500	375500	436900	475200	418900	232600	402500	482500	478600	381900
MIN	176400	175400	179400	229700	379400	422200	240900	149800	202800	406300	381100	368900
†	485.83	486.82	503.62	545.65	560.09	556.74	508.29	493.74	552.15	569.47	547.01	546.50
‡	-20800	+2600	+47500	+149000	+61400	-14700	-181300	-43200	+204800	+77200	-98600	-2100
††	1110	490	320	330	490	910	830	1270	2500	3620	3140	1730

CAL YR 1977 † -18200

WTR YR 1978 ‡ +181800

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet.

†† Evaporation, in acre-feet.

SAN JOAQUIN RIVER BASIN  
11250100 MILLERTON LAKE AT FRIANT, CA--Continued

WATER-QUALITY RECORDS

MILLERTON LAKE SITE NO. 3 OPPOSITE PINCUSHION MOUNTAIN, NEAR FRIANT, CA

LOCATION.--Lat 37°01'40", long 119°39'28", Fresno County, 1.1 mi (1.8 km) southwest of Pincushion Mountain,  
4.0 mi (6.4 km) northeast of Friant.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water year 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)				PH	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DATE	TIME	SAM- PLING DEPTH (M) 1/				(UNITS)			
JUN									
27...	1235	.50	--	7.8	22.8	9.1	103		
27...	1236	1.0	25	7.8	22.7	9.1	104		
27...	1237	2.0	--	7.9	22.1	9.3	105		
27...	1238	3.0	--	7.9	20.3	9.3	101		
27...	1239	4.0	19	7.4	15.5	10.4	104		
27...	1240	5.0	--	7.4	14.1	10.4	101		
27...	1241	6.0	--	7.3	13.6	10.4	100		
27...	1242	7.0	--	7.3	13.4	10.5	100		
27...	1243	8.0	--	7.3	13.1	10.4	99		
27...	1244	9.0	--	7.3	13.0	10.5	99		
27...	1245	10.0	--	7.3	12.9	10.5	99		
27...	1246	15.0	--	7.2	12.8	10.5	99		
27...	1247	20.0	--	7.2	12.7	10.5	99		
27...	1248	25.0	19	7.2	12.3	10.5	98		
27...	1249	30.0	--	7.2	12.2	10.6	99		
27...	1250	35.0	--	7.2	12.1	10.6	98		
27...	1251	40.0	--	7.1	11.9	10.6	98		
27...	1252	45.0	--	7.1	11.8	10.5	97		
27...	1253	50.0	--	7.0	11.7	10.4	96		
27...	1254	55.0	--	7.0	11.5	10.2	94		
27...	1255	58.0	--	6.9	11.2	8.9	81		
AUG									
23...	1402	.50	29	8.3	25.6	8.6	102		
23...	1403	1.0	29	8.3	25.4	8.7	103		
23...	1404	2.0	29	8.4	25.1	8.8	104		
23...	1405	3.0	29	8.4	24.9	8.8	104		
23...	1406	4.0	28	8.4	24.3	9.0	105		
23...	1407	5.0	28	8.3	22.8	10.0	114		
23...	1408	6.0	25	7.4	19.2	10.0	106		
23...	1409	7.0	24	7.0	18.4	9.6	101		
23...	1410	8.0	24	6.9	17.9	9.2	96		
23...	1411	9.0	24	6.8	17.6	9.2	95		
23...	1412	10.0	24	6.8	17.3	9.1	94		
23...	1413	15.0	24	6.8	16.6	9.3	94		
23...	1414	20.0	24	6.8	16.3	9.7	98		
23...	1416	30.0	24	6.8	14.5	9.4	91		
23...	1417	35.0	26	6.8	13.0	8.6	81		
23...	1418	40.0	26	6.7	12.2	9.2	85		
23...	1419	45.0	26	6.7	12.0	9.4	87		
23...	1420	50.0	27	6.7	11.8	8.9	82		
23...	1421	55.0	30	6.6	11.5	7.0	64		
23...	1422	60.0	34	6.4	11.3	4.0	36		
23...	1423	65.0	37	6.4	11.0	2.3	21		

DATE	TIME	SAM- PLING DEPTH (M) 1/	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUN											
27...	1300	1.0	25	7.8	22.7	9.1	7	2	2.0	.6	2.0
27...	1305	4.0	19	7.4	15.5	10.4	6	0	2.0	.2	1.4
27...	1310	30.0	19	7.2	12.2	10.6	6	0	2.0	.2	1.3
AUG											
23...	1430	1.0	29	8.3	25.4	8.7	7	1	2.0	.6	1.7
23...	1435	5.0	28	8.5	22.8	10.0	9	0	2.6	.5	1.9
23...	1440	35.0	25	6.8	13.0	8.6	6	0	1.8	.4	1.4

1. To convert meters to feet, multiply by 3.281.

## 11250100 MILLERTON LAKE AT FRIANT, CA--Continued

MILLERTON LAKE SITE NO. 3 OPPOSITE PINCUSHION MOUNTAIN, NEAR FRIANT, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
JUN										
27...	35	.3	.6	6	2.8	1.1	.0	9.2	22	.03
27...	32	.3	.5	7	2.8	.8	.0	7.1	19	.03
27...	30	.2	.5	7	2.9	.7	.0	7.0	19	.03
AUG										
23...	31	.3	.5	7	1.3	.9	.1	7.2	18	.02
23...	31	.3	.5	8	.9	.7	.1	7.2	19	.03
23...	31	.2	.4	7	1.4	.7	.1	7.4	18	.02

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
JUN										
27...	.00	.00	.00	.17	.17	.17	.01	.00	10	20
27...	.00	.00	.00	1.8	1.8	1.8	.01	.00	9	20
27...	.01	.01	.00	.10	.10	.11	.01	.01	9	40
AUG										
23...	.00	.00	.01	.59	.60	.60	.03	.01	30	20
23...	.00	.01	.01	.21	.22	.22	.04	.01	30	<10
23...	.06	.07	.01	.18	.19	.25	.05	.01	30	20

## SAN JOAQUIN RIVER BASIN

11250100 MILLERTON LAKE AT FRIANT, CA--Continued

MILLERTON LAKE SITE NO. 1 AT WINCHELL BAY, NEAR FRIANT, CA

LOCATION.--Lat 37°00'00", long 119°39'30", Fresno County, in Winchell Bay, 3.0 mi (4.8 km) northeast of Friant.  
PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water year 1978.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAM- PLING DEPTH (M) 1/	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
27...	1507	.50	--	8.2	21.9	10.1	113
27...	1508	1.0	25	8.2	21.7	10.2	114
27...	1509	2.0	--	8.1	20.5	10.8	118
27...	1510	3.0	23	8.1	16.3	11.6	117
27...	1511	4.0	--	8.1	15.7	11.4	114
27...	1512	5.0	--	8.1	14.0	10.7	103
27...	1513	6.0	--	7.9	13.8	10.8	104
27...	1514	7.0	--	7.9	13.6	10.8	104
27...	1515	8.0	--	7.7	13.5	10.8	103
27...	1516	9.0	--	7.7	13.4	10.8	103
27...	1517	10.0	--	7.5	13.2	10.6	101
27...	1518	15.0	17	7.5	12.8	10.4	98
27...	1519	20.0	--	7.4	12.6	10.4	98
27...	1520	25.0	--	7.4	12.3	10.0	93
27...	1521	26.0	--	7.3	12.3	9.9	92
AUG							
23...	1615	.50	29	8.4	26.3	8.6	104
23...	1616	1.0	29	8.4	26.2	8.6	103
23...	1617	2.0	30	8.5	25.5	8.7	103
23...	1618	3.0	30	8.5	25.3	8.7	103
23...	1619	4.0	29	8.4	24.8	8.7	102
23...	1620	5.0	26	8.5	21.2	10.8	119
23...	1621	6.0	25	8.4	19.7	10.6	114
23...	1622	7.0	24	7.3	18.3	9.7	102
23...	1623	8.0	24	7.1	17.9	9.2	96
23...	1624	9.0	25	7.0	17.6	8.5	88
23...	1625	10.0	25	6.7	17.2	8.2	84
23...	1626	15.0	24	6.7	16.6	8.7	88
23...	1627	20.0	24	6.7	16.1	8.3	83
23...	1628	25.0	25	6.6	16.4	6.3	61
23...	1629	27.0	28	6.4	14.0	4.6	44

DATE	TIME	SAM- PLING DEPTH (M) 1/	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUN											
27...	1525	1.0	25	8.2	21.7	10.2	7	0	2.2	.4	2.0
27...	1530	3.0	22	8.1	16.3	11.6	8	1	2.7	.3	1.8
27...	1535	15.0	17	7.5	12.8	10.4	5	0	1.6	.2	1.3
AUG											
23...	1635	1.0	29	8.4	26.2	8.6	8	1	2.5	.4	1.6
23...	1640	5.0	26	8.5	21.2	10.8	11	4	3.8	.4	1.5
23...	1645	20.0	24	6.7	16.1	8.3	5	0	1.6	.3	1.3

DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
JUN										
27...	36	.3	.6	8	2.4	1.1	.0	9.2	23	.03
27...	31	.3	.6	7	2.1	.9	.0	8.5	21	.03
27...	35	.3	.4	5	2.2	.7	.0	7.5	17	.02
AUG										
23...	29	.2	.5	7	1.2	.8	.1	7.3	19	.03
23...	22	.2	.5	7	1.2	.9	.1	6.7	20	.03
23...	34	.2	.3	6	.8	.5	.1	6.5	15	.02

1. To convert meters to feet, multiply by 3.281.

## 11250100 MILLERTON LAKE AT FRIANT, CA--Continued

## MILLERTON LAKE SITE NO. 1 AT WINCHELL BAY, NEAR FRIANT, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
JUN										
27...	.00	.00	.00	.12	.12	.12	.01	.00	10	30
27...	.02	.00	.00	.33	.33	.35	.02	.01	10	30
27...	.02	.01	.00	.11	.11	.13	.01	.00	10	30
AUG										
23...	.01	.02	.01	.75	.76	.77	.03	.01	20	20
23...	.01	.00	.01	.22	.23	.24	.03	.01	20	20
23...	.03	.02	.01	.34	.35	.38	.03	.01	20	20

## MILLERTON LAKE SITE NO. 2 AT FRIANT DAM, NEAR FRIANT, CA

LOCATION.--Lat 37°00'25", long 119°41'45", Fresno County, 0.6 mi (1.0 km) northeast of Friant Dam, 1.7 mi (2.7 km) northeast of Friant.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water year 1978.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAM- PLING DEPTH (M) <u>1</u> /	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
27...	0948	.50	--	8.2	22.0	9.2	103
27...	0949	1.0	26	8.0	21.9	9.1	102
27...	0950	2.0	--	8.0	21.8	9.1	101
27...	0951	3.0	--	8.0	21.8	9.1	102
27...	0952	4.0	26	7.9	16.6	10.4	106
27...	0953	5.0	--	7.8	14.8	10.4	101
27...	0954	6.0	--	7.8	14.1	10.1	98
27...	0955	7.0	--	7.6	13.9	10.1	97
27...	0956	8.0	--	7.6	13.6	10.0	96
27...	0957	9.0	--	7.5	13.2	10.0	95
27...	0958	10.0	--	7.5	13.2	10.0	95
27...	0959	15.0	16	7.4	12.9	10.0	94
27...	1000	20.0	--	7.4	12.7	10.0	94
27...	1001	25.0	--	7.3	12.3	10.0	93
27...	1002	30.0	--	7.3	12.2	10.0	93
27...	1003	35.0	--	7.3	12.0	10.0	93
27...	1004	40.0	--	7.2	11.8	9.9	91
27...	1005	42.0	--	6.9	11.8	8.3	77
AUG							
23...	0930	.50	29	8.1	24.0	8.7	101
23...	0931	1.0	28	8.1	24.0	8.6	100
23...	0932	2.0	28	8.1	24.0	8.6	100
23...	0933	3.0	28	8.1	23.9	8.6	100
23...	0934	4.0	28	8.1	23.9	8.6	100
23...	0935	5.0	28	8.2	23.0	9.5	108
23...	0936	6.0	26	8.3	20.9	10.4	114
23...	0937	7.0	25	7.7	19.1	10.0	106
23...	0938	8.0	25	7.6	18.1	9.4	98
23...	0939	9.0	25	7.0	17.7	8.9	92
23...	0940	10.0	24	6.9	17.2	8.6	88
23...	0941	15.0	24	6.8	16.6	8.8	89
23...	0942	20.0	24	6.8	16.3	9.0	91
23...	0943	25.0	24	6.6	15.8	8.6	88
23...	0944	30.0	25	6.6	14.8	8.8	86
23...	0945	35.0	25	6.8	13.1	8.8	83
23...	0946	40.0	26	6.7	12.2	8.8	82
23...	0947	45.0	27	6.7	12.0	9.2	85
23...	0948	50.0	27	6.7	11.8	8.7	80
23...	0949	52.0	28	6.6	11.7	8.6	79

1. To convert meters to feet, multiply by 3.281.

## SAN JOAQUIN RIVER BASIN

11250100 MILLERTON LAKE AT FRIANT, CA--Continued

MILLERTON LAKE SITE NO. 2 AT FRIANT DAM, NEAR FRIANT, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMPLING DEPTH (M) 1/	SPECIFIC CONDUCTANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUN											
27...	1010	1.0	26	8.0	21.9	9.1	5	0	1.3	.4	2.0
27...	1015	4.0	26	7.9	16.6	10.4	7	2	2.2	.3	2.0
27...	1020	15.0	16	7.4	12.9	10.0	6	6	1.9	.2	1.2
AUG											
23...	1000	1.0	28	8.1	24.0	8.6	7	0	1.9	.5	1.7
23...	1005	6.0	25	8.3	20.9	10.4	5	0	1.6	.3	1.4
23...	1010	25.0	24	6.6	15.8	8.6	5	0	1.5	.3	1.3

DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
JUN									
27...	43	.4	.7	2.4	1.1	.0	9.1	22	.03
27...	37	.3	.6	2.4	1.2	.0	9.1	21	.03
27...	30	.2	.4	1.9	.8	.0	6.9	13	.02
AUG									
23...	33	.3	.5	.9	.8	.1	6.9	18	.02
23...	35	.3	.3	1.0	.7	.1	6.2	16	.02
23...	35	.3	.3	1.4	.8	.1	6.6	16	.02

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHOPHOS- PHORUS, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
JUN										
27...	.02	.00	.00	.38	.38	.40	.02	.01	20	30
27...	.00	.01	.00	.22	.22	.22	.02	.00	10	30
27...	.00	.01	.00	.01	.01	.01	.01	.00	10	30
AUG										
23...	.00	.01	.01	.31	.32	.32	.03	.01	20	<10
23...	.00	.01	.01	.33	.34	.34	.04	.01	20	10
23...	.01	.02	.02	.08	.10	.11	.03	.01	40	10

1. To convert meters to feet, multiply by 3.281.

## 11251000 SAN JOAQUIN RIVER BELOW FRIANT, CA

LOCATION.--Lat 36°59'04", long 119°43'24", in SW¼SW¼ sec.7, T.11 S., R.21 E., Fresno County, on left bank 0.5 mi (0.8 km) west of Friant, 1.5 mi (2.4 km) downstream from Cottonwood Creek, 2 mi (3.2 km) downstream from Friant Dam, and at mile 268.1 (431.4 km).

DRAINAGE AREA.--1,676 mi<sup>2</sup> (4,341 km<sup>2</sup>).

PERIOD OF RECORD.--October 1907 to current year. 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.

REVISED RECORDS.--WSP 843: 1914(M).

GAGE.--Water-stage recorder. Datum of gage is 294.00 ft (89.611 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Oct. 18, 1907, to Nov. 9, 1913, nonrecording gage at site 4.5 mi (7.2 km) upstream at different datum. Nov. 10, 1913, to Sept. 30, 1968, water-stage recorder at site 2.5 mi (4.0 km) upstream at different datum.

REMARKS.--Records good. Flow regulated by Millerton Lake (station 11250100) beginning in 1941, and by reservoirs described in REMARKS for San Joaquin River below Kerckhoff powerhouse. Diversion for irrigation through Madera and Friant-Kern Canals (stations 11249500, 11250000) began in 1944 and 1949, respectively. See schematic diagram of San Joaquin River basin.

AVERAGE DISCHARGE (adjusted for change in contents in and evaporation from Millerton Lake and for diversions to Madera and Friant-Kern Canals).--71 years, 2,346 ft<sup>3</sup>/s (66.44 m<sup>3</sup>/s), 1,700,000 acre-ft/yr (2.10 km<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 77,200 ft<sup>3</sup>/s (2,190 m<sup>3</sup>/s) Dec. 11, 1937, gage height, 23.8 ft (7.25 m) site and datum then in use; minimum, 38 ft<sup>3</sup>/s (1.08 m<sup>3</sup>/s) regulated, July 29, 1940. Maximum discharge since construction of Friant Dam in 1941, 12,400 ft<sup>3</sup>/s (351 m<sup>3</sup>/s) June 6, 1969; minimum, 5.5 ft<sup>3</sup>/s (0.16 m<sup>3</sup>/s) Oct. 20, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,640 ft<sup>3</sup>/s (216 m<sup>3</sup>/s) Apr. 26, gage height, 9.83 ft (2.996 m); minimum daily, 33 ft<sup>3</sup>/s (0.93 m<sup>3</sup>/s) Jan. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	131	124	63	36	52	813	6350	7380	4970	176	129	72
2	131	123	64	38	51	910	6430	7430	5000	157	113	98
3	131	114	64	39	50	1400	6460	7360	5080	146	112	98
4	156	106	76	39	50	4460	6540	7290	4970	143	111	100
5	170	107	90	40	52	6940	6470	7220	4960	114	111	99
6	129	107	99	44	65	7200	6690	7150	4980	95	111	88
7	110	107	108	41	93	7210	7140	6920	4980	93	111	77
8	82	104	105	40	87	7230	7220	6330	4570	133	111	77
9	83	94	106	44	937	7200	7080	5470	3840	165	110	77
10	113	85	108	61	3720	7160	6980	4990	3660	166	110	77
11	128	85	107	111	4570	6650	6940	4540	3650	168	109	77
12	155	85	99	111	4590	5850	6910	3940	3060	141	109	77
13	192	85	90	111	5820	5290	6880	4310	2510	110	109	77
14	186	82	91	119	5880	4420	6960	5500	2540	109	109	77
15	168	85	91	144	5810	4210	7060	6330	2540	109	109	77
16	143	100	92	109	5230	4200	7060	6740	2550	109	108	77
17	115	100	112	136	3950	4190	6980	7030	2570	168	112	77
18	84	100	97	70	2870	4190	6940	6690	2570	190	121	89
19	80	102	83	127	2180	4180	6900	5900	2550	206	118	99
20	95	166	71	76	1800	4180	6850	5280	2210	206	109	100
21	105	217	73	60	1640	4330	6820	5040	1680	180	116	99
22	120	186	73	52	1320	4420	6850	4960	1180	156	118	99
23	154	105	76	47	897	4400	6860	5000	602	156	109	99
24	144	105	73	41	816	4470	6830	5010	229	127	94	98
25	101	105	74	38	813	4710	6970	4430	229	99	94	97
26	98	106	75	35	811	4880	7220	2940	227	101	94	97
27	107	107	82	34	814	4930	7270	2020	226	101	93	97
28	108	107	80	34	810	4910	7220	2040	195	119	93	97
29	107	98	79	33	---	5050	7170	2070	173	192	93	101
30	115	78	63	42	---	5190	7210	2830	173	217	87	106
31	124	---	36	52	---	5980	---	4260	---	201	73	---
TOTAL	3865	3275	2600	2004	55778	151153	207260	164400	78624	4553	3306	2680
MEAN	125	109	83.9	64.6	1992	4876	6909	5303	2621	147	107	89.3
MAX	192	217	112	144	5880	7230	7270	7430	5080	217	129	106
MIN	80	78	36	33	50	813	6350	2020	173	93	73	72
AC-FT	7670	6500	5160	3970	110600	299800	411100	326100	156000	9030	6560	5320
MEAN ‡	133	220	862	2493	4548	5732	5254	7712	10870	6671	3250	2933
AC-FT ‡	8180	13090	53000	153300	252600	352400	312600	474200	646800	410200	199800	174500
CAL YR 1977 TOTAL	47695			131	217	11	AC-FT	94600	MEAN ‡	528	AC-FT ‡	382500
WTR YR 1978 TOTAL	679498			1862	7430	33	AC-FT	1348000	MEAN ‡	4211	AC-FT ‡	3051000

‡ Adjusted for change in contents and evaporation from Millerton Lake and for diversions to Madera and Friant-Kern canals.

## SAN JOAQUIN RIVER BASIN

11253310 CANTUA CREEK NEAR CANTUA CREEK, CA

LOCATION.--Lat 36°24'08", long 120°25'57", in SE¼SE¼ sec.34, T.17 S., R.14 E., Fresno County, on left bank 9.2 mi (14.8 km) southwest of town of Cantua Creek, and 19 mi (31 km) north of Coalinga.

DRAINAGE AREA.--46.4 mi<sup>2</sup> (120.2 km<sup>2</sup>).

PERIOD OF RECORD.--Water years 1958-65 (annual maximum), October 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 680 ft (207 m), from topographic map. Prior to October 1966, crest-stage gage at datum 2.00 ft (0.610 m) lower.

REMARKS.--Records fair. Some small dams for stock use above station.

AVERAGE DISCHARGE.--12 years, 2.87 ft<sup>3</sup>/s (0.081 m<sup>3</sup>/s), 2,080 acre-ft/yr (2.56 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,920 ft<sup>3</sup>/s (54.3 m<sup>3</sup>/s) Feb. 24, 1969, gage height, 6.60 ft (2.012 m), from rating curve extended above 170 ft<sup>3</sup>/s (4.81 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 4.57 ft (1.393 m), 6.04 ft (1.841 m), and 6.60 ft (2.012 m); no flow for several months in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft<sup>3</sup>/s (1.42 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 27	unknown	148 4.19	a 3.09 0.942	Feb. 8	unknown	370 10.5	a 4.22 1.286
Jan. 5	2030	91 2.58	2.83 0.863	Feb. 12	1715	365 10.3	3.76 1.146
Jan. 9	1115	118 3.34	2.97 0.905	Mar. 4	0645	358 10.1	3.74 1.140
Jan. 16	1445	*960 27.2	5.30 1.615	Apr. 15	1845	93 2.63	2.76 0.841

a From highwater mark.

Minimum, no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	0	1.7	4.7	13	8.2	3.5	1.8	.24	0
2			0	0	1.5	22	10	7.5	3.5	1.8	.21	0
3			0	0	1.4	36	9.1	6.9	3.4	1.8	.20	.02
4			0	8.3	1.2	182	14	6.7	3.3	1.7	.18	.07
5			0	27	3.4	75	10	6.5	3.1	1.5	.16	.38
6			0	22	16	39	10	6.4	2.9	1.4	.12	.77
7			0	3.5	59	34	11	6.2	2.7	1.3	.09	.56
8			0	1.2	69	33	9.9	6.0	2.6	1.1	.08	.40
9			0	24	144	36	8.8	6.0	2.6	1.0	.06	.34
10			0	6.9	105	36	8.0	5.8	2.7	.91	.02	.36
11			0	2.7	36	34	7.6	5.4	2.9	.83	0	.35
12			0	2.0	93	33	7.4	5.2	2.8	.92	0	.32
13			0	.92	67	31	7.5	5.1	2.7	.88	0	.27
14			0	3.8	38	29	7.4	5.1	2.7	.73	0	.26
15			0	32	30	27	23	5.2	2.7	.66	0	.24
16			0	146	23	26	25	5.2	2.5	.66	0	.23
17			0	29	19	24	18	5.1	2.5	.67	0	.18
18			0	8.0	15	23	13	5.0	2.3	.64	0	.15
19			0	10	13	22	12	4.7	2.3	.58	0	.16
20			0	8.0	10	21	12	4.7	2.2	.53	0	.17
21			0	6.0	8.6	21	11	4.6	2.0	.50	0	.19
22			0	4.9	7.3	18	10	4.6	2.0	.48	0	.18
23			0	4.2	6.4	12	9.7	4.5	1.9	.45	0	.15
24			0	3.6	5.8	11	9.3	4.6	1.9	.42	0	.14
25			0	3.3	5.2	9.7	17	4.6	1.8	.38	0	.12
26			0	2.9	4.9	9.1	15	4.4	1.9	.29	0	.11
27			15	2.6	4.8	8.6	11	4.1	2.1	.29	0	.10
28			1.6	2.3	4.5	8.3	9.3	3.9	2.7	.28	0	.09
29			.80	2.1	---	8.1	8.8	3.7	2.2	.27	0	.09
30			.06	1.9	---	8.7	8.3	3.5	2.0	.27	0	.09
31		---	0	1.8	---	23	---	3.5	---	.26	0	---
TOTAL	0	0	17.46	370.92	793.7	905.2	346.1	162.9	76.4	25.30	1.36	6.49
MEAN	0	0	.56	12.0	28.3	29.2	11.5	5.25	2.55	.82	.044	.22
MAX	0	0	15	146	144	182	25	8.2	3.5	1.8	.24	.77
MIN	0	0	0	0	1.2	4.7	7.4	3.5	1.8	.26	0	0
CFSM	0	0	.01	.26	.61	.63	.25	.11	.05	.02	0	.004
IN.	0	0	.01	.30	.64	.73	.28	.13	.06	.02	.001	.005
CAL YR 1977	TOTAL	36.87	MEAN	.10	MAX	15	MIN	0	CFSM	.002	IN	.03
WTR YR 1978	TOTAL	2705.83	MEAN	7.41	MAX	182	MIN	0	CFSM	.16	IN	2.17



## SAN JOAQUIN RIVER BASIN

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11253500 JAMES BYPASS NEAR SAN JOAQUIN, CA

LOCATION.--Lat 36°39'09", long 120°10'49", in NE¼SW¼ sec.1, T.15 S., R.16 E., Fresno County, on right bank 3.2 mi (5.1 km) north of San Joaquin.

PERIOD OF RECORD.--October 1947 to current year. Published as "Fresno Slough bypass" in WSP 1315-A and 1735. Daily discharge for period October 1954 to September 1972 are in files of Bureau of Reclamation. Monthly totals published in WDR CA-72-2.

GAGE.--Water-stage recorder. Altitude of gage is 160 ft (49 m), from topographic map.

REMARKS.--Diversion above station for irrigation. James Bypass carries overflow from Kings River to San Joaquin River.

COOPERATION.--Records furnished by Bureau of Reclamation.

AVERAGE DISCHARGE.--31 years, 159 ft<sup>3</sup>/s (4.503 m<sup>3</sup>/s), 115,200 acre-ft/yr (142 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 5,570 ft<sup>3</sup>/s (158 m<sup>3</sup>/s) June 7, 1969; no flow for all or most of each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					0	0	2480	4290	687	25		
2					0	0	2500	4350	621	13		
3					0	0	2220	4280	588	12		
4					0	0	2370	4290	768	11		
5					0	0	2540	4320	779	7.0		
6					0	832	2510	4410	733	7.0		
7					0	950	2520	4390	653	5.0		
8					0	229	2610	4290	603	5.0		
9					0	293	2930	4270	628	3.0		
10					0	1140	3100	4170	674	1.0		
11					50	1490	3300	4110	696	0		
12					300	1660	3430	3960	691	0		
13					657	1800	3550	4040	653	0		
14					390	1770	3660	4200	744	0		
15					1110	1750	3720	4230	1010	0		
16					590	1860	3740	4200	1320	0		
17					150	2030	3720	4170	1400	0		
18					44	2190	3600	4050	1390	0		
19					34	2270	3470	4300	1540	0		
20					17	2310	3580	3320	1560	0		
21					19	2310	3680	2950	1420	0		
22					0	2290	3790	2460	1170	0		
23					0	2290	3820	2190	969	0		
24					0	2250	3770	2090	707	0		
25					0	2260	3750	1670	674	0		
26					0	2280	3780	1540	705	0		
27					0	2310	3850	1560	718	0		
28					0	2310	4000	1240	494	0		
29					---	2270	4090	875	100	0		
30					---	2290	4110	841	50	0		
31		---			---	2380	---	828	---	0		---
TOTAL	0	0	0	0	3361	47814	1,00190	101884	24625	89.0	0	0
MEAN	0	0	0	0	120	1542	3340	3287	821	2.87	0	0
MAX	0	0	0	0	1110	2380	4110	4410	1560	25	0	0
MIN	0	0	0	0	0	0	2220	828	50	0	0	0
AC-FT	0	0	0	0	6670	94840	198700	202100	48840	177	0	0
CAL YR 1977	TOTAL	0.00	MEAN	.00	MAX	.00	MIN	0	AC-FT	0		
WTR YR 1978	TOTAL	277963.00	MEAN	762	MAX	4410	MIN	0	AC-FT	551300		

## SAN JOAQUIN RIVER BASIN

11257100 MIAMI CREEK NEAR OAKHURST, CA

LOCATION.--Lat 37°23'37", long 119°39'12", in NE¼SE¼ sec.22, T.6 S., R.21 E., Madera County, Sierra National Forest, on left bank 200 ft (61 m) downstream from county road bridge, and 4.6 mi (7.4 km) north of Oakhurst.

DRAINAGE AREA.--10.6 mi<sup>2</sup> (27.5 km<sup>2</sup>).

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,500 ft (1,070 m), from topographic map.

REMARKS.--No known diversions above station.

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

AVERAGE DISCHARGE.--18 years, 8.19 ft<sup>3</sup>/s (0.232 m<sup>3</sup>/s), 5,930 acre-ft/yr (7.31 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 804 ft<sup>3</sup>/s (22.8 m<sup>3</sup>/s) Feb. 1, 1963, gage height, 9.08 ft (2.768 m); no flow many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 406 ft<sup>3</sup>/s (11.5 m<sup>3</sup>/s) Feb. 9, gage height, 6.94 ft (2.115 m); no flow Oct. 1-20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.20	.50	7.5	8.4	21	35	40	14	8.7	4.0	3.3
2	0	.20	.50	6.4	7.8	119	29	38	14	8.6	3.8	3.1
3	0	.20	.50	6.1	7.6	95	26	37	14	8.6	3.7	3.1
4	0	.10	.40	9.2	7.4	249	31	36	13	8.4	3.8	4.0
5	0	.80	.50	25	15	198	28	34	13	8.1	3.8	7.9
6	0	.70	.50	51	44	96	30	32	12	7.9	3.7	9.1
7	0	.40	.50	20	51	62	30	31	12	7.6	3.5	6.3
8	0	.30	.50	13	43	48	30	30	12	7.4	3.4	5.3
9	0	.30	.50	25	242	49	33	29	11	7.3	3.4	4.7
10	0	.30	.50	21	93	43	35	28	11	7.1	3.3	6.2
11	0	.30	.50	13	44	50	34	27	11	7.0	3.4	5.5
12	0	.20	.70	11	36	46	33	26	11	7.0	3.4	4.9
13	0	.20	.70	9.6	34	39	31	25	11	6.9	3.5	4.6
14	0	.20	.60	27	28	35	30	24	10	6.7	3.5	4.7
15	0	.30	3.4	69	25	33	50	24	10	6.5	3.4	4.6
16	0	.30	2.1	105	23	31	51	23	10	6.4	3.4	4.4
17	0	.30	29	167	21	30	41	22	9.8	6.4	3.5	4.3
18	0	.30	15	47	20	29	40	21	10	6.3	3.5	4.3
19	0	.30	4.8	46	20	28	37	20	8.9	6.0	3.4	4.2
20	0	.30	3.1	31	21	28	35	19	9.3	5.9	3.3	4.1
21	.10	.90	2.6	23	22	40	32	19	9.3	5.3	3.3	4.1
22	.30	6.4	6.5	19	23	43	31	19	9.2	4.8	3.4	4.0
23	.30	1.6	90	16	22	32	30	18	9.0	4.7	3.6	3.8
24	.40	.80	16	14	21	29	35	18	9.0	4.6	3.6	3.7
25	.40	.60	7.5	13	19	27	172	18	9.4	4.6	3.6	3.4
26	.40	.60	9.2	12	18	26	82	17	8.6	4.5	3.6	3.2
27	.60	.50	68	11	18	25	55	17	11	4.4	3.6	3.2
28	.50	.50	26	10	18	25	48	16	10	4.3	3.4	3.1
29	.30	.50	13	9.7	---	25	43	15	9.5	4.2	3.4	3.1
30	.20	.50	18	9.3	---	28	42	15	9.1	4.1	3.3	3.1
31	.20	---	9.9	8.9	---	55	---	15	---	4.1	3.3	---
TOTAL	3.70	19.10	331.50	855.7	952.2	1684	1259	753	321.1	194.4	108.8	133.3
MEAN	.12	.64	10.7	27.6	34.0	54.3	42.0	24.3	10.7	6.27	3.51	4.44
MAX	.60	6.4	90	167	242	249	172	40	14	8.7	4.0	9.1
MIN	0	.10	.40	6.1	7.4	21	26	15	8.6	4.1	3.3	3.1
AC-FT	7.3	38	658	1700	1890	3340	2500	1490	637	386	216	264
CAL YR 1977	TOTAL	600.10	MEAN	1.64	MAX	90	MIN	0	AC-FT	1190		
WTR YR 1978	TOTAL	6615.80	MEAN	18.1	MAX	249	MIN	0	AC-FT	13120		

## 11257500 FRESNO RIVER NEAR KNOWLES, CA

LOCATION.--Lat 37°14'14", long 119°46'26", in SE¼NW¼ sec.15, T.8 S., R.20 E., Madera County, on left bank at Fresno Crossing, 0.1 mi (0.2 km) downstream from Bean Gulch, and 6 mi (10 km) northeast of Knowles.

DRAINAGE AREA.--133 mi<sup>2</sup> (344 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1911 to August 1913, November 1915 to current year.

REVISED RECORDS.--WSP 1515: 1916-19, 1920(M), 1921-23, 1925-26(M), 1932(M), 1935-36(M).

GAGE.--Water-stage recorder. Datum of gage is 1,086.4 ft (331.13 m) National Geodetic Vertical Datum of 1929. Prior to June 13, 1930, nonrecording gage 10 ft (3 m) upstream and June 13, 1930, to Jan. 13, 1931, water-stage recorder at site 40 ft (12 m) upstream at datum 0.34 ft (0.104 m) lower.

REMARKS.--Records good. Diversions for irrigation of 160 acres (648,000 m<sup>2</sup>) above station. Diversions into Fresno River basin above station of up to 50 ft<sup>3</sup>/s (1.42 m<sup>3</sup>/s) at times since 1897 from the San Joaquin River basin and up to 60 ft<sup>3</sup>/s (1.70 m<sup>3</sup>/s) at times since 1888 from the Merced River basin. Diversions are for irrigation downstream from station.

AVERAGE DISCHARGE.--63 years (water years 1912, 1917-78), 79.9 ft<sup>3</sup>/s (2.263 m<sup>3</sup>/s), 57,890 acre-ft/yr (71.4 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,300 ft<sup>3</sup>/s (377 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 11.52 ft (3.511 m), from rating curve extended above 3,900 ft<sup>3</sup>/s (110 m<sup>3</sup>/s) on basis of slope-area measurement of maximum flow; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 590 ft<sup>3</sup>/s (16.7 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 23	1630	1070 30.3	4.10 1.250	Mar. 4	1100	3760 106	7.13 2.173
Jan. 15	0515	1730 49.0	5.08 1.548	Mar. 21	1300	615 17.4	3.12 .951
Jan. 16	1900	*3820 108	7.18 2.188	Mar. 31	0930	1150 32.6	4.17 1.271
Feb. 7	1930	930 26.3	3.78 1.152	Apr. 6	1800	1100 31.2	4.09 1.247
Feb. 9	1615	3380 95.7	6.81 2.076	Apr. 16	0100	1160 32.9	4.19 1.277
Feb. 13	0100	2460 69.7	5.94 1.811	Apr. 25	unknown	2080 58.9	5.49 1.673
Mar. 2	2145	1690 47.9	4.99 1.521				

Minimum, no flow Oct. 1 to Nov. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	4.7	72	88	217	421	375	188	90	11	6.2
2		0	4.8	55	84	888	352	350	186	85	11	6.0
3		0	4.5	48	79	872	319	357	185	81	12	6.2
4		0	4.4	56	77	2160	515	362	184	80	11	6.9
5		0	4.4	136	117	1580	670	374	181	77	11	17
6		0	4.3	359	394	871	871	348	177	74	10	26
7		.54	4.3	154	554	629	729	328	172	72	9.7	25
8		1.3	4.4	101	475	527	531	310	169	69	8.7	17
9		.69	4.4	171	2110	532	462	297	164	68	7.8	15
10		.65	4.2	212	1840	485	429	291	161	64	7.7	15
11		.81	4.3	112	762	582	400	283	158	61	7.4	18
12		.72	5.0	88	709	545	374	279	155	58	7.5	16
13		.77	4.8	75	1640	469	374	278	154	55	7.5	14
14		.71	5.3	173	695	395	356	275	153	53	8.3	14
15		.28	6.3	876	502	359	511	270	149	38	8.5	16
16		.49	29	1100	402	338	733	262	145	23	8.2	16
17		.41	117	1940	341	325	530	255	142	20	8.1	15
18		.33	219	536	307	314	500	251	142	19	8.8	14
19		.27	46	590	285	300	490	241	140	18	9.0	14
20		.27	23	356	269	296	515	236	140	17	8.6	15
21		.31	18	270	256	449	500	231	140	16	8.3	16
22		7.5	22	227	250	499	450	230	137	16	8.4	15
23		13	470	192	241	373	440	225	135	15	9.6	14
24		6.4	206	163	228	321	480	221	134	14	9.9	13
25		3.3	78	147	213	300	1350	216	134	14	8.9	12
26		2.5	49	132	207	294	1200	211	132	14	9.0	12
27		2.5	312	118	201	285	750	205	129	12	8.8	11
28		3.4	222	111	203	280	585	200	144	12	7.9	11
29		4.8	124	105	---	276	490	199	132	11	7.1	11
30		4.9	142	99	---	286	425	195	102	11	6.4	11
31		---	101	92	---	709	---	193	---	11	6.1	---
TOTAL	0	56.85	2248.1	8866	13529	16756	16752	8348	4564	1268	272.2	418.3
MEAN	0	1.90	72.5	286	483	541	558	269	152	40.9	8.78	13.9
MAX	0	13	470	1940	2110	2160	1350	375	188	90	12	26
MIN	0	0	4.2	48	77	217	319	193	102	11	6.1	6.0
AC-FT	0	113	4460	17590	26830	33240	33230	16560	9050	2520	540	830
CAL YR 1977	TOTAL	4626.54	MEAN	12.7	MAX	470	MIN	0	AC-FT	9180		
WTR YR 1978	TOTAL	73078.45	MEAN	200	MAX	2160	MIN	0	AC-FT	145000		

## SAN JOAQUIN RIVER BASIN

11257500 FRESNO RIVER NEAR KNOWLES, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: July 1971 to current year.

INSTRUMENTATION.--Temperature recorder since July 1971.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 33.0°C Aug. 11, 1971, Aug. 8, 9, 1978; minimum recorded, 0.0°C Jan. 5, 7, 1973.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 33.0°C Aug. 8, 9; minimum recorded, 4.5°C Nov. 20.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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

11257500 FRESNO RIVER NEAR KNOWLES, CA--Continued

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	12.0	9.5	13.5	11.0	19.5	15.0	22.0	18.0	31.0	23.0	27.5	19.5
2	13.0	10.0	15.5	12.0	19.5	14.5	20.5	18.0	31.0	23.0	27.5	20.0
3	12.5	9.5	16.5	13.5	19.5	15.0	20.5	16.5	30.5	23.0	26.5	20.5
4	12.0	11.0	16.5	14.0	20.0	15.0	21.0	17.0	28.0	23.0	23.0	21.0
5	11.0	8.5	16.0	12.5	21.0	16.0	22.0	18.0	31.0	22.5	21.0	19.5
6	10.5	9.5	15.0	10.5	21.0	16.0	23.0	19.0	31.5	23.5	22.5	19.0
7	10.0	8.5	16.0	11.5	21.5	16.5	23.5	19.5	32.5	25.0	23.5	18.0
8	11.0	8.5	17.0	12.5	21.0	16.0	24.0	19.5	33.0	25.5	23.5	16.5
9	12.5	9.0	17.0	13.0	21.0	16.5	25.0	20.5	33.0	25.5	22.0	16.5
10	14.0	10.5	17.5	13.5	19.5	15.0	25.0	21.0	32.5	26.0	22.5	18.0
11	14.0	11.5	17.5	13.0	19.5	14.5	24.0	20.0	31.0	24.0	23.0	16.0
12	15.5	12.0	17.5	13.0	20.5	15.5	23.5	19.0	29.0	23.0	23.5	16.0
13	13.5	13.0	18.5	14.5	21.0	16.0	24.5	19.5	29.0	22.0	22.0	17.0
14	13.0	12.5	19.0	15.0	20.0	16.0	26.0	20.5	28.5	20.0	22.0	17.0
15	12.5	11.0	17.0	14.5	19.0	14.5	28.5	21.5	28.5	20.5	23.5	16.5
16	12.0	9.0	15.5	11.5	18.5	14.0	29.0	21.0	28.0	20.0	24.5	17.0
17	12.0	7.5	16.0	11.5	19.5	14.0	29.5	21.0	27.0	20.0	23.5	17.0
18	13.0	10.0	17.5	13.0	20.0	15.5	30.0	21.0	27.0	18.5	20.5	14.0
19	13.5	11.0	17.5	13.0	19.5	14.5	30.0	21.0	27.5	19.0	20.0	12.5
20	13.0	11.5	18.5	13.5	20.0	14.5	30.0	21.0	27.0	18.5	20.5	12.5
21	12.5	9.0	18.5	14.0	20.0	15.5	30.0	21.0	27.0	19.0	20.5	13.0
22	13.5	9.5	18.0	14.0	20.0	15.5	30.5	21.5	26.0	19.0	22.0	14.0
23	14.0	10.5	16.0	13.0	20.0	15.0	31.0	22.0	25.5	17.5	23.0	15.5
24	13.5	12.0	15.0	10.5	20.0	15.5	31.0	22.5	25.5	17.5	23.5	16.0
25	12.5	12.0	14.5	10.0	19.5	15.0	29.5	24.0	25.5	17.5	23.5	16.5
26	13.0	11.0	16.0	11.0	18.5	15.0	31.0	23.5	25.5	18.0	24.0	17.5
27	14.0	10.5	17.5	12.0	19.0	15.0	31.5	23.0	26.0	18.0	24.0	17.5
28	14.5	11.5	19.5	14.0	19.5	15.0	31.5	23.0	27.0	18.5	24.0	17.5
29	14.0	11.0	20.5	15.5	20.5	16.0	31.0	22.5	28.0	20.0	24.0	17.5
30	14.0	12.5	20.0	15.5	21.5	17.0	30.5	22.5	27.5	20.5	24.0	17.5
31	---	---	20.0	15.0	---	---	31.0	22.5	27.5	19.5	---	---
MONTH	15.5	7.5	20.5	10.0	21.5	14.0	31.5	16.5	33.0	17.5	27.5	12.5

## SAN JOAQUIN RIVER BASIN

11257950 HENSLEY LAKE NEAR DAULTON, CA

LOCATION.--Lat 37°06'34", long 119°53'05", in NE¼NW¼ sec.34, T.9 S., R.19 E., Madera County, in control tower at center of Hidden Dam on Fresno River, and 5.3 mi (8.5 km) southeast of Daulton.

DRAINAGE AREA.--236 mi<sup>2</sup> (611 km<sup>2</sup>).

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Lake is formed by earthfill dam. Storage began Oct. 1, 1975, usable capacity, 85,289 acre-ft (105 hm<sup>3</sup>), between elevations 448.0 ft (136.55 m) lowest outlet, and 540.0 ft (164.59 m) crest of spillway. Dead storage, 4,970 acre-ft (6.13 hm<sup>3</sup>). Records, including extremes, represent total contents at 2400 hours. Reservoir is used for flood control, irrigation, recreation, and wildlife enhancement.

COOPERATION.--Records furnished by Corps of Engineers, not rounded to Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 83,282 acre-ft (103 hm<sup>3</sup>) June 6, 1978, elevation, 535.46 ft (163.208 m); minimum, 21 acre-ft (25,900 m<sup>3</sup>) Oct. 1, 1975, elevation, 405.87 ft (123.709 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 83,282 acre-ft (103 hm<sup>3</sup>) June 6, elevation, 535.46 ft (163.208 m); minimum, 2,987 acre-ft (3.68 hm<sup>3</sup>) Nov. 22, elevation, 439.73 ft (134.030 m).

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

435	2134	490	28556
445	4173	500	38094
455	7217	510	49115
460	9185	520	61525
470	14138	530	75247
480	20569	540	90259

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3190	3032	3277	7507	33892	39844	65681	73248	82786	80546	70841	55799
2	3184	3028	3279	7623	34115	42766	65856	73092	82921	80546	70437	55363
3	3178	3024	3283	7736	34358	45941	65870	72979	83041	80576	70005	54941
4	3172	3024	3286	7843	34523	52915	66601	72852	83117	80576	69548	54644
5	3165	3022	3288	8055	34778	54237	66900	72936	83147	80591	68982	54397
6	3159	3020	3290	8761	35666	53232	67581	73248	83282	80591	68416	54139
7	3153	3018	3292	9138	37346	51309	67909	73774	83267	80546	67882	53905
8	3147	3016	3294	9421	39016	49009	67363	74359	83267	80442	67322	53684
9	3142	3014	3296	9701	45760	46774	67049	74988	83117	80264	66763	53464
10	3136	3012	3298	10274	52163	45432	66642	75577	83026	79969	66181	53317
11	3130	3010	3301	10556	51201	46089	66086	76169	82966	79599	65573	53195
12	3124	3008	3305	10763	50034	46865	65492	76704	82801	79261	64995	53049
13	3118	3006	3307	10935	53366	47891	65695	77256	82680	78996	64459	52915
14	3113	3004	3311	11249	50426	48927	66642	77780	82575	78687	63966	52781
15	3107	3001	3313	14138	47995	49833	67540	78263	82485	78350	63474	52635
16	3101	2999	3318	16964	44512	50699	68664	78761	82365	77985	62971	52502
17	3097	2997	3324	23977	42645	51573	68252	79231	82260	77591	62456	52345
18	3091	2995	3660	25788	40948	52526	68046	79673	82216	77183	61983	52187
19	3085	2993	4168	27876	39141	53305	68129	80042	82216	76704	61525	52103
20	3081	2991	4223	28978	37214	54200	68101	80309	82156	76227	61081	51957
21	3077	2989	4287	29754	36255	55500	68321	80516	82036	75721	60652	51813
22	3074	2987	4333	30395	36094	56865	68664	80724	81871	75232	60211	51681
23	3070	3103	4909	30925	36425	57928	68926	80858	81692	74730	59797	51453
24	3064	3165	5453	31386	37001	58757	69687	81007	81498	74287	59334	51189
25	3053	3207	5589	31832	37489	59617	73234	81051	81334	73845	58885	50890
26	3052	3239	5662	32150	38032	60418	74187	81215	81170	73390	58424	50568
27	3048	3266	6071	32479	38610	61172	74216	81528	80992	72922	57966	50259
28	3046	3271	6520	32839	39162	61878	73916	81356	80902	72484	57522	49939
29	3042	3273	6924	33086	---	62588	73617	82201	80784	72047	57105	49644
30	3038	3275	7137	33392	---	63328	73419	82440	80620	71653	56676	49326
31	3034	---	7366	33670	---	65371	---	82650	---	71261	56225	---
MAX	3190	3275	7366	33670	53366	65371	74216	82650	83282	80591	70841	55799
MIN	3034	2987	3277	7507	33892	39844	65492	72852	80620	71261	56225	49326
†	439.96	441.12	455.41	495.56	501.03	522.90	528.72	535.04	533.68	527.19	515.86	510.18
‡	-161	+241	+4091	+26304	+5492	+26209	+8048	+9231	-2030	-9359	-15036	-6899
††	134	53	21	47	100	233	355	911	1237	1431	1278	760

CAL YR 1977 ‡ +4098  
WTR YR 1978 ‡ +46131

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet.

†† Evaporation, in acre-feet.

## 11258000 FRESNO RIVER BELOW HIDDEN DAM, NEAR DAULTON, CA

LOCATION.--Lat 37°06'16", long 119°53'13", in NE¼SW¼ sec.34, T.9 S., R.19 E., Madera County, on left bank 350 ft (107 m) upstream from Willow Creek, 2,000 ft (610 m) downstream from Hidden Dam, and 5.2 mi (8.4 km) south-east of Daulton.

DRAINAGE AREA.--237 mi<sup>2</sup> (614 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1941 to current year. Prior to October 1975, published as "near Daulton."

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 385 ft (117 m), from topographic map. See WDR CA-75-3 for history of changes prior to Oct. 1, 1975.

REMARKS.--Records good except those below 0.10 ft<sup>3</sup>/s (0.003 m<sup>3</sup>/s), which are poor. Flow completely regulated by Hensley Lake (station 11257950) since October 1975.

AVERAGE DISCHARGE.--37 years, 107 ft<sup>3</sup>/s (3.030 m<sup>3</sup>/s), 77,520 acre-ft/yr (93.6 hm<sup>3</sup>/yr), adjusted for change in contents and evaporation from Hensley Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft<sup>3</sup>/s (496 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 17.64 ft (5.377 m) site and datum then in use, from rating curve extended above 6,400 ft<sup>3</sup>/s (181 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 17.60 ft (5.364 m) site and datum then in use; maximum gage height, 17.69 ft (5.392 m) Feb. 24, 1969, site and datum then in use; no flow at times most years. Maximum discharge since construction of Hidden Dam in 1975, 2,840 ft<sup>3</sup>/s (80.4 m<sup>3</sup>/s) Feb. 14, 15, 1978, gage height, 8.27 ft (2.521 m); no flow for many days in 1975-78.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 3, 1938, reached a discharge of 15,000 ft<sup>3</sup>/s (425 m<sup>3</sup>/s), furnished by Bureau of Reclamation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,840 ft<sup>3</sup>/s (80.4 m<sup>3</sup>/s) Feb. 14, 15, gage height, 8.27 ft (2.521 m); no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	.20	2.0	1.9	455	642	98	106	190	203
2			0	.30	2.1	9.0	458	592	108	70	196	202
3			0	.60	2.2	3.8	460	558	112	57	209	196
4			0	1.0	2.3	883	457	517	134	58	233	172
5			0	.50	2.5	1940	459	420	145	62	268	142
6			0	.50	2.7	1930	719	258	88	67	282	131
7			0	.30	3.6	1920	1340	134	147	84	282	129
8			0	.20	3.0	1900	1220	67	150	107	282	113
9			0	.40	259	1900	867	49	206	140	282	106
10			0	.50	911	1390	843	52	187	188	285	88
11			0	.40	1850	611	852	51	170	227	290	76
12			0	.40	1920	486	847	47	215	210	276	76
13			0	.40	2310	248	443	46	206	183	261	75
14			0	.80	2760	101	84	47	178	192	247	74
15			0	1.9	2460	100	208	47	172	187	234	78
16			0	1.4	1970	99	597	47	184	198	232	76
17			0	2.2	1510	54	885	47	169	209	237	72
18			0	1.1	1340	2.1	700	47	138	214	225	71
19			0	1.8	1350	1.6	537	64	124	241	211	54
20			0	1.2	1350	2.6	534	105	141	248	199	72
21			0	1.0	890	4.5	367	122	181	262	194	73
22			0	1.0	504	5.7	298	121	203	261	195	73
23			.12	.70	213	6.8	306	121	207	252	190	105
24			.13	.30	53	5.8	120	149	202	239	210	125
25			.09	.27	57	2.8	490	169	196	230	218	142
26			.07	.27	57	2.7	865	129	195	231	212	151
27			.10	.64	23	4.6	866	65	195	237	214	151
28			.90	1.1	1.9	6.4	860	37	182	226	216	153
29			.15	1.2	---	4.3	789	36	157	214	200	147
30			.13	1.4	---	2.6	701	63	149	201	209	144
31		---	.01	1.8	---	188	---	86	---	190	211	---
TOTAL	0	0	1.70	25.78	21809.3	13817.2	18627	4935	4939	5591	7190	3470
MEAN	0	0	.055	.83	779	446	621	159	165	180	232	116
MAX	0	0	.90	2.2	2760	1940	1340	642	215	262	290	203
MIN	0	0	0	.20	1.9	1.6	84	36	88	57	190	54
AC-FT	0	0	3.4	51	43260	27410	36950	9790	9800	11090	14260	6880
CAL YR 1977 TOTAL	1434.83		MEAN 3.93	MAX 114	MIN 0	AC-FT 2850	MEAN ‡ 12.0	AC-FT ‡ 8700				
WTR YR 1978 TOTAL	80405.98		MEAN 220	MAX 2760	MIN 0	AC-FT 159500	MEAN ‡ 293	AC-FT ‡ 212200				

‡ Adjusted for change in contents and evaporation from Hensley Lake.





11258000 FRESNO RIVER BELOW HIDDEN DAM, NEAR DAULTON, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	13.5	13.0	13.5	13.5	15.0	14.0	16.0	14.5	16.0	15.0	16.5	16.0
2	13.5	13.0	14.0	13.5	15.5	14.0	16.0	14.0	16.0	15.0	16.5	16.0
3	13.5	13.0	14.0	13.5	15.5	14.0	17.0	14.0	16.0	15.0	16.5	16.0
4	13.5	13.0	14.0	13.5	15.0	14.0	16.5	14.0	15.5	15.0	16.5	16.0
5	13.5	13.0	14.0	13.5	15.0	14.0	17.0	14.5	16.0	15.0	16.0	16.0
6	13.0	13.0	14.5	13.5	22.5	14.0	16.0	14.5	16.0	15.0	16.5	16.0
7	13.0	13.0	15.0	13.5	15.0	14.0	16.0	14.5	16.0	15.0	17.0	16.0
8	13.0	13.0	15.5	13.5	16.0	14.0	16.0	14.5	16.0	15.0	17.0	16.0
9	13.0	13.0	15.5	13.0	15.0	14.0	15.5	14.5	16.0	15.5	16.5	16.0
10	13.5	13.0	16.0	13.0	15.0	14.0	15.5	14.5	16.0	15.5	16.5	16.0
11	13.5	13.0	16.0	13.0	15.0	14.0	15.5	14.5	16.0	15.5	17.0	16.0
12	13.5	13.0	16.0	13.0	15.0	14.0	15.5	14.5	16.0	15.5	17.0	16.0
13	13.0	13.0	16.0	13.5	15.0	14.0	15.5	14.5	16.0	15.5	16.5	16.0
14	16.0	13.0	16.0	13.5	15.0	14.0	15.5	14.5	16.0	15.5	17.0	16.0
15	13.0	13.0	16.0	13.0	15.0	14.0	15.5	14.5	16.0	15.5	17.0	16.0
16	13.5	13.0	15.5	13.0	15.0	14.0	15.5	14.5	16.0	15.5	17.0	16.0
17	13.0	13.0	15.5	13.0	15.0	14.0	15.5	14.5	16.0	15.5	17.0	16.0
18	13.5	13.0	16.0	13.5	15.5	14.0	15.5	14.5	16.0	15.5	17.0	15.5
19	13.5	13.0	15.5	13.5	15.5	14.0	15.5	14.5	16.0	15.5	19.0	15.5
20	13.5	13.0	15.0	13.5	15.5	14.0	15.5	14.5	16.0	15.5	17.0	16.0
21	13.5	13.0	15.0	13.5	15.0	14.0	15.5	14.5	16.5	15.5	17.0	16.0
22	13.5	13.0	15.0	13.5	15.0	14.0	15.5	15.0	16.5	15.5	17.5	16.0
23	13.5	13.0	14.5	13.5	15.0	14.0	16.0	15.0	16.5	15.5	17.0	16.0
24	14.5	13.0	14.5	13.5	15.0	14.5	15.5	15.0	16.5	15.5	17.0	16.5
25	14.5	13.0	15.0	13.5	15.5	14.0	15.5	15.0	16.5	15.5	17.0	16.5
26	13.5	13.5	15.5	13.5	15.0	14.0	15.5	15.0	16.5	15.5	17.0	16.5
27	13.5	13.5	16.5	13.5	15.5	14.5	16.0	15.0	16.5	15.5	17.0	16.5
28	13.5	13.5	16.5	13.5	15.5	14.5	16.0	15.0	16.5	16.0	17.5	16.5
29	13.5	13.5	17.0	13.5	15.5	14.5	16.0	15.0	16.5	16.0	17.5	17.0
30	13.5	13.5	15.5	13.5	15.5	14.5	16.0	15.0	16.5	15.5	17.5	17.0
31	---	---	15.5	13.5	---	---	16.0	15.0	16.5	16.0	---	---
MONTH	16.0	13.0	17.0	13.0	22.5	14.0	17.0	14.0	16.5	15.0	19.0	15.5

## SAN JOAQUIN RIVER BASIN

11258900 WEST FORK CHOWCHILLA RIVER NEAR MARIPOSA, CA

LOCATION.--Lat 37°25'14", long 119°52'25", in SW¼SE¼ sec.10, T.6 S., R.19 E., Mariposa County, on left bank 15 ft (5 m) downstream from bridge on Indian Peak Road, 0.5 mi (0.8 km) downstream from Humbug Creek, and 6.7 mi (10.8 km) southeast of Mariposa.

DRAINAGE AREA.--33.6 mi<sup>2</sup> (87.0 km<sup>2</sup>).

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,680 ft (512 m), from topographic map.

REMARKS.--No known diversions above station.

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

AVERAGE DISCHARGE.--21 years, 17.7 ft<sup>3</sup>/s (0.501 m<sup>3</sup>/s), 12,820 acre-ft/yr (15.8 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,350 ft<sup>3</sup>/s (123 m<sup>3</sup>/s) Jan. 25, 1969, gage height, 8.93 ft (2.722 m) in gage well, 11.1 ft (3.38 m) from floodmarks; no flow many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,640 ft<sup>3</sup>/s (103 m<sup>3</sup>/s) Feb. 9, gage height, 8.44 ft (2.573 m); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	5.7	12	43	76	95	13	3.5	.20	0
2			0	4.3	11	236	57	85	13	3.5	.20	0
3			0	3.2	11	186	48	79	12	3.5	.20	0
4			0	17	10	777	101	71	11	3.3	.20	0
5			0	125	56	358	70	64	10	3.1	.10	1.2
6			0	164	812	196	268	59	9.8	2.7	.10	5.4
7			0	32	392	134	208	54	8.9	2.5	.10	3.4
8			0	18	186	114	129	50	8.0	2.2	.10	2.3
9			0	107	1380	112	104	47	7.6	2.0	.10	1.8
10			0	53	591	99	90	43	7.3	1.8	0	2.4
11			0	24	212	110	82	39	7.5	1.6	0	1.6
12			0	16	360	112	73	38	7.1	1.5	0	1.2
13			0	13	540	83	68	37	6.7	1.5	0	.80
14			0	232	192	76	68	36	6.5	1.3	0	.60
15			0	542	136	67	153	33	6.4	1.2	0	.60
16			0	522	108	62	202	31	6.2	1.1	0	.70
17			17	630	90	59	118	30	5.7	1.0	0	.60
18			4.0	114	80	54	93	28	5.5	1.0	0	.50
19			1.0	267	74	51	82	27	5.2	.90	0	.50
20			1.0	90	68	50	76	25	4.9	.80	0	.50
21			1.0	52	64	80	73	24	4.3	.70	0	.50
22			2.0	38	59	92	63	22	4.0	.60	0	.60
23			20	32	54	58	59	22	3.9	.50	0	.60
24			4.0	27	51	52	82	22	3.9	.50	0	.50
25			1.5	24	46	46	758	21	4.6	.50	0	.40
26			2.0	21	45	44	285	20	4.0	.50	0	.40
27			58	19	44	40	169	19	5.4	.40	0	.30
28			20	17	44	39	136	18	5.5	.30	0	.30
29			8.9	15	---	38	114	17	4.3	.30	0	.30
30			31	14	---	42	102	16	3.9	.30	0	.30
31		---	11.	13	---	174	---	14	---	.20	0	---
TOTAL	0	0	182.4	3251.2	5728	3684	4007	1186	206.1	44.80	1.30	28.30
MEAN	0	0	5.88	105	205	119	134	38.3	6.87	1.45	.042	.94
MAX	0	0	58	630	1380	777	758	95	13	3.5	.20	5.4
MIN	0	0	0	3.2	10	38	48	14	3.9	.20	0	0
AC-FT	0	0	362	6450	11360	7310	7950	2350	409	89	2.6	56

CAL YR 1977 TOTAL 265.40 MEAN .73 MAX 58 MIN 0 AC-FT 526  
WTR YR 1978 TOTAL 18319.10 MEAN 50.2 MAX 1380 MIN 0 AC-FT 36340

## 11258980 CHOWCHILLA RIVER NEAR RAYMOND, CA

LOCATION.--Lat 37°15'36", long 119°56'43", in SE¼SE¼ sec.1, T.8 S., R.18 E., Madera County, on right bank 20 ft (6 m) downstream from County Road 613 bridge, 2,300 ft (701 m) downstream from Chapman Creek, and 3.8 mi (6.1 km) northwest of Raymond.

DRAINAGE AREA.--201 mi<sup>2</sup> (521 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1971 to current year. December 1958 to September 1970 in files of California Department of Water Resources.

REVISED RECORDS.--WDR CA-73-2: 1972(M).

GAGE.--Water-stage recorder and concrete improved control. Datum of gage is 565.67 ft (172.416 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those below 0.2 ft<sup>3</sup>/s (0.006 m<sup>3</sup>/s), and for the period Mar. 15 to Sept. 30, which are poor. Station is affected by backwater from H. V. Eastman Lake at times in most years. No large storage or diversions above station.

AVERAGE DISCHARGE.--7 years, 89.3 ft<sup>3</sup>/s (2.529 m<sup>3</sup>/s), 64,700 acre-ft/yr (79.8 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,100 ft<sup>3</sup>/s (286 m<sup>3</sup>/s) Mar. 4, 1978, gage height, 15.92 ft (4.852 m); minimum daily, 0.01 ft<sup>3</sup>/s (<0.001 m<sup>3</sup>/s) on several days in 1974 and 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 660 ft<sup>3</sup>/s (18.7 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 23	1630	1580 44.7	6.26 1.908	Feb. 9	1500	7620 216	13.55 4.130
Jan. 6	0900	1280 36.2	5.74 1.750	Feb. 13	0100	5800 164	11.65 3.551
Jan. 9	2400	840 23.8	4.90 1.494	Mar. 2	2200	2200 62.3	7.05 2.149
Jan. 15	0530	5140 146	10.90 3.322	Mar. 4	1100	*10100 286	15.92 4.852
Jan. 16	2000	9440 267	15.30 4.663	Mar. 31	--	(a)	--
Jan. 19	1300	1740 49.3	6.52 1.987	Apr. 6	--	(a)	10.55 3.216
Feb. 6	0830	3230 91.5	8.57 2.612	Apr. 16	--	(a)	--
Feb. 7	2000	2530 71.6	7.57 2.307	Apr. 25	--	(a)	11.65 3.551

a Backwater from H. V. Eastman Lake.

Minimum daily, 0.01 ft<sup>3</sup>/s (<0.001 m<sup>3</sup>/s) Nov. 19, 20, Dec. 11-17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.02	.02	37	46	220	820	440	85	44	5.0	2.9
2	.03	.02	.02	25	43	809	640	325	84	40	5.0	2.7
3	.03	.02	.02	20	39	1110	500	337	83	38	5.4	2.9
4	.04	.02	.02	20	36	4700	660	348	82	37	5.1	3.1
5	.04	.02	.02	199	39	3690	1240	360	81	36	5.0	7.5
6	.04	.02	.02	731	1330	2240	1620	303	79	34	4.6	12
7	.04	.03	.02	209	1360	1120	1400	264	78	33	4.3	11
8	.04	.03	.02	95	1000	928	1000	237	76	32	3.9	7.7
9	.04	.03	.02	189	4120	896	820	218	74	31	3.5	6.8
10	.04	.03	.02	405	3500	838	720	200	73	30	3.5	6.8
11	.04	.03	.01	141	1400	1050	615	186	72	28	3.4	8.1
12	.04	.03	.01	82	1250	1020	555	171	70	27	3.4	7.4
13	.04	.03	.01	60	3180	838	520	159	69	26	3.4	6.4
14	.04	.03	.01	99	1190	724	500	148	69	25	3.7	6.5
15	.04	.02	.01	1970	752	630	710	137	68	17	3.9	7.3
16	.04	.02	.01	2350	678	560	1380	129	66	11	3.8	7.4
17	.04	.02	.01	3730	579	500	970	120	65	9.2	3.7	6.9
18	.03	.02	117	764	507	460	795	114	64	8.7	3.9	6.4
19	.03	.01	61	1120	447	425	760	108	63	8.1	4.1	6.3
20	.03	.01	28	572	401	400	945	106	64	7.7	3.9	6.9
21	.03	.02	17	372	361	805	930	104	63	7.4	3.8	7.2
22	.03	.03	14	276	330	930	800	105	62	7.3	4.0	6.8
23	.02	.05	508	207	307	725	695	102	62	7.0	4.3	6.3
24	.02	.05	224	162	273	610	750	99	61	6.8	4.6	5.9
25	.02	.05	54	132	250	565	2480	97	60	6.5	4.0	5.3
26	.02	.03	26	112	236	525	2350	95	59	6.1	4.1	5.2
27	.02	.02	168	96	217	490	1390	92	60	5.5	3.9	5.1
28	.02	.02	197	82	214	460	1020	90	65	5.4	3.6	5.0
29	.02	.02	71	70	---	435	725	89	59	5.0	3.4	5.0
30	.02	.02	118	60	---	425	560	88	48	4.9	3.1	4.9
31	.02	---	84	52	---	1320	---	86	---	5.0	2.8	---
TOTAL	.98	.77	1687.27	14439	24085	30448	28870	5457	2064	589.6	124.1	189.7
MEAN	.032	.026	54.4	466	860	982	962	176	68.8	19.0	4.00	6.32
MAX	.04	.05	508	3730	4120	4700	2480	440	85	44	5.4	12
MIN	.02	.01	.01	20	36	220	500	86	48	4.9	2.8	2.7
AC-FT	1.9	1.5	3350	28640	47770	60390	57260	10820	4090	1170	246	376

CAL YR 1977	TOTAL	2335.16	MEAN	6.40	MAX	508	MIN	.01	AC-FT	4630
WTR YR 1978	TOTAL	107955.42	MEAN	296	MAX	4700	MIN	.01	AC-FT	214100

## SAN JOAQUIN RIVER BASIN

11258980 CHOWCHILLA RIVER NEAR RAYMOND, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1971 to current year.

INSTRUMENTATION.--Temperature recorder since Oct. 1, 1971.

REMARKS.--Temperature not shown for periods when flow in stream consisted of seepage in gage pool only or in backwater from Buchanan Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 34.5°C June 28, 1973; minimum recorded, 1.0°C Dec. 12, 1972.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 14.0°C Dec. 30; minimum recorded, 7.0°C Dec. 20, Jan. 24-26.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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

11258990 H. V. EASTMAN LAKE NEAR RAYMOND, CA

LOCATION.--Lat 37°13'00", long 119°59'04", in SW¼SE¼ sec.22, T.8 S., R.18 E., Madera County, in intake structure at center of dam on Chowchilla River 4.4 mi (7.1 km) west of Raymond.

DRAINAGE AREA.--235 mi<sup>2</sup> (609 km<sup>2</sup>).

PERIOD OF RECORD.--January 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by earth and rockfill dam. Dam was completed in December 1975, capacity, 150,604 acre-ft (186 hm<sup>3</sup>), between elevations, 410.0 ft (124.96 m) invert elevation to outlet tunnel, and 587.0 ft (178.92 m) crest of ungated spillway. Inactive pool, 10,150 acre-ft (12.5 hm<sup>3</sup>). Reservoir is used for flood control, irrigation, recreation, and fish and wildlife enhancement. Records, including extremes, represent total contents at 2400 hours.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 144,743 acre-ft (178 hm<sup>3</sup>) June 7, 1978, elevation, 583.68 ft (177.906 m); minimum since initial season of normal operation, 1,978 acre-ft (2.44 hm<sup>3</sup>) Nov. 20, 1977, elevation, 440.81 ft (134.359 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 144,743 acre-ft (178 hm<sup>3</sup>) June 7, elevation, 583.68 ft (177.906 m); minimum, 1,978 acre-ft (2.44 hm<sup>3</sup>) Nov. 20, elevation, 440.81 ft (134.359 m).

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

438	1519	480	18213
442	2197	490	25520
446	3043	500	34039
450	4069	520	54354
455	5620	540	78560
460	7485	560	106476
465	9673	580	138394
470	12190	600	174809
475	15038		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2056	1993	1987	5074	35471	88888	132514	136086	143906	142898	133164	112923
2	2052	1989	1987	5138	35582	90890	131882	136019	144010	142690	132797	111973
3	2050	1987	1985	5203	35684	93346	131566	136205	144115	142465	132430	111028
4	2048	1989	1985	5318	35768	100732	132131	136205	144254	142240	132064	110116
5	2045	1996	1985	6031	35908	104974	132214	136407	144516	142015	131698	109269
6	2043	1996	1985	7336	38320	107568	133381	136814	144603	141773	131334	108846
7	2039	1994	1984	7681	41020	109329	133632	137322	144743	141532	130969	108816
8	2036	1994	1984	7888	43010	110738	133365	137832	144873	141273	130606	108786
9	2032	1991	1984	8577	52491	112187	132714	138360	144886	141015	130242	108771
10	2030	1991	1982	9063	60068	113507	132198	138820	144341	140739	129862	108741
11	2027	1989	1991	9310	62960	115175	132198	139230	144376	140464	129484	108710
12	2021	1987	1991	9490	65776	116808	132464	139675	144324	140190	129124	108680
13	2019	1985	1991	9645	74045	118075	133214	140070	144306	139864	128762	108650
14	2018	1985	1993	11844	76797	119113	133415	140430	144254	139504	128417	108620
15	2016	1982	1991	14202	78573	120029	134051	140705	144254	139162	128058	108575
16	2014	1982	1994	23637	80050	120870	135311	140997	144394	138820	127698	108529
17	2012	1980	2105	27721	81169	121633	135109	141308	144411	138479	127062	108470
18	2011	1980	2142	29251	82149	122351	134504	141601	144376	138121	126167	108424
19	2011	1980	2193	31151	83014	123007	133783	141294	144376	137764	125195	108394
20	2011	1978	2216	32420	83776	123665	133014	142136	144359	137390	124243	108364
21	2011	1980	2235	33676	84486	124630	132664	142326	144359	137034	123295	108334
22	2009	1985	2266	33775	85173	125730	132697	142482	144341	136678	122351	108304
23	2009	1987	3255	34248	85780	126476	132731	142603	144254	136340	121394	108274
24	2007	1991	3486	34531	86349	127111	133014	142725	144080	135985	120457	108243
25	2005	1991	3581	34724	86893	127698	137051	142933	143941	135648	119508	108213
26	2003	1989	3659	34834	87383	128254	137679	143089	143836	135294	118578	108183
27	2002	1989	4091	34935	87874	128762	137475	143262	143697	134940	117636	108154
28	2002	1989	4389	35000	88367	129271	136864	143454	143541	134588	116699	108063
29	1998	1987	4547	35101	---	129748	136492	143732	143315	134235	115749	108033
30	1996	1987	4831	35221	---	130276	136255	143854	143106	133883	114803	108018
31	1996	---	4991	35351	---	132248	---	143941	---	133532	113861	---
MAX	2056	1996	4991	35351	88367	132248	137679	143941	144743	142898	133164	112923
MIN	1996	1978	1982	5074	35471	88888	131566	136019	143106	133532	113861	108018
†	440.91	440.86	453.09	501.43	547.34	576.35	578.74	583.22	582.74	577.12	564.87	561.03
‡	-63	-9	+3004	+30360	+53016	+43881	+4007	+7686	-835	-9574	-19671	-5843
††	95	39	18	42	107	271	355	851	1219	1443	1372	753

CAL YR 1977 ‡ +2649  
WTR YR 1978 ‡ +105959

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet.

†† Evaporation, in acre-feet.

## SAN JOAQUIN RIVER BASIN

11259000 CHOWCHILLA RIVER BELOW BUCHANAN DAM, NEAR RAYMOND, CA

LOCATION.--Lat 37°12'56", long 119°59'25", in SE¼SW¼ sec.22, T.8 S., R.18 E., Madera County, on left bank 1,800 ft (550 m) downstream from Buchanan Dam, and 4.6 mi (7.4 km) west of Raymond.

DRAINAGE AREA.--236 mi<sup>2</sup> (611 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1921 to September 1923, October 1930 to September 1972, October 1975 to current year. Prior to Oct. 1, 1962, published as "at Buchanan damsite."

REMARKS.--Records good. Flow completely regulated by H. V. Eastman Lake (station 11258985) 1,800 ft (550 m) upstream beginning Jan. 1, 1976.

GAGE.--Water-stage recorder and concrete control since October 1975. Altitude of gage is 420 ft (128 m), from topographic map. October 1921 to September 1923, at site 2.4 mi (3.9 km) upstream at different datum. October 1930 to May 17, 1972, at site 0.3 mi (0.5 km) upstream at datum 407.32 ft (124.151 m) National Geodetic Vertical Datum of 1929. May 18, 1972, to Sept. 30, 1972, at site 500 ft (150 m) downstream at different datum.

AVERAGE DISCHARGE (adjusted for change in contents in and evaporation from H. V. Eastman Lake since 1976).--47 years (water years 1922-23, 1931-72, 1976-78), 97.6 ft<sup>3</sup>/s (2.764 m<sup>3</sup>/s), 70,710 acre-ft/yr (87.2 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft<sup>3</sup>/s (850 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 16.50 ft (5.029 m) site and datum then in use, from rating curve extended above 6,000 ft<sup>3</sup>/s (170 m<sup>3</sup>/s) on basis of slope-area measurement at gage height, 15.06 ft (4.590 m); no flow for part of each year except 1937-38, 1940-43. Maximum discharge since construction of Buchanan Dam in 1975, 3,230 ft<sup>3</sup>/s (91.5 m<sup>3</sup>/s) Apr. 25, 1978, gage height, 8.69 ft (2.649 m); no flow many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,230 ft<sup>3</sup>/s (91.5 m<sup>3</sup>/s) Apr. 25, gage height, 8.69 ft (2.649 m); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				0	24	.20	456	615	21	120	158	458
2				0	25	.60	868	493	22	118	158	460
3				0	25	.40	559	420	19	119	159	460
4				0	25	1.6	507	405	22	118	162	460
5				.10	25	.90	505	220	21	123	162	433
6				0	4.9	.80	787	119	11	123	162	209
7				0	.60	.60	1320	64	6.9	118	162	8.5
8				0	.50	.50	931	51	22	122	161	7.9
9				.20	2.3	.80	937	32	21	123	162	6.8
10				.10	2.5	.60	800	18	22	122	164	7.1
11				0	1.2	.80	509	22	22	124	164	10
12				0	2.0	.90	339	18	22	124	164	12
13				0	3.0	.70	141	22	21	145	162	11
14				.30	1.6	.60	344	22	22	167	160	11
15				.20	1.1	.50	293	21	20	156	159	11
16				1.5	1.0	.50	542	21	21	159	158	11
17				1.7	1.0	.50	776	21	22	159	300	11
18				.60	1.0	.50	800	21	21	159	434	10
19				.70	.60	.50	795	22	22	163	467	7.6
20				.40	.40	.50	804	21	22	167	463	3.5
21				.40	.40	.60	567	20	21	159	461	7.4
22				.30	.30	.40	327	21	21	159	460	5.2
23				.20	.30	.60	305	20	51	158	460	.20
24				45	.30	.30	305	21	68	159	460	.10
25				68	.30	.30	1430	21	70	159	460	.10
26				80	.30	.30	1230	21	70	161	457	.10
27				80	.20	.30	1000	21	70	159	457	.10
28				80	.20	.20	1000	22	97	158	457	35
29				59	---	.20	785	20	126	160	457	.70
30				40	---	.20	668	21	120	160	457	.40
31		---		29	---	96	---	21	---	160	457	---
TOTAL	0	0	0	487.70	150.00	112.40	20630	2877	1116.9	4481	9284	2657.70
MEAN	0	0	0	15.7	5.36	3.63	688	92.8	37.2	145	299	88.6
MAX	0	0	0	80	25	96	1430	615	126	167	467	460
MIN	0	0	0	0	.20	.20	141	18	6.9	118	158	.10
AC-FT	0	0	0	967	298	223	40920	5710	2220	8890	18410	5270
CAL YR 1977 TOTAL	401.35			MEAN 1.10	MAX 13	MIN 0	AC-FT 796		MEAN ‡ 6.27		AC-FT ‡ 4540	
WTR YR 1978 TOTAL	41796.70			MEAN 115	MAX 1430	MIN 0	AC-FT 82900		MEAN ‡270		AC-FT ‡ 195400	

‡ Adjusted for change in contents in and evaporation from H. V. Eastman Lake.

11259000 CHOWCHILLA RIVER BELOW BUCHANAN DAM, NEAR RAYMOND, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958-65, 1976 to current year.

CHEMICAL ANALYSES: Water years 1958-65. Published as "at Buchanan Damsite."

WATER TEMPERATURES: Water years 1976 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1975 to current year.

INSTRUMENTATION.--Temperature recorder since October 1975.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURES: Maximum recorded, 33.5°C June 7, 1977; minimum recorded, 0.0°C Jan. 2, 4, 1976.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 27.5°C Sept. 25, 26; minimum recorded, 6.0°C Jan. 24.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1							---	---	11.0	10.0	17.5	12.5
2							---	---	12.0	9.5	16.5	12.5
3							---	---	12.0	9.5	17.0	12.0
4							---	---	12.0	10.0	18.5	12.5
5							12.5	10.5	11.0	10.0	18.0	12.0
6							16.0	10.0	12.0	10.5	21.0	10.5
7							16.0	8.5	12.5	10.0	21.0	11.5
8							15.5	10.0	14.0	8.5	18.5	13.0
9							15.0	11.5	12.5	11.5	18.0	13.0
10							16.0	10.5	12.5	10.5	16.5	12.5
11							17.0	9.5	16.0	10.0	16.5	12.0
12							13.5	9.0	10.5	9.5	17.5	11.0
13							13.5	11.0	16.5	10.0	20.5	9.5
14							13.5	12.0	17.5	9.0	20.0	10.5
15							14.5	10.5	16.5	10.0	22.0	11.0
16							13.0	11.0	17.0	9.0	23.0	12.0
17							17.5	11.0	18.0	8.5	23.0	13.0
18							15.0	10.0	18.0	9.5	20.0	13.0
19							16.5	11.0	18.5	9.5	23.0	13.0
20							15.5	9.5	19.5	10.0	20.5	14.0
21							16.0	9.0	20.0	10.5	21.0	15.0
22							14.5	9.0	20.0	11.0	23.0	14.5
23							11.5	7.5	19.5	11.0	21.0	14.5
24							11.0	6.0	19.0	12.5	22.0	12.0
25							13.5	10.5	16.5	13.0	23.0	12.5
26							11.5	10.0	19.5	12.0	22.0	14.5
27							11.0	10.0	16.0	12.5	22.5	15.0
28							11.0	10.0	17.0	12.0	24.0	14.5
29							10.5	10.0	---	---	21.0	16.0
30							10.5	10.0	---	---	20.0	16.0
31							10.5	10.0	---	---	20.0	9.5
MONTH							17.5	6.0	20.0	8.5	24.0	9.5

## SAN JOAQUIN RIVER BASIN

11259000 CHOWCHILLA RIVER BELOW BUCHANAN DAM, NEAR RAYMOND, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.5	9.5	11.0	11.0	15.5	11.5	13.0	12.0	14.5	12.5	12.0	11.0
2	9.5	9.0	11.0	11.0	16.0	11.5	13.0	12.0	14.5	11.0	12.0	11.0
3	9.5	9.5	11.5	11.0	16.5	11.5	13.0	12.0	13.0	11.5	12.0	11.5
4	9.5	9.5	11.5	11.0	15.0	11.5	13.0	12.0	12.5	11.5	12.0	12.0
5	9.5	9.0	12.0	11.0	15.0	11.5	13.0	12.0	12.5	10.5	12.0	12.0
6	9.5	9.5	12.5	11.0	25.0	11.5	13.0	12.0	14.0	9.5	15.5	12.0
7	9.5	9.5	13.5	11.0	26.5	10.0	13.0	12.0	14.0	10.0	16.0	11.5
8	10.0	9.0	14.0	11.0	15.5	10.0	13.0	12.0	13.5	9.5	15.5	11.5
9	10.0	9.5	15.0	11.0	14.5	11.5	14.0	11.0	13.5	10.5	15.5	11.5
10	10.0	9.5	14.5	11.0	14.5	11.5	13.0	12.0	12.5	10.5	15.0	12.5
11	10.0	9.5	14.5	10.5	15.0	11.5	13.0	12.0	13.0	9.5	15.0	12.0
12	10.5	9.5	15.0	11.0	14.5	11.5	13.0	12.0	11.5	10.5	15.0	12.0
13	13.5	9.5	15.0	11.0	14.5	11.5	13.0	12.0	11.5	10.5	15.0	12.0
14	10.0	9.5	15.0	11.0	14.5	11.5	13.5	11.5	11.0	10.5	15.5	12.0
15	10.5	9.5	14.5	11.0	14.5	11.5	13.5	12.0	11.0	10.0	15.5	12.5
16	10.0	9.0	14.5	11.0	14.5	11.5	13.0	12.0	11.0	10.5	16.0	12.5
17	10.0	9.5	15.0	11.0	14.5	11.5	13.0	12.0	11.0	10.5	15.5	12.5
18	10.0	10.0	15.0	11.0	14.5	11.5	13.0	11.0	11.0	10.5	15.5	12.0
19	10.5	10.0	15.0	11.5	14.5	11.5	13.5	11.5	11.0	10.5	15.5	12.0
20	10.0	9.5	15.0	11.5	14.5	11.5	13.0	11.0	11.0	10.5	21.5	11.5
21	10.5	10.0	15.0	11.0	14.5	11.5	13.0	11.5	11.0	10.5	20.5	12.5
22	10.5	9.5	14.5	11.0	14.5	12.0	13.0	12.5	11.0	10.5	19.5	12.5
23	10.5	9.5	14.0	11.0	13.5	12.0	13.0	11.0	11.0	10.5	26.0	15.0
24	10.5	9.0	14.5	11.0	13.0	12.0	14.5	10.5	11.0	10.5	27.0	16.0
25	11.0	9.5	14.5	11.0	13.5	12.0	14.5	11.5	11.5	11.0	27.5	17.0
26	10.5	10.5	15.0	11.0	13.0	12.0	13.0	12.0	11.0	11.0	27.5	18.5
27	10.5	10.5	15.0	11.0	13.0	12.0	13.0	11.5	11.5	10.5	26.5	17.5
28	11.0	10.5	15.5	11.5	13.5	12.0	14.5	11.5	11.5	11.0	26.5	13.0
29	11.0	10.5	15.5	11.5	13.0	12.0	14.0	12.0	13.5	10.0	24.5	14.0
30	11.0	10.5	15.5	11.5	13.0	12.0	13.0	12.0	12.0	11.0	25.5	17.0
31	---	---	15.5	11.5	---	---	13.0	12.0	12.0	11.0	---	---
MONTH	13.5	9.0	15.5	10.5	26.5	10.0	14.5	10.5	14.5	9.5	27.5	11.0



## 11260480 MARIPOSA CREEK NEAR CATHEYS VALLEY, CA

LOCATION.--Lat 37°23'56", long 120°00'10", in SW¼NE¼ sec.21, T.6 S., R.18 E., Mariposa County, on downstream side of bridge on White Rock Road, 0.3 mi (0.5 km) downstream from China Gulch, and 5.7 mi (9.2 km) southeast of town of Catheys Valley.

DRAINAGE AREA.--65.7 mi<sup>2</sup> (170 km<sup>2</sup>).

PERIOD OF RECORD.--October 1958 to current year. Prior to October 1963, published as "near Cathay."

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,230 ft (375 m), from topographic map.

REMARKS.--Probably minor diversions above the station for irrigation.

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

AVERAGE DISCHARGE.--20 years, 28.5 ft<sup>3</sup>/s (0.807 m<sup>3</sup>/s), 20,650 acre-ft/yr (25.5 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,460 ft<sup>3</sup>/s (211 m<sup>3</sup>/s) Feb. 24, 1969, gage height, 11.63 ft (3.545 m); no flow many days in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 3, 1958, reached a stage of 11.62 ft (3.542 m), discharge, 7,180 ft<sup>3</sup>/s (203 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,580 ft<sup>3</sup>/s (101 m<sup>3</sup>/s) Jan. 15, gage height, 9.51 ft (2.899 m); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	12	17	41	151	120	14	3.7	.10	.10
2			0	9.2	16	186	102	103	13	3.6	.10	.10
3			0	8.0	14	260	83	91	13	3.6	.10	.10
4			0	29	13	1050	172	81	12	3.3	.10	.10
5			0	142	59	514	124	72	12	3.0	.10	.20
6			0	235	640	326	492	65	18	2.8	.10	4.2
7			0	42	661	204	484	58	9.3	2.6	.10	2.8
8			0	20	378	161	241	54	8.5	2.4	.10	1.6
9			0	155	1570	155	169	50	8.1	2.2	.10	1.3
10			0	92	1080	140	136	45	7.8	2.0	.10	2.6
11			0	39	363	136	114	41	7.9	1.7	.10	3.4
12			0	25	575	153	99	39	7.6	1.7	.10	2.0
13			0	23	1120	121	96	37	7.0	1.5	.10	1.6
14			0	379	374	104	86	35	6.7	1.4	.10	1.6
15			0	797	215	91	145	32	6.3	1.2	.10	1.5
16			1.3	729	158	82	226	30	6.1	1.2	.10	1.5
17			18	1170	126	73	152	29	5.9	1.0	.10	1.3
18			2.3	220	104	66	118	28	5.6	1.0	.10	1.2
19			.60	565	90	59	101	26	5.4	.90	.10	1.1
20			.20	206	77	54	91	24	4.9	.80	.10	1.1
21			.70	118	68	84	85	23	4.7	.70	.10	1.2
22			2.0	82	61	111	74	22	4.5	.60	.10	1.1
23			20	61	55	66	67	21	4.4	.50	.10	1.1
24			5.6	48	51	57	87	21	4.3	.40	.10	.90
25			20	40	47	52	1250	21	4.3	.40	.10	.90
26			2.9	34	45	48	855	19	4.2	.40	.10	.90
27			86	29	42	45	320	18	4.3	.30	.10	.90
28			33	26	41	42	205	17	4.9	.20	.10	.80
29			20	23	---	40	162	16	4.4	.20	.10	.80
30			57	21	---	41	137	15	3.9	.10	.10	.70
31		---	19	19	---	192	---	15	---	.10	.10	---
TOTAL	0	0	288.60	5398.2	8060	4754	6624	1268	215.0	45.50	3.10	38.70
MEAN	0	0	9.31	174	288	153	221	40.9	7.17	1.47	.10	1.29
MAX	0	0	86	1170	1570	1050	1250	120	14	3.7	.10	4.2
MIN	0	0	0	8.0	13	40	67	15	3.9	.10	.10	.10
AC-FT	0	0	572	10710	15990	9430	13140	2520	426	90	6.1	77
CAL YR 1977 TOTAL	506.60			MEAN 1.39	MAX 86	MIN 0	AC-FT 1000					
WTR YR 1978 TOTAL	26695.10			MEAN 73.1	MAX 1570	MIN 0	AC-FT 52950					

## SAN JOAQUIN RIVER BASIN

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA  
(Hydrologic bench-mark station)

LOCATION.--Lat 37°43'54", long 119°33'28", unsurveyed, Mariposa County, Yosemite National Park, on right bank 10 ft (3 m) downstream from footbridge at Happy Isles, 0.4 mi (0.6 km) downstream from Illilouette Creek, and 2.0 mi (3.2 km) southeast of Yosemite National Park Headquarters.

DRAINAGE AREA.--181 mi<sup>2</sup> (469 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1915 to current year.

REVISED RECORDS.--WSP 1215: 1938(M).

GAGE.--Water-stage recorder. Datum of gage is 4,016.58 ft (1,224.254 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 2, 1916, nonrecording gage at datum 0.55 ft (0.168 m) lower.

REMARKS.--Records good. Up to 5 ft<sup>3</sup>/s (0.142 m<sup>3</sup>/s) can be diverted above station for Yosemite Valley water supply.

AVERAGE DISCHARGE.--63 years, 341 ft<sup>3</sup>/s (9.657 m<sup>3</sup>/s), 247,100 acre-ft/yr (305 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,860 ft<sup>3</sup>/s (279 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 12.73 ft (3.880 m), from rating curve extended above 4,000 ft<sup>3</sup>/s (113 m<sup>3</sup>/s) on basis of contracted-opening measurements at gage heights 10.4 ft (3.170 m) and 11.55 ft (3.520 m); minimum, 1.5 ft<sup>3</sup>/s (0.042 m<sup>3</sup>/s) Sept. 30, 1926, Sept. 26, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,900 ft<sup>3</sup>/s (53.8 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 15	0200	2730 77.3	6.74 2.054	June 13	0245	3380 95.7	7.26 2.213
May 22	0230	2660 75.3	6.68 2.036	July 26	unknown	2080 58.9	6.13 1.868
May 31	0130	3260 92.3	7.17 2.186	Sept. 5	2330	2680 75.9	6.70 2.042
June 9	0145	*4190 119	7.77 2.368				

Minimum daily, 2.0 ft<sup>3</sup>/s (0.057 m<sup>3</sup>/s) Oct. 18, 19, 21, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	2.7	14	102	85	122	540	504	2840	1580	785	104
2	2.9	2.7	14	97	84	164	414	597	2720	1490	688	94
3	2.9	2.6	13	88	82	162	348	846	2690	1280	700	91
4	2.9	3.0	13	87	85	223	324	1140	2580	1200	631	128
5	3.0	3.9	12	90	105	220	284	1190	2870	1230	569	1790
6	3.1	6.7	13	98	121	198	279	1010	3110	1360	524	2130
7	3.2	5.2	14	94	118	182	262	962	3340	1470	536	1520
8	2.8	5.1	14	94	124	183	242	1130	3450	1420	571	980
9	2.8	5.0	14	114	129	184	239	1370	3570	1390	618	440
10	2.8	5.4	13	111	126	174	292	1400	3010	1460	680	600
11	3.0	6.0	12	98	114	170	450	1420	2340	1410	520	450
12	3.0	5.9	13	90	95	153	593	1640	2660	1200	431	304
13	2.9	5.9	12	93	98	144	663	2040	3000	1100	332	228
14	2.9	5.8	13	112	104	136	529	2370	2770	1170	265	209
15	3.0	5.8	92	124	102	143	491	2380	2450	1200	226	221
16	3.1	5.7	48	134	93	176	422	1810	2120	1150	212	186
17	2.5	5.4	122	141	83	224	366	1570	2000	1060	206	159
18	2.0	5.6	85	131	84	249	358	1720	2210	940	189	142
19	2.0	5.6	63	128	85	268	377	1890	2200	855	164	121
20	2.1	5.6	61	115	94	308	391	2060	2220	840	152	106
21	2.0	5.4	58	104	103	409	345	2300	2230	850	147	94
22	2.1	9.0	63	100	117	435	320	2430	2250	890	142	93
23	2.1	16	101	88	126	303	344	2210	2070	940	130	88
24	2.1	15	78	87	132	275	437	1470	2010	930	115	83
25	2.0	12	70	89	127	302	719	1210	1910	920	104	78
26	2.2	12	72	89	122	368	550	1210	1820	1320	99	72
27	2.4	12	213	89	118	381	507	1510	1650	1230	97	72
28	2.4	13	206	88	116	429	599	2070	1400	990	97	73
29	2.6	14	165	87	---	501	554	2610	1260	850	102	72
30	2.6	14	144	88	---	631	586	2960	1450	720	107	70
31	2.6	---	115	87	---	763	---	2960	---	750	109	---
TOTAL	80.9	222.0	1940	3137	2972	8580	12825	51989	72200	35195	10248	10798
MEAN	2.61	7.40	62.6	101	106	277	428	1677	2407	1135	331	360
MAX	3.2	16	213	141	132	763	719	2960	3570	1580	785	2130
MIN	2.0	2.6	12	87	82	122	239	504	1260	720	97	70
AC-FT	160	440	3850	6220	5890	17020	25440	103100	143200	69810	20330	21420

CAL YR 1977 TOTAL 31884.9 MEAN 87.4 MAX 1120 MIN 1.5 AC-FT 63240  
WTR YR 1978 TOTAL 210186.9 MEAN 576 MAX 3570 MIN 2.0 AC-FT 416900

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

CHEMICAL ANALYSES: Water years 1968 to current year.

BIOLOGICAL DATA: Water years 1973 to current year.

WATER TEMPERATURES: Water years 1966-77.

SEDIMENT RECORDS: Water years 1970-71, 1973 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1965 to September 1977.

INSTRUMENTATION.--Temperature recorder October 1965 to September 1977.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
OCT 20...	1030	1.9	57	6.0	9.0	7.6	K4	--	K4	13
NOV 15...	1100	5.6	46	6.8	4.5	10.9	<1	<1	K5	11
JAN 12...	1500	85	38	6.6	3.0	12.2	14	K1	K1	9
MAR 10...	1300	170	27	6.0	3.0	11.2	15	12	K1	8
JUN 01...	1200	2800	24	6.4	8.0	10.9	35	K1	K2	--
SEP 12...	1300	301	16	6.4	8.5	9.9	>80	K5	K4	5

DATE	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 20...	5	4.4	.4	3.8	38	.5	.8	7	2.0
NOV 15...	4	3.9	.4	3.6	39	.5	.5	7	2.2
JAN 12...	2	3.4	.1	2.7	38	.4	.4	7	2.1
MAR 10...	1	2.6	.3	2.0	35	.3	.4	7	2.2
JUN 01...	--	--	--	1.0	--	--	.3	3	--
SEP 12...	1	2.0	.1	.7	21	.1	.2	4	1.8

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
OCT 20...	9.8	.0	11	28	37	.05	.00	.05	.04
NOV 15...	8.2	.1	6.6	27	30	.01	.01	.02	.00
JAN 12...	5.9	.0	8.0	34	27	--	--	.13	.02
MAR 10...	3.3	.1	8.6	--	24	--	--	.02	.05
JUN 01...	.5	.0	4.6	13	--	--	--	.04	.01
SEP 12...	.6	.0	4.7	10	13	--	--	.01	.01

See footnotes at end of table.

## SAN JOAQUIN RIVER BASIN

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CYANIDE TOTAL (MG/L AS CN)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
JAN 12...	1500	1	0	.00	10	5	80	20	.3	0	1	20
JUN 01...	1200	1	--	.00	0	4	170	5	.1	0	0	5
SEP 12...	1300	1	0	.00	0	4	100	0	.0	0	0	20

DATE	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS YT-90)	RADIUM 226, DIS- SOLVED (PCI/L AS METHOD EXTRAC- TION (UG/L)	URANIUM DIS- SOLVED (UG/L)
JUN 01...	.9	.6	1.7	.7	1.7	.7	.03	.80

DATE	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JUN 01...	.00	.0	.00	.0	.00	.00	.00	.00

DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)
JUN 01...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL TRI- THION, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	MIREX, TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JUN 01...	.00	.00	0	.00	.00	.00	.00	.00

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

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 20...	1030	9.0	1.9	2	.01	44
NOV 15...	1100	4.5	5.6	2	.03	41
MAR 10...	1300	3.0	170	3	1.4	67
SEP 12...	1300	8.5	301	1	.81	47

## 11266500 MERCED RIVER AT POHONO BRIDGE, NEAR YOSEMITE, CA

LOCATION.--Lat 37°43'01", long 119°39'55", Mariposa County, Yosemite National Park, on left bank 150 ft (46 m) upstream from Pohono bridge, 0.4 mi (0.6 km) upstream from Artist Creek, and 4.8 mi (7.7 km) southwest of Yosemite National Park headquarters.

DRAINAGE AREA.--321 mi<sup>2</sup> (831 km<sup>2</sup>).

PERIOD OF RECORD.--October 1916 to current year. Monthly discharge only for October and November 1916, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 3,861.66 ft (1,177.034 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 5, 1918, at datum 1.8 ft (0.549 m) higher. Sept. 5, 1918, to Sept. 30, 1955, at datum 1.0 ft (0.305 m) higher.

REMARKS.--Records good. No diversions between stations at Happy Isles bridge and Pohono bridge. One ft<sup>3</sup>/s (0.028 m<sup>3</sup>/s) sewage effluent returns between stations (see REMARKS for station 11264500).

AVERAGE DISCHARGE.--62 years, 598 ft<sup>3</sup>/s (16.94 m<sup>3</sup>/s), 433,300 acre-ft/yr (534 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,400 ft<sup>3</sup>/s (663 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 21.52 ft (6.559 m) from floodmarks in well, from rating curve extended above 17,000 ft<sup>3</sup>/s (481 m<sup>3</sup>/s) on basis of computation of flow over diversion dam for Yosemite powerhouse, 1 mi (2 km) downstream at gage heights 20.1 ft (6.13 m) and 21.98 ft (6.700 m), present datum; minimum, 3.3 ft<sup>3</sup>/s (0.093 m<sup>3</sup>/s) Sept. 29, Oct. 1, 1924.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,900 ft<sup>3</sup>/s (82.1 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 15	0215	5300 150	9.30 2.835	June 9	0300	*6440 182	10.19 3.106
May 22	0200	5090 144	9.12 2.780	June 13	0400	5380 152	9.36 2.853
May 31	0145	5850 166	9.74 2.969				

Minimum daily, 5.4 ft<sup>3</sup>/s (0.15 m<sup>3</sup>/s) Oct. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	6.4	31	236	164	292	1150	1130	5130	2560	874	129
2	6.4	6.4	29	223	164	402	911	1300	4900	2420	778	120
3	6.2	6.4	28	200	158	388	772	1780	4880	2040	766	113
4	6.1	6.4	27	198	162	545	732	2260	4850	1910	714	131
5	6.1	12	28	202	211	531	640	2420	5190	1990	658	1450
6	6.1	11	30	217	281	455	649	2110	5400	2230	608	2290
7	6.1	13	31	212	265	432	608	2020	5640	2410	616	1560
8	5.9	11	30	210	250	431	564	2320	5700	2270	668	924
9	5.8	10	29	251	319	434	566	2800	5840	2210	668	553
10	5.8	10	28	246	298	407	649	2860	5110	2430	753	857
11	5.7	10	26	227	264	411	934	2790	4070	2220	619	752
12	5.6	10	26	202	227	379	1200	3190	4440	1890	543	494
13	5.6	10	26	176	240	349	1350	3880	4930	1750	458	380
14	5.6	10	26	238	255	343	1140	4520	4780	1890	379	343
15	5.6	10	216	290	245	356	1100	4730	4220	1980	323	358
16	5.6	9.4	112	320	212	399	944	3540	3620	1880	287	302
17	5.6	9.7	238	334	199	492	812	3090	3370	1630	276	253
18	5.6	9.8	190	298	200	554	807	3330	3640	1470	253	222
19	5.5	9.7	143	293	209	590	837	3630	3600	1320	220	198
20	5.6	9.5	140	254	228	683	883	3930	3540	1220	200	177
21	5.6	21	132	229	253	783	783	4330	3510	1170	192	160
22	5.6	40	145	217	280	794	726	4640	3500	1190	185	145
23	5.6	34	208	188	299	706	763	4290	3850	1270	172	132
24	5.6	26	177	175	310	619	932	2920	3170	1240	156	120
25	5.5	27	160	184	299	647	1600	2460	2990	1200	142	112
26	5.4	27	163	181	285	784	1280	2480	2800	1610	133	106
27	6.5	27	430	181	278	813	1120	2920	2600	1400	129	102
28	6.6	30	425	177	271	904	1280	3850	2210	1120	127	99
29	6.6	30	360	172	---	1030	1190	4770	2000	952	128	98
30	6.4	31	328	173	---	1220	1300	5340	2370	834	131	95
31	6.3	---	280	170	---	1520	---	5350	---	858	133	---
TOTAL	182.6	483.7	4242	6874	6826	18693	28222	100980	121180	52564	12289	12775
MEAN	5.89	16.1	137	222	244	603	941	3257	4039	1696	396	426
MAX	6.6	40	430	334	319	1520	1600	5350	5840	2560	874	2290
MIN	5.4	6.4	26	170	158	292	564	1130	2000	834	127	95
AC-FT	362	959	8410	13630	13540	37080	55980	200300	240400	104300	24380	25340
CAL YR 1977 TOTAL	48795.6		MEAN	134	MAX	1560	MIN	5.4	AC-FT	96790		
WTR YR 1978 TOTAL	365311.3		MEAN	1001	MAX	5840	MIN	5.4	AC-FT	724600		

## SAN JOAQUIN RIVER BASIN

11269300 MAXWELL CREEK AT COULTERVILLE, CA

LOCATION.--Lat 37°42'58", long 120°11'20", in NW¼SE¼ sec.34, T.2 S., R.16 E., Mariposa County, on Dogtown Road bridge, 0.4 mi (0.6 km) downstream from Cuneo Creek, and 0.5 mi (0.8 km) northeast of Coulterville.

DRAINAGE AREA.--17.0 mi<sup>2</sup> (44.0 km<sup>2</sup>).

PERIOD OF RECORD.--October 1959 to September 1974, October 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,740 ft (530 m), from topographic map.

REMARKS.--No diversion or storage above station.

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

AVERAGE DISCHARGE.--18 years (water years 1960-74, 1976-78), 7.61 ft<sup>3</sup>/s (0.216 m<sup>3</sup>/s), 5,510 acre-ft/yr (6.79 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,770 ft<sup>3</sup>/s (50.1 m<sup>3</sup>/s) Dec. 22, 1964, gage height, 5.71 ft (1.740 m); no flow many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,110 ft<sup>3</sup>/s (31.4 m<sup>3</sup>/s) Feb. 9, gage height, 5.61 ft (1.710 m); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	.10	2.4	2.2	7.2	41	28	2.7	1.1	.10	.10
2		0	.10	1.9	2.1	83	35	24	2.7	1.0	.10	.10
3		0	.10	1.7	1.8	124	27	21	2.5	1.0	.10	.10
4		0	.10	8.9	1.8	410	71	18	2.3	1.0	.10	.10
5		0	.10	48	11	168	47	16	2.0	.90	.10	1.4
6		0	.10	47	43	98	155	14	1.8	.80	.10	1.5
7		0	0	7.9	107	54	141	13	1.8	.70	.10	.80
8		0	0	4.5	90	37	87	11	1.7	.70	.10	.50
9		0	0	29	510	33	52	11	1.7	.60	.10	.50
10		0	0	15	142	36	36	10	1.7	.50	.10	2.6
11		0	0	6.5	48	35	28	9.3	1.7	.50	.10	1.1
12		0	0	4.4	135	46	23	8.4	1.6	.50	.10	.80
13		0	0	4.2	232	35	21	8.0	1.6	.40	.10	.60
14		0	0	85	75	28	18	7.7	1.6	.40	.10	.60
15		0	1.4	114	37	23	44	7.3	1.6	.30	.10	.60
16		0	.30	102	23	20	77	6.7	1.6	.30	.10	.50
17		0	40	242	17	17	55	6.4	1.4	.30	.10	.50
18		0	6.0	36	13	15	39	6.1	1.3	.30	.10	.50
19		0	1.4	160	11	13	30	5.7	1.3	.30	.10	.50
20		0	.80	36	9.6	12	25	5.2	1.3	.20	.10	.50
21		.10	.60	16	8.5	16	22	5.0	1.2	.20	.10	.50
22		1.0	1.3	9.5	7.9	20	19	4.9	1.2	.20	.10	.50
23		.20	24	6.8	7.3	14	17	4.8	1.1	.20	.10	.40
24		.20	3.5	5.3	6.9	13	24	4.5	1.0	.20	.10	.40
25		.10	1.7	4.3	6.6	12	399	4.4	1.0	.20	.10	.40
26		.10	1.8	3.7	6.5	11	341	4.2	1.0	.20	.10	.40
27		.10	33	3.3	6.2	11	108	3.8	1.3	.20	.10	.40
28		.10	9.1	3.1	6.3	10	61	3.5	1.3	.20	.10	.40
29		.10	5.2	2.8	---	9.6	43	3.2	1.2	.10	.10	.40
30		.10	14	2.6	---	9.4	35	3.1	1.1	.10	.10	.40
31		---	4.0	2.3	---	42	---	2.8	---	.10	.10	---
TOTAL	0	2.10	148.70	1016.1	1567.7	1462.2	2121	281.0	47.3	13.70	3.10	18.10
MEAN	0	.070	4.80	32.8	56.0	47.2	70.7	9.06	1.58	.44	.10	.60
MAX	0	1.0	40	242	510	410	399	28	2.7	1.1	.10	2.6
MIN	0	0	0	1.7	1.8	7.2	17	2.8	1.0	.10	.10	.10
AC-FT	0	4.2	295	2020	3110	2900	4210	557	94	27	6.1	36
CAL YR 1977	TOTAL	205.20	MEAN	.56	MAX	40	MIN	0	AC-FT	407		
WTR YR 1978	TOTAL	6681.00	MEAN	18.3	MAX	510	MIN	0	AC-FT	13250		

## 11269500 LAKE MCLURE AT EXCHEQUER, CA

LOCATION.--Lat 37°35'02", long 120°16'09", in NW¼SE¼ sec.13, T.4 S., R.15 E., Mariposa County, on left end of New Exchequer Dam on Merced River, 0.9 mi (1.4 km) east of Exchequer, and 5.5 mi (8.8 km) northeast of Merced Falls.

DRAINAGE AREA.--1,037 mi<sup>2</sup> (2,686 km<sup>2</sup>).

PERIOD OF RECORD.--April 1926 to September 1930 (daily gage heights; also summary of yearly contents in WSP 881), October 1930 to current year.

REVISED RECORDS.--WSP 881: 1926-32 (yearly summaries only). WSP 1345: 1951(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Merced Irrigation District). Prior to Oct. 1, 1964, indicator in powerhouse at same datum. Oct. 1, 1964, to July 31, 1966, nonrecording gage at center of upstream face of dam at same datum.

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 (1,260 hm<sup>3</sup>) between elevations 440.0 ft (134.11 m) invert entrance to outlet tunnel, and 867.0 ft (264.26 m) top of spillway gates. Dead storage, 300 acre-ft (370,000 m<sup>3</sup>). 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,026,000 acre-ft (1,270 hm<sup>3</sup>) July 14, 15, 1969, elevation, 867.2 ft (264.32 m); practically no storage at times in 1926, 1930-31, 1964-65 when reservoir was drained for inspection or construction. Minimum since construction of New Exchequer Dam in 1966, and since lake first filled, 72,200 acre-ft (89.0 hm<sup>3</sup>) Dec. 14, 1977, elevation, 593.6 ft (180.93 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 975,700 acre-ft (1,200 hm<sup>3</sup>) July 18, elevation, 860.0 ft (262.13 m); minimum, 72,200 acre-ft (89.0 hm<sup>3</sup>) Dec. 14, elevation, 593.6 ft (180.93 m).

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

590	67900	720	317800
600	79900	750	415900
610	92800	780	534500
620	106700	820	729600
640	137800	840	845800
660	173500	860	975700
680	215200	870	1046000
700	263000		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93700	87900	76400	100500	203200	343900	479600	565400	754100	943900	957400	852000
2	93300	87700	75700	101800	204200	350200	480000	566800	762500	947300	954700	848300
3	93300	87600	75800	101500	204900	360500	479200	569100	770500	950000	952000	843400
4	93100	87000	75800	102200	205700	382000	479600	573100	778600	952000	949300	839700
5	92700	87100	74900	104300	207300	401000	480000	576300	787200	954000	947300	836600
6	92700	86700	74500	110600	213900	411900	484000	579500	796600	957400	944600	835800
7	92000	85900	74600	113300	222300	419100	488100	582300	806600	959400	942600	835000
8	92000	85300	74600	115200	228500	424600	490900	585500	817900	962100	939300	834100
9	92000	84400	73900	117800	257500	429700	492100	590200	829300	964200	935900	833300
10	92000	83600	73700	121200	273100	433800	493300	595300	839700	966900	934000	832500
11	90500	83200	73800	123800	280500	438300	495400	599500	845800	969600	930600	831600
12	90500	83200	73400	125500	290100	442800	497000	605200	852600	970300	927300	830800
13	89900	83200	72800	126300	299700	446200	499500	613300	861900	971600	924000	830000
14	89800	82500	72200	130200	307400	448800	501500	623400	870000	972300	920800	827500
15	89800	81000	72500	143600	312300	450000	503600	634600	877000	973700	917500	823300
16	89600	80400	73300	150900	315500	451900	507800	642000	882000	974400	914200	820300
17	89400	80400	74100	168400	318700	453800	509800	647500	885800	975100	910300	816700
18	89300	80300	77400	174900	321600	455300	511500	653500	890300	975700	906400	812500
19	89300	80300	77700	182100	324000	456100	512800	661000	896100	974400	903200	810200
20	89300	80000	77900	186500	326100	457600	514000	668700	901200	973000	899300	805400
21	89300	79200	78000	189700	328500	460000	514500	677400	906400	972300	894800	801900
22	89300	78700	78200	192000	330000	463100	514500	687800	911600	971000	891600	798300
23	89300	78800	83300	193700	332500	464600	514500	696800	915500	969600	887800	794200
24	89300	79200	85000	195000	334600	466200	515300	701500	919400	968900	883300	790700
25	89300	78600	86200	196600	336800	467000	534100	704200	923400	967600	879500	786700
26	89300	78500	87100	197900	338900	468100	549400	706300	928700	966900	875700	782600
27	88800	78300	90200	198500	340800	468900	555600	709000	932600	966200	871300	778600
28	88800	77700	93100	199800	341700	470900	559200	715500	936600	964800	867500	775100
29	88800	77900	96800	201000	---	472900	561800	724700	938600	962800	865000	771100
30	88600	77100	98000	201900	---	474400	563600	735100	940600	960800	860000	767100
31	88600	---	99600	202500	---	478000	---	745100	---	959400	856300	---
MAX	93700	87900	99600	202500	341700	478000	563600	745100	940600	975700	957400	852000
MIN	88600	77100	72200	100500	203200	343900	479200	565400	754100	943900	856300	767100
†	606.8	597.7	614.9	674.2	727.9	766.4	786.6	822.8	854.8	857.6	841.7	826.7
‡	-5200	-11500	+22500	+102900	+139200	+136300	+85600	+181500	+195500	+18800	-103100	-89200

CAL YR 1977 ‡ -118600  
WTR YR 1978 ‡ +673300

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet.

## 11270900 MERCED RIVER BELOW MERCED FALLS DAM, NEAR SNELLING, CA

LOCATION.--Lat 37°31'18", long 120°19'53", in SE¼SW¼ sec.4, T.5 S., R.15 E., Merced County, on right bank 0.1 mi (0.2 km) south of Merced Falls, 0.2 mi (0.3 km) downstream from Merced Falls Dam, and 5.8 mi (9.3 km) east of Snelling.

DRAINAGE AREA.--1,061 mi<sup>2</sup> (2,748 km<sup>2</sup>).

PERIOD OF RECORD.--April 1901 to current year. Records for water years 1914-16 incomplete, yearly estimates published in WSP 1315-A. Published as "near Merced Falls" 1901-13; as "at Exchequer" 1916-64. Records at present site are about equivalent when adjusted for diversion to North Side Canal and change in contents in Lake McClure.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 310.55 ft (94.656 m) National Geodetic Vertical Datum of 1929. See WSP 1930 for history of changes prior to Oct. 1, 1964.

REMARKS.--Records excellent. Merced Falls Dam diverts water to North Side Canal to irrigate 4,100 acres (16.6 km<sup>2</sup>) below station. Flow regulated by Exchequer, McSwain, and Merced Falls powerplants, Lake McClure (station 11269500) since 1926, and McSwain Reservoir since 1966, capacity, 9,200 acre-ft (11.3 km<sup>3</sup>).

AVERAGE DISCHARGE (adjusted for diversion to North Side Canal and change in contents in Lake McClure since 1965 and change in contents in McSwain Reservoir since 1969).--77 years, 1,325 ft<sup>3</sup>/s (37.52 m<sup>3</sup>/s), 960,000 acre-ft/yr (1.18 km<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (water years 1901-13, 1916-78): Maximum discharge observed, 47,700 ft<sup>3</sup>/s (1,350 m<sup>3</sup>/s) Jan. 31, 1911, gage height, 23.3 ft (7.10 m) site and datum then in use; no flow for part of Nov. 21, 1901. Maximum discharge since construction of Exchequer Dam in 1926, 46,200 ft<sup>3</sup>/s (1,310 m<sup>3</sup>/s) Dec. 4, 1950, gage height, 22.6 ft (6.89 m) from floodmarks, site and datum then in use, from rating curve extended above 16,000 ft<sup>3</sup>/s (453 m<sup>3</sup>/s) on basis of computation of peak flow over dam; minimum daily, 3.4 ft<sup>3</sup>/s (0.096 m<sup>3</sup>/s) Mar. 5, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,490 ft<sup>3</sup>/s (127 m<sup>3</sup>/s) May 29, gage height, 9.34 ft (2.847 m); minimum daily, 72 ft<sup>3</sup>/s (2.04 m<sup>3</sup>/s) Oct. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	137	193	191	134	134	2810	2900	4170	2210	2210	2200
2	79	193	191	194	121	159	2810	2900	4190	2210	2210	2200
3	79	189	194	188	125	142	2550	2910	4200	2190	2200	2200
4	78	188	193	193	122	257	2320	2920	4210	2190	2200	2220
5	76	189	190	211	150	161	2300	2940	4220	2190	2200	2270
6	78	187	197	201	156	158	2390	2990	4220	2190	2210	2270
7	78	188	192	189	181	134	2330	2990	4230	2180	2210	2260
8	82	190	191	190	170	132	2310	2980	3970	2180	2200	2260
9	77	192	191	206	255	131	2290	2960	3660	2190	2210	2250
10	77	195	191	173	195	135	2300	2970	3630	2180	2190	2250
11	79	194	191	130	137	132	2300	2960	3620	2180	2160	2250
12	75	191	186	131	222	157	2290	2970	3620	2180	2160	2250
13	73	188	189	129	169	131	2290	2970	3630	2190	2160	2260
14	73	187	192	243	134	332	2290	2980	3610	2180	2170	2230
15	72	298	195	170	132	510	2310	3000	3590	2190	2180	2220
16	76	188	185	200	131	889	2320	3000	3580	2190	2190	2220
17	75	217	190	213	130	1090	2310	3010	3590	2200	2180	2220
18	76	190	183	139	132	1110	2310	3020	3590	2200	2200	2220
19	82	185	184	136	133	1120	2310	3020	3360	2190	2200	2220
20	75	181	188	132	130	1110	2300	3020	3170	2200	2210	2220
21	73	186	188	129	131	1120	2310	3030	3170	2190	2200	2230
22	74	186	190	130	132	1120	2320	3050	3170	2190	2200	2220
23	74	186	189	126	136	1120	2320	3060	3140	2200	2200	2230
24	74	189	190	132	131	1380	2320	3050	3090	2210	2190	2230
25	77	189	191	118	133	1520	2500	3050	3090	2230	2180	2210
26	78	189	187	119	129	1530	2640	3230	2740	2220	2190	2210
27	77	186	186	116	132	1530	2730	3480	2260	2230	2190	2200
28	77	189	188	116	129	1530	2800	3560	2270	2220	2190	2200
29	76	188	194	114	---	1520	2880	3200	2230	2220	2190	2200
30	77	187	189	115	---	2360	2890	3800	2240	2230	2190	2180
31	76	---	189	116	---	2820	---	4160	---	2210	2200	---
TOTAL	2368	5742	5887	4890	4112	25674	73150	96080	103460	68160	67970	66800
MEAN	76.4	191	190	158	147	828	2438	3099	3449	2199	2193	2227
MAX	82	298	197	243	255	2820	2890	4160	4230	2230	2210	2270
MIN	72	137	183	114	121	131	2290	2900	2230	2180	2160	2180
AC-FT	4700	11390	11680	9700	8160	50920	145100	190600	205200	135200	134800	132500
†	196	105	180	101	16	0	232	2740	4680	4760	4480	2280

CAL YR 1977 TOTAL 131681 MEAN 361 MAX 971 MIN 71 AC-FT 261200 MEAN † 216 AC-FT † 156700  
WTR YR 1978 TOTAL 524293 MEAN 1436 MAX 4230 MIN 72 AC-FT 1040000 MEAN † 2395 AC-FT † 1734000

† Diversion, in acre-feet, to North Side Canal, furnished by Merced Irrigation District.

‡ Adjusted for diversion to North Side Canal and change in contents in Lake McClure and McSwain Reservoir.



## 11271290 MERCED RIVER AT SHAFFER BRIDGE, NEAR CRESSEY, CA

LOCATION.--Lat 37°27'15", long 120°36'28", in NW¼SW¼ sec.36, T.5 S., R.12 E., Merced County, near center of span on downstream side of county road bridge, 0.6 mi (1.0 km) upstream from Dry Creek, and 4.0 mi (6.4 km) north-east of Cressey.

DRAINAGE AREA.--1,117 mi<sup>2</sup> (2,893 km<sup>2</sup>).

PERIOD OF RECORD.--October 1965 to current year (low flow only).

GAGE.--Water-stage recorder. Datum of gage is 116.79 ft (35.598 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Most water released from Lake McClure (station 11269500) 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 ft<sup>3</sup>/s (5.66 m<sup>3</sup>/s).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	18	152	165	124	133				187	152	
2	6.0	23	152	170	122	154				193	154	
3	6.0	59	157	193	133	197				---	162	
4	6.0	86	160	190	135	---				181	157	
5	6.0	100	157	---	142	---				---	162	
6	6.0	114	157	---	200	---				197	178	
7	6.0	116	162	---	---	---				193	184	
8	6.0	131	160	181	---	---				170	170	
9	6.0	152	154	190	---	197				176	162	
10	6.0	154	157	---	---	197				165	160	
11	6.0	154	160	---	---	187				152	149	
12	5.9	157	162	152	---	---				142	135	
13	6.2	154	162	140	---	---				131	147	
14	6.2	154	162	142	---	178				135	147	
15	8.2	152	167	---	---	---				152	147	
16	8.2	---	173	---	187	---				135	147	
17	8.2	---	173	---	173	---				144	165	
18	15	176	197	---	165	---				140	193	
19	19	154	176	---	157	---				140	---	
20	21	149	167	---	152	---				133	---	
21	18	147	162	193	147	---				133	---	
22	13	147	165	184	142	---				149	---	
23	18	149	187	170	140	---				147	---	
24	18	154	190	165	144	---				167	---	
25	12	160	176	160	138	---				162	---	
26	9.3	157	173	154	135	---				154	---	
27	8.9	157	178	147	133	---				154	---	
28	11	157	176	142	133	---				149	---	
29	14	154	173	138	---	---				154	---	
30	24	154	173	133	---	---				162	---	
31	25	---	167	131	---	---				162	---	
TOTAL	335.1	---	5198	---	---	---				---	---	
MEAN	10.8	---	168	---	---	---				---	---	
MAX	25	---	197	---	---	---				---	---	
MIN	5.9	---	152	---	---	---				---	---	
AC-FT	665	---	10310	---	---	---				---	---	
†	1200	1080	1190	998	893	2760	14420	81820	116600	119800	110300	62290

† Diversion, in acre-feet, to Main Canal near diversion dam, near Merced Falls, furnished by Merced Irrigation District.

## SAN JOAQUIN RIVER BASIN

11271320 DRY CREEK NEAR SNELLING, CA

LOCATION.--Lat 37°33'18", long 120°27'44", in NE¼SE¼ sec.30, T.4 S., R.14 E., Merced County, on left bank 650 ft (198 m) downstream from Fields Road, and 2.8 mi (4.5 km) northwest of Snelling.

DRAINAGE AREA.--67.6 mi<sup>2</sup> (175 km<sup>2</sup>).

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

GAGE.--Water-stage recorder. Altitude of gage is 230 ft (70 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, which are fair. Small weir upstream from gage regulates storage for stock pond and irrigation pumping.

AVERAGE DISCHARGE.--12 years, 17.4 ft<sup>3</sup>/s (0.493 m<sup>3</sup>/s), 12,610 acre-ft/yr (15.5 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,710 ft<sup>3</sup>/s (190 m<sup>3</sup>/s) Jan. 21, 1969, gage height, 17.01 ft (5.185 m); no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft<sup>3</sup>/s (28.3 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Jan. 15	0045	2810 79.6	11.67 3.557	Feb. 12	2300	1670 47.3	9.51 2.899
Jan. 17	0145	1610 45.6	9.38 2.859	Mar. 4	0730	1340 37.9	8.80 2.682
Feb. 7	1415	1470 41.6	9.08 2.768	Apr. 25	unknown	2440 69.1	11.01 3.356
Feb. 9	0845	*4900 139	14.79 4.508				

Minimum, no flow for many months.

DISCHARGE, IN CURIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				0	4.0	9.0	29	17				
2				.18	3.5	86	11	14				
3				1.0	3.0	92	7.8	11				
4				5.2	2.7	583	23	9.3				
5				41	116	302	17	7.8				
6				122	296	268	36	6.4				
7				18	422	68	45	5.4				
8				9.4	165	31	36	4.5				
9				103	1490	23	27	3.7				
10				70	489	38	19	3.1				
11				21	129	20	15	2.6				
12				12	423	257	12	2.1				
13				25	407	43	12	1.8				
14				293	111	21	10	1.5				
15				503	63	16	29	1.2				
16				204	39	13	44	1.0				
17				577	29	11	34	.84				
18				84	24	10	25	.71				
19				121	20	9.0	19	.58				
20				50	17	7.9	16	.49				
21				26	14	8.3	14	.40				
22				19	12	26	11	.34				
23				15	11	12	9.2	.28				
24				11	9.3	8.6	14	.23				
25				8.9	8.5	7.1	800	.19				
26				7.3	7.9	6.5	170	.16				
27				6.3	7.4	5.9	61	.13				
28				5.6	6.9	5.0	32	.11				
29				5.1	---	4.7	26	.04				
30				4.7	---	4.1	20	0				
31		---		4.4	---	85	---	0	---			---
TOTAL	0	0	0	2373.08	4330.2	2081.1	1624.0	96.90	0	0	0	0
MEAN	0	0	0	76.6	155	67.1	54.1	3.13	0	0	0	0
MAX	0	0	0	577	1490	583	800	17	0	0	0	0
MIN	0	0	0	0	2.7	4.1	7.8	0	0	0	0	0
AC-FT	0	0	0	4710	8590	4130	3220	192	0	0	0	0

CAL YR 1977	TOTAL	9.01	MEAN	.025	MAX	.68	MIN	0	AC-FT	18
WTR YR 1978	TOTAL	10505.28	MEAN	28.8	MAX	1490	MIN	0	AC-FT	20840

NOTE.--No gage-height record Apr. 4 to June 2.

## 11272500 MERCED RIVER NEAR STEVINSON, CA

LOCATION.--Lat 37°22'15", long 120°55'46", in SW¼NE¼ sec.36, T.6 S., R.9 E., Merced County, on right bank 4.4 mi (7.1 km) upstream from mouth, and 5.3 mi (8.5 km) northwest of Stevinson.

DRAINAGE AREA.--1,273 mi<sup>2</sup> (3,297 km<sup>2</sup>).

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

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. October 1940 to Aug. 15, 1955, at datum 55.74 ft (16.990 m) higher, Aug. 16, 1955, to Sept. 30, 1959, at datum 54.74 ft (16.685 m) higher.

REMARKS.--Records good except those for the period Feb. 12 to June 10, which are poor. Practically entire flow is diverted above station for irrigation of 120,000 acres (486 km<sup>2</sup>) during low runoff years. Some return flow enters above station. Flow regulated by three reservoirs, combined capacity, 1,035,000 acre-ft (1.28 km<sup>3</sup>), the largest of which is Lake McClure (station 11269500).

AVERAGE DISCHARGE.--38 years, 645 ft<sup>3</sup>/s (18.27 m<sup>3</sup>/s), 467,300 acre-ft/yr (576 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft<sup>3</sup>/s (385 m<sup>3</sup>/s) Dec. 5, 1950, elevation, 73.79 ft (22.491 m) present datum; no flow July 19 to Aug. 21, 1961, result of temporary dam.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2,580 ft<sup>3</sup>/s (73.1 m<sup>3</sup>/s) Apr. 29, maximum gage height, 67.28 ft (20.507 m) Apr. 26 (backwater from San Joaquin River); minimum daily, 8.6 ft<sup>3</sup>/s (0.24 m<sup>3</sup>/s) Oct. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	15	144	188	278	163	1240	2460	1390	342	204	550
2	11	16	144	186	274	164	1620	2400	1520	324	192	567
3	11	37	145	187	276	179	1830	2390	1590	304	184	591
4	11	57	152	197	375	276	1970	2320	1720	286	194	596
5	11	68	184	200	480	1040	2090	2270	1810	278	184	732
6	11	78	182	212	610	1270	2110	2250	1800	277	215	964
7	11	79	176	263	815	1430	2180	2210	1790	255	222	1100
8	11	89	174	291	1100	1640	2300	2180	1840	242	222	1130
9	11	102	179	250	1460	1950	2430	2130	1780	243	225	1120
10	11	104	164	234	2020	2010	2530	2070	1510	249	201	1160
11	11	106	174	320	1790	2020	2500	1910	1500	221	191	1210
12	11	107	184	295	1500	1940	2430	1760	1480	207	182	1230
13	11	106	182	239	1230	1890	2360	1580	1390	220	195	1200
14	12	105	184	214	1010	1900	2310	1420	1370	196	212	1210
15	12	103	182	258	753	1850	2280	1320	1320	183	213	1220
16	13	108	196	938	459	1730	2260	1200	1300	204	204	1250
17	14	153	192	578	451	1520	2250	1220	1330	209	215	1280
18	12	206	199	1020	522	1330	2280	1310	1370	201	211	1250
19	12	182	205	643	577	1100	2350	1400	1400	186	240	1170
20	12	182	201	477	567	950	2400	1460	1280	190	281	1160
21	12	190	192	401	469	830	2350	1470	1080	186	285	1150
22	11	159	187	375	356	833	2270	1410	1030	198	286	1180
23	11	155	188	360	267	818	2220	1310	1000	192	305	1210
24	10	158	193	345	205	803	2180	1210	975	196	358	1250
25	9.1	169	202	330	206	823	2130	1080	975	178	387	1260
26	8.6	166	200	320	205	922	2200	1000	973	184	401	1240
27	8.7	171	197	310	182	920	2380	1020	839	199	432	1160
28	9.8	176	196	300	171	880	2500	1190	522	177	445	1150
29	12	153	195	292	---	810	2580	1250	432	181	437	1210
30	15	142	190	288	---	785	2530	1060	360	195	496	1190
31	15	---	189	281	---	926	---	1050	---	217	558	---
TOTAL	352.2	3642	5672	10792	18608	35702	67060	50310	38676	6920	8577	32690
MEAN	11.4	121	183	348	665	1152	2235	1623	1289	223	277	1090
MAX	15	206	205	1020	2020	2020	2580	2460	1840	342	558	1280
MIN	8.6	15	144	186	171	163	1240	1000	360	177	182	550
AC-FT	699	7220	11250	21410	36910	70810	133000	99790	76710	13730	17010	64840
CAL YR 1977 TOTAL		27105.7		MEAN 74.3	MAX 206	MIN 4.6	AC-FT 53760					
WTR YR 1978 TOTAL		279001.2		MEAN 764	MAX 2580	MIN 8.6	AC-FT 553400					

## SAN JOAQUIN RIVER BASIN

11274000 SAN JOAQUIN RIVER NEAR NEWMAN, CA

LOCATION.--Lat 37°21'02", long 120°58'34", in NW¼SW¼ sec.3, T.7 S., R.9 E., Stanislaus County, on left bank 600 ft (180 m) downstream from bridge on Hills Ferry Road, 650 ft (198 m) downstream from Merced River, and 3.5 mi (5.6 km) northeast of Newman.

DRAINAGE AREA.--9,520 mi<sup>2</sup> (24,657 km<sup>2</sup>).

PERIOD OF RECORD.--April 1912 to current year. Prior to Oct. 1, 1937, and subsequent to Oct. 1, 1943, flow that bypassed station at discharges above 9,000 ft<sup>3</sup>/s (255 m<sup>3</sup>/s) not included in records.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. See WSP 1930 for history of changes prior to Aug. 9, 1960.

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.

AVERAGE DISCHARGE.--66 years, 1,988 ft<sup>3</sup>/s (56.30 m<sup>3</sup>/s), 1,440,000 acre-ft/yr (1.78 km<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (river only), 28,000 ft<sup>3</sup>/s (793 m<sup>3</sup>/s) Feb. 26, 1969, elevation, 65.90 ft (20.086 m) from high-water mark in well; river and Merced River Slough, 34,400 ft<sup>3</sup>/s (974 m<sup>3</sup>/s) Feb. 26, 1969, elevation, 65.90 ft (20.086 m) present datum; minimum, 15 ft<sup>3</sup>/s (0.42 m<sup>3</sup>/s) Aug. 9, 10, 1924.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 2, 1868, reached a stage of 21.7 ft (6.61 m) from floodmarks; flood of February 1886, reached a stage of 19.8 ft (6.04 m) from floodmarks; and flood of 1911 reached a stage of 19 ft (5.8 m) from floodmarks. All stages referred to datum in use from 1931 to 1959. Discharges unknown.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,500 ft<sup>3</sup>/s (439 m<sup>3</sup>/s) Apr. 10, elevation, 64.49 ft (19.657 m); minimum daily, 20 ft<sup>3</sup>/s (0.57 m<sup>3</sup>/s) Oct. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	29	153	289	835	1960	9500	14700	3680	1010	481	896
2	32	29	153	291	807	1800	10200	14600	3560	926	469	882
3	30	29	149	294	782	1720	10900	14200	3850	869	444	896
4	33	30	152	299	960	2170	11800	13800	4280	843	469	914
5	31	37	169	299	1180	3720	12400	13400	4680	865	498	1050
6	26	41	174	287	1940	5220	12700	13600	4950	847	534	1350
7	22	54	170	308	2800	6860	13000	13300	5100	793	525	1710
8	21	72	170	388	3620	10100	13800	13100	5200	735	508	1820
9	22	75	175	586	4210	11600	14900	12900	5230	705	531	1800
10	23	83	177	587	4700	12200	15300	12400	4890	705	473	1750
11	24	96	178	556	5330	12200	15100	11600	4550	646	401	1800
12	25	106	190	680	5890	11800	14700	10800	4190	614	406	1890
13	21	108	191	766	6340	11500	14200	10100	3840	633	432	1830
14	22	130	188	679	7700	11400	13800	9470	3510	623	465	1800
15	25	133	182	617	11100	11000	13700	8860	3080	594	480	1770
16	23	123	187	677	13100	10500	13500	8150	2680	579	463	1770
17	25	130	209	1680	12700	9760	13500	8130	2590	628	446	1770
18	26	171	236	2530	12100	9140	13700	8810	2640	611	441	1720
19	27	166	297	3420	11300	8640	14100	9410	2870	567	497	1600
20	26	168	305	3970	10300	8250	14100	9680	2880	545	576	1500
21	21	250	276	3750	8900	8020	13800	9680	2620	527	622	1450
22	23	281	247	3090	7390	7950	13600	9260	2580	515	611	1490
23	25	173	245	2490	6240	7970	13300	8650	2550	508	636	1550
24	24	163	281	2060	5040	8060	12900	7790	2390	520	657	1600
25	22	172	297	1620	4070	8180	12800	6890	2110	481	667	1640
26	20	169	303	1390	3200	8360	13200	6350	1950	499	683	1620
27	24	167	294	1180	2590	8430	14200	6160	1770	512	701	1560
28	27	170	286	1060	2200	8460	15100	6140	1420	449	764	1420
29	26	164	293	980	---	8460	15300	5840	1230	433	822	1420
30	23	156	293	904	---	8520	15100	5050	1110	456	893	1410
31	27	---	288	866	---	8820	---	4000	---	507	924	---
TOTAL	782	3675	6908	38593	157324	252770	404200	306820	97980	19745	17519	45678
MEAN	25.2	123	223	1245	5619	8154	13470	9897	3266	637	565	1523
MAX	36	281	305	3970	13100	12200	15300	14700	5230	1010	924	1890
MIN	20	29	149	287	782	1720	9500	4000	1110	433	401	882
AC-FT	1550	7290	13700	76550	312100	501400	801700	608600	194300	39160	34750	90600
CAL YR 1977 TOTAL	62444		MEAN	171	MAX	661	MIN	20	AC-FT	123900		
WTR YR 1978 TOTAL	1351994		MEAN	3704	MAX	15300	MIN	20	AC-FT	2682000		

## 11274500 ORESTIMBA CREEK NEAR NEWMAN, CA

LOCATION.--Lat 37°18'48", long 121°07'32", in SE¼NE¼ sec.19, T.7 S., R.8 E., Stanislaus County, on right bank 220 ft (67 m) upstream from California aqueduct siphon, 3 mi (5 km) downstream from Oso Creek, and 5 mi (8 km) west of Newman.

DRAINAGE AREA.--134 mi<sup>2</sup> (347 km<sup>2</sup>).

PERIOD OF RECORD.--January 1932 to current year.

REVISED RECORDS.--WSP 1445: 1932(M), 1938(P), 1940-41(M), 1945, 1951(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 216.01 ft (65.837 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1958, at site 1,320 ft (402 m) downstream at datum 24.14 ft (7.358 m) lower. Oct. 1, 1958, to Aug. 13, 1969, at site 1,200 ft (366 m) downstream at datum 27.14 ft (8.272 m) lower.

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

AVERAGE DISCHARGE.--46 years, 15.1 ft<sup>3</sup>/s (0.428 m<sup>3</sup>/s), 10,940 acre-ft/yr (13.5 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft<sup>3</sup>/s (289 m<sup>3</sup>/s) Apr. 2, 1958, gage height, 6.57 ft (2.003 m) site and datum then in use, from rating curve extended above 5,000 ft<sup>3</sup>/s (142 m<sup>3</sup>/s); no flow for all or parts of each year.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 100 ft<sup>3</sup>/s (2.83 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Jan. 9	1800	272 7.70	4.84 1.475	Feb. 12	2200	549 15.5	5.45 1.661
Jan. 15	0200	1750 49.6	6.45 1.966	Mar. 4	1900	2050 58.1	6.65 2.027
Jan. 17	0100	*4360 123	8.03 2.448	Mar. 10	0400	280 7.93	4.86 1.481
Feb. 7	1530	1780 50.4	6.47 1.972	Mar. 31	0730	970 27.5	5.92 1.804
Feb. 9	0030	3040 86.1	7.32 2.231				

Minimum, no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				0	4.8	19	43	23	2.8			
2				0	4.6	28	30	22	2.6			
3				0	4.5	100	24	22	2.4			
4				0	4.3	985	28	20	2.0			
5				0	13	1230	26	19	1.9			
6				0	32	596	30	18	1.6			
7				0	470	332	35	17	1.5			
8				0	508	214	29	17	1.4			
9				68	1740	192	23	18	1.4			
10				55	365	208	18	17	1.3			
11				1.4	180	149	17	15	1.2			
12				0	212	132	16	14	1.1			
13				0	387	97	13	15	1.0			
14				202	204	81	12	14	1.0			
15				949	123	69	14	13	.90			
16				1400	84	60	30	12	.82			
17				1510	65	55	24	11	.75			
18				232	52	51	19	9.7	.68			
19				112	46	47	17	9.1	.60			
20				62	41	43	17	8.0	.52			
21				41	37	45	18	7.4	.38			
22				30	34	60	18	7.0	.22			
23				20	31	41	19	6.5	0			
24				12	30	35	22	6.1	0			
25				9.5	26	33	31	6.1	0			
26				8.2	23	31	39	5.7	0			
27				7.3	20	29	33	5.3	0			
28				6.6	19	28	28	4.9	0			
29				6.1	---	24	24	4.3	0			
30				5.7	---	24	23	3.4	0			
31		---		5.2	---	153	---	3.2	---	---		
TOTAL	0	0	0	4743.0	4760.2	5191	720	373.7	28.07	0	0	0
MEAN	0	0	0	153	170	167	24.0	12.1	.94	0	0	0
MAX	0	0	0	1510	1740	1230	43	23	2.8	0	0	0
MIN	0	0	0	0	4.3	19	12	3.2	0	0	0	0
AC-FT	0	0	0	9410	9440	10300	1430	741	56	0	0	0
CAL YR 1977	TOTAL	0.00	MEAN	.000	MAX	.00	MIN	0	AC-FT	0		
WTR YR 1978	TOTAL	15815.97	MEAN	43.3	MAX	1740	MIN	0	AC-FT	31370		

## SAN JOAQUIN RIVER BASIN

11274630 DEL PUERTO CREEK NEAR PATTERSON, CA

LOCATION.--Lat 37°29'12", long 121°12'29", in SE¼NW¼ sec.21, T.5 S., R.7 E., Stanislaus County, on left bank 1.0 mi (1.6 km) upstream from Delta-Mendota Canal crossing, and 4.4 mi (7.1 km) west of Patterson.

DRAINAGE AREA.--72.6 mi<sup>2</sup> (188.0 km<sup>2</sup>).

PERIOD OF RECORD.--October 1958 to May 1965 (maximums only), June 1965 to current year.

REVISED RECORDS.--WSP 1930: 1959-60(M), drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 200 ft (61 m), from topographic map. Prior to June 1965, crest-stage gage at site 1.0 mi (1.6 km) downstream at different datum.

REMARKS.--Records good. Some stock ponds and small diversions above station.

AVERAGE DISCHARGE.--13 years, 4.84 ft<sup>3</sup>/s (0.137 m<sup>3</sup>/s), 3,510 acre-ft/yr (4.33 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,800 ft<sup>3</sup>/s (51.0 m<sup>3</sup>/s) Feb. 16, 1959, gage height, 14.68 ft (4.474 m) site and datum then in use, from rating curve extended above 690 ft<sup>3</sup>/s (19.5 m<sup>3</sup>/s); no flow for several months in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft<sup>3</sup>/s (1.42 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)		Gage height (ft) (m)		Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)		Gage height (ft) (m)	
Jan. 4	1930	435	12.3	4.33	1.320	Feb. 9	0945	*750	21.2	5.40	1.646
Jan. 16	1830	664	18.8	5.10	1.554	Feb. 13	0445	unknown	-	unknown	-
Feb. 5	1545	51	1.44	2.36	0.719	Mar. 4	1500	675	19.1	5.14	1.567
Feb. 7	2115	131	3.71	3.00	0.914	Mar. 31	0845	110	3.12	2.86	0.872

Minimum, no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				0	4.8	12	24	9.2	3.2	.94		
2				0	4.6	20	16	9.0	3.2	.79		
3				0	4.5	25	13	9.1	3.1	.65		
4				0	4.3	210	13	9.3	3.0	.58		
5				0	13	254	12	9.5	2.8	.49		
6				0	22	136	16	9.5	2.7	.42		
7				0	72	73	15	9.8	2.5	.39		
8				0	88	53	12	10	2.4	.32		
9				27	244	51	10	11	2.4	.26		
10				23	137	51	10	12	2.6	.23		
11				6.6	70	41	9.9	12	2.9	.20		
12				3.3	46	39	9.6	9.6	2.8	.19		
13				3.4	70	33	9.5	8.8	2.7	.16		
14				107	51	30	9.0	8.3	2.7	.12		
15				182	38	28	11	8.5	2.7	.11		
16				187	32	25	15	8.6	2.5	.09		
17				174	28	22	11	7.9	2.5	.08		
18				66	24	21	10	7.9	2.3	.07		
19				40	21	20	9.9	7.3	2.3	.04		
20				27	19	18	9.6	7.0	2.3	.03		
21				19	17	20	9.6	6.7	2.2	.01		
22				16	16	27	8.7	6.6	2.2	0		
23				12	15	18	8.8	6.4	2.1	0		
24				9.8	14	15	9.2	6.7	2.1	0		
25				8.4	13	14	12	6.8	2.0	0		
26				7.5	13	14	11	6.5	1.9	0		
27				6.9	12	13	10	5.6	1.6	0		
28				6.3	11	13	9.1	4.7	1.4	0		
29				5.9	---	12	9.0	3.4	1.2	0		
30				5.7	---	12	8.6	3.3	1.0	0		
31		---		5.2	---	49	---	3.2	---	0		---
TOTAL	0	0	0	949.0	1104.2	1369	341.5	244.2	71.3	6.17	0	0
MEAN	0	0	0	30.6	39.4	44.2	11.4	7.88	2.38	.20	0	0
MAX	0	0	0	187	244	254	24	12	3.2	.94	0	0
MIN	0	0	0	0	4.3	12	8.6	3.2	1.0	0	0	0
AC-FT	0	0	0	1880	2190	2720	677	484	141	12	0	0
CAL YR 1977	TOTAL	5.23	MEAN	.014	MAX	.15	MIN	0	AC-FT	10		
WTR YR 1978	TOTAL	4085.37	MEAN	11.2	MAX	254	MIN	0	AC-FT	8100		

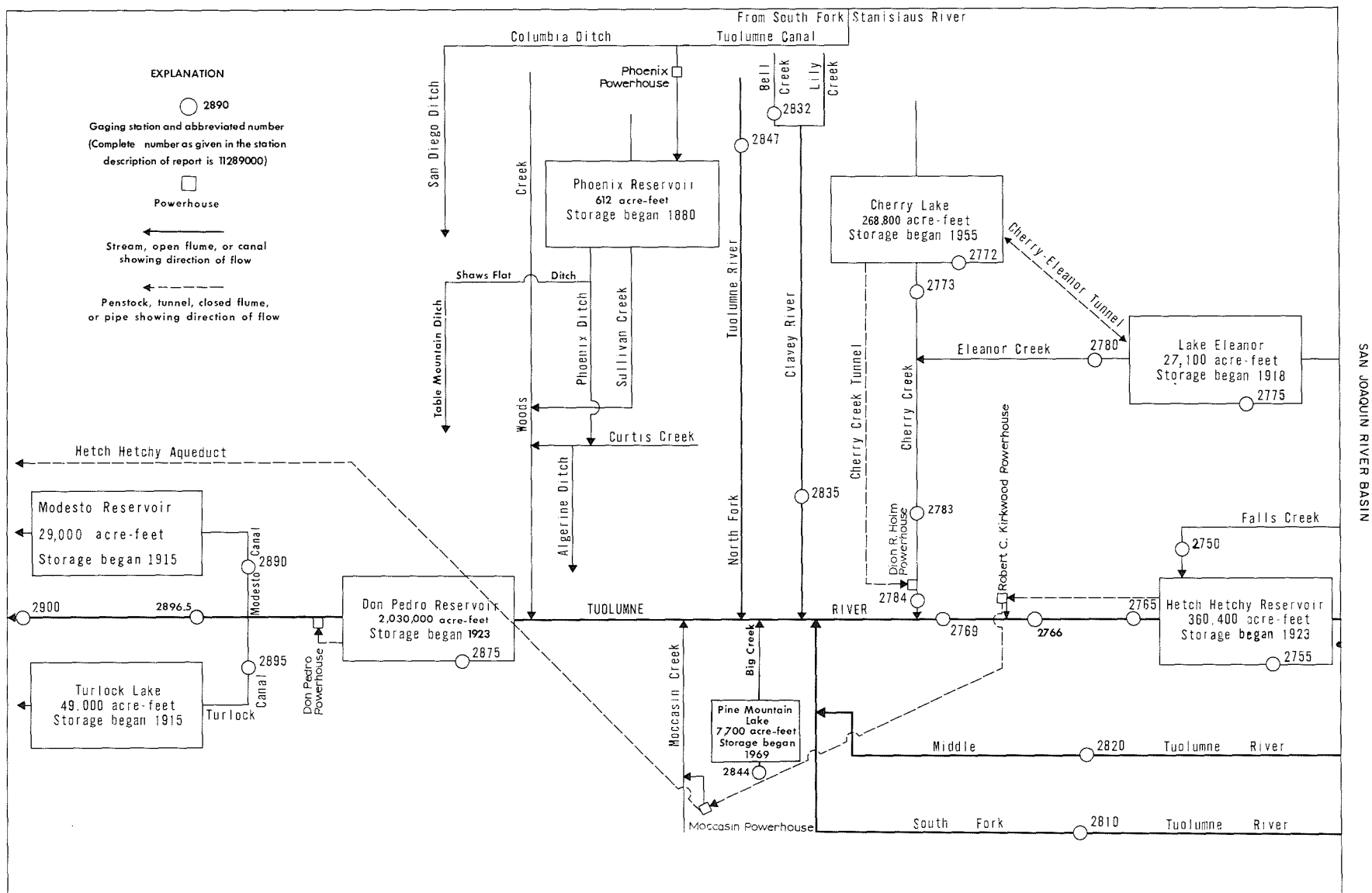


FIGURE 9.--Schematic diagram showing diversions and storage in Tuolumne River basin.

## SAN JOAQUIN RIVER BASIN

11275000 FALLS CREEK NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°58'15", long 119°45'48", in NW¼SE¼ sec.3, T.1 N., R.20 E., Tuolumne County, Yosemite National Park, on right bank 0.2 mi (0.3 km) upstream from Wampana Falls, 0.6 mi (1.0 km) upstream from mouth, and 2 mi (3 km) northeast of Hetch Hetchy.

DRAINAGE AREA.--46.0 mi<sup>2</sup> (119.1 km<sup>2</sup>).

PERIOD OF RECORD.--October 1915 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1918, published as "near Sequoia."

REVISED RECORDS.--WSP 531: 1917(M). WSP 931: 1938. WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,350 ft (1,631 m), from topographic map.

REMARKS.--Records good. No regulation or diversion above station. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--63 years, 142 ft<sup>3</sup>/s (4.021 m<sup>3</sup>/s), 102,900 acre-ft/yr (127 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,660 ft<sup>3</sup>/s (189 m<sup>3</sup>/s) Nov. 19, 1950, Dec. 23, 1955, gage height, 9.0 ft (2.74 m) from floodmarks, from rating curve extended above 2,500 ft<sup>3</sup>/s (70.8 m<sup>3</sup>/s) on basis of velocity-area studies; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 900 ft<sup>3</sup>/s (25.5 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 2	0315	1060 30.0	5.86 1.786	May 30	0845	1110 31.4	5.92 1.804
May 15	unknown	1180 33.4	6.01 1.832	June 6	0700	1300 36.8	6.15 1.875
May 22	0545	989 28.0	5.75 1.753	June 14	1000	*1350 38.2	6.20 1.890

Minimum, no flow Oct. 1 to Nov. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	15	62	42	92	268	802	946	673	131	10
2		0	13	52	40	123	198	624	925	718	110	10
3		0	12	47	39	88	159	545	878	589	98	9.2
4		0	12	46	42	183	144	505	892	494	91	8.9
5		0	13	52	67	111	110	480	1030	508	97	38
6		0	13	63	75	81	102	433	1130	613	83	316
7		0	12	62	63	81	94	397	1100	683	90	312
8		0	10	57	51	84	94	472	1070	648	123	223
9		0	9.3	100	72	84	116	536	1090	572	104	128
10		0	8.5	69	62	76	148	580	1010	665	128	353
11		0	8.0	53	59	74	193	441	717	633	103	354
12		0	8.6	46	59	62	249	529	846	531	73	176
13		0	8.6	56	56	56	314	602	1040	451	57	105
14		0	9.0	99	54	59	301	700	1160	462	47	74
15		0	254	84	48	71	233	740	1060	505	38	59
16		0	81	86	46	92	171	538	802	501	32	46
17		0	344	76	44	117	148	443	648	387	29	37
18		0	113	66	43	127	143	510	750	352	25	31
19		0	64	68	51	157	161	600	798	313	22	25
20		0	49	60	61	173	179	701	755	274	19	22
21		3.3	42	55	69	214	152	810	806	241	17	19
22		60	54	50	78	208	146	915	812	233	16	17
23		11	142	43	83	162	182	854	787	239	15	15
24		14	67	44	82	136	336	489	811	233	14	13
25		19	49	40	73	144	221	319	779	221	13	12
26		19	71	43	68	167	241	321	652	248	12	11
27		19	379	44	67	186	302	460	574	247	12	10
28		15	273	43	62	227	456	675	469	206	11	9.8
29		16	199	44	---	262	473	867	406	184	10	9.1
30		19	184	45	---	359	578	1010	561	153	10	8.6
31		---	87	43	---	409	---	972	---	142	10	---
TOTAL	0	195.3	2604.0	1798	1656	4465	6612	18870	25304	12919	1640	2461.6
MEAN	0	6.51	84.0	58.0	59.1	144	220	609	843	417	52.9	82.1
MAX	0	60	379	100	83	409	578	1010	1160	718	131	354
MIN	0	0	8.0	40	39	56	94	319	406	142	10	8.6
AC-FT	0	387	5170	3570	3280	8860	13110	37430	50190	25620	3250	4880
CAL YR 1977	TOTAL	16518.00	MEAN	45.3	MAX	379	MIN	0	AC-FT	32760		
WTR YR 1978	TOTAL	78524.90	MEAN	215	MAX	1160	MIN	0	AC-FT	155800		



## 11275500 HETCH HETCHY RESERVOIR AT HETCH HETCHY, CA

LOCATION.--Lat 37°56'52", long 119°47'13", in NW¼NW¼ sec.16, T.1 N., R.20 E., Tuolumne County, Yosemite National Park, near center of O'Shaughnessy Dam on Tuolumne River at Hetch Hetchy, 1.5 mi (2.4 km) downstream from Falls Creek.

DRAINAGE AREA.--455 mi<sup>2</sup> (1,178 km<sup>2</sup>).

PERIOD OF RECORD.--May 1923 to current year. Prior to October 1930 monthend contents, published in WSP 1315-A.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Nonrecording gage. Datum of gage is 1.84 ft (0.561 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1927, nonrecording gage at same site and datum. Oct. 1, 1927, to July 9, 1972, water-stage recorder at same site and datum. Prior to October 1974, datum published as at mean sea level.

REMARKS.--Reservoir is formed by concrete gravity-type dam, completed to crest gage height 3,726.5 ft (1,135.84 m) in 1923 and raised to 3,812.0 ft (1,161.90 m) in 1937. Storage began Apr. 6, 1923. Ten-foot (3-m) drum gates were installed on spillway in 1949. Capacity, 360,400 acre-ft (444 hm<sup>3</sup>) between gage heights 3,512.0 ft (1,070.46 m) somewhat above bottom outlet, and 3,806.0 ft (1,160.07 m) top of drum-type spillway gates. Water is diverted from reservoir through tunnel to Robert C. Kirkwood powerplant 15 mi (24 km) 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 (station 11287500) 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. Records, including extremes, represent contents at 0800 hours.

COOPERATION.--Record of gage heights furnished by city and county of San Francisco.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 369,100 acre-ft (455 hm<sup>3</sup>) Dec. 3, 1950, gage height, 3,810.4 ft (1,161.41 m); no contents at times in 1929-31.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 363,100 acre-ft (448 hm<sup>3</sup>) July 27, gage height, 3,807.4 ft (1,160.50 m); minimum, 63,000 acre-ft (77.7 hm<sup>3</sup>) Mar. 18, gage height, 3,605.9 ft (1,099.08 m).

## Capacity table (gage height, in feet, and contents, in acre-feet)

3512	0	3540	8700	3640	97000	3740	238900
3513	51	3560	22900	3660	119900	3760	273700
3515	154	3580	39500	3680	146200	2780	310400
3520	410	3600	57400	3700	175000	3800	348600
3530	3300	3620	76500	3720	206000	3810.4	369100

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	112900	98700	84500	92600	82900	64000	73900	98200	221400	323800	361500	338500
2	112400	98100	84100	93300	81900	64300	74900	99100	226700	326600	361700	337000
3	111900	97400	83700	93400	80800	64300	75300	100800	230300	328500	361700	335600
4	111500	96900	83300	93500	79600	64800	75500	104100	233500	328900	361700	334600
5	111100	96400	83000	94100	78500	66200	75600	108200	238200	329300	361700	333500
6	110500	95800	82600	95000	78100	67900	75500	111900	244500	331600	361500	335400
7	110100	95300	82300	95600	77700	67800	75600	115200	250200	335800	361400	337900
8	109600	94800	81800	96100	77600	67600	75400	118400	257500	339700	361400	339900
9	109100	94400	81400	96500	77500	67300	75300	122500	264800	343000	361400	340200
10	108700	93700	81000	96700	77500	67000	75300	127800	271000	347000	361500	340600
11	108200	93200	80500	96200	77000	66700	76000	133100	272800	350400	361500	343700
12	107800	92700	80100	96600	76300	66300	77000	138600	273000	351700	361200	344500
13	107300	92200	79600	94900	75700	65800	78800	145400	275700	352100	360800	344500
14	106900	91800	79200	94300	75200	65000	80500	155000	282700	353300	360400	344100
15	106400	91100	79200	94800	74400	64300	81700	166000	289300	355800	359800	343400
16	106000	90600	80100	96100	73600	63800	83000	175000	292900	357800	358800	342800
17	105600	90100	80600	96200	72700	63300	83600	180000	294600	358800	358000	342000
18	105200	89500	83100	95400	71700	63000	84000	183800	296300	359000	357000	341000
19	104700	88800	83400	95100	70800	63200	84500	187800	299000	359400	355800	340100
20	104300	88200	83500	94600	70500	63500	85100	190800	301400	360000	354700	338900
21	103700	87900	83600	94000	70200	63900	85700	195400	303700	360800	353300	337700
22	103300	88000	83400	93200	68700	64800	86100	201700	306500	361200	352100	336600
23	102700	87600	84100	92200	68200	65300	86200	207000	310400	361500	350700	335400
24	102300	87100	85100	91100	67900	65400	86600	207800	314100	361500	349600	334300
25	101900	86800	85200	90200	67400	65300	89000	205400	317100	361500	348200	332700
26	101500	86400	85300	89100	66900	65500	91500	202500	319800	362300	346800	332200
27	101000	86000	86900	88100	66200	66200	92800	200200	320900	363100	345300	330400
28	100500	85700	89300	87000	65500	66800	94200	200300	321300	362700	344100	328900
29	99900	85300	90700	86000	---	67900	95400	203200	320700	362300	342600	327800
30	99500	84900	92000	84900	---	69400	96800	208700	321500	361700	341200	326400
31	99100	---	91800	84000	---	72100	---	215200	---	361500	339900	---
MAX	112900	98700	92000	96700	82900	72100	96800	215200	321500	363100	361700	344500
MIN	99100	84900	79200	84000	65500	63000	73900	98200	221400	323800	339900	326400
†	3641.9	3628.4	3635.0	3627.5	3608.5	3615.4	3639.8	3725.7	3785.9	3806.6	3795.5	3788.5
‡	-14200	-14200	+6900	-7800	-18500	+6600	+24700	+118400	+106300	+40000	-21600	-13500

CAL YR 1977 +37700  
WTR YR 1978 +213100

† Gage height, in feet, at end of month.  
‡ Change in contents, in acre-feet.

## SAN JOAQUIN RIVER BASIN

11276500 TUOLUMNE RIVER NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°56'15", long 119°47'50", in SW¼SE¼ sec.17, T.1 N., R.20 E., Tuolumne County, Yosemite National Park, on left bank 1 mi (2 km) downstream from O'Shaughnessy Dam at Hetch Hetchy, and 2.5 mi (4.0 km) downstream from Falls Creek.

DRAINAGE AREA.--457 mi<sup>2</sup> (1,184 km<sup>2</sup>).

PERIOD OF RECORD.--October 1910 to current year. 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.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder with concrete control since May 5, 1970. Altitude of gage is 3,480 ft (1,061 m), from topographic map. Prior to Jan. 1, 1915, water-stage recorder at site 1 mi (2 km) upstream, at damsite, at different datum. Jan. 1, 1915, to Sept. 30, 1968, water-stage recorder, at same site and datum. Oct. 1, 1968, to May 4, 1970, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum.

REMARKS.--Records good. Flow regulated by Hetch Hetchy Reservoir (station 11275500) 1 mi (2 km) upstream beginning in April 1923. Flow diverted above station through tunnel to Robert C. Kirkwood powerplant and Hetch Hetchy aqueduct beginning Apr. 26, 1967. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE (prior to diversion to Robert C. Kirkwood powerplant and Hetch Hetchy aqueduct).--57 years (water years 1911-67), 999 ft<sup>3</sup>/s (28.29 m<sup>3</sup>/s), 723,800 acre-ft/yr (892 hm<sup>3</sup>/yr); 11 years (water years 1968-78), 323 ft<sup>3</sup>/s (9.147 m<sup>3</sup>/s), 234,000 acre-ft/yr (289 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,900 ft<sup>3</sup>/s (365 m<sup>3</sup>/s) June 1, 1943, gage height, 13.90 ft (4.237 m); no flow Oct. 3, 4, 1968, Dec. 16, 1969, Feb. 20-26, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,590 ft<sup>3</sup>/s (158 m<sup>3</sup>/s) June 13, gage height, 10.92 (3.328 m); minimum daily, 22 ft<sup>3</sup>/s (0.62 m<sup>3</sup>/s) Aug. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	37	37	38	35	46	39	77	3560	2590	531	76
2	37	37	37	37	38	55	40	82	4060	2630	471	78
3	37	37	37	37	37	52	40	83	4360	2640	460	78
4	37	37	37	39	38	63	41	79	4400	2640	411	78
5	37	37	37	47	40	60	41	79	4430	2340	401	79
6	37	37	37	48	49	50	43	80	4590	1990	316	79
7	37	37	37	43	52	44	45	81	4300	2020	260	77
8	37	37	37	40	45	41	47	80	4420	2060	260	79
9	37	36	37	41	83	53	44	81	4530	2100	248	80
10	37	36	37	38	70	65	42	80	4640	2360	330	82
11	37	36	37	40	59	49	41	78	5470	2680	292	83
12	37	36	37	38	55	45	40	79	5470	2690	158	83
13	37	36	36	38	56	40	36	79	4350	2490	68	83
14	38	36	36	42	54	39	33	79	3470	2200	33	85
15	37	36	38	51	52	38	36	103	3570	2220	27	85
16	37	36	35	56	50	37	37	263	3660	2240	22	52
17	36	36	62	55	50	37	37	500	3690	2250	55	43
18	36	36	37	38	50	36	36	889	3720	1920	80	42
19	36	36	33	49	50	36	35	1880	3780	1420	80	41
20	36	36	37	47	50	36	36	2260	3820	1190	80	39
21	36	38	38	41	50	37	36	2280	3870	1250	80	38
22	36	39	39	40	48	37	36	2380	3360	1340	79	38
23	39	36	55	34	47	37	36	3240	2970	1450	78	39
24	40	35	40	36	47	36	36	3440	3040	1670	77	38
25	39	35	38	40	46	36	52	3420	2970	1280	77	37
26	37	35	38	38	46	36	50	3410	2950	1320	76	37
27	39	36	50	38	46	36	42	3370	2970	1620	77	37
28	38	36	44	38	46	36	40	3370	2750	1440	79	39
29	38	36	41	38	---	36	38	3410	2560	1160	78	41
30	38	36	45	38	---	37	37	3450	2570	912	77	41
31	37	---	41	36	---	40	---	3500	---	740	76	---
TOTAL	1153	1090	1227	1279	1389	1326	1192	42282	114230	58852	5437	1807
MEAN	37.2	36.3	39.6	41.3	49.6	42.8	39.7	1364	3808	1898	175	60.2
MAX	40	39	62	56	83	65	52	3500	5470	2690	531	85
MIN	36	35	33	34	35	36	33	77	2560	740	22	37
CFSM	.08	.08	.09	.09	.11	.09	.09	2.98	8.33	4.15	.38	.13
IN.	.09	.09	.10	.10	.11	.11	.10	3.44	9.30	4.79	.44	.15
CAL YR 1977 TOTAL	18234			50.0	84	30	.11	1.48				
WTR YR 1978 TOTAL	231264		634		5470	22	1.39	18.82				

## 11276600 TUOLUMNE RIVER ABOVE EARLY INTAKE, NEAR MATHER, CA

LOCATION.--Lat 37°52'46", long 119°56'46", in SE¼SW¼ sec.1, T.1 S., R.18 E., Tuolumne County, Stanislaus National Forest, on left bank 0.5 mi (0.8 km) upstream from Early Intake, 2.4 mi (3.9 km) upstream from Cherry Creek, and 5.0 mi (8.0 km) west of Mather.

DRAINAGE AREA.--484 mi<sup>2</sup> (1,254 km<sup>2</sup>).

PERIOD OF RECORD.--October 1970 to current year. Records for the period October 1939 to September 1970 in the files of the California district office of the Geological Survey.

GAGE.--Water-stage recorder. Altitude of gage is 2,420 ft (738 m), from topographic map.

REMARKS.--Records good. Flow regulated by Hetch Hetchy Reservoir (station 11275500) 12 mi (19 km) upstream.

AVERAGE DISCHARGE.--8 years, 295 ft<sup>3</sup>/s (8.354 m<sup>3</sup>/s), 213,700 acre-ft/yr (263 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,520 ft<sup>3</sup>/s (270 m<sup>3</sup>/s) June 12, 1974, gage height, 20.94 ft (6.383 m); minimum daily, 33 ft<sup>3</sup>/s (0.93 m<sup>3</sup>/s) Aug. 17, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1943, reached a stage of 22.1 ft (6.74 m), discharge, 12,900 ft<sup>3</sup>/s (365 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,160 ft<sup>3</sup>/s (174 m<sup>3</sup>/s) June 11-13, gage height, 19.50 ft (5.944 m); minimum daily, 33 ft<sup>3</sup>/s (0.93 m<sup>3</sup>/s) Aug. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	38	38	81	65	101	130	132	3800	2520	520	89
2	37	38	39	73	64	282	123	163	4230	2550	455	90
3	37	37	39	70	64	324	110	145	4620	2580	450	90
4	37	38	39	73	62	478	125	136	4650	2580	400	92
5	37	45	39	185	75	449	124	131	4680	2440	385	95
6	38	40	39	235	216	288	154	127	4710	1910	320	98
7	38	38	39	124	293	200	171	123	4590	1900	240	96
8	38	38	39	98	249	167	167	120	4620	1950	233	97
9	38	38	39	126	618	158	180	118	4700	1970	228	98
10	38	38	40	132	359	156	166	115	4800	2220	331	103
11	38	38	40	98	224	166	145	111	5720	2610	330	103
12	37	38	41	88	196	169	129	108	5720	2630	227	103
13	36	38	39	82	202	143	119	107	5210	2550	110	103
14	37	39	39	107	178	127	108	105	3600	2290	40	106
15	38	38	64	295	156	117	124	104	3620	2290	35	108
16	37	38	50	281	141	109	186	207	3650	2290	34	105
17	36	38	162	397	126	104	149	411	3710	2290	33	51
18	36	38	151	206	120	99	135	762	3770	1800	90	50
19	36	38	62	211	122	95	121	1740	3780	1400	88	49
20	37	38	49	172	127	92	118	2350	3850	1140	91	45
21	37	55	49	131	126	96	130	2390	3930	1190	90	44
22	37	86	62	112	124	119	117	2500	3700	1300	89	44
23	36	47	227	102	121	108	106	3620	2990	1420	89	46
24	39	40	100	89	115	99	105	3680	2960	1580	88	45
25	40	39	74	88	108	93	417	3680	3020	1210	88	44
26	39	38	67	85	104	88	356	3630	3020	1270	87	43
27	43	38	178	80	102	86	220	3620	3020	1520	89	43
28	39	38	134	77	99	83	167	3620	2900	1360	92	45
29	39	39	97	74	---	80	145	3640	2540	1100	90	48
30	38	39	138	72	---	92	134	3690	2540	900	90	48
31	39	---	100	69	---	174	---	3750	---	720	89	---
TOTAL	1168	1228	2313	4113	4556	4942	4681	45135	118650	57480	5621	2221
MEAN	37.7	40.9	74.6	133	163	159	156	1456	3955	1854	181	74.0
MAX	43	86	227	397	618	478	417	3750	5720	2630	520	108
MIN	36	37	38	69	62	80	105	104	2540	720	33	43
CFSM	.08	.08	.15	.27	.34	.33	.32	3.01	8.17	3.83	.37	.15
IN.	.09	.09	.18	.32	.35	.38	.36	3.47	9.12	4.42	.43	.17
CAL YR 1977 TOTAL	20579			56.4	MAX 227	MIN 35	CFSM .12	IN 1.58				
WTR YR 1978 TOTAL	252108			691	MAX 5720	MIN 33	CFSM 1.43	IN 19.38				

## SAN JOAQUIN RIVER BASIN

11276900 TUOLUMNE RIVER BELOW EARLY INTAKE, NEAR MATHER, CA

LOCATION.--Lat 37°52'54", long 119°58'09", in NW¼SW¼ sec.2, T.1 S., R.18 E., Tuolumne County, Stanislaus National Forest, on left bank 0.6 mi (1.0 km) upstream from Cherry Creek, 0.7 mi (1.1 km) downstream from Robert C. Kirkwood powerplant and Hetch Hetchy aqueduct, and 6.3 mi (10.1 km) west of Mather.

DRAINAGE AREA.--487 mi<sup>2</sup> (1,261 km<sup>2</sup>).

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

GAGE.--Water-stage recorder. Altitude of gage is 2,200 ft (671 m), from topographic map.

REMARKS.--Records excellent. Flow regulated by Hetch Hetchy Reservoir (station 11275500) 13 mi (21 km) upstream and Robert C. Kirkwood powerplant beginning Apr. 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.

AVERAGE DISCHARGE.--12 years, 454 ft<sup>3</sup>/s (12.86 m<sup>3</sup>/s), 328,900 acre-ft/yr (406 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,300 ft<sup>3</sup>/s (320 m<sup>3</sup>/s) June 4, 1969, gage height, 9.82 ft (2.993 m); minimum daily, 12 ft<sup>3</sup>/s (0.34 m<sup>3</sup>/s) Nov. 28-30, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,040 ft<sup>3</sup>/s (171 m<sup>3</sup>/s) June 13, gage height, 8.34 ft (2.542 m); minimum daily, 31 ft<sup>3</sup>/s (0.88 m<sup>3</sup>/s) during several days in October.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	33	34	76	260	333	358	321	3710	2850	684	170
2	32	37	34	68	253	525	263	357	4100	2880	570	132
3	33	35	34	65	255	585	345	339	4490	2940	544	141
4	33	32	34	68	225	720	366	326	4520	2890	506	138
5	33	38	35	212	248	725	362	308	4620	2730	483	203
6	33	36	35	213	435	570	395	276	4640	2200	438	215
7	33	34	35	33	524	457	407	276	4450	2210	391	196
8	33	34	35	53	493	418	397	296	4510	2230	376	190
9	33	34	35	142	904	406	366	296	4670	2290	357	136
10	33	34	36	216	621	398	397	280	4740	2500	406	144
11	33	34	37	178	442	385	372	261	5640	2900	427	201
12	33	34	37	160	373	344	355	250	5700	2790	321	186
13	32	34	36	145	436	394	344	247	4920	2730	198	191
14	32	34	36	174	417	374	332	236	3790	2520	181	196
15	32	34	57	380	389	361	344	261	3870	2540	160	191
16	31	34	45	472	369	354	376	348	3920	2720	146	126
17	31	34	173	671	347	349	362	557	3930	2660	140	89
18	32	34	177	447	319	325	321	749	3960	2370	185	150
19	31	34	57	427	336	333	296	917	4020	1740	171	155
20	31	33	45	396	349	351	288	2160	4010	1380	140	145
21	31	46	45	349	362	351	300	2420	4090	1420	195	143
22	32	80	56	341	354	367	240	2520	3740	1470	197	132
23	31	43	263	350	344	352	144	3370	3270	1560	193	73
24	31	37	103	313	339	340	233	3610	3280	1690	194	77
25	31	36	69	314	313	310	714	3610	3260	1460	186	143
26	31	35	61	306	260	202	583	3590	3230	1360	175	149
27	31	35	203	300	342	305	416	3540	3250	1830	138	127
28	31	34	150	295	332	322	326	3570	3070	1660	202	140
29	31	34	94	210	---	325	276	3600	2790	1340	197	136
30	31	34	136	304	---	337	296	3640	2800	1040	190	85
31	31	---	96	299	---	422	---	3700	---	884	183	---
TOTAL	988	1100	2323	7977	10641	12340	10574	46231	120990	65784	8874	4500
MEAN	31.9	36.7	74.9	257	380	398	352	1491	4033	2122	286	150
MAX	33	80	263	671	904	725	714	3700	5700	2940	684	215
MIN	31	32	34	33	225	202	144	236	2790	884	138	73
AC-FT	1960	2180	4610	15820	21110	24480	20970	91700	240000	130500	17600	8930
CAL YR 1977 TOTAL	19324			MEAN 52.9	MAX 263	MIN 24	AC-FT 38330					
WTR YR 1978 TOTAL	292322			MEAN 801	MAX 5700	MIN 31	AC-FT 579800					

## 11277200 CHERRY LAKE NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°58'33", long 119°54'47", in SE¼NW¼ sec.5, T.1 N., R.19 E., Tuolumne County, Stanislaus National Forest, on upstream face of Cherry Valley Dam on Cherry Creek, 4.2 mi (6.8 km) upstream from Eleanor Creek, 7 mi (11 km) north of Early Intake, and 7.3 mi (11.7 km) northwest of Hetch Hetchy.

DRAINAGE AREA.--117 mi<sup>2</sup> (303 km<sup>2</sup>).

PERIOD OF RECORD.--August 1956 to current year. Prior to October 1959, published as Lake Lloyd near Hetch Hetchy.

GAGE.--Water-stage recorder. Datum of gage is 2.42 ft (0.738 m) National Geodetic Vertical Datum of 1929. Prior to October 1974, datum published as at mean sea level.

REMARKS.--Reservoir is formed by a rockfill dam completed in 1956. Storage began in December 1955. Capacity, 268,800 acre-ft (331 hm<sup>3</sup>) between gage heights 4,430 ft (1,350.3 m) bottom of sluice gates, and 4,700 ft (1,432.6 m) top of spillway gates. No dead storage. 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 Aug. 1, 1960. See schematic diagram of Tuolumne River basin. Records, including extremes, represent contents at 2400 hours.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 269,900 acre-ft (333 hm<sup>3</sup>) July 1-3, 1957, gage height, 4,700.6 ft (1,432.74 m), from capacity table currently in use; normal minimum since reservoir first filled, 7,660 acre-ft (9.44 hm<sup>3</sup>) Jan. 24, 1960, gage height, 4,502.1 ft (1,372.24 m). Reservoir drained for inspection in 1961 and 1964.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 247,600 acre-ft (305 hm<sup>3</sup>) July 16, gage height, 4,687.9 ft (1,428.87 m); minimum, 78,700 acre-ft (97.0 hm<sup>3</sup>) Dec. 14, gage height, 4,574.8 ft (1,394.40 m).

## Capacity table (gage height, in feet, and contents, in acre-feet)

4440	0	4490	3020	4560	60800	4660	201100
4450	75	4500	6030	4580	85100	4680	234100
4460	250	4510	11700	4600	111800	4700	268800
4470	675	4520	19700	4620	139900	4705	277900
4480	1530	4540	38900	4640	169700		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	103300	91600	82100	102600	104700	92300	102800	123600	193800	237800	240900	206100
2	103000	91200	81900	103900	103700	92700	103700	125000	197000	239100	239900	206800
3	102500	90700	81700	104000	102800	92900	104400	127200	200000	239600	238700	206500
4	102200	90200	81400	104100	101900	94000	105100	130000	202200	239900	237700	206100
5	101700	90100	81000	104700	102100	95000	105400	132200	205200	240300	236600	206500
6	101400	89800	80900	105000	101800	95300	105800	133100	207600	241100	236300	209200
7	101000	89300	80800	105200	101500	95100	105600	133800	209600	242100	235600	210400
8	100600	88900	80400	106100	101300	94900	105400	135100	211300	243000	234900	209900
9	100000	88400	80000	106700	101800	94600	105100	137100	213100	243700	233900	209600
10	99600	88000	79800	107000	101700	94100	105200	139100	214000	244500	232900	212300
11	99200	87500	79500	106900	101300	93600	105800	140800	214600	245400	231700	212200
12	98900	87100	79200	106900	101400	93000	106900	143100	215900	245900	230700	211500
13	98500	86700	78900	106700	100900	92300	108500	146100	218200	246100	230100	210500
14	98200	86200	78700	107700	100200	91500	109600	150300	220500	246400	228900	209700
15	97900	85800	80500	108800	99500	90700	110700	153900	221900	246800	227600	208900
16	97500	85300	80900	109800	98700	90200	111500	155200	222200	247600	226200	208300
17	97100	84800	83100	110300	97600	89800	111800	156400	222200	247500	224900	208100
18	96800	84400	84300	110600	96800	86700	112000	157900	222900	247300	223600	206800
19	96400	83900	84800	110600	96600	90100	112100	159700	223700	247100	222600	205700
20	96000	83500	85100	110300	96400	90300	112500	162100	224700	246800	222200	204400
21	95600	83500	85500	110200	95800	91200	112500	165000	226100	246300	220900	203200
22	95400	83800	86300	110300	95300	92000	112400	168200	227700	245900	219500	201900
23	95000	83500	87900	109800	94700	92500	112200	170500	229700	246300	218300	201100
24	94600	83400	88600	109200	94200	92800	113100	170800	231600	245700	216900	200800
25	94200	83300	89200	108500	93700	92900	116700	170800	233400	245100	215700	199500
26	94000	83100	89900	108000	93400	93200	118200	171600	234400	244700	214600	198600
27	93700	83000	93600	107300	93000	93700	119300	173700	235300	244000	214300	197600
28	93300	82900	95800	106900	92400	94600	120400	177400	235400	243300	213000	196600
29	92900	82600	98100	106700	---	95900	121400	181600	235600	242800	211700	195700
30	92500	82400	100000	106200	---	98500	122800	186000	236500	242800	210400	195200
31	92100	---	101400	105500	---	101300	---	190000	---	242000	209100	---
MAX	103300	91600	101400	110600	104700	101300	122800	190000	236500	247600	240900	212300
MIN	92100	82400	78700	102600	92400	86700	102800	123600	193800	237800	209100	195200
†	4585.4	4577.8	4592.4	4595.4	4585.6	4592.3	4607.9	4653.0	4681.4	4684.6	4664.9	4656.3
‡	-11800	-9700	+19000	+4100	-13100	+8900	+21500	+67200	+46500	+5500	-32900	-13900
CAL YR 1977	+24400											
WTR YR 1978	+91300											

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

## SAN JOAQUIN RIVER BASIN

11277300 CHERRY CREEK BELOW CHERRY VALLEY DAM, NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°58'04", long 119°54'59", in SE¼SW¼ sec.5, T.1 N., R.19 E., Tuolumne County, Stanislaus National Forest, on right bank 0.7 mi (1.1 km) downstream from Cherry Valley Dam, 3.5 mi (5.6 km) upstream from Eleanor Creek, 6.7 mi (10.8 km) north of Early Intake, and 7.2 mi (11.6 km) west of Hetch Hetchy.

DRAINAGE AREA.--118 mi<sup>2</sup> (306 km<sup>2</sup>).

PERIOD OF RECORD.--November 1956 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,337.08 ft (1,321.942 m) National Geodetic Vertical Datum of 1929 (levels by city and county of San Francisco).

REMARKS.--Records excellent. Flow regulated by Cherry Lake (station 11277200) 0.7 mi (1.1 km) upstream. Diversion between Lake Eleanor (station 11277500) and Cherry Lake began Mar. 6, 1960. Diversion from Cherry Lake to Cherry powerplant began Aug. 1, 1960. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE (since diversion to Cherry Creek powerplant).--18 years (water years 1961-78), 29.3 ft<sup>3</sup>/s (0.830 m<sup>3</sup>/s), 21,230 acre-ft/yr (26.2 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,210 ft<sup>3</sup>/s (119 m<sup>3</sup>/s) July 10, 1974, gage height, 10.53 ft (3.210 m); minimum daily, 1.6 ft<sup>3</sup>/s (0.045 m<sup>3</sup>/s) Apr. 10, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 822 ft<sup>3</sup>/s (23.3 m<sup>3</sup>/s) June 12, 13, gage height, 6.71 ft (2.045 m); minimum daily, 4.3 ft<sup>3</sup>/s (0.12 m<sup>3</sup>/s) May 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	175	50	4.8	6.6	5.6	9.3	7.9	8.9	5.2	11	11	17
2	174	5.0	4.8	6.4	5.5	16	7.8	8.6	36	11	11	17
3	174	4.8	4.8	6.4	5.4	15	7.6	8.5	96	10	11	17
4	174	4.8	4.8	6.8	5.4	37	8.1	8.3	168	11	11	17
5	174	5.1	4.8	12	6.1	31	7.8	107	348	11	11	17
6	174	4.8	4.8	12	7.4	19	8.2	397	680	11	11	17
7	174	4.8	4.8	8.8	9.1	15	7.9	501	806	11	11	17
8	174	4.8	4.8	8.0	8.3	13	8.2	499	808	11	11	17
9	174	4.8	4.6	13	34	13	8.3	510	809	11	11	17
10	174	4.8	4.6	9.2	14	12	8.3	515	811	11	14	17
11	174	4.8	4.6	7.2	11	13	8.2	516	811	11	14	17
12	170	4.8	4.6	6.8	10	11	8.0	516	811	11	11	17
13	163	4.8	4.6	6.6	10	10	8.0	518	683	11	10	17
14	161	4.8	4.7	11	9.4	9.8	8.0	520	622	11	11	17
15	161	4.8	6.5	9.8	9.0	9.3	9.0	523	623	11	11	17
16	161	4.8	5.0	23	8.6	8.9	8.9	524	623	11	11	17
17	161	4.8	22	18	8.3	8.6	8.4	525	624	11	11	17
18	161	4.8	6.6	12	8.2	8.4	8.3	526	625	11	12	17
19	160	4.8	5.6	13	8.2	8.2	8.1	527	498	11	14	17
20	161	4.8	5.3	11	8.2	8.0	8.3	528	313	11	15	16
21	161	7.6	5.3	9.2	8.2	8.5	8.1	530	284	11	17	17
22	160	8.3	6.4	8.5	8.2	8.8	7.9	532	131	11	17	17
23	160	5.1	10	7.9	8.2	8.1	7.7	534	10	11	17	17
24	160	5.0	6.3	7.3	8.2	8.0	8.3	537	10	11	17	17
25	160	4.8	5.9	7.0	8.0	7.7	18	538	10	11	17	16
26	160	4.8	6.2	6.7	8.1	7.6	13	424	10	11	17	16
27	160	4.8	8.0	6.5	8.1	7.5	11	180	10	11	17	17
28	160	4.8	6.8	6.3	8.1	7.5	10	42	10	10	17	17
29	160	4.8	7.4	6.1	---	7.4	9.6	4.3	10	11	17	17
30	160	4.8	7.6	5.9	---	7.7	9.2	4.7	11	11	17	17
31	160	---	6.8	5.9	---	8.8	---	5.2	---	11	17	---
TOTAL	5135	196.5	193.8	284.9	256.8	363.1	266.1	11117.5	11296.2	339	420	507
MEAN	166	6.55	6.25	9.19	9.17	11.7	8.87	359	377	10.9	13.5	16.9
MAX	175	50	22	23	34	37	18	538	811	11	17	17
MIN	160	4.8	4.6	5.9	5.4	7.4	7.6	4.3	5.2	10	10	16
AC-FT	10190	390	384	565	509	720	528	22050	22410	672	833	1010

CAL YR 1977 TOTAL 43603.3 MEAN 119 MAX 179 MIN 4.6 AC-FT 86490  
WTR YR 1978 TOTAL 30375.9 MEAN 83.2 MAX 811 MIN 4.3 AC-FT 60250

## 11277500 LAKE ELEANOR NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°58'27", long 119°52'48", in SE¼NW¼ sec.3, T.1 N., R.19 E., Tuolumne County, Yosemite National Park, 720 ft (219 m) from left bank on downstream side of dam on Eleanor Creek, 1.7 mi (2.7 km) upstream from Miguel Creek, and 5.5 mi (8.8 km) northwest of Hetch Hetchy.

DRAINAGE AREA.--78.1 mi<sup>2</sup> (202.3 km<sup>2</sup>).

PERIOD OF RECORD.--June 1918 to current year. Prior to October 1930, published in WSP 1315-A. Published as "near Sequoia" 1919-20.

REVISED RECORDS.--WSP 1445: 1938(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2.46 ft (0.750 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1927, nonrecording gage on upstream side of dam at same site and datum.

REMARKS.--Reservoir is formed by multiple-arch dam completed in 1918; storage began June 23, 1918. Usable capacity, 25,510 acre-ft (31.4 hm<sup>3</sup>) between gage heights, 4,620.9 ft (1,408.45 m), natural outlet of old lake and 4,660.0 ft (1,420.37 m), top of 5-ft (1.5-m) flashboards. Records, including extremes, represent usable contents at 2400 hours. See schematic diagram of Tuolumne River basin.

COOPERATION.--Periodic observations of gage height furnished by city and county of San Francisco.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 31,000 acre-ft (38.2 hm<sup>3</sup>) Dec. 11, 1937, from capacity table then in use, gage height, 4,663.4 ft (1,421.40 m); no usable contents at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 27,500 acre-ft (33.9 hm<sup>3</sup>) Sept. 10, gage height, 4,661.4 ft (1,420.79 m); no usable contents Oct. 1 to Nov. 23.

Capacity table (gage height, in feet, and contents, in acre-feet)

4608	0	4620	36	4628	1480	4646	13500
4610	6	4622	49	4630	2450	4650	17000
4612	12	4624	92	4632	3580	4655	21500
4614	18	4625	211	4635	5270	4660	26100
4616	24	4626	550	4638	7330	4663	29100
4618	27	4627	996	4642	10300		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	817	3970	2060	2680	6440	5680	25100	24400	26700	26700
2		0	861	3410	2060	3180	6020	5680	25200	24400	26800	26600
3		0	906	2960	2060	3240	5340	6370	25300	24700	26900	26600
4		0	906	2790	2060	3860	4820	7260	25400	25200	26900	26500
5		0	950	2840	2300	2920	4200	7950	25500	25600	27000	26800
6		0	996	2840	2560	3580	3750	8090	25400	25800	27000	27400
7		0	996	2730	2680	3300	3350	8230	25400	25900	27000	27400
8		0	996	2620	2680	3130	3130	8710	25300	25900	27300	27300
9		0	996	2900	3070	3070	3130	9660	25200	25800	27300	27300
10		0	996	2840	2960	2960	3300	10500	25000	25800	27300	27500
11		0	996	2680	2790	2900	3580	11300	24900	25800	27200	27300
12		0	996	2560	2680	2790	3970	12300	25000	25800	27200	27200
13		0	996	2510	2560	2620	4420	13700	25100	25700	27200	27200
14		0	996	2840	2450	2560	4650	15600	25000	25700	27100	27200
15		0	2300	2960	2350	2560	4590	17400	24900	25700	27100	27000
16		0	2450	3180	2300	2620	4250	18200	24800	25700	27100	26700
17		0	3920	3180	2210	2840	3800	18800	24700	25600	27100	26500
18		0	3520	3010	2160	3070	3580	19500	24700	25600	27100	26300
19		0	3010	2900	2160	3240	3460	20500	24700	25600	27100	26100
20		0	2680	2730	2210	3460	3520	21600	24700	25500	27000	26100
21		0	2450	2560	2300	3800	3410	23000	24700	25500	27000	26100
22		0	2510	2450	2400	3970	3300	24500	24700	25500	26900	26100
23		0	3070	2350	2510	3800	3240	24700	24700	25500	26900	26100
24		16	2900	2260	2560	3580	3630	24100	24600	25500	26900	26100
25		32	2680	2210	2560	3460	5960	23800	24600	25600	26900	26000
26		50	2680	2160	2560	3520	6440	23900	24500	25800	26800	25800
27		211	4590	2160	2510	3690	6370	24200	24500	26100	26800	25500
28		594	4990	2110	2450	3920	6370	24600	24400	26200	26800	25100
29		683	5160	2110	---	4250	6090	25000	24300	26400	26800	24800
30		772	5210	2110	---	5210	5960	25100	24400	26500	26700	24400
31		---	4650	2110	---	6440	---	25100	---	26600	26700	---
MAX	0	772	5210	3970	3070	6440	6440	25100	25500	26600	27300	27500
MIN	0	0	817	2110	2060	2560	3130	5680	24300	24400	26700	24400
†	0	4626.5	4633.9	4629.3	4630.0	4636.7	4636.0	4658.9	4658.1	4660.5	4660.6	4658.1
‡	0	+772	+3878	-2540	+340	+3990	-480	+19140	-700	+2200	+100	-2300

CAL YR 1977 ‡ +4190  
WTR YR 1978 ‡ +24400

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

## SAN JOAQUIN RIVER BASIN

11278000 ELEANOR CREEK NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°58'09", long 119°52'52", in NW¼SW¼ sec.3, T.1 N., R.19 E., Tuolumne County, Yosemite National Park, on right bank 0.5 mi (0.8 km) downstream from Lake Eleanor Dam, 1.1 mi (1.8 km) upstream from Miguel Creek, and 5.5 mi (8.8 km) northwest of Hetch Hetchy.

DRAINAGE AREA.--78.4 mi<sup>2</sup> (203.1 km<sup>2</sup>).

PERIOD OF RECORD.--October 1909 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "near Sequoia" 1910-18.

REVISED RECORDS.--WSP 1315-A: 1923(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,500 ft (1,370 m), from topographic map. November 1909 to November 1915, nonrecording gage and water-stage recorder at site 1 mi (2 km) upstream at different datum.

REMARKS.--Records excellent. Flow regulated by Lake Eleanor (station 11277500) 0.5 mi (0.8 km) upstream beginning in 1918. Diversion from Lake Eleanor to Cherry Lake began in March 1960. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE (prior to diversion to Cherry Lake).--50 years (water years 1910-59), 223 ft<sup>3</sup>/s (6.315 m<sup>3</sup>/s), 161,400 acre-ft/yr (199 hm<sup>3</sup>/yr); 19 years (water years 1960-78), 61.5 ft<sup>3</sup>/s (1.742 m<sup>3</sup>/s), 44,560 acre-ft/yr (54.9 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft<sup>3</sup>/s (331 m<sup>3</sup>/s) Nov. 19, 1950, gage height, 14.95 ft (4.557 m), from rating curve extended above 1,500 ft<sup>3</sup>/s (42.5 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 9.94 ft (3.030 m) and 12.24 ft (3.731 m); no flow at times in 1910, 1930-31, 1933, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,420 ft<sup>3</sup>/s (40.2 m<sup>3</sup>/s) June 6, gage height, 5.71 ft (1.740 m); minimum daily, 0.17 ft<sup>3</sup>/s (0.005 m<sup>3</sup>/s) Oct. 25, 26, Nov. 2-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.34	.26	8.8	1.8	3.3	4.9	5.3	4.4	989	380	25	9.7
2	.34	.17	8.8	1.8	3.3	6.6	5.3	4.2	1050	406	24	9.7
3	.34	.17	8.8	1.7	3.3	6.0	4.8	4.2	1140	237	23	9.7
4	.34	.17	7.1	3.2	3.3	8.1	5.4	4.2	1170	26	21	9.7
5	.34	.46	5.4	6.3	4.5	6.9	4.9	4.4	1280	111	20	10
6	.34	.34	5.3	5.7	5.6	5.6	5.3	4.7	1340	252	18	247
7	.34	.34	5.3	4.4	6.2	5.3	5.3	4.7	1290	347	16	463
8	.34	.34	5.3	4.2	5.9	4.8	5.3	4.7	1240	368	18	260
9	.34	.34	5.3	5.7	7.9	5.0	5.5	4.7	1180	345	99	141
10	.34	.34	5.3	4.8	5.4	4.7	4.9	4.7	1110	352	88	501
11	.34	.34	5.3	4.2	4.8	5.4	4.4	4.9	899	350	44	402
12	.34	.34	5.3	3.9	4.6	4.9	4.2	5.3	869	315	36	198
13	.34	.39	5.3	3.8	4.5	4.4	4.2	5.3	972	272	29	119
14	.34	.37	5.3	5.6	4.3	4.2	4.2	5.3	1020	248	24	203
15	.34	.37	6.0	5.5	4.2	4.2	5.2	5.5	923	254	20	196
16	.34	.39	5.6	7.4	4.2	4.2	5.4	5.6	780	259	17	194
17	.34	.39	12	6.1	4.2	4.2	5.3	5.6	642	235	14	155
18	.34	.39	6.1	5.4	4.3	4.2	4.7	5.6	627	205	11	118
19	.34	.38	5.7	5.7	4.7	4.2	4.2	5.6	659	186	11	90
20	.34	.36	5.6	4.9	4.9	4.2	4.6	5.6	620	165	11	79
21	.34	2.5	5.6	4.3	5.0	4.8	4.4	5.8	614	147	11	40
22	.34	5.2	6.3	4.2	5.0	5.0	4.2	8.1	605	137	10	8.7
23	.34	5.6	7.5	3.7	4.8	4.7	4.2	415	584	132	10	11
24	.32	6.3	5.8	3.7	4.6	4.4	5.2	432	562	130	10	11
25	.17	7.1	5.7	3.7	4.2	4.2	7.5	167	543	99	10	11
26	.17	8.0	5.9	3.7	4.2	4.2	6.0	100	483	29	10	11
27	.41	8.6	6.9	3.7	4.2	4.2	5.3	156	439	27	10	11
28	.34	8.8	6.1	3.5	4.2	4.2	5.3	364	406	26	10	11
29	.28	8.8	4.8	3.3	---	4.3	4.7	655	351	26	10	10
30	.34	8.8	3.0	3.3	---	5.1	4.7	897	351	25	9.9	10
31	.34	---	2.1	3.3	---	5.8	---	956	---	24	9.8	---
TOTAL	10.19	76.35	187.3	132.5	129.6	152.9	149.9	4255.1	24738	6115	679.7	3549.5
MEAN	.33	2.55	6.04	4.27	4.63	4.93	5.00	137	825	197	21.9	118
MAX	.41	8.8	12	7.4	7.9	8.1	7.5	956	1340	406	99	501
MIN	.17	.17	2.1	1.7	3.3	4.2	4.2	4.2	351	24	9.8	8.7
AC-FT	20	151	372	263	257	303	297	8440	49070	12130	1350	7040
CAL YR 1977 TOTAL	1585.91	MEAN	4.35	MAX	13	MIN	.17	AC-FT	3150			
WTR YR 1978 TOTAL	40176.04	MEAN	110	MAX	1340	MIN	.17	AC-FT	79690			



## 11278300 CHERRY CREEK NEAR EARLY INTAKE, CA

LOCATION.--Lat 37°53'40", long 119°57'42", in NW¼SE¼ sec.35, T.1 N., R.18 E., Tuolumne County, Stanislaus National Forest, on right bank 1.2 mi (1.9 km) upstream from mouth, 1.3 mi (2.1 km) north of Early Intake, and 10.3 mi (16.6 km) southwest of Hetch Hetchy.

DRAINAGE AREA.--226 mi<sup>2</sup> (585 km<sup>2</sup>).

PERIOD OF RECORD.--May 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,272.00 ft (692.506 m) National Geodetic Vertical Datum of 1929 (levels by city and county of San Francisco).

REMARKS.--Records good. Flow regulated by Cherry Lake (station 11277200) 10 mi (16 km) upstream and Lake Eleanor (station 11277500) 9.8 mi (15.8 km) upstream. Diversion from Cherry Lake to Dion R. Holm powerplant began Aug. 1, 1960. Water is returned to creek 1.2 mi (1.9 km) below station. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE (since diversion to Dion R. Holm powerplant).--18 years (water years 1961-78), 102 ft<sup>3</sup>/s (2.889 m<sup>3</sup>/s), 73,900 acre-ft/yr (91.1 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,500 ft<sup>3</sup>/s (467 m<sup>3</sup>/s) Feb. 1, 1963, gage height, 14.50 ft (4.420 m), from rating curve extended above 4,600 ft<sup>3</sup>/s (130 m<sup>3</sup>/s); minimum daily, 0.30 ft<sup>3</sup>/s (0.008 m<sup>3</sup>/s) Apr. 5, 6, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,270 ft<sup>3</sup>/s (64.3 m<sup>3</sup>/s) June 6, gage height, 8.46 ft (2.579 m); minimum daily, 5.7 ft<sup>3</sup>/s (0.16 m<sup>3</sup>/s) Nov. 11-20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	16	14	25	56	131	128	131	1090	394	47	26
2	18	9.7	14	21	54	351	123	119	1160	421	45	26
3	18	6.3	14	18	52	303	105	111	1330	323	44	26
4	18	5.8	14	20	50	536	113	104	1430	42	42	27
5	17	9.2	12	58	67	505	109	161	1700	99	40	36
6	18	8.6	11	110	157	344	128	464	2070	274	36	236
7	18	6.7	11	46	193	259	124	608	2160	420	33	560
8	18	6.1	11	29	184	224	121	606	2080	451	38	361
9	17	5.9	11	60	432	219	145	618	1970	428	120	209
10	17	5.9	11	54	252	212	163	625	1900	430	110	529
11	17	5.7	11	26	169	216	150	624	1700	432	81	520
12	17	5.7	11	18	148	199	131	622	1670	401	63	289
13	17	5.7	11	16	146	167	116	622	1670	357	48	185
14	18	5.7	11	27	128	152	111	623	1650	327	42	252
15	18	5.7	51	76	120	141	132	625	1560	331	36	271
16	18	5.7	22	81	110	134	155	625	1420	338	33	267
17	18	5.7	129	132	100	129	135	623	1290	316	29	229
18	18	5.7	72	59	96	123	138	623	1270	281	27	177
19	18	5.7	29	99	104	117	128	622	1190	257	26	146
20	18	5.7	22	149	111	112	122	621	961	231	27	125
21	18	16	21	119	117	126	124	622	914	208	29	105
22	18	65	30	104	126	164	113	626	790	193	28	30
23	18	14	161	93	129	128	101	1080	597	185	28	37
24	18	12	65	82	127	112	106	1110	574	182	28	37
25	18	12	35	76	119	100	383	823	558	149	28	36
26	18	12	30	72	116	92	317	644	502	56	27	36
27	18	13	109	69	119	86	218	441	456	52	27	35
28	18	14	73	66	116	81	171	492	426	50	27	36
29	18	14	46	64	---	76	150	725	375	48	27	36
30	18	14	93	62	---	101	140	980	366	48	27	35
31	18	---	37	59	---	168	---	1050	---	47	26	---
TOTAL	552	323.2	1192	1990	3698	5808	4400	18370	36829	7771	1269	4920
MEAN	17.8	10.8	38.5	64.2	132	187	147	593	1228	251	40.9	164
MAX	18	65	161	149	432	536	383	1110	2160	451	120	560
MIN	17	5.7	11	16	50	76	101	104	366	42	26	26
AC-FT	1090	641	2360	3950	7330	11520	8730	36440	73050	15410	2520	9760
CAL YR 1977 TOTAL	4223.2			MEAN 11.6	MAX 161	MIN 1.1	AC-FT 8380					
WTR YR 1978 TOTAL	87122.2			MEAN 239	MAX 2160	MIN 5.7	AC-FT 172800					

## SAN JOAQUIN RIVER BASIN

11278400 CHERRY CREEK BELOW DION R. HOLM POWERHOUSE, NEAR MATHER, CA

LOCATION.--Lat 37°53'24", long 119°58'08", in NE¼NW¼ sec.2, T.1 S., R.18 E., Tuolumne County, Stanislaus National Forest, on left bank 600 ft (183 m) upstream from mouth, 0.5 mi (0.8 km) downstream from powerhouse, 0.8 mi (1.3 km) northwest of Early Intake, and 6.2 mi (10.0 km) west of Mather.

DRAINAGE AREA.--234 mi<sup>2</sup> (606 km<sup>2</sup>).

PERIOD OF RECORD.--March 1963 to current year. Prior to October 1965, published as "below Cherry powerhouse, near Mather."

GAGE.--Water-stage recorder. Altitude of gage is 2,150 ft (655 m), from topographic map.

REMARKS.--Records fair. Flow regulated by Cherry Lake (station 11277200) 11 mi (18 km) upstream and Lake Eleanor (station 11277500) 10 mi (16 km) upstream. Prior to May 1971, Cherry Creek Canal diverted 2 mi (3 km) upstream from station. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--15 years, 617 ft<sup>3</sup>/s (17.47 m<sup>3</sup>/s), 447,000 acre-ft/yr (551 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,530 ft<sup>3</sup>/s (242 m<sup>3</sup>/s) Dec. 24, 1964, gage height, 13.55 ft (4.130 m), from rating curve extended above 3,300 ft<sup>3</sup>/s (93.5 m<sup>3</sup>/s); minimum daily, 1.6 ft<sup>3</sup>/s (0.045 m<sup>3</sup>/s) June 4, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 3,010 ft<sup>3</sup>/s (85.2 m<sup>3</sup>/s) June 7; minimum daily, 18 ft<sup>3</sup>/s (0.510 m<sup>3</sup>/s) Oct. 14-18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	249	236	145	767	868	977	978	1940	1240	714	654
2	20	232	237	140	776	1080	845	951	2010	1280	713	482
3	20	228	221	533	787	1050	925	950	2180	1190	709	201
4	20	231	210	542	776	1360	937	945	2280	905	710	209
5	20	220	245	605	553	1200	930	1000	2550	963	622	732
6	22	214	244	682	891	1160	952	1300	2920	1140	334	791
7	20	232	231	473	926	1090	947	1450	3010	1280	704	1180
8	21	233	238	200	919	1050	945	1450	2920	1320	699	984
9	21	235	230	625	1170	1040	966	1460	2820	1140	795	670
10	22	237	238	569	988	1030	985	1460	2750	1260	777	707
11	23	239	217	541	905	1040	971	1460	2420	945	749	1140
12	20	210	208	532	686	1020	954	1460	2510	1120	652	914
13	19	208	236	531	881	989	939	1460	2520	1080	400	808
14	18	224	236	467	866	975	938	1290	2500	1050	716	879
15	18	230	274	196	860	966	960	1470	2410	1050	714	897
16	18	230	249	613	850	955	849	1470	2270	774	695	727
17	18	231	252	758	842	950	959	1460	2140	1050	706	416
18	18	235	277	690	841	947	967	1470	2120	935	691	800
19	19	217	263	737	589	792	951	1460	2050	913	571	725
20	21	201	257	775	652	903	947	1460	1810	890	205	753
21	19	238	245	663	849	951	952	1460	1760	861	653	730
22	19	288	245	465	868	984	935	1470	1640	764	640	659
23	19	238	385	730	870	951	935	1920	1440	436	646	502
24	19	228	286	719	859	911	933	1950	1420	836	652	213
25	19	232	239	714	858	928	1210	1660	1220	799	646	660
26	19	216	228	711	659	921	1150	1480	1340	702	565	655
27	27	216	303	704	858	915	1050	1280	1300	695	206	660
28	32	236	293	626	840	908	999	1200	1280	694	648	668
29	26	236	268	465	---	903	977	1560	1230	614	648	370
30	34	234	314	690	---	927	784	1820	1230	227	643	499
31	36	---	260	717	---	966	---	1890	---	682	644	---
TOTAL	667	6898	7865	17558	23186	30730	28769	44094	61990	28835	19467	20285
MEAN	21.5	230	254	566	828	991	959	1422	2066	930	628	676
MAX	36	288	385	775	1170	1360	1210	1950	3010	1320	795	1180
MIN	18	201	208	140	553	792	784	945	1220	227	205	201
AC-FT	1320	13680	15600	34830	45990	60950	57060	87460	123000	57190	38610	40240
CAL YR 1977 TOTAL	17827.8	MEAN	48.8	MAX	385	MIN	1.6	AC-FT	35360			
WTR YR 1978 TOTAL	290344.0	MEAN	795	MAX	3010	MIN	18	AC-FT	575900			

## 11281000 SOUTH FORK TUOLUMNE RIVER NEAR OAKLAND RECREATION CAMP, CA

LOCATION.--Lat 37°49'18", long 120°00'43", in SE4SE4 sec.29, T.1 S., R.18 E., Tuolumne County, Stanislaus National Forest, on right bank 75 ft (23 m) downstream from highway bridge on Big Oak Flat Road, 0.5 mi (0.8 km) southwest of Oakland Recreation Camp, and 0.6 mi (1.0 km) upstream from Middle Tuolumne River.

DRAINAGE AREA.--87.0 mi<sup>2</sup> (225.3 km<sup>2</sup>).

PERIOD OF RECORD.--March 1923 to current year.

REVISED RECORDS.--WSP 1445: 1923, 1925(M), 1926-28, 1929-30(M), 1932(M), 1935-36(M), 1937-38, 1943(M), 1945(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,800 ft (853 m), from topographic map. Prior to Nov. 22, 1931, at site 50 ft (15 m) upstream and Nov. 22, 1931, to July 19, 1977, at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records good except those for the period June 22 to Sept. 30, which are poor. No diversion above station. One small recreation reservoir (capacity unknown) is located approximately 3.5 mi (5.6 km) upstream. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--55 years, 92.2 ft<sup>3</sup>/s (2.611 m<sup>3</sup>/s), 66,800 acre-ft/yr (82.4 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,900 ft<sup>3</sup>/s (337 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 11.9 ft (3.63 m) from floodmarks, present datum, from rating curve extended above 3,300 ft<sup>3</sup>/s (93.5 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 9.08 ft (2.768 m) and 11.9 ft (3.63 m); minimum, 0.3 ft<sup>3</sup>/s (0.008 m<sup>3</sup>/s) Aug. 23, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 900 ft<sup>3</sup>/s (25.5 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Jan. 14	2330	1170 33.1	6.63 2.021	Mar. 4	0800	1590 45.0	7.17 2.185
Jan. 16	1745	1030 29.2	6.42 1.957	Apr. 25	0645	*2060 58.3	7.70 2.347

Minimum daily, 1.2 ft<sup>3</sup>/s (0.034 m<sup>3</sup>/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	1.7	5.1	51	49	132	367	399	489	132	15	3.2
2	1.6	1.7	5.0	43	48	531	307	393	465	120	14	3.1
3	1.7	1.7	4.9	40	46	502	266	443	456	110	13	3.0
4	1.7	1.7	4.8	57	45	1170	277	491	471	100	12	3.5
5	1.7	2.9	4.6	255	116	1060	251	486	474	94	11	7.0
6	1.7	1.9	4.5	288	318	556	285	426	464	88	11	35
7	1.6	1.8	4.5	103	440	390	270	405	471	80	13	29
8	1.6	1.8	4.4	69	345	320	265	429	449	74	16	23
9	1.6	1.8	4.4	231	1250	301	285	467	435	66	14	13
10	1.6	1.8	4.4	176	465	277	305	476	376	62	12	21
11	1.5	1.8	4.6	96	273	267	334	436	335	58	10	26
12	1.6	1.8	4.7	71	234	349	246	482	354	56	9.0	15
13	1.5	1.9	5.1	62	246	216	357	550	348	54	8.0	12
14	1.5	1.9	5.2	275	193	198	334	610	332	50	7.6	13
15	1.5	1.9	39	480	160	183	405	619	300	56	7.4	15
16	1.5	1.9	27	561	136	177	401	473	265	52	7.0	13
17	1.5	2.0	171	579	120	185	339	439	249	44	6.4	11
18	1.5	2.0	88	268	111	330	333	470	258	38	6.2	10
19	1.4	2.0	30	293	109	300	324	487	241	34	6.0	9.6
20	1.4	3.4	20	194	113	320	328	503	230	31	5.6	9.0
21	1.4	8.1	18	135	117	300	305	529	220	29	5.2	8.6
22	1.4	55	45	107	125	296	283	541	210	27	4.9	8.4
23	1.4	18	417	90	130	248	271	496	200	26	4.8	7.9
24	1.4	10	78	77	129	221	316	367	190	24	4.7	7.2
25	1.4	7.5	43	71	121	213	1310	327	180	22	4.6	6.8
26	1.5	6.7	34	65	117	224	905	328	170	24	4.5	6.4
27	1.6	6.1	233	61	116	229	611	361	180	22	4.4	6.0
28	1.5	5.7	128	58	113	238	516	445	150	20	4.2	5.6
29	1.6	5.5	80	55	---	252	455	511	130	19	4.0	5.4
30	1.6	5.3	114	53	---	332	444	528	136	17	3.7	5.2
31	1.6	---	68	51	---	500	---	512	---	16	3.4	---
TOTAL	47.3	167.3	1699.2	5015	5785	10714	11798	14429	9228	1645	252.6	341.9
MEAN	1.53	5.58	54.8	162	207	346	393	465	308	53.1	8.15	11.4
MAX	1.7	55	417	579	1250	1170	1310	619	489	132	16	35
MIN	1.2	1.7	4.4	40	45	132	251	327	130	16	3.4	3.0
AC-FT	94	332	3370	9950	11470	21250	23400	28620	18300	3260	501	678
CAL YR 1977 TOTAL	4749.17			MEAN 13.0	MAX 417	MIN .45	AC-FT 9420					
WTR YR 1978 TOTAL	61122.30			MEAN 167	MAX 1310	MIN 1.2	AC-FT 121200					

NOTE.--No gage-height record June 22 to Sept. 30.

## SAN JOAQUIN RIVER BASIN

11282000 MIDDLE TUOLUMNE RIVER AT OAKLAND RECREATION CAMP, CA

LOCATION.--Lat 37°49'42", long 120°00'38", in SW¼NW¼ sec.28, T.1 S., R.18 E., Tuolumne County, Stanislaus National Forest, on left bank 1,000 ft (305 m) downstream from Oakland Recreation Camp, 0.8 mi (1.3 km) upstream from South Fork Tuolumne River, and 2.7 mi (4.3 km) east of Buck Meadows Post Office.

DRAINAGE AREA.--73.5 mi<sup>2</sup> (190.4 km<sup>2</sup>).

PERIOD OF RECORD.--October 1916 to current year. Monthly discharge only for October and November 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.

REVISED RECORDS.--WSP 1395: 1919(M), 1938(M), 1951(P). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,800 ft (853 m), from topographic map.

REMARKS.--Records good. No regulation but small diversion above station for irrigation. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--62 years, 74.2 ft<sup>3</sup>/s (2.101 m<sup>3</sup>/s), 53,760 acre-ft/yr (66.3 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,920 ft<sup>3</sup>/s (139 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 11.75 ft (3.581 m) from flood profile, 11.05 ft (3.368 m) from floodmarks inside gage well, from rating curve extended above 2,300 ft<sup>3</sup>/s (65.1 m<sup>3</sup>/s) on basis of slope-area measurement of maximum flow; no flow at times in 1924, 1931, 1934, 1961, and 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 380 ft<sup>3</sup>/s (10.8 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Jan. 14	2330	594 16.8	4.87 1.484	Apr. 25	0700	783 22.2	5.48 1.670
Feb. 7	1800	402 11.4	4.14 1.262	May 15	0430	702 19.9	5.23 1.594
Feb. 9	0745	*1000 28.3	6.08 1.853	May 22	0245	724 20.5	5.30 1.615
Mar. 5	0130	506 14.3	4.55 1.387	May 30	0245	852 24.1	5.68 1.731
Apr. 15	2100	382 10.8	4.06 1.237	June 8	0015	921 26.1	5.87 1.789

Minimum, no flow Oct. 1-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.81	1.9	23	22	59	223	254	673	223	25	5.3
2	0	.50	1.9	19	22	185	177	257	641	210	24	5.0
3	0	.71	1.8	17	21	182	151	310	632	197	22	5.0
4	0	.71	1.8	28	21	391	162	354	681	176	20	5.9
5	0	1.6	1.7	119	60	356	150	373	695	160	20	12
6	0	1.8	1.7	101	150	191	170	343	690	150	17	61
7	0	1.6	1.6	36	216	142	162	329	711	140	21	49
8	0	1.5	1.6	25	148	123	154	357	698	130	27	35
9	0	1.3	1.6	94	536	116	171	395	692	120	23	23
10	0	1.2	1.5	62	196	111	186	407	603	110	20	36
11	0	1.1	1.6	35	109	114	200	389	505	100	16	46
12	0	1.1	2.0	27	109	113	216	430	550	96	15	27
13	0	1.1	2.0	23	120	94	232	497	558	90	14	21
14	0	1.1	2.0	127	84	86	224	577	540	86	13	21
15	0	1.1	6.7	210	73	83	256	619	494	100	13	25
16	0	1.1	16	229	60	84	228	488	427	87	11	22
17	0	1.1	56	198	55	88	189	448	405	74	11	19
18	0	1.1	35	89	54	92	183	474	422	64	11	17
19	0	1.1	12	106	54	93	176	509	396	58	10	16
20	0	1.1	7.8	66	57	97	183	549	381	52	9.3	16
21	0	3.0	7.1	48	60	115	181	597	365	48	8.8	15
22	0	10	18	42	62	142	160	631	353	46	8.4	14
23	0	6.0	138	36	63	121	157	602	331	44	8.3	14
24	0	5.0	25	30	63	109	181	445	321	39	8.3	13
25	0	3.7	14	32	60	105	556	396	292	37	7.8	12
26	0	2.9	11	30	58	115	459	397	289	41	7.8	11
27	.07	2.6	55	28	58	122	330	430	296	37	7.4	10
28	.27	2.3	55	27	56	133	297	526	238	33	7.0	9.8
29	.50	2.2	39	25	---	146	271	635	214	30	6.6	9.3
30	.82	2.1	47	24	---	185	285	697	225	28	6.0	8.8
31	.91	---	30	24	---	281	---	696	---	27	5.6	---
TOTAL	2.57	62.53	597.3	1980	2647	4374	6670	14411	14318	2833	424.3	584.1
MEAN	.083	2.08	19.3	63.9	94.5	141	222	465	477	91.4	13.7	19.5
MAX	.91	10	138	229	536	391	556	697	711	223	27	61
MIN	0	.50	1.5	17	21	59	150	254	214	27	5.6	5.0
AC-FT	5.1	124	1180	3930	5250	8680	13230	28580	28400	5620	842	1160
CAL YR 1977	TOTAL	2850.25	MEAN	7.81	MAX	138	MIN	0	AC-FT	5650		
WTR YR 1978	TOTAL	48903.80	MEAN	134	MAX	711	MIN	0	AC-FT	97000		

## 11283200 BELL CREEK NEAR PINECREST, CA

LOCATION.--Lat 38°09'46", long 119°56'32", in NE¼NE¼ sec.36, T.4 N., R.18 E., Tuolumne County, on right bank 1,400 ft (426 m) downstream from Bell Meadows, and 3 mi (5 km) southeast of Pinecrest.

DRAINAGE AREA.--9.11 mi<sup>2</sup> (23.59 km<sup>2</sup>).

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

GAGE.--Water-stage recorder. Altitude of gage is 6,450 ft (1,966 m), from topographic map.

REMARKS.--Records good except those for the winter period, which are poor. No storage or diversion above station. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--15 years, 25.6 ft<sup>3</sup>/s (0.725 m<sup>3</sup>/s), 18,550 acre-ft/yr (22.9 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 934 ft<sup>3</sup>/s (26.5 m<sup>3</sup>/s) Dec. 23, 1964, gage height, 7.54 ft (2.298 m), from rating curve extended above 160 ft<sup>3</sup>/s (4.53 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 8.79 ft (2.679 m); no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 1, 1963, reached a stage of 8.79 ft (2.679 m) from floodmarks, discharge, 1,410 ft<sup>3</sup>/s (39.9 m<sup>3</sup>/s), from slope-area measurement of maximum flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 125 ft<sup>3</sup>/s (3.54 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Mar. 30	2315	196 5.55	4.57 1.393	May 21	1930	271 7.67	5.01 1.527
Apr. 25	0545	196 5.55	4.57 1.393	May 30	unknown	--	unknown --
May 4	2030	195 5.52	4.56 1.390	June 6	do	do	do --
May 14	2000	*288 8.16	5.11 1.558	June 13	2000	215 6.09	4.69 1.430

Minimum, no flow Oct. 4-6, 14.

DISCHARGE<sup>1</sup> IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.05	2.3	4.0	3.3	13	78	67	165	72	6.2	.56
2	.02	.05	2.2	4.0	3.4	19	59	97	157	67	5.5	.51
3	.01	.05	2.4	4.0	3.6	18	52	135	144	59	4.9	.48
4	0	.05	2.6	4.2	3.8	24	47	153	148	61	4.5	.56
5	0	.21	3.1	4.1	4.1	23	42	135	166	64	4.0	18
6	0	.14	2.5	4.8	3.6	19	37	113	190	70	3.6	46
7	.01	.22	1.7	4.7	3.5	20	36	119	183	72	3.9	25
8	.02	.30	1.5	4.4	3.4	21	32	145	176	66	3.7	6.0
9	.02	.19	1.4	7.7	3.7	20	34	158	181	71	3.2	3.5
10	.02	.16	1.3	5.6	3.6	18	50	148	170	70	2.7	33
11	.02	.15	1.3	4.3	3.4	17	77	155	122	65	2.5	6.9
12	.01	.12	1.0	3.6	3.3	15	96	173	139	53	2.3	4.1
13	.01	.11	1.2	4.2	2.8	14	100	199	163	49	2.2	3.3
14	0	.10	1.7	7.8	3.3	14	82	222	160	50	2.0	8.4
15	.01	.10	4.5	6.4	3.5	16	67	191	134	54	1.8	6.5
16	.01	.09	4.2	6.6	3.3	23	57	139	115	54	1.6	3.9
17	.01	.09	3.8	5.6	3.5	33	50	141	110	35	1.5	3.0
18	.01	.09	4.4	5.0	4.0	36	51	159	118	29	1.5	2.7
19	.02	.06	3.9	5.2	5.4	40	57	168	108	26	1.5	2.6
20	.03	.06	3.6	4.6	7.7	45	65	182	107	22	1.4	2.3
21	.03	.32	3.1	4.3	8.7	51	57	200	104	19	1.3	2.2
22	.04	2.8	3.4	3.9	14	51	53	201	102	18	1.3	2.0
23	.04	4.2	4.5	3.3	15	42	59	159	98	16	1.3	1.9
24	.04	2.5	4.8	3.4	16	37	79	104	92	14	1.1	1.8
25	.04	2.1	4.5	3.1	14	46	160	90	82	14	.94	1.6
26	.05	3.2	3.9	3.3	13	58	92	101	72	14	.89	1.4
27	.24	4.5	4.5	3.4	12	67	82	122	72	12	.84	1.2
28	.10	4.3	4.8	3.3	12	76	86	144	60	10	.75	1.1
29	.06	3.8	4.9	3.4	---	90	74	165	58	9.0	.67	1.1
30	.06	3.1	4.5	3.5	---	142	74	183	65	8.0	.60	1.0
31	.05	---	3.9	3.4	---	137	---	177	---	7.2	.57	---
TOTAL	1.00	33.21	97.4	139.1	180.9	1245	1985	4645	3761	1250.2	70.76	192.61
MEAN	.032	1.11	3.14	4.49	6.46	40.2	66.2	150	125	40.3	2.28	6.42
MAX	.24	4.5	4.9	7.8	16	142	160	222	190	72	6.2	46
MIN	0	.05	1.0	3.1	2.8	13	32	67	58	7.2	.57	.48
CFSM	.003	.12	.34	.49	.71	4.41	7.27	16.5	13.7	4.42	.25	.70
IN.	.004	.14	.40	.57	.74	5.08	8.10	18.97	15.36	5.10	.29	.79

CAL YR 1977 TOTAL 1637.46 MEAN 4.49 MAX 35 MIN 0 CFSM .49 IN 6.69  
WTR YR 1978 TOTAL 13601.18 MEAN 37.3 MAX 222 MIN 0 CFSM 4.09 IN 55.53

NOTE.--No gage-height record Dec. 23 to Feb. 21.

## SAN JOAQUIN RIVER BASIN

11283500 CLAVEY RIVER NEAR BUCK MEADOWS, CA

LOCATION.--Lat 37°54'02", long 120°04'15", in SE¼NE¼ sec.35, T.1 N., R.17 E., Tuolumne County, Stanislaus National Forest, on right bank 300 ft (91 m) upstream from Forest Service road bridge, 1.7 mi (2.7 km) downstream from Quilty Creek, and 6 mi (10 km) north of Buck Meadows Post Office.

DRAINAGE AREA.--144 mi<sup>2</sup> (373 km<sup>2</sup>).

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,374.08 ft (723.620 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, which are poor. No storage or diversion above station. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--19 years, 244 ft<sup>3</sup>/s (6.910 m<sup>3</sup>/s), 176,800 acre-ft/yr (218 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,200 ft<sup>3</sup>/s (544 m<sup>3</sup>/s) Feb. 1, 1963, gage height, 21.40 ft (6.523 m), from rating curve extended above 2,000 ft<sup>3</sup>/s (56.6 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; minimum daily, 1.2 ft<sup>3</sup>/s (0.034 m<sup>3</sup>/s) Sept. 11, 12, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,400 ft<sup>3</sup>/s (39.6 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Feb. 9	unknown	2090 59.2	10.49 3.197	May 5	0215	1700 48.1	9.70 2.957
Mar. 5	0215	2550 72.2	11.30 3.444	May 14	2400	2180 61.7	10.67 3.252
Mar. 31	0800	2150 60.9	10.60 3.231	May 22	0130	1770 50.1	9.85 3.002
Apr. 25	0600	*3680 104	12.67 3.862	May 30	0100	1690 47.9	9.68 2.950

Minimum daily, 24 ft<sup>3</sup>/s (0.6 m<sup>3</sup>/s) Oct. 17-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	4.2	14	152	175	376	1290	957	1180	346	47	19
2	3.0	4.0	14	136	171	908	992	1060	1090	357	44	18
3	2.8	3.9	13	127	167	951	833	1300	1040	300	41	17
4	2.7	3.9	13	170	165	1920	802	1450	1090	248	39	18
5	2.7	7.3	13	490	350	2190	707	1380	1160	246	37	51
6	2.6	13	12	530	600	1450	710	1110	1120	256	35	355
7	2.6	9.0	12	310	695	1040	665	1060	1150	271	33	234
8	2.6	7.1	12	240	680	861	637	1180	1050	244	33	111
9	2.7	6.6	12	385	1500	769	644	1350	1030	223	33	67
10	2.7	6.1	12	330	900	702	723	1340	905	230	32	220
11	2.7	5.8	12	240	725	675	895	1260	728	214	30	150
12	2.6	5.6	13	200	635	611	1020	1350	816	185	29	81
13	2.6	5.4	13	190	630	550	1130	1530	864	158	28	59
14	2.5	5.4	14	350	480	522	1070	1670	846	158	28	53
15	2.6	5.3	88	420	407	510	1010	1640	756	159	27	70
16	2.5	5.2	67	455	350	525	876	1130	622	147	26	62
17	2.4	5.3	200	490	315	582	782	1030	557	130	26	50
18	2.4	5.4	125	395	290	640	785	1130	598	120	25	43
19	2.4	5.3	78	400	294	663	794	1160	580	108	25	40
20	2.5	6.9	60	340	303	706	863	1260	543	99	24	37
21	2.6	12	59	302	313	849	765	1360	539	93	23	35
22	2.8	49	180	276	341	990	713	1390	521	87	23	34
23	2.9	35	495	256	373	842	710	1240	494	82	24	32
24	2.9	26	270	242	382	761	876	775	491	78	23	30
25	2.9	21	160	228	369	737	2630	687	439	73	23	29
26	3.0	18	132	218	353	814	1810	716	395	73	23	28
27	3.2	16	375	207	348	862	1450	827	374	72	22	27
28	3.6	15	295	198	340	942	1340	1100	356	65	22	27
29	4.2	15	240	191	---	1020	1150	1250	301	60	21	26
30	4.2	14	265	184	---	1530	1120	1290	329	55	19	26
31	4.4	---	185	179	---	1900	---	1250	---	50	19	---
TOTAL	89.5	341.7	3453	8831	12651	28398	29792	37232	21964	4987	884	2049
MEAN	2.89	11.4	111	285	452	916	993	1201	732	161	28.5	68.3
MAX	4.4	49	495	530	1500	2190	2630	1670	1180	357	47	355
MIN	2.4	3.9	12	127	165	376	637	687	301	50	19	17
AC-FT	178	678	6850	17520	25090	56330	59090	73800	43570	9890	1750	4060

CAL YR 1977 TOTAL 14200.9 MEAN 38.9 MAX 495 MIN 1.2 AC-FT 28170  
WTR YR 1978 TOTAL 150672.2 MEAN 413 MAX 2630 MIN 2.4 AC-FT 298900

NOTE.--No gage-height record Nov. 19 to Feb. 20.

## 11284400 BIG CREEK ABOVE WHITES GULCH, NEAR GROVELAND, CA

LOCATION.--Lat 37°50'31", long 120°11'02", in SW¼NE¼ sec.23, T.1 S., R.16 E., Tuolumne County, on right bank 500 ft (152 m) upstream from Whites Gulch, and 2.5 mi (4.0 km) east of Groveland.

DRAINAGE AREA.--16.4 mi<sup>2</sup> (42.5 km<sup>2</sup>).

PERIOD OF RECORD.--May 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,561.79 ft (780.834 m) National Geodetic Vertical Datum of 1929 (levels by Boise-Cascade Corp.).

REMARKS.--Records good. No storage or diversion above station. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--9 years, 6.52 ft<sup>3</sup>/s (0.185 m<sup>3</sup>/s), 4,720 acre-ft/yr (5.82 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,260 ft<sup>3</sup>/s (35.7 m<sup>3</sup>/s) Feb. 9, 1978, gage height, 5.84 ft (1.780 m); no flow many days in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of December 1964 reached a stage of 6.4 ft (1.95 m) from floodmarks, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft<sup>3</sup>/s (4.25 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)
Jan. 6	0045	284	8.04	4.01	1.222	Feb. 7	1815	278	7.87	3.99	1.216
Jan. 9	1530	205	5.81	3.73	1.137	Feb. 9	0815	*1260	35.7	5.84	1.780
Jan. 14	2400	733	20.8	5.07	1.545	Feb. 12	2230	172	4.87	3.64	1.109
Jan. 17	0230	299	8.47	4.06	1.237	Mar. 4	0815	631	17.9	4.88	1.487
Jan. 19	0700	170	4.81	3.63	1.106	Apr. 25	0630	376	10.6	4.29	1.308

Minimum, no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	1.8	1.8	4.2	13	20	1.8	.43	.01	0
2			0	1.3	1.6	59	12	16	1.7	.41	.01	0
3			0	1.5	1.5	93	8.5	14	1.6	.39	.01	0
4			0	12	1.4	372	25	12	1.5	.37	.01	0
5			0	52	9.4	181	18	9.9	1.4	.34	.01	.02
6			0	98	24	78	39	8.7	1.2	.32	.01	.01
7			0	15	125	41	49	7.7	1.1	.29	0	0
8			0	7.0	95	28	40	7.0	.99	.25	0	.01
9			0	81	657	24	29	6.6	.91	.22	0	.03
10			0	36	145	21	22	6.0	.86	.18	0	.33
11			0	12	52	20	17	5.5	.82	.16	0	.15
12			0	6.8	61	17	13	5.2	.78	.15	0	.07
13			0	6.0	132	12	13	4.9	.77	.13	0	.05
14			0	120	62	10	11	4.6	.72	.11	0	.04
15			0	207	35	8.6	31	4.4	.69	.10	0	.04
16			0	135	25	7.6	49	4.3	.68	.09	0	.03
17			12	182	18	6.7	36	4.0	.66	.08	0	.03
18			2.8	45	14	6.0	26	3.9	.59	.07	0	.02
19			.37	112	11	5.3	20	3.7	.52	.05	0	.02
20			.13	40	8.6	4.8	18	3.4	.49	.05	0	.02
21			.07	21	7.1	11	16	3.3	.46	.05	0	.02
22			.73	12	5.9	11	12	3.1	.43	.04	0	.02
23			39	8.0	5.2	7.4	10	3.1	.40	.04	0	.01
24			4.4	5.7	4.7	5.8	15	3.1	.37	.03	0	.01
25			1.1	4.7	4.3	5.1	203	3.0	.37	.03	0	.01
26			.78	3.9	4.1	4.7	175	3.0	.36	.03	0	.01
27			16	3.3	3.9	4.4	65	2.8	1.1	.02	0	.01
28			8.4	3.0	3.8	4.1	39	2.6	1.2	.02	0	.01
29			4.1	2.6	---	3.9	29	2.3	.65	.02	0	.01
30			14	2.2	---	4.1	24	2.0	.51	.02	0	.01
31		---	4.2	2.0	---	19	---	1.9	---	.01	0	---
TOTAL	0	0	108.08	1239.8	1519.3	1079.7	1077.5	182.0	25.63	4.50	.06	.99
MEAN	0	0	3.49	40.0	54.3	34.8	35.9	5.87	.85	.15	.002	.033
MAX	0	0	39	207	657	372	203	20	1.8	.43	.01	.33
MIN	0	0	0	1.3	1.4	3.9	8.5	1.9	.36	.01	0	0
AC-FT	0	0	214	2460	3010	2140	2140	361	51	8.9	.1	2.0
CAL YR 1977	TOTAL	111.98	MEAN	.31	MAX	39	MIN	0	AC-FT	222		
WTR YR 1978	TOTAL	5237.56	MEAN	14.3	MAX	657	MIN	0	AC-FT	10390		

## SAN JOAQUIN RIVER BASIN

11284700 NORTH FORK TUOLUMNE RIVER NEAR LONG BARN, CA

LOCATION.--Lat 38°05'56", long 120°05'55", in NW¼SW¼ sec.22, T.3 N., R.17 E., Tuolumne County, Stanislaus National Forest, on right bank 0.6 mi (1.0 km) upstream from small tributary, 1.5 mi (2.4 km) east of Long Barn, and 3.8 mi (6.1 km) upstream from Wrights Creek.

DRAINAGE AREA.--23.1 mi<sup>2</sup> (59.8 km<sup>2</sup>).

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

GAGE.--Water-stage recorder. Altitude of gage is 4,650 ft (1,417 m), from topographic map.

REMARKS.--Records good. No storage or diversion above station. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--16 years, 26.6 ft<sup>3</sup>/s (0.753 m<sup>3</sup>/s), 19,270 acre-ft/yr (23.8 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,670 ft<sup>3</sup>/s (47.3 m<sup>3</sup>/s) Jan. 21, 1969, gage height, 7.61 ft (2.320 m), from rating curve extended above 650 ft<sup>3</sup>/s (18.4 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 9.8 ft (2.99 m); minimum daily, 0.07 ft<sup>3</sup>/s (0.002 m<sup>3</sup>/s) July 29, 1976, and many days during 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a stage of 9.8 ft (2.99 m) from floodmarks, discharge, 2,560 ft<sup>3</sup>/s (72.5 m<sup>3</sup>/s) by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft<sup>3</sup>/s (4.25 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Jan. 9	1345	182 5.15	4.19 1.277	Mar. 4	1900	*441 12.5	5.06 1.542
Jan. 14	2015	281 7.96	4.59 1.399	Mar. 31	0730	199 5.64	4.27 1.302
Jan. 16	2130	211 5.98	4.32 1.317	Apr. 25	0500	327 9.26	4.74 1.445
Feb. 9	0600	213 6.03	4.33 1.320				

Minimum daily, 0.08 ft<sup>3</sup>/s (0.002 m<sup>3</sup>/s) Oct. 7, 8, 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.88	2.1	19	25	58	147	105	60	10	1.4	.35
2	.09	1.0	1.9	17	24	137	126	103	55	9.9	1.2	.22
3	.09	1.0	1.6	16	23	143	109	107	51	9.3	1.1	.18
4	.09	1.0	1.6	19	23	359	106	115	49	8.8	.98	.52
5	.09	1.4	1.6	57	54	300	95	117	47	8.2	1.1	5.4
6	.09	1.0	1.4	62	76	193	95	104	44	7.7	.66	11
7	.08	.79	1.3	41	100	149	86	99	42	7.5	.45	6.7
8	.08	.59	2.4	32	93	130	83	100	39	7.0	.26	4.3
9	.08	.45	2.7	111	166	118	86	102	36	6.6	.40	3.6
10	.08	.34	1.7	71	110	109	91	103	33	6.1	.48	6.8
11	.08	.38	1.4	47	83	105	98	99	30	6.0	.36	4.9
12	.12	.38	2.8	37	69	99	102	98	28	5.8	.35	3.7
13	.22	.36	2.3	34	64	89	109	104	27	5.6	.35	3.3
14	.22	.39	2.4	125	54	81	112	111	26	5.3	.37	4.5
15	.22	.44	17	127	49	73	122	109	24	4.9	.35	4.3
16	.22	.37	8.9	139	44	71	112	93	22	4.5	.33	3.4
17	.22	.42	43	153	42	71	105	83	20	4.3	.30	3.1
18	.23	.47	22	99	39	71	106	80	19	4.1	.29	3.1
19	.27	.50	13	87	40	73	104	79	17	3.9	.26	3.2
20	.28	.50	9.0	67	43	77	109	80	16	3.7	.23	3.1
21	.33	8.0	8.2	54	46	96	104	81	16	3.6	.22	3.0
22	.40	10	19	46	51	116	97	82	15	3.4	.25	2.9
23	.47	7.2	79	40	55	105	91	78	14	3.2	.29	2.8
24	.47	4.8	25	35	55	98	105	67	13	3.1	.26	2.5
25	.53	3.8	16	33	53	92	238	59	12	2.7	.22	2.3
26	.57	3.4	14	31	52	93	177	54	12	3.1	.25	2.1
27	.85	3.1	32	29	52	97	148	52	13	2.9	.23	2.0
28	.79	2.9	25	28	51	101	134	57	13	2.6	.22	1.8
29	.79	2.8	26	27	---	104	123	63	12	2.3	.22	1.8
30	.81	2.4	38	27	---	141	117	66	11	1.9	.19	1.8
31	.79	---	25	26	---	178	---	64	---	1.7	.42	---
TOTAL	9.75	61.06	447.3	1736	1636	3727	3437	2714	816	159.7	13.99	98.67
MEAN	.31	2.04	14.4	56.0	58.4	120	115	87.5	27.2	5.15	.45	3.29
MAX	.85	10	79	153	166	359	238	117	60	10	1.4	11
MIN	.08	.34	1.3	16	23	58	83	52	11	1.7	.19	.18
CFSM	.01	.09	.62	2.42	2.53	5.19	4.98	3.79	1.18	.22	.02	.14
IN.	.02	.10	.72	2.80	2.63	6.00	5.53	4.37	1.31	.26	.02	.16
CAL YR 1977	TOTAL	1005.47	MEAN	2.75	MAX	79	MIN	.07	CFSM	.12	IN	1.62
WTR YR 1978	TOTAL	14856.47	MEAN	40.7	MAX	359	MIN	.08	CFSM	1.76	IN	23.92



## SAN JOAQUIN RIVER BASIN

297

## 11287500 DON PEDRO RESERVOIR NEAR LA GRANGE, CA

LOCATION.--Lat 37°42'06", long 120°25'16", in NE¼SW¼ sec.3, T.3 S., R.14 E., Tuolumne County, on left end of New Don Pedro Dam on Tuolumne River, 500 ft (152 m) downstream from Mexican Gulch, and 3.4 mi (5.5 km) northeast of La Grange.

DRAINAGE AREA.--1,533 mi<sup>2</sup> (3,970 km<sup>2</sup>).

PERIOD OF RECORD.--September 1923 to current year. Year-end contents only 1923-24 and October 1924 to September 1930 monthend contents, published in WSP 1315-A.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Turlock Irrigation District). Prior to Feb. 1, 1941, nonrecording gage at site 1.5 mi (2.4 km) upstream at same datum. Feb. 2, 1941, to Nov. 3, 1970, water-stage recorder at site 1.5 mi (2.4 km) upstream at same datum. Nov. 4, 1970, to Apr. 26, 1972, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam completed June 23, 1971. Storage began Nov. 3, 1970. Total capacity, 2,030,000 acre-ft (2.50 km<sup>3</sup>) at elevation 830.0 ft (252.98 m) top of uncontrolled spillway, of which 309,000 acre-ft (381 hm<sup>3</sup>) below elevation 600.0 ft (182.88 m), mutually agreed-upon minimum, is not available for release. Water passes through powerplant at dam and down Tuolumne River to La Grange Dam, 2.5 mi (4.0 km) downstream, where it is diverted into Turlock and Modesto Canals (stations 11289500 and 11289000) for irrigation. This reservoir is operated jointly by Turlock and Modesto Irrigation Districts. Prior to June 1971 reservoir was formed by a concrete gravity-type dam completed Jan. 1, 1923, capacity, 290,400 acre-ft (358 hm<sup>3</sup>). Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,852,000 acre-ft (2.28 km<sup>3</sup>) June 27, 28, 1975, elevation, 815.8 ft (248.66 m); minimum, 29,200 acre-ft (36.0 hm<sup>3</sup>) Sept. 1-3, 5, 1934; minimum elevation, 475.0 ft (144.78 m) Sept. 1, 2, 1934. Minimum since construction of New Don Pedro Dam in 1970 under normal operations, 302,600 acre-ft (373 hm<sup>3</sup>) Oct. 14, 15, 1977, elevation, 598.2 ft (182.33 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,676,000 acre-ft (2.07 km<sup>3</sup>) July 18, 19, elevation, 800.6 ft (244.02 m); minimum, 302,600 acre-ft (373 hm<sup>3</sup>) Oct. 14, 15, elevation, 598.2 ft (182.33 m).

## Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

550	158700	650	517400	770	1359000
570	212900	680	679000	800	1669000
590	274800	710	869700	830	2030000
620	384100	740	1095000		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	306800	304300	322500	366700	551600	750200	1032000	1206000	1281000	1615000	1659000	1568000
2	306800	304600	322900	368200	554700	759000	1040000	1206000	1290000	1620000	1656000	1565000
3	306100	305300	323600	369800	557200	770400	1044000	1206000	1305000	1626000	1653000	1560000
4	305300	305700	324300	372200	561400	803800	1048000	1207000	1320000	1630000	1650000	1557000
5	305000	306800	324300	378100	566100	828900	1051000	1206000	1333000	1635000	1647000	1557000
6	304600	307200	324300	387700	572300	844400	1057000	1206000	1345000	1638000	1643000	1559000
7	304600	307900	324700	391700	582900	855900	1064000	1205000	1363000	1641000	1639000	1560000
8	304600	308200	324700	394200	592500	864800	1069000	1204000	1377000	1646000	1636000	1563000
9	305000	309000	324700	400300	622000	873800	1076000	1204000	1394000	1649000	1632000	1565000
10	304600	309300	325400	407300	635900	882100	1080000	1204000	1410000	1652000	1628000	1568000
11	304300	310000	326100	411900	645500	889800	1084000	1204000	1428000	1657000	1625000	1570000
12	303600	310400	326100	416100	655100	897600	1088000	1204000	1444000	1661000	1622000	1571000
13	303300	311100	326500	420400	666100	904600	1092000	1204000	1458000	1663000	1618000	1571000
14	302600	311400	326800	427700	674200	911000	1097000	1205000	1470000	1668000	1614000	1571000
15	302600	311800	327900	442000	680700	916800	1105000	1206000	1482000	1670000	1611000	1572000
16	302900	312500	329400	452200	686000	922500	1115000	1206000	1495000	1672000	1607000	1573000
17	302900	313200	333400	471300	691300	928300	1119000	1206000	1506000	1675000	1604000	1575000
18	302900	313200	337100	481000	697200	934800	1124000	1207000	1517000	1676000	1602000	1575000
19	302900	313600	337900	491800	702000	939900	1129000	1209000	1528000	1676000	1599000	1576000
20	302900	314300	338200	499500	707400	946600	1133000	1212000	1537000	1675000	1597000	1577000
21	303300	314600	338600	505700	711600	953900	1137000	1217000	1547000	1675000	1593000	1577000
22	303300	316400	339300	510600	716400	962000	1142000	1222000	1556000	1673000	1591000	1577000
23	303600	317500	344600	515500	720700	969500	1148000	1227000	1565000	1672000	1589000	1577000
24	303600	318200	347200	520400	725500	976200	1152000	1233000	1574000	1670000	1588000	1578000
25	303600	318900	349100	524900	731000	982200	1173000	1239000	1581000	1670000	1586000	1577000
26	303600	319600	350600	529300	736000	988300	1186000	1243000	1588000	1670000	1584000	1576000
27	303600	320300	353600	533800	740300	994300	1194000	1248000	1595000	1670000	1582000	1576000
28	304000	320700	357000	538400	744600	1000000	1199000	1252000	1600000	1668000	1581000	1576000
29	304000	321400	359300	541400	---	1007000	1203000	1257000	1605000	1660000	1577000	1575000
30	304000	322100	362800	545500	---	1013000	1205000	1265000	1611000	1665000	1574000	1575000
31	304300	---	365100	549000	---	1025000	---	1273000	---	1662000	1572000	---
MAX	306800	322100	365100	549000	744600	1025000	1205000	1273000	1611000	1676000	1659000	1578000
MIN	302600	304300	322500	366700	551600	750200	1032000	1204000	1281000	1615000	1572000	1557000
†	598.7	603.7	615.2	656.3	690.9	731.2	753.1	760.7	794.7	799.4	791.1	791.4
‡	-2100	+17800	+43000	+183900	+195600	+280400	+180000	+68000	+338000	+51000	-90000	+3000

CAL YR 1977 † -270200

WTR YR 1978 ‡ +1268600

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

## SAN JOAQUIN RIVER BASIN

11289000 MODESTO CANAL NEAR LA GRANGE, CA

LOCATION.--Lat 37°40'04", long 120°27'26", in SE¼SW¼ sec.17, T.3 S., R.14 E., Stanislaus County, on left bank 0.5 mi (0.8 km) northeast of La Grange, and 1.4 mi (2.2 km) downstream from intake at La Grange Dam.

PERIOD OF RECORD.--April 1903 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1315-A: 1904-9 (monthly figures only).

GAGE.--Water-stage recorder. V-notch sharp-crested weir since Mar. 19, 1963. Datum of gage is 272.4 ft (83.03 m) National Geodetic Vertical Datum of 1929 (levels by Modesto Irrigation District). See WSP 1930 for history of changes prior to March 1932. March 1932 to Aug. 14, 1975, on right bank at same datum.

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.

AVERAGE DISCHARGE.--75 years, 405 ft<sup>3</sup>/s (11.47 m<sup>3</sup>/s), 293,400 acre-ft/yr (362 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,820 ft<sup>3</sup>/s (51.5 m<sup>3</sup>/s) July 1, 1935; no flow at times most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	13	62	23	341	57	199	396	1040	798	1020	1360
2	.01	16	112	20	307	57	32	391	901	785	955	1330
3	179	20	27	86	217	46	707	386	947	800	925	826
4	455	21	24	130	38	119	698	383	955	865	977	557
5	172	19	226	139	26	24	631	382	978	882	993	227
6	151	16	307	64	330	13	908	380	972	985	831	229
7	73	14	239	38	21	.09	727	377	1020	939	1080	228
8	31	17	228	23	.13	.07	52	377	1010	962	1080	230
9	29	69	230	22	.20	.07	26	662	1000	919	1090	227
10	319	27	24	41	.11	.06	730	1150	998	1010	1040	230
11	466	26	21	55	.11	.05	626	626	1020	922	955	228
12	326	22	225	88	.11	.05	410	815	1030	926	829	217
13	338	18	218	27	.10	.04	394	954	1070	1000	829	223
14	281	17	252	28	.09	.10	395	780	1040	1060	829	229
15	61	19	184	30	.09	.13	191	779	1050	922	826	216
16	18	20	139	133	.09	.13	24	780	895	995	812	193
17	79	21	25	55	5.4	.13	482	886	577	1100	790	185
18	45	21	23	78	18	.13	513	973	228	1110	688	190
19	19	20	278	62	18	.12	502	1080	728	1100	719	188
20	5.1	17	364	58	16	.12	594	1170	698	1060	780	185
21	3.8	100	304	24	110	.12	468	1160	772	1070	795	189
22	2.8	42	194	22	414	.12	95	1200	784	1000	809	190
23	2.6	32	38	110	624	.12	31	1280	771	901	798	186
24	2.3	29	34	38	494	4.2	641	1280	290	1070	673	185
25	6.1	24	30	81	39	12	708	1160	642	883	664	626
26	16	19	27	65	30	11	338	1080	793	1000	647	169
27	15	15	30	26	28	132	399	1080	773	982	527	166
28	14	13	121	25	31	149	396	1070	787	947	629	172
29	13	14	89	22	---	68	395	1060	837	868	1050	321
30	12	15	26	118	---	72	394	1060	813	867	1230	205
31	12	---	25	195	---	140	---	1050	---	1050	1220	---
TOTAL	3146.73	736	4126	1926	3108.43	905.85	12706	26207	25419	29778	27090	9907
MEAN	102	24.5	133	62.1	111	29.2	424	845	847	961	874	330
MAX	466	100	364	195	624	149	908	1280	1070	1110	1230	1360
MIN	.01	13	21	20	.09	.04	24	377	228	785	527	166
AC-FT	6240	1460	8180	3820	6170	1800	25200	51980	50420	59060	53730	19650

CAL YR 1977 TOTAL 115021.91 MEAN 315 MAX 1290 MIN .01 AC-FT 228100  
WTR YR 1978 TOTAL 145056.01 MEAN 397 MAX 1360 MIN .01 AC-FT 287700

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LOCATION.--Lat 37°39'57", long 120°26'24", in NW¼NW¼ sec.21, T.3 S., R.14 E., Stanislaus County, on right bank 2,400 ft (730 m) downstream from intake at La Grange Dam, and 1.2 mi (1.9 km) east of La Grange.

REVISED RECORDS.--WSP 1315-A: 1899-1908 (monthly figures only). WSP 1445: 1917-20, 1922.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 277.70 ft (84.643 m) National Geodetic Vertical Datum of 1929 (levels by Turlock Irrigation District). See WSP 1930 for history of changes prior to Apr. 17, 1924.

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 mi (0.5 km) upstream from gage, passed through La Grange powerplant and returned to river. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--80 years, 618 ft<sup>3</sup>/s (17.50 m<sup>3</sup>/s), 447,700 acre-ft/yr (552 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,300 ft<sup>3</sup>/s (65.1 m<sup>3</sup>/s) Aug. 15, 16, 1978; no diversion for irrigation during some periods in some years. Prior to 1939, unmeasured small discharge during winter called zero.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	4.5	3.5	2.9	498	469	1070	709	1780	1740	2130	1780
2	6.5	4.7	3.7	2.9	487	568	34	456	1640	1750	2190	1760
3	5.9	4.9	3.4	3.2	444	466	1210	324	856	1750	2180	1520
4	7.0	5.0	3.2	3.1	112	159	1220	323	341	1760	2170	1570
5	7.4	4.8	3.3	2.9	15	208	1240	324	1230	1770	2170	1440
6	5.9	4.3	3.5	2.8	492	410	1210	325	1400	1800	2240	1060
7	5.7	4.0	3.3	2.5	761	254	1150	324	1230	1840	2120	1030
8	5.5	4.4	3.0	2.2	805	410	964	325	1240	2020	2140	950
9	5.5	4.4	2.8	2.4	772	349	32	1030	1250	1700	2130	697
10	5.3	4.1	3.1	2.8	704	283	1010	1660	682	1660	2160	90
11	3.1	4.1	3.1	2.7	128	26	177	1510	117	1770	2210	1030
12	.90	3.7	3.1	2.5	34	33	35	1740	1120	1900	2270	1100
13	.90	3.6	3.0	2.5	679	298	35	1860	1640	1750	2270	870
14	1.0	3.3	3.2	2.9	552	348	343	1730	1460	1870	2270	754
15	1.0	3.3	3.1	3.1	546	222	518	1740	965	1840	2300	844
16	1.0	3.2	3.0	2.9	756	247	32	1740	1020	1770	2300	609
17	1.0	3.1	3.1	3.1	428	244	713	1740	1730	1840	2220	39
18	2.4	3.2	3.1	3.0	15	22	686	1740	1630	2070	2040	433
19	1.0	3.1	3.2	3.1	25	22	655	1740	1730	2100	1750	456
20	2.5	2.8	3.1	2.9	19	138	666	1740	1620	2110	1490	513
21	6.0	3.0	2.8	2.8	238	201	634	1740	1720	2120	1700	555
22	5.7	3.2	2.5	2.6	19	142	538	1740	1690	2240	1480	639
23	5.7	3.2	2.3	8.9	2.5	102	36	1730	1640	2160	1530	493
24	5.9	3.2	2.0	8.9	.85	29	693	1870	1580	2110	1420	81
25	6.0	3.2	2.9	3.9	3.9	36	679	1940	1550	2210	1530	1010
26	6.0	3.2	2.8	4.1	3.7	28	583	1940	1630	2160	1460	819
27	3.4	3.2	2.8	4.0	464	186	635	1950	1840	2170	1480	746
28	3.5	3.0	2.8	4.0	460	206	911	1950	1820	2220	1640	759
29	3.7	3.3	2.5	3.7	---	192	1530	1950	1780	2200	1570	806
30	3.9	3.4	2.3	26	---	198	1170	1830	1740	2110	1560	772
31	4.2	---	2.4	22	---	73	---	1740	---	2110	1520	---
TOTAL	129.20	110.4	91.9	147.3	9463.95	6569	20409	43460	41641	60620	59640	25225
MEAN	4.17	3.68	2.96	4.75	338	212	680	1402	1388	1955	1924	841
MAX	7.4	5.0	3.7	26	805	568	1530	1950	1840	2240	2300	1780
MIN	.90	2.8	2.0	2.2	.85	22	32	323	117	1660	1420	39
AC-FT	256	219	182	292	18770	13030	40480	86200	82590	120200	118300	50300
CAL YR 1977	TOTAL	81643.87										

## 11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA

LOCATION.--Lat 37°39'59", long 120°26'28", in NW¼NW¼ sec.21, T.3 S., R.14 E., Stanislaus County, on left bank 0.5 mi (0.8 km) downstream from La Grange Dam, and 1.1 mi (1.8 km) east of La Grange.

DRAINAGE AREA.--1,538 mi<sup>2</sup> (3,983 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder. Datum of gage is 170.19 ft (51.874 m) National Geodetic Vertical Datum of 1929 (levels by Turlock Irrigation District).

REMARKS.--Records good. Flow diverted into Modesto Canal (station 11289000) and Turlock Canal (station 11289500) at La Grange Dam. Flow regulated by Don Pedro powerplant, Don Pedro Reservoir (station 11287500), 4.5 mi (7.2 km) upstream, Hetch Hetchy Reservoir (station 11275500), Cherry Lake (station 11277200), and Lake Eleanor (station 11277500). Tuolumne Canal (station 11297500) 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 194 ft<sup>3</sup>/s (5.49 m<sup>3</sup>/s) was diverted during the current year. See schematic diagram of Tuolumne River basin. For records of combined discharge of river and Modesto and Turlock canals, see following page.

AVERAGE DISCHARGE (River only).--8 years, 403 ft<sup>3</sup>/s (11.41 m<sup>3</sup>/s), 292,000 acre-ft/yr (360 hm<sup>3</sup>/yr).  
(Combined river and canals).--8 years, 1,640 ft<sup>3</sup>/s (46.44 m<sup>3</sup>/s), 1,188,000 acre-ft/yr (1.46 km<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 4,800 ft<sup>3</sup>/s (136 m<sup>3</sup>/s) Jan. 30, 1975, gage height, 10.82 ft (3.298 m); no flow Sept. 26-30, Oct. 1, 12-20, 1977.  
Combined flow, maximum daily discharge, 5,360 ft<sup>3</sup>/s (152 m<sup>3</sup>/s) May 9, 1978; minimum daily, 0.45 ft<sup>3</sup>/s (0.01 m<sup>3</sup>/s) Nov. 2, 1970.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 4,600 ft<sup>3</sup>/s (130 m<sup>3</sup>/s) May 4, 7, gage height, 10.59 ft (3.228 m); no flow Oct. 1, 12-20.  
Combined flow, maximum daily discharge, 5,360 ft<sup>3</sup>/s (152 m<sup>3</sup>/s) May 9; minimum daily, 5.7 ft<sup>3</sup>/s (0.16 m<sup>3</sup>/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	2.5	9.5	11	7.8	40	262	3240	1830	25	364	320
2	.05	2.3	9.7	12	8.0	41	263	3800	1570	24	169	229
3	1.4	2.5	9.7	12	8.3	41	262	4230	598	23	153	21
4	1.1	4.4	10	12	8.3	62	252	4140	602	23	185	19
5	1.2	8.7	10	12	8.6	45	252	4550	940	89	145	18
6	1.3	8.4	10	12	8.7	89	333	4570	670	254	23	16
7	1.3	8.1	10	11	38	175	370	4360	362	116	378	15
8	1.3	8.0	10	11	52	174	370	4560	382	21	355	15
9	1.4	8.1	10	11	40	173	258	3670	27	19	347	15
10	1.6	8.3	10	12	36	175	445	2360	25	178	231	15
11	1.1	8.3	10	11	35	171	1440	3140	12	20	86	15
12	0	8.3	10	11	32	168	2040	2680	14	19	22	14
13	0	8.3	10	11	32	170	1860	2480	15	186	21	305
14	0	8.3	10	11	31	184	1480	2470	19	258	22	371
15	0	8.4	11	10	31	265	876	2770	15	21	22	377
16	0	8.8	11	9.3	31	264	443	2720	16	19	22	331
17	0	9.1	11	9.4	25	263	786	2650	15	222	22	129
18	0	9.2	10	9.1	10	263	855	2590	14	331	21	378
19	0	9.4	10	8.9	9.8	266	912	2470	13	277	21	378
20	0	9.4	10	8.7	9.7	259	855	2370	13	238	20	371
21	.05	9.7	10	8.6	9.7	259	903	2390	13	211	20	384
22	.52	10	11	8.5	9.3	259	900	2350	12	24	20	550
23	.99	10	11	8.1	5.8	262	647	2220	23	21	20	526
24	1.5	10	10	7.9	3.3	258	849	1920	29	281	107	12
25	2.3	9.3	10	7.8	26	261	1170	2020	29	23	19	524
26	2.5	9.4	10	7.8	24	265	1630	2040	30	120	19	599
27	2.4	9.4	10	7.8	26	265	1650	2150	30	118	18	588
28	2.3	9.4	11	7.8	38	266	1740	2170	28	21	18	586
29	2.4	9.4	10	7.8	---	261	1690	2190	29	20	17	592
30	2.5	9.4	10	7.8	---	267	1690	2330	30	19	17	575
31	2.5	---	10	7.8	---	265	---	2400	---	300	17	---
TOTAL	31.71	244.8	314.9	303.1	604.3	6176	27483	90000	7355	3521	2921	8288
MEAN	1.02	8.16	10.2	9.78	21.6	199	916	2903	245	114	94.2	276
MAX	2.5	10	11	12	52	267	2040	4570	1880	331	378	599
MIN	0	2.3	9.5	7.8	3.3	40	252	1920	12	19	17	12
AC-FT	63	486	625	601	1200	12250	54510	178500	14590	6980	5790	16440
CAL YR 1977 TOTAL	17739.33			MEAN 48.6	MAX 215	MIN 0	AC-FT 35190					
WTR YR 1978 TOTAL	147242.81			MEAN 403	MAX 4570	MIN 0	AC-FT 292100					

## SAN JOAQUIN RIVER BASIN

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11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF TUOLUMNE RIVER, MODESTO CANAL NEAR LA GRANGE, AND TURLOCK CANAL NEAR LA GRANGE, CALIF., WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	21	76	37	847	566	1530	4350	4600	2570	3510	3460
2	6.6	23	126	35	802	666	329	4650	4110	2560	3320	3320
3	186	28	40	101	669	553	2180	4940	2400	2570	3260	2370
4	463	30	37	145	158	340	2170	4850	1900	2650	3340	2150
5	180	33	239	154	50	277	2120	5260	3150	2740	3310	1690
6	158	28	321	79	831	512	2450	5280	3040	3040	3090	1310
7	80	26	252	52	820	429	2250	5060	2610	2900	3580	1280
8	38	29	241	36	857	584	1390	5260	2580	3000	3580	1200
9	36	81	243	35	812	522	316	5360	2280	2640	3570	939
10	326	39	37	56	740	458	2190	5170	1710	2850	3430	335
11	470	38	34	69	163	197	2240	5280	1150	2710	3260	1280
12	327	34	238	102	66	201	2490	5240	2160	2850	3120	1330
13	339	30	231	41	711	468	2290	5290	2730	2940	3120	1400
14	282	28	265	42	583	532	2220	4980	2520	3190	3120	1350
15	62	30	198	43	577	487	1590	5290	2040	2780	3150	1440
16	19	32	153	145	787	511	499	5240	1940	2790	3130	1130
17	80	33	39	67	458	507	1990	5280	2330	3160	3030	353
18	47	33	36	90	43	285	2060	5300	1870	3510	2750	1000
19	20	32	291	74	53	288	2070	5290	2470	3480	2490	1020
20	7.6	29	377	70	45	397	2120	5280	2330	3410	2290	1070
21	9.9	113	317	36	358	460	2000	5290	2500	3400	2520	1130
22	9.0	55	208	34	442	401	1530	5290	2480	3260	2310	1380
23	9.3	45	51	127	633	364	714	5230	2450	3080	2350	1210
24	9.7	42	46	55	498	291	2180	5070	1900	3460	2200	278
25	14	36	43	93	69	309	2560	5120	2220	3110	2210	2160
26	25	31	40	77	58	304	2550	5060	2450	3280	2130	1590
27	20	27	43	38	518	583	2680	5180	2640	3270	2030	1500
28	20	25	135	37	529	621	3050	5190	2640	3190	2290	1520
29	19	23	102	34	---	521	3620	5200	2650	3090	2640	1720
30	19	24	38	152	---	537	3250	5220	2580	3000	2810	1550
31	19	---	37	225	---	478	---	5190	---	3460	2760	---
TOTAL	3306.8	1078	4534	2381	13177	13649	60628	159690	74430	93940	89700	43465
MEAN	107	35.9	146	76.8	471	440	2021	5151	2481	3030	2894	1449
MAX	470	113	377	225	857	666	3620	5360	4600	3510	3580	3460
MIN	5.7	21	34	34	43	197	316	4350	1150	2560	2030	278
AC-FT	6560	2140	8990	4720	26140	27070	120300	316700	147600	186300	177900	86210
CAL YR 1977	TOTAL	214547.86	MEAN	588	MAX	2530	MIN	.58	AC-FT	425600		
WTR YR 1978	TOTAL	559978.80	MEAN	1534	MAX	5360	MIN	5.7	AC-FT	1111000		

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA--Continued

## WATER-QUALITY RECORDS

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: November 1970 to current year.

INSTRUMENTATION.--Temperature recorder since November 1970.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 29.0°C Sept. 27, Oct. 15, 1977; minimum recorded, 6.0°C Feb. 6-8, 10, 1971.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 29.0°C Oct. 15; minimum recorded, 9.0°C Mar. 23.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	26.5	10.5	16.0	13.5	12.0	11.0	12.0	11.0	11.0	10.5	10.5	10.0
2	27.5	11.5	16.0	13.5	12.5	11.5	11.5	11.0	12.0	10.5	10.5	10.0
3	22.5	19.5	16.5	13.5	12.0	11.0	11.0	11.0	12.0	10.5	10.5	10.0
4	21.5	19.5	15.0	13.5	12.0	11.0	11.5	11.0	12.0	11.0	12.0	10.5
5	20.0	18.0	14.0	13.0	11.5	11.0	11.5	11.0	12.0	11.0	11.5	11.0
6	19.5	16.5	13.5	12.5	11.5	11.0	12.5	11.0	11.5	11.0	12.0	10.5
7	18.5	15.5	13.0	12.5	11.5	11.0	12.5	11.0	11.5	11.0	10.5	10.5
8	19.0	15.0	13.5	12.0	11.5	11.0	12.0	11.0	11.0	11.0	10.5	10.0
9	19.0	15.0	13.5	12.0	12.0	11.0	12.5	11.5	11.0	11.0	10.0	10.0
10	18.5	15.0	13.0	12.0	11.5	10.5	12.5	12.0	11.0	11.0	10.0	10.0
11	19.0	15.0	13.0	12.0	11.5	10.5	13.0	12.0	11.0	10.5	10.5	10.0
12	22.0	14.0	13.0	11.5	11.5	10.5	12.5	11.5	10.5	10.5	11.0	10.0
13	24.0	13.0	13.0	11.5	11.5	11.0	12.5	12.0	11.0	10.5	10.5	10.0
14	25.5	11.5	12.5	11.5	11.5	11.0	12.5	12.0	11.5	10.5	10.5	10.0
15	29.0	10.5	12.5	11.5	12.5	11.0	12.0	12.0	11.0	10.5	10.5	10.0
16	26.5	10.0	12.5	11.5	12.0	11.0	12.0	11.5	11.0	10.5	10.5	10.0
17	25.5	10.5	12.5	11.5	12.0	11.0	13.5	12.0	12.0	10.5	10.5	10.0
18	22.5	11.5	12.5	11.5	11.5	11.0	12.5	12.0	12.0	10.5	10.5	10.0
19	21.5	11.0	12.0	11.0	11.0	11.0	13.0	12.0	12.5	10.5	10.5	10.0
20	22.0	11.0	11.5	11.0	11.0	11.0	13.0	12.0	14.0	10.5	10.5	10.5
21	21.0	10.0	12.0	11.0	11.0	11.0	12.5	11.5	14.0	11.0	10.5	10.0
22	18.5	16.5	11.5	11.0	12.0	11.0	12.0	11.5	13.0	11.0	10.5	10.0
23	18.0	16.0	11.5	11.0	13.0	12.0	12.0	11.0	13.5	10.5	10.5	9.0
24	18.5	15.5	12.0	11.0	12.5	12.0	12.0	11.0	17.0	11.0	10.5	10.0
25	18.5	16.0	12.0	11.0	12.5	11.5	12.0	11.0	11.0	10.5	10.5	10.0
26	18.0	16.0	13.0	11.0	12.5	11.5	12.0	10.5	12.0	10.5	10.5	10.5
27	16.0	15.5	12.5	11.0	12.5	11.5	11.5	10.5	11.0	10.5	11.0	10.0
28	15.5	14.5	12.0	11.0	13.0	12.5	11.0	10.5	10.5	10.0	10.5	9.5
29	16.5	14.5	12.5	11.0	13.0	12.5	11.0	10.5	---	---	10.0	9.5
30	16.0	14.0	12.0	11.0	13.5	12.5	10.5	10.5	---	---	10.0	9.5
31	15.5	13.5	---	---	12.5	11.5	10.5	10.5	---	---	10.0	10.0
MONTH	29.0	10.0	16.5	11.0	13.5	10.5	13.5	10.5	17.0	10.0	12.0	9.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.0	9.5	---	---	11.5	10.5	13.5	11.5	13.0	11.5	14.5	12.0
2	10.5	9.5	---	---	11.5	10.5	14.5	11.5	13.5	12.0	14.0	11.5
3	10.5	10.0	---	---	11.5	10.5	15.0	11.0	15.0	12.0	15.0	12.0
4	10.0	9.5	---	---	11.5	10.5	14.5	11.5	13.0	12.0	13.5	12.0
5	10.0	9.5	---	---	11.5	10.5	13.5	11.5	13.5	12.0	13.5	12.5
6	10.0	9.5	---	---	11.5	11.0	14.0	11.0	15.0	12.0	14.0	12.5
7	10.0	9.5	---	---	12.0	11.0	13.5	11.5	13.0	12.0	15.0	12.5
8	10.5	9.5	---	---	12.5	11.0	14.5	11.5	13.0	12.0	14.0	12.0
9	11.0	9.5	---	---	14.0	11.0	14.0	12.0	13.0	12.0	13.5	12.5
10	11.0	9.5	---	---	13.5	11.5	13.0	11.5	13.5	12.0	15.0	12.0
11	10.5	9.5	---	---	22.5	11.5	13.5	11.5	15.5	11.5	15.0	12.5
12	10.5	9.5	---	---	17.0	12.0	14.0	11.5	15.0	12.5	14.5	12.0
13	10.0	10.0	---	---	16.0	12.0	14.0	11.5	14.0	12.0	13.0	12.0
14	10.0	9.5	---	---	17.0	12.0	14.5	11.5	14.0	12.0	12.5	12.0
15	10.0	9.5	---	---	16.0	12.5	14.5	11.5	14.0	12.0	12.5	12.0
16	10.0	9.5	11.0	10.5	17.0	12.0	15.0	12.0	14.5	12.0	12.5	12.0
17	---	---	11.5	10.5	15.0	12.5	13.0	11.5	14.5	12.5	13.0	12.0
18	---	---	11.5	10.5	15.5	12.0	12.5	11.5	14.5	12.0	12.5	11.5
19	---	---	11.5	10.5	15.0	11.5	13.0	11.5	14.5	12.5	12.5	11.5
20	---	---	11.5	10.0	14.5	12.0	13.0	11.5	14.5	12.0	12.5	11.5
21	---	---	11.5	10.5	16.0	12.0	13.0	11.5	15.5	12.0	12.0	11.5
22	---	---	11.5	10.5	15.0	12.0	15.0	11.5	15.5	12.0	12.5	11.5
23	---	---	11.0	10.5	13.5	12.0	15.5	12.5	14.5	12.0	12.5	11.5
24	---	---	11.5	10.5	13.0	11.5	13.0	12.0	13.0	12.0	15.5	12.0
25	---	---	11.5	10.5	13.0	11.5	14.5	12.0	14.5	12.0	14.0	12.0
26	---	---	11.5	10.5	12.5	11.0	15.0	12.0	15.0	12.0	12.5	12.0
27	---	---	11.5	10.5	12.5	11.5	15.5	12.0	15.0	12.0	12.5	12.0
28	---	---	11.5	10.5	13.5	11.5	16.0	12.0	15.0	12.0	12.5	11.5
29	---	---	11.5	10.5	13.5	11.5	15.5	12.0	15.0	12.0	12.5	12.0
30	---	---	11.5	10.5	13.5	11.5	16.0	12.0	15.5	12.5	12.5	12.0
31	---	---	11.5	10.0	---	---	13.5	11.5	15.0	12.5	---	---
MONTH	---	---	---	---	22.5	10.5	16.0	11.0	15.5	11.5	15.5	11.5

## 11290000 TUOLUMNE RIVER AT MODESTO, CA

LOCATION.--Lat 37°37'38", long 120°59'11", in SE¼SW¼ sec.33, T.3 S., R.9 E., Stanislaus County, on left bank at bridge on Ninth Street in Modesto, and 0.2 mi (0.3 km) downstream from Dry Creek.

DRAINAGE AREA.--1,884 mi<sup>2</sup> (4,880 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1878-84, 1891-94, 1897 (gage heights only), January 1895 to December 1896, April 1940 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Modesto Irrigation District). Prior to July 11, 1947, at site 1,700 ft (518 m) downstream at same datum, July 11, 1947, to Nov. 16, 1953, at site 1,000 ft (305 m) downstream at same datum.

REMARKS.--Records fair. Flow regulated by reservoirs and powerplants above station. In addition to diversions into Modesto and Turlock Canals (stations 11289000, 11289500), there are diversions for irrigation of about 1,300 acres (526 hm<sup>2</sup>) between station above La Grange Dam and at Modesto. See REMARKS for station 11289650 for Tuolumne River below La Grange Dam. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--39 years (water years 1896, 1941-78), 1,315 ft<sup>3</sup>/s (37.24 m<sup>3</sup>/s), 952,700 acre-ft/yr (1.17 km<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (water years 1895-96, 1941-78).--Maximum discharge observed, 57,000 ft<sup>3</sup>/s (1,610 m<sup>3</sup>/s) Dec. 9, 1950, elevation, 69.19 ft (21.089 m); minimum, 56 ft<sup>3</sup>/s (1.59 m<sup>3</sup>/s) Aug. 6, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,880 ft<sup>3</sup>/s (167 m<sup>3</sup>/s) May 7, elevation, 48.63 ft (14.822 m); minimum daily, 73 ft<sup>3</sup>/s (2.07 m<sup>3</sup>/s) Oct. 6, 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	83	102	109	147	184	498	2960	2100	196	176	197
2	88	84	102	109	144	198	562	4060	1790	193	333	236
3	80	84	104	112	142	305	481	4790	1500	207	307	395
4	78	86	105	113	143	515	502	5140	1100	178	268	361
5	74	86	105	134	168	2800	533	5180	1020	192	263	411
6	73	83	106	127	163	3800	576	5710	1110	193	284	675
7	73	82	106	229	348	855	1170	5810	971	260	255	339
8	74	84	104	180	848	541	921	5550	708	306	254	220
9	75	86	104	149	863	474	670	5660	569	246	372	211
10	76	88	104	143	3060	462	597	4590	413	201	378	221
11	76	91	104	308	903	580	634	3080	380	182	349	226
12	77	93	104	211	491	488	1100	3560	316	236	278	223
13	77	94	104	157	519	582	1960	2990	266	176	214	208
14	77	95	104	179	757	476	1820	2710	236	178	189	232
15	78	94	106	912	465	418	1300	2710	194	273	174	454
16	78	95	107	1220	339	437	917	2930	197	273	171	501
17	78	95	124	605	275	443	1170	2880	191	192	185	501
18	78	95	117	677	250	435	1730	2660	214	188	157	406
19	76	95	116	479	225	430	1570	2540	214	314	155	397
20	75	95	114	486	200	425	1520	2390	199	330	170	520
21	78	97	112	409	179	429	1310	2280	200	318	163	526
22	79	99	115	313	168	428	1310	2310	180	311	188	539
23	80	100	124	264	163	427	1290	2250	179	262	190	644
24	80	100	113	225	161	424	1050	2160	188	202	170	675
25	80	100	114	196	161	416	1550	1850	182	201	202	432
26	80	100	115	180	159	403	4800	1920	196	257	272	427
27	80	100	115	168	161	401	4300	1920	204	178	226	691
28	81	102	114	162	167	397	3230	2020	194	214	214	727
29	83	104	114	158	---	399	3100	2070	199	223	193	743
30	82	103	113	154	---	398	2970	2040	192	170	207	740
31	82	---	112	150	---	427	---	2180	---	157	210	---
TOTAL	2424	2793	3403	9018	11769	19397	45141	100900	15492	7007	7167	13078
MEAN	78.2	93.1	110	291	420	626	1505	3255	516	226	231	436
MAX	88	104	124	1220	3060	3800	4800	5810	2100	330	378	743
MIN	73	82	102	109	142	184	481	1850	179	157	155	197
AC-FT	4810	5540	6750	17890	23340	38470	89540	200100	30790	13900	14220	25940
CAL YR 1977 TOTAL	55066			MEAN 151	MAX 417	MIN 56	AC-FT 109200					
WTR YR 1978 TOTAL	237589			MEAN 651	MAX 5810	MIN 73	AC-FT 471300					

## SAN JOAQUIN RIVER BASIN

11290000 TUOLUMNE RIVER AT MODESTO, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: July 1965 to current year.

INSTRUMENTATION.--Temperature recorder since July 1965.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 31.5°C July 15, 1972; minimum recorded, 6.5°C on several days in 1972.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 30.5°C Aug. 1; minimum recorded, 8.5°C on Dec. 20.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1			---	---	14.0	11.5	11.5	10.5	13.0	11.0	---	---
2			---	---	13.5	11.0	11.5	11.0	13.0	10.5	---	---
3			---	---	13.5	11.0	12.5	11.0	13.5	10.5	---	---
4			---	---	13.5	12.0	12.0	11.5	13.5	11.5	---	---
5			---	---	13.5	12.0	12.0	11.5	13.5	12.0	---	---
6			---	---	14.0	12.5	14.0	11.5	14.0	12.5	---	---
7			---	---	13.5	12.0	13.0	11.0	13.0	11.5	---	---
8			---	---	---	---	12.5	11.5	12.0	11.0	---	---
9			---	---	---	---	13.5	12.0	12.0	10.5	---	---
10			---	---	---	---	14.5	12.0	12.0	10.5	---	---
11			---	---	---	---	13.0	11.5	12.0	11.0	---	---
12			---	---	---	---	13.0	11.5	11.5	11.0	---	---
13			---	---	---	---	13.0	12.0	12.5	10.0	---	---
14			---	---	---	---	13.0	12.0	12.0	10.5	---	---
15			---	---	---	---	12.0	11.5	12.5	11.5	---	---
16			---	---	---	---	12.5	11.0	12.5	11.0	---	---
17			---	---	11.5	10.0	12.0	11.5	13.5	11.5	18.0	15.5
18			14.5	11.5	12.0	9.5	12.5	11.5	14.0	11.5	18.0	16.0
19			12.5	10.0	10.5	9.0	13.5	12.0	14.5	11.5	18.5	15.5
20			12.5	9.5	10.0	8.5	13.0	11.5	15.5	12.0	17.5	16.0
21			12.0	10.5	10.5	9.5	13.0	11.5	16.0	12.5	17.5	16.0
22			14.0	11.0	12.5	10.0	13.5	12.0	16.5	13.0	18.5	16.0
23			14.0	11.0	13.5	11.0	12.0	10.5	15.0	13.5	18.0	16.0
24			14.0	11.5	13.0	11.5	12.5	10.0	---	---	18.0	15.5
25			14.0	11.5	12.0	11.0	12.5	10.5	---	---	18.5	15.5
26			14.5	11.5	12.5	11.0	12.5	10.5	---	---	18.0	16.0
27			15.0	12.5	12.5	12.0	12.5	10.5	---	---	19.0	16.0
28			14.5	12.0	13.5	12.0	12.0	11.0	---	---	19.0	16.0
29			14.5	12.0	14.5	12.5	11.5	11.0	---	---	18.0	17.0
30			14.5	12.0	14.0	11.5	11.0	10.5	---	---	18.0	16.5
31			---	---	13.0	10.5	11.5	10.5	---	---	18.0	16.5
MONTH			---	---	---	---	14.5	10.0	16.5	10.0	---	---

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.5	15.5	14.5	13.5	15.5	13.5	25.5	21.0	30.5	25.0	27.5	22.5
2	17.0	14.5	14.0	13.0	16.0	14.0	26.0	21.0	28.5	25.0	27.5	22.5
3	16.5	14.5	14.0	13.0	16.5	14.0	25.5	21.0	28.5	25.0	26.0	23.0
4	17.0	14.5	14.0	12.5	18.5	15.0	27.0	22.0	28.5	25.0	24.5	23.0
5	17.0	14.5	13.0	12.0	20.5	16.5	---	---	29.0	25.0	23.0	21.0
6	15.5	14.5	13.0	11.5	20.5	18.0	---	---	28.5	25.0	22.0	20.5
7	14.5	14.0	13.5	12.0	20.0	17.5	---	---	29.5	25.5	23.0	20.5
8	15.0	13.5	14.0	12.0	21.0	18.0	---	---	---	---	24.0	19.5
9	16.0	13.0	13.5	12.5	21.5	18.5	---	---	---	---	21.0	19.5
10	18.0	14.5	14.0	12.5	22.5	18.5	---	---	---	---	23.0	19.5
11	18.5	16.0	14.5	13.0	24.0	19.5	---	---	---	---	23.0	19.5
12	18.0	15.5	14.5	12.5	24.5	20.0	---	---	---	---	23.5	19.5
13	15.0	13.0	15.0	13.0	25.0	20.5	---	---	---	---	23.5	20.0
14	13.0	12.0	15.0	13.0	25.0	20.0	---	---	---	---	23.5	19.5
15	12.5	11.5	15.0	13.5	25.5	20.0	---	---	---	---	23.0	20.5
16	13.0	11.5	14.0	13.0	25.5	20.0	---	---	---	---	23.0	21.0
17	14.5	12.0	14.5	12.5	26.5	20.5	---	---	---	---	21.5	19.5
18	16.0	13.5	14.5	13.0	25.5	20.5	---	---	---	---	20.0	18.0
19	16.0	14.0	15.0	13.0	26.0	20.5	---	---	---	---	19.5	17.5
20	15.5	14.5	15.0	13.0	26.0	20.5	---	---	---	---	19.0	17.0
21	15.0	13.5	15.0	13.5	26.0	20.5	---	---	---	---	19.0	16.5
22	15.5	13.0	15.0	13.5	27.0	21.0	---	---	---	---	19.0	16.5
23	15.5	14.0	14.5	13.0	27.0	21.0	---	---	---	---	18.5	17.0
24	15.0	14.5	13.5	12.5	26.0	21.0	---	---	---	---	18.5	17.0
25	15.0	14.0	14.0	12.5	26.0	21.0	---	---	---	---	20.0	17.5
26	14.5	13.5	14.5	13.0	26.5	21.0	---	---	25.0	22.0	19.5	18.0
27	15.5	14.0	15.0	13.0	26.0	22.0	---	---	26.0	21.5	20.0	18.5
28	15.5	14.0	16.0	13.5	25.5	21.5	---	---	27.0	22.0	19.0	17.5
29	15.0	14.0	16.0	14.0	26.5	21.0	---	---	27.5	22.0	18.5	17.0
30	15.0	14.0	16.0	14.0	26.5	21.0	---	---	27.0	22.5	18.0	17.0
31	---	---	15.5	14.0	---	---	---	---	27.0	22.0	---	---
MONTH	18.5	11.5	16.0	11.5	27.0	13.5	---	---	---	---	27.5	16.5





## 11292000 MIDDLE FORK STANISLAUS RIVER AT KENNEDY MEADOWS, NEAR DARDANELLE, CA

LOCATION.--Lat 38°17'51", long 119°44'25", in SW¼NE¼ sec.11, T.5 N., R.20 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank at upper end of Kennedy Meadows, 1.3 mi (2.1 km) upstream from Deadman Creek, 1.6 mi (2.6 km) downstream from Relief Reservoir, and 5.8 mi (9.3 km) southwest of Dardanelle.

DRAINAGE AREA.--47.5 mi<sup>2</sup> (123.0 km<sup>2</sup>).

PERIOD OF RECORD.--October 1938 to current year. Records for water year 1946 incomplete, yearly estimate published in WSP 1315-A. Prior to October 1960, published as "at Kennedy Meadows."

REVISED RECORDS.--WSP 1315-A: 1939(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,326.3 ft (1,928.26 m), revised, National Geodetic Vertical Datum of 1929.

REMARKS.--Flow regulated by Relief Reservoir 1.6 mi (2.6 km) upstream, capacity, 15,600 acre-ft (19.2 hm<sup>3</sup>). Contents of Relief Reservoir, 669 acre-ft (825,000 m<sup>3</sup>/s) Sept. 30, 1977, and 3,640 acre-ft (4.49 hm<sup>3</sup>) Sept. 30, 1978. No diversion above station. See schematic diagram of Stanislaus River basin.

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

AVERAGE DISCHARGE (unadjusted).--40 years, 132 ft<sup>3</sup>/s (3.738 m<sup>3</sup>/s), 95,630 acre-ft/yr (118 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge recorded, 1,700 ft<sup>3</sup>/s (48.1 m<sup>3</sup>/s) Nov. 20, 1950, gage height, 6.66 ft (2.030 m); minimum daily recorded, 7.1 ft<sup>3</sup>/s (0.20 m<sup>3</sup>/s) Jan. 14, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,030 ft<sup>3</sup>/s (29.2 m<sup>3</sup>/s) June 7, gage height, 5.75 ft (1.753 m); minimum daily, 7.9 ft<sup>3</sup>/s (0.22 m<sup>3</sup>/s) Oct. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	8.1	11	17	16	19	75	86	726	582	220	173
2	58	8.1	11	16	16	21	68	95	735	580	202	175
3	14	8.1	11	16	16	20	61	118	700	479	203	182
4	9.9	8.0	11	16	16	27	55	142	667	428	217	188
5	8.7	10	11	14	18	24	48	152	762	448	230	251
6	8.7	10	10	18	19	22	42	137	896	544	240	338
7	8.8	8.7	10	18	17	21	34	126	988	614	296	307
8	8.7	9.2	10	16	19	23	30	126	945	569	310	299
9	8.7	9.0	10	19	15	22	54	157	926	558	295	280
10	8.7	8.8	10	18	22	21	72	182	853	633	288	328
11	8.6	8.7	10	16	21	21	93	184	704	603	276	297
12	8.5	8.7	10	16	18	20	125	191	736	491	272	277
13	8.5	8.7	10	16	17	19	115	227	757	427	254	265
14	8.5	8.5	11	21	17	21	98	281	893	495	230	263
15	8.4	8.8	26	21	16	25	82	638	803	555	218	256
16	8.3	8.7	14	18	16	31	70	538	627	514	216	250
17	8.3	8.7	16	19	15	52	57	409	540	411	211	246
18	8.1	8.7	15	17	15	76	64	391	618	396	204	242
19	8.3	8.1	17	17	15	75	70	427	621	351	199	236
20	8.1	14	14	16	17	86	64	489	625	317	196	231
21	8.1	11	12	16	19	96	56	549	641	310	194	226
22	8.1	16	13	16	21	95	48	622	638	337	192	221
23	8.1	11	15	16	18	75	60	626	506	356	191	217
24	8.1	11	14	21	18	64	90	446	635	355	186	214
25	8.0	11	12	16	17	85	145	330	599	381	182	210
26	7.9	11	13	16	20	103	80	294	539	411	180	207
27	9.3	12	32	16	20	120	84	333	483	383	178	203
28	8.9	11	22	16	19	140	89	472	389	342	178	200
29	8.4	11	22	16	---	159	86	618	374	307	177	196
30	8.1	11	20	17	---	185	89	722	489	272	177	193
31	8.1	---	17	16	---	135	---	739	---	245	176	---
TOTAL	373.9	295.6	440	527	493	1903	2204	10847	20415	13694	6788	7171
MEAN	12.1	9.85	14.2	17.0	17.6	61.4	73.5	350	681	442	219	239
MAX	65	16	32	21	22	185	145	739	988	633	310	338
MIN	7.9	8.0	10	14	15	19	30	86	374	245	176	173
AC-FT	742	586	873	1050	978	3770	4370	21520	40490	27160	13460	14220
CAL YR 1977 TOTAL	13012.6			35.7	MAX 105	MIN 7.1	AC-FT 25810					
WTR YR 1978 TOTAL	65151.5			MEAN 178	MAX 988	MIN 7.9	AC-FT 129200					

NOTE.--No gage-height record Mar. 14 to Apr. 27.

## 11292500 CLARK FORK STANISLAUS RIVER NEAR DARDANELLE, CA

LOCATION.--Lat 38°21'50", long 119°52'13", in NE¼NE¼ sec.22, T.6 N., R.19 E., Tuolumne County, Stanislaus National Forest, on right bank 0.5 mi (0.8 km) upstream from mouth, and 2.6 mi (4.2 km) northwest of Dardanelle.

DRAINAGE AREA.--67.5 mi<sup>2</sup> (175 km<sup>2</sup>).

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

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,507.3 ft (1,678.62 m) National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--Records good. No storage or diversion above station. See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--28 years, 147 ft<sup>3</sup>/s (4.163 m<sup>3</sup>/s), 106,500 acre-ft/yr (131 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,350 ft<sup>3</sup>/s (123 m<sup>3</sup>/s) Nov. 20, 1950, gage height, 11.88 ft (3.621 m), from rating curve extended above 1,300 ft<sup>3</sup>/s (36.8 m<sup>3</sup>/s) on basis of slope-area measurement of maximum flow; minimum daily, 9.8 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s) Sept. 11-15, 26-30, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft<sup>3</sup>/s (17.0 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 14	2115	993 28.1	6.26 1.908	June 8	2215	*1220 34.6	6.81 2.076
May 21	2200	899 25.5	6.03 1.838	July 1	2200	626 17.7	5.29 1.612
May 29	2145	993 28.1	6.26 1.908				

Minimum daily, 10 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	13	20	35	33	47	191	217	790	514	136	53
2	11	13	20	33	33	52	163	253	784	493	127	51
3	11	13	20	32	33	51	147	321	775	442	124	50
4	11	13	21	31	34	63	139	372	784	418	153	51
5	11	16	22	31	39	63	127	371	902	434	132	80
6	11	14	21	32	39	58	125	316	949	471	120	123
7	11	13	20	34	34	60	115	328	1010	480	116	96
8	11	12	20	30	39	63	110	383	1000	448	112	71
9	11	13	27	33	40	62	108	451	1010	467	105	67
10	12	14	44	31	50	61	128	478	883	462	103	138
11	12	14	40	30	46	60	168	488	790	423	94	83
12	12	14	20	29	43	57	197	541	867	372	89	71
13	12	15	19	30	36	56	204	660	953	356	85	65
14	12	13	21	34	37	56	181	769	954	371	82	73
15	12	14	58	37	32	58	175	728	833	374	79	73
16	12	13	34	37	32	65	153	511	702	339	77	72
17	12	13	41	38	33	79	143	474	658	307	75	68
18	12	14	34	36	33	83	145	504	698	288	71	66
19	12	14	29	35	34	86	153	561	675	264	69	66
20	12	15	24	33	37	98	159	634	678	247	67	66
21	12	13	25	32	40	103	142	716	682	236	65	66
22	12	58	24	32	42	102	136	763	669	234	65	64
23	12	52	30	31	45	102	142	665	647	225	64	60
24	12	42	28	29	48	98	163	486	634	211	62	58
25	12	34	23	29	47	107	218	423	581	233	61	54
26	12	28	24	31	46	128	188	427	517	226	60	53
27	16	27	66	31	47	145	198	499	486	202	58	50
28	15	24	52	32	46	171	234	612	428	182	56	48
29	14	22	44	32	---	198	222	760	439	164	55	46
30	14	21	45	33	---	224	240	823	488	153	54	45
31	13	---	38	33	---	244	---	790	---	146	54	---
TOTAL	374	594	954	1006	1098	2900	4914	16324	22266	10182	2670	2027
MEAN	12.1	19.8	30.8	32.5	39.2	93.5	164	527	742	328	86.1	67.6
MAX	16	58	66	38	50	244	240	823	1010	514	153	138
MIN	10	12	19	29	32	47	108	217	428	146	54	45
AC-FT	742	1180	1890	2000	2180	5750	9750	32380	44160	20200	5300	4020
CAL YR 1977	TOTAL	13397.8	MEAN	36.7	MAX	253	MIN	9.8	AC-FT	26570		
WTR YR 1978	TOTAL	65309.0	MEAN	179	MAX	1010	MIN	10	AC-FT	129500		

## SAN JOAQUIN RIVER BASIN

11292600 DONNELL LAKE NEAR DARDANELLE, CA

LOCATION.--Lat 38°19'46", long 119°57'37" unsurveyed, T.6 N., R.18 E., Tuolumne County, Stanislaus National Forest, on left bank in hoist house of Donnell Dam on Middle Fork Stanislaus River, 1.2 mi (1.9 km) downstream from Niagara Creek, and 6.9 mi (11.1 km) west of Dardanelle.

DRAINAGE AREA.--230 mi<sup>2</sup> (596 km<sup>2</sup>).

PERIOD OF RECORD.--October 1957 to current year. Prior to October 1960, published as Donnell's Reservoir near Dardanelle.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4.84 ft (1.475 m) National Geodetic Vertical Datum of 1929 (levels by Oakdale and South San Joaquin Irrigation Districts).

REMARKS.--Lake is formed by concrete arch-type dam complete in 1957. Usable capacity, 64,745 acre-ft (79.8 hm<sup>3</sup>), between gage heights 4,720.0 ft (1,438.66 m), minimum operating head and 4,917.0 ft (1,498.70 m), top of spillway gates. Lake is for power and conservation storage. Water passes through a 7.2-mi (11.6-km) tunnel to a powerplant and down the Middle Fork Stanislaus River to Beardsley Lake (station 11292800). Records, including extremes, represent total contents at 2400 hours of which 2,150 acre-ft (2.65 hm<sup>3</sup>) is below minimum operating head. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 64,900 acre-ft (80.0 hm<sup>3</sup>) May 8, 1963, gage height, 4,917.3 ft (1,498.79 m); minimum since reservoir first filled, 2,380 acre-ft (2.93 hm<sup>3</sup>) June 30, 1977, gage height, 4,721.8 ft (1,439.20 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 64,300 acre-ft (79.3 hm<sup>3</sup>) June 30, July 1, 6, gage height, 4,915.9 ft (1,498.37 m); minimum, 6,100 acre-ft (7.52 hm<sup>3</sup>) Feb. 17, gage height, 4,741.2 ft (1,445.12 m).

Capacity table (gage height, in feet, and contents, in acre-feet)

4720	2150	4780	16200
4725	2850	4790	19100
4730	3730	4800	22100
4735	4730	4820	28400
4740	5830	4850	38700
4750	8220	4880	49800
4760	10800	4917.3	64900
4770	13400		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11500	9790	10900	17300	6920	7550	13600	10900	59900	64300	63100	53200
2	11600	9820	10900	17600	6760	7680	13600	11400	59800	64200	62700	52700
3	11700	9840	11000	17200	6520	7720	13300	12600	59700	64200	62400	52200
4	11700	9900	11100	16200	6760	8520	13000	14300	59700	64200	62200	51700
5	11800	9970	11000	15400	7120	9280	12600	15900	60100	64200	62100	51600
6	11800	10000	11100	14800	6970	8950	12100	16900	60300	64300	61800	51900
7	11300	10100	11200	14000	6850	8520	11500	17900	60500	64200	61700	52000
8	11300	10100	11200	13300	6760	8040	10800	19500	60500	64200	61600	51900
9	11400	10200	11000	12700	6760	7600	10200	21600	60400	64200	61500	51700
10	11400	10200	11000	12000	6640	7190	9820	23800	59900	64200	61500	52100
11	11400	10300	11100	11300	6920	7720	9720	25900	59700	64200	61300	52100
12	11500	10300	11100	10600	7210	8220	9920	28400	60200	64100	61000	51900
13	11500	10400	11200	9820	7070	7680	10200	31700	60500	64200	60700	51700
14	11500	10400	11300	9230	6830	7240	10300	35800	60800	64200	60200	51500
15	11500	10500	11800	8640	6620	6780	10400	40600	60400	64200	59800	51400
16	11600	10500	11900	8570	6430	6430	10200	43600	59900	64200	59300	51200
17	11300	10500	12700	8390	6100	6200	9840	45900	59800	64100	58900	50900
18	10900	10500	13000	8320	6340	6950	9540	47000	60300	64000	58600	50600
19	10500	10600	13000	8120	6530	7750	9250	51500	61100	64100	58100	50300
20	10100	10600	13100	7920	6710	7680	9100	55300	61900	64200	57900	49900
21	9770	10400	13200	8190	6900	7770	8800	59200	62600	64200	57700	49500
22	9430	10500	13400	8440	6920	7920	8420	59800	63100	64200	57700	49200
23	9460	10500	13800	8220	7020	8000	8100	59300	63200	64200	57500	48900
24	9480	10600	13900	7970	7070	7970	8100	58800	63600	64200	57000	48500
25	9510	10600	14100	7750	7460	8950	9050	58400	64000	64200	56400	48100
26	9560	10700	14400	7500	7820	10200	9380	58400	63900	64200	56000	47600
27	9610	10800	15100	7190	7680	10400	9590	58800	63900	64200	55500	47100
28	9660	10800	15500	7430	7580	10500	10100	59300	63700	64200	55000	46700
29	9690	10800	16200	7680	---	10900	10400	59800	64200	64000	54600	46200
30	9720	10900	16700	7430	---	12000	10700	59900	64300	63800	54300	45700
31	9740	---	17100	7210	---	12900	---	59900	---	63500	53700	---
MAX	11800	10900	17100	17600	7820	12900	13600	59900	64300	64300	63100	53200
MIN	9430	9790	10900	7190	6100	6200	8100	10900	59700	63500	53700	45700
†	4756.0	4760.4	4783.1	4745.9	4747.4	4768.1	4759.8	4905.4	4915.9	4914.0	4890.1	4869.1
‡	-1560	+1160	+6200	-9890	+370	+5320	-2200	+49200	+4400	-800	-9800	-8000

CAL YR 1977 ‡ +7850

WTR YR 1978 ‡ +34400

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

LOCATION.--Lat 38°14'49", long 120°01'51", in SW¼NE¼ sec.31, T.5 N., R.18 E., Tuolumne County, on left bank 200 ft (61 m) upstream from Donnell powerhouse, 800 ft (244 m) downstream from Hells Half Acre bridge, 1.1 mi (1.8 km) upstream from Cow Creek, and 4.7 mi (7.6 km) northwest of Pinecrest.

WATER-DISCHARGE RECORDS

REMARKS.--Records good. Flow regulated by Relief Reservoir since 1909, capacity, 15,600 acre-ft (19.2 hm<sup>3</sup>), by Donnell Lake (station 11292600), and by diversion around station through Donnell powerplant. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft<sup>3</sup>/s (289 m<sup>3</sup>/s) Dec. 24, 1964, gage height, 13.64 ft (4.158 m) in gage well, 14.2 ft (4.33 m) outside, from floodmarks, from rating curve extended above 5,200 ft<sup>3</sup>/s (147 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 12.20 ft (3.719 m); minimum daily, 3.3 ft<sup>3</sup>/s (0.094 m<sup>3</sup>/s) Nov. 9, 10, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,210 ft<sup>3</sup>/s (90.9 m<sup>3</sup>/s) June 8, gage height, 9.00 ft (2.743 m); minimum daily, 9.8 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s) Nov. 8-14.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	13	18	111	98	194	575	414	2800	939	41	40
2	12	13	18	95	96	357	464	402	2720	1040	39	39
3	12	13	18	88	94	326	398	515	2590	824	37	39
4	12	10	18	87	95	387	371	586	2440	662	35	40
5	13	12	18	114	98	409	330	563	2750	570	42	48
6	13	10	18	127	146	406	329	491	2990	577	41	68
7	13	9.9	18	106	166	384	297	490	3090	690	40	61
8	12	9.8	18	98	166	354	287	534	3140	892	41	49
9	13	9.8	17	132	263	335	297	571	3100	821	40	46
10	13	9.8	17	134	226	310	339	581	2860	965	39	72
11	13	9.8	18	112	185	304	373	577	2180	877	39	56
12	13	9.8	19	100	167	283	387	569	2060	676	39	49
13	13	9.8	18	101	164	258	440	595	2060	472	39	46
14	13	9.8	18	101	147	248	467	698	2360	428	39	53
15	13	13	103	134	143	247	440	696	2400	631	39	50
16	13	16	47	195	133	258	381	533	1970	595	38	47
17	13	16	251	251	127	269	349	490	1540	515	37	46
18	13	16	128	196	125	290	358	504	1330	353	37	45
19	13	16	64	184	131	307	365	527	1150	203	37	44
20	12	16	50	161	143	331	381	542	1140	61	37	43
21	12	27	43	144	155	402	349	608	1210	115	37	43
22	12	57	50	132	165	464	334	2550	1260	101	36	43
23	12	27	130	122	174	422	332	2720	1270	135	42	42
24	12	22	83	113	177	384	360	1850	1160	108	42	42
25	12	22	64	109	172	371	553	1340	1060	104	42	41
26	12	20	58	106	169	401	618	1190	1070	263	41	41
27	15	20	211	103	171	424	524	1250	987	170	41	41
28	13	19	151	102	169	460	502	1440	764	92	41	40
29	12	19	183	102	---	500	468	1960	488	48	40	40
30	13	18	246	102	---	683	473	2840	562	45	40	40
31	13	---	145	100	---	789	---	2870	---	43	40	---
TOTAL	392	493.5	2258	3862	4265	11557	12141	31496	56501	14015	1218	1394
MEAN	12.6	16.5	72.8	125	152	373	405	1016	1883	452	39.3	46.5
MAX	15	57	251	251	263	789	618	2870	3140	1040	42	72
MIN	12	9.8	17	87	94	194	287	402	488	43	35	39
AC-FT	778	979	4480	7660	8460	22920	24080	62470	112100	27800	2420	2760

CAL YR 1977	TOTAL	7676.7	MEAN	21.0	MAX	251	MIN	8.8	AC-FT	15230
WTR YR 1978	TOTAL	139592.5	MEAN	382	MAX	3140	MIN	9.8	AC-FT	276900

11292700 MIDDLE FORK STANISLAUS RIVER AT HELLS HALF ACRE BRIDGE, NEAR PINECREST, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

CHEMICAL ANALYSES: Water year 1977.

WATER TEMPERATURES: October 1965 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1965 to current year.

INSTRUMENTATION.--Temperature recorder since October 1965.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 24.0°C Aug. 1, 1977; minimum recorded, 0.0°C on many days during winter period of most years.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 21.0°C Aug. 5; minimum recorded, 1.5°C Feb. 6.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	15.5	12.5	10.5	8.5	7.0	5.5	4.5	3.5	4.0	3.0	---	---
2	15.5	12.5	10.5	8.5	6.5	5.5	5.5	4.5	4.0	2.5	---	---
3	15.5	12.5	10.5	9.0	6.5	5.5	5.5	5.0	3.5	3.0	---	---
4	15.0	12.0	10.5	9.0	7.0	5.5	5.5	5.0	4.0	2.5	---	---
5	15.0	12.0	9.5	8.0	6.5	5.5	5.0	4.5	4.0	2.5	---	---
6	14.5	12.5	8.5	7.0	6.0	5.0	5.0	4.0	3.0	1.5	---	---
7	14.0	11.5	8.5	7.0	6.0	5.0	5.0	4.0	3.5	2.0	---	---
8	14.0	11.5	8.5	6.5	5.5	4.5	5.5	4.5	4.5	3.5	---	---
9	14.0	11.5	8.5	6.5	5.5	4.0	5.5	5.5	4.5	2.5	---	---
10	14.0	11.5	8.0	6.5	5.5	4.0	5.5	4.5	4.0	2.5	---	---
11	14.5	11.5	8.5	7.0	5.0	4.0	6.0	5.0	4.5	3.0	---	---
12	14.0	12.0	8.0	6.0	5.0	4.0	5.5	4.5	5.5	3.5	---	---
13	14.0	11.5	8.0	6.0	5.5	4.5	6.5	5.5	5.5	3.5	---	---
14	14.0	11.5	7.5	6.0	6.0	5.0	6.5	4.5	6.0	4.0	---	---
15	14.0	12.0	7.5	6.0	6.5	4.5	4.0	3.0	---	---	---	---
16	14.0	12.0	8.0	6.5	4.5	3.5	4.5	4.0	---	---	---	---
17	14.0	11.5	8.0	6.5	5.0	4.5	4.5	3.0	---	---	---	---
18	14.0	12.0	7.5	6.0	4.5	3.5	5.0	4.0	---	---	7.5	5.0
19	13.5	12.0	6.0	4.0	3.5	2.5	5.0	4.0	---	---	8.5	5.5
20	13.0	11.0	4.0	3.0	4.0	3.0	5.0	3.5	---	---	7.5	5.5
21	12.5	10.5	4.0	3.5	5.0	4.0	5.0	4.0	---	---	6.5	6.0
22	12.5	10.0	4.5	3.5	5.5	5.0	5.5	4.5	---	---	7.0	5.0
23	12.5	10.5	5.5	4.0	6.0	5.5	4.5	3.0	---	---	6.5	5.5
24	13.0	11.0	7.0	5.5	5.0	4.0	5.0	2.5	---	---	7.5	4.5
25	13.0	10.5	7.0	5.5	5.5	4.5	5.0	3.5	---	---	8.5	5.0
26	13.5	11.0	7.0	6.0	6.0	5.0	5.0	4.0	---	---	8.0	5.5
27	12.0	10.5	7.0	6.5	6.5	6.0	5.5	4.0	---	---	9.0	5.5
28	10.5	9.5	6.5	5.5	6.5	5.5	5.5	4.5	---	---	9.0	5.0
29	11.0	9.0	7.0	5.5	6.5	6.0	6.0	5.5	---	---	8.5	5.0
30	10.5	9.0	7.0	6.0	6.0	5.5	5.5	4.0	---	---	7.0	6.0
31	10.5	9.0	---	---	5.5	4.0	4.0	4.0	---	---	6.0	5.0
MONTH	15.5	9.0	10.5	3.0	7.0	2.5	6.5	2.5	---	---	---	---

11292700 MIDDLE FORK STANISLAUS RIVER AT HELLS HALF ACRE BRIDGE, NEAR PINECREST, CA--Continued

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	5.5	4.5	8.5	4.0	9.0	7.0	---	---	20.5	16.5	17.0	14.5
2	6.0	4.5	9.0	5.5	9.5	7.5	---	---	20.5	16.5	17.0	14.5
3	6.5	4.5	9.5	5.0	10.0	8.0	---	---	20.5	17.0	17.0	14.5
4	5.5	3.5	9.0	5.0	11.5	9.0	---	---	20.0	17.5	16.0	15.0
5	5.5	3.0	6.5	4.0	---	---	---	---	21.0	17.5	15.0	14.5
6	5.0	2.5	7.5	3.5	---	---	---	---	20.5	17.5	14.5	14.0
7	4.0	2.5	8.5	4.5	---	---	---	---	20.5	17.5	15.0	13.0
8	6.0	3.0	9.5	5.0	---	---	---	---	19.0	17.5	14.0	11.5
9	8.0	4.5	9.0	5.5	---	---	---	---	20.0	16.5	13.0	11.5
10	9.0	5.0	9.0	5.5	---	---	---	---	20.0	16.5	13.5	12.0
11	9.0	5.5	8.5	5.0	---	---	---	---	19.5	16.5	13.5	11.0
12	9.0	5.5	9.0	4.5	---	---	---	---	17.5	16.0	14.0	11.5
13	8.0	6.0	10.0	5.5	---	---	---	---	18.0	15.5	14.0	12.0
14	7.0	6.0	9.5	5.5	---	---	---	---	17.5	14.5	14.0	12.0
15	6.0	3.0	6.5	5.0	---	---	---	---	18.0	15.0	14.5	11.5
16	3.5	2.5	7.5	4.0	---	---	---	---	17.5	14.5	15.0	12.5
17	6.0	2.5	9.0	4.5	---	---	---	---	17.0	14.0	15.0	13.0
18	7.0	3.5	9.5	5.0	---	---	---	---	17.0	13.5	13.0	11.0
19	7.5	4.0	9.5	5.5	---	---	---	---	17.0	14.0	12.0	9.5
20	6.0	3.0	9.5	5.5	---	---	---	---	17.0	13.5	12.0	9.5
21	5.5	2.5	10.0	6.0	---	---	17.5	16.5	17.0	13.5	12.5	10.5
22	7.0	3.5	9.0	6.0	---	---	18.0	15.5	17.0	13.5	13.5	11.0
23	7.5	4.5	7.5	6.0	---	---	18.5	15.5	16.0	13.0	14.5	12.0
24	6.5	5.5	7.5	5.5	---	---	18.5	16.0	16.0	13.0	15.0	12.5
25	6.0	4.0	8.5	5.5	---	---	19.5	17.0	16.0	13.0	15.5	13.0
26	6.5	4.0	9.0	5.5	---	---	19.0	17.0	16.0	13.0	15.0	13.5
27	8.0	4.5	10.5	6.5	---	---	19.5	16.0	16.0	13.0	15.5	13.5
28	7.0	5.0	10.5	7.5	---	---	19.5	17.5	17.0	13.5	15.5	13.5
29	7.5	4.5	10.5	7.5	---	---	20.0	16.5	17.5	14.0	15.5	13.5
30	6.0	4.5	10.0	7.5	---	---	20.0	16.5	17.0	14.5	15.0	13.5
31	---	---	10.5	7.0	---	---	20.5	17.0	17.0	14.0	---	---
MONTH	9.0	2.5	10.5	3.5	---	---	---	---	21.0	13.0	17.0	9.5

## SAN JOAQUIN RIVER BASIN

11292800 BEARDSLEY LAKE NEAR STRAWBERRY, CA

LOCATION.--Lat 38°12'17", long 120°04'31", in SE¼NW¼ sec.14, T.4 N., R.17 E., Tuolumne County, Stanislaus National Forest, in hoist house of Beardsley Dam on Middle Fork Stanislaus River, 2.4 mi (3.9 km) upstream from Spring Gap powerhouse, 3.9 mi (6.3 km) west of Strawberry, and 4.7 mi (7.6 km) west of Pinecrest.

DRAINAGE AREA.--309 mi<sup>2</sup> (800 km<sup>2</sup>).

PERIOD OF RECORD.--June 1957 to current year. Prior to October 1960, published as Lake Hartley near Strawberry.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7.84 ft (2.390 m) National Geodetic Vertical Datum of 1929 (levels by Oakdale and South San Joaquin Irrigation Districts).

REMARKS.--Reservoir is formed by rockfill, earth-core dam completed in 1957. Capacity, 98,500 acre-ft (121 hm<sup>3</sup>) between gage heights 3,145.0 ft (958.60 m), tunnel invert and 3,398.0 ft (1,035.71 m), top of spillway gates. No dead storage. Reservoir is used for power and conservation storage. Water passes through Beardsley power-plant and down Middle Fork Stanislaus River to Melones Reservoir (station 11299000). Records, including extremes, represent contents at 2400 hours. See schematic diagram of Stanislaus River basin.

COOPERATION.--Once-daily gage-height readings furnished by Oakdale-South San Joaquin Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 98,700 acre-ft (122 hm<sup>3</sup>) June 27, 1957, gage height, 3,398.2 ft (1,035.77 m); minimum since reservoir first filled, 3 acre-ft (3,700 m<sup>3</sup>) Sept. 23, 1976, gage height, 3,154.4 ft (961.46 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 97,900 acre-ft (121 hm<sup>3</sup>) July 25, gage height, 3,397.1 ft (1035.44 m); minimum, 3,530 acre-ft (4.35 hm<sup>3</sup>) Oct. 6, gage height, 3,208.4 ft (977.92 m).

Capacity table (gage height, in feet, and contents, in acre-feet)

3154	2	3240	11600
3160	41	3260	19500
3170	267	3290	33100
3180	693	3320	48800
3190	1370	3350	66400
3200	2373	3370	79200
3210	3790	3398	98500
3220	5720		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3680	5050	5360	9440	31000	32800	50900	78900	80300	97700	97700	94200
2	3610	5170	5420	9540	31200	33600	52200	78800	81000	97700	97700	94100
3	3640	5030	5340	9780	31400	33800	53400	78800	81900	97700	97700	93900
4	3570	5090	5380	9870	31100	34000	54600	78800	82400	97800	97700	93700
5	3600	4950	5340	12500	30900	34300	55600	78800	83400	97700	97700	93700
6	3530	5070	5420	13300	31400	35200	56800	78800	85000	97800	97700	93600
7	3880	5010	5340	15100	31900	36100	57700	78800	86800	97700	97700	93500
8	3890	5010	5400	16200	32400	36900	58600	78800	88600	97800	97700	93200
9	3930	4950	5420	17300	33000	37700	59600	78800	90400	97800	97700	93100
10	3890	4970	5640	18600	33600	38300	60600	78800	91800	97800	97500	93000
11	3790	4890	5680	19700	33600	38000	61800	78800	92300	97700	97500	92700
12	3810	4910	5660	21000	33500	37600	63000	78900	92700	97700	97500	92600
13	3830	4930	5700	21900	33900	38100	64300	78900	93700	97700	97500	92400
14	3760	4850	5640	23200	34200	38500	65600	79000	94900	97700	97600	92300
15	3790	4790	5810	24800	34600	38900	66800	78900	96200	97700	97600	92000
16	3730	4810	5830	26500	34900	39300	67900	78800	96400	97700	97500	91800
17	3740	4850	6080	27800	35200	39900	69000	78800	96400	97800	97500	91600
18	4030	4770	6560	28600	35000	39400	70100	78800	96500	97700	97200	91300
19	4280	4810	6640	29600	34900	39100	71100	78800	96800	97700	97300	91100
20	4480	4750	6860	30500	34500	39800	72300	78800	97100	97800	97100	90900
21	4890	4750	6890	30500	34200	40600	73400	78800	97300	97700	96700	90700
22	5090	5150	7020	29900	34000	41400	74300	80000	97400	97700	96000	90400
23	5420	5210	7180	29900	33900	42200	75200	79900	97500	97700	95700	90200
24	5340	5250	7360	30200	33700	43000	76100	79500	97500	97700	95700	89900
25	5360	5290	7500	30300	33200	42700	78000	79200	97600	97900	95600	89600
26	5290	5210	7530	30600	32800	42600	79600	79200	97700	97700	95400	89300
27	5310	5290	7830	30900	32800	43500	79500	79300	97700	97700	95200	89200
28	5230	5130	8120	30700	32800	44800	79200	79600	97700	97800	95100	88900
29	5250	5380	8290	30400	---	46100	79100	79900	97700	97700	94900	88600
30	5130	5400	8930	30600	---	47700	79000	80000	97700	97800	94500	88300
31	5210	---	9090	30800	---	49700	---	80000	---	97700	94400	---
MAX	5420	5400	9090	30900	35200	49700	79600	80000	97700	97900	97700	94200
MIN	3530	4750	5340	9440	30900	32800	50900	78800	80300	97700	94400	88300
†	3217.6	3218.5	3232.6	3285.1	3289.2	3321.7	3369.8	3371.3	3396.8	3396.9	3392.2	3383.6
‡	+1550	+190	+3690	+21710	+2000	+16900	+29300	+1000	+17700	0	-3300	-6100

CAL YR 1977 † +5570

WTR YR 1978 † +84640

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.



## 11292900 MIDDLE FORK STANISLAUS RIVER BELOW BEARDSLEY DAM, CA

LOCATION.--Lat 38°11'36", long 120°05'53", in NW¼NW¼ sec.22, T.4 N., R.17 E., Tuolumne County, Stanislaus National Forest, on right bank 0.5 mi (0.8 km) downstream from Beardsley afterbay dam, 1.5 mi (2.4 km) downstream from Beardsley Dam, and 5.7 mi (9.2 km) west of Pinecrest.

DRAINAGE AREA.--316 mi<sup>2</sup> (818 km<sup>2</sup>).

PERIOD OF RECORD.--December 1956 to current year.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,044.7 ft (928.02 m) National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--Records excellent. No diversion above station. Flow regulated by Relief Reservoir, capacity, 15,600 acre-ft (19.2 hm<sup>3</sup>), Donnell Lake since April 1957 (station 11292600), and by Beardsley Lake since January 1957 (station 11292800). See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--21 years (water years 1958-78), 602 ft<sup>3</sup>/s (17.05 m<sup>3</sup>/s), 436,100 acre-ft/yr (538 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,630 ft<sup>3</sup>/s (188 m<sup>3</sup>/s) May 24, 1969, gage height, 11.07 ft (3.374 m); minimum daily, 3.0 ft<sup>3</sup>/s (0.085 m<sup>3</sup>/s) Oct. 10, 11, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,700 ft<sup>3</sup>/s (105 m<sup>3</sup>/s) May 23, 31, gage height, 9.24 ft (2.816 m); minimum daily, 21 ft<sup>3</sup>/s (0.59 m<sup>3</sup>/s) Oct. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	25	24	24	239	348	562	1370	3290	1630	742	600
2	25	25	22	25	243	511	570	1350	3080	1700	680	595
3	25	25	37	24	247	541	574	1390	2850	1440	617	600
4	25	25	24	23	247	550	574	1430	2920	1270	612	600
5	25	25	25	26	248	558	582	1380	2900	1280	591	600
6	25	25	24	30	246	582	550	1290	2850	1450	591	604
7	25	24	25	26	248	544	554	1320	2910	1640	604	612
8	25	24	24	25	247	543	587	1370	2840	1510	591	608
9	25	24	25	28	252	541	591	1410	2780	1510	591	608
10	25	24	24	26	249	540	603	1420	2790	1600	591	608
11	22	24	24	25	250	540	582	1400	2600	1510	591	608
12	21	24	24	26	248	534	603	1420	2470	1370	589	612
13	24	24	24	28	251	536	608	1470	2510	1100	589	608
14	24	24	25	27	250	534	608	1520	2530	1130	582	600
15	22	24	24	28	249	533	608	1500	2420	1350	589	617
16	27	23	26	33	249	532	612	1330	2460	1220	595	617
17	24	24	26	45	249	531	608	1270	2180	1050	591	612
18	25	24	25	35	248	535	603	1270	1920	1060	591	617
19	24	24	26	32	283	531	607	1290	1660	830	446	617
20	25	25	24	29	431	531	622	1300	1610	704	582	617
21	25	25	26	132	487	535	627	1350	1720	887	595	621
22	25	26	24	475	399	539	654	2880	1840	742	589	621
23	24	24	27	350	447	535	653	3470	1880	823	589	630
24	25	24	25	250	448	539	654	2730	1800	823	582	635
25	24	23	23	247	447	558	672	2140	1660	713	589	639
26	24	24	25	248	447	539	700	1900	1660	999	591	648
27	24	23	25	248	447	539	1360	1950	1650	881	582	644
28	26	23	25	248	448	539	1380	2350	1400	699	589	648
29	24	23	25	247	---	546	1340	2950	1110	797	591	657
30	25	23	25	247	---	523	1320	3460	1450	685	591	653
31	25	---	26	248	---	569	---	3590	---	757	600	---
TOTAL	759	724	778	3505	8744	16556	21168	56270	67740	35160	18443	18556
MEAN	24.5	24.1	25.1	113	312	534	706	1815	2258	1134	595	619
MAX	27	26	37	475	487	582	1380	3590	3290	1700	742	657
MIN	21	23	22	23	239	348	550	1270	1110	685	446	595
AC-FT	1510	1440	1540	6950	17340	32840	41990	111600	134400	69740	36580	36810
CAL YR 1977 TOTAL	40753				516	18	AC-FT	80830				
WTR YR 1978 TOTAL	248403				3590	21	AC-FT	492700				

## SAN JOAQUIN RIVER BASIN

11293500 NORTH FORK STANISLAUS RIVER BELOW SILVER CREEK, CA

LOCATION.--Lat 38°26'22", long 120°00'53", in SE¼ sec.20, T.7 N., R.18 E., Alpine County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 100 ft (30 m) downstream from Silver Creek, and 5.6 mi (9.0 km) north-east of Big Meadows.

DRAINAGE AREA.--27.8 mi<sup>2</sup> (72.0 km<sup>2</sup>).

PERIOD OF RECORD.--October 1952 to current year.

REVISED RECORDS.--WSP 1930: 1954(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,677.3 ft (2,035.24 m) National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--Flow regulated by Lake Alpine, Union, and Utica Reservoirs, combined capacity, 9,580 acre-ft (11.8 hm<sup>3</sup>). No diversion above station. See schematic diagram of Stanislaus River basin.

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

AVERAGE DISCHARGE.--26 years, 76.5 ft<sup>3</sup>/s (2.166 m<sup>3</sup>/s), 55,420 acre-ft/yr (68.3 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,780 ft<sup>3</sup>/s (78.7 m<sup>3</sup>/s) Dec. 24, 1964, gage height, 11.16 ft (3.402 m), from floodmarks, from rating curve extended above 500 ft<sup>3</sup>/s (14.2 m<sup>3</sup>/s); minimum daily, 0.3 ft<sup>3</sup>/s (0.008 m<sup>3</sup>/s) Oct. 10, 1958.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 20, 1950, reached a stage of 11.17 ft (3.405 m), from Pacific Gas and Electric Co. recorder chart, discharge, 2,790 ft<sup>3</sup>/s (79.0 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft<sup>3</sup>/s (8.5 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	Gage height (ft)	(m)	Date	Time	Discharge (ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	Gage height (ft)	(m)
Mar. 30	2030	551	15.6	6.63	2.021	May 14	2030	*1420	40.2	7.86	2.396
Apr. 25	0500	479	13.6	6.47	1.972	May 21	2100	1070	30.3	7.45	2.271
May 3	2115	600	17.0	6.73	2.051	May 29	2245	990	28.0	7.35	2.240
May 9	1945	769	21.8	7.03	2.143	June 5	2400	894	25.3	7.22	2.201

Minimum daily discharge, 1.8 ft<sup>3</sup>/s (0.051 m<sup>3</sup>/s) Nov. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	5.7	2.3	14	12	19	214	213	562	151	6.8	46
2	27	5.7	2.4	12	11	27	156	335	546	148	5.8	45
3	27	5.7	2.8	10	11	22	121	450	525	119	5.2	43
4	27	5.6	3.0	9.6	13	22	129	485	524	93	4.9	40
5	27	6.7	3.8	9.2	15	21	91	393	625	89	4.4	27
6	27	5.7	3.2	10	16	19	116	295	604	96	4.5	8.8
7	27	5.5	2.4	9.4	13	23	84	351	604	100	5.2	10
8	26	5.3	2.2	11	12	26	66	482	558	83	6.3	5.4
9	26	5.2	2.1	11	14	24	67	593	546	71	5.5	7.9
10	26	5.0	2.0	11	14	20	136	593	441	73	4.9	22
11	26	4.9	2.0	9.7	12	21	234	582	359	63	5.3	10
12	26	4.9	2.1	8.9	10	19	270	610	423	50	6.4	16
13	26	4.8	2.2	9.4	11	19	262	763	450	45	6.4	28
14	26	4.8	2.9	14	10	19	227	932	442	43	33	35
15	26	4.7	38	16	10	22	193	720	357	40	62	31
16	26	4.7	12	14	9.4	32	158	359	272	35	61	29
17	26	4.6	7.1	14	8.7	48	110	379	251	30	61	29
18	26	3.9	6.7	13	8.9	54	109	475	270	26	61	29
19	25	2.1	5.5	12	13	60	137	596	258	23	60	28
20	25	1.8	5.2	12	20	69	170	647	245	20	60	28
21	24	1.8	5.2	11	22	72	123	736	249	18	55	28
22	24	2.0	5.9	11	24	68	100	716	236	16	49	44
23	24	2.0	8.1	10	23	76	118	484	223	14	49	66
24	23	1.9	6.7	9.8	24	118	178	248	213	13	48	66
25	23	2.0	5.8	9.6	22	139	386	225	185	12	48	65
26	22	2.1	6.1	11	19	186	226	291	164	13	48	65
27	23	2.0	46	13	18	216	229	435	150	13	47	65
28	14	2.0	36	13	17	257	254	585	152	12	48	65
29	6.1	2.1	41	13	---	309	235	683	127	11	48	67
30	5.8	2.2	32	14	---	393	249	667	144	9.1	48	66
31	5.8	---	18	13	---	365	---	600	---	7.8	47	---
TOTAL	719.7	117.4	320.7	358.6	413.0	2785	5148	15923	10705	1536.9	1004.6	1115.1
MEAN	23.2	3.91	10.3	11.6	14.8	89.8	172	514	357	49.6	32.4	37.2
MAX	27	6.7	46	16	24	393	386	932	625	151	62	67
MIN	5.8	1.8	2.0	8.9	8.7	19	66	213	127	7.8	4.4	5.4
AC-FT	1430	233	636	711	819	5520	10210	31580	21230	3050	1990	2210
CAL YR 1977	TOTAL	5418.2	MEAN	14.8	MAX	145	MIN	1.8	AC-FT	10750		
WTR YR 1978	TOTAL	40147.0	MEAN	110	MAX	932	MIN	1.8	AC-FT	79630		

## 11294000 HIGHLAND CREEK BELOW SPICER MEADOWS RESERVOIR, CA

LOCATION.--Lat 38°23'34", long 119°59'50", in SW¼ sec.3, T.6 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 500 ft (152 m) downstream from Spicer Meadows Reservoir dam, 5.8 mi (9.3 km) upstream from mouth, and 7 mi (11 km) east of Big Meadow.

DRAINAGE AREA.--42.4 mi<sup>2</sup> (109.8 km<sup>2</sup>).

PERIOD OF RECORD.--October 1952 to current year.

REVISED RECORDS.--WSP 1930: 1953.

GAGE.--Water-stage recorder. Datum of gage is 6,382.2 ft (1,945.29 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Flow regulated by Spicer Meadows Reservoir 500 ft (152 m) upstream, capacity, 4,060 acre-ft (5.01 hm<sup>3</sup>). See schematic diagram of Stanislaus River basin.

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

AVERAGE DISCHARGE.--26 years, 119 ft<sup>3</sup>/s (3.370 m<sup>3</sup>/s), 86,220 acre-ft/yr (106 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,860 ft<sup>3</sup>/s (279 m<sup>3</sup>/s) Jan. 31, 1963, gage height, 11.88 ft (3.621 m), from rating curve extended above 1,200 ft<sup>3</sup>/s (34.0 m<sup>3</sup>/s); no flow Sept. 28 to Dec. 1, Dec. 4-6, 1964, Sept. 17, Oct. 4, 21-24, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 20, 1950, reached a stage of 11.50 ft (3.505 m), from Pacific Gas and Electric Co. recorder chart, discharge, 8,800 ft<sup>3</sup>/s (249 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft<sup>3</sup>/s (14 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)
Mar. 30	2115	602	17.0	5.18	1.579	May 21	2100	1140	32.3	6.26	1.908
Apr. 25	0330	745	21.1	5.53	1.686	May 29	2245	1100	31.2	6.20	1.890
May 3	2115	750	21.2	5.54	1.689	June 5	2215	1050	29.7	6.11	1.862
May 14	2000	*1540	43.6	6.83	2.082						

Minimum daily discharge, 0.62 ft<sup>3</sup>/s (0.018 m<sup>3</sup>/s) Oct. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	.92	5.5	5.0	36	68	298	303	702	285	31	3.2
2	1.3	1.2	5.5	5.3	36	102	230	435	678	274	29	3.3
3	1.3	1.2	5.5	5.9	35	81	196	570	662	234	28	3.3
4	1.4	1.2	5.5	7.4	37	118	186	614	670	213	40	3.3
5	1.4	1.2	3.9	33	56	101	157	530	755	213	47	16
6	1.3	1.2	2.5	32	61	77	159	423	760	225	47	41
7	1.3	1.3	2.5	29	52	90	141	478	750	232	55	41
8	1.3	1.3	2.5	32	46	97	126	598	700	207	63	41
9	1.3	1.6	2.5	47	51	87	139	666	654	202	62	41
10	1.3	1.8	2.5	40	43	77	220	682	547	200	61	42
11	1.3	1.8	2.5	34	38	78	312	682	490	182	69	42
12	1.3	1.7	2.5	31	40	67	366	726	552	154	74	42
13	1.3	1.5	2.5	31	39	61	372	835	597	134	73	42
14	1.3	1.6	2.6	57	33	63	336	955	583	133	36	42
15	1.2	1.9	2.9	58	35	71	276	910	501	134	3.0	42
16	1.3	1.9	2.7	54	31	98	220	530	414	123	2.2	42
17	1.4	1.9	2.9	44	32	147	183	510	385	102	1.8	42
18	1.3	3.7	2.8	36	33	178	188	630	419	94	1.5	41
19	1.2	5.4	2.8	40	39	192	222	750	400	83	1.5	41
20	1.2	5.4	2.9	35	50	224	246	810	402	74	1.5	41
21	1.2	5.4	2.9	32	59	232	194	865	419	73	1.4	41
22	1.2	5.5	3.0	33	65	230	180	890	385	66	1.5	21
23	1.0	5.5	3.0	26	69	222	204	714	392	63	1.9	1.5
24	.76	5.5	3.0	29	70	196	298	423	367	58	2.3	1.5
25	.62	5.5	3.0	31	63	226	562	363	330	57	2.4	1.5
26	.66	5.5	3.1	33	58	272	330	399	288	68	2.4	1.4
27	.66	5.5	3.2	34	59	300	330	514	265	58	2.3	1.2
28	.66	5.5	3.2	35	57	336	366	654	248	51	2.4	1.2
29	.71	5.5	3.3	36	---	396	333	765	240	46	2.5	8.5
30	.71	5.5	3.6	38	---	486	360	790	273	39	2.5	19
31	.81	---	4.2	38	---	454	---	730	---	39	2.9	---
TOTAL	34.99	94.62	101.0	1021.6	1323	5427	7730	19744	14828	4116	751.0	749.9
MEAN	1.13	3.15	3.26	33.0	47.3	175	258	637	494	133	24.2	25.0
MAX	1.4	5.5	5.5	58	70	486	562	955	760	285	74	42
MIN	.62	.92	2.5	5.0	31	61	126	303	240	39	1.4	1.2
AC-FT	69	188	200	2030	2620	10760	15330	39160	29410	8160	1490	1490

CAL YR 1977 TOTAL 9173.48 MEAN 25.1 MAX 204 MIN .02 AC-FT 18200  
WTR YR 1978 TOTAL 55921.11 MEAN 153 MAX 955 MIN .62 AC-FT 110900

## SAN JOAQUIN RIVER BASIN

11294500 NORTH FORK STANISLAUS RIVER NEAR AVERY, CA

LOCATION.--Lat 38°14'45", long 120°17'20", in SW¼NE¼ sec.35, T.5 N., R.15 E., Calaveras County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 700 ft (213 m) upstream from intake of Utica Canal, 3.3 mi (5.3 km) upstream from Beaver Creek, and 5.1 mi (8.2 km) northeast of Avery.

DRAINAGE AREA.--163 mi<sup>2</sup> (422 km<sup>2</sup>).

PERIOD OF RECORD.--July 1914 to September 1925, November 1928 to current year. Yearly discharge only for some years, published in WSP 1315-A.

REVISED RECORDS.--WSP 1215: 1938(M). WSP 1515: 1915(M), 1932(M), 1936(M), 1938, 1940(M).

GAGE.--Water-stage recorder. Datum of gage is 3,388.3 ft (1,032.75 m) National Geodetic Vertical Datum of 1929 (river-profile survey). Prior to September 1922, nonrecording gage at same site at datum 0.05 ft (0.015 m) lower.

REMARKS.--Flow regulated at low and medium stages of Lake Alpine, Spicer Meadows, Union and Utica Reservoirs, combined capacity, 13,600 acre-ft (16.8 hm<sup>3</sup>). Diversion of a maximum of 10 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s) during summer from Beaver Creek into river above station. See schematic diagram of Stanislaus River basin.

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

AVERAGE DISCHARGE.--61 years, 414 ft<sup>3</sup>/s (11.72 m<sup>3</sup>/s), 299,900 acre-ft/yr (370 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,000 ft<sup>3</sup>/s (1,020 m<sup>3</sup>/s) Jan. 31, 1963, gage height, 15.00 ft (4.572 m), from floodmarks, from rating curve extended above 14,000 ft<sup>3</sup>/s (396 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 13.8 ft (4.21 m); minimum daily, 5.5 ft<sup>3</sup>/s (0.16 m<sup>3</sup>/s) Dec. 6, 7, 1929.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft<sup>3</sup>/s (57 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Mar. 31	0030	2660 75.3	6.61 2.015	May 21	2230	3660 104	7.33 2.234
Apr. 25	0430	3610 102	7.30 2.225	May 30	0145	3270 92.6	7.07 2.155
May 9	2230	3090 87.5	6.94 2.115	June 14	0300	2190 62.0	6.20 1.890
May 14	2145	*4980 141	8.10 2.469				

Minimum daily discharge, 8.8 ft<sup>3</sup>/s (0.25 m<sup>3</sup>/s) on Nov. 3, 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	9.3	24	171	204	360	1480	1210	2340	589	65	58
2	30	8.9	23	141	195	771	1100	1650	2260	584	55	57
3	29	8.8	22	140	186	681	933	2100	2200	505	51	56
4	29	8.8	22	154	193	1130	904	2280	2140	435	48	55
5	29	14	22	303	326	1100	759	2080	2390	403	55	88
6	29	17	23	306	464	754	755	1630	2400	409	63	124
7	29	15	22	215	450	688	666	1760	2380	427	62	106
8	29	13	18	196	375	658	595	2120	2260	394	72	84
9	29	12	15	485	539	594	614	2470	2200	349	79	70
10	28	11	14	397	388	526	864	2520	1980	351	76	154
11	28	11	14	269	315	544	1260	2490	1630	326	73	115
12	28	10	17	227	284	491	1480	2530	1730	280	82	83
13	28	10	15	227	286	425	1500	2970	1820	239	87	82
14	28	10	15	555	258	405	1420	3430	1810	225	86	107
15	28	10	287	590	253	416	1230	3120	1610	220	84	110
16	27	10	119	608	220	486	1020	1980	1280	208	77	97
17	27	10	459	692	215	652	870	1860	1110	181	75	93
18	27	10	226	422	209	735	882	2090	1140	160	74	91
19	27	10	83	405	232	749	958	2390	1120	146	74	89
20	27	9.9	60	354	272	858	1080	2560	1050	130	72	88
21	27	33	52	318	318	994	931	2780	1050	117	72	87
22	26	84	79	295	357	1070	833	2810	997	113	67	86
23	25	48	352	252	375	998	859	2390	946	103	63	89
24	25	32	157	205	381	937	1150	1500	914	99	62	83
25	25	33	97	212	355	945	2760	1240	816	92	62	82
26	25	30	79	204	325	1110	1670	1360	713	98	62	81
27	24	28	470	208	325	1230	1440	1720	620	101	61	80
28	29	28	314	209	308	1410	1570	2180	643	92	60	79
29	25	24	473	209	---	1590	1380	2520	538	84	60	79
30	16	23	553	213	---	2060	1510	2620	563	77	60	84
31	11	---	246	213	---	2230	---	2480	---	68	59	---
TOTAL	824	581.7	4372	9395	8608	27597	34473	68840	44650	7605	2098	2637
MEAN	26.6	19.4	141	303	307	890	1149	2221	1488	245	67.7	87.9
MAX	30	84	553	692	539	2230	2760	3430	2400	589	87	154
MIN	11	8.8	14	140	186	360	595	1210	538	68	48	55
AC-FT	1630	1150	8670	18630	17070	54740	68380	136500	88560	15080	4160	5230

CAL YR 1977 TOTAL 27121.7 MEAN 74.3 MAX 553 MIN 8.8 AC-FT 53800  
WTR YR 1978 TOTAL 211680.7 MEAN 580 MAX 3430 MIN 8.8 AC-FT 419900

## 11295400 STANISLAUS RIVER NEAR HATHAWAY PINES, CA

LOCATION.--Lat 38°08'29", long 120°22'19", in NW¼SW¼ sec.6, T.3 N., R.15 E., Calaveras County, on right bank 1,000 ft (300 m) upstream from Stanislaus powerplant, and 3.6 mi (5.8 km) south of Hathaway Pines.

DRAINAGE AREA.--629 mi<sup>2</sup> (1,629 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,030.00 ft (313.944 m) National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.).

REMARKS.--Records excellent. Many diversions above station for hydroelectric powerplants. Small diversions for domestic water supply. Stanislaus tunnel diverts from left bank of Middle Fork Stanislaus River 13.7 mi (22.0 km) upstream from station in SE¼ sec.24, T.4 N., R.16 E., to Stanislaus powerplant 1,000 ft (300 m) 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.

AVERAGE DISCHARGE.--River only: 11 years, 771 ft<sup>3</sup>/s (21.83 m<sup>3</sup>/s), 558,600 acre-ft/yr (689 hm<sup>3</sup>/yr).  
Combined river and powerplant: 11 years, 1,226 ft<sup>3</sup>/s (34.72 m<sup>3</sup>/s), 888,200 acre-ft/yr (1.10 km<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 17,300 ft<sup>3</sup>/s (490 m<sup>3</sup>/s) Jan. 21, 1970, gage height, 17.98 ft (5.480 m) recorded, 18.6 ft (5.67 m) from floodmarks; minimum daily, 9.4 ft<sup>3</sup>/s (0.27 m<sup>3</sup>/s) Aug. 7, 1977.  
Combined flow, maximum discharge, 17,900 ft<sup>3</sup>/s (507 m<sup>3</sup>/s) Jan. 21, 1970; minimum daily, 27 ft<sup>3</sup>/s (0.76 m<sup>3</sup>/s) July 20, 1977.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 6,750 ft<sup>3</sup>/s (191 m<sup>3</sup>/s) May 23, gage height, 13.91 ft (4.240 m); minimum daily, 12 ft<sup>3</sup>/s (0.34 m<sup>3</sup>/s) Oct. 5-7.  
Combined flow, maximum discharge, 7,280 ft<sup>3</sup>/s (206 m<sup>3</sup>/s) May 23; minimum daily, 31 ft<sup>3</sup>/s (0.88 m<sup>3</sup>/s) Oct. 25, 26, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	16	22	367	548	543	2370	2600	5590	2020	263	95
2	13	16	21	292	561	1100	1810	3050	5220	2100	276	101
3	13	16	20	280	558	1440	1540	3590	4870	1730	196	99
4	13	16	20	303	529	1950	1540	3930	4820	1470	186	101
5	12	20	23	650	649	3130	1330	3750	5120	1440	155	131
6	12	23	40	948	1090	2280	1380	2940	5100	1510	153	245
7	12	19	41	573	1320	1710	1250	3050	5170	1570	157	228
8	13	17	42	447	1280	1460	1150	3450	4900	1540	161	196
9	13	17	39	887	2000	1310	1170	3980	4780	1300	146	184
10	14	17	39	908	1490	1150	1380	4080	4430	1420	136	247
11	14	17	35	613	1150	1150	1830	4010	3870	1390	86	273
12	14	17	40	489	1030	1100	2130	4000	3760	1220	96	201
13	14	17	41	464	1080	952	2200	4460	3900	930	146	186
14	14	17	41	935	968	880	2140	5050	3940	808	147	181
15	14	17	447	1530	855	851	1990	5000	3610	1030	148	212
16	14	17	211	1350	792	901	1820	3310	3300	935	163	207
17	14	17	931	2320	737	1060	1560	2960	2890	682	162	194
18	14	17	592	1210	707	1140	1610	3200	2620	782	153	190
19	14	17	188	1050	711	1160	1660	3580	2380	536	100	186
20	14	17	104	814	677	1280	1860	3740	2380	335	134	186
21	14	38	89	658	489	1640	1660	4020	2340	412	140	186
22	14	187	106	909	557	1880	1570	5310	2270	357	101	196
23	14	65	688	895	569	1600	1540	5940	2160	412	96	196
24	14	35	359	663	578	1500	1820	4050	2120	398	93	205
25	14	26	195	647	542	1440	4800	3110	2030	303	93	201
26	14	25	141	621	508	1620	3320	2940	1970	518	104	212
27	15	26	684	609	531	1730	3340	3300	1910	475	93	207
28	16	25	634	584	503	1940	3450	4250	1840	318	97	210
29	16	24	730	581	---	2160	3010	5370	1790	335	98	221
30	16	27	983	578	---	2800	3120	6050	1980	295	97	219
31	16	---	532	597	---	3440	---	6070	---	284	99	---
TOTAL	432	825	8078	23772	23009	48297	61350	124140	103010	28855	4275	5696
MEAN	13.9	27.5	261	767	822	1558	2045	4005	3434	931	138	190
MAX	16	187	983	2320	2000	3440	4800	6070	5590	2100	276	273
MIN	12	16	20	280	489	543	1150	2600	1790	284	86	95
AC-FT	857	1640	16020	47150	45640	95800	121700	246200	204300	57230	8480	11300
CAL YR 1977 TOTAL	24684.9			67	MAX 983	MIN 9.4	AC-FT 48960					
WTR YR 1978 TOTAL	431739.0			MEAN 1183	MAX 6070	MIN 12	AC-FT 856400					

## SAN JOAQUIN RIVER BASIN

11295400 STANISLAUS RIVER NEAR HATHAWAY PINES, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF STANISLAUS RIVER AND STANISLAUS  
POWERPLANT AT STANISLAUS, NEAR HATHAWAY PINES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	33	39	428	652	1080	2910	3140	6130	2560	801	632
2	86	33	37	355	666	1590	2350	3590	5760	2640	813	638
3	86	33	50	348	664	1930	2080	4130	5410	2270	733	636
4	86	33	39	375	640	2490	2080	4470	5360	2010	723	638
5	85	37	43	725	760	3670	1870	4290	5660	1980	692	668
6	83	40	58	1030	1180	2820	1920	3480	5640	2050	690	781
7	82	35	60	652	1370	2240	1790	3590	5710	2110	694	764
8	83	36	60	524	1340	1990	1690	3990	5440	2080	698	731
9	83	33	58	966	2050	1840	1710	4520	5320	1840	683	721
10	84	33	57	984	1530	1690	1920	4620	4970	1960	673	784
11	82	34	53	690	1220	1690	2370	4550	4410	1930	623	809
12	81	33	58	566	1110	1640	2670	4540	4300	1760	633	738
13	88	34	59	544	1170	1490	2740	5000	4440	1470	683	722
14	87	33	60	1010	1290	1420	2680	5590	4480	1350	684	717
15	86	33	463	1610	1170	1390	2530	5540	4150	1570	685	747
16	88	35	228	1440	1110	1450	2360	3850	3840	1470	699	743
17	85	32	948	2420	1090	1610	2100	3500	3430	1220	698	731
18	86	33	612	1310	1100	1690	2150	3730	3160	1320	689	725
19	52	32	207	1140	1100	1710	2200	4110	2920	1070	594	721
20	32	33	118	906	1080	1830	2400	4280	2920	872	680	721
21	33	58	107	862	1010	2190	2200	4560	2880	949	683	721
22	33	206	122	1290	1090	2440	2110	5850	2810	894	642	731
23	32	83	708	1000	1090	2150	2080	6470	2700	950	636	731
24	32	53	378	734	1110	2050	2360	4580	2660	936	632	740
25	31	43	213	715	1080	1990	5340	3640	2570	841	631	736
26	31	42	161	690	1040	2170	3860	3470	2510	1060	642	747
27	34	43	721	684	1070	2270	3880	3840	2450	1010	631	742
28	34	40	696	660	1040	2480	3990	4790	2380	856	635	745
29	31	41	792	663	---	2700	3550	5910	2380	873	635	756
30	33	42	1050	659	---	3340	3660	6590	2470	833	634	753
31	33	---	595	689	---	3980	---	6610	---	822	636	---
TOTAL	1969	1329	8850	26669	30822	65020	77550	140820	119210	45556	20905	21769
MEAN	63.5	44.3	285	860	1101	2097	2585	4543	3974	1470	674	726
MAX	88	206	1050	2420	2050	3980	5340	6610	6190	2640	813	809
MIN	31	32	37	348	640	1080	1690	3140	2330	822	594	632
AC-FT	3910	2640	17550	52900	61140	129000	153800	279300	236500	90360	41470	43180
CAL YR 1977 TOTAL	68134			187	MAX	1050	MIN 27	AC-FT	135100			
WTR YR 1978 TOTAL	560469			MEAN 1536	MAX	6610	MIN 31	AC-FT	1112000			

11295400 STANISLAUS RIVER NEAR HATHAWAY PINES, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: February 1970 to March 1978 (discontinued).

INSTRUMENTATION.--Temperature recorder February 1970 to March 1978.

REMARKS.--Water temperatures are affected by the powerplant operation. Clock stopped Jan. 11-16, range in temperature, 6.5°C to 9.5°C.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 28.5°C July 19, 20, 1977; minimum recorded, 1.5°C Jan. 3, 1975, Dec. 22, 27-29, 1976.

EXTREMES FOR OCTOBER 1977 TO MARCH 1978.--

WATER TEMPERATURES: Maximum recorded, 18.5°C Oct. 1, 9; minimum recorded, 4.5°C Dec. 20, Jan. 24.

## TEMPERATURE (DEG C) OF WATER, OCTOBER 1977 TO MARCH 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	18.5	15.0	14.0	11.0	10.0	8.5	7.0	6.0	6.0	5.5	9.0	7.5
2	17.0	15.0	14.0	11.0	10.0	8.5	8.0	6.5	7.0	6.0	8.5	7.5
3	16.5	14.5	13.5	11.0	9.5	7.5	8.5	8.0	7.5	6.0	8.0	7.0
4	17.0	14.5	13.5	11.0	9.5	7.0	8.5	8.0	8.0	7.0	---	---
5	16.0	14.0	13.0	11.5	9.5	7.5	8.5	8.0	8.5	8.0	---	---
6	16.0	14.0	12.5	10.5	9.5	7.5	8.5	7.5	8.0	7.0	---	---
7	16.0	14.0	12.5	9.5	9.5	7.5	8.0	6.5	7.5	7.0	---	---
8	17.5	14.0	12.0	9.0	9.5	8.0	8.5	7.5	7.5	6.5	---	---
9	18.5	14.0	11.5	9.0	8.5	7.0	9.0	8.5	8.0	7.0	---	---
10	17.0	14.0	11.5	9.0	8.5	6.5	8.5	7.5	7.0	6.0	---	---
11	18.0	14.0	11.5	9.0	7.5	7.0	---	---	7.0	5.5	---	---
12	17.5	14.0	11.5	8.5	8.5	7.0	---	---	6.5	6.0	---	---
13	15.0	13.5	11.5	8.0	8.5	7.0	---	---	6.5	6.0	---	---
14	15.5	13.5	11.0	8.0	8.5	7.5	---	---	7.0	5.0	---	---
15	18.0	13.5	10.5	7.5	10.0	7.5	---	---	7.0	6.5	---	---
16	16.5	13.5	10.0	7.5	7.5	6.0	---	---	7.0	5.5	9.0	7.0
17	17.0	13.5	10.0	7.5	8.5	6.5	8.0	7.0	7.0	5.5	9.0	7.5
18	14.5	13.0	10.5	8.0	7.5	6.5	8.0	6.5	7.5	6.0	8.5	7.5
19	14.5	13.5	9.5	6.5	6.5	5.0	8.0	7.0	7.5	6.0	9.0	7.5
20	16.5	13.0	9.0	5.5	5.5	4.5	7.0	6.0	8.0	6.5	9.0	7.5
21	16.5	13.0	8.5	6.5	7.5	5.5	7.0	6.0	7.5	6.5	8.5	7.5
22	16.5	13.5	8.5	6.5	8.5	7.5	8.0	7.0	8.5	7.0	7.5	6.0
23	16.0	13.5	9.5	7.5	9.5	8.5	7.0	6.0	8.0	7.0	7.0	6.5
24	16.5	13.5	10.0	8.5	8.5	7.5	6.0	4.5	8.0	7.0	7.5	5.0
25	17.0	13.5	11.0	8.5	8.0	7.5	6.0	5.0	8.0	7.0	7.5	6.0
26	17.0	14.0	10.5	8.5	9.0	8.0	6.5	5.5	8.0	7.5	7.0	6.0
27	16.0	14.0	10.5	9.5	10.0	8.5	7.0	5.5	8.0	7.5	7.5	5.5
28	14.5	13.5	10.5	9.5	9.5	8.5	7.5	6.5	8.0	7.0	7.0	4.5
29	15.0	13.0	10.5	8.5	9.5	9.5	7.0	6.0	---	---	---	---
30	15.0	12.5	10.5	8.5	9.5	8.0	7.0	6.0	---	---	---	---
31	14.5	12.0	---	---	8.0	7.0	6.5	5.5	---	---	---	---
MONTH	18.5	12.0	14.0	5.5	10.0	4.5	9.0	4.5	8.5	5.0	---	---

## SAN JOAQUIN RIVER BASIN

11296500 SOUTH FORK STANISLAUS RIVER AT STRAWBERRY, CA

LOCATION.--Lat 38°11'51", long 120°00'27", in SW¼ sec.16, T.4 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 0.3 mi (0.5 km) downstream from bridge on State Highway 108 at Strawberry, 0.6 mi (1.0 km) downstream from Herring Creek, and 1.2 mi (1.9 km) downstream from Pinecrest Lake.

DRAINAGE AREA.--44.8 mi<sup>2</sup> (116.0 km<sup>2</sup>).

PERIOD OF RECORD.--October 1911 to January 1917, August 1938 to current year. Monthly discharge only for October 1913 and yearly estimates for 1912-13, published in WSP 1315-A. Published as "near Confidence" 1911-13.

REVISED RECORDS.--WSP 1215: 1945(M). WSP 1515: 1916, 1943(M).

GAGE.--Water-stage recorder. Datum of gage is 5,235.1 ft (1,595.66 m) National Geodetic Vertical Datum of 1929 (river-profile survey). October 1911 to January 1917, nonrecording gage at site 1 mi (2 km) downstream at different datum.

REMARKS.--Flow at low and medium stages regulated beginning in 1916 by Pinecrest Lake 1.2 mi (1.9 km) upstream, capacity, 18,300 acre-ft (22.6 hm<sup>3</sup>). No diversion above station. See schematic diagram of Stanislaus River basin.

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

AVERAGE DISCHARGE.--45 years, (water years 1912-16, 1939-78), 126 ft<sup>3</sup>/s (3.568 m<sup>3</sup>/s), 91,290 acre-ft/yr (113 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,900 ft<sup>3</sup>/s (110 m<sup>3</sup>/s) Nov. 21, 1950, gage height, 9.25 ft (2.819 m), from rating curve extended above 1,100 ft<sup>3</sup>/s (31.2 m<sup>3</sup>/s) on basis of contracted-opening measurement of maximum flow at bridge 0.3 mi (0.5 km) below station; minimum, 1.3 ft<sup>3</sup>/s (0.037 m<sup>3</sup>/s) Nov. 22, 23, 1946.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,220 ft<sup>3</sup>/s (34.6 m<sup>3</sup>/s) June 7, gage height, 5.52 ft (1.682 m); minimum daily, 3.9 ft<sup>3</sup>/s (0.11 m<sup>3</sup>/s) Dec. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	16	14	42	56	62	150	125	897	511	56	10
2	57	16	14	44	55	68	117	153	844	520	62	10
3	57	16	14	52	55	66	103	196	841	462	65	10
4	57	16	14	55	55	84	96	225	793	360	63	10
5	57	17	14	58	59	80	90	235	910	379	63	16
6	57	17	14	58	60	73	87	348	983	428	62	46
7	57	16	14	56	60	72	86	393	1040	455	62	48
8	57	16	14	55	60	72	81	496	990	411	68	51
9	57	16	14	61	63	71	81	576	982	398	62	72
10	57	16	14	57	61	69	93	581	836	414	59	124
11	57	16	14	56	59	69	116	572	682	372	59	92
12	57	16	14	56	59	68	135	656	804	298	61	80
13	57	26	14	55	60	66	142	791	935	254	62	75
14	57	24	14	61	58	65	128	929	964	261	62	80
15	57	23	21	61	58	65	116	914	860	270	62	83
16	58	23	18	62	58	67	107	563	672	246	62	76
17	58	22	21	61	57	73	100	514	603	195	62	73
18	58	18	19	60	57	77	100	592	647	175	61	72
19	27	19	16	58	58	80	103	646	627	152	62	71
20	5.4	19	16	59	58	83	107	751	647	139	62	70
21	5.3	20	16	58	59	91	100	778	672	127	28	69
22	5.9	22	12	58	60	95	95	786	670	125	11	68
23	6.8	20	9.5	56	61	93	95	702	663	120	11	67
24	6.8	19	5.0	57	61	89	111	429	670	111	11	67
25	6.8	19	4.0	56	61	91	182	335	578	104	11	66
26	16	19	3.9	55	61	100	139	379	524	119	10	65
27	33	19	22	55	61	108	127	531	477	101	10	65
28	33	19	41	55	60	119	133	745	408	83	10	65
29	33	19	45	55	---	132	127	885	370	70	10	65
30	33	18	46	56	---	168	134	859	433	58	10	64
31	28	---	43	56	---	196	---	924	---	55	10	---
TOTAL	1269.0	562	554.4	1744	1650	2712	3381	17609	22022	7773	1369	1830
MEAN	40.9	18.7	17.9	56.3	58.9	87.5	113	568	734	251	44.2	61.0
MAX	58	26	46	62	63	196	182	929	1040	520	68	124
MIN	5.3	16	3.9	42	55	62	81	125	370	55	10	10
AC-FT	2520	1110	1100	3460	3270	5380	6710	34930	43680	15420	2720	3630
CAL YR 1977 TOTAL	9619.8			26.4		194		3.9		19080		
WTR YR 1978 TOTAL	62475.4			171		1040		3.9		123900		



## 11297000 PHILADELPHIA CANAL NEAR STRAWBERRY, CA

LOCATION.--Lat 38°10'39", long 120°02'46", in NW¼NW¼ sec.30, T.4 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 250 ft (76 m) downstream from diversion dam on South Fork Stanislaus River, and 2.8 mi (4.5 km) southwest of Strawberry.

PERIOD OF RECORD.--October 1939 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,960 ft (1,511.8 m) National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--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 at powerplant above Sand Bar Flat. See schematic diagram of Stanislaus River basin.

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

AVERAGE DISCHARGE.--39 years, 41.9 ft<sup>3</sup>/s (1.187 m<sup>3</sup>/s), 30,360 acre-ft/yr (37.4 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 64 ft<sup>3</sup>/s (1.81 m<sup>3</sup>/s) in 1941, 1961-63, 1965, 1971-72, 1974-75; no flow at times in some years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	.46	.46	43	57	57	58	53	59	60	58	.39
2	55	.46	.46	44	51	45	55	56	58	60	59	.53
3	55	.46	.46	49	58	52	55	58	59	59	60	.56
4	55	.46	.41	56	55	54	53	54	60	58	60	.85
5	55	.45	.31	57	56	53	53	55	60	60	60	4.8
6	54	.39	.31	56	55	51	53	55	60	60	60	44
7	54	.39	.31	56	56	51	53	57	62	60	61	49
8	54	.39	.25	56	55	51	53	57	52	60	59	45
9	54	.39	.24	57	56	51	54	57	61	60	53	60
10	54	.39	.24	56	55	51	54	56	60	60	53	61
11	54	.34	.24	56	55	52	55	56	59	59	58	59
12	54	.32	.24	56	55	55	55	46	61	59	59	59
13	54	.32	.24	56	55	55	55	20	61	59	60	59
14	54	.31	.24	57	55	55	54	58	61	60	61	59
15	55	.31	.29	57	55	55	54	59	60	60	60	59
16	55	.31	.26	57	55	55	54	55	58	59	60	60
17	55	.31	.30	58	56	56	54	56	60	59	60	60
18	55	.35	.31	57	56	56	54	57	60	60	60	60
19	22	.46	.31	57	56	56	54	58	60	60	60	60
20	1.3	.54	.31	57	56	57	54	59	60	51	60	59
21	1.3	.54	.31	57	56	57	54	58	60	60	26	59
22	1.3	.49	.31	56	56	57	54	57	60	60	0	60
23	1.3	.53	.28	56	56	56	54	57	60	59	0	60
24	1.3	.51	.24	56	56	56	55	53	60	59	0	60
25	1.3	.46	.24	56	56	56	56	56	60	59	0	59
26	1.1	.46	.24	56	56	56	54	60	60	60	0	59
27	.48	.46	18	56	56	56	53	61	59	59	0	59
28	0	.46	43	56	56	56	53	61	59	59	0	59
29	.14	.46	43	56	---	56	53	60	59	59	0	59
30	.46	.46	44	56	---	57	53	59	60	58	0	59
31	.46	---	43	56	---	58	---	59	---	57	.22	---
TOTAL	1013.44	12.64	198.81	1715	1556	1689	1623	1723	1788	1832	1207.22	1453.13
MEAN	32.7	.42	6.41	55.3	55.6	54.5	54.1	55.6	59.6	59.1	38.9	48.4
MAX	55	.54	44	58	58	58	58	61	62	60	61	61
MIN	0	.31	.24	43	51	45	53	20	52	51	0	.39
AC-FT	2010	25	394	3400	3090	3350	3220	3420	3550	3630	2390	2880
CAL YR 1977 TOTAL	2187.01	MEAN	5.99	MAX	55	MIN	0	AC-FT	4340			
WTR YR 1978 TOTAL	15811.24	MEAN	43.3	MAX	62	MIN	0	AC-FT	31360			

## SAN JOAQUIN RIVER BASIN

11297500 TUOLUMNE CANAL NEAR LONG BARN, CA

LOCATION.--Lat 38°05'35", long 120°10'03", in SW¼ sec.24, T.3 N., R.16 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank 300 ft (91 m) downstream from intake, 350 ft (107 m) downstream from Lyons Reservoir on South Fork Stanislaus River, 2 mi (3 km) west of Long Barn, and 15 mi (24 km) northeast of Sonora.

PERIOD OF RECORD.--October 1937 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,110.0 ft (1,252.73 m) National Geodetic Vertical Datum of 1929 (river-profile survey). Prior to June 1938, at site 200 ft (61 m) downstream at different datum.

REMARKS.--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 collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--41 years, 27.4 ft<sup>3</sup>/s (0.776 m<sup>3</sup>/s), 19,850 acre-ft/yr (24.5 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 59 ft<sup>3</sup>/s (1.67 m<sup>3</sup>/s) May 11, 1975; no flow at times in some years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	5.5	15	40	38	38	44	42	45	51	38	46
2	24	14	15	40	38	38	43	42	47	53	37	46
3	24	5.9	15	40	38	38	42	42	49	52	38	45
4	26	13	15	39	38	38	42	43	48	53	38	45
5	26	32	15	40	38	38	43	43	47	52	38	45
6	26	32	15	40	39	38	43	43	48	51	38	45
7	26	32	15	40	39	38	43	44	51	50	38	45
8	26	27	15	40	39	37	43	45	50	49	39	39
9	26	24	15	40	45	37	43	44	51	49	39	39
10	26	23	15	41	37	38	43	42	48	50	38	42
11	26	22	15	41	43	37	43	43	47	50	38	42
12	26	21	15	41	43	37	43	43	47	50	40	42
13	26	21	15	41	39	38	43	43	48	50	42	42
14	26	21	15	41	40	37	43	44	49	49	42	42
15	26	20	15	41	38	37	43	44	48	50	42	42
16	25	20	15	42	40	37	43	45	46	53	42	41
17	9.6	18	15	38	38	38	43	44	45	49	43	41
18	7.6	17	16	36	38	38	43	45	46	51	45	37
19	12	16	15	37	38	38	43	44	47	50	45	30
20	11	15	15	39	38	38	43	45	48	49	45	30
21	11	15	15	38	38	40	43	45	49	50	45	30
22	32	16	16	38	38	42	43	44	50	50	44	30
23	32	16	15	39	38	43	43	44	51	50	45	30
24	31	15	15	38	38	43	43	44	54	42	45	30
25	4.0	15	15	38	38	43	43	44	52	36	45	30
26	16	15	15	37	38	43	44	45	51	36	45	30
27	6.1	15	15	38	38	43	43	49	52	36	44	30
28	16	15	15	38	38	43	42	52	52	38	44	30
29	32	16	22	38	---	43	42	52	51	38	44	30
30	32	15	34	38	---	44	42	48	47	38	45	29
31	5.4	---	40	38	---	44	---	46	---	38	46	---
TOTAL	668.7	552.4	518	1215	1088	1224	1287	1383	1464	1463	1297	1125
MEAN	21.6	18.4	16.7	39.2	38.9	39.5	42.9	44.6	48.8	47.2	41.8	37.5
MAX	32	32	40	42	45	44	44	52	54	53	46	46
MIN	4.0	5.5	15	36	37	37	42	42	45	36	37	29
AC-FT	1330	1100	1030	2410	2160	2430	2550	2740	2900	2900	2570	2230

CAL YR 1977 TOTAL 7820.8 MEAN 21.4 MAX 48 MIN 4.0 AC-FT 15510  
WTR YR 1978 TOTAL 13285.1 MEAN 36.4 MAX 54 MIN 4.0 AC-FT 26350

## 11298000 SOUTH FORK STANISLAUS RIVER NEAR LONG BARN, CA

LOCATION.--Lat 38°05'33", long 120°10'02", in SW¼ sec.24, T.3 N., R.16 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank 600 ft (183 m) downstream from Lyons Dam, 2 mi (3 km) west of Long Barn, and 15 mi (24 km) northeast of Sonora.

DRAINAGE AREA.--66.9 mi<sup>2</sup> (173.3 km<sup>2</sup>).

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1215: 1938(M).

GAGE.--Water-stage recorder and masonry control. Datum of gage is 4,073.4 ft (1,241.57 m) National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--Flow regulated by Lyons Reservoir 600 ft (183 m) upstream, capacity, 5,510 acre-ft (6.79 hm<sup>3</sup>) and Pinecrest Lake, capacity, 18,300 acre-ft (22.6 hm<sup>3</sup>). Tuolumne Canal (station 11297500) diverts at Lyons Dam; other diversions, see schematic diagram of Stanislaus River basin.

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

AVERAGE DISCHARGE.--41 years, 82.5 ft<sup>3</sup>/s (2.336 m<sup>3</sup>/s), 59,770 acre-ft/yr (73.7 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,900 ft<sup>3</sup>/s (139 m<sup>3</sup>/s) Nov. 21, 1950, gage height, 9.3 ft (2.83 m), from rating curve extended above 1,100 ft<sup>3</sup>/s (31.2 m<sup>3</sup>/s) on basis of computation of maximum flow over Lyons Dam; no flow at times in 1937-39, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,300 ft<sup>3</sup>/s (36.8 m<sup>3</sup>/s) July 3, gage height, 5.76 ft (1.756 m); minimum daily, 0.41 ft<sup>3</sup>/s (0.012 m<sup>3</sup>/s) Oct. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.99	.90	.92	2.8	2.6	26	132	105	867	202	2.0	2.4
2	1.2	.83	.92	2.8	2.6	101	88	98	784	401	2.0	2.3
3	1.2	.78	.92	2.8	2.6	161	64	125	775	374	2.0	2.3
4	1.1	.81	.92	1.9	2.6	281	67	160	709	274	2.0	2.2
5	1.0	.94	.92	1.4	2.5	364	56	171	818	247	2.0	2.3
6	1.0	.92	.92	1.2	2.4	265	65	229	925	221	2.0	2.2
7	.92	.91	.92	1.1	2.5	181	56	287	1010	319	2.0	2.0
8	.92	.74	.92	.92	2.5	133	56	361	974	306	2.0	1.9
9	.92	.63	.92	1.3	193	106	60	479	944	291	2.0	1.9
10	.92	.71	.92	1.1	160	87	64	507	844	267	2.0	2.1
11	.92	.95	.96	1.1	87	78	77	446	589	256	2.0	2.0
12	.92	1.3	1.1	1.1	65	70	91	531	666	230	2.1	2.0
13	.92	1.1	1.1	1.1	62	56	100	712	867	192	2.2	2.0
14	.92	1.0	1.1	1.5	41	46	94	838	922	101	2.2	2.0
15	.92	1.0	1.2	1.5	35	38	105	967	859	40	2.2	2.0
16	.92	1.0	1.1	1.8	24	33	108	526	609	127	2.2	2.0
17	.41	1.0	1.7	4.6	19	31	88	385	490	139	2.2	2.0
18	1.1	1.0	1.8	3.7	16	31	92	453	530	118	1.9	1.9
19	.90	1.0	1.8	1.5	17	32	89	499	516	83	2.0	1.8
20	.89	1.0	1.7	1.0	21	30	103	611	516	21	1.7	1.9
21	.94	1.0	1.5	.92	23	38	104	698	551	6.6	2.0	2.0
22	1.4	1.0	1.7	.92	25	54	89	687	564	6.6	2.4	2.0
23	1.8	1.0	2.5	.92	29	48	76	713	470	6.5	2.4	2.0
24	1.8	1.0	2.4	1.6	31	44	82	373	561	4.1	2.4	2.0
25	.99	1.0	2.4	2.8	31	37	290	251	485	2.0	2.4	2.0
26	1.0	1.0	2.4	2.8	30	38	237	241	416	2.1	2.4	2.0
27	.93	1.0	2.4	2.5	28	41	182	341	294	2.5	2.4	2.0
28	.97	1.0	2.4	2.2	25	46	157	579	299	2.6	2.4	2.0
29	1.0	1.0	2.5	2.2	---	53	132	784	259	2.4	2.4	2.0
30	1.1	1.0	2.8	2.3	---	78	123	815	68	2.5	2.4	2.0
31	.92	---	2.8	2.6	---	166	---	862	---	2.4	2.6	---
TOTAL	31.84	28.52	48.56	57.98	982.3	2793	3127	14834	19181	4249.3	66.9	61.2
MEAN	1.03	.95	1.57	1.87	35.1	90.1	104	479	639	137	2.16	2.04
MAX	1.8	1.3	2.8	4.6	193	364	290	967	1010	401	2.6	2.4
MIN	.41	.63	.92	.92	2.4	26	56	98	68	2.0	1.7	1.8
AC-FT	63	57	96	115	1950	5540	6200	29420	38050	8430	133	121
CAL YR 1977	TOTAL	467.31	MEAN	1.28	MAX	2.8	MIN	.41	AC-FT	927		
WTR YR 1978	TOTAL	45461.60	MEAN	125	MAX	1010	MIN	.41	AC-FT	90170		

## SAN JOAQUIN RIVER BASIN

11299000 MELONES LAKE NEAR SONORA, CA

LOCATION.--Lat 37°57'12", long 120°30'49", in NW¼SE¼ sec.11, T.1 N., R.13 E., Tuolumne County, at gate tower near left bank at Melones Dam on Stanislaus River, 0.1 mi (0.2 km) downstream from Bear Creek, and 7.5 mi (12.1 km) southwest of Sonora.

DRAINAGE AREA.--904 mi<sup>2</sup> (2,341 km<sup>2</sup>).

PERIOD OF RECORD.--1926 (year-end content only, published in WSP 1315-A), June 1927 to current year. Prior to October 1970, published as Melones Reservoir at Melones Dam.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.). Prior to Feb. 28, 1961, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by concrete overflow dam; storage began Aug. 21, 1926. Dam completed in December 1926. Usable capacity for irrigation, 109,980 acre-ft (136 hm<sup>3</sup>) between elevations 610.0 ft (185.93 m) floor of outlet tunnel, and 735.0 ft (224.03 m), top of drum-type spillway gates. Dead storage, 2,630 acre-ft (3.24 hm<sup>3</sup>). Released water flows down Stanislaus River to Tulloch Reservoir (station 11299995). Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River basin. Storage held low during construction of the New Melones Dam.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 115,800 acre-ft (143 hm<sup>3</sup>) May 27, 1951, elevation, 736.7 ft (224.55 m); minimum, 2,995 acre-ft (3.69 hm<sup>3</sup>) Aug. 8 to Dec. 29, 1977, elevation, 612.2 ft (186.60 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 113,905 acre-ft (140 hm<sup>3</sup>) July 2, elevation, 735.7 ft (224.24 m); minimum, 2,995 acre-ft (3.69 hm<sup>3</sup>) Oct. 1 to Dec. 29, elevation, 612.2 ft (186.60 m).

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

610	2630	635	8750	660	21500	700	59140
615	3495	640	10680	665	25025	710	72200
620	4480	645	12905	670	28900	720	86930
625	5650	650	15450	680	37580	730	103460
630	7070	655	18340	690	47620	736.7	115800

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2995	2995	2995	10275	78550	63714	54880	70240	96493	113585	90060	27548
2	2995	2995	2995	10680	76384	64351	54410	71500	96660	113905	89591	26230
3	2995	2995	2995	14648	73491	66309	53139	73779	96660	113720	86629	24856
4	2995	2995	2995	15789	70660	70660	51987	76882	96660	112980	84206	23566
5	2995	2995	2995	17160	68320	84221	50284	79760	96880	112610	81834	22492
6	2995	2995	2995	18520	67915	89434	49944	80940	97170	112795	79406	23246
7	2995	2995	2995	19252	69960	89591	49278	82132	98360	113720	76982	23672
8	2995	2995	2995	20190	70800	88349	47951	83920	98530	113720	74640	24042
9	2995	2995	2995	20845	76676	86629	46443	86930	99550	113350	72186	23971
10	2995	2995	2995	22458	78875	84372	45168	90548	100400	113535	69792	23495
11	2995	2995	2995	34158	79170	82137	44648	93148	101930	112980	67308	24262
12	2995	2995	2995	37956	78875	80303	44648	93980	105280	112610	64873	25821
13	2995	2995	2995	40430	79760	77406	44856	94650	110028	112425	62923	27380
14	2995	2995	2995	43000	79318	74496	44960	95655	113720	111820	60665	28983
15	2995	2995	2995	47192	78138	71500	45376	95488	113535	111685	58545	30560
16	2995	2995	2995	53833	76968	68320	46764	93645	109662	111500	56408	31997
17	2995	2995	2995	64482	76238	65656	46764	93148	107466	110760	54645	33461
18	2995	2995	2995	68860	74927	63337	46443	93148	106190	110760	52562	34959
19	2995	2995	2995	73205	73922	60848	46015	93478	106372	110028	50398	36397
20	2995	2995	2995	76092	72918	58783	45801	93813	108015	108564	48283	37956
21	2995	2995	2995	77844	72200	56879	45480	94315	110211	106736	46336	39460
22	2995	2995	2995	79760	71080	56290	44752	95320	112610	104916	46229	41012
23	2995	2995	2995	82281	70240	54998	43816	95990	113350	103290	42300	42600
24	2995	2995	2995	84071	69130	53602	43400	94483	113350	104006	40236	44128
25	2995	2995	2995	84974	68165	51873	53255	93310	112980	102270	38180	47213
26	2995	2995	2995	84823	66970	50511	58783	92823	112425	100400	36124	48758
27	2995	2995	2995	83920	65917	49498	62205	92985	112055	98700	34176	48758
28	2995	2995	2995	83026	64747	48836	65395	94148	112795	96493	33009	50398
29	2995	2995	2995	82132	---	48615	67375	95320	112795	94483	31760	51987
30	2995	2995	8462	81238	---	49278	69265	95990	112980	92335	30402	53578
31	2995	---	9680	79908	---	54064	---	96325	---	90223	29000	---
MAX	2995	2995	9680	84974	79760	89591	69265	96325	113720	113905	90060	53578
MIN	2995	2995	2995	10275	64747	48615	43400	70240	96493	90223	29000	22492
†	612.2	612.2	637.5	715.3	704.5	695.7	707.9	725.8	735.2	722.1	670.1	695.2
‡	0	0	+6685	+70228	-15161	-10683	+15201	+27060	+16655	-22757	-61223	+24578

CAL YR 1977 ‡ +6222  
WTR YR 1978 ‡ +50583

† Elevation, in feet NGVD, at end of month.  
‡ Change in contents, in acre-feet.

## 11299995 TULLOCH RESERVOIR NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°52'34", long 120°36'12", in Rancheria Del Rio Estanislao Grant, T.1 S., R.12 E., Tuolumne County, in center of dam on Stanislaus River, 1.9 mi (3.1 km) upstream from Goodwin Dam, and 5.3 mi (8.5 km) northeast of Knights Ferry.

DRAINAGE AREA.--980 mi<sup>2</sup> (2,538 km<sup>2</sup>).

PERIOD OF RECORD.--November 1957 to current year.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Oakdale and South San Joaquin Irrigation Districts).

REMARKS.--Reservoir is formed by gravity-type concrete dam completed in October 1957. Usable capacity, 56,840 acre-ft (70.1 hm<sup>3</sup>) between elevations 431.0 ft (131.37 m) normal minimum water surface, and 511.0 ft (155.75 m) top of radial gates. Dead storage, 11,560 acre-ft (14.3 hm<sup>3</sup>). Reservoir is used for irrigation and power. Water passes down Stanislaus River, some first passing through Tulloch powerplant at dam. Part of flow is diverted at Goodwin Dam to Oakdale Canal (station 11301000) and South San Joaquin Canal (station 11300500). Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 69,500 acre-ft (85.7 hm<sup>3</sup>) Jan. 7, 1965, elevation, 512.0 ft (156.06 m); minimum, 4,580 acre-ft (5.65 hm<sup>3</sup>) Oct. 3, 1960, elevation, 404.0 ft (123.14 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 67,100 acre-ft (82.7 hm<sup>3</sup>) on several days in June to August, elevation, 510.1 ft (155.48 m); minimum, 11,000 acre-ft (13.6 hm<sup>3</sup>) Oct. 1, elevation, 429.7 ft (130.97 m).

## Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

404	4580	460	23600
411	6020	475	33100
420	8200	490	45300
430	11100	512	69500
445	16400		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11000	14800	17800	34900	27900	56000	54700	42400	44800	67100	65100	66200
2	11100	14900	18000	34900	28600	56700	54800	41700	45400	67100	63800	66300
3	11300	15000	18500	35100	29800	57000	54800	40700	45800	66800	63400	66300
4	11500	14800	18100	35100	31100	59500	54800	39200	46100	66800	63800	66300
5	11600	14900	18200	36200	32500	62600	54700	37600	47300	67000	64100	66300
6	11600	14900	18300	36700	34200	62400	55000	37900	49900	66700	64500	66200
7	11800	15000	18300	36800	37100	61700	54800	40100	53100	66700	64900	66500
8	12000	15100	18400	36800	39100	60800	54900	42400	58400	66800	65200	66100
9	12100	15200	18500	37600	42800	59900	55100	44800	62300	66800	65600	66000
10	12300	15300	18600	38200	44700	59300	55000	47000	65200	67000	65800	66500
11	12500	15100	18700	38400	46100	58500	54700	48400	66200	67100	66100	65200
12	12600	15200	18800	38500	48100	57900	54300	46500	66600	66800	66300	63400
13	12800	15300	18600	38800	50200	57400	53800	43600	66800	66800	66600	61800
14	13000	15400	18800	40900	51600	57300	52500	39600	66800	66800	66800	60300
15	13200	15400	19000	42300	52900	57300	51700	35100	67000	67000	67000	58700
16	13300	15500	19600	41800	53500	57300	51100	33900	66500	67000	67000	57300
17	13500	15300	20500	40300	53600	57200	50300	34300	66500	67000	67000	55700
18	13700	15400	22700	41500	53600	56900	49600	34400	66700	66600	67000	54100
19	13800	15500	24400	41500	53600	56700	49000	34200	66000	66300	67000	52600
20	13700	15600	25300	39800	53400	56600	48600	34000	66500	66300	67000	51000
21	13700	15600	25900	36900	53400	56700	48100	33900	66700	66600	66800	49200
22	13900	15800	26500	34600	53800	56800	47600	33100	66700	66700	66800	47500
23	14100	16200	27300	32500	54100	56800	47200	32000	67000	67000	66700	45600
24	14200	16600	28600	30800	54400	56800	46500	32500	66800	64500	66600	43800
25	14200	16900	29800	30100	54800	56700	47300	34900	66700	64700	66600	42000
26	14300	17100	30700	29800	55000	56600	46800	36200	67100	65200	66800	40000
27	14400	17200	31400	29400	55300	56400	45800	36700	67100	65600	67100	38000
28	14500	17400	32600	28800	55700	56200	44600	37100	66800	66100	66800	36100
29	14600	17600	34100	28400	---	56000	43700	39300	67000	66300	66500	34100
30	14700	17700	34900	28100	---	56000	43200	40700	67100	66800	66300	32100
31	14800	---	34900	27900	---	54300	---	42700	---	67100	66200	---
MAX	14800	17700	34900	42300	55700	62600	55100	48400	67100	67100	67100	66500
MIN	11000	14800	17800	27900	27900	54300	43200	32000	44800	64500	63400	32100
†	440.8	448.1	477.5	467.4	500.4	499.1	487.6	487.1	510.1	510.1	509.4	473.7
‡	+4000	+2900	+17200	-7000	+27800	-1400	-11100	-500	+24400	0	-900	-34100

CAL YR 1977 +18700  
WTR YR 1978 +21300

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

## 11299997 STANISLAUS RIVER BELOW TULLOCH POWERPLANT, NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°52'34", long 120°36'15", in Rancheria del Rio Estanislao Grant, T.1 S., R.12 E., on Calaveras-Tuolumne County line, temperature recorder in south corner of Tulloch powerplant at downstream side of Tulloch Dam, 5.2 mi (8.4 km) northeast of Knights Ferry.

DRAINAGE AREA.--980 mi<sup>2</sup> (2,538 km<sup>2</sup>).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: June 1972 to current year.

INSTRUMENTATION.--Temperature recorder since June 1972.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 27.5°C Aug. 30, 1977; minimum recorded, 5.0°C Jan. 13, 1973.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 22.5°C Oct. 1-4; minimum recorded, 9.0°C on several days during February to March.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	22.5	21.5	20.0	19.0	14.5	14.0	11.5	11.0	10.0	10.0	9.0	9.0
2	22.5	21.5	19.5	18.5	14.5	14.0	11.0	10.5	10.0	9.5	9.0	9.0
3	22.5	21.5	19.5	18.5	14.5	14.0	11.0	10.5	10.0	9.5	9.5	9.0
4	22.5	21.0	19.0	18.5	14.0	13.5	11.0	10.5	9.5	9.5	9.5	9.0
5	22.0	20.5	19.0	18.5	14.0	13.5	11.0	10.5	9.5	9.0	9.5	9.5
6	21.0	20.5	18.5	18.0	14.0	13.5	11.0	10.5	10.0	9.5	9.5	9.5
7	21.0	20.5	18.0	18.0	13.5	13.5	11.5	11.0	9.5	9.5	10.0	9.5
8	21.5	20.5	18.0	17.5	13.5	13.0	11.0	11.0	10.0	9.5	10.0	9.5
9	21.5	20.5	18.0	17.5	13.5	13.0	11.5	11.0	10.0	9.5	10.0	9.5
10	21.5	20.5	17.5	17.0	13.5	13.0	12.0	11.0	10.0	9.5	10.0	9.5
11	21.5	20.5	17.5	17.0	13.0	12.5	11.5	11.5	10.0	9.5	10.0	9.5
12	21.5	20.5	17.5	17.0	13.5	12.5	11.5	11.0	10.0	9.5	10.0	9.5
13	21.5	20.5	17.5	17.0	13.0	12.5	12.0	11.0	10.0	9.5	10.0	9.5
14	21.5	20.5	17.0	16.5	12.5	12.5	11.5	11.0	10.0	9.5	10.0	9.5
15	21.0	20.5	17.0	16.5	13.0	12.5	11.5	11.0	9.5	9.5	10.0	9.5
16	21.0	20.5	17.0	16.0	12.5	12.5	11.5	11.0	9.5	9.5	10.0	9.5
17	21.0	20.0	16.5	16.0	12.5	12.5	12.0	11.0	9.5	9.5	10.0	9.5
18	21.0	20.0	16.5	16.0	12.5	12.0	12.0	10.5	9.5	9.0	10.0	10.0
19	21.0	20.0	16.0	15.5	12.0	11.5	11.0	11.0	9.5	9.0	10.0	10.0
20	20.5	20.0	15.5	15.0	11.5	11.5	11.0	11.0	9.5	9.0	10.5	10.0
21	20.5	20.0	15.0	14.5	11.5	11.0	11.0	11.0	9.0	9.0	10.5	10.0
22	20.5	19.5	15.0	14.5	11.5	11.0	11.5	11.0	9.0	9.0	10.5	10.0
23	20.5	19.5	15.0	14.5	11.5	11.0	11.5	11.0	9.0	9.0	10.5	10.0
24	20.5	20.0	15.5	14.5	11.5	11.0	11.5	11.0	9.0	9.0	10.5	10.0
25	21.0	20.0	15.0	14.5	11.5	11.5	11.5	11.0	9.0	9.0	10.5	10.5
26	21.0	20.0	15.0	14.5	12.0	11.0	11.5	11.0	9.0	9.0	10.5	10.5
27	20.5	20.0	15.0	14.5	12.0	11.0	11.0	11.0	9.0	9.0	10.5	10.5
28	20.0	19.5	15.0	14.5	12.0	11.0	11.0	10.5	9.0	9.0	10.5	10.5
29	20.0	19.5	15.0	14.0	12.0	11.5	10.5	10.5	---	---	11.0	10.5
30	20.0	19.0	14.5	14.0	12.0	11.5	10.5	10.0	---	---	11.0	10.5
31	20.0	19.0	---	---	12.0	11.5	10.5	10.0	---	---	11.0	10.5
MONTH	22.5	19.0	20.0	14.0	14.5	11.0	12.0	10.0	10.0	9.0	11.0	9.0

11299997 STANISLAUS RIVER BELOW TULLOCH POWERPLANT, NEAR KNIGHTS FERRY, CA--Continued

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.0	10.5	11.0	10.5	14.0	13.5	15.0	15.0	17.0	17.0	19.0	19.0
2	11.0	10.5	11.0	11.0	14.0	13.5	15.0	15.0	17.0	17.0	19.0	19.0
3	11.0	10.0	11.0	11.0	14.0	14.0	15.0	15.0	17.0	17.0	19.0	19.0
4	11.0	11.0	11.0	11.0	14.0	14.0	15.0	15.0	17.5	17.0	19.0	19.0
5	11.0	10.5	11.5	11.0	14.0	14.0	15.0	15.0	17.5	17.5	19.0	19.0
6	11.0	10.0	11.5	11.5	14.0	14.0	15.5	15.0	17.5	17.5	19.0	19.0
7	10.5	10.5	12.0	11.5	14.5	14.0	15.5	15.5	17.5	17.5	19.0	19.0
8	10.5	10.0	12.0	11.5	14.5	14.0	15.5	15.5	17.5	17.5	19.0	19.0
9	11.0	10.0	12.0	11.5	14.5	14.5	15.5	15.5	17.5	17.5	19.0	19.0
10	11.0	10.5	12.0	11.5	14.5	14.5	15.5	15.5	17.5	17.5	19.0	19.0
11	11.0	10.0	12.0	11.5	14.5	14.5	16.0	15.5	17.5	17.5	19.0	18.5
12	10.5	10.5	12.5	11.5	14.5	14.5	16.0	16.0	17.5	17.5	19.0	18.5
13	11.0	9.5	13.0	12.5	14.5	14.5	16.0	16.0	18.0	17.5	19.0	18.5
14	10.5	10.5	13.5	13.0	14.5	14.5	16.0	16.0	18.0	18.0	19.0	18.5
15	10.5	10.5	13.5	13.5	14.5	14.0	16.5	16.0	18.0	18.0	19.0	18.5
16	11.0	10.5	14.0	13.5	14.5	14.0	16.5	16.5	18.0	18.0	19.0	18.5
17	11.0	10.5	14.0	13.5	14.5	14.5	16.5	16.5	18.0	18.0	19.0	18.5
18	11.0	10.5	13.5	13.0	15.0	14.5	16.5	16.5	18.0	18.0	19.0	19.0
19	11.0	10.5	13.5	13.0	15.0	15.0	16.5	16.5	18.0	18.0	19.0	19.0
20	11.0	10.5	13.0	12.5	15.0	15.0	16.5	16.5	18.5	18.0	19.0	19.0
21	11.0	10.5	13.5	13.0	15.0	15.0	16.5	16.5	18.5	18.5	19.0	19.0
22	10.5	10.5	13.5	13.0	15.0	14.5	16.5	16.5	18.5	18.5	19.0	19.0
23	11.0	10.5	13.5	13.0	15.0	14.5	16.5	16.5	18.5	18.5	19.0	19.0
24	11.0	10.5	13.5	13.0	15.0	14.5	17.0	16.5	18.5	18.5	19.0	19.0
25	11.0	10.5	13.5	13.0	15.0	15.0	17.0	17.0	18.5	18.5	19.5	19.0
26	11.0	10.5	13.5	13.0	15.0	15.0	17.0	17.0	18.5	18.5	19.5	19.0
27	11.0	10.5	13.5	13.0	15.0	15.0	17.0	17.0	18.5	18.5	19.5	19.0
28	11.0	10.5	13.0	13.0	15.0	15.0	17.0	17.0	18.5	18.5	19.5	19.5
29	11.0	10.5	13.5	13.0	15.0	15.0	17.0	17.0	18.5	18.5	19.5	19.5
30	11.0	11.0	13.5	13.0	15.0	15.0	17.0	17.0	19.0	18.5	19.5	19.5
31	---	---	13.5	13.5	---	---	17.0	17.0	19.0	18.5	---	---
MONTH	11.0	9.5	14.0	10.5	15.0	13.5	17.0	15.0	19.0	17.0	19.5	18.5

## SAN JOAQUIN RIVER BASIN

11300500 SOUTH SAN JOAQUIN CANAL NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°51'16", long 120°38'14", in Rancheria Del Rio Estanislao Grant, Tuolumne County, on left bank 0.8 mi (1.3 km) downstream from headgate at Goodwin Dam, and 3.0 mi (4.8 km) northeast of Knights Ferry.

PERIOD OF RECORD.--May 1914 to current year. 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 (101.858 m) National Geodetic Vertical Datum of 1929 (levels by Oakdale Irrigation District). Prior to Mar. 12, 1915, nonrecording gage 100 ft (30 m) downstream. Mar. 12, 1915, to July 1, 1921, nonrecording gage at present site and datum.

REMARKS.--Records good. Canal diverts from right bank of Stanislaus River at Goodwin Dam for irrigation in Oakdale and South San Joaquin Irrigation Districts. See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--64 years, 425 ft<sup>3</sup>/s (12.04 m<sup>3</sup>/s), 307,900 acre-ft/yr (380 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,320 ft<sup>3</sup>/s (37.4 m<sup>3</sup>/s) Aug. 10-17, 1978; no flow at times in each year except 1951, 1969, 1973-77.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	7.5	4.6	4.1	532	2.1	181	587	1290	1210	1280	937
2	4.3	5.9	4.6	4.1	521	79	182	481	1290	1270	1280	933
3	4.3	5.9	4.1	4.1	522	279	182	482	1280	1270	1280	938
4	4.2	7.1	4.1	4.0	523	355	183	514	1280	1260	1280	936
5	4.2	8.9	4.1	4.0	529	353	184	540	1290	1260	1280	829
6	5.6	8.4	4.4	4.0	334	357	184	540	1300	1260	1280	615
7	5.6	8.4	4.6	0	133	362	184	540	1290	1260	1280	424
8	5.2	8.4	4.4	0	95	361	184	718	1290	1220	1280	530
9	5.2	8.4	4.6	0	3.3	361	184	719	1290	1170	1290	600
10	4.9	2.8	4.6	0	3.1	361	184	884	1290	1130	1320	599
11	4.6	.50	4.6	0	3.0	361	184	948	1290	1130	1320	600
12	4.9	.40	4.6	4.0	3.2	361	184	990	1270	1130	1320	530
13	7.5	.40	5.2	4.0	3.0	193	185	1060	1270	1130	1320	432
14	8.4	.40	5.6	4.0	1.4	.20	186	1060	1280	1180	1320	397
15	8.0	.40	5.2	4.0	1.0	1.1	187	1060	1270	1190	1320	398
16	7.5	3.6	4.9	4.0	2.3	3.2	187	1120	1280	1230	1320	399
17	7.5	13	4.9	4.0	2.3	3.2	188	1160	1270	1200	1320	400
18	7.5	14	4.9	4.0	2.1	3.1	189	1220	1270	1180	1310	401
19	8.4	13	4.6	255	2.1	3.0	189	1250	1270	1220	1310	402
20	9.4	12	4.6	336	2.1	3.0	189	1250	1230	1260	1310	401
21	10	8.4	4.4	333	2.2	3.0	189	1260	1190	1280	1310	492
22	9.4	4.1	4.4	336	2.3	2.8	189	1260	1240	1280	1310	543
23	9.4	4.4	4.4	336	2.3	2.8	188	1260	1280	1280	1310	543
24	10	5.6	4.4	431	2.4	2.8	435	1250	1280	1280	1310	546
25	8.9	5.6	4.4	525	2.4	3.0	686	1250	1270	1280	1270	546
26	8.9	5.2	4.4	525	2.2	3.0	687	1240	1260	1280	1170	546
27	8.0	4.9	4.1	533	2.1	97	686	1250	1260	1280	1070	594
28	6.8	4.6	4.1	532	2.1	181	687	1270	1180	1280	1000	593
29	6.8	4.6	4.4	532	---	181	686	1270	1100	1280	1010	592
30	7.1	4.6	4.1	532	---	181	685	1280	1130	1280	1010	592
31	7.1	---	4.1	532	---	181	---	1280	---	1280	990	---
TOTAL	214.0	181.40	140.4	5790.3	3235.9	4640.30	8818	30993.	37780	38240	38780	17288
MEAN	6.90	6.05	4.53	187	116	150	294	1000	1259	1234	1251	576
MAX	10	14	5.6	533	532	362	687	1280	1300	1280	1320	938
MIN	4.2	.40	4.1	0	1.0	.20	181	481	1100	1130	990	397
AC-FT	424	360	278	11490	6420	9200	17490	61470	74940	75850	76920	34290
CAL YR 1977 TOTAL	41992.88			MEAN 115	MAX 956	MIN 0	AC-FT 83290					
WTR YR 1978 TOTAL	186101.30			MEAN 510	MAX 1320	MIN 0	AC-FT 369100					



## 11301000 OAKDALE CANAL NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°51'32", long 120°37'56", in SW¼SE¼ sec.10, T.1 S., R.12 E., Tuolumne County, on left bank 0.3 mi (0.5 km) downstream from headgate at Goodwin Dam, and 3.4 mi (5.5 km) northeast of Knights Ferry.

PERIOD OF RECORD.--May 1914 to current year. Records for water years 1933-36 incomplete, monthly and yearly estimates published in WSP 1315-A.

GAGE.--Water-stage recorder. Altitude of gage is 350 ft (107 m), from topographic map. Prior to Apr. 29, 1916, nonrecording gage at site 1,000 ft (300 m) upstream at different datum. Apr. 29, 1916, to July 3, 1925, nonrecording gage and July 4, 1925, to Apr. 3, 1949, water-stage recorder at present site at datum 0.18 ft (0.055 m) higher.

REMARKS.--Records good. Canal diverts water from left bank of Stanislaus River at Goodwin Dam 0.3 mi (0.5 km) upstream for irrigation in Oakdale Irrigation District. See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--64 years, 162 ft<sup>3</sup>/s (4.588 m<sup>3</sup>/s), 117,400 acre-ft/yr (145 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 556 ft<sup>3</sup>/s (15.7 m<sup>3</sup>/s) July 8-11, 1967; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0	0	0	0	0	.95	523	525	524	463
2	0	2.6	0	0	0	0	0	.87	524	524	524	462
3	0	4.9	0	.02	0	0	0	.78	524	524	524	465
4	0	5.9	0	.11	0	.55	0	.77	523	521	525	465
5	0	5.9	0	.47	.01	.69	0	.81	525	523	526	239
6	0	5.9	0	.35	.22	.20	.32	.87	525	525	525	100
7	1.3	5.5	0	.01	.61	0	.08	.86	524	521	525	102
8	5.2	5.5	0	0	.27	0	0	167	524	525	525	381
9	2.2	5.2	0	.52	.77	0	.01	328	525	525	526	384
10	0	5.2	0	.53	.18	0	0	342	525	523	526	384
11	0	3.0	0	.18	0	0	0	363	524	523	526	385
12	0	0	0	.07	.28	.01	0	370	523	525	526	385
13	0	0	0	.24	.39	.02	3.2	388	525	524	526	384
14	0	0	.02	1.1	.01	0	16	390	526	524	527	385
15	0	1.8	.01	.46	0	0	12	392	524	521	527	385
16	0	8.7	0	.24	0	0	3.8	397	525	528	526	386
17	0	9.4	.13	.27	0	0	3.5	418	524	524	526	386
18	0	9.8	0	.02	0	0	3.3	447	524	524	525	402
19	0	4.7	0	.07	0	0	3.3	450	523	521	526	410
20	0	0	0	0	0	0	3.3	504	523	523	527	410
21	0	0	0	0	0	0	3.3	508	524	522	525	410
22	0	0	.04	0	0	0	3.3	515	524	524	523	412
23	0	0	.09	0	0	0	3.3	527	524	524	523	411
24	0	0	0	0	0	0	7.2	524	524	523	522	412
25	0	0	0	0	0	0	18	523	524	523	524	412
26	0	0	0	0	0	0	15	523	523	523	525	411
27	0	0	.02	0	0	0	1.1	524	524	525	525	411
28	0	0	0	0	0	0	.98	525	523	525	525	412
29	0	0	.15	0	---	0	.95	525	523	523	525	412
30	0	0	0	0	---	0	.96	525	523	524	526	413
31	0	---	0	0	---	0	---	524	---	524	517	---
TOTAL	8.7	84.0	.46	4.66	2.74	1.47	102.90	10704.91	15719	16233	16272	11479
MEAN	.28	2.80	.015	.15	.098	.047	3.43	345	524	524	525	383
MAX	5.2	9.8	.15	1.1	.77	.69	18	527	526	528	527	465
MIN	0	0	0	0	0	0	0	.77	523	521	517	100
AC-FT	17	167	.9	9.2	5.4	2.9	204	21230	31180	32200	32280	22770
CAL YR 1977 TOTAL	19815.88			MEAN 54.3	MAX 366	MIN 0	AC-FT 39300					
WTR YR 1978 TOTAL	70612.84			MEAN 193	MAX 528	MIN 0	AC-FT 140100					

## SAN JOAQUIN RIVER BASIN

11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°51'06", long 120°38'13", in Rancheria Del Rio Estanislao Grant, Calaveras County, on right bank 250 ft (76 m) upstream from Owl Creek, 0.9 mi (1.4 km) downstream from Goodwin Dam, and 2.9 mi (4.7 km) north-east of Knights Ferry.

DRAINAGE AREA.--986 mi<sup>2</sup> (2,554 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1957 to current year. 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.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 252.83 ft (77.063 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by reservoirs and powerplants at Donnell, Beardsley, and Melones Lakes, Tulloch Reservoir, and several smaller reservoirs above station. South San Joaquin Canal (station 11300500) and Oakdale Canal (station 11301000) divert at Goodwin Dam 1.0 mi (1.6 km) upstream. See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--21 years, 726 ft<sup>3</sup>/s (20.56 m<sup>3</sup>/s), 526,000 acre-ft/yr (649 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,200 ft<sup>3</sup>/s (1,140 m<sup>3</sup>/s) Dec. 24, 1964, gage height, 28.85 ft (8.793 m) in gage well, 31.2 ft (9.51 m) outside, from floodmarks, from rating curve extended above 27,000 ft<sup>3</sup>/s (765 m<sup>3</sup>/s); minimum daily, 0.14 ft<sup>3</sup>/s (0.004 m<sup>3</sup>/s) on several days in 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a stage of 37.7 ft (11.49 m), from floodmarks, discharge, 62,900 ft<sup>3</sup>/s (1,780 m<sup>3</sup>/s), by computation of flow over Goodwin Dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,470 ft<sup>3</sup>/s (155 m<sup>3</sup>/s) May 25, height, 13.89 ft (4.234 m); minimum daily, 0.16 ft<sup>3</sup>/s (0.005 m<sup>3</sup>/s) Nov. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	1.2	.20	.36	900	1720	2990	3350	4390	291	3.0	2.6
2	3.2	1.1	.20	.35	886	1640	3000	3410	4490	638	3.1	2.6
3	3.4	1.3	.20	.35	888	1400	3080	3610	4500	1020	3.0	2.6
4	3.5	1.3	.20	.35	903	1330	3150	3800	4410	555	3.1	2.5
5	3.5	1.5	.20	.35	927	1360	3140	3920	4070	351	3.0	2.5
6	3.5	1.2	.20	.35	1170	2880	3170	4050	3420	318	2.7	2.6
7	3.4	1.1	.20	.35	1470	4060	3190	4070	2720	134	2.6	2.8
8	3.3	.87	.20	.35	1520	4010	3190	3750	1990	593	2.6	2.9
9	3.5	.70	.20	.35	1660	3960	3180	3510	1940	475	2.6	3.0
10	3.5	14	.20	.35	1660	3920	3160	3190	2240	430	2.9	3.1
11	3.5	32	.21	.35	1670	3880	3140	3010	2090	460	2.9	3.3
12	3.3	34	.26	.35	1700	3850	3120	2960	1220	482	3.0	3.4
13	1.6	33	.24	.35	1710	3870	3230	2940	783	341	3.0	3.5
14	1.4	32	.24	.35	1720	3760	3690	3050	1660	140	3.1	3.8
15	1.5	31	.88	.35	1730	3640	3600	3290	4000	11	2.9	3.7
16	1.5	24	.54	.35	1730	3640	3560	3630	5000	29	2.9	3.7
17	1.5	12	.87	.35	1730	3620	3490	3300	3510	118	2.9	3.8
18	1.4	12	.97	.35	1730	3620	3420	2680	2470	113	2.9	4.1
19	1.4	12	.60	.35	1720	3600	3340	2750	2020	31	2.8	4.6
20	1.4	12	.44	.35	1720	3450	3290	3090	461	2.3	2.8	4.6
21	1.4	8.8	.29	1100	1720	3320	3230	3510	301	2.3	2.8	4.6
22	1.3	1.7	.33	1100	1720	3320	3180	3760	363	2.3	2.8	4.8
23	1.2	.70	.79	1100	1720	3320	3130	4840	1020	2.3	2.8	4.8
24	1.1	.32	.56	470	1720	3320	3040	4890	1580	2.3	2.8	5.0
25	1.0	.23	.39	310	1720	3310	3190	4620	1510	2.3	2.8	5.0
26	1.1	.18	.32	465	1720	3310	3430	3270	1000	2.4	3.3	4.8
27	1.0	.16	.49	1060	1720	3190	3420	2790	994	2.7	3.0	5.0
28	1.1	.18	.51	950	1720	3080	3460	2760	683	2.8	2.7	5.0
29	1.2	.20	.54	900	---	3070	3290	3160	296	2.7	2.7	5.0
30	1.2	.20	.43	900	---	3050	3070	4610	228	2.5	2.9	4.9
31	1.3	---	.41	900	---	3030	---	4660	---	2.5	2.9	---
TOTAL	65.3	270.94	12.31	9262.01	42904	98530	97570	110230	65359	6559.4	89.3	114.6
MEAN	2.11	9.03	.40	299	1532	3178	3252	3556	2179	212	2.88	3.82
MAX	3.5	34	.97	1100	1730	4060	3690	4890	5000	1020	3.3	5.0
MIN	1.0	.16	.20	.35	886	1330	2990	2680	228	2.3	2.6	2.5
AC-FT	130	537	24	18370	85100	195400	193500	218600	129600	13010	177	227

CAL YR 1977 TOTAL 1971.85 MEAN 5 MAX 34 MIN .16 AC-FT 3910  
WTR YR 1978 TOTAL 430966.86 MEAN 1181 MAX 5000 MIN .16 AC-FT 854800

11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: February 1966 to current year.

INSTRUMENTATION.--Temperature recorder since February 1966.

REMARKS.--Temperature recorder located 2300 ft (701 m) upstream from gaging station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 30.5°C July 25, 1974; minimum recorded, 5.5°C Feb. 3, 1972.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 27.5°C on Aug. 9; minimum recorded, 8.0°C on Dec. 19, 20.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	23.0	19.0	18.0	14.5	15.5	12.0	10.5	9.0	10.0	10.0	9.5	9.0
2	23.0	19.0	18.5	14.0	15.5	12.0	11.0	10.0	10.0	9.0	9.5	9.0
3	22.5	19.0	18.0	14.5	15.0	11.5	11.0	10.0	10.0	9.5	10.0	9.0
4	22.5	18.5	18.0	13.5	15.0	12.0	12.0	10.5	9.5	9.0	10.0	9.5
5	22.0	18.5	18.5	14.5	14.0	12.0	12.0	10.5	9.5	9.0	10.0	9.5
6	21.0	18.0	18.0	14.0	14.0	11.0	12.0	10.0	10.0	9.0	11.0	10.0
7	21.0	17.5	17.0	14.5	13.5	11.5	11.5	10.0	9.5	9.5	11.5	10.5
8	21.0	17.5	17.0	14.0	13.5	11.5	11.5	10.0	10.0	9.5	11.0	10.5
9	21.0	17.5	16.0	13.0	13.0	10.0	12.0	10.0	9.5	9.5	11.0	10.5
10	21.0	17.5	16.0	13.5	13.0	10.0	12.0	10.5	10.0	9.5	11.0	10.5
11	21.0	17.5	17.0	14.5	12.0	10.0	12.0	10.0	10.0	9.5	11.0	10.5
12	21.0	18.0	17.0	15.0	13.5	10.0	11.5	9.5	9.5	9.5	11.0	10.5
13	21.0	17.5	16.5	15.0	13.0	11.0	11.5	10.0	10.0	9.5	11.0	10.5
14	21.5	17.0	16.5	15.0	12.0	10.5	11.5	10.5	10.0	9.0	11.5	10.0
15	20.5	17.5	16.5	15.0	14.5	11.5	11.0	9.5	9.5	9.0	11.0	10.5
16	20.0	17.0	16.5	15.0	13.0	11.0	11.5	10.0	9.0	9.0	11.5	10.0
17	21.0	17.0	16.0	15.0	13.0	11.5	12.0	10.5	9.5	9.0	11.0	9.0
18	20.5	17.5	16.0	14.5	12.5	10.0	12.0	9.5	9.5	9.0	10.5	9.5
19	20.0	17.0	15.5	13.0	11.5	8.0	10.0	9.5	9.5	9.0	11.0	9.5
20	19.5	17.0	14.5	11.0	10.0	8.0	10.5	10.0	9.5	8.5	12.0	10.0
21	19.0	16.5	14.5	13.0	11.5	9.0	10.5	10.0	9.0	8.5	11.5	11.0
22	20.0	15.5	15.0	13.0	12.0	10.0	10.5	10.5	9.0	8.5	12.5	11.0
23	19.0	16.0	15.5	12.5	14.0	11.0	11.0	10.0	9.0	8.5	12.5	11.5
24	20.5	16.5	16.0	12.5	13.0	11.0	10.5	10.0	9.0	8.5	12.5	11.0
25	21.0	17.0	17.0	12.5	12.5	11.0	10.5	10.0	9.0	8.5	11.5	10.0
26	20.5	18.5	17.5	12.0	12.5	11.0	11.0	10.5	9.5	9.0	11.0	9.0
27	18.5	16.5	17.0	13.5	13.5	11.5	11.0	10.5	9.5	9.0	11.0	9.0
28	17.5	15.5	15.5	13.5	15.0	12.5	10.5	10.5	9.5	9.0	---	---
29	19.0	15.5	17.0	12.5	14.5	13.5	10.5	10.0	---	---	---	---
30	19.0	15.5	15.5	12.5	14.0	12.0	10.5	10.0	---	---	---	---
31	18.5	14.5	---	---	12.0	10.0	10.0	10.0	---	---	---	---
MONTH	23.0	14.5	18.5	11.0	15.5	8.0	12.0	9.0	10.0	8.5	12.5	9.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	11.5	10.0	15.0	14.0	16.0	14.5	27.0	21.5	24.5	20.0
2	---	---	12.0	10.5	15.0	14.0	16.5	14.5	26.5	21.0	25.0	20.0
3	---	---	12.5	11.5	15.0	13.5	17.0	15.5	26.5	20.5	25.0	20.5
4	---	---	12.5	11.0	15.0	14.0	17.0	16.0	27.0	21.5	23.0	20.0
5	---	---	11.5	10.5	15.5	13.5	17.0	15.5	26.5	21.0	22.0	20.5
6	---	---	11.5	10.5	16.0	14.0	16.5	15.0	26.5	23.0	23.0	20.0
7	---	---	12.0	11.0	15.5	14.0	20.5	15.5	27.0	22.5	23.5	19.5
8	---	---	11.5	11.0	16.0	14.0	17.0	15.5	27.0	23.0	23.5	19.0
9	---	---	12.0	11.0	16.0	13.5	17.0	15.5	27.5	23.0	21.5	19.5
10	---	---	12.0	11.0	16.0	13.5	17.0	15.5	27.0	22.0	23.0	19.0
11	---	---	12.0	11.0	16.5	14.5	16.5	16.0	26.0	20.5	23.0	19.0
12	---	---	12.5	11.5	16.5	14.0	17.0	16.0	25.5	20.0	23.5	19.0
13	---	---	13.5	12.0	16.5	14.0	17.5	16.0	25.0	20.0	22.5	19.5
14	---	---	14.0	12.0	16.0	13.5	18.5	16.0	25.0	20.0	23.0	19.0
15	10.5	9.5	13.5	12.5	16.5	15.0	23.0	16.5	25.0	20.5	23.5	20.0
16	10.5	9.5	15.0	13.5	16.5	15.0	24.0	17.0	25.0	20.0	24.5	20.0
17	11.5	10.0	14.5	13.5	16.5	15.0	17.5	16.0	24.5	19.5	24.0	20.0
18	11.5	10.0	14.5	13.5	16.5	15.0	18.5	16.5	24.5	19.5	22.0	18.5
19	12.0	10.0	14.5	13.5	17.5	16.0	22.5	16.5	24.5	20.0	22.0	18.0
20	11.5	10.5	14.0	13.0	17.0	15.0	25.0	19.0	24.5	20.0	21.5	17.5
21	12.0	10.0	14.0	13.0	16.5	14.0	25.5	20.0	24.5	20.0	21.5	18.0
22	11.5	10.0	14.0	13.5	16.0	15.0	26.0	21.0	24.0	19.0	22.0	18.0
23	11.5	10.5	13.5	12.5	16.5	14.0	25.5	21.0	23.5	19.5	22.5	18.5
24	11.5	10.5	14.0	12.5	16.5	15.5	27.0	21.5	23.5	19.5	23.0	19.0
25	10.5	10.0	13.5	13.0	17.0	16.0	25.0	22.0	24.0	19.5	23.5	19.0
26	11.5	10.5	13.5	13.0	17.0	15.5	25.5	21.0	23.5	19.5	23.0	19.5
27	12.0	11.0	13.5	12.5	16.0	15.5	26.0	20.5	24.0	19.0	23.0	19.5
28	12.0	11.0	13.5	11.5	16.0	15.5	26.0	21.0	24.5	20.0	23.0	19.5
29	11.5	11.0	14.0	11.5	16.0	14.5	26.0	21.0	25.0	20.5	22.5	19.0
30	11.5	10.5	15.0	13.5	16.0	14.0	26.0	20.5	24.5	20.0	23.5	19.5
31	---	---	14.5	13.5	---	---	26.0	21.5	24.0	20.0	---	---
MONTH	---	---	15.0	10.0	17.5	13.5	27.0	14.5	27.5	19.0	25.0	17.5

## SAN JOAQUIN RIVER BASIN

11303000 STANISLAUS RIVER AT RIPON, CA

LOCATION.--Lat 37°43'47", long 121°06'34", in NW¼SE¼ sec.29, T.2 S., R.8 E., Stanislaus County, on left bank 15 ft (5 m) downstream from railroad bridge, 1.1 mi (1.8 km) southeast of Ripon, and 15 mi (24 km) upstream from mouth.

DRAINAGE AREA.--1,075 mi<sup>2</sup> (2,784 km<sup>2</sup>).

PERIOD OF RECORD.--October 1940 to current year. April to September 1940 in reports of California Department of Water Resources.

GAGE.--Water-stage recorder. Datum of gage is 0.72 ft (0.219 m) National Geodetic Vertical Datum of 1929. October 1940 to Nov. 17, 1953, at site 100 ft (30 m) upstream at same datum.

REMARKS.--Records good. Flow regulated by reservoirs and powerplants above station (see REMARKS for station 11302000). South San Joaquin and Oakdale Canals (stations 11300500, 11301000) divert at Goodwin Dam 34 mi (55 km) upstream. Diversions for irrigation of 57,250 acres (232 km<sup>2</sup>) in vicinity of Oakdale area. See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--38 years, 1,006 ft<sup>3</sup>/s (28.49 m<sup>3</sup>/s), 728,800 acre-ft/yr (899 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,500 ft<sup>3</sup>/s (1,770 m<sup>3</sup>/s) Dec. 24, 1955, gage height, 63.25 ft (19.279 m); minimum daily, 0.11 ft<sup>3</sup>/s (0.003 m<sup>3</sup>/s) Aug. 4-6, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 12, 1938, reached a stage of 64.4 ft (19.63 m) from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,840 ft<sup>3</sup>/s (137 m<sup>3</sup>/s) May 26, gage height, 52.79 ft (16.090 m); minimum daily, 4.2 ft<sup>3</sup>/s (0.12 m<sup>3</sup>/s) Oct. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	9.5	23	28	934	1750	3000	3210	4420	715	199	202
2	4.6	10	23	29	936	1830	2940	3270	4340	736	180	183
3	4.4	10	23	29	949	1880	2920	3450	4330	974	159	232
4	4.4	9.5	22	31	970	1730	2960	3520	4410	1260	156	284
5	4.8	11	21	33	995	1960	3030	3700	4380	1040	169	240
6	4.2	12	21	37	1040	2030	3150	3810	4170	762	223	332
7	4.4	14	21	48	1200	2400	3380	3940	3600	695	191	357
8	4.6	15	21	88	1750	3460	3350	3990	3030	578	153	357
9	4.8	15	21	91	1820	3660	3180	3830	2450	817	171	323
10	5.3	15	21	76	2210	3660	3180	3590	2350	810	136	326
11	5.1	13	22	69	1880	3680	3160	3370	2530	740	156	356
12	5.9	12	22	86	1730	3670	3130	3190	2390	763	145	302
13	7.4	13	23	97	1800	3680	3080	3070	1770	746	161	178
14	12	14	23	94	1960	3650	3130	3060	1460	673	187	145
15	10	20	25	184	1790	3610	3480	3110	1970	534	157	137
16	8.7	25	25	561	1740	3460	3520	3240	3390	447	144	129
17	8.0	27	30	426	1720	3420	3540	3490	4240	392	124	149
18	6.4	28	30	367	1720	3410	3470	3340	3970	366	160	193
19	5.9	28	32	381	1720	3400	3400	2940	2910	378	155	197
20	4.8	28	32	1080	1710	3400	3320	2880	2380	366	203	146
21	4.4	27	29	1150	1710	3340	3250	3090	1310	300	220	178
22	5.3	28	29	1080	1720	3230	3200	3370	972	283	210	183
23	7.4	28	29	1090	1730	3190	3150	3620	925	251	204	231
24	6.4	30	30	963	1750	3180	3140	4250	1340	242	223	287
25	6.7	31	32	609	1740	3170	3160	4650	1820	239	259	268
26	8.0	34	32	496	1740	3170	3470	4730	1800	202	251	190
27	7.0	29	30	497	1750	3160	3650	3890	1480	179	231	160
28	7.0	25	30	808	1740	3100	3520	3180	1410	183	256	149
29	8.0	24	30	908	---	2990	3500	3020	1150	189	267	189
30	7.7	24	26	929	---	2970	3380	3140	828	202	237	187
31	8.0	---	27	933	---	2990	---	4000	---	212	237	---
TOTAL	196.4	609.0	805	13298	44454	94230	97740	108940	77525	16274	5924	6790
MEAN	6.34	20.3	26.0	429	1588	3040	3258	3514	2584	525	191	226
MAX	12	34	32	1150	2210	3680	3650	4730	4420	1260	267	357
MIN	4.2	9.5	21	28	934	1730	2920	2880	828	179	124	129
AC-FT	390	1210	1600	26380	88170	186900	193900	216100	153800	32280	11750	13470
CAL YR 1977 TOTAL	11022.75		MEAN	30	MAX	92	MIN	.11	AC-FT	21860		
WTR YR 1978 TOTAL	466785.40		MEAN	1279	MAX	4730	MIN	4.2	AC-FT	925900		

## SAN JOAQUIN RIVER BASIN

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11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA  
(National stream-quality accounting network station)

LOCATION.--Lat 37°40'34", long 121°15'55", in El Pescadero Grant, San Joaquin County, on left bank 12 ft (4 m) downstream from Durham Ferry highway bridge, 2.6 mi (4.2 km) downstream from Stanislaus River, and 3.2 mi (5.1 km) northeast of Vernalis.

DRAINAGE AREA.--13,536 mi<sup>2</sup> (35,058 km<sup>2</sup>) (includes about 2,100 mi<sup>2</sup> (5,440 km<sup>2</sup>) in James Bypass).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1922 to current year (1922-23 and 1925-29, low-water records only).

REVISED RECORDS.--WSP 831: 1936. WSP 931: 1940. WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. See WSP 2130 for history of changes prior to Nov. 30, 1967.

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.

AVERAGE DISCHARGE.--50 years (water years 1924, 1930-78), 4,326 ft<sup>3</sup>/s (122.5 m<sup>3</sup>/s), 3,134,000 acre-ft/yr (3.86 km<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge recorded, 79,000 ft<sup>3</sup>/s (2,240 m<sup>3</sup>/s) Dec. 9, 1950, elevation, 32.81 ft (10.000 m) present datum, including flow through breaks in levee; maximum elevation, 34.55 ft (10.531 m) Jan. 27, 1969; minimum discharge, 19 ft<sup>3</sup>/s (0.54 m<sup>3</sup>/s) Aug. 10, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26,400 ft<sup>3</sup>/s (748 m<sup>3</sup>/s) May 4, elevation, 28.12 ft (8.571 m); minimum daily, 218 ft<sup>3</sup>/s (6.17 m<sup>3</sup>/s) Oct 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	258	257	455	574	2240	5120	11800	26000	11200	2980	1340	1790
2	282	266	445	574	2210	4850	12200	26000	10700	2830	1270	1790
3	260	301	441	576	2160	4700	12700	26200	10400	2770	1340	1910
4	228	296	443	585	2120	4800	13200	26200	10100	2880	1360	2060
5	218	285	456	596	2110	5970	14100	25800	10000	2810	1340	2160
6	225	318	446	661	2180	8530	15300	25500	9930	2470	1380	2460
7	225	383	442	694	2250	9470	16400	25400	9830	2260	1410	2780
8	225	387	444	813	3150	9680	17800	25200	9500	2180	1330	2730
9	239	415	437	943	4970	10500	18600	25000	8950	2240	1260	2800
10	246	458	434	1040	6600	11900	19300	24700	8470	2230	1350	2940
11	242	485	452	1010	8090	13800	20700	23300	8250	2040	1330	2990
12	250	506	472	1280	7720	15400	22100	21700	7990	1920	1290	2930
13	250	540	448	1340	7590	16200	22800	20500	7350	1930	1280	2880
14	253	534	442	1300	8330	16300	23100	19000	6420	1880	1310	2770
15	250	522	442	1510	8980	16200	22900	17700	6090	1820	1320	2710
16	272	477	444	2540	9460	15900	22500	16800	6460	1740	1270	2800
17	253	435	470	3640	10100	15500	22000	16200	6960	1730	1290	2880
18	232	419	531	4150	11700	14900	21800	15600	7170	1640	1260	3000
19	225	421	547	4340	13100	14100	21900	15000	6620	1590	1290	2910
20	246	445	544	4520	13500	13300	22100	14900	6080	1590	1370	2820
21	253	454	576	5190	13200	12700	22400	15200	5350	1490	1520	2760
22	253	459	588	5160	12500	12200	22300	15700	4640	1500	1460	2770
23	246	497	585	4800	11500	11700	22000	15900	4390	1500	1380	2870
24	257	521	596	4290	10300	11500	21600	15900	4320	1500	1410	3070
25	232	489	581	3570	9020	11400	21100	15800	4700	1410	1470	3190
26	225	465	574	2930	7700	11500	21300	15200	4730	1360	1610	3000
27	242	467	587	2490	6500	11500	22800	14300	4430	1360	1760	2970
28	253	465	600	2340	5640	11500	23900	12900	4000	1330	1820	3060
29	260	463	591	2420	---	11500	24800	12100	3760	1340	1730	3030
30	268	461	584	2370	---	11500	25400	11600	3290	1410	1680	3080
31	264	---	581	2300	---	11600	---	11400	---	1410	1730	---
TOTAL	7632	12891	15678	70546	204920	355720	600900	592700	212080	59140	43960	81910
MEAN	246	430	506	2276	7319	11470	20030	19120	7069	1908	1418	2730
MAX	282	540	600	5190	13500	16300	25400	26200	11200	2980	1820	3190
MIN	218	257	434	574	2110	4700	11800	11400	3290	1330	1260	1790
AC-FT	15140	25570	31100	139900	406500	705600	1192000	1176000	420700	117300	87190	162500

CAL YR 1977 TOTAL 142713 MEAN 391 MAX 1170 MIN 56 AC-FT 283100  
WTR YR 1978 TOTAL 2258077 MEAN 6187 MAX 26200 MIN 218 AC-FT 4479000

## SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

## WATER-QUALITY RECORDS

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

CHEMICAL ANALYSES: Water years 1951 to current year.

BIOLOGICAL DATA: Water years 1974 to current year.

SPECIFIC CONDUCTANCE: Water years 1951-63, 1973 to current year.

WATER TEMPERATURES: Water years 1951 to current year.

SEDIMENT RECORDS: Water years 1957 to current year.

TURBIDITY: Water years 1972 to current year.

PERIOD OF DAILY RECORD.--

CHEMICAL ANALYSES: March 1951 to May 1963.

SPECIFIC CONDUCTANCE: March 1951 to May 1963, January 1973 to current year.

WATER TEMPERATURES: March 1951 to current year.

SEDIMENT RECORDS: November 1956 to current year.

INSTRUMENTATION.--Conductivity recorder since January 1973. Temperature recorder October 1961 to September 1963, and since December 1972.

REMARKS.--Mean daily specific conductance records since January 1973, furnished by Bureau of Reclamation; unpublished records are included in extremes and are available in files of district office. Where no maximum or minimum is shown, temperature is once-daily reading.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,350 micromhos Aug. 11, 1961; minimum daily, 60 micromhos June 21, 1953.

WATER TEMPERATURES: Maximum recorded 30.0°C July 7, 1970, July 30, 1977; minimum recorded, 3.0°C Jan. 24, 1962.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,590 mg/L Dec. 25, 1964; minimum daily mean, 9 mg/L Jan. 4, 1960, Nov. 18, 1961.

SEDIMENT DISCHARGE: Maximum daily, 54,100 tons (49,100 metric tons) Dec. 25, 1964; minimum daily, 2 tons (1.8 metric tons) Aug. 10, 1961.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily recorded, 1,520 micromhos Oct. 25; minimum daily recorded, 106 micromhos May 23.

WATER TEMPERATURES: Maximum recorded, 29.0°C Aug. 7-9; minimum recorded, 8.5°C Dec. 10, 20, 21, Jan. 26.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 624 mg/L Mar. 5; minimum daily mean, 28 mg/L Nov. 20.

SEDIMENT DISCHARGE: Maximum daily, 10,500 tons (9,530 metric tons) Feb. 15; minimum daily, 30 tons (27 metric tons) Oct. 19, Apr. 19, 20.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)
OCT 05...	1300	229	--	7.5	18.0	15	13.9	K100	580	--	--
NOV 02...	1330	270	1480	7.8	14.5	10	7.5	260	K46	--	--
DEC 14...	1600	448	1030	7.3	11.0	15	7.3	140	460	220	84
JAN 11...	1200	1000	570	7.7	12.0	60	7.1	710	5400	140	37
FEB 13...	1300	7600	356	7.6	10.0	75	9.2	580	1400	91	26
MAR 03...	1230	4700	686	7.6	13.0	20	8.6	4800	6400	180	100
29...	1300	11500	289	6.8	17.5	20	9.0	K60	--	75	29
MAY 02...	1430	26000	189	6.9	17.5	15	7.2	260	170	57	12
JUN 05...	1230	10000	150	--	23.0	25	8.5	210	160	39	6
JUL 06...	1200	2530	551	7.4	21.0	25	9.0	310	210	140	64
AUG 02...	1300	1260	999	7.7	25.0	45	8.5	340	320	220	100
SEP 11...	1315	2980	424	7.4	20.0	30	8.0	K1400	K58	81	2

See footnotes at end of table.

## SAN JOAQUIN RIVER BASIN

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11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
OCT 05...	--	--	--	--	--	--	--	--	--	--	--
NOV 02...	--	--	--	--	--	--	--	--	--	--	--
DEC 14...	40	30	120	53	3.5	6.0	140	100	160	.4	12
JAN 11...	31	16	64	48	2.3	6.4	110	65	85	.2	21
FEB 13...	20	10	36	45	1.6	3.9	66	48	36	.1	15
MAR 03...	39	20	87	51	2.8	4.3	75	140	110	.1	16
29...	17	7.8	29	45	1.5	1.9	46	44	34	.1	11
MAY 02...	15	4.7	16	36	.9	3.1	45	20	18	.1	13
JUN 05...	9.8	3.6	14	--	1.0	--	33	16	13	.1	12
JUL 06...	30	16	62	48	2.3	2.8	77	65	81	.1	17
AUG 02...	47	25	110	52	3.2	2.7	120	120	150	.1	5.0
SEP 11...	23	5.8	44	53	2.1	4.2	79	37	47	.1	16

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
OCT 05...	--	--	--	--	--	--	--	--	--	--	--
NOV 02...	--	--	--	1.3	--	2.3	--	--	3.6	.36	--
DEC 14...	611	553	.83	2.0	--	--	--	.82	--	.18	.06
JAN 11...	365	353	.50	1.9	--	--	--	.81	--	.57	.20
FEB 13...	220	209	.30	1.2	1.3	1.4	.00	1.9	2.6	.40	.20
MAR 03...	--	462	.18	.85	1.0	1.3	.00	1.4	2.2	.43	.26
29...	--	172	.11	.19	.68	.72	.42	.30	.91	.10	.08
MAY 02...	116	117	.16	.25	.67	.71	--	--	.96	.20	.10
JUN 05...	103	--	--	.22	.45	.50	--	--	.72	.05	.04
JUL 06...	347	320	.47	.78	.91	.94	.19	.75	1.7	.18	.07
AUG 02...	574	532	.78	1.6	1.3	1.3	.80	.50	2.9	.31	.17
SEP 11...	241	225	.33	.99	.96	1.1	.00	1.2	2.1	.31	.17

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDED TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDED RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM SUS- PENDED RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
DEC 14...	1600	3	1	2	100	0	100	1	0	1
FEB 13...	1300	--	--	2	100	0	100	--	--	--
MAY 02...	1430	3	2	1	0	0	0	--	--	--
AUG 02...	1300	4	3	1	200	200	50	4	2	2

See footnotes at end of table.

## SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, SUS- PENDED RECOVERABLE (UG/L AS CR)	CHROMIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUS- PENDED RECOVERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUS- PENDED RECOVERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)
DEC 14...	0	0	0	0	0	0	5	2	3	1500
FEB 13...	10	10	0	1	0	1	22	15	7	5900
MAY 02...	0	0	10	2	1	1	9	5	4	2200
AUG 02...	10	10	0	3	2	<1	21	17	4	3900

DATE	IRON, SUS- PENDED RECOVERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUS- PENDED RECOVERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUS- PENDED RECOVERABLE (UG/L AS MN)	MANGANESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUS- PENDED RECOVERABLE (UG/L AS HG)
DEC 14...	--	20	3	2	1	340	60	280	.3	.3
FEB 13...	--	110	--	--	0	270	200	70	--	--
MAY 02...	--	20	--	--	--	80	60	20	.0	.0
AUG 02...	3900	<10	--	--	--	330	300	30	.0	.0

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUS- PENDED TOTAL (UG/L AS SE)	SELENIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, SUS- PENDED RECOVERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)
DEC 14...	.0	0	0	0	0	50	30	20	--	--
FEB 13...	.0	--	--	0	3	70	60	10	9.7	2.2
MAY 02...	.0	0	0	0	0	20	10	10	2.6	--
AUG 02...	.2	1	0	1	0	50	50	<3	5.5	<2.5

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



11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	NOV 2,77 1330	DEC 14,77 1600	MAR 3,78 1230	MAY 2,78 1430
TOTAL CELLS/ML	15000	4800	6700	6100
DIVERSITY: DIVISION	1.6	1.5	0.9	1.0
..CLASS	1.6	1.5	0.9	1.0
..ORDER	2.1	1.7	0.9	1.4
...FAMILY	2.4	2.7	0.9	1.7
....GENUS	2.5	2.8	1.2	2.3

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...CHARACIACEAE								
...SCHROEDERIA	150	1	--	--	--	--	--	--
...COELASTRACEAE								
...COELASTRUM	--	--	310	7	--	--	--	--
...HYDRODICTYACEAE								
...PEDIASTRUM								
...MICRACTINIACEAE								
...GOLENKINIA	--	--	*	0	--	--	--	--
...MICRACTINIUM	510	3	--	--	--	--	--	--
...OOCYSTACEAE								
...ANKISTRODESMUS	460	3	710	15	170	3	91	1
...CHODATELLA	*	0	--	--	--	--	--	--
...DICTYOSPHAERIUM	--	--	120	3	--	--	120	2
...KIRCHNERIELLA	--	--	*	0	860	13	--	--
...NEPHROCYTIUM								
...OOCYSTIS	--	--	--	--	--	--	180	3
...QUADRIGULA	--	--	--	--	350	5	--	--
...SELENASTRUM	--	--	--	--	--	--	--	--
...TETRAEDRON	--	--	*	0	--	--	--	--
...TREUBARIA	--	--	--	--	--	--	--	--
...WESTELLA	--	--	--	--	--	--	120	2
...SCENEDESMACEAE								
...ACTINASTRUM	*	0	--	--	--	--	120	2
...CRUCIGENIA	--	--	--	--	--	--	--	--
...SCENEDESMUS	1400	9	310	7	--	--	490	8
...ULOTRICHALES								
...ULOTRICHACEAE								
...ULOTHRIX	--	--	--	--	--	--	--	--
...VOLVOCALES								
...CHLAMYDOMONADACEAE								
...CARTERIA	--	--	--	--	--	--	--	--
...CHLAMYDOMONAS	--	--	110	2	--	--	61	1
...VOLVOCAEEAE	--	--	--	--	--	--	--	--
...PANDORINA	--	--	--	--	--	--	--	--
...ZYGNEATALES								
...DESMIDIACEAE								
...CLOSTERIUM	--	--	--	--	--	--	--	--
CHRYSTOPHYTA								
..BACILLARIOPHYCEAE								
...CENTRALES								
...CHAETOCERACEAE								
...CHAETOCEROS	--	--	*	0	--	--	--	--
...COSCINODISCACEAE								
...CYCLOTETRA	4800#	32	290	6	170	3	3800#	62
...MELOSIRA	250	2	--	--	--	--	430	7
...PENNALES								
...FRAGILARIACEAE								
...FRAGILARIA	--	--	--	--	--	--	61	1
...SYNEORA	--	--	31	1	--	--	--	--
...GOMPHONEMATACEAE								
...GOMPHONEMA	--	--	47	1	--	--	*	0
...NAVICULACEAE								
...CALONEIS	--	--	--	--	--	--	--	--
...GYROSIGMA	--	--	--	--	--	--	--	--
...NAVICULA	300	2	47	1	--	--	61	1
...NITZSCHACEAE								
...DENTICULA	--	--	--	--	--	--	*	0
...NITZSCHIA	150	1	93	2	--	--	180	3
...SURIRELLACEAE								
...SURIRELLA	--	--	--	--	--	--	*	0
CRYPTOPHYTA (CRYPTOMONADS)								
..CRYPTOPHYCEAE								
...CRYPTOMONIDALES								
...CRYPTOMONODACEAE								
...CRYPTOMONAS	--	--	--	--	--	--	--	--

See footnotes at end of table.

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	NOV 2,77 1330		DEC 14,77 1600		MAR 3,78 1230		MAY 2,78 1430	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCOCCOCEAE								
...CHROCOCCOCEAE								
....AGMENELLUM	--	-	--	-	--	-	--	-
....ANACYSTIS	1600	10	--	-	--	-	240	4
...HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	*	0	--	-	--	-	--	-
....ANABAENOPSIS	--	-	--	-	--	-	--	-
....APHANIZOMENON	--	-	1900#	41	5200#	77	--	-
...OSCILLATORIA								
....OSCILLATORIA	5100#	34	620	13	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
....EUGLENA	200	1	31	1	--	-	--	-
....PHACUS	*	0	--	-	--	-	*	0
....TRACHELOMONAS	*	0	*	0	--	-	*	0
PYRRHOPHYTA (FIRE ALGAE)								
..DINOPHYCEAE								
...PERIDINIALES								
...PERIDINIACEAE								
....PERIDINIUM	--	-	*	0	--	-	--	-

DATE TIME	JUL 6,78 1200		AUG 2,78 1300		SEP 11,78 1315	
TOTAL CELLS/ML	71000		57000		50000	
DIVERSITY: DIVISION	1.6		1.4		1.2	
..CLASS	1.6		1.4		1.2	
...ORDER	1.9		2.0		2.2	
....FAMILY	2.6		2.6		2.5	
....GENUS	2.9		3.3		2.8	

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
...CHARACIACEAE						
...SCHROEDERIA	--	-	--	-	--	-
...COELASTRACEAE						
...COELASTRUM	--	-	--	-	--	-
...HYDRODICTYACEAE						
...PEDIASTRUM	--	-	1600	3	--	-
...MICRACTINIACEAE						
....GOLENKINIA	--	-	*	0	--	-
...MICRACTINIUM	10000	14	2400	4	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	850	1	800	1	770	2
....CHODATELLA	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	1600	3	11000#	22
....KIRCHNERIELLA	*	0	600	1	--	-
....NEPHROCYTIUM	--	-	400	1	--	-
....OOCYSTIS	--	-	400	1	--	-
....QUADRIGULA	--	-	--	-	--	-
....SELENASTRUM	850	1	--	-	390	1
....TETRAEDRON	--	-	--	-	--	-
....TREUBARIA	--	-	*	0	--	-
....WESTELLA	--	-	--	-	--	-
...SCENEDESMACEAE						
....ACTINASTRUM	--	-	--	-	--	-
....CRUCIGENIA	--	-	3600	6	--	-
....SCENEDESMUS	2700	4	1600	3	4000	8
...ULOTRICHACEAE						
...ULOTRICHACEAE						
...ULOTHRIX	--	-	--	-	15000#	31
...VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CARTERIA	*	0	--	-	--	-
....CHLAMYDOMONAS	510	1	--	-	580	1
...VOLVOCAEAE						
....PANDORINA	--	-	1600	3	--	-
...ZYGNEATALES						
...DESMIDIACEAE						
....CLOSTERIUM	--	-	*	0	--	-
CHRYSTOPHYTA						
..BACILLARIOPHYCEAE						

See footnotes at end of table.

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	JUL 6,78 1200	AUG 2,78 1300	SEP 11,78 1315
TOTAL CELLS/ML	71000	57000	50000
DIVERSITY: DIVISION	1.6	1.4	1.2
...CLASS	1.6	1.4	1.2
...ORDER	1.9	2.0	2.2
...FAMILY	2.6	2.6	2.5
...GENUS	2.9	3.3	2.8

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
..CENTRALES						
...CHAETOCERACEAE						
...CHAETOCEROS	--	-	--	-	--	-
...COSCINODISCACEAE						
....CYCLOTELLA	18000#	25	6800	12	1900	4
....MELOSIRA	2600	4	*	0	580	1
...PENNALES						
..FRAGILARIACEAE						
....FRAGILARIA	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-
...GOMPHONEMACEAE						
....GOMPHONEMA	--	-	--	-	--	-
...NAVICULACEAE						
....CALONEIS	--	-	*	0	--	-
....GYROSIGMA	--	-	--	-	*	0
....NAVICULA	--	-	--	-	*	0
...NITZSCHACEAE						
....DENTICULA	--	-	--	-	--	-
....NITZSCHIA	*	0	*	0	580	1
...SURIPELLACEAE						
....SURIPELLA	--	-	*	0	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONIDALES						
....CRYPTOMONODACEAE						
....CRYPTOMONAS	--	-	*	0	--	-

DATE TIME	JUL 6,78 1200	AUG 2,78 1300	SEP 11,78 1315			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROCCOCCALES						
...CHROCCOCCAEAE						
....AGMENELLUM	--	-	18000#	31	3100	6
....ANACYSTIS	5100	7	8800#	15	--	-
...HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	5400	8	--	-	2100	4
....ANABAENOPSIS	4100	6	3400	6	--	-
....APHANIZOMENON	--	-	--	-	8700#	18
...OSCILLATORACEAE						
....OSCILLATORIA	19000#	27	4900	9	--	-
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENACEAE						
....EUGLENA	*	0	--	-	--	-
....PHACUS	*	0	--	-	--	-
....TRACHELOMONAS	*	0	*	0	--	-
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...PERIDINIALES						
....PERIDINIACEAE						
....PERIDINIUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%  
 \* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## PERIPHYTON

DATE	LENGTH OF EXPO- SURE (DAYS)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M
DEC 14...	70	6.22	4.57

## SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1370	1470	994	887	865	750	256	---	161	596	864	594
2	1360	1400	1020	889	878	751	250	160	170	607	904	615
3	1310	1340	1050	907	891	763	244	154	158	611	797	586
4	---	1350	1050	895	882	800	224	151	152	530	741	517
5	1360	1440	1040	879	891	701	208	149	134	530	795	496
6	1380	1400	1040	834	872	380	199	147	120	604	812	475
7	1510	1330	1040	746	862	309	198	142	112	642	760	392
8	1460	1210	1040	728	789	311	206	143	139	642	808	385
9	1500	1190	1010	668	479	245	216	134	153	612	815	377
10	1430	1160	976	516	338	229	212	129	163	568	782	388
11	1450	1080	961	528	300	231	194	126	163	622	778	378
12	1400	1010	946	603	272	240	187	144	174	643	748	359
13	1420	988	981	502	318	252	197	154	202	588	781	365
14	1420	997	976	468	330	267	199	162	243	609	771	387
15	1420	997	998	489	320	277	180	165	251	648	822	402
16	1440	1010	998	424	291	279	177	162	217	675	835	396
17	1420	1080	983	390	279	297	171	160	199	648	799	379
18	1460	1130	937	---	300	312	179	158	199	718	792	338
19	1440	1120	872	---	327	325	---	149	222	759	809	330
20	1400	1080	936	341	349	329	198	136	214	703	785	348
21	1440	988	932	333	350	324	191	123	248	698	756	359
22	1470	979	880	419	360	320	190	113	317	726	753	355
23	1500	979	875	462	431	324	182	106	338	724	770	350
24	1460	981	846	517	489	321	174	110	331	759	790	329
25	1520	1000	898	673	549	303	171	114	288	817	765	329
26	1490	1000	910	776	620	295	169	129	304	854	727	370
27	1470	1000	922	872	677	290	153	136	354	844	660	392
28	1430	991	826	905	712	275	149	138	414	889	642	374
29	1390	1010	801	857	---	268	154	131	432	868	629	379
30	1380	1010	832	855	---	268	140	133	539	807	628	379
31	1420	---	863	856	---	262	---	143	---	841	631	---
MONTH	1430	1120	949	663	536	364	192	140	237	690	766	404

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT		NOV		DEC		JAN		FEB		MAR	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	DAILY		DAILY		DAILY		DAILY		DAILY		DAILY	
1	22.0	-- 17.5	17.0	-- 13.5	13.5	-- 12.0	11.5	-- 10.5	10.5	-- 9.5	13.5	-- 12.5
2	22.0	-- 17.5	17.0	-- 13.5	13.0	-- 11.0	10.5	-- 10.0	10.5	-- 9.5	13.5	-- 13.0
3	22.5	-- 18.0	17.5	-- 14.5	12.0	-- 10.5	11.0	-- 10.0	10.5	-- 10.0	13.5	-- 13.0
4	23.0	-- 18.0	16.5	-- 14.0	12.5	-- 11.0	11.0	-- 10.5	11.0	-- 10.0	13.5	-- 13.0
5	20.0	-- 16.0	16.0	-- 14.0	12.5	-- 11.5	11.0	-- 10.5	11.5	-- 10.5	13.5	-- 13.0
6	19.0	-- 15.5	15.0	-- 13.0	-- 11.5	--	12.0	-- 11.0	12.0	-- 11.0	13.5	-- 13.0
7	19.0	-- 15.5	14.5	-- 12.5	-- 11.0	--	12.5	-- 11.5	11.5	-- 11.0	14.5	-- 13.5
8	19.5	-- 15.0	14.0	-- 11.5	-- 11.0	--	11.5	-- 11.5	11.5	-- 11.0	14.5	-- 14.0
9	19.5	-- 15.5	13.5	-- 11.0	-- 9.5	--	12.0	-- 11.5	11.0	-- 11.0	14.5	-- 14.5
10	19.5	-- 15.5	13.5	-- 11.5	-- 8.5	--	12.5	-- 11.5	11.0	-- 10.5	14.5	-- 14.0
11	20.0	-- 16.0	14.5	-- 12.5	-- 9.0	--	12.5	-- 11.0	11.0	-- 10.5	14.5	-- 14.0
12	20.0	-- 16.0	15.0	-- 13.0	-- 9.5	--	12.0	-- 11.0	10.5	-- 10.0	14.5	-- 14.0
13	20.5	-- 16.0	15.0	-- 13.5	-- 9.0	--	11.5	-- 11.0	10.5	-- 10.0	14.0	-- 13.5
14	20.5	-- 16.5	14.5	-- 13.0	-- 9.0	--	11.0	-- 11.0	10.5	-- 9.5	14.0	-- 13.5
15	20.5	-- 16.5	15.0	-- 12.5	12.5	-- 11.5	11.0	-- 10.5	11.0	-- 10.0	14.0	-- 13.5
16	19.5	-- 16.5	15.0	-- 12.5	12.5	-- 11.0	11.0	-- 10.5	11.0	-- 10.5	14.5	-- 14.0
17	19.0	-- 16.0	14.5	-- 12.5	11.5	-- 10.5	11.0	-- 10.5	11.0	-- 11.0	14.5	-- 14.0
18	19.0	-- 15.0	13.5	-- 11.5	11.0	-- 10.0	11.0	-- 11.0	12.0	-- 11.0	15.0	-- 15.0
19	18.5	-- 15.0	12.0	-- 10.0	10.5	-- 9.0	11.5	-- 11.0	12.0	-- 11.5	15.5	-- 15.0
20	18.0	-- 14.5	11.0	-- 9.0	9.0	-- 8.5	11.5	-- 11.5	12.5	-- 11.5	16.0	-- 15.5
21	17.5	-- 14.5	10.0	-- 9.0	9.5	-- 8.5	11.5	-- 11.0	13.0	-- 12.0	16.0	-- 16.0
22	18.0	-- 14.5	12.0	-- 9.5	10.5	-- 9.0	11.5	-- 11.0	13.5	-- 13.0	16.0	-- 15.5
23	18.0	-- 15.0	12.5	-- 10.5	12.5	-- 11.0	11.0	-- 10.0	14.0	-- 13.5	16.5	-- 16.0
24	19.5	-- 15.5	12.5	-- 11.0	12.5	-- 11.5	10.0	-- 9.5	14.0	-- 14.0	16.5	-- 16.0
25	20.5	-- 16.5	13.5	-- 11.0	12.0	-- 11.5	9.5	-- 9.0	14.0	-- 13.5	16.5	-- 15.5
26	19.0	-- 17.0	13.5	-- 11.5	12.0	-- 11.5	9.5	-- 8.5	13.5	-- 13.0	16.5	-- 16.0
27	17.0	-- 15.5	14.0	-- 12.5	12.0	-- 12.0	9.5	-- 9.0	13.5	-- 13.0	17.0	-- 16.5
28	15.5	-- 14.5	14.5	-- 12.5	13.0	-- 12.0	10.0	-- 9.0	13.0	-- 13.0	17.5	-- 16.5
29	17.0	-- 14.0	14.0	-- 12.5	13.5	-- 13.0	10.0	-- 9.5	--	--	18.0	-- 17.0
30	17.5	-- 15.0	14.0	-- 12.5	14.0	-- 12.5	9.5	-- 9.5	--	--	17.0	-- 17.0
31	17.0	-- 14.5	--	--	13.0	-- 11.5	10.0	-- 9.5	--	--	17.0	-- 16.0
MONTH	23.0	-- 14.0	17.5	-- 9.0	14.0	-- 8.5	12.5	-- 8.5	14.0	-- 9.5	18.0	-- 12.5

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	APR			MAY			JUN			JUL			AUG			SEP		
	MAX	DAILY	MIN	MAX	DAILY	MIN	MAX	DAILY	MIN	MAX	DAILY	MIN	MAX	DAILY	MIN	MAX	DAILY	MIN
1	16.5	--	15.5	18.0	--	17.5	--	19.5	--	--	20.0	--	--	25.0	--	25.0	--	23.0
2	15.5	--	15.0	18.0	--	17.5	--	18.5	--	--	19.5	--	--	25.0	--	25.5	--	24.0
3	15.5	--	15.0	18.5	--	17.5	--	18.5	--	--	20.5	--	27.0	--	25.0	25.0	--	23.5
4	15.5	--	15.0	18.5	--	18.0	--	18.0	--	--	20.5	--	27.0	--	25.5	24.0	--	22.5
5	15.5	--	15.0	18.0	--	16.5	--	19.5	--	--	21.0	--	27.5	--	25.5	22.5	--	21.0
6	15.5	--	14.5	16.5	--	15.5	--	20.5	--	--	23.0	--	28.0	--	26.5	22.0	--	20.5
7	14.5	--	14.0	16.5	--	15.5	--	20.5	--	--	22.5	--	29.0	--	27.0	22.0	--	20.5
8	14.5	--	13.5	17.5	--	16.0	--	21.0	--	--	23.0	--	29.0	--	27.0	22.0	--	20.5
9	15.0	--	14.0	19.0	--	17.5	--	21.0	--	--	24.0	--	29.0	--	27.0	20.5	--	19.5
10	16.5	--	15.0	--	17.5	--	--	21.0	--	--	24.0	--	28.5	--	26.5	21.0	--	19.5
11	17.0	--	16.0	--	17.5	--	--	20.5	--	--	23.0	--	27.5	--	25.0	21.0	--	19.5
12	18.0	--	16.5	--	17.5	--	--	20.0	--	--	22.5	--	26.0	--	24.0	20.5	--	19.5
13	18.0	--	17.5	--	20.0	--	--	20.5	--	--	23.0	--	25.5	--	23.5	20.5	--	19.5
14	18.0	--	17.5	--	19.0	--	--	20.0	--	--	24.0	--	25.0	--	24.0	21.0	--	20.0
15	17.5	--	16.0	--	19.0	--	--	20.0	--	--	24.0	--	26.0	--	23.5	21.5	--	20.0
16	15.5	--	15.0	--	18.0	--	--	20.0	--	--	23.0	--	25.0	--	22.5	22.0	--	20.5
17	15.0	--	14.0	--	18.0	--	--	19.0	--	--	24.0	--	24.0	--	22.0	21.5	--	20.0
18	15.5	--	14.5	--	18.0	--	--	18.5	--	--	24.5	--	24.0	--	22.5	20.0	--	18.5
19	16.5	--	15.5	--	19.0	--	--	17.0	--	--	25.0	--	25.0	--	22.5	18.5	--	17.5
20	16.5	--	16.0	--	19.5	--	--	19.5	--	--	25.5	--	25.0	--	23.0	18.5	--	17.0
21	16.5	--	15.5	--	19.5	--	--	20.0	--	--	25.5	--	24.5	--	22.0	19.0	--	17.5
22	16.5	--	16.0	--	20.0	--	--	20.5	--	--	25.5	--	23.5	--	21.5	19.5	--	18.0
23	17.0	--	16.0	--	19.0	--	--	20.5	--	--	25.5	--	23.5	--	21.5	20.0	--	18.5
24	17.0	--	16.5	--	18.5	--	--	21.0	--	--	25.5	--	23.5	--	21.5	20.5	--	19.0
25	16.5	--	16.0	--	17.5	--	--	20.5	--	--	25.0	--	23.5	--	22.0	21.0	--	19.5
26	17.0	--	16.0	--	17.0	--	--	20.0	--	--	24.0	--	23.5	--	21.5	21.0	--	20.0
27	17.5	--	16.5	--	18.0	--	--	20.5	--	--	24.0	--	23.5	--	21.5	21.0	--	20.0
28	17.5	--	17.0	--	19.0	--	--	20.0	--	--	23.0	--	24.0	--	22.0	21.0	--	20.0
29	18.0	--	17.5	--	19.5	--	--	20.0	--	--	23.0	--	25.0	--	22.5	21.0	--	19.5
30	18.0	--	18.0	--	20.5	--	--	20.0	--	--	22.5	--	25.0	--	23.0	21.0	--	19.5
31	--	--	--	--	20.0	--	--	--	--	--	24.0	--	24.5	--	22.5	--	--	--
MONTH	18.0	--	13.5	--	--	--	--	21.0	--	--	25.5	--	29.0	--	22.0	25.5	--	17.0

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	258	100	70	257	50	35	455	40	49
2	282	100	76	266	56	40	445	34	41
3	260	91	64	301	57	46	441	35	42
4	228	94	58	296	52	42	443	45	54
5	218	97	57	285	48	37	456	48	59
6	225	95	58	318	50	43	446	52	63
7	225	98	60	383	53	55	442	42	50
8	225	80	49	387	46	48	444	46	55
9	239	80	52	415	40	45	437	30	35
10	246	85	56	458	48	59	434	31	36
11	242	79	52	485	63	82	452	33	40
12	250	78	53	506	61	83	472	42	54
13	250	74	50	540	61	89	448	46	56
14	253	85	58	534	58	84	442	48	57
15	250	78	53	522	59	83	442	48	57
16	272	66	48	477	52	67	444	43	52
17	253	55	38	435	46	54	470	41	52
18	232	52	33	419	48	54	531	40	57
19	225	49	30	421	33	38	547	46	68
20	246	49	33	445	28	34	544	40	59
21	253	51	35	454	40	49	576	48	75
22	253	56	38	459	49	61	588	49	78
23	246	50	33	497	65	87	585	61	96
24	257	57	40	521	68	96	596	58	93
25	232	59	37	489	48	63	581	40	63
26	225	61	37	465	34	43	574	44	68
27	242	67	44	467	39	49	587	46	73
28	253	58	40	465	53	67	600	55	89
29	260	55	39	463	61	76	591	57	91
30	268	59	43	461	52	65	584	47	74
31	264	54	38	---	---	---	581	39	61
TOTAL	7632	---	1472	12891	---	1774	15678	---	1897

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	574	36	56	2240	53	321	5120	70	968
2	574	40	62	2210	52	310	4850	60	786
3	576	40	62	2160	55	321	4700	77	977
4	585	48	76	2120	56	321	4800	173	2240
5	596	60	97	2110	54	308	5970	624	10100
6	661	65	116	2180	78	459	8530	251	5780
7	694	75	141	2250	102	620	9470	146	3730
8	813	82	180	3150	244	2080	9680	122	3190
9	943	82	209	4970	285	3820	10500	110	3120
10	1040	110	309	6600	440	7840	11900	112	3600
11	1010	109	297	8090	243	5310	13800	124	4620
12	1280	110	380	7720	210	4380	15400	122	5070
13	1340	94	340	7590	180	3690	16200	117	5120
14	1300	88	309	8330	276	6210	16300	86	3780
15	1510	170	693	8980	433	10500	16200	81	3540
16	2540	357	2450	9460	225	5750	15900	78	3350
17	3640	411	4040	10100	227	6190	15500	69	2890
18	4150	537	6020	11700	235	7420	14900	67	2700
19	4340	285	3340	13100	202	7140	14100	65	2470
20	4520	230	2810	13500	136	4960	13300	74	2660
21	5190	183	2560	13200	128	4560	12700	73	2500
22	5160	156	2170	12500	118	3980	12200	79	2600
23	4800	132	1710	11500	104	3230	11700	73	2310
24	4290	109	1260	10300	99	2750	11500	77	2390
25	3570	93	896	9020	95	2310	11400	82	2520
26	2930	93	736	7700	100	2080	11500	61	1890
27	2490	90	605	6500	89	1560	11500	64	1990
28	2340	77	486	5640	83	1260	11500	60	1860
29	2420	69	451	---	---	---	11500	69	2140
30	2370	65	416	---	---	---	11500	59	1830
31	2300	56	348	---	---	---	11600	66	2070
TOTAL	70546	---	33625	204920	---	99680	355720	---	94791
DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	11800	86	2740	26000	45	3160	11200	69	2090
2	12200	68	2240	26000	42	2950	10700	68	1960
3	12700	68	2330	26200	44	3110	10400	67	1880
4	13200	85	3030	26200	34	2410	10100	73	1990
5	14100	65	2470	25800	40	2790	10000	72	1940
6	15300	67	2770	25500	47	3240	9930	75	2010
7	16400	74	3280	25400	45	3090	9830	88	2340
8	17800	81	3890	25200	41	2790	9500	85	2180
9	18600	72	3620	25000	46	3110	8950	83	2010
10	19300	71	3700	24700	34	2270	8470	89	2040
11	20700	75	4190	23300	33	2080	8250	94	2090
12	22100	63	3760	21700	42	2460	7990	80	1730
13	22800	66	4060	20500	47	2600	7350	79	1570
14	23100	58	3620	19000	52	2670	6420	95	1650
15	22900	59	3650	17700	57	2720	6090	96	1580
16	22500	54	3280	16800	62	2810	6460	94	1640
17	22000	64	3800	16200	64	2800	6960	89	1670
18	21800	63	3710	15600	63	2650	7170	79	1530
19	21900	64	3780	15000	63	2550	6620	74	1320
20	22100	59	3520	14900	62	2490	6080	77	1260
21	22400	49	2960	15200	57	2340	5350	88	1270
22	22300	56	3370	15700	58	2460	4640	99	1240
23	22000	47	2790	15900	58	2490	4390	98	1160
24	21600	51	2970	15900	63	2700	4320	102	1190
25	21100	56	3190	15800	67	2860	4700	102	1290
26	21300	55	3160	15200	64	2630	4730	91	1160
27	22800	46	2830	14300	66	2550	4430	77	921
28	23900	44	2840	12900	76	2650	4000	76	821
29	24800	43	2880	12100	64	2090	3760	77	782
30	25400	40	2740	11600	70	2190	3290	72	640
31	---	---	---	11400	69	2120	---	---	---
TOTAL	600900	---	97170	592700	---	81830	212080	---	46954

## SAN JOAQUIN RIVER BASIN

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11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	2980	79	636	1340	108	391	1790	86	416
2	2830	76	581	1270	113	387	1790	84	406
3	2770	83	621	1340	96	347	1910	76	392
4	2880	76	591	1360	83	305	2060	83	462
5	2810	68	516	1340	86	311	2160	85	496
6	2470	70	467	1380	94	350	2460	94	624
7	2260	60	366	1410	81	308	2780	107	803
8	2180	64	377	1330	92	330	2730	97	715
9	2240	70	423	1260	77	262	2800	108	816
10	2230	65	391	1350	85	310	2940	121	960
11	2040	68	375	1330	81	291	2990	103	832
12	1920	75	389	1290	89	310	2930	95	752
13	1930	69	360	1280	89	308	2880	104	809
14	1880	61	310	1310	99	350	2770	98	733
15	1820	64	314	1320	103	367	2710	108	790
16	1740	62	291	1270	115	394	2800	116	877
17	1730	70	327	1290	107	373	2880	101	785
18	1640	79	350	1260	99	337	3000	102	826
19	1590	79	339	1290	99	345	2910	88	691
20	1590	80	343	1370	89	329	2820	80	609
21	1490	76	306	1520	101	415	2760	89	663
22	1500	80	324	1460	96	378	2770	83	621
23	1500	76	308	1380	92	343	2870	86	666
24	1500	85	344	1410	89	339	3070	91	754
25	1410	86	327	1470	94	373	3190	91	784
26	1360	90	330	1610	94	409	3000	89	721
27	1360	94	345	1760	88	418	2970	99	794
28	1330	90	323	1820	81	398	3060	90	744
29	1340	103	373	1730	83	388	3030	88	720
30	1410	110	419	1680	85	386	3080	94	782
31	1410	102	388	1730	86	402	---	---	---
TOTAL	59140	---	12154	43960	---	10954	81910	---	21043
YEAR	2258077		503344.0						

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
OCT								
05...	1245	18.0	214	75	43	42	59	71
05...	1300	18.0	214	61	35	--	--	--
NOV								
02...	1330	14.5	272	53	39	--	--	--
DEC								
14...	1600	11.0	440	52	62	--	--	--
JAN								
11...	1200	12.0	988	109	291	--	--	--
11...	1330	11.5	988	105	280	61	72	81
16...	0830	11.5	2170	424	2480	61	71	81
19...	1530	12.0	4320	280	3270	62	73	80
FEB								
13...	1300	10.0	7520	164	3330	57	65	72
17...	1300	11.0	10000	214	5780	45	53	60
20...	0820	11.5	13500	139	5070	--	--	--
22...	1200	13.0	12500	97	3270	48	54	61
MAR								
03...	1230	13.0	4670	66	832	--	--	--
09...	1300	14.5	10600	114	3260	--	--	--
15...	0815	14.0	16100	82	3570	--	--	--
29...	1300	17.5	11500	73	2270	42	52	58
MAY								
02...	1430	17.5	26000	43	3020	--	--	--
JUN								
05...	1230	19.0	10000	74	2000	40	48	58
JUL								
06...	1200	21.0	2490	77	518	39	52	66
AUG								
02...	1300	25.0	1290	123	428	50	65	80
SEP								
11...	1315	20.0	3000	106	859	--	--	--

## SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM
OCT								
05...	86	95	98	98	100	--	--	--
05...	--	--	--	98	--	--	--	--
NOV								
02...	--	--	--	63	--	--	--	--
DEC								
14...	--	--	--	68	--	--	--	--
JAN								
11...	--	--	--	97	--	--	--	--
11...	89	95	97	97	99	100	--	--
16...	89	94	97	97	99	100	--	--
19...	88	94	96	96	99	100	--	--
FEB								
13...	79	85	88	88	91	96	99	100
17...	67	74	78	78	84	92	99	100
20...	--	--	--	63	70	84	99	100
22...	67	73	77	77	84	91	99	100
MAR								
03...	--	--	--	89	95	98	100	--
09...	--	--	--	72	77	86	99	100
15...	--	--	--	59	67	82	99	100
29...	67	73	78	78	84	92	99	100
MAY								
02...	--	--	--	84	90	97	100	--
JUN								
05...	68	78	83	83	90	97	100	--
JUL								
06...	80	91	95	95	99	100	--	--
AUG								
02...	92	98	99	99	100	--	--	--
SEP								
11...	--	--	--	92	97	100	--	--

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT  
CONCENTRATION AND TURBIDITY, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	TUR- BID- ITY (NTU)
OCT						
01...	0725	250	17.0	100	67	27
02...	0730	275	17.0	100	74	27
03...	0745	257	17.5	91	63	21
04...	0710	221	17.5	93	55	24
05...	0720	211	17.5	97	55	27
05...	1300	214	18.0	61	35	15
06...	0725	221	17.0	94	56	23
07...	0725	228	17.0	101	62	16
08...	0830	225	16.5	80	49	18
09...	0725	239	17.0	78	50	20
10...	0750	246	17.0	85	56	18
11...	0740	232	17.0	78	49	19
12...	0710	246	17.5	80	53	18
13...	0720	242	17.5	72	47	20
14...	0740	257	17.5	84	58	12
15...	0720	242	17.5	80	52	17
16...	0730	275	17.5	68	50	19
17...	0920	260	17.0	55	39	17
18...	0825	232	16.5	53	33	12
19...	0820	225	16.0	49	30	13
20...	0855	242	15.0	49	32	7.0
21...	0835	253	15.0	50	34	7.0
22...	0735	253	15.0	57	39	9.0
23...	0835	246	15.5	49	33	16
24...	0840	260	16.0	57	40	18
25...	0845	239	17.0	59	38	13
26...	0840	218	18.0	61	36	10
27...	0835	239	16.0	68	44	12
28...	0835	253	15.0	59	40	13
29...	0835	260	14.0	55	39	15
30...	0815	268	15.0	59	43	12
31...	0750	268	14.5	55	40	13
NOV						
01...	0710	253	13.5	50	34	10
02...	0830	268	13.5	55	40	13
02...	1330	272	14.5	53	39	10
03...	0835	294	14.5	58	46	13
04...	0840	306	14.0	53	44	5.0
05...	0835	237	14.0	48	37	8.0
06...	0815	306	13.0	50	41	8.0



## SAN JOAQUIN RIVER BASIN

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11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT  
CONCENTRATION AND TURBIDITY, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	TUR- BID- ITY (NTU)
NOV						
07...	0755	345	12.5	53	55	8.0
08...	0830	345	11.5	47	49	9.0
09...	0810	440	11.0	30	36	7.0
09...	0840	403	11.0	38	41	6.0
10...	0815	452	11.5	47	57	15
11...	0810	486	12.5	65	85	14
12...	0830	501	13.0	60	81	13
13...	0735	540	13.0	62	90	13
14...	0745	540	13.0	58	85	13
15...	0825	524	12.5	60	85	16
16...	0845	497	12.5	53	71	14
17...	0830	437	12.5	46	54	11
18...	0815	422	12.0	49	56	10
19...	0715	414	10.0	36	40	8.0
20...	0835	444	9.0	27	32	6.0
21...	0845	452	9.0	38	46	8.0
22...	0810	459	9.5	48	59	10
23...	0835	486	10.0	63	83	16
24...	0930	528	11.0	70	100	17
25...	0820	501	11.0	49	66	12
26...	0800	467	11.5	34	43	8.0
27...	0735	467	12.5	37	47	8.0
28...	0800	467	12.0	51	64	14
29...	0825	463	12.0	61	76	13
30...	0800	463	12.0	54	68	14
DEC						
01...	0810	459	11.5	42	52	9.0
02...	0820	448	10.5	34	41	8.0
03...	0810	440	10.5	33	39	4.0
04...	0810	440	11.0	43	51	10
05...	0820	455	11.0	48	59	13
06...	0800	448	11.5	53	64	13
07...	0810	440	11.0	44	52	12
08...	0805	444	11.0	36	43	8.0
09...	0810	440	9.5	30	36	7.0
10...	0820	433	8.5	30	35	7.0
11...	0835	444	9.0	32	38	7.0
12...	0730	478	9.5	40	52	10
13...	0805	452	9.0	49	60	9.0
14...	0815	463	9.0	48	60	11
14...	1600	440	11.0	52	62	15
15...	0810	444	11.0	48	58	15
16...	0810	440	10.5	43	51	7.0
17...	0935	459	11.0	44	55	8.0
18...	0825	540	9.5	40	58	9.0
19...	0830	548	9.0	47	70	13
20...	0815	544	8.5	40	59	12
21...	0820	568	9.0	48	74	11
22...	0810	592	9.5	47	75	12
23...	0750	584	11.0	62	98	16
24...	0825	546	11.5	59	95	16
25...	0920	584	11.5	40	63	11
26...	0815	572	12.5	34	53	8.0
27...	0820	584	12.0	43	68	11
28...	0820	600	12.5	54	87	18
29...	0835	546	13.0	58	93	16
30...	0810	584	13.0	49	77	13
31...	0945	580	12.0	40	63	10
JAN						
01...	0815	576	11.0	34	53	6.0
02...	0745	572	10.5	40	62	10
03...	0915	576	11.0	40	62	10
04...	0825	580	11.0	46	72	16
05...	0825	584	11.5	47	74	12
06...	0815	626	11.5	60	101	22
07...	0810	710	12.0	73	140	26
08...	0820	769	11.5	85	176	28
09...	0830	905	12.0	74	181	27
10...	0810	1030	12.5	111	309	50
11...	0820	1090	12.0	109	294	45
11...	1200	968	12.0	109	291	60
12...	0815	1260	12.0	109	371	60
13...	0820	1340	11.0	94	340	45
14...	0810	1290	11.0	87	303	24
15...	0810	1350	11.5	139	507	80
16...	0830	2170	11.5	424	2480	190
17...	0815	3550	11.0	392	3760	220
18...	0835	4010	11.5	593	6420	350
19...	0810	4370	12.0	293	3460	130
20...	0840	4370	12.0	240	2830	130

## SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT  
CONCENTRATION AND TURBIDITY, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	TUR- BID- ITY (NTU)
JAN						
21...	0725	5150	12.0	186	2590	90
22...	0945	5180	12.0	155	2170	70
23...	0825	4880	10.5	137	1810	60
24...	0820	4390	10.0	109	1290	45
25...	0830	3670	9.5	90	892	33
26...	0810	3020	9.0	93	758	30
27...	0920	2520	9.5	94	640	25
28...	1135	2320	10.0	74	464	20
29...	0735	2420	10.0	68	444	21
30...	0800	2380	10.0	66	424	18
31...	0805	2320	10.0	55	345	18
FEB						
01...	0810	2240	10.0	51	308	16
02...	0810	2210	10.0	53	316	16
03...	1015	2170	10.0	51	299	17
04...	0710	2130	11.0	58	334	19
05...	0755	2120	11.0	49	280	16
06...	0825	2210	11.0	78	465	24
07...	0815	2240	11.5	91	550	30
08...	0845	3370	11.0	207	1880	90
09...	0810	5270	11.0	260	3700	120
10...	0845	7040	10.5	490	9380	260
11...	0810	8130	10.5	241	5290	120
12...	0745	7650	10.0	216	4460	95
13...	0745	7510	10.0	180	3650	80
13...	1300	7520	10.0	164	3330	75
14...	0810	8110	9.5	187	4100	80
15...	0820	8940	10.5	481	11600	85
16...	0815	9340	10.5	214	5400	85
17...	0735	10000	11.0	238	6430	85
18...	0715	11300	11.0	239	7290	75
19...	0705	13000	11.0	213	7480	60
20...	0820	13500	11.5	139	5070	55
21...	0815	14700	12.0	130	5160	45
22...	0750	12600	12.5	120	4080	38
23...	0840	11600	13.5	103	3230	34
24...	0755	10500	14.0	101	2860	30
25...	0810	9230	14.0	94	2340	30
26...	0740	7900	13.5	102	2180	29
27...	0840	6640	13.0	88	1580	23
28...	0815	5730	13.0	85	1320	24
MAR						
01...	0805	5170	13.0	72	1010	21
02...	0810	4840	13.5	60	784	22
03...	0805	4740	13.0	68	870	20
03...	1230	4670	13.0	66	832	20
04...	0840	4650	13.5	70	879	24
05...	0730	5660	13.0	808	12300	370
06...	0820	8200	13.0	264	5850	170
07...	0815	9520	13.5	157	4040	100
08...	0815	9560	14.0	125	3230	75
09...	0805	10300	14.5	115	3200	50
10...	0755	11500	14.0	108	3350	50
11...	0810	13500	14.0	127	4630	50
12...	0800	15300	14.0	122	5040	45
13...	0820	16100	13.5	122	5300	40
14...	0815	16300	14.0	85	3740	38
15...	0815	16100	14.0	82	3570	32
16...	0820	15900	14.5	78	3350	33
17...	0730	15600	15.0	70	2950	32
18...	0725	15100	15.0	69	2810	27
19...	0735	14300	15.5	62	2390	27
20...	0825	13400	16.0	74	2680	26
21...	0815	12800	16.0	72	2490	25
22...	0755	12200	16.0	79	2600	25
23...	0805	11700	16.5	73	2310	24
24...	0805	11500	16.0	76	2360	25
25...	0810	11400	16.0	85	2620	23
26...	0735	11400	16.0	61	1880	18
27...	0810	11500	16.5	66	2050	18
28...	0810	11600	17.0	59	1850	20
29...	0850	11500	17.5	67	2080	20
29...	1300	11500	17.5	73	2270	20
30...	0805	11500	17.0	60	1860	22
31...	0825	11600	16.5	61	1910	18
APR						
01...	0815	11800	16.0	91	2900	32
02...	0715	12100	15.5	70	2290	23
03...	0810	12600	15.0	65	2210	18
04...	0805	13000	15.5	90	3160	20

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11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT  
CONCENTRATION AND TURBIDITY, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW- INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	TUR- BID- ITY (NTU)
APR						
05...	0850	13900	15.0	61	2290	22
06...	0840	15200	14.5	68	2790	22
07...	0830	16200	14.0	71	3110	22
08...	0810	17600	13.5	61	2900	20
09...	0610	18500	14.0	75	3750	23
10...	0650	19100	15.0	71	3660	23
11...	0650	20400	16.0	79	4350	27
12...	0640	21900	16.5	63	3730	24
13...	0645	22800	18.0	68	4190	18
14...	0650	23200	17.5	58	3630	19
15...	0640	23000	16.0	60	3730	20
16...	0650	22600	15.0	54	3300	23
17...	0630	22100	14.0	61	3640	23
18...	0625	21800	14.5	64	3770	21
19...	0635	21900	15.5	63	3730	20
20...	0640	22000	16.0	65	3860	18
21...	0630	22400	15.5	44	2660	18
22...	0625	22400	16.0	59	3570	20
23...	0640	22100	16.0	46	2750	18
24...	0630	21800	16.5	49	2880	19
25...	0620	21100	16.0	56	3190	20
26...	0615	21100	16.0	56	3190	20
27...	0620	22500	16.5	47	2860	18
28...	0610	23800	17.0	44	2830	20
29...	0615	24600	17.5	44	2920	18
30...	0640	25200	18.0	40	2720	19
MAY						
01...	0625	25900	17.5	45	3150	19
02...	0635	26000	17.5	44	3090	22
02...	1430	26000	17.5	43	3020	15
03...	0640	26100	17.5	46	3240	23
04...	0630	26300	18.0	36	2560	20
05...	0645	25800	17.0	36	2510	19
06...	0650	25300	15.5	47	3210	22
07...	0635	25200	15.5	47	3200	25
08...	0630	25500	16.0	41	2820	22
09...	0630	25200	17.5	45	3060	18
10...	0700	24600	17.5	35	2330	18
11...	0645	23800	17.5	32	2060	18
12...	0625	22000	17.5	41	2440	21
13...	0840	20600	20.0	45	2500	22
14...	0755	19200	19.0	50	2590	22
15...	0655	18000	19.0	54	2620	24
16...	0835	16900	18.0	61	2780	28
17...	0825	16200	18.0	65	2840	25
18...	0725	15700	18.0	63	2670	25
19...	0840	15000	19.0	63	2550	26
20...	0635	14800	19.5	64	2560	23
21...	0650	15100	19.5	58	2370	23
22...	0720	15600	20.0	58	2440	24
23...	0830	16000	19.0	58	2510	25
24...	0830	15900	18.5	61	2620	26
25...	0825	15900	17.5	67	2880	25
26...	0735	15400	17.0	65	2700	26
27...	0830	14500	18.0	63	2470	24
28...	0700	13100	19.0	76	2690	25
29...	0655	12200	19.5	65	2140	26
30...	0830	11600	20.5	70	2190	24
31...	0830	11400	20.0	69	2120	23
JUN						
01...	0840	11200	19.5	69	2090	22
02...	0835	10800	18.5	68	1980	18
03...	0830	10400	18.5	67	1880	19
04...	0700	10200	18.0	72	1980	22
05...	0710	10000	19.5	71	1920	23
05...	1230	10000	19.0	74	2000	25
06...	0825	9930	20.5	73	1960	23
07...	0830	9950	20.5	88	2360	24
08...	0820	9620	21.0	85	2210	27
09...	0625	9100	21.0	83	2040	29
10...	0825	8540	21.0	83	1910	31
11...	0725	8280	20.5	97	2170	30
12...	0730	8100	20.0	81	1770	27
13...	0745	7570	20.5	77	1570	30
14...	0655	6570	20.0	92	1630	35
15...	0830	6150	20.0	97	1610	37
16...	0830	6310	20.0	94	1600	32
17...	0700	6840	19.0	90	1660	24
18...	0650	7170	18.5	83	1610	21
19...	0630	6910	17.0	74	1380	21

## SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT  
CONCENTRATION AND TURBIDITY, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREA- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	TUR- BID- ITY (NTU)
JUN						
20...	0825	6170	19.5	76	1270	26
21...	0830	5580	20.0	86	1300	31
22...	--	4740	20.5	99	1270	33
23...	0600	4410	20.5	97	1160	33
24...	0840	4270	21.0	102	1180	37
25...	0650	4600	20.5	104	1290	32
26...	0745	4790	20.0	94	1220	27
27...	0740	4550	20.5	77	946	27
28...	0810	4050	20.0	76	831	25
29...	0615	3900	20.0	76	800	24
30...	0640	3450	20.0	74	689	26
JUL						
01...	0720	3060	20.0	77	636	29
02...	0750	2870	19.5	75	581	28
03...	0830	2750	20.5	83	616	31
04...	0715	2870	20.5	77	597	21
05...	0700	2870	21.0	68	527	23
06...	0845	2570	23.0	70	486	24
06...	1200	2490	21.0	77	518	25
07...	0655	2280	22.5	62	382	21
08...	0620	2200	23.0	60	356	23
09...	0625	2180	24.0	72	424	26
10...	0820	2300	24.0	65	404	18
11...	0830	2090	23.0	66	372	23
12...	0835	1920	22.5	75	389	26
13...	0815	1950	23.0	71	374	23
14...	0835	1900	24.0	61	313	19
15...	0835	1830	24.0	63	311	18
16...	0655	1720	23.0	63	293	21
17...	0740	1760	24.0	67	318	27
18...	0830	1610	24.5	79	343	30
19...	0810	1600	25.0	79	341	32
20...	0825	1600	25.5	80	346	34
21...	0835	1500	25.5	77	312	33
22...	0810	1510	25.5	79	322	36
23...	0640	1470	25.5	76	302	28
24...	0830	1530	25.5	85	351	30
25...	0830	1440	25.0	85	330	31
26...	0820	1360	24.0	90	330	34
27...	0830	1370	24.0	94	348	37
28...	0830	1330	23.0	88	316	33
29...	0815	1340	23.0	101	365	40
30...	0655	1400	22.5	111	420	45
31...	0800	1450	24.0	101	395	36
AUG						
01...	0825	1380	25.0	106	395	40
02...	0710	1240	25.0	113	378	40
02...	1300	1290	25.0	123	428	45
03...	0840	1330	25.0	101	363	50
04...	0815	1340	25.5	83	300	35
05...	0825	1340	25.5	83	300	35
06...	0705	1340	26.5	97	351	50
07...	0820	1440	27.0	79	307	33
08...	0845	1360	27.0	95	349	40
09...	0920	1250	27.0	76	256	33
10...	0820	1340	26.5	85	308	33
11...	0835	1320	26.0	80	285	32
12...	0830	1290	25.0	90	313	36
13...	0715	1250	23.5	86	290	39
14...	0805	1290	24.0	98	341	50
15...	0825	1340	24.0	101	365	45
16...	0830	1280	25.0	116	401	55
17...	0830	1300	22.0	108	379	50
18...	0830	1270	22.5	99	339	50
19...	0825	1300	22.5	102	358	50
20...	0910	1350	23.0	86	313	40
21...	0730	1580	23.0	101	431	36
22...	0835	1480	22.0	97	388	36
23...	0815	1390	21.5	93	349	45
24...	0906	1430	21.5	88	340	28
25...	0825	1460	22.0	94	371	34
26...	0835	1590	22.0	94	404	45
27...	0725	1730	21.5	90	420	32
28...	0800	1840	22.0	81	402	24
29...	0845	1750	22.5	83	392	25
30...	0830	1680	23.0	83	376	31
31...	0835	1740	22.5	86	402	23
SEP						
01...	0840	1810	23.5	85	415	30
02...	0830	1780	24.0	86	413	26

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11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT  
CONCENTRATION AND TURBIDITY, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	TUR- BID- ITY (NTU)
SEP						
03...	0705	1840	23.5	76	378	31
04...	0750	2040	23.0	82	452	22
05...	0830	2150	22.5	85	493	31
06...	0835	2400	21.0	92	596	33
07...	0835	2830	20.5	108	825	28
08...	0835	2760	20.5	96	715	27
09...	0840	2790	20.5	105	791	35
10...	0745	2950	19.5	121	964	33
11...	0725	2980	19.5	104	837	31
11...	1315	3000	20.0	106	859	30
12...	0830	2970	19.5	94	754	30
13...	0825	2920	19.5	104	820	27
14...	0830	2800	20.0	97	733	26
15...	0840	2710	20.0	106	776	32
16...	0825	2810	20.5	119	903	33
17...	0745	2840	21.0	100	767	31
18...	0900	3010	20.0	103	837	28
19...	0825	2940	17.5	91	722	21
20...	0835	2840	17.5	77	590	22
21...	0835	2760	18.0	89	663	25
22...	0830	2790	18.0	83	625	24
23...	0840	2850	18.5	85	654	22
24...	0725	3030	19.0	90	736	25
25...	0910	3240	20.0	92	805	22
26...	0825	3060	20.5	87	719	22
27...	0845	2940	20.0	101	802	28
28...	0745	3070	20.0	92	763	25
29...	0850	3030	20.0	86	704	19
30...	0840	3090	20.5	94	784	24

## SAN JOAQUIN RIVER BASIN

11306000 SOUTH FORK CALAVERAS RIVER NEAR SAN ANDREAS, CA

LOCATION.--Lat 38°08'40", long 120°39'46", in SW¼NW¼ sec.4, T.3 N., R.12 E., Calaveras County, on right bank 0.1 mi (0.2 km) downstream from San Antonio Creek, and 3.7 mi (6.0 km) south of San Andreas.

DRAINAGE AREA.--118 mi<sup>2</sup> (306 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1395: 1951(M).

GAGE.--Water-stage recorder. Altitude of gage is 860 ft (262 m), from topographic map. Prior to Feb. 13, 1952, nonrecording gage at same site and datum.

REMARKS.--Records good. Some diversions for irrigation above station.

AVERAGE DISCHARGE.--28 years, 79.0 ft<sup>3</sup>/s (2.237 m<sup>3</sup>/s), 57,240 acre-ft/yr (70.6 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,600 ft<sup>3</sup>/s (498 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 10.29 ft (3.136 m), from rating curve extended above 5,700 ft<sup>3</sup>/s (161 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; maximum gage height, 11.41 ft (3.478 m) Mar. 1, 1974; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft<sup>3</sup>/s (28.3 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Jan. 5	2130	1670 47.3	6.08 1.853	Feb. 9	0800	3820 108	7.90 2.408
Jan. 9	1800	1730 49.0	6.00 1.829	Feb. 12	2300	1380 39.1	5.56 1.695
Jan. 14	2230	*4370 124	8.22 2.505	Mar. 5	0930	2680 75.9	7.05 2.149
Jan. 17	0400	3110 88.1	7.40 2.256	Apr. 6	1600	1220 34.6	5.32 1.622
Feb. 6	1600	1030 29.2	5.00 1.524	Apr. 25	1830	1730 49.0	6.01 1.832
Feb. 7	1300	3070 86.9	7.37 2.246				

Minimum daily, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	21	51	94	168	228	31	14	3.4	1.8
2			0	17	48	370	148	198	31	13	3.2	1.7
3			0	16	44	383	125	172	31	13	3.1	1.7
4			0	22	43	1380	217	153	32	12	3.0	1.7
5			0	417	100	2030	181	140	31	11	2.9	2.6
6			0	591	483	1190	672	127	30	11	2.8	14
7			0	135	1410	598	490	113	27	10	2.5	11
8			0	81	726	417	298	106	26	9.9	2.3	7.1
9			0	603	1910	329	239	99	27	8.4	2.1	5.5
10			0	512	744	277	202	93	25	8.6	2.0	8.8
11			0	229	472	262	172	85	25	8.4	1.7	13
12			0	136	534	350	155	80	24	8.2	1.6	7.0
13			0	148	833	255	142	76	22	7.9	1.6	4.9
14			0	1190	440	217	135	70	21	7.5	1.8	4.5
15			0	1580	315	189	228	67	20	7.1	1.9	4.0
16			0	934	244	170	514	63	19	6.9	1.9	4.0
17			12	1860	198	155	344	59	18	6.8	1.9	3.6
18			42	626	168	142	275	56	17	6.4	1.8	3.5
19			14	680	149	130	237	52	16	5.9	1.8	3.5
20			6.4	387	132	122	230	50	16	5.4	1.6	3.4
21			2.9	255	124	142	232	47	16	4.9	1.6	4.5
22			3.6	191	115	181	198	46	15	4.8	1.8	4.5
23			53	153	111	149	175	44	14	4.7	1.8	3.3
24			39	125	108	139	187	44	14	4.5	1.8	3.8
25			22	106	104	124	1300	44	13	4.2	1.9	2.9
26			16	90	98	113	960	42	13	3.9	2.1	2.9
27			22	78	91	104	533	36	15	4.0	2.3	2.7
28			29	69	90	96	384	33	18	3.7	2.0	3.8
29			33	62	---	90	306	35	16	3.7	1.9	3.8
30			37	58	---	85	260	34	15	3.6	1.9	2.8
31		---	27	53	---	165	---	32	---	3.5	1.8	---
TOTAL	0	0	358.9	11425	9885	10448	9707	2524	638	226.9	65.8	142.3
MEAN	0	0	11.6	369	353	337	324	81.4	21.3	7.32	2.12	4.74
MAX	0	0	53	1860	1910	2030	1300	228	32	14	3.4	14
MIN	0	0	0	16	43	85	125	32	13	3.5	1.6	1.7
AC-FT	0	0	712	22660	19610	20720	19250	5010	1270	450	131	282

CAL YR 1977	TOTAL	1096.70	MEAN	3.00	MAX	53	MIN	0	AC-FT	2180
WTR YR 1978	TOTAL	45420.90	MEAN	124	MAX	2030	MIN	0	AC-FT	90090

WATER-QUALITY RECORDS

SEDIMENT RECORDS: Water years 1974 to current year.

SEDIMENT RECORDS: October 1973 to current year.

SEDIMENT DISCHARGE: Maximum daily, 3,750 tons (3,400 metric tons) Mar. 2, 1974; minimum daily, 0 ton (0 metric ton) on many days in each year.

SEDIMENT DISCHARGE: Maximum daily, 1,560 tons (1,420 metric tons) Feb. 9; minimum daily, 0 ton (0 metric ton) on many days.

[illegible]

## SAN JOAQUIN RIVER BASIN

11306000 SOUTH FORK CALAVERAS RIVER NEAR SAN ANDREAS, CA--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1							0	0	0
2							0	0	0
3							0	0	0
4							0	0	0
5							0	0	0
6							0	0	0
7							0	0	0
8							0	0	0
9							0	0	0
10							0	0	0
11							0	0	0
12							0	0	0
13							0	0	0
14							0	0	0
15							0	0	0
16							0	0	0
17							12	5	.53
18							42	18	2.5
19							14	4	.15
20							6.4	2	.03
21							2.9	2	.02
22							3.6	2	.02
23							53	9	1.7
24							39	5	.53
25							22	2	.12
26							16	2	.09
27							22	1	.06
28							29	1	.08
29							33	1	.09
30							37	1	.10
31							27	1	.07
TOTAL	0	0	0	0	0	0	358.90	---	6.09

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	21	2	.11	51	2	.28	94	4	1.0
2	17	2	.09	48	2	.26	370	44	58
3	16	1	.04	44	2	.24	383	15	17
4	22	2	.12	43	2	.23	1380	84	396
5	417	41	93	100	36	17	2030	121	686
6	591	35	83	483	85	127	1190	50	171
7	135	5	1.8	1410	102	425	598	26	42
8	81	4	.87	726	26	58	417	18	20
9	603	25	72	1910	243	1560	329	10	8.9
10	512	19	28	744	146	303	277	6	4.5
11	229	13	8.6	472	100	127	262	6	4.2
12	136	5	1.8	534	48	99	350	8	7.6
13	148	12	7.3	833	67	164	255	4	2.8
14	1190	70	364	440	20	24	217	3	1.8
15	1580	59	302	315	10	8.5	189	3	1.5
16	934	39	119	244	10	6.6	170	2	.92
17	1860	107	638	198	8	4.3	155	3	1.3
18	626	28	49	168	7	3.2	142	3	1.2
19	680	20	37	149	6	2.4	130	4	1.4
20	387	6	6.3	132	5	1.8	122	4	1.3
21	255	3	2.1	124	4	1.3	142	8	3.1
22	191	3	1.5	115	4	1.2	181	11	5.4
23	153	3	1.2	111	4	1.2	149	4	1.6
24	125	3	1.0	108	3	.87	139	3	1.1
25	106	3	.86	104	3	.84	124	3	1.0
26	90	2	.49	98	3	.79	113	3	.92
27	78	1	.21	91	3	.74	104	3	.84
28	69	2	.37	90	3	.73	96	2	.52
29	62	2	.33	---	---	---	90	2	.49
30	58	2	.31	---	---	---	85	2	.46
31	53	2	.29	---	---	---	165	10	5.5
TOTAL	11425	---	1820.69	9885	---	2939.48	10448	---	1449.35



11306000 SOUTH FORK CALAVERAS RIVER NEAR SAN ANDREAS, CA--Continued

## SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	168	9	4.1	228	8	4.9	31	3	.25
2	148	8	3.2	198	8	4.3	31	3	.25
3	125	5	1.7	172	8	3.7	31	3	.25
4	217	10	6.7	153	8	3.3	32	3	.26
5	181	5	2.4	140	8	3.0	31	3	.25
6	672	25	62	127	7	2.4	30	3	.24
7	490	19	26	113	7	2.1	27	3	.22
8	298	11	8.9	106	7	2.0	26	3	.21
9	239	7	4.5	99	7	1.9	27	3	.22
10	202	4	2.2	93	6	1.5	25	3	.20
11	172	3	1.4	85	6	1.4	25	3	.20
12	155	2	.84	80	6	1.3	24	3	.19
13	142	3	1.2	76	6	1.2	22	3	.18
14	135	4	1.5	70	5	.94	21	3	.17
15	228	13	14	67	5	.90	20	3	.16
16	514	28	41	63	5	.85	19	3	.15
17	344	13	12	59	5	.80	18	4	.19
18	275	7	5.2	56	4	.60	17	6	.28
19	237	5	3.2	52	4	.56	16	5	.22
20	230	5	3.1	50	4	.54	16	5	.22
21	232	4	2.5	47	4	.51	16	5	.22
22	198	4	2.1	46	3	.37	15	5	.20
23	175	4	1.9	44	3	.36	14	5	.19
24	187	6	3.7	44	3	.36	14	5	.19
25	1300	68	241	44	3	.36	13	5	.18
26	960	23	66	42	3	.34	13	5	.18
27	533	9	13	36	3	.29	15	5	.20
28	384	8	8.3	33	3	.27	18	5	.24
29	306	8	6.6	35	3	.28	16	5	.22
30	260	8	5.6	34	3	.28	15	5	.20
31	---	---	---	32	3	.26	---	---	---
TOTAL	9707	---	555.84	2524	---	41.87	638	---	6.33
DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	14	5	.19	3.4	4	.04	1.8	2	.01
2	13	5	.18	3.2	4	.03	1.7	2	.01
3	13	4	.14	3.1	4	.03	1.7	2	.01
4	12	4	.13	3.0	4	.03	1.7	2	.01
5	11	4	.12	2.9	4	.03	2.6	2	.01
6	11	4	.12	2.8	4	.03	14	4	.15
7	10	4	.11	2.5	4	.03	11	2	.06
8	9.9	4	.11	2.3	4	.02	7.1	2	.04
9	8.4	4	.09	2.1	4	.02	5.5	2	.03
10	8.6	4	.09	2.0	3	.02	8.8	2	.05
11	8.4	4	.09	1.7	3	.01	13	2	.07
12	8.2	4	.09	1.6	3	.01	7.0	2	.04
13	7.9	4	.09	1.6	3	.01	4.9	2	.03
14	7.5	4	.08	1.8	3	.01	4.5	3	.04
15	7.1	3	.06	1.9	3	.02	4.0	3	.03
16	6.9	3	.06	1.9	3	.02	4.0	3	.03
17	6.8	3	.06	1.9	3	.02	3.6	3	.03
18	6.4	3	.05	1.8	3	.01	3.5	3	.03
19	5.9	3	.05	1.8	3	.01	3.5	3	.03
20	5.4	3	.04	1.6	3	.01	3.4	3	.03
21	4.9	3	.04	1.6	3	.01	4.5	3	.04
22	4.8	3	.04	1.8	3	.01	4.5	3	.04
23	4.7	3	.04	1.8	2	.01	3.3	2	.02
24	4.5	4	.05	1.8	2	.01	3.8	2	.02
25	4.2	4	.05	1.9	2	.01	2.9	2	.02
26	3.9	4	.04	2.1	2	.01	2.9	2	.02
27	4.0	4	.04	2.3	2	.01	2.7	2	.01
28	3.7	4	.04	2.0	2	.01	3.8	2	.02
29	3.7	4	.04	1.9	2	.01	3.8	2	.02
30	3.6	4	.04	1.9	2	.01	2.8	2	.02
31	3.5	4	.04	1.8	2	.01	---	---	---
TOTAL	226.9	---	2.41	65.8	---	.52	142.3	---	.97
YEAR	45420.90		6823.55						

## SAN JOAQUIN RIVER BASIN

11306000 SOUTH FORK CALAVERAS RIVER NEAR SAN ANDREAS, CA--Continued

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
JAN								
10...	1425	12.0	370	11	11	--	--	--
15...	1030	9.0	1140	42	129	--	--	--
16...	1230	10.5	688	10	19	--	--	--
17...	0830	10.0	2250	124	753	27	38	52
17...	1310	12.0	1590	59	253	--	--	--
FEB								
07...	1720	9.0	2180	100	589	40	52	67
09...	0735	9.5	3780	468	4780	--	36	50
MAR								
05...	1020	11.0	2540	209	1430	29	39	54

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM
JAN								
10...	--	--	82	84	87	88	89	100
15...	--	--	92	95	98	100	--	--
16...	--	--	95	100	--	--	--	--
17...	69	83	91	97	100	--	--	--
17...	--	--	91	96	99	100	--	--
FEB								
07...	81	91	95	99	100	--	--	--
09...	66	84	93	98	100	--	--	--
MAR								
05...	71	84	93	98	99	100	--	--

11308000 NORTH FORK CALAVERAS RIVER NEAR SAN ANDREAS, CA

LOCATION.--Lat 38°13'17", long 120°41'54", in NE¼NW¼ sec.7, T.4 N., R.12 E., Calaveras County, on right bank 0.5 mi (0.8 km) upstream from Chile Gulch, and 1.8 mi (2.9 km) northwest of San Andreas.

DRAINAGE AREA.--85.2 mi<sup>2</sup> (220.7 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 750 ft (229 m), from topographic map. Prior to Feb. 14, 1952, nonrecording gage at same site and datum.

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

AVERAGE DISCHARGE.--28 years, 45.9 ft<sup>3</sup>/s (1.300 m<sup>3</sup>/s), 33,250 acre-ft/yr (41.0 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,200 ft<sup>3</sup>/s (176 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 12.52 ft (3.816 m), from rating curve extended above 3,900 ft<sup>3</sup>/s (110 m<sup>3</sup>/s); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft<sup>3</sup>/s (22.7 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 17	1930	1060 30.0	5.36 1.634	Feb. 7	1700	875 24.8	4.92 1.500
Dec. 23	1015	825 23.4	4.81 1.466	Feb. 9	0945	1530 43.3	6.43 1.960
Jan. 6	0230	*2360 66.8	7.78 2.371	Mar. 4	2230	1210 34.3	5.70 1.737
Jan. 9	2130	1230 34.8	5.76 1.756	Apr. 16	0030	898 25.4	4.97 1.515
Jan. 15	0215	2060 58.3	7.33 2.234	Apr. 25	0700	1090 30.9	5.44 1.658
Jan. 17	0745	1430 40.5	6.21 1.893				

Minimum, no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	28	22	46	120	93	14	6.4	.03	0
2			0	20	20	193	95	77	14	6.1	.01	0
3			0	17	19	258	70	67	14	6.0	0	0
4			0	18	18	579	98	60	13	5.5	0	0
5			0	321	22	959	89	54	13	5.2	0	0
6			0	841	117	569	203	50	12	4.5	0	0
7			0	132	440	273	258	45	11	4.0	0	0
8			0	65	329	181	173	42	11	3.6	0	0
9			0	314	787	134	119	40	10	3.4	0	0
10			0	338	414	104	92	37	9.7	3.2	0	3.1
11			0	111	275	121	77	35	10	3.6	0	5.9
12			0	64	215	185	68	33	9.7	3.7	0	4.0
13			0	58	345	140	61	31	9.3	3.7	0	3.4
14			0	310	213	100	58	30	9.0	3.5	0	3.5
15			14	895	144	83	126	29	8.9	2.9	0	2.9
16			22	378	106	73	469	28	8.6	2.4	0	2.8
17			203	916	82	65	281	27	8.3	2.1	0	2.7
18			130	308	68	59	186	26	8.2	1.9	0	2.4
19			28	244	59	54	130	24	8.1	1.7	0	2.5
20			14	170	52	50	123	23	7.9	1.5	0	2.6
21			9.4	101	46	56	149	22	7.8	1.3	0	2.6
22			9.8	73	42	98	101	21	7.5	1.2	0	2.7
23			199	57	38	76	85	21	6.6	.96	0	2.6
24			59	46	35	78	80	21	6.6	.74	0	2.5
25			26	0	32	62	718	21	6.4	.58	0	2.3
26			17	18	30	54	512	20	6.3	.47	0	1.9
27			44	30	29	50	268	19	6.6	.31	0	1.8
28			45	28	28	46	186	18	9.6	.24	0	1.8
29			64	27	---	43	138	16	8.8	.18	0	1.8
30			104	25	---	41	108	15	7.5	.13	0	1.8
31		---	48	23	---	79	---	15	---	.08	0	---
TOTAL	0	0	1036.2	5976	4027	4909	5241	1060	283.4	81.09	.04	57.6
MEAN	0	0	33.4	193	144	158	175	34.2	9.45	2.62	.001	1.92
MAX	0	0	203	916	787	959	718	93	14	6.4	.03	5.9
MIN	0	0	0	0	18	41	58	15	6.3	.08	0	0
AC-FT	0	0	2060	11850	7990	9740	10400	2100	562	161	.08	114
CAL YR 1977	TOTAL	1655.91	MEAN	4.54	MAX	203	MIN	0	AC-FT	3280		
WTR YR 1978	TOTAL	22671.33	MEAN	62.1	MAX	959	MIN	0	AC-FT	44970		

## SAN JOAQUIN RIVER BASIN

11308000 NORTH FORK CALAVERAS RIVER NEAR SAN ANDREAS, CA--Continued

## WATER-QUALITY RECORDS

## PERIOD OF DAILY RECORD. --

WATER TEMPERATURES: October 1973 to current year.

SEDIMENT RECORDS: October 1973 to current year.

## EXTREMES FOR PERIOD OF DAILY RECORD. --

**SEDIMENT CONCENTRATIONS:** Maximum daily mean, 294 mg/L Mar. 2, 1974; minimum daily mean, 0 mg/L on several days in 1975-77.

SEDIMENT DISCHARGE: Maximum daily, 1,680 tons (1,520 metric tons) Mar. 2, 1974; minimum daily, 0 ton (0 metric ton) on many days each year.

## EXTREMES FOR CURRENT YEAR. - -

SEDIMENT CONCENTRATIONS: Maximum daily mean, 260 mg/L Jan. 6; minimum daily mean, 0 mg/l on many days.

SEDIMENT DISCHARGE: Maximum daily, 1,200 tons (1,090 metric tons) Jan. 6; minimum daily, 0 ton (0 metric ton) on many days.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
ONCE-DAILY

[illegible]

11308000 NORTH FORK CALAVERAS RIVER NEAR SAN ANDREAS, CA--Continued

## SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1							0	0	0
2							0	0	0
3							0	0	0
4							0	0	0
5							0	0	0
6							0	0	0
7							0	0	0
8							0	0	0
9							0	0	0
10							0	0	0
11							0	0	0
12							0	0	0
13							0	0	0
14							0	0	0
15							14	15	2.5
16							22	16	.95
17							203	213	407
18							130	43	29
19							28	5	.38
20							14	4	.15
21							9.4	3	.08
22							9.8	2	.05
23							199	232	269
24							59	27	5.8
25							26	4	.28
26							17	2	.09
27							44	7	.83
28							45	5	.61
29							64	7	1.2
30							104	17	4.8
31							48	7	.91
TOTAL	0	0	0	0	0	0	1036.20	---	723.63

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	28	4	.30	22	4	.24	46	11	3.6
2	20	3	.16	20	4	.22	193	105	78
3	17	2	.09	19	5	.26	268	83	66
4	18	2	.10	18	6	.29	579	152	366
5	321	98	223	22	11	.72	959	141	378
6	841	260	1200	117	28	13	569	46	80
7	132	15	5.3	440	102	181	273	9	6.6
8	65	10	1.8	329	29	34	181	6	2.9
9	314	81	192	787	170	511	134	4	1.4
10	338	57	82	414	60	68	104	2	.56
11	111	9	2.7	275	32	24	121	12	4.2
12	64	7	1.2	215	22	15	185	17	9.5
13	58	4	.63	345	29	29	140	7	2.6
14	310	84	195	213	12	6.9	100	3	.81
15	895	249	916	144	8	3.1	83	1	.22
16	378	48	56	106	6	1.7	73	1	.20
17	916	177	533	82	5	1.1	65	1	.18
18	308	22	23	68	4	.73	59	2	.32
19	244	10	6.6	59	3	.48	54	3	.44
20	170	6	2.8	52	2	.28	50	3	.41
21	101	4	1.1	46	2	.25	56	9	1.4
22	73	3	.59	42	2	.23	98	7	1.9
23	57	3	.46	38	2	.21	76	4	.82
24	46	2	.25	35	1	.09	78	6	1.3
25	0	0	0	32	1	.09	62	4	.67
26	18	1	.05	30	1	.08	54	3	.44
27	30	2	.16	29	1	.08	50	2	.27
28	28	3	.23	28	1	.08	46	1	.12
29	27	3	.22	---	---	---	43	1	.12
30	25	2	.14	---	---	---	41	1	.11
31	23	3	.19	---	---	---	79	11	3.4
TOTAL	5976.00	---	3445.07	4027	---	892.13	4909	---	1012.49

## SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	120	17	5.8	93	7	1.8	14	2	.08
2	95	5	1.3	77	6	1.2	14	2	.08
3	70	4	.76	67	6	1.1	14	2	.08
4	98	14	4.5	60	5	.81	13	2	.07
5	89	8	1.9	54	5	.73	13	2	.07
6	203	47	42	50	5	.68	12	2	.06
7	258	20	17	45	5	.61	11	2	.06
8	173	5	2.3	42	4	.45	11	2	.06
9	119	4	1.3	40	4	.43	10	2	.05
10	92	3	.75	37	4	.40	9.7	2	.05
11	77	3	.62	35	4	.38	10	1	.03
12	68	2	.37	33	4	.36	9.7	1	.03
13	61	1	.16	31	4	.33	9.3	1	.03
14	58	1	.16	30	4	.32	9.0	1	.02
15	126	11	12	29	3	.23	8.9	1	.02
16	469	47	71	28	3	.23	8.6	1	.02
17	281	19	16	27	3	.22	8.3	1	.02
18	186	6	3.0	26	3	.21	8.2	1	.02
19	130	5	1.8	24	3	.19	8.1	1	.02
20	123	6	2.0	23	3	.19	7.9	1	.02
21	149	6	2.4	22	3	.18	7.8	1	.02
22	101	4	1.1	21	3	.17	7.5	1	.02
23	85	3	.69	21	3	.17	6.6	1	.02
24	80	3	.65	21	3	.17	6.6	1	.02
25	718	81	188	21	3	.17	6.4	1	.02
26	512	29	44	20	3	.16	6.3	3	.05
27	268	10	7.2	19	3	.15	6.6	5	.09
28	186	9	4.5	18	3	.15	9.6	8	.21
29	138	8	3.0	16	3	.13	8.8	5	.12
30	108	7	2.0	15	3	.12	7.5	4	.08
31	---	---	---	15	2	.08	---	---	---
TOTAL	5241	---	438.26	1060	---	12.52	283.4	---	1.54

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	6.4	3	.05	.03	1	0	0	0	0
2	6.1	3	.05	.01	0	0	0	0	0
3	6.0	3	.05	0	0	0	0	0	0
4	5.5	3	.04	0	0	0	0	0	0
5	5.2	3	.04	0	0	0	0	0	0
6	4.5	3	.04	0	0	0	0	0	0
7	4.0	2	.02	0	0	0	0	0	0
8	3.6	2	.02	0	0	0	0	0	0
9	3.4	2	.02	0	0	0	0	0	0
10	3.2	2	.02	0	0	0	3.1	2	.02
11	3.6	2	.02	0	0	0	5.9	4	.06
12	3.7	2	.02	0	0	0	4.0	3	.03
13	3.7	2	.02	0	0	0	3.4	3	.03
14	3.5	2	.02	0	0	0	3.5	2	.02
15	2.9	2	.02	0	0	0	2.9	2	.02
16	2.4	2	.01	0	0	0	2.8	2	.02
17	2.1	2	.01	0	0	0	2.7	3	.02
18	1.9	2	.01	0	0	0	2.4	6	.04
19	1.7	2	.01	0	0	0	2.5	5	.03
20	1.5	2	.01	0	0	0	2.6	4	.03
21	1.3	2	.01	0	0	0	2.6	3	.02
22	1.2	2	.01	0	0	0	2.7	3	.02
23	.96	3	.01	0	0	0	2.6	3	.02
24	.74	3	.01	0	0	0	2.5	2	.01
25	.58	3	0	0	0	0	2.3	2	.01
26	.47	4	.01	0	0	0	1.9	2	.01
27	.31	3	0	0	0	0	1.8	2	.01
28	.24	2	0	0	0	0	1.8	2	.01
29	.18	2	0	0	0	0	1.8	2	.01
30	.13	1	0	0	0	0	1.8	2	.01
31	.08	1	0	0	0	0	---	---	---
TOTAL	81.09	---	.55	.04	---	0	57.60	---	.45

11308000 NORTH FORK CALAVERAS RIVER NEAR SAN ANDREAS, CA--Continued

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
DEC							
17...	1630	10.0	17	152	7.0	--	--
23...	0530	10.0	209	245	138	--	--
23...	1145	10.0	594	659	1060	--	63
JAN							
10...	1214	10.0	285	16	12	--	--
16...	1611	10.5	290	9	7.0	--	--
17...	0938	10.0	1210	184	601	29	40
FEB							
09...	1105	9.0	1460	338	1330	26	37
09...	1516	9.5	931	116	292	--	--
MAR							
02...	1100	12.0	113	58	18	--	--
04...	1330	11.5	740	267	533	28	37

DATE	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
DEC							
17...	--	--	--	100	--	--	--
23...	--	--	--	100	--	--	--
23...	79	87	97	100	--	--	--
JAN							
10...	--	--	--	96	100	--	--
16...	--	--	--	92	100	--	--
17...	51	64	77	89	96	99	100
FEB							
09...	48	61	75	86	96	99	100
09...	--	--	--	88	94	98	100
MAR							
02...	--	--	--	99	100	--	--
04...	49	65	84	95	99	100	--

## SAN JOAQUIN RIVER BASIN

11308600 CALAVERAS RIVER ABOVE NEW HOGAN LAKE, NEAR SAN ANDREAS, CA

LOCATION.--Lat 38°11'48", long 120°43'18", in NW¼SW¼ sec.13, T.4 N., R.11 E., Calaveras County, on right bank  
600 ft (183 m) below confluence of the North and South Forks of the Calaveras River, and 2.3 mi (3.7 km) west  
of San Andreas.

DRAINAGE AREA.--307 mi<sup>2</sup> (795 km<sup>2</sup>).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1970 to current year.

INSTRUMENTATION.--Temperature recorder since October 1970.

REMARKS.--Stream dry Oct. 1 to Dec. 15, backwater from New Hogan Dam Apr. 22 to July 17.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 31.5°C Aug. 8, 9, 1978; minimum recorded, 2.0°C Jan. 7, 1973,  
Jan. 4, 1976.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 31.5°C Aug. 8, 9; minimum recorded, 6.5°C Dec. 20, Jan. 24-26.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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



11308600 CALAVERAS RIVER ABOVE NEW HOGAN LAKE, NEAR SAN ANDREAS, CA--Continued

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	14.0	13.0					---	---	28.5	22.0	28.0	18.5
2	14.0	12.0					---	---	28.5	21.5	28.5	19.0
3	13.5	12.0					---	---	29.0	21.0	27.5	19.0
4	13.5	12.0					---	---	29.0	22.0	23.5	20.0
5	12.5	11.0					---	---	31.0	22.0	22.0	20.0
6	12.5	10.0					---	---	31.0	22.5	24.0	19.0
7	12.0	9.5					---	---	31.0	23.0	22.0	19.0
8	13.0	9.5					---	---	31.5	23.5	22.0	18.0
9	14.5	11.0					---	---	31.5	23.5	19.0	17.5
10	15.5	12.5					---	---	31.0	23.0	21.0	18.0
11	16.5	13.5					---	---	29.5	20.5	20.5	17.5
12	17.0	14.5					---	---	28.5	20.5	21.0	17.0
13	16.5	15.0					---	---	29.0	19.5	21.0	17.0
14	14.5	14.0					---	---	29.5	18.5	22.0	17.5
15	14.0	11.5					---	---	29.0	19.0	22.0	18.0
16	11.5	10.5					---	---	27.5	19.0	22.5	18.5
17	13.0	9.5					---	---	27.5	17.5	21.0	18.0
18	14.0	10.5					26.5	22.0	28.5	17.0	20.5	16.5
19	14.5	11.5					26.5	22.0	28.0	16.5	20.0	15.5
20	13.5	12.0					27.0	22.0	27.5	17.5	20.0	15.5
21	13.5	10.5					27.0	22.0	26.0	18.0	19.5	15.0
22	---	---					27.5	22.5	26.5	17.0	20.0	15.5
23	---	---					27.5	22.5	26.0	17.0	20.5	16.0
24	---	---					27.5	22.5	27.0	17.0	21.5	16.5
25	---	---					27.0	23.0	27.0	17.5	22.0	17.0
26	---	---					27.5	22.5	27.0	18.5	22.0	17.5
27	---	---					27.0	22.5	27.0	17.5	22.0	17.0
28	---	---					27.0	22.0	28.0	18.5	21.5	17.0
29	---	---					26.5	21.5	28.5	19.5	21.5	17.0
30	---	---					27.0	22.0	27.5	19.5	22.0	17.0
31	---	---					28.0	22.0	27.5	18.5	---	---
MONTH	---	---					---	---	31.5	16.5	28.5	15.0

## 11308700 NEW HOGAN LAKE NEAR VALLEY SPRINGS, CA

LOCATION.--Lat 38°09'01", long 120°48'45", in SW¼SW¼ sec.31, T.4 N., R.11 E., Calaveras County, in control house at New Hogan Dam on the Calaveras River, 3.0 mi (4.8 km) south of Valley Springs.

DRAINAGE AREA.--362 mi<sup>2</sup> (938 km<sup>2</sup>).

PERIOD OF RECORD.--December 1963 to current year. Prior to October 1971, published as "New Hogan Reservoir."

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by an earthfill dam and four earthfill dikes. Storage began Dec. 20, 1963. Total capacity, 323,715 acre-ft (399 hm<sup>3</sup>) between elevations 534.5 ft (162.92 m), invert of outlet valve and 713.0 ft (217.32 m), top of spillway gates. Capacity table revised Oct. 1, 1975. Elevation of spillway crest is 679.5 ft (207.11 m). 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 ft<sup>3</sup>/s (170 m<sup>3</sup>/s) at Bellota. Records, including extremes, show contents at 2400 hours.

COOPERATION.--Records furnished by Corps of Engineers, not rounded to Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 273,130 acre-ft (337 hm<sup>3</sup>) May 7, 1974, elevation, 700.88 ft (213.628 m); minimum since initial season of normal operation, 9,360 acre-ft (11.5 hm<sup>3</sup>) Oct. 27, 1964, elevation, 516.81 ft (157.524 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 225,917 acre-ft (279 hm<sup>3</sup>) May 13, elevation, 688.27 ft (209.785 m); minimum, 10,706 acre-ft (13.2 hm<sup>3</sup>) Dec. 10, elevation, 579.40 ft (176.601 m).

## Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

545	588	600	27228
550	1120	610	38995
555	1897	630	70585
560	2965	650	113160
570	6157	670	166770
580	11054	700	269594
590	17985		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11160	10839	10740	14807	73491	119254	172391	221316	221677	206355	188829	170676
2	11154	10833	10735	14921	73586	121540	173026	222654	221224	205821	188132	170136
3	11142	10831	10729	15050	73700	123723	173540	223353	220877	205421	187467	169628
4	11125	10816	10729	15194	73814	131854	174571	223914	220563	205021	186867	169180
5	11119	10850	10723	17873	74309	143274	175301	224334	220181	204622	186299	169090
6	11101	10830	10717	21890	76290	149343	178916	224756	219696	204157	185764	168821
7	11089	10833	10712	22936	82932	152259	181607	225107	219073	203526	185135	168553
8	11078	10827	10712	23486	86836	154183	183195	225494	218519	203030	184571	168255
9	11060	10821	10712	26439	95687	155634	184759	225706	217967	202533	183944	167957
10	11048	10810	10706	29385	99593	156864	185356	225311	217519	202005	183288	169690
11	11037	10804	10717	30575	102009	158185	186048	225847	217002	201511	182633	167363
12	11031	10790	10712	31244	104686	160032	186615	225882	216452	201082	181980	167067
13	11019	10769	10712	32061	108596	161280	187120	225917	215936	200589	181421	166800
14	11007	10787	10746	37380	110889	162271	187657	225882	215388	199965	180893	166533
15	11001	10775	10758	46814	112464	163119	188703	225811	214772	199342	180335	166267
16	10990	10780	10752	51363	113376	163851	191700	225635	214225	198721	179779	165971
17	10984	10763	11081	60415	114268	164498	193659	225530	213645	198198	179193	165588
18	10978	10758	11458	63617	115019	165086	195014	225369	212998	197611	178577	165233
19	10966	10758	11632	66537	115674	165617	196116	225178	212487	196960	177993	164910
20	10961	10762	11718	68307	116234	166149	197183	224791	211944	196278	177349	164586
21	10931	10781	11779	69514	116625	166829	198231	224545	211436	195629	176736	164321
22	10926	10787	11846	70344	117016	167601	199081	224334	210928	194950	176125	164057
23	10914	10781	12451	70975	117359	168196	199867	224124	210421	194238	175484	163793
24	10908	10779	12809	71478	117727	168732	200219	223949	209881	193626	174906	163558
25	10902	10769	12984	71908	117997	169209	208097	223633	209341	193015	174328	163265
26	10891	10763	13108	72246	118267	169628	213543	223353	208802	192437	173752	162943
27	10885	10758	13253	72340	118538	169987	216349	223143	208264	191828	173146	162651
28	10868	10768	13402	72716	118834	170256	218243	223003	207795	191155	172663	162358
29	10868	10762	13938	72886	---	170526	218696	222793	207359	190549	172210	162096
30	10856	10735	14365	73283	---	170886	220112	222549	206890	190007	171668	161805
31	10844	---	14624	73416	---	171608	---	222165	---	189497	171187	---
MAX	11160	10850	14624	73416	118834	171608	220112	225917	221677	206355	188829	170676
MIN	10844	10735	10706	14807	73491	119254	172391	221316	206890	189497	171187	161805
†	579.64	579.45	585.54	631.51	652.33	671.62	686.61	687.20	682.73	677.40	671.48	668.31
‡	-334	-109	+3889	+58792	+45418	+52774	+48504	+2053	-15275	-17393	-18310	-9382
††	271	117	68	125	254	525	637	1320	2084	2603	2344	1558

CAL YR 1977 ‡ -53048  
WTR YR 1978 ‡ +150627

† Elevation, in feet NGVD, at end of month.  
‡ Change in contents, in acre-feet.  
†† Evaporation, in acre-feet.

## SAN JOAQUIN RIVER BASIN

363

11308900 CALAVERAS RIVER BELOW NEW HOGAN DAM, NEAR VALLEY SPRINGS, CA

LOCATION.--Lat 38°08'53", long 120°49'26", in NW¼NE¼ sec.1, T.3 N., R.10 E., Calaveras County, on right bank at county road bridge, 0.5 mi (0.8 km) upstream from Cosgrove Creek, 0.8 mi (1.3 km) downstream from New Hogan Dam, and 3.0 mi (4.8 km) south of Valley Springs.

DRAINAGE AREA.--363 mi<sup>2</sup> (940 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1961 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 519.8 ft (158.44 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Auxiliary nonrecording gage 300 ft (91 m) downstream at different datum used May 1, 1962, to Jan. 26, 1963.

REMARKS.--Records good. Flow regulated by New Hogan Lake (station 11308700). Some seepage of North Fork Stanislaus River water enters basin from diversion canals and reservoirs, normally not over 1.5 ft<sup>3</sup>/s (0.042 m<sup>3</sup>/s). Small diversions above station for irrigation.

AVERAGE DISCHARGE (adjusted for change in contents in and evaporation from New Hogan Lake).--17 years, 211 ft<sup>3</sup>/s (5.976 m<sup>3</sup>/s), 152,900 acre-ft/yr (189 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,830 ft<sup>3</sup>/s (222 m<sup>3</sup>/s) Jan. 25, 26, 1969, gage height, 7.46 ft (2.274 m); no flow many days in 1961-65, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 335 ft<sup>3</sup>/s (9.49 m<sup>3</sup>/s) Aug. 1, 2, gage height, 1.92 ft (0.585 m); minimum daily, 0.40 ft<sup>3</sup>/s (0.011 m<sup>3</sup>/s) Oct. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	2.0	1.7	1.9	4.4	15	19	26	270	249	268	253
2	2.0	1.6	1.7	1.9	3.9	11	20	26	273	242	303	253
3	1.8	1.5	1.7	2.2	3.4	3.8	20	26	242	204	290	232
4	1.6	1.4	1.7	1.6	3.2	16	31	32	219	193	267	216
5	1.6	2.2	1.6	6.6	2.3	12	38	40	246	199	265	170
6	1.5	1.7	1.7	4.8	11	6.0	27	40	296	231	265	118
7	1.5	1.7	1.7	2.2	19	3.4	4.5	40	322	272	265	125
8	1.8	1.7	1.5	1.7	8.7	2.4	2.2	40	296	256	265	136
9	2.0	1.7	1.1	6.6	12	2.1	2.2	73	281	227	273	154
10	2.0	1.4	1.4	4.5	5.8	1.9	12	121	281	226	290	150
11	2.0	1.3	1.8	2.5	4.4	1.6	45	151	279	207	290	151
12	2.0	1.3	1.7	2.0	3.3	5.1	55	151	281	189	269	153
13	2.0	1.3	1.7	3.9	4.9	2.0	38	151	281	237	238	136
14	1.5	1.3	1.7	20	3.6	1.6	25	151	285	277	234	124
15	.40	1.5	2.1	12	3.5	1.9	25	151	300	277	239	137
16	.70	1.3	1.4	7.8	3.0	1.9	25	135	300	277	238	151
17	.90	1.3	3.4	10	2.6	1.9	25	196	302	250	255	151
18	1.0	1.7	2.1	4.8	2.5	2.0	25	201	298	255	272	155
19	1.0	1.9	1.7	4.4	2.2	1.9	25	221	286	283	272	154
20	1.5	1.5	1.7	3.1	2.0	1.7	25	272	269	301	272	144
21	1.5	1.6	1.7	2.2	12	2.2	25	223	256	303	273	132
22	1.4	1.4	1.7	1.2	31	2.5	25	171	245	303	273	132
23	1.3	2.3	4.0	1.2	34	13	25	159	259	303	273	132
24	1.5	2.7	2.0	1.3	39	25	25	163	257	275	273	132
25	1.2	1.7	1.7	1.5	40	25	25	230	257	257	273	132
26	1.4	1.5	2.0	6.7	40	25	20	234	257	257	273	143
27	1.3	1.5	2.0	21	33	28	4.9	194	257	264	273	159
28	1.4	1.7	2.1	42	21	41	2.8	176	240	277	247	152
29	1.5	1.5	2.8	45	---	46	2.0	178	226	264	226	153
30	1.5	1.5	2.2	44	---	43	11	197	237	245	226	150
31	1.6	---	2.0	44	---	26	---	223	---	245	240	---
TOTAL	46.40	48.7	59.3	314.6	510.5	371.9	654.6	4392	8098	7845	8180	4680
MEAN	1.50	1.62	1.91	10.1	18.2	12.0	21.8	142	270	253	264	156
MAX	2.0	2.7	4.0	45	44	46	55	272	322	303	303	253
MIN	.40	1.3	1.1	1.2	2.0	1.6	2.0	26	219	189	226	118
AC-FT	92	97	118	624	1010	738	1300	8710	16060	15560	16230	9280
MEAN ‡	47	1.76	66.4	968	841	879	848	205	48.2	12.5	4.29	24.5
AC-FT ‡	29	105	4080	59540	46680	54040	50440	12580	2870	770	264	1460

CAL YR 1977 TOTAL 29842.80 MEAN 81.8 MAX 303 MIN .40 AC-FT 59190 MEAN ‡ 15.3 AC-FT ‡ 11110  
WTR YR 1978 TOTAL 35201.00 MEAN 96.4 MAX 322 MIN .40 AC-FT 69820 MEAN ‡ 184 AC-FT ‡ 133100

‡ Adjusted for change in contents and evaporation from New Hogan Lake.

## SAN JOAQUIN RIVER BASIN

11308900 CALAVERAS RIVER BELOW NEW HOGAN DAM, NEAR VALLEY SPRINGS, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-66, 1971 to current year.

CHEMICAL ANALYSES: Water years 1964-66.

WATER TEMPERATURES: Water years 1971 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1970 to current year.

INSTRUMENTATION.--Temperature recorder since October 1970.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 24.0°C Aug. 10, 28, 29, 1977; minimum recorded, 5.5°C Dec. 17, 1971, Jan. 1, 1973.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 19.5°C Oct. 3, 4; minimum recorded, 7.5°C Nov. 20, Dec. 20, Jan. 24.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	19.0	16.5	15.0	12.5	11.5	10.0	10.0	9.0	11.0	10.0	13.0	10.0
2	19.0	16.5	14.5	12.0	11.0	9.5	10.5	9.5	11.0	10.0	12.5	10.5
3	19.5	16.5	14.5	12.5	10.5	9.0	11.0	10.0	11.5	10.0	14.0	11.0
4	19.5	16.5	14.0	12.5	11.0	9.5	11.0	10.5	11.0	10.0	13.5	12.0
5	19.0	16.0	14.5	12.5	11.0	9.5	11.0	10.5	11.0	10.0	14.0	12.0
6	18.5	15.5	13.5	12.0	11.0	9.5	12.5	11.0	13.0	10.5	15.5	11.0
7	18.0	15.0	13.0	11.0	10.5	9.5	12.0	10.0	12.0	10.5	16.0	11.5
8	18.0	15.0	13.0	11.0	10.5	9.0	11.5	10.5	12.0	9.5	14.5	13.5
9	18.0	15.5	12.5	10.5	9.5	8.5	12.5	11.5	11.5	10.5	14.5	13.0
10	18.5	16.0	12.5	10.5	9.5	8.0	12.5	11.0	11.0	10.0	14.5	12.5
11	18.5	16.0	13.0	11.0	9.5	8.0	12.5	10.5	12.0	9.5	14.0	13.0
12	18.0	16.5	13.0	11.0	10.0	9.0	11.5	10.5	10.0	9.5	14.5	11.5
13	18.5	16.0	13.0	11.0	11.0	9.5	12.0	11.0	12.0	9.0	14.0	11.0
14	18.5	16.0	12.0	10.0	10.5	9.5	12.5	9.5	11.5	8.5	15.0	12.0
15	18.5	15.0	12.5	10.5	11.5	10.0	11.0	10.0	12.5	10.0	15.0	12.0
16	17.5	14.5	12.5	10.5	10.0	9.5	12.5	10.5	11.0	9.5	15.5	12.5
17	16.5	14.0	12.5	10.5	11.0	10.0	13.0	11.5	11.5	9.0	16.0	13.5
18	17.5	15.0	12.0	10.5	10.5	9.5	12.0	11.0	12.0	9.5	16.0	14.0
19	16.5	13.5	10.5	9.0	9.5	8.0	12.5	11.0	12.5	9.5	16.5	14.0
20	16.5	14.0	9.5	7.5	9.0	7.5	12.0	10.5	13.0	10.0	16.5	14.5
21	16.0	14.0	9.5	8.5	10.5	8.5	11.5	10.0	13.0	9.5	16.0	15.0
22	16.5	14.0	11.0	9.0	11.0	9.5	12.0	10.5	12.0	9.5	16.5	14.5
23	16.0	14.5	11.0	9.0	12.0	11.0	10.5	9.0	11.5	9.5	15.5	11.0
24	17.0	14.5	12.5	10.5	11.0	10.0	9.5	7.5	11.0	9.5	13.5	10.5
25	17.5	15.0	12.0	10.0	11.0	10.0	10.0	8.0	11.0	9.5	14.0	10.5
26	17.0	15.5	12.0	10.5	11.0	10.5	10.5	8.0	10.5	9.5	13.5	11.0
27	16.0	14.5	12.0	10.5	12.0	11.0	11.5	9.5	11.5	9.5	14.0	11.0
28	14.5	14.0	12.0	10.0	13.0	12.0	11.5	10.5	11.0	9.5	13.0	11.0
29	15.5	13.5	11.5	10.0	13.0	12.0	11.0	10.5	---	---	11.5	11.0
30	16.0	14.0	11.5	10.0	12.5	11.0	10.5	10.0	---	---	12.0	11.0
31	15.0	13.0	---	---	11.0	9.5	10.5	10.0	---	---	13.0	11.0
MONTH	19.5	13.0	15.0	7.5	13.0	7.5	13.0	7.5	13.0	8.5	16.5	10.0

11308900 CALAVERAS RIVER BELOW NEW HOGAN DAM, NEAR VALLEY SPRINGS, CA--Continued

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	12.0	11.0	15.5	11.5	12.5	12.0	13.0	12.5	13.5	13.0	13.0	12.5
2	14.0	10.5	15.5	11.5	13.0	12.0	13.0	12.5	13.5	13.0	13.0	12.5
3	13.0	10.5	15.5	12.0	13.0	12.0	13.0	12.5	13.5	13.0	13.0	12.5
4	13.0	11.0	14.5	11.5	13.0	12.0	13.0	12.5	13.5	13.0	13.0	12.5
5	12.5	10.5	14.0	11.5	13.0	12.0	13.0	12.5	13.5	13.0	13.0	12.5
6	12.5	11.0	14.5	11.0	13.0	12.0	13.0	12.5	13.5	13.0	13.0	12.0
7	13.5	10.0	14.5	11.5	13.0	12.5	13.0	12.5	13.5	13.0	13.0	12.0
8	15.0	11.0	14.5	11.5	13.0	12.5	13.0	12.5	13.5	13.0	13.0	12.0
9	16.5	12.5	13.0	11.5	13.0	12.0	13.0	12.5	13.5	13.0	12.5	12.0
10	17.5	12.0	13.0	11.5	12.5	12.0	13.0	12.5	13.5	13.0	13.0	12.5
11	13.0	11.0	12.5	11.5	13.0	12.0	13.0	12.5	13.5	13.0	13.0	12.5
12	13.0	11.0	13.0	11.5	13.0	12.0	13.0	12.5	13.5	13.0	13.0	12.5
13	12.5	11.5	13.0	11.5	13.0	12.0	13.0	12.5	13.5	12.5	13.0	12.5
14	12.5	11.5	13.0	12.0	13.0	12.0	13.0	12.5	13.5	12.5	13.0	12.5
15	12.0	11.5	12.5	12.0	13.0	12.0	13.0	12.5	13.5	12.5	13.0	12.5
16	13.0	11.0	12.5	12.0	13.0	12.0	13.5	12.5	13.0	12.5	13.0	12.5
17	14.5	10.5	13.0	12.0	13.0	12.0	13.5	12.5	13.0	12.5	13.0	12.5
18	15.0	10.5	13.0	12.0	13.0	12.5	13.0	12.5	13.5	12.5	13.0	12.5
19	15.0	11.0	13.0	12.0	13.0	12.5	13.5	12.5	13.5	13.0	13.0	12.5
20	13.0	11.5	13.0	12.0	13.0	12.5	13.5	13.0	13.5	13.0	13.0	12.5
21	14.5	11.0	13.0	12.0	13.0	12.0	13.5	13.0	13.5	13.0	13.0	12.5
22	14.5	11.0	13.0	12.0	13.0	12.0	13.5	13.0	13.5	13.0	13.5	12.5
23	14.5	11.0	12.5	12.0	13.0	12.0	13.5	13.0	13.5	13.0	13.5	12.5
24	12.5	11.5	12.5	12.0	13.0	12.5	13.5	13.0	13.5	12.5	13.5	12.5
25	14.0	12.0	12.5	12.0	13.0	12.5	13.5	13.0	13.5	13.0	13.5	12.5
26	16.0	12.5	12.5	12.0	13.0	12.5	13.5	13.0	13.5	13.0	13.5	12.5
27	18.0	14.0	13.0	12.0	12.5	12.5	13.5	13.0	13.5	13.0	13.5	12.5
28	17.5	15.0	13.0	12.0	13.0	12.5	13.5	13.0	13.5	12.5	13.5	12.5
29	18.5	15.0	12.5	12.0	13.0	12.5	13.5	13.0	13.0	12.5	13.5	12.5
30	17.5	12.5	13.0	12.0	13.0	12.5	13.5	13.0	13.0	12.5	13.5	12.5
31	---	---	12.5	12.0	---	---	13.5	13.0	13.0	12.5	---	---
MONTH	18.5	10.0	15.5	11.0	13.0	12.0	13.5	12.5	13.5	12.5	13.5	12.0

11312000 BEAR CREEK NEAR LOCKEFORD, CA

LOCATION.--Lat 38°09'10", long 121°08'17", in NW¼SE¼ sec.31, T.4 N., R.8 E., San Joaquin County, on right bank 15 ft (5 m) downstream from county road bridge, and 0.8 mi (1.3 km) southeast of Lockeford.

DRAINAGE AREA, --47.4 mi<sup>2</sup> (122.8 km<sup>2</sup>).

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1315-A. October 1926 to November 1930 at site 3 mi (5 km) downstream; records not equivalent.

REVISED RECORDS.--WSP 1635: Drainage area.

GAGE.--Water-stage recorder and low-water concrete control. Datum of gage is 80.68 ft (24.591 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

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. Summer discharge influenced by return flows from irrigated areas.

AVERAGE DISCHARGE.--48 years, 11.6 ft<sup>3</sup>/s (0.329 m<sup>3</sup>/s), 8,400 acre-ft/yr (10.4 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,930 ft<sup>3</sup>/s (83.0 m<sup>3</sup>/s) Apr. 3, 1958, gage height, 15.13 ft (4.612 m); no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft<sup>3</sup>/s (14.2 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)		Gage height (ft) (m)		Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)		Gage height (ft) (m)	
Jan. 9	2130	916	25.9	7.89	2.405	Feb. 7	2030	1080	30.6	8.30	2.530
Jan. 14	0730	*1320	37.4	8.81	2.685	Mar. 4	2400	1090	30.9	8.31	2.533
Jan. 17	0900	682	19.3	7.25	2.210	Mar. 6	0030	587	16.6	6.96	2.121

Minimum, no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.03	0	1.1	1.9	2.7	42	16	.01	0	.39	.02
2	.02	.01	0	.75	1.8	4.9	22	6.9	.01	0	.08	0
3	.02	.01	0	.56	1.6	53	11	3.7	.01	0	.04	0
4	.01	0	0	.87	1.4	294	24	2.0	0	0	.01	.16
5	.01	.32	0	.81	35	575	27	1.6	0	0	0	.58
6	.01	.08	0	160	116	322	156	1.2	0	0	0	.28
7	.26	.02	0	35	370	84	218	.86	0	0	0	.08
8	.74	.01	0	14	290	49	68	.68	0	.35	0	.39
9	.28	0	0	317	385	43	34	.55	0	.23	0	.62
10	.09	0	0	234	115	28	20	.30	0	.02	0	.11
11	.07	0	.05	55	63	20	12	.06	0	.01	0	.03
12	.24	0	.01	28	47	50	8.1	.34	0	0	.68	0
13	.14	0	0	82	89	41	5.8	.10	0	0	.40	0
14	.14	0	.60	869	57	21	4.3	.02	.01	0	.34	0
15	.07	0	.35	807	36	13	3.6	.01	0	0	.03	0
16	.19	0	.10	316	28	9.9	4.8	.40	0	0	.01	0
17	.14	0	2.5	488	22	8.0	9.5	.69	0	0	.02	.70
18	.44	0	3.5	90	17	6.5	7.6	.26	0	0	.02	.27
19	.57	0	1.2	103	13	5.1	4.5	.14	0	0	0	.03
20	.50	0	1.0	55	10	3.8	3.1	.71	0	0	0	.01
21	.46	.54	.21	32	8.1	10	2.4	.46	0	.39	0	.01
22	.09	.15	.26	20	6.4	11	1.9	.15	0	.07	0	.01
23	.04	.01	29	13	5.1	10	1.5	.14	0	.03	0	.10
24	.02	0	6.6	8.5	4.4	6.8	1.2	.04	0	.03	.69	.07
25	.08	0	2.1	6.0	3.8	4.9	1.8	.19	.10	.01	1.2	.04
26	.14	0	1.3	4.5	3.3	3.9	62	.35	.03	.01	.21	.06
27	.20	0	.90	3.6	2.8	3.2	52	.03	.13	0	.02	.08
28	.04	0	1.1	3.0	3.8	2.7	23	.02	.28	0	.01	.79
29	.02	0	1.7	2.5	---	2.3	13	.02	.04	0	0	.52
30	.01	0	1.6	2.2	---	2.2	7.9	.01	.01	.14	.01	.10
31	.01	---	1.9	2.1	---	2.6	---	.01	---	.45	.03	---
TOTAL	5.13	1.18	55.98	3834.68	1737.4	1693.5	852.0	37.94	.63	1.74	4.19	5.06
MEAN	.17	.039	1.81	124	62.1	54.6	28.4	1.22	.021	.056	.14	.17
MAX	.74	.54	29	869	385	575	218	16	.28	.45	1.2	.79
MIN	.01	0	0	.56	1.4	2.2	1.2	.01	0	0	0	0
AC-FT	10	2.3	111	7610	3450	3360	1690	75	1.2	3.5	8.3	10
CAL YR 1977	TOTAL	105.56	MEAN	.29	MAX	29	MIN	0	AC-FT	209		
WTR YR 1978	TOTAL	8229.43	MEAN	22.5	MAX	869	MIN	0	AC-FT	16320		

## 11313000 DELTA-MENDOTA CANAL AT TRACY PUMPING PLANT, NEAR TRACY, CA

LOCATION.--Lat 37°47'49", long 121°35'03", in SW¼SW¼ sec.31, T.1 S., R.4 E., Alameda County, at Tracy pumping plant at intake to canal, 6 mi (10 km) southeast of Byron, and 10 mi (16 km) northwest of Tracy.

PERIOD OF RECORD.--June 1951 to current year. Prior to October 1959, published as "near Tracy."

GAGE.--Water-stage recorder on forebay, pressure gages on pump discharge lines, and operating time of pumps. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

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 (61 m) 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.

COOPERATION.--Records furnished by Bureau of Reclamation, rounded to Geological Survey standards.

AVERAGE DISCHARGE.--78 years, 2,122 ft<sup>3</sup>/s (60.10 m<sup>3</sup>/s), 1,537,000 acre-ft/yr (1.90 km<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,935 ft<sup>3</sup>/s (140 m<sup>3</sup>/s) Aug. 11, 1969; no flow many days in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1030	206	2410	3840	4200	4050	4060	1630	2880	4670	4340	4640
2	1430	1610	1820	3840	4210	4050	4040	1630	3200	4660	3240	4660
3	1390	1310	802	3550	4200	4030	4050	1630	3230	4670	3220	4640
4	640	1160	797	3140	4240	3940	3900	1630	3180	4650	3510	4640
5	640	1150	798	3170	4220	3860	4070	1630	3220	4660	3970	4420
6	645	1150	802	3180	4270	3990	4080	1630	3160	4670	3940	3870
7	640	1960	461	3730	4150	4040	4090	1630	3180	4730	4020	3790
8	922	2460	317	3990	3930	3610	4080	1620	3540	4730	4640	3840
9	839	2110	315	4010	3940	4050	4080	1620	3930	4700	4640	3810
10	838	1640	312	4010	3920	4050	4070	1610	3920	4710	4320	3830
11	836	1660	311	4010	3940	4040	4080	1620	3910	4430	3920	3810
12	837	725	311	4010	3940	4050	4050	1620	3890	4700	4020	3810
13	838	307	316	3990	3950	4010	4090	1610	3890	4690	4000	3820
14	484	811	670	3910	4000	4030	4100	1620	4330	4700	4020	3820
15	302	1880	868	4030	4020	4040	4070	2160	4640	4680	4010	3810
16	108	1690	1730	3960	4150	4030	4060	2470	4650	4700	4020	3820
17	102	1880	3910	4040	3940	4040	2160	2470	4650	4720	4020	3840
18	100	1660	3890	4020	4020	4030	811	2460	4660	4710	4010	3800
19	98	1090	3950	4050	4040	4040	813	2470	4670	4750	3990	3810
20	102	857	4040	4020	4020	4020	813	2470	4700	4370	3990	3800
21	156	929	3060	4000	4070	4030	813	2480	4660	4020	3980	3830
22	615	1170	2410	4020	4090	4030	814	2470	4660	4050	3740	3530
23	608	1580	2400	3940	4070	4040	815	2460	4670	4050	4220	3190
24	477	2440	3520	3930	4090	4010	816	2450	4660	4040	4670	3180
25	69	2810	3790	3950	4060	4020	1260	2450	4640	4060	4660	3180
26	70	3170	3780	3960	4050	4050	1640	2430	4650	4050	4660	3200
27	69	2420	3930	3930	4050	3420	1580	2420	4650	4030	4660	3190
28	64	2440	3930	3930	4040	4060	1630	2420	4670	4010	4650	3180
29	65	2430	3840	3920	---	3810	1630	2410	4640	4680	4680	3180
30	62	2430	3870	3930	---	4010	1650	2410	4660	4670	4670	3190
31	65	---	3860	3990	---	4050	---	2420	---	4670	4660	---
TOTAL	15141	49135	67220	120000	113820	123530	82215	64050	123990	139630	129090	113130
MEAN	488	1638	2168	3871	4065	3985	2741	2066	4133	4504	4164	3771
MAX	1430	3170	4040	4050	4270	4060	4100	2480	4700	4750	4680	4660
MIN	62	206	311	3140	3920	3420	811	1610	2880	4010	3220	3180
AC-FT	30030	97460	133300	238000	225800	245000	163100	127000	245900	277000	256000	224400
CAL YR 1977 TOTAL		555294	MEAN	1521	MAX	4060	MIN	62	AC-FT	1101000		
WTR YR 1978 TOTAL		1140951	MEAN	3126	MAX	4750	MIN	62	AC-FT	2263000		

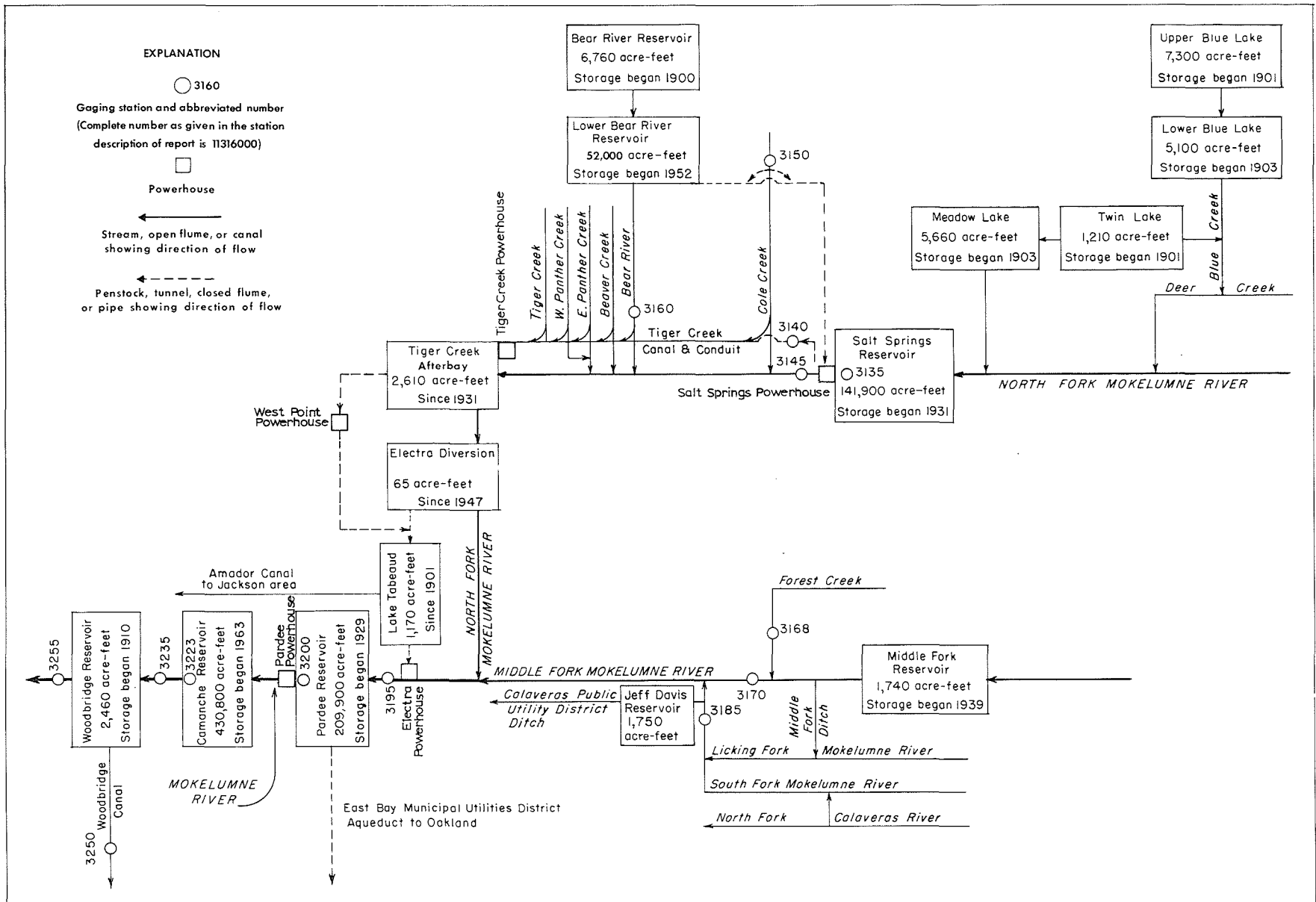


FIGURE 11.--Schematic diagram showing diversions and storage in Mokelumne River basin.



## 11313500 SALT SPRINGS RESERVOIR NEAR WEST POINT, CA

LOCATION.--Lat 38°30'00", long 120°12'55", in SE¼ sec.33, T.8 N., R.16 E., Calaveras County, Hydrologic Unit 18040012, Eldorado National Forest, at right end of Salt Springs Dam on North Fork Mokelumne River, 2 mi (3 km) upstream from Cole Creek, and 18 mi (29 km) northeast of West Point.

DRAINAGE AREA.--169 mi<sup>2</sup> (438 km<sup>2</sup>).

PERIOD OF RECORD.--March 1931 to current year. Prior to October 1964, records published as usable contents.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.).

REMARKS.--Reservoir is formed by concrete-faced, rockfill dam, completed in 1931; storage began in March 1931. Capacity, 141,900 acre-ft (175 hm<sup>3</sup>) between elevations 3,667.75 ft (1,117.930 m), outlet drain, and 3,958.0 ft (1,206.40 m), top of radial gates, NGVD. Storage of 1,860 acre-ft (2.29 hm<sup>3</sup>) available for release to river only. Water is released through powerhouse just below dam and discharged into Tiger Creek powerhouse conduit (station 11314000). Figures given herein represent total contents. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Energy Regulatory Commission Project.

EXTREMES (AT 1500) FOR PERIOD OF RECORD.--Maximum contents observed, 141,900 acre-ft (175 hm<sup>3</sup>) for several days in June or July each year 1948-54, 1956-58, 1960, 1962-63, 1965, 1967, 1969-75, and 1978, elevation, 3,958.0 ft (1,206.40 m); no contents at times in 1932-33, 1945, 1962.

EXTREMES (AT 1500) FOR CURRENT YEAR.--Maximum contents observed, 141,900 acre-ft (175 hm<sup>3</sup>) June 28, 29, elevation, 3,958.0 ft (1,206.40 m); minimum, 3,990 acre-ft (4.92 hm<sup>3</sup>) Feb. 5, elevation, 3,723.0 ft (1,134.770 m).

Capacity table (elevation, in feet, and contents, in acre-feet)

3667.75	45	3740.0	7320
3700.0	1250	3750.0	9800
3705.0	1680	3760.0	12700
3710.0	2200	3780.0	19600
3715.0	2810	3800.0	28000
3720.0	3520	3850.0	54900
3725.0	4320	3900.0	90800
3730.0	5230	3958.0	141900
3735.0	6230		

CONTENTS, IN ACRE-Feet, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 1500

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4222	4205	5172	8838	5520	5172	27972	47365	133779	141088	129586	99556
2	4239	4205	5210	8194	5115	5480	28888	48298	134625	140992	128478	98482
3	4273	4205	5267	7670	4764	6314	29489	49955	134530	141184	127374	97330
4	4273	4205	5286	7210	4341	7233	29908	52190	134530	141088	126366	96384
5	4273	4205	5325	7256	3990	9169	30189	54539	135001	141472	125361	95289
6	4273	4205	5364	7859	4056	10204	30330	56115	135567	141376	124359	95370
7	4273	4222	5383	7930	4674	10931	30471	57396	135567	141665	123361	95533
8	4273	4256	5422	7554	5306	11480	30660	59023	135472	141376	122365	95370
9	4273	4273	5344	7508	5738	12015	30896	61684	135567	141280	121373	95045
10	4273	4273	5364	8194	6442	12288	31181	64545	135378	141568	120744	95614
11	4273	4273	5383	8170	6920	12411	31944	68101	134625	141472	119667	95777
12	4273	4290	5344	8267	6853	12627	33007	71095	134719	141280	118684	95533
13	4273	4290	5172	8194	6875	12814	34184	74654	135661	140992	117615	95289
14	4273	4290	4966	8439	6897	12908	35130	79184	138506	140704	117170	94964
15	4273	4324	5441	9325	6809	12876	35784	85290	139938	140704	116372	94964
16	4273	4324	5920	9933	6549	12751	36444	88335	139651	140512	115753	94721
17	4273	4324	6766	11016	6105	13570	36853	89993	138887	140225	114958	94478
18	4273	4222	7554	11422	5579	13865	37110	92223	139555	139746	114078	93993
19	4273	4222	7600	11776	5286	13768	37417	95289	140992	139364	113114	93589
20	4273	4222	7324	11687	4984	14224	38041	98729	141184	138792	112065	93428
21	4273	4222	7053	11422	4550	14688	38459	102391	141184	138125	111020	93026
22	4273	4445	6744	10789	4674	15569	39036	106967	141184	137365	109980	92704
23	4273	4585	6964	10259	4800	16263	39352	111281	140897	136701	108943	92303
24	4273	4620	7233	9613	5096	17043	39669	113201	140800	135944	107911	91983
25	4273	4728	7031	9247	5172	17657	41544	113289	140608	135189	106796	91583
26	4273	4800	6920	8488	5191	18391	43017	113201	140800	134719	105858	91264
27	4273	4873	7301	8026	5191	19404	43901	114281	141281	134061	104753	90866
28	4273	4924	8170	7416	5172	20598	44908	117793	141857	133310	103654	90310
29	4273	5040	8513	6831	---	22194	45871	121643	141857	132375	102727	89993
30	4273	5096	9169	6442	---	23935	46845	126274	141665	131443	101721	89676
31	4205	---	9273	5941	---	26313	---	130699	---	130513	100553	---
MAX	4273	5096	9273	11776	6920	26313	46845	130699	141857	141665	129586	99556
MIN	4205	4205	4966	5941	3990	5172	27972	47365	133779	130513	100553	89676
(+)	3724.3	3729.3	3748.0	3733.6	3729.7	3796.2	3836.7	3946.2	3957.8	3946.0	3912.0	3898.6
(+)	-17	+891	+4180	-3330	-769	+21100	+20500	+83900	+11000	-11200	-30000	-10900

CAL YR 1977 ‡ -2800

WTR YR 1978 ‡ +85500

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet, rounded to Geological Survey standards.

## SAN JOAQUIN RIVER BASIN

## 11314000 TIGER CREEK POWERHOUSE CONDUIT BELOW SALT SPRINGS DAM, CA

LOCATION.--Lat 38°29'47", long 120°13'04", in SW¼ sec.33, T.8 N., R.16 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on left bank 1,000 ft (305 m) downstream from Salt Springs Dam and powerhouse.

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

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 3,620 ft (1,103 m), from topographic map. Auxiliary nonrecording gages in stilling wells upstream and downstream from control.

REMARKS.--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 collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--47 years, 348 ft<sup>3</sup>/s (9.855 m<sup>3</sup>/s), 252,100 acre-ft/yr (311 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 577 ft<sup>3</sup>/s (16.3 m<sup>3</sup>/s) June 22, 1945; no flow at times in many years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	101	.53	462	486	465	492	2.0	552	550	553	552
2	0	31	1.3	476	499	400	491	.70	552	550	553	552
3	0	17	.98	477	499	298	491	.10	552	550	552	552
4	0	4.0	.33	454	499	265	492	0	552	550	552	552
5	0	0	91	298	489	219	496	0	552	551	552	552
6	0	0	0	200	439	266	501	0	552	551	552	537
7	0	0	0	322	308	321	502	0	552	552	552	548
8	0	0	0	432	367	380	502	0	552	552	551	552
9	0	0	178	343	296	410	501	0	552	551	549	552
10	0	0	0	328	200	416	510	0	552	551	544	543
11	0	0	0	303	341	410	512	0	553	551	549	537
12	0	0	120	236	419	424	508	257	553	551	550	547
13	0	0	107	331	420	423	506	515	552	551	551	551
14	0	0	183	309	436	435	506	530	552	550	515	551
15	0	0	40	201	486	456	507	527	552	550	551	551
16	0	0	176	214	499	293	507	541	553	550	551	552
17	0	0	.61	199	499	164	507	552	552	550	551	551
18	0	85	.41	200	499	458	507	552	552	550	551	552
19	0	0	388	344	499	460	507	553	552	551	440	550
20	0	0	512	429	499	452	507	554	551	552	552	548
21	0	128	512	444	488	435	506	554	552	551	552	549
22	0	0	513	465	480	437	298	553	552	551	552	547
23	0	0	333	501	440	440	504	552	551	551	551	548
24	0	0	456	523	453	440	497	546	551	550	552	549
25	0	0	469	530	481	435	486	542	550	550	552	549
26	0	0	472	521	480	430	493	542	550	551	552	549
27	0	0	199	493	480	424	506	547	550	549	552	549
28	0	0	438	468	476	420	338	552	550	534	552	549
29	0	0	448	450	---	459	5.8	552	551	551	552	549
30	0	0	251	480	---	494	3.4	552	551	552	551	549
31	133	---	351	489	---	492	---	552	---	552	551	---
TOTAL	133	366.0	6241.16	11922	12457	12321	13689.2	10627.80	16550	17056	16940	16469
MEAN	4.29	12.2	201	385	445	397	456	343	552	550	546	549
MAX	133	128	513	530	499	494	512	554	553	552	553	552
MIN	0	0	0	199	200	164	3.4	0	550	534	440	537
AC-FT	264	726	12380	23650	24710	24440	27150	21080	32830	33830	33600	32670
CAL YR 1977	TOTAL	61804.72	MEAN	169	MAX	548	MIN	0	AC-FT	122600		
WTR YR 1978	TOTAL	134772.16	MEAN	369	MAX	554	MIN	0	AC-FT	267300		

LOCATION.--Lat 38°29'37", long 120°13'12", in NE¼NW¼ sec.4, T.7 N., R.16 E., Calaveras County, Hydrologic Unit 18040012, Stanislaus National Forest, on left bank 0.3 mi (0.5 km) downstream from Salt Springs Dam, and 1.3 mi (2.1 km) upstream from Cole Creek.

PERIOD OF RECORD.--September 1926 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "above Moore Creek" 1926-30.

GAGE.--Water-stage recorder. Altitude of gage is 3,590 ft (1,094 m), from topographic map. Prior to Sept. 12, 1928, at site 100 ft (30 m) upstream and Sept. 12, 1928, to Sept. 23, 1940, at present site at datum 2.0 ft (0.61 m) higher.

AVERAGE DISCHARGE (combined flow of North Fork Mokelumne River and Tiger Creek powerhouse conduit minus Bear River-Cole Creek diversion), --52 years, 465 ft<sup>3</sup>/s (13.17 m<sup>3</sup>/s), 336,900 acre-ft/yr (415 hm<sup>3</sup>/yr).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,380 ft<sup>3</sup>/s (95.7 m<sup>3</sup>/s) June 6, gage height, 9.06 ft (2.761 m); minimum daily, 2.5 ft<sup>3</sup>/s (0.071 m<sup>3</sup>/s) Nov. 2, Dec. 18.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	3.3	3.0	5.7	145	5.3	51	703	1290	1340	318	310
2	3.2	2.5	3.0	5.0	101	5.6	52	704	2240	902	318	308
3	3.2	2.9	3.0	4.6	82	7.0	52	708	2540	720	316	308
4	2.8	2.7	3.0	5.4	62	12	53	719	2440	524	316	307
5	3.0	2.9	2.9	9.4	46	19	60	732	2520	526	299	306
6	3.0	3.1	3.3	6.4	63	14	74	739	3030	648	276	99
7	3.0	2.9	3.9	5.5	10	9.1	86	741	3080	718	275	13
8	3.0	2.9	3.6	8.5	12	8.3	91	746	3030	692	271	13
9	3.2	2.7	3.3	6.0	13	7.8	93	756	2960	491	269	13
10	3.0	2.8	3.7	4.0	9.1	7.5	94	768	2780	495	224	13
11	3.0	2.9	3.0	3.0	7.3	7.9	100	748	2270	538	280	13
12	3.2	3.0	2.9	2.7	54	7.6	108	539	2310	442	351	13
13	3.2	3.6	2.8	7.1	72	5.9	114	281	1850	392	327	12
14	3.2	3.6	3.3	8.6	7.1	46	135	272	1700	308	72	12
15	3.2	3.6	2.9	6.6	9.1	92	159	288	1930	238	121	12
16	3.4	3.2	2.9	5.5	34	53	162	280	1980	300	122	12
17	3.4	3.0	2.8	5.5	154	54	162	270	1670	293	119	12
18	3.6	3.1	2.5	5.3	131	91	162	270	1120	272	294	12
19	3.4	3.5	3.6	6.0	110	99	162	274	1090	264	267	12
20	3.0	2.8	4.4	4.8	92	117	171	278	1530	282	338	12
21	3.0	2.8	3.9	21	81	40	170	283	1520	295	299	12
22	3.0	2.8	7.2	35	82	5.7	102	292	1520	294	298	12
23	3.2	2.8	4.7	59	7.8	5.9	127	301	1500	293	295	12
24	3.2	2.8	5.0	54	6.9	5.8	188	537	1500	280	296	12
25	3.0	2.8	5.0	107	6.3	14	214	951	1290	276	297	12
26	2.9	5.3	5.0	163	6.3	15	213	598	758	275	308	12
27	2.9	4.8	5.0	149	5.3	5.7	202	348	607	253	307	12
28	3.1	3.1	5.0	4.0	5.3	5.6	514	348	770	202	306	12
29	3.1	3.1	5.0	3.9	---	13	689	356	709	297	308	12
30	3.2	3.0	5.5	71	---	31	696	364	779	299	306	12
31	2.9	---	5.9	150	---	46	---	379	---	313	304	---
TOTAL	96.5	94.3	121.0	932.5	1414.5	856.7	5256	15573	54313	13462	8497	1932
MEAN	3.11	3.14	3.90	30.1	50.5	27.6	175	502	1810	434	274	64.4
MAX	3.6	5.3	7.2	163	154	117	696	951	3080	1340	351	310
MIN	2.8	2.5	2.5	2.7	5.3	5.3	51	270	607	202	72	12
AC-FT	191	187	240	1850	2810	1700	10430	30890	107700	26700	16850	3830
CAL YR 1977	TOTAL	1328.4	MEAN	3.64	MAX	16	MIN	1.6	AC-FT	2630		
WTR YR 1978	TOTAL	102548.5	MEAN	281	MAX	3080	MIN	2.5	AC-FT	203400		

## SAN JOAQUIN RIVER BASIN

11315000 COLE CREEK NEAR SALT SPRINGS DAM, CA

LOCATION.--Lat 38°31'09", long 120°12'41", in NE¼ sec.28, T.8 N., R.16 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on left bank 200 ft (61 m) downstream from bridge, 1.4 mi (2.3 km) north of Salt Springs Dam, 3.2 mi (5.1 km) upstream from mouth, and 6.5 mi (10.5 km) southwest of Mokelumne Peak.

DRAINAGE AREA.--21.0 mi<sup>2</sup> (54.4 km<sup>2</sup>).

PERIOD OF RECORD.--July 1927 to November 1942, October 1943 to current year. Prior to October 1958, published as Cold Creek near Mokelumne Peak. October 1958 to September 1960, published as "near Mokelumne Peak."

REVISED RECORDS.--WSP 1515: 1928, 1930-31, 1938(M), 1944, 1947. WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Oct. 30, 1974. Altitude of gage is 5,900 ft (1,800 m), from topographic map. Prior to Oct. 30, 1974, at site 0.4 mi (0.6 km) upstream at different datum.

REMARKS.--Occasional pumping for domestic use in summer-home tract began in September 1961. See schematic diagram of Mokelumne River basin.

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

AVERAGE DISCHARGE.--50 years, 63.7 ft<sup>3</sup>/s (1.804 m<sup>3</sup>/s), 46,150 acre-ft/yr (56.9 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,140 ft<sup>3</sup>/s (174 m<sup>3</sup>/s) Dec. 23, 1964, gage height, 10.21 ft (3.112 m) site and datum then in use, from rating curve extended above 900 ft<sup>3</sup>/s (25.5 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 9.69 ft (2.954 m) site and datum then in use; no flow many days in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft<sup>3</sup>/s (14 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)
Dec. 15	0815	588	16.7	3.23	0.985	May 21	1945	1040	29.5	3.69	1.125
Mar. 30	2030	536	15.2	3.16	.963	May 29	2045	988	28.0	3.65	1.113
May 14	1830	*1270	36.0	3.87	1.180	June 5	1945	1110	31.4	3.75	1.143

Minimum daily discharge, 0.07 ft<sup>3</sup>/s (0.002 m<sup>3</sup>/s) Oct. 13-23, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.41	.11	6.9	25	23	27	157	136	450	138	4.3	.28
2	.31	.11	5.6	20	19	46	106	228	447	132	3.7	.25
3	.31	.10	7.7	19	18	34	89	321	449	114	3.2	.23
4	.29	.10	6.6	18	19	40	79	344	526	93	2.7	.24
5	.26	.26	11	15	23	36	69	281	599	98	2.7	3.0
6	.23	.30	9.6	15	25	30	72	198	561	105	2.1	38
7	.17	.24	5.5	16	21	35	61	242	562	100	1.8	55
8	.08	.21	6.3	19	20	38	56	348	509	86	3.4	16
9	.11	.18	5.2	23	18	33	66	440	480	85	6.2	8.0
10	.08	.16	3.6	22	18	28	130	425	356	76	2.5	172
11	.08	.15	3.2	19	16	28	198	399	355	65	1.7	32
12	.08	.14	2.7	17	15	25	206	434	455	55	1.4	15
13	.07	.13	3.2	20	15	23	187	577	481	45	1.2	9.3
14	.07	.13	8.5	29	15	27	159	719	423	45	1.0	13
15	.07	.13	182	28	14	39	112	509	317	41	.87	11
16	.07	.12	29	23	14	65	90	249	258	35	.80	7.2
17	.07	.11	30	21	14	92	81	274	255	26	.71	5.6
18	.07	.11	29	19	13	94	85	361	276	23	.64	4.8
19	.07	.11	17	17	16	94	100	446	244	19	.57	4.2
20	.07	.10	11	17	23	113	100	496	258	17	.51	3.6
21	.07	.15	8.3	17	28	129	82	575	252	15	.45	3.1
22	.07	2.8	8.3	16	33	112	74	539	235	13	.46	2.7
23	.07	1.1	15	17	35	109	83	334	232	12	.45	2.3
24	.08	.66	15	19	35	88	113	173	210	10	.43	2.0
25	.07	.57	9.7	15	29	110	274	145	171	15	.41	1.7
26	.08	.52	9.5	16	26	141	153	189	137	33	.41	1.5
27	.18	.53	216	19	24	161	158	319	135	14	.39	1.3
28	.20	2.7	91	19	23	196	180	488	120	9.8	.36	1.2
29	.14	4.9	104	20	---	215	155	550	115	7.7	.35	1.1
30	.13	7.0	65	22	---	361	168	537	133	6.3	.31	.96
31	.12	---	30	24	---	311	---	475	---	5.1	.28	---
TOTAL	4.18	23.93	955.4	606	592	2880	3643	11751	10001	1538.9	45.90	416.56
MEAN	.13	.80	30.8	19.5	21.1	92.9	121	379	333	49.6	1.48	13.9
MAX	.41	7.0	216	29	35	361	274	719	599	138	6.2	172
MIN	.07	.10	2.7	15	13	23	56	136	115	5.1	.28	.23
AC-FT	8.3	47	1900	1200	1170	5710	7230	23310	19840	3050	91	826
CAL YR 1977	TOTAL	6984.95	MEAN 19.1	MAX 216	MIN .04	AC-FT 13850						
WTR YR 1978	TOTAL	32457.87	MEAN 88.9	MAX 719	MIN .07	AC-FT 64380						

## 11316000 BEAR RIVER NEAR SALT SPRINGS DAM, CA

LOCATION.--Lat 38°29'37", long 120°17'18", in NE¼NW¼ sec.2, T.7 N., R.15 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on right bank 200 ft (61 m) upstream from diversion to Tiger Creek powerhouse conduit and highway bridge, 1.5 mi (2.4 km) upstream from mouth, and 4 mi (6 km) west of Salt Springs Dam.

DRAINAGE AREA.--48.0 mi<sup>2</sup> (124.3 km<sup>2</sup>).

PERIOD OF RECORD.--October 1951 to current year.

GAGE.--Water-stage recorder and broad-crested weir. Altitude of gage is 3,727 ft (1,136 m), revised, from photogrammetric map.

REMARKS.--Flow regulated since 1900 by Bear River Reservoir, capacity, 6,760 acre-ft (8.34 hm<sup>3</sup>), and since December 1952 by Lower Bear River Reservoir 4 mi (6 km) upstream, capacity, 49,100 acre-ft (60.5 hm<sup>3</sup>). Water diverted for power since December 1952 from Lower Bear River Reservoir through tunnel to Salt Springs powerhouse on North Fork Mokelumne River. Water diverted occasionally from Cole Creek into Lower Bear River Reservoir. See schematic diagram of Mokelumne River basin.

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

AVERAGE DISCHARGE.--27 years, 52.4 ft<sup>3</sup>/s (1.484 m<sup>3</sup>/s), 37,960 acre-ft/yr (46.8 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft<sup>3</sup>/s (312 m<sup>3</sup>/s) Dec. 24, 1964, gage height, 10.11 ft (3.082 m) in gage well, 11.8 ft (3.60 m), from flood profile, from rating curve extended above 560 ft<sup>3</sup>/s (15.9 m<sup>3</sup>/s) on basis of slope-area measurements of maximum flow; minimum daily, 0.53 ft<sup>3</sup>/s (0.015 m<sup>3</sup>/s) Sept. 7, 13, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1950 reached a stage of 11.2 ft (3.41 m), from floodmarks, discharge, 10,000 ft<sup>3</sup>/s (283 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 945 ft<sup>3</sup>/s (26.8 m<sup>3</sup>/s) May 25, gage height, 3.48 ft (1.061 m); minimum daily, 0.61 ft<sup>3</sup>/s (0.017 m<sup>3</sup>/s) Oct. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.76	.66	2.1	28	21	47	116	86	772	15	5.6	5.0
2	.73	.65	1.9	23	21	90	93	87	770	15	5.6	4.9
3	.70	.65	1.8	21	20	81	78	91	757	15	5.5	4.8
4	.68	.64	1.8	22	20	129	74	90	749	14	5.5	4.8
5	.67	.76	1.8	42	31	138	63	83	768	13	5.4	4.9
6	.65	3.7	1.8	37	36	110	62	73	780	12	5.4	19
7	.65	1.3	1.7	27	45	96	54	70	790	11	5.3	7.9
8	.66	1.1	1.6	27	37	86	55	71	792	11	5.5	7.9
9	.66	1.0	1.6	59	57	78	57	73	785	10	5.6	5.8
10	.66	1.0	1.5	48	42	71	62	71	766	9.3	5.6	12
11	.65	.96	1.5	41	35	73	70	67	706	8.6	5.5	12
12	.64	.96	3.5	33	32	64	73	62	676	7.8	6.3	6.3
13	.64	.94	2.1	35	31	57	73	62	637	7.3	5.5	6.0
14	.64	.94	2.0	75	28	53	74	61	592	6.9	5.5	6.0
15	.63	.94	4.5	70	27	52	78	63	562	6.4	5.5	6.2
16	.63	.92	9.0	77	25	53	67	56	479	6.2	5.4	5.8
17	.62	.91	7.9	89	24	58	66	49	307	5.9	5.4	5.7
18	.61	.89	31	64	25	60	68	44	102	6.3	5.4	5.7
19	.98	.89	12	58	27	64	69	47	22	6.2	5.4	5.6
20	1.3	.89	8.4	45	30	68	73	39	36	6.2	5.3	5.6
21	1.3	2.0	7.1	38	32	90	69	37	305	6.1	6.8	5.5
22	1.3	34	13	34	36	108	65	218	396	6.1	6.8	5.6
23	1.3	7.6	43	29	38	110	66	527	500	6.0	6.8	5.6
24	1.4	4.1	20	26	39	99	75	639	483	6.0	6.7	5.6
25	1.4	5.4	14	24	38	90	158	562	252	5.9	6.6	5.6
26	.90	3.7	13	24	36	89	131	461	57	5.9	6.6	5.5
27	.62	3.1	73	23	36	89	116	317	15	5.9	5.6	5.5
28	.83	2.7	36	23	36	93	108	461	15	5.8	5.1	5.4
29	.67	2.2	87	23	---	97	101	684	15	5.7	5.1	5.4
30	.65	2.1	74	22	---	121	94	752	15	5.7	5.2	5.4
31	.66	---	40	22	---	144	---	769	---	5.7	5.0	---
TOTAL	25.19	87.60	631.2	1209	905	2658	2408	6772	13901	257.9	176.5	197.0
MEAN	.81	2.92	20.4	39.0	32.3	85.7	80.3	218	463	8.32	5.69	6.57
MAX	1.4	34	87	89	57	144	158	769	792	15	6.8	19
MIN	.61	.64	1.5	21	20	47	54	37	15	5.7	5.0	4.8
AC-FT	50	174	1250	2400	1800	5270	4780	13430	27570	512	350	391
CAL YR 1977 TOTAL	1488.52			MEAN 4.08	MAX 87	MIN .53	AC-FT 2950					
WTR YR 1978 TOTAL	29228.39			MEAN 80.1	MAX 792	MIN .61	AC-FT 57970					

## SAN JOAQUIN RIVER BASIN

11316800 FOREST CREEK NEAR WILSEYVILLE, CA

LOCATION.--Lat 38°24'12", long 120°26'45", in SW¼NW¼ sec.4, T.6 N., R.14 E., Calaveras County, on left bank 1.0 mi (1.6 km) downstream from Lion Creek, 1.8 mi (2.9 km) upstream from mouth, and 4 mi (6 km) northeast of Wilseyville.

DRAINAGE AREA.--20.8 mi<sup>2</sup> (53.9 km<sup>2</sup>).

PERIOD OF RECORD.--July 1960 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,950 ft (899 m), from topographic map.

REMARKS.--Records good. No regulation. Minor diversions above station for irrigation and domestic use. See schematic diagram of Mokelumne River basin.

AVERAGE DISCHARGE.--18 years, 22.2 ft<sup>3</sup>/s (0.629 m<sup>3</sup>/s), 16,080 acre-ft/yr (19.8 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,770 ft<sup>3</sup>/s (50.1 m<sup>3</sup>/s) Dec. 24, 1964, gage height, 7.68 ft (2.341 m), from rating curve extended above 500 ft<sup>3</sup>/s (14.2 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 7.41 ft (2.259 m); minimum daily, 0.11 ft<sup>3</sup>/s (0.003 m<sup>3</sup>/s) Aug. 14, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 120 ft<sup>3</sup>/s (3.40 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Jan. 5	unknown	*228 6.46	4.71 1.436	Mar. 31	1630	120 3.40	4.34 1.323
Jan. 17	0300	*228 6.46	4.71 1.436	Apr. 15	1830	135 3.82	4.40 1.341
Feb. 9	0630	195 5.52	4.64 1.414	Apr. 25	0630	225 6.37	4.70 1.433
Mar. 5	0600	201 5.69	4.63 1.411				

Minimum daily, 0.47 ft<sup>3</sup>/s (0.013 m<sup>3</sup>/s) Oct. 18, 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.88	.70	2.3	19	19	32	97	83	22	10	4.7	3.5
2	.81	.63	2.1	16	18	56	84	75	22	9.4	4.5	3.3
3	.78	.65	2.1	15	18	63	73	71	21	9.3	4.4	3.2
4	.71	.66	2.1	18	17	117	74	68	20	9.0	4.6	3.3
5	.74	1.8	2.1	110	22	190	65	65	19	8.2	4.3	7.3
6	.80	1.4	2.1	80	41	147	70	59	18	7.4	4.1	12
7	.81	1.1	2.1	40	64	106	66	54	17	7.8	3.2	8.0
8	.72	1.2	2.1	30	59	89	66	51	16	7.8	3.0	6.4
9	.68	1.2	2.2	80	114	81	65	49	16	7.8	3.4	6.4
10	.61	1.2	2.0	70	73	76	64	48	16	7.2	3.5	11
11	.67	1.1	2.1	39	56	83	63	46	15	7.3	3.5	7.2
12	.71	1.2	3.0	33	55	83	62	45	15	7.3	3.5	6.0
13	.62	1.3	2.5	31	55	72	62	45	14	7.2	4.5	5.6
14	.61	1.4	2.8	84	52	65	66	44	13	6.4	4.3	6.6
15	.58	1.4	2.0	116	49	61	89	45	12	6.6	4.1	5.9
16	.58	1.4	6.8	104	43	56	87	43	12	6.7	4.0	5.1
17	.51	1.4	30	158	38	53	84	39	12	6.6	3.7	4.9
18	.47	1.4	15	86	35	52	85	37	12	5.9	3.7	4.9
19	.48	1.4	8.0	80	33	51	81	35	12	5.6	3.6	4.7
20	.49	1.6	6.2	58	32	52	101	34	11	6.2	3.7	4.5
21	.49	9.3	5.8	46	31	63	95	33	11	6.0	3.8	4.3
22	.54	20	9.0	41	31	78	87	32	11	5.7	3.3	4.3
23	.47	5.9	35	37	31	76	81	31	11	5.3	2.9	4.3
24	.54	3.8	15	33	31	72	88	29	10	4.7	3.7	4.2
25	.53	3.2	9.0	30	31	66	199	27	9.6	4.3	3.7	3.9
26	.53	2.9	8.0	28	31	63	166	26	9.3	4.9	3.7	2.4
27	.69	2.6	14	25	31	61	132	25	11	5.2	3.5	2.9
28	.63	2.6	13	23	31	61	115	24	12	5.1	3.2	4.1
29	.63	2.4	28	22	---	61	100	24	11	4.8	2.8	3.9
30	.65	2.4	34	21	---	70	92	24	10	4.9	3.3	3.6
31	.70	---	26	20	---	105	---	23	---	5.0	3.8	---
TOTAL	19.66	79.24	314.4	1593	1141	2361	2659	1334	420.9	205.6	116.0	157.7
MEAN	.63	2.64	10.1	51.4	40.8	76.2	88.6	43.0	14.0	6.63	3.74	5.26
MAX	.88	20	35	158	114	190	199	83	22	10	4.7	12
MIN	.47	.63	2.0	15	17	32	62	23	9.3	4.3	2.8	2.4
AC-FT	39	157	624	3160	2260	4680	5270	2650	835	408	230	313

CAL YR 1977 TOTAL 1072.56 MEAN 2.94 MAX 35 MIN .11 AC-FT 2130  
WTR YR 1978 TOTAL 10401.50 MEAN 28.5 MAX 199 MIN .47 AC-FT 20630

## 11317000 MIDDLE FORK MOKELUMNE RIVER AT WEST POINT, CA

LOCATION.--Lat 38°23'23", long 120°31'32", in SE¼NE¼ sec.10, T.6 N., R.13 E., Calaveras County, on right bank 200 ft (61 m) downstream from highway bridge, 0.6 mi (1.0 km) south of West Point, and 4.5 mi (7.2 km) upstream from South Fork Mokelumne River.

DRAINAGE AREA.--68.4 mi<sup>2</sup> (177.2 km<sup>2</sup>).

PERIOD OF RECORD.--October 1911 to current year. Monthly discharge only for October 1911, published in WSP 1315-A.

REVISED RECORDS.--WSP 1515: 1919-20, 1927-28(M), 1936(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,450 ft (747 m), from topographic map. Prior to Oct. 6, 1926, nonrecording gage at site 1,200 ft (366 m) upstream at different datum. Oct. 6, 1926, to Aug. 18, 1928, nonrecording gage at present site and datum.

REMARKS.--Records fair. Flow slightly regulated by Middle Fork Reservoir, capacity, 1,740 acre-ft (2.15 hm<sup>3</sup>), 6 mi (10 km) above station, since January 1940. Several small diversions above station. At times water diverted 4 mi (6 km) above station to South Fork Mokelumne River via Middle Fork ditch, capacity, 15 ft<sup>3</sup>/s (0.42 m<sup>3</sup>/s) and Licking Fork Mokelumne River. See schematic diagram of Mokelumne River basin.

AVERAGE DISCHARGE.--67 years, 60.4 ft<sup>3</sup>/s (1.711 m<sup>3</sup>/s), 43,760 acre-ft/yr (54.0 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,320 ft<sup>3</sup>/s (122 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 8.98 ft (2.737 m); no flow Aug. 23 to Sept. 14, 1931, Sept. 9, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft<sup>3</sup>/s (11.3 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Jan. 5	2300	753 21.3	4.37 1.332	Feb. 9	0830	711 20.1	4.27 1.302
Jan. 9	1930	538 15.2	3.81 1.161	Mar. 5	0900	762 21.6	4.39 1.338
Jan. 14	2330	*801 22.7	4.48 1.366	Apr. 15	2000	438 12.4	3.49 1.064
Jan. 17	0500	715 20.2	4.28 1.305	Apr. 25	unknown	758 21.5	4.38 1.335

Minimum daily, 0.69 ft<sup>3</sup>/s (0.020 m<sup>3</sup>/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.69	2.7	3.7	41	52	103	288	294	93	25	16	10
2	.76	2.6	3.7	35	50	203	245	252	89	24	15	10
3	.75	2.5	3.4	33	47	244	209	237	85	23	15	10
4	.83	2.5	3.8	38	46	445	216	220	83	22	14	10
5	.99	4.2	3.5	248	65	714	190	204	82	21	14	15
6	1.2	3.7	3.5	330	142	536	218	189	79	20	14	30
7	1.2	2.7	3.5	126	282	363	203	174	76	19	13	22
8	1.3	2.4	3.6	84	242	301	195	167	72	19	13	18
9	1.4	2.8	3.5	233	465	264	192	160	67	19	12	16
10	1.3	2.4	3.4	243	301	238	189	155	65	18	13	26
11	1.2	2.0	3.7	139	219	251	187	148	60	19	11	21
12	1.3	2.3	5.2	101	197	253	184	141	57	19	11	16
13	1.3	2.5	4.3	90	214	216	181	135	56	18	13	15
14	1.5	2.7	4.4	256	174	190	189	130	54	18	12	16
15	1.4	2.5	26	457	152	174	270	128	52	17	12	15
16	1.4	2.4	12	323	132	164	304	120	51	18	12	14
17	1.5	2.3	52	556	116	159	264	111	49	18	12	14
18	1.6	2.4	33	320	105	156	259	104	47	17	12	14
19	1.5	2.4	17	287	99	153	249	102	44	16	12	13
20	1.4	2.5	14	210	97	155	290	101	42	17	11	13
21	1.5	11	13	161	95	179	274	100	41	16	11	13
22	1.6	24	19	132	95	235	248	99	39	16	11	13
23	2.0	7.8	81	111	96	222	233	99	37	15	12	12
24	2.0	5.2	30	94	97	215	248	98	36	14	12	12
25	1.9	4.4	20	84	96	192	700	98	33	15	12	12
26	2.1	4.1	18	76	95	185	627	96	32	15	11	9.9
27	2.5	4.1	32	70	96	181	495	92	34	15	13	9.6
28	2.6	3.9	29	65	95	180	410	92	30	15	13	11
29	2.6	3.9	61	61	---	181	353	96	28	15	11	11
30	2.9	3.7	81	57	---	202	318	98	26	14	10	10
31	3.4	---	55	54	---	316	---	97	---	15	10	---
TOTAL	49.62	124.6	646.2	5115	3962	7570	8428	4337	1639	552	383	431.5
MEAN	1.60	4.15	20.8	165	142	244	281	140	54.6	17.8	12.4	14.4
MAX	3.4	24	81	556	465	714	700	294	93	25	16	30
MIN	.69	2.0	3.4	33	46	103	181	92	26	14	10	9.6
AC-FT	98	247	1280	10150	7860	15020	16720	8600	3250	1090	760	856
CAL YR 1977 TOTAL	2173.84			5.96		81		.14		4310		
WTR YR 1978 TOTAL	33237.92			91.1		714		.69		65930		

## 11318500 SOUTH FORK MOKELUMNE RIVER NEAR WEST POINT, CA

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., Calaveras County, on right bank 500 ft (152 m) upstream from highway bridge, 2.4 mi (3.9 km) southwest of West Point, and 2.5 mi (4.0 km) upstream from mouth.

DRAINAGE AREA.--75.1 mi<sup>2</sup> (194.5 km<sup>2</sup>).

PERIOD OF RECORD.--October 1933 to current year.

REVISED RECORDS.--WSP 1315-A: 1934(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,950 ft (594 m), from topographic map. October 1933 to Sept. 19, 1957, at site 1,100 ft (335 m) downstream at different datum.

REMARKS.--Records good. Several small diversions above station for domestic use and for irrigation of about 100 acres (405,000 m<sup>2</sup>). 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 of Mokelumne River basin.

AVERAGE DISCHARGE.--45 years, 81.4 ft<sup>3</sup>/s (2.305 m<sup>3</sup>/s), 58,970 acre-ft/yr (72.7 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,920 ft<sup>3</sup>/s (196 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 14.8 ft (4.51 m) from floodmarks, site and datum then in use, from rating curve extended above 2,700 ft<sup>3</sup>/s (76.5 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow Aug. 6, 7, Aug. 12 to Sept. 26, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft<sup>3</sup>/s (14.2 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)
Jan. 5	2200	1110	31.4	6.17	1.881	Feb. 9	0800	1120	31.7	6.18	1.884
Jan. 9	1800	900	25.5	5.80	1.768	Mar. 5	0800	1180	33.4	6.28	1.914
Jan. 14	2230	*1220	34.6	6.34	1.932	Apr. 15	2100	639	18.1	5.27	1.606
Jan. 17	0530	1050	29.7	6.07	1.850	Apr. 25	0730	994	28.2	5.97	1.820
Feb. 7	1430	578	16.4	5.13	1.564						

Minimum daily, 0.65 ft<sup>3</sup>/s (0.018 m<sup>3</sup>/s) Dec. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	2.0	1.0	53	59	123	322	325	67	30	15	9.1
2	1.8	2.1	.92	45	56	282	279	294	66	32	14	9.3
3	1.9	2.1	.78	43	54	316	241	275	64	31	14	8.5
4	2.0	2.0	.70	56	52	675	252	259	61	29	13	8.8
5	2.3	5.0	.65	396	84	1090	218	240	58	29	13	13
6	2.4	4.3	3.8	407	180	807	278	217	55	27	13	36
7	2.4	3.6	3.9	146	382	553	256	202	53	26	12	18
8	2.5	2.7	4.9	97	329	426	234	193	51	25	11	14
9	2.6	3.1	8.1	356	726	354	225	188	50	24	11	13
10	2.7	2.6	7.8	299	464	308	220	183	51	23	11	31
11	2.9	2.3	8.7	160	314	304	217	172	51	23	10	22
12	2.8	5.6	11	114	286	308	212	163	49	23	10	17
13	2.9	2.2	8.8	103	312	259	207	157	48	23	12	14
14	2.8	2.5	5.3	375	236	231	212	153	47	21	11	14
15	2.5	2.5	59	647	198	211	327	151	46	21	11	13
16	2.4	2.4	29	473	168	198	397	141	44	20	11	12
17	2.4	2.6	139	821	146	192	335	130	43	18	11	10
18	2.4	2.5	88	435	131	187	315	123	42	16	11	10
19	2.3	2.3	34	355	121	184	300	115	41	15	9.7	11
20	2.4	2.4	20	256	115	185	343	108	39	15	9.1	11
21	2.6	15	18	195	113	216	322	106	38	16	9.6	11
22	2.9	50	35	160	115	293	294	104	37	16	9.8	11
23	2.7	19	193	134	118	269	274	100	36	16	11	9.8
24	2.7	6.5	68	113	119	256	293	95	36	15	11	9.2
25	2.1	3.9	43	98	115	230	841	89	35	15	11	11
26	1.4	3.0	35	88	113	219	740	85	33	15	9.7	12
27	1.6	2.3	85	79	113	212	579	80	37	14	11	12
28	1.2	1.8	67	73	111	208	483	77	38	14	11	12
29	1.2	1.5	91	68	---	205	411	73	35	14	9.7	11
30	.92	1.2	110	64	---	229	374	70	31	13	8.8	10
31	1.7	---	70	62	---	358	---	69	---	14	9.0	---
TOTAL	69.32	161.0	1250.35	6771	5330	9888	10001	4737	1382	633	344.4	403.7
MEAN	2.24	5.37	40.3	218	190	319	333	153	46.1	20.4	11.1	13.5
MAX	2.9	50	193	821	726	1090	841	325	67	32	15	36
MIN	.92	1.2	.65	43	52	123	207	69	31	13	8.8	8.5
AC-FT	137	319	2480	13430	10570	19610	19840	9400	2740	1260	683	801

CAL YR 1977 TOTAL 3193.01 MEAN 8.75 MAX 193 MIN .12 AC-FT 6330  
WTR YR 1978 TOTAL 40970.77 MEAN 112 MAX 1090 MIN .65 AC-FT 81270



## 11319500 MOKELUMNE RIVER NEAR MOKELUMNE HILL, CA

LOCATION.--Lat 38°18'46", long 120°43'09", in SW¼SW¼ sec.1, T.5 N., R.11 E., Calaveras County, on downstream side of bridge 1.2 mi (1.9 km) northwest of Mokelumne Hill, and 8 mi (13 km) downstream from confluence of North and South Forks of Mokelumne River.

DRAINAGE AREA.--544 mi<sup>2</sup> (1,409 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January to June 1901, May 1903 to December 1904, October 1927 to current year. Yearly estimate only for water year 1928 (incomplete), published in WSP 1315-A. Published as "at Electra" 1901, 1903-4.

REVISED RECORDS.--WSP 1445: 1903-4, 1928(M), 1936(M), 1938(M), 1940(M), 1943(M), 1945(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 584.88 ft (178.271 m) National Geodetic Vertical Datum of 1929 (levels by California Division of Highways). Jan. 1 to June 30, 1901, and May 11, 1903, to Dec. 31, 1904, nonrecording gage at site 3 mi (5 km) upstream at different datum. Nov. 10, 1927, to Aug. 26, 1952, water-stage recorder at site 40 ft (12 m) upstream at datum 5.00 ft (1.524 m) higher. Aug. 27, 1952, to Oct. 14, 1977, at present site at datum 5.00 ft (1.524 m) higher.

REMARKS.--Records good. Flow regulated by Salt Springs Reservoir (station 11313500) beginning in 1931, several smaller reservoirs, and four powerplants. Diversion above station for irrigation and domestic use. See schematic diagram of Mokelumne River basin.

AVERAGE DISCHARGE.--52 years (water years 1904, 1928-78), 960 ft<sup>3</sup>/s (27.19 m<sup>3</sup>/s), 695,500 acre-ft/yr (858 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,700 ft<sup>3</sup>/s (954 m<sup>3</sup>/s) Dec. 3, 1950, gage height, 23.5 ft (7.16 m, present datum); minimum observed, 5 ft<sup>3</sup>/s (0.14 m<sup>3</sup>/s) Aug. 13-15, 17, 18, 1904.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,020 ft<sup>3</sup>/s (170 m<sup>3</sup>/s) June 8, gage height, 12.97 ft (3.953 m); minimum daily, 6.6 ft<sup>3</sup>/s (0.19 m<sup>3</sup>/s) Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	14	15	756	940	1000	1910	2040	2850	1890	887	934
2	6.6	17	14	736	973	1360	1710	1860	3980	1840	927	880
3	6.9	14	14	680	841	1580	1570	1880	4530	1410	894	858
4	7.4	17	14	590	790	2150	1580	1850	4290	1370	902	895
5	7.8	13	81	1030	749	3610	1510	1870	4520	1120	841	892
6	7.8	16	15	1860	1190	2990	1620	1760	4870	1340	861	862
7	8.2	30	21	1000	1490	2230	1680	1590	4950	1270	855	634
8	8.5	30	20	853	1480	1850	1500	1640	5120	1470	874	653
9	8.6	18	54	1160	2270	1620	1490	1690	4810	1230	889	683
10	8.8	14	32	1440	1750	1550	1410	1730	4730	1040	855	702
11	9.0	14	20	1060	1470	1570	1420	1600	4110	1230	847	712
12	9.5	11	161	844	1390	1570	1530	1580	3800	1160	901	701
13	10	13	169	730	1510	1440	1490	1510	3840	1020	681	521
14	10	12	202	1150	1360	1380	1580	1810	3120	1050	721	630
15	10	11	375	2340	1270	1310	1790	2010	3340	918	726	553
16	10	18	344	1720	1220	1120	2140	1630	3360	904	732	534
17	10	18	471	2630	1130	913	1780	1570	3050	900	752	702
18	10	12	647	1910	1170	1200	1890	1520	2160	885	838	531
19	11	9.9	298	1620	1130	1280	1810	1450	1720	906	805	594
20	10	9.9	583	1340	1110	1260	1960	1380	2220	879	863	645
21	9.2	132	604	1300	907	1310	2000	1590	2520	897	881	614
22	9.2	230	712	1150	1020	1550	1680	1680	2610	851	877	640
23	9.6	97	955	1040	994	1490	1620	1960	2720	926	877	610
24	9.5	61	638	1000	969	1480	1750	2220	2730	886	883	611
25	9.8	73	708	1030	950	1460	3460	2630	2450	899	882	521
26	9.9	103	690	1030	984	1350	3360	2400	1830	876	844	603
27	9.0	57	639	1050	969	1240	2790	1720	1300	885	901	590
28	9.2	40	619	772	877	1230	2610	1770	1430	886	856	571
29	8.8	17	843	795	---	1340	2320	2240	1520	839	910	638
30	8.7	16	912	781	---	1340	2200	2310	1410	850	886	604
31	8.5	---	769	785	---	1910	---	2330	---	874	828	---
TOTAL	278.2	1137.8	11639	36182	32903	48683	57160	56820	95890	33501	26276	20118
MEAN	8.97	37.9	375	1167	1175	1570	1905	1833	3196	1081	848	671
MAX	11	230	955	2630	2270	3610	3460	2630	5120	1890	927	934
MIN	6.6	9.9	14	590	749	913	1410	1380	1300	839	681	521
AC-FT	552	2260	23090	71770	65260	96560	113400	112700	190200	66450	52120	39900
CAL YR 1977 TOTAL	72933.4			200	955	6.6	AC-FT	144700				
WTR YR 1978 TOTAL	420588.0			1152	5120	6.6	AC-FT	834200				

## SAN JOAQUIN RIVER BASIN

11319500 MOKELUMNE RIVER NEAR MOKELUMNE HILL, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: February 1961 to current year.

INSTRUMENTATION.--Temperature recorder since February 1961.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 29.5°C July 18, 1977; minimum recorded, 1.0°C Jan. 31, Feb. 1, 1968.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 22.0°C Oct. 1-4; minimum recorded, 4.5°C Nov. 20, Jan. 24-28.

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	22.0	14.0	14.5	10.5	10.5	8.5	6.5	6.0	5.5	5.0	9.0	7.5
2	22.0	14.0	14.5	11.0	10.0	7.5	6.0	6.0	5.5	5.0	9.5	8.0
3	22.0	14.0	15.0	11.5	9.5	7.0	6.5	6.0	6.0	5.0	9.5	8.5
4	22.0	14.0	14.0	12.0	10.0	8.0	7.0	6.0	6.0	5.5	9.5	8.5
5	21.0	14.5	14.5	12.0	10.0	8.0	8.5	6.5	7.5	6.0	9.5	9.0
6	20.0	13.5	13.0	10.5	9.5	7.5	8.0	7.0	7.0	6.0	9.5	8.5
7	20.0	12.5	12.0	10.0	9.5	7.5	7.0	6.0	8.0	6.5	9.5	8.5
8	20.0	13.0	12.0	10.0	9.0	7.5	6.5	6.0	8.0	6.5	9.5	9.0
9	20.0	13.5	13.0	10.0	8.5	6.5	8.0	6.0	7.5	7.0	9.5	9.0
10	20.5	13.5	12.5	9.5	8.5	7.0	7.5	7.0	7.5	6.0	9.5	8.5
11	---	---	12.5	10.5	7.5	6.5	7.5	6.5	6.5	6.0	9.0	8.5
12	---	---	12.0	9.5	8.5	6.5	7.5	6.5	6.0	5.5	8.5	8.0
13	---	---	12.0	9.0	8.5	7.5	7.5	6.5	6.5	6.0	8.0	7.0
14	---	---	11.5	8.5	8.0	7.5	9.0	7.0	6.0	5.5	8.5	7.5
15	20.0	15.0	11.0	8.5	8.5	7.0	8.0	7.0	6.5	6.0	8.5	7.5
16	18.5	15.0	11.5	8.0	8.0	7.0	7.5	7.0	6.0	5.5	10.0	8.0
17	19.0	14.0	11.0	8.5	8.0	7.0	8.5	7.5	6.0	5.5	11.0	8.5
18	18.5	14.5	11.0	8.5	7.5	6.5	7.5	7.0	6.5	5.5	10.0	9.0
19	18.5	14.0	8.5	6.0	6.5	5.5	8.0	7.0	6.5	5.5	11.0	9.5
20	18.0	13.5	7.0	4.5	6.0	5.5	7.5	6.5	7.0	6.0	10.5	10.0
21	17.0	13.0	11.0	6.5	6.0	5.5	6.5	6.0	8.0	6.0	11.5	10.0
22	17.0	12.5	11.0	8.0	5.5	5.5	7.0	6.0	8.0	6.5	11.0	10.0
23	16.5	13.0	10.0	9.0	7.0	5.5	6.0	5.0	8.0	7.0	10.0	9.5
24	18.0	13.5	11.0	9.5	7.0	5.5	5.5	4.5	8.0	7.0	10.0	9.0
25	19.0	14.0	10.5	8.5	6.0	5.5	5.0	4.5	8.0	7.0	10.5	9.0
26	18.0	15.0	11.0	8.5	6.0	5.5	5.0	4.5	8.0	7.0	10.5	9.5
27	17.0	14.5	11.0	9.0	7.0	5.5	5.0	4.5	8.5	7.5	11.5	10.0
28	14.5	13.5	10.0	8.5	7.5	6.0	6.0	4.5	8.5	7.5	12.0	10.5
29	16.0	13.0	10.5	8.0	7.5	6.5	6.0	5.0	---	---	11.5	10.5
30	16.0	12.5	10.5	8.5	7.5	6.5	6.0	5.0	---	---	11.5	11.0
31	15.0	11.5	---	---	7.0	6.0	6.0	5.5	---	---	11.5	10.5
MONTH	22.0	11.5	15.0	4.5	10.5	5.5	9.0	4.5	8.5	5.0	12.0	7.0

11319500 MOKELUMNE RIVER NEAR MOKELUMNE HILL, CA--Continued

## TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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

## SAN JOAQUIN RIVER BASIN

## 11320000 PARDEE RESERVOIR NEAR VALLEY SPRINGS, CA

LOCATION.--Lat 38°15'25", long 120°50'59", in NW¼SW¼ sec.26, T.5 N., R.10 E., Amador County, at Pardee Dam on the Mokelumne River, 4.5 mi (7.2 km) north of Valley Springs.

DRAINAGE AREA.--578 mi<sup>2</sup> (1,497 km<sup>2</sup>).

PERIOD OF RECORD.--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 current year.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by East Bay Municipal Utility District).

REMARKS.--Reservoir is formed by a curved concrete gravity dam, completed in 1929. Storage began Mar. 9, 1929. Usable capacity, 194,100 acre-ft (239 hm<sup>3</sup>) between elevations 593.50 ft (119.939 m) diversion tunnel invert, and 567.65 ft (173.020 m) spillway crest. Dead storage, 15,800 acre-ft (19.5 hm<sup>3</sup>). 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 represent total contents at 2400 hours. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records furnished by East Bay Municipal Utility District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 219,300 acre-ft (270 hm<sup>3</sup>) Dec. 23, 1955, elevation, 571.72 ft (174.260 m); minimum, 47,000 acre-ft (58.0 hm<sup>3</sup>) Mar. 25, 1977, elevation, 454.98 ft (138.678 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 209,900 acre-ft (259 hm<sup>3</sup>) July 29, elevation, 567.63 ft (173.014 m); minimum, 70,700 acre-ft (87.2 hm<sup>3</sup>) Dec. 11, elevation, 481.45 ft (146.746 m).

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

450	43400	520	120400
460	50900	530	136500
470	59500	540	153800
480	69200	550	172700
490	80100	560	193200
500	92900	570	215300
510	105700	580	239100

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82400	74700	71800	91100	133600	147700	181800	198300	182300	201500	208800	192800
2	82100	74600	71700	92400	133700	148600	182500	197000	184500	203000	208500	192300
3	81900	74400	71500	93400	133400	149900	182900	195300	185400	203600	208200	193500
4	81600	74300	71400	94300	133000	152700	183300	193600	186000	204200	207900	193200
5	81400	74200	71400	96200	132600	158700	183600	192100	187000	204300	207500	192900
6	81100	74000	71200	99900	133000	163200	184500	190800	188500	204800	207100	192500
7	80800	73900	71100	101700	134500	164900	185300	189100	189000	205200	206700	191700
8	80600	73800	71000	103200	135900	165900	185500	188700	189800	206000	206200	190700
9	80300	73600	70900	105900	138800	166300	185800	188400	190600	206300	205800	190000
10	80100	73500	70800	108600	140700	166600	185900	188100	191600	206200	205200	190800
11	79800	73300	70700	110400	141800	168000	186300	187800	191900	206400	204700	190100
12	79600	73200	70800	111900	142800	169500	186700	187400	193400	206600	204300	189400
13	79300	73000	70900	113200	144000	170500	187000	186600	194300	206500	203400	188300
14	79100	72900	71200	115900	145000	171400	187400	186400	194900	206500	202600	187400
15	78800	72700	71700	121000	145700	172100	188400	186700	195200	206200	201800	186400
16	78600	72500	72200	123700	146200	172400	189200	186100	195600	205900	201000	185400
17	78400	72400	73100	127600	146600	172300	189200	185500	195300	205600	200200	186200
18	78100	72300	74200	129900	147100	172800	189400	184600	195700	206000	199600	185000
19	77900	72100	74500	131400	147400	173400	189300	183700	195900	206300	199000	184100
20	77600	71900	75500	132400	147700	174000	189700	182500	197100	206600	198400	183200
21	77400	72100	76500	133200	147600	174600	190700	181900	198000	206900	197900	182200
22	77100	72300	77700	133700	147700	174600	191600	181300	197800	207100	197400	181300
23	76900	72400	79300	134000	147800	174000	192400	181400	197800	208300	196900	180500
24	76600	72400	80700	134200	147800	175000	193200	181700	197800	208600	196400	181200
25	76400	72300	81900	134400	147200	176000	196200	181600	197600	209000	195900	180100
26	76200	72300	83100	134600	147800	176700	197300	181400	197700	209200	195400	179100
27	75900	72300	84000	134900	147800	177200	197500	181900	198000	209500	195000	178000
28	75700	72200	85100	134600	147600	177700	197400	182300	198300	209800	194500	176900
29	75400	72100	86800	134300	---	178400	197100	182200	199200	209900	194600	176200
30	75200	71900	88400	133900	---	179100	197900	182300	199800	209400	193600	176900
31	74900	---	89800	133600	---	180700	---	182200	---	209100	193300	---
MAX	82400	74700	89800	134900	147800	180700	197900	198300	199800	209900	208800	193500
MIN	74900	71900	70700	91100	132600	147700	181800	181300	182300	201500	193300	176200
†	485.42	482.64	498.03	528.29	536.50	553.99	562.20	554.74	563.09	567.27	560.05	552.12
‡	-7700	-2990	+17900	+43800	+14000	+33100	+17200	-15700	+17600	+9260	-15800	-16400
††	315	115	68	102	132	269	410	1087	1280	1604	1372	718
‡‡	7633	5030	6253	7211	8183	8654	9732	12129	17539	16835	18461	15731

CAL YR 1977 ‡ +10000  
WTR YR 1978 ‡ +94300

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet.

†† Evaporation, in acre-feet.

‡‡ Diversion, in acre-feet, from Pardee Reservoir to East Bay Municipal Utility District and to Jackson Valley Irrigation District.

## 11322300 CAMANCHE RESERVOIR NEAR CLEMENTS, CA

LOCATION.--Lat 38°13'31", long 121°01'17", in NE&SE¼ sec.6, T.4 N., R.9 E., San Joaquin County, at Camanche Dam on the Mokelumne River, 4.3 mi (6.9 km) northeast of Clements.

DRAINAGE AREA.--621 mi<sup>2</sup> (1,608 km<sup>2</sup>).

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by East Bay Municipal Utility District).

REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 18, 1963. Usable capacity, 430,300 acre-ft (531 hm<sup>3</sup>) between elevations 104.00 ft (31.699 m) invert of emergency valve release, and 235.50 ft (71.780 m) spillway crest. Dead storage, 534 acre-ft (658,000 m<sup>3</sup>). 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 of Mokelumne River basin.

COOPERATION.--Records furnished by East Bay Municipal Utility District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 425,700 acre-ft (525 hm<sup>3</sup>) July 14, 1967, elevation, 234.82 ft (71.573 m); minimum since initial season of operation, 42,800 acre-ft (52.8 hm<sup>3</sup>) Jan. 2, 3, 1978, elevation, 152.44 ft (46.464 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 391,400 acre-ft (483 hm<sup>3</sup>) July 17, elevation, 230.19 ft (70.162 m); minimum, 42,800 acre-ft (52.8 hm<sup>3</sup>) Jan. 2, 3, elevation, 152.44 ft (46.464 m).

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)

120	4970	170	82600
130	13600	190	156200
140	25000	220	320900
150	38900	235.5	430900
160	57100		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54700	52400	47400	42900	72800	117700	169200	220000	277700	384800	388300	365600
2	54500	52400	47100	42800	74300	119400	170700	221700	282100	385200	388100	364900
3	54400	52300	46800	42800	75900	120900	172200	223700	288100	385700	387300	362900
4	54300	52300	46600	42900	77500	123500	173700	225700	293900	386100	386500	361900
5	54200	52200	46300	43400	79100	125500	176200	227400	299600	386600	386200	362200
6	54200	52200	46100	43500	81100	127100	177400	229600	305500	387000	385100	361600
7	54100	52100	45900	43400	83400	130000	179100	231600	312500	387400	384200	360900
8	54000	52100	45700	43400	85200	132400	180800	232900	319500	387800	383400	360200
9	53900	52000	45600	44200	87200	134900	182400	234100	325900	388300	382700	359600
10	53900	52000	45400	44400	88900	136900	184000	235300	331800	388600	381900	357700
11	53800	51900	45200	44500	90400	138600	185300	236600	337300	388900	381100	356600
12	53700	51800	45100	44600	92000	140200	186600	238100	341000	389400	380300	355900
13	53700	51800	44900	45000	93700	141700	188100	239900	345300	389800	379500	355200
14	53600	51700	44900	46000	95300	143100	189700	241500	348600	390200	378800	354600
15	53500	51700	44800	46600	96800	144500	191300	243100	352600	390600	378000	354000
16	53500	51500	44700	47600	98300	146000	193800	244800	356600	391000	377200	353400
17	53400	51200	44700	49500	99800	147400	196300	246500	360800	391400	376300	351000
18	53400	50900	44600	51100	101300	148900	198900	248200	362500	391200	375700	350200
19	53300	50600	44400	52600	102800	150300	201300	249800	363500	390900	374900	349500
20	53200	50300	44300	54200	104300	151700	203200	251600	364600	390700	374100	348800
21	53200	50100	44200	55700	105800	153400	204000	253200	366800	390400	373400	348200
22	53100	49900	44000	57200	107200	155600	204100	255000	370100	390200	372700	347600
23	53000	49600	44000	58800	108700	158300	204400	256600	373500	389000	371800	346900
24	53000	49300	43900	60300	110200	159400	205300	258400	377000	388600	371100	344700
25	52900	49000	43700	61800	111700	160600	208700	261600	380500	388300	370400	343800
26	52800	48800	43600	63600	113200	161700	212700	264700	382200	388100	369600	343200
27	52700	48500	43500	64900	114700	162800	215600	265800	382900	387800	368900	342700
28	52700	48200	43400	66600	116100	163900	217400	267000	383600	387400	368200	342000
29	52600	47900	43300	68100	---	165000	219100	269600	384000	387300	367500	341300
30	52600	47600	43200	69700	---	166100	219400	272100	384400	387700	366700	339200
31	52500	---	43100	71200	---	167700	---	274900	---	388200	366300	---
MAX	54700	52400	47400	71200	116100	167700	219400	274900	384400	391400	388300	365600
MIN	52500	47600	43100	42800	72800	117700	169200	220000	277700	384800	278000	339200
†	157.79	155.21	152.62	165.94	180.05	192.57	202.98	212.71	229.22	229.75	226.68	222.75
‡	-2300	-4900	-4500	+28100	+44900	+52700	+51700	+55500	+109500	+3800	-21900	-27100
††	948	414	157	243	636	951	1384	3659	4999	6450	5905	3562

CAL YR 1977 ‡ -127300  
WTR YR 1978 ‡ +284400

† Elevation, in feet NGVD, at end of month.

‡ Change in contents, in acre-feet.

†† Evaporation, in acre-feet.

## SAN JOAQUIN RIVER BASIN

## 11323500 MOKELUMNE RIVER BELOW CAMANCHE DAM, CA

LOCATION.--Lat 38°13'14", long 121°02'19", in NW¼NW¼ sec.7, T.4 N., R.9 E., San Joaquin County, on left bank 0.7 mi (1.1 km) downstream from Murphy Creek, 1.0 mi (1.6 km) downstream from Camanche Dam, and 3.4 mi (5.5 km) northeast of Clements.

DRAINAGE AREA.--627 mi<sup>2</sup> (1,624 km<sup>2</sup>).

PERIOD OF RECORD.--October 1904 to current year. Monthly discharge only for some periods, published in WSP 1315-A, and 1735. Prior to October 1961, published as "near Clements."

REVISED RECORDS.--WSP 751: Drainage area. WSP 881: 1905-9 (yearly summaries only). WSP 1445: 1911, 1917(M), 1925(M).

GAGE.--Water-stage recorder. Datum of gage is 82.71 ft (25.210 m) National Geodetic Vertical Datum of 1929. See WSP 1930 for history of changes prior to Oct. 1, 1961.

REMARKS.--Records good. Flow regulated by Camanche Reservoir (station 11322300) 1 mi (2 km) upstream beginning December 1963, Salt Springs Reservoir (station 11313500) beginning March 1931, Pardee Reservoir (station 11320000) beginning March 1929, several small reservoirs, and four powerplants. East Bay Municipal Utility District aqueducts are the largest of several diversions above the station. Maximum capacity is 511 ft<sup>3</sup>/s (14.5 m<sup>3</sup>/s) with Pardee Reservoir full. See schematic diagram of Mokelumne River basin.

AVERAGE DISCHARGE.--24 years (water years 1905-28), 1,111 ft<sup>3</sup>/s (31.47 m<sup>3</sup>/s), 804,300 acre-ft/yr (992 hm<sup>3</sup>/yr); 50 years (water years 1929-78), 804 ft<sup>3</sup>/s (22.76 m<sup>3</sup>/s), 582,500 acre-ft/yr (718 hm<sup>3</sup>/yr), adjusted for change in contents in and evaporation from Camanche Reservoir since 1963. Storage and diversion by East Bay Municipal Utility District began in March 1929.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,800 ft<sup>3</sup>/s (816 m<sup>3</sup>/s) Nov. 21, 1950, gage height, 24.40 ft (7.437 m) site and datum then in use; no flow July 9, Aug. 15, 20-23, 1924.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,620 ft<sup>3</sup>/s (45.9 m<sup>3</sup>/s) Apr. 27 to May 5, gage height, 6.05 ft (1.844 m); minimum daily, 23 ft<sup>3</sup>/s (0.65 m<sup>3</sup>/s) Oct. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	32	146	66	75	92	513	1620	861	501	619	1150
2	52	32	146	66	78	112	512	1620	865	503	866	1150
3	52	32	146	67	78	111	511	1620	859	502	1060	1150
4	51	32	146	71	78	158	511	1620	861	501	1150	1150
5	41	32	145	108	93	143	507	1490	863	501	1140	1150
6	23	32	112	90	105	122	542	1290	861	503	1140	1150
7	26	32	83	76	157	113	484	1290	861	503	1140	1150
8	30	32	83	72	108	110	437	1180	861	504	1140	1150
9	31	32	84	172	132	109	434	1070	861	504	1140	1150
10	31	32	85	96	88	109	434	1070	861	503	1140	1150
11	31	32	86	77	84	109	436	960	865	502	1140	1140
12	31	32	85	75	84	118	437	861	863	499	1140	1140
13	32	32	85	100	88	111	437	861	858	499	1140	1140
14	30	32	86	182	83	109	437	861	864	501	1150	1140
15	28	32	91	142	81	109	437	861	854	501	1140	1140
16	28	70	86	109	79	107	439	861	798	501	1150	1140
17	28	143	96	127	79	105	439	861	740	499	1150	1140
18	28	143	87	83	78	107	437	861	739	496	1150	1140
19	28	143	85	80	79	108	437	861	738	496	1150	1140
20	28	143	85	76	80	108	683	861	673	496	1140	1140
21	30	146	86	73	80	190	1040	861	611	498	1150	1140
22	32	147	86	72	80	259	1040	862	613	500	1150	1140
23	32	146	105	72	80	259	1040	861	579	498	1150	1140
24	32	146	87	71	80	259	966	861	506	496	1160	1140
25	32	146	85	72	80	261	780	861	506	496	1150	1140
26	32	146	85	72	80	263	922	861	507	496	1150	1140
27	32	146	85	73	80	262	1270	861	505	496	1150	1140
28	32	146	85	72	80	260	1620	861	501	496	1150	1140
29	32	146	87	73	---	259	1620	861	501	496	1150	1140
30	32	146	79	73	---	259	1620	861	501	496	1150	1140
31	32	---	67	72	---	399	---	861	---	495	1150	---
TOTAL	1031	2583	2985	2730	2447	5200	21422	32041	21936	15478	34645	34300
MEAN	33.3	86.1	96.3	88.1	87.4	168	714	1034	731	499	1118	1143
MAX	52	147	146	182	157	399	1620	1620	865	504	1160	1150
MIN	23	32	67	66	75	92	434	861	501	495	619	1140
AC-FT	2040	5120	5920	5410	4850	10310	42490	63550	43510	30700	68720	68030
MEAN ‡	11.2	10.7	25.7	549	907	1022	1606	1996	2655	666	857	748
AC-FT ‡	688	634	1580	33750	50390	62860	95570	122700	158000	40950	52720	44490
CAL YR 1977 TOTAL	61979	MEAN 170	MAX 561	MIN 23	AC-FT 122900	MEAN ‡ 19.4	AC-FT ‡ 14030					
WTR YR 1978 TOTAL	176798	MEAN 484	MAX 1620	MIN 23	AC-FT 350700	MEAN ‡ 918	AC-FT ‡ 664400					

‡ Adjusted for change in contents in and evaporation from Camanche Reservoir.

## 11325000 WOODBRIDGE CANAL AT WOODBRIDGE, CA

LOCATION.--Lat 38°09'07", long 121°18'00", in NE¼SE¼ sec.34, T.4 N., R.6 E., San Joaquin County, on right bank at Woodbridge, at point of diversion from Woodbridge Reservoir.

PERIOD OF RECORD.--April 1926 to current year.

GAGE.--Water-stage recorder. Datum of gage is 32.18 ft (9.808 m) National Geodetic Vertical Datum of 1929 (levels by East Bay Municipal Utility District). Prior to Mar. 15, 1931, water-stage recorder at site 0.2 mi (0.3 km) downstream at different datum.

REMARKS.--Records good. Discharge computed from records of gate openings and effective head as shown by differential recorder. Canal diverts from Woodbridge Reservoir on Mokelumne River for irrigation south and west of Woodbridge. See schematic diagram of Mokelumne River basin.

AVERAGE DISCHARGE.--52 years, 135 ft<sup>3</sup>/s (3.823 m<sup>3</sup>/s), 97,810 acre-ft/yr (121 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 482 ft<sup>3</sup>/s (13.6 m<sup>3</sup>/s) July 8, 1953; no flow at times in each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0	41	17	191	236	290	193
2						0	36	13	202	227	282	192
3						0	35	16	213	224	272	182
4						0	32	28	208	219	268	179
5						0	27	31	202	236	242	165
6						0	26	34	201	242	236	147
7						0	25	36	199	258	244	142
8						0	23	53	220	280	268	140
9						0	23	84	232	286	288	143
10						0	24	122	220	282	292	135
11						0	27	116	216	282	283	134
12						0	26	104	207	280	273	140
13						0	25	109	208	270	268	130
14						0	22	116	214	270	258	124
15						0	17	128	228	270	273	116
16						0	13	151	222	256	275	118
17						0	13	173	210	254	266	117
18						0	15	185	201	258	259	117
19						0	18	188	195	260	256	124
20						0	24	189	218	256	252	126
21						0	26	182	249	247	258	126
22						0	25	182	266	238	260	128
23						0	24	191	266	240	254	122
24						0	25	172	244	245	246	118
25						0	23	158	220	268	227	120
26						0	18	173	227	271	203	117
27						0	13	175	233	275	198	110
28						0	15	162	237	278	186	102
29					---	8.0	17	156	226	280	191	90
30					---	36	18	159	232	282	203	86
31		---			---	51	---	171	---	290	198	---
TOTAL	0	0	0	0	0	95.0	696	3774	6607	8060	7769	3983
MEAN	0	0	0	0	0	3.06	23.2	122	220	260	251	133
MAX	0	0	0	0	0	51	41	191	266	290	292	193
MIN	0	0	0	0	0	0	13	13	191	219	186	86
AC-FT	0	0	0	0	0	188	1380	7490	13100	15990	15410	7900
CAL YR 1977	TOTAL	23555.00	MEAN 64.5	MAX 193	MIN 0	AC-FT	46720					
WTR YR 1978	TOTAL	30984.00	MEAN 84.9	MAX 292	MIN 0	AC-FT	61460					

LOCATION.--Lat 38°09'31", long 121°18'09", in NW¼NE¼ sec.34, T.4 N., R.6 E., San Joaquin County, on right bank at Woodbridge, 0.4 mi (0.6 km) downstream from county highway bridge, and 0.5 mi (0.8 km) downstream from dam and canal intake of Woodbridge Irrigation District.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WSP 1930: Drainage area.

REMARKS.--Records good. Concerning regulation and diversions see REMARKS for Mokelumne River below Camanche Dam (station 11323500); between Woodbridge and Camanche Dam there are many additional diversions for irrigation, including Woodbridge Canal (station 11325000). Nearest diversion is 0.5 mi (0.8 km) upstream. See schematic diagram of Mokelumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,000 ft<sup>3</sup>/s (765 m<sup>3</sup>/s) Nov. 22, 1950, gage height, 29.58 ft (9.016 m), from rating curve extended above 6,200 ft<sup>3</sup>/s (176 m<sup>3</sup>/s) on basis of contracted-opening measurement of maximum flow; minimum daily, 0.23 ft<sup>3</sup>/s (0.007 m<sup>3</sup>/s) Nov. 15, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,360 ft<sup>3</sup>/s (38.5 m<sup>3</sup>/s) May 3, gage height, 12.11 ft (3.691 m); minimum daily, 0.23 ft<sup>3</sup>/s (0.007 m<sup>3</sup>/s) Nov. 15.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	.25	74	24	28	33	261	1350	497	119	87	797
2	3.9	.25	74	20	29	54	346	1350	496	122	315	796
3	3.7	.26	73	19	32	60	368	1350	487	135	480	803
4	3.7	.26	71	22	33	96	388	1350	480	141	662	809
5	3.7	.26	70	35	40	131	401	1350	492	135	730	872
6	3.4	.27	67	43	58	102	469	1160	483	110	728	876
7	3.4	.27	53	32	84	73	457	1080	478	87	725	865
8	3.3	.27	38	28	132	64	369	1010	423	77	654	866
9	3.1	.28	33	50	105	73	330	809	447	70	652	870
10	2.9	.28	29	135	100	57	325	783	431	71	660	886
11	2.7	.27	30	59	57	53	314	833	449	70	674	886
12	2.5	.26	34	32	53	63	316	697	487	62	694	871
13	2.4	.25	32	72	51	64	315	617	456	58	699	882
14	2.3	.24	33	120	49	63	316	607	425	62	716	883
15	2.2	.23	41	184	45	64	335	599	417	69	713	905
16	2.2	.24	40	141	42	58	339	533	411	100	695	889
17	2.0	.24	47	120	38	59	338	532	337	128	739	883
18	1.9	.24	34	114	37	31	329	527	337	74	725	881
19	1.7	.30	31	74	36	47	318	525	368	66	722	877
20	1.7	2.5	29	55	35	28	387	522	298	85	730	891
21	1.6	53	28	46	35	28	699	556	195	101	734	887
22	1.5	69	30	39	35	13	858	543	170	105	723	897
23	1.3	62	47	36	35	66	880	529	170	118	733	889
24	1.1	64	39	34	33	152	898	531	137	125	744	891
25	.83	69	31	32	34	171	801	572	132	78	789	890
26	.71	71	31	34	34	182	709	533	144	77	816	886
27	.59	74	30	34	35	190	902	529	135	69	801	899
28	.51	75	30	32	35	194	1190	541	121	63	805	904
29	.42	77	30	30	---	87	1320	546	123	54	807	924
30	.33	77	30	30	---	15	1340	548	123	55	797	921
31	.24	---	28	29	---	43	---	538	---	65	793	---
TOTAL	65.73	698.42	1287	1755	1360	2414	16618	23550	10149	2751	21342	26276
MEAN	2.12	23.3	41.5	56.6	48.6	77.9	554	760	338	88.7	688	876
MAX	3.9	77	74	184	132	194	1340	1350	497	141	816	924
MIN	.24	.23	28	19	28	13	261	522	121	54	87	796
AC-FT	130	1390	2550	3480	2700	4790	32960	46710	20130	5460	42330	52120
CAL YR 1977	TOTAL	5892.85	MEAN	16.1	MAX	108	MIN	.23	AC-FT	11690		
WTR YR 1978	TOTAL	108266.15	MEAN	297	MAX	1350	MIN	.23	AC-FT	214700		



## 11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA--Continued

## WATER-QUALITY RECORDS

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

CHEMICAL ANALYSES: Water years 1951 to current year.

BIOLOGICAL DATA: Water years 1975 to current year.

SPECIFIC CONDUCTANCE: Water years 1952-58, 1975-77.

WATER TEMPERATURES: Water years 1951-58, 1961 to current year.

PERIOD OF DAILY RECORD.--

CHEMICAL ANALYSES: March 1951 to September 1958.

SPECIFIC CONDUCTANCE: March 1951 to September 1958, October 1974 to September 1977.

WATER TEMPERATURES: March 1951 to September 1958, November 1960 to current year.

INSTRUMENTATION.--Temperature recorder since November 1960.

REMARKS.--Unpublished records of specific conductance of daily samples available in files of district office.

COOPERATION.--The letter "A" following a date indicates chemical-quality data furnished by California Department of Water Resources.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 28.5°C July 17, 1951; minimum recorded, 1.5°C Jan. 29, 30, 1954.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 25.0°C July 19; minimum recorded, 7.0°C Nov. 20.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT										
05... A	1545	3.7	67	6.8	20.0	--	7.6	--	--	--
17...	1330	2.0	63	7.5	20.0	6.0	--	--	--	K1
NOV										
14...	1030	.25	60	7.6	12.0	--	5.9	--	--	K2
21... A	1045	56	67	7.2	9.0	--	10.7	--	--	--
DEC										
12...	1000	34	70	7.6	9.0	4.0	11.6	--	--	66
29... A	1100	28	87	7.3	12.0	8.0	10.6	--	--	--
JAN										
12...	1015	31	114	7.3	11.5	25	10.4	--	--	K780
19... A	1245	69	120	7.3	--	--	10.2	--	--	--
FEB										
10... A	1230	96	100	7.3	11.0	--	10.5	--	--	--
15...	1000	45	86	8.0	11.0	15	11.4	--	--	88
MAR										
08... A	0915	62	97	7.2	15.0	--	7.4	--	--	--
14...	1030	62	76	8.3	14.0	15	10.6	--	--	120
APR										
12...	0930	319	66	8.4	14.5	2.0	10.1	--	--	58
12... A	1145	318	73	7.1	15.0	2.0	10.1	3	1.0	--
MAY										
03... A	0800	1350	67	7.5	12.0	--	10.3	--	--	--
04...	1115	1350	59	7.9	12.0	3.0	10.6	--	--	44
JUN										
06... A	0715	486	66	7.3	17.0	--	9.1	--	--	--
07...	1100	481	50	7.5	17.5	1.0	9.6	--	--	64
JUL										
06...	1215	127	55	8.1	22.0	1.4	8.7	--	--	24
12... A	0940	58	58	7.3	21.0	1.0	8.5	--	--	--
AUG										
08... A	0930	680	61	7.2	--	--	9.7	--	--	--
16...	1100	694	50	8.3	18.5	2.0	10.4	--	--	100
SEP										
06... A	1130	875	59	7.1	17.0	1.0	10.2	3	.8	--
26...	1115	887	48	--	18.0	.50	9.7	--	--	K3300

See footnotes at end of table.

## SAN JOAQUIN RIVER BASIN

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	STREP- TOCOCCL FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
OCT								
05... A	--	--	--	--	--	--	--	--
17... A	>1000	24	1	6.8	1.6	3.0	.3	.9
NOV								
14... A	160	--	--	--	--	--	--	--
21... A	--	--	--	--	--	--	--	--
DEC								
12... A	630	28	0	7.2	2.4	3.9	.3	1.3
29... A	--	27	0	7.2	--	5.0	--	--
JAN								
12... A	650	41	15	10	3.8	5.7	.4	4.1
19... A	--	35	5	9.4	2.8	6.0	.4	2.0
FEB								
10... A	--	--	--	--	--	--	--	--
15... A	K60	35	10	8.6	3.2	4.5	.3	1.6
MAR								
08... A	--	--	--	--	--	--	--	--
14... A	170	31	6	9.0	2.1	3.8	.3	1.1
APR								
12... A	87	25	6	6.9	1.9	3.4	.3	1.0
12... A	--	23	--	6.3	.0	4.0	.4	--
MAY								
03... A	--	--	--	--	--	--	--	--
04... A	K40	21	3	5.7	1.6	3.0	.3	.9
JUN								
06... A	--	--	--	--	--	--	--	--
07... A	K31	23	1	5.9	1.9	3.3	.3	1.1
JUL								
06... A	K28	21	14	5.4	1.8	3.1	.3	1.1
12... A	--	19	--	5.4	--	3.0	--	--
AUG								
08... A	--	--	--	--	--	--	--	--
16... A	K32	20	1	5.3	1.6	2.8	.3	1.0
SEP								
06... A	--	--	--	4.8	--	2.9	--	--
26... A	K2600	20	1	5.5	1.5	2.6	.3	.9

DATE	ALKA- LITY (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT									
05... A	--	--	--	--	--	--	--	--	.02
17... A	22	4.8	2.9	.0	8.0	--	42	.04	--
NOV									
14... A	--	--	--	--	--	--	--	--	--
21... A	--	--	--	--	--	--	--	--	.00
DEC									
12... A	28	4.9	3.6	.1	2.7	46	43	.06	--
29... A	27	--	3.2	--	--	32	--	.04	.30
JAN									
12... A	32	6.9	7.2	.1	14	96	67	.13	--
19... A	30	5.8	5.0	--	--	73	--	.10	1.7
FEB									
10... A	--	--	--	--	--	--	--	--	.60
15... A	25	10	4.5	.0	7.9	58	95	.08	--
MAR									
08... A	--	--	--	--	--	--	--	--	.24
14... A	25	7.1	4.3	.1	11	55	54	.07	--
APR									
12... A	19	3.3	3.9	.0	11	46	43	.06	--
12... A	19	--	3.2	--	--	47	--	.06	.22
MAY									
03... A	--	--	--	--	--	--	--	--	.18
04... A	18	3.5	4.1	.0	12	42	42	.06	--
JUN									
06... A	--	--	--	--	--	--	--	--	.12
07... A	21	8.5	3.1	.0	10	39	47	.05	--
JUL									
06... A	--	4.3	3.1	.1	9.9	38	33	.05	--
12... A	19	--	3.0	--	--	48	--	.07	.05
AUG									
08... A	--	--	--	--	--	--	--	--	.10
16... A	19	3.2	2.5	.1	11	39	39	.05	--
SEP									
06... A	18	--	1.2	--	--	44	--	.06	.14
26... A	19	3.4	2.5	.0	10	35	38	.05	--

See footnotes at end of table.

## SAN JOAQUIN RIVER BASIN

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11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE		NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
OCT										
05...	A	.01	--	.20	.35	--	--	--	.05	--
17...		--	.08	--	--	--	--	--	.04	.03
NOV										
14...		--	.01	--	.15	--	--	.16	.06	--
21...	A	.00	--	.60	.66	--	--	--	.04	--
DEC										
12...		--	.08	--	--	--	.18	--	.03	.02
29...	A	.01	--	.20	.20	--	--	--	.06	--
JAN										
12...		--	3.5	--	--	--	.69	--	.16	.09
19...	A	--	--	--	--	--	--	--	--	--
FEB										
10...	A	.01	--	.60	.66	--	--	--	.19	--
15...		--	.22	.18	.20	.00	.20	.42	.07	.03
MAR										
08...	A	.00	--	.50	.50	--	--	--	.08	--
14...		--	.18	.37	.37	.18	.19	.55	.07	.01
APR										
12...		--	.21	.14	.17	.00	.17	.38	.01	.00
12...	A	.01	--	.20	.21	--	--	--	.01	--
MAY										
03...	A	.00	--	.20	.20	--	--	--	.02	--
04...		--	.18	.34	.39	.00	.39	.57	.01	.00
JUN										
06...	A	.02	--	.30	.30	--	--	--	.04	--
07...		--	.13	.42	.42	.15	.27	.55	.00	.00
JUL										
06...		--	.05	.30	.30	--	--	.35	.02	--
12...	A	.00	--	.20	.23	--	--	--	.02	--
AUG										
08...	A	.00	--	.20	.20	--	--	--	.02	--
16...		--	.12	.95	.97	.73	.24	1.1	.02	.01
SEP										
06...	A	.00	--	.80	.80	--	--	--	.02	--
26...		--	.08	.30	.31	.13	.18	.39	.00	.00

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDE TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDE RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM SUS- PENDE RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
OCT										
17...	1330	2	0	2	400	400	0	<10	<9	1
JAN										
12...	1015	1	0	2	0	0	0	0	0	0
APR										
12...	0930	4	3	1	200	200	0	1	1	0
12...	A 1145	--	--	0	--	--	0	--	--	0
JUL										
06...	1215	1	0	2	300	100	200	1	1	0
SEP										
06...	A 1130	--	--	0	--	--	0	--	--	0

DATE		CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDE RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDE RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT											
17...		0	0	0	<50	<50	0	<10	<8	2	1100
JAN											
12...		10	0	10	1	1	0	14	0	14	1000
APR											
12...		0	0	0	0	0	0	5	2	3	350
12...	A	--	--	0	--	--	--	--	--	10	--
JUL											
06...		0	0	0	1	1	0	10	6	4	70
SEP											
06...	A	--	--	0	--	--	--	--	--	10	--

See footnotes at end of table.

## SAN JOAQUIN RIVER BASIN

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE RECOV- ERABLE (UG/L AS HG)
OCT 17...	--	180	<100	<99	1	130	20	110	.0	.0
JAN 12...	--	70	4	4	0	60	40	20	.1	.1
APR 12...	--	200	6	5	1	20	10	10	1.4	.7
12... A	--	80	--	--	0	--	--	20	.0	--
JUL 06...	30	40	4	4	0	20	20	0	.0	.0
SEP 06... A	--	20	--	--	0	--	--	10	.0	--

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, SUS- PENDE TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)
OCT 17...	.0	0	0	0	<10	20	10	10	3.7	.0
JAN 12...	.0	0	0	0	0	30	20	10	10	1.8
APR 12...	.7	1	1	0	0	70	40	30	2.6	4.8
12... A	--	--	--	0	--	--	--	--	--	--
JUL 06...	.0	0	0	0	0	20	10	10	2.1	.5
SEP 06... A	--	--	--	0	--	--	--	--	--	--

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

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA--Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PHYTOPLANKTON

DATE TIME	OCT 17,77 1330	NOV 14,77 1030	MAR 14,78 1030	MAY 4,78 1115
TOTAL CELLS/ML	12000	1600	2000	1100
DIVERSITY: DIVISION	1.4	1.4	0.9	0.7
..CLASS	1.4	1.4	0.9	0.7
...ORDER	1.8	1.5	1.8	1.5
....FAMILY	2.2	1.8	2.7	2.2
.....GENUS	2.4	2.2	3.0	2.4

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
....CHARACIACEAE								
.....CHARACIUM	* 0							
....SCHROEDERIA	--		* 0					
...COELASTRACEAE								
....COELASTRUM	1600	13	--					
...HYDRODICTYACEAE								
....PEDIASTRUM	100	1	--					
...MICRACTINIACEAE								
....GOLENKINIA	--		--					
....MICRACTINIUM	--		15	1				
...OOCYSTACEAE								
....ANKISTRODESMUS	* 0		15	1	210	11	150	14
....DICTYOSPHAERIUM	1700	14	--		--		76	7
....KIRCHNERIELLA	--		30	2	--		--	
....OOCYSTIS	170	1	20	1	--		--	
....SELENASTRUM	* 0		--		--		--	
....TETRAEDRON	* 0		--		--		--	
...SCENEDESMACEAE								
....CRUCIGENIA	100	1	--		--		--	
....SCENEDESMUS	200	2	140	9	57	3	--	
...TETRASPORALES								
....PALMELLACEAE								
....SPHAEROCYSTIS	320	3	--		--		--	
...VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	--		--		--		--	
....CHLAMYDOMONAS	* 0		--		28	1	--	
...ZYGNEMATALES								
....DESMIDIACEAE								
....COSMARIUM	--		* 0		--		--	
....STAURASTRUM	--		--		43	2	--	
CHRYSTOPHYTA								
..BACILLARIOPHYCEAE								
...CENTRALES								
....COSCINODISCACEAE								
....CYCLOTELLA	200	2	15	1	200	10	--	
....MELOSIRA	2200	18	160	10	570#	29	490#	44
....SKELETONEMA	--		--		--		--	
...PENNALES								
....ACHNANTHACEAE								
....ACHNANTHES	--		--		14	1	--	
....COCCONEIS	--		* 0		--		--	
....CYMBELLACEAE								
....CYMBELLA	--		--		130	7	57	5
...DIATOMACEAE								
....DIATOMA	--		--		14	1	--	
....FRAGILARIACEAE								
....ASTERIONELLA	--		15	1	--		--	
....FRAGILARIA	--		--		--		--	
....SYNEDRA	* 0		--		190	9	130	12
...GOMPHONEMACEAE								
....GOMPHONEMA	--		--		--		--	
...MERIDIONACEAE								
....MERIDION	--		--		--		--	
....NAVICULACEAE								
....NAVICULA	* 0		30	2	360#	18	110	10
...NITZSCHIIACEAE								
....NITZSCHIA	* 0		35	2	71	4	130	12
...SURIPELLACEAE								
....SURIPELLA	--		--		--		--	
CHRYSONOMONADALES								
...MALLONADACEAE								
....MALLONAS	--		--		--		--	
...OCHROMONADACEAE								
....OCHROMONAS	--		--		--		--	

See footnotes at end of table.

## SAN JOAQUIN RIVER BASIN

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PHYTOPLANKTON

DATE TIME	OCT 17,77 1330		NOV 14,77 1030		MAR 14,78 1030		MAY 4,78 1115	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CRYPTOPHYTA (CRYPTOMONADS)								
..CRYPTOPHYCEAE								
...CRYPTOMONIDALES								
....CRYPTOMONODACEAE								
.....CRYPTOMONAS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCOCCALES								
....CHROCOCCACEAE								
.....AGMENELLUM	--	-	80	5	--	-	--	-
....ANACYSTIS	4200#	35	970#	61	71	4	--	-
...HORMOGONALES								
....NOSTOCACEAE								
.....ANABAENA	850	7	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
....EUGLENACEAE								
.....TRACHELOMONAS	--	-	45	3	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
..DINOPHYCEAE								
...PERIDINIALES								
....PERIDINIACEAE								
.....PERIDINIUM	*	0	--	-	--	-	--	-

See footnotes at end of table.

11325500 MOSELUMNE RIVER AT WOODBRIDGE, CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PHYTOPLANKTON

DATE TIME	JUN 7,78 1100	JUL 6,78 1215	AUG 16,78 1100			
TOTAL CELLS/ML	540	4800	1900			
DIVERSITY: DIVISION	1.0	1.1	1.1			
..CLASS	1.0	1.1	1.4			
..ORDER	1.1	1.9	2.0			
...FAMILY	2.3	2.4	2.9			
....GENUS	2.3	3.0	2.9			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
...CHARACIACEAE						
....CHARACIUM	--	-	--	-	--	-
....SCHROEDERIA	--	-	* 0		22	1
...COELASTRACEAE						
....COELASTRUM	--	-	--	-	--	-
...HYDRODICTYACEAE						
....PEDIASTRUM	--	-	--	-	180	9
...MICRACTINIACEAE						
....GOLENKINIA	--	-	* 0		--	-
....MICRACTINIUM	--	-	--	-	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	22	4	* 0		44	2
....DICTYOSPHAERIUM	--	-	1100# 23		--	-
...KIRCHNERIELLA	--	-	120	2	--	-
...OOCYSTIS	--	-	--	-	--	-
...SELENASTRUM	--	-	--	-	--	-
...TETRAEDRON	--	-	--	-	--	-
...SCENEDESMACEAE						
....CRUCIGENIA	--	-	--	-	--	-
...SCENEDESMUS	--	-	97	2	--	-
...TETRASPORALES						
...PALMELLACEAE						
...SPHAEROCYSTIS	--	-	--	-	750# 40	
...VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CARTERIA	--	-	48	1	--	-
...CHLAMYDOMONAS	89# 16		97	2	44	2
...ZYGNEMATALES						
...DESMIDIACEAE						
...COSMARIUM	--	-	--	-	--	-
...STAUSTRUM	--	-	--	-	--	-
CHRYSOPHYTA						
..BACILLARIOPHYCEAE						
...CENTRALES						
...COSCINODISCACEAE						
...CYCLOTILLA	--	-	1100# 23		22	1
...MELOSIRA	--	-	--	-	--	-
...SKELETONEMA	--	-	940# 20		--	-
...PENNALES						
...ACHNANTHACEAE						
....ACHNANTHES	45	8	--	-	44	2
...COCCONEIS	--	-	--	-	--	-
...CYMBELLACEAE						
....CYMBELLA	270# 50		48	1	240	13
...DIATOMACEAE						
....DIATOMA	--	-	--	-	--	-
...FRAGILARIACEAE						
....ASTERIONELLA	--	-	--	-	--	-
...FRAGILARIA	--	-	700	14	200	10
...SYNEDRA	--	-	--	-	22	1
...GOMPHONEMACEAE						
....GOMPHONEMA	--	-	48	1	--	-
...MERIDIONACEAE						
....MERIDION	22	4	--	-	--	-
...NAVICULACEAE						
....NAVICULA	22	4	* 0		44	2
...NITZSCHACEAE						
....NITZSCHIA	67	12	480	10	89	5
...SURIPELLACEAE						
....SURIPELLA	--	-	* 0		--	-
CHRYSOPHYCEAE						
...CHRYSOMONADALES						
...MALLOMONADACEAE						
....MALLOMONAS	--	-	--	-	22	1
...OCHROMONADACEAE						
....OCHROMONAS	--	-	--	-	160	8

See footnotes at end of table.

## SAN JOAQUIN RIVER BASIN

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PHYTOPLANKTON

DATE TIME	JUN 7,78 1100		JUL 6,78 1215		AUG 16,78 1100	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONIDALES						
...CRYPTOMONODACEAE						
....CRYPTOMONAS	22	4	--	-	22	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROCCOCCALES						
...CHROCCOCCACEAE						
....AGMENELLUM	--	-	--	-	--	-
....ANACYSTIS	--	-	170	3	--	-
...HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENACEAE						
....TRACHELOMONAS	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...PERIDINIALES						
...PERIDINIACEAE						
....PERIDINIUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## PERIPHYTON

DATE	LENGTH OF EXPO- SURE (DAYS)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)	BIOMASS CHLORO- PHYLL RATIO PERI- PHYTON (UNITS)
NOV 14...	28	6.38	4.80	.030	.030	52670
FEB 15...	34	4.72	3.78	3.35	.080	280



## 11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	20.5	19.0	15.5	13.5	13.0	12.0	12.0	11.0	10.5	9.0	16.5	14.5
2	21.0	19.0	15.0	12.5	12.5	11.5	11.0	10.5	11.5	9.5	16.5	15.5
3	21.5	19.0	15.0	13.0	11.5	11.0	10.5	10.0	12.0	10.0	16.0	14.5
4	21.5	19.0	14.5	13.0	12.0	11.0	10.5	10.0	12.0	11.0	15.0	14.0
5	21.0	19.0	15.0	13.0	12.5	11.5	11.5	10.5	12.5	11.5	15.0	14.0
6	20.5	18.5	14.5	12.0	12.5	12.0	12.0	11.0	13.0	12.0	15.0	13.0
7	20.0	18.5	14.0	11.5	12.0	11.5	12.0	11.0	12.5	12.0	16.0	14.0
8	20.0	18.0	13.0	11.5	11.5	10.5	12.0	11.5	12.0	11.0	16.0	15.0
9	20.0	18.0	12.5	10.5	11.0	10.0	12.5	11.5	12.0	11.0	15.5	14.5
10	20.0	18.0	13.5	10.0	10.0	9.0	12.5	12.0	11.5	10.5	16.0	14.0
11	21.0	17.5	13.5	10.5	9.5	8.5	13.5	12.0	12.0	10.5	15.5	14.0
12	20.5	17.5	14.0	11.5	9.5	9.0	12.5	12.0	11.0	10.0	15.5	13.5
13	20.5	17.5	13.0	11.0	10.5	9.0	12.5	12.0	11.0	9.0	15.0	13.0
14	20.0	17.5	13.0	10.5	10.5	9.5	12.5	12.0	12.0	10.0	16.5	14.0
15	20.0	17.5	13.0	10.0	12.0	11.0	12.0	11.0	13.0	11.0	17.0	14.5
16	19.5	17.5	12.5	10.5	11.5	10.5	12.0	11.0	12.5	11.5	17.5	15.0
17	19.0	17.0	13.0	10.5	11.0	10.5	13.0	11.5	12.5	10.5	18.5	16.0
18	18.5	17.0	12.0	10.0	10.5	9.5	12.5	12.0	13.5	11.0	18.5	16.5
19	17.5	16.5	9.5	8.0	9.5	8.5	13.5	12.0	14.0	11.5	19.0	16.5
20	17.0	15.5	11.0	7.0	9.0	8.0	13.5	12.0	14.5	12.0	18.5	16.5
21	16.5	14.5	11.5	9.0	8.5	8.0	13.0	11.5	15.5	13.0	18.5	17.5
22	17.0	14.5	11.0	9.0	10.0	8.0	13.0	11.5	16.0	13.5	19.0	17.0
23	17.5	15.0	12.5	10.5	12.0	10.0	12.0	10.5	16.5	14.0	18.0	16.0
24	17.5	15.5	13.0	11.5	12.5	11.5	10.5	9.0	16.0	15.0	16.0	15.0
25	18.5	16.5	13.5	12.0	12.5	11.5	10.0	8.0	15.5	14.5	16.0	14.5
26	18.0	17.0	13.5	12.5	12.0	11.5	10.0	8.5	15.0	14.0	16.0	14.5
27	17.0	16.0	14.0	12.5	11.5	11.0	10.5	8.5	15.5	13.5	16.5	15.0
28	16.0	15.5	14.0	12.5	12.0	11.5	10.0	9.0	15.5	14.0	16.5	15.0
29	16.0	15.0	13.5	12.5	13.0	12.0	10.0	9.5	---	---	16.5	15.5
30	16.0	15.0	13.5	12.5	13.5	12.0	9.5	9.5	---	---	16.5	15.0
31	15.5	14.0	---	---	12.5	11.5	9.5	9.0	---	---	16.0	15.0
MONTH	21.5	14.0	15.5	7.0	13.5	8.0	13.5	8.0	16.5	9.0	19.0	13.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	14.5	13.5	12.5	11.0	16.5	15.0	21.5	19.5	24.5	22.0	19.0	18.0
2	13.5	12.5	13.0	12.0	16.0	14.5	21.5	19.5	23.5	22.5	19.5	18.0
3	13.5	12.5	13.0	12.5	16.5	14.5	21.5	19.5	22.5	19.5	19.5	18.0
4	13.5	13.0	13.0	12.0	18.0	16.0	22.0	19.5	20.0	18.5	19.0	18.0
5	13.5	12.5	12.5	11.5	19.0	17.0	23.0	20.0	20.0	18.5	18.0	17.5
6	13.0	12.0	12.5	11.5	19.0	17.5	23.5	21.0	20.0	18.5	18.5	17.0
7	12.0	11.0	13.0	12.5	19.0	17.5	23.5	21.0	20.0	18.5	18.0	17.0
8	13.0	11.0	13.0	13.0	19.0	17.5	23.5	21.5	20.0	18.5	18.0	17.0
9	14.5	12.5	13.5	13.0	18.5	17.0	24.5	22.0	20.0	18.5	17.5	16.5
10	15.5	14.0	13.5	13.0	18.0	16.5	24.5	22.0	20.0	18.5	17.5	16.5
11	16.0	14.5	13.5	13.5	18.0	16.5	24.0	21.5	19.5	18.5	18.0	17.0
12	16.0	15.0	14.0	13.5	18.0	16.5	23.0	21.0	19.5	18.0	18.0	17.0
13	15.5	14.5	14.0	13.5	18.0	16.0	23.0	20.5	19.0	18.0	18.0	17.0
14	14.5	13.5	14.5	14.0	19.0	17.0	24.0	21.5	19.0	17.5	18.0	17.0
15	13.0	12.0	14.5	14.0	19.0	17.0	24.0	22.0	19.5	18.0	18.5	17.0
16	12.0	11.5	14.5	14.0	19.0	17.0	23.5	22.0	19.5	18.0	18.5	17.5
17	13.0	11.0	14.5	14.0	19.5	17.5	23.5	22.0	18.5	17.5	18.0	17.5
18	14.0	12.0	14.5	14.0	19.5	18.0	24.5	22.0	19.0	17.5	17.5	16.0
19	14.5	13.5	15.0	14.5	19.5	18.0	25.0	22.0	19.0	17.5	16.5	16.0
20	14.0	13.5	15.5	14.5	19.5	18.0	24.5	22.5	19.0	18.0	17.0	16.0
21	13.5	12.0	15.5	15.0	20.0	18.5	24.5	22.5	19.0	18.0	17.0	16.0
22	13.0	12.0	15.5	14.5	20.5	18.5	24.5	22.5	18.5	17.5	17.0	16.5
23	13.0	12.0	15.0	14.0	21.0	19.0	24.5	22.5	18.5	17.0	17.5	16.5
24	12.5	11.5	14.5	13.5	21.0	19.0	24.0	22.5	18.5	17.0	18.0	17.0
25	12.0	11.5	15.0	13.5	21.0	19.0	23.5	22.5	19.0	17.5	18.0	17.5
26	12.5	11.5	15.5	14.0	21.5	19.5	24.0	22.0	19.0	17.5	18.0	17.5
27	13.5	12.5	16.0	14.5	21.5	20.0	23.5	21.5	18.5	17.5	17.5	17.0
28	13.0	12.0	16.5	15.0	21.0	19.5	24.0	21.5	19.0	17.5	17.5	17.0
29	12.5	11.5	17.0	15.5	21.5	19.0	23.5	21.5	19.0	18.0	17.5	17.0
30	12.5	11.5	16.5	15.0	21.5	19.0	24.0	21.5	19.0	18.0	18.0	17.5
31	---	---	16.5	15.0	---	---	24.5	21.5	19.0	17.5	---	---
MONTH	16.0	11.0	17.0	11.0	21.5	14.5	25.0	19.5	24.5	17.0	19.5	16.0

## SAN JOAQUIN RIVER BASIN

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA--Continued

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT						
17...	1300	18.0	2.0	7	.04	80
NOV						
14...	1030	12.0	.25	10	.01	85
DEC						
12...	1000	9.0	34	8	.73	89
JAN						
12...	1015	11.5	31	32	2.7	97
FEB						
15...	1000	11.0	45	21	2.6	97
MAR						
14...	1030	14.0	62	31	5.2	80
APR						
12...	0930	14.5	319	4	3.4	85
MAY						
04...	1115	12.0	1350	7	26	83
JUN						
07...	1100	17.5	481	5	6.5	54
JUL						
06...	1215	22.0	127	5	1.7	91
AUG						
16...	1100	18.5	694	6	11	80
SEP						
26...	1115	18.0	887	5	12	60

## 11327000 SUTTER CREEK NEAR SUTTER CREEK, CA

LOCATION.--Lat 38°23'45", long 120°46'49", in SE¼SE¼ sec.5, T.6 N., R.11 E., Amador County, on left bank 1.3 mi (2.1 km) east of town of Sutter Creek.

DRAINAGE AREA.--48.1 mi<sup>2</sup> (124.6 km<sup>2</sup>).

PERIOD OF RECORD.--October 1935 to December 1941, March 1960 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,220 ft (372 m), from topographic map. Prior to Oct. 29, 1937, nonrecording gage 15 ft (5 m) downstream at datum 4.00 ft (1.219 m) lower. Oct. 29, 1937, to Dec. 7, 1938, nonrecording gage at present site at datum 4.00 ft (1.219 m) lower.

REMARKS.--Small diversion above station for irrigation.

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

AVERAGE DISCHARGE.--24 years, 30.0 ft<sup>3</sup>/s (0.850 m<sup>3</sup>/s), 21,740 acre-ft/yr (26.8 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,770 ft<sup>3</sup>/s (163 m<sup>3</sup>/s) Jan. 31, 1963, gage height, 6.27 ft (1.911 m), from rating curve extended above 1,200 ft<sup>3</sup>/s (34.0 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 4.77 ft (1.454 m); no flow at times in each year except 1938, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 847 ft<sup>3</sup>/s (24.0 m<sup>3</sup>/s) Mar. 5, gage height, 3.37 ft (1.027 m); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	16	15	44	49	78	11	4.9		0
2			0	11	13	193	45	68	10	4.7		0
3			0	9.3	12	186	36	59	9.9	4.7		0
4			0	9.9	11	293	55	52	9.2	4.3		0
5			0	85	15	677	46	47	8.6	3.8		0
6			0	218	43	396	100	41	7.7	3.4		0
7			0	62	156	194	120	37	7.3	3.2		0
8			0	32	125	133	96	33	7.2	2.9		0
9			0	186	245	104	77	30	6.8	2.6		0
10			0	129	155	85	66	28	6.9	2.4		2.9
11			0	83	132	76	56	27	6.9	2.4		2.9
12			.10	50	127	91	49	26	6.9	2.4		1.8
13			1.5	46	202	68	42	24	6.9	2.3		1.4
14			2.2	211	145	58	39	23	6.9	2.1		1.4
15			35	395	106	50	79	22	6.8	1.8		1.6
16			11	214	85	44	171	22	6.4	1.7		1.5
17			59	312	70	39	139	20	6.3	1.6		1.3
18			35	144	59	35	104	19	6.0	1.5		1.2
19			10	149	48	32	84	17	5.9	1.4		1.2
20			6.2	98	40	30	97	16	5.5	1.3		1.2
21			4.7	72	35	39	94	16	5.5	1.1		1.1
22			6.6	56	31	58	74	15	5.1	1.0		1.1
23			75	42	28	47	66	15	5.0	.90		1.0
24			22	33	25	47	76	15	4.8	.80		1.1
25			11	28	23	36	375	15	4.8	.60		.90
26			7.5	24	22	32	275	14	4.7	.50		.80
27			14	21	21	29	169	13	5.6	.50		.80
28			12	20	20	27	128	13	6.8	.40		.80
29			70	18	---	25	102	12	5.8	.30		.80
30			63	17	---	24	88	11	5.2	.20		.70
31		---	28	16	---	52	---	11	---	.10		---
TOTAL	0	0	473.80	2807.2	2009	3244	2997	839	202.4	61.80	0	27.50
MEAN	0	0	15.3	90.6	71.8	105	99.9	27.1	6.75	1.99	0	.92
MAX	0	0	75	395	245	677	375	78	11	4.9	0	2.9
MIN	0	0	0	9.3	11	24	36	11	4.7	.10	0	0
AC-FT	0	0	940	5570	3980	6430	5940	1660	401	123	0	55
CAL YR 1977	TOTAL	954.30	MEAN	2.61	MAX	75	MIN	0	AC-FT	1890		
WTR YR 1978	TOTAL	12661.70	MEAN	34.7	MAX	677	MIN	0	AC-FT	25110		

## SAN JOAQUIN RIVER BASIN

11329500 DRY CREEK NEAR GALT, CA

LOCATION.--Lat 38°14'53", long 121°13'33", in NE¼NE¼ sec.32, T.5 N., R.7 E., San Joaquin County, on left bank of main channel 35 ft (11 m) downstream from county road bridge, 2 mi (3 km) downstream from Coyote Creek, and 4 mi (6 km) east of Galt.

DRAINAGE AREA.--324 mi<sup>2</sup> (839 km<sup>2</sup>), revised.

PERIOD OF RECORD.--October 1926 to September 1933, October 1944 to current year. Monthly figures only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 52.83 ft (16.103 m) National Geodetic Vertical Datum of 1929 (levels by East Bay Municipal Utility District). Dec. 4, 1926, to Sept. 30, 1933, at site 4 mi (6 km) downstream at different datum. Oct. 1, 1944, to Sept. 30, 1945, on right bank at datum 3.00 ft (0.914 m) higher. Oct. 1, 1945, to June 15, 1966, on right bank at same datum.

REMARKS.--Many small diversions above station for irrigation. Total storage of many small reservoirs, 1,000 acre-ft (1.23 hm<sup>3</sup>) and approximately a total of 500 acres (202 hm<sup>2</sup>) irrigated.

AVERAGE DISCHARGE.--41 years, 112 ft<sup>3</sup>/s (3.172 m<sup>3</sup>/s), 81,140 acre-ft/yr (100 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,000 ft<sup>3</sup>/s (680 m<sup>3</sup>/s) Apr. 3, 1958, gage height, 15.28 ft (4.657 m); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft<sup>3</sup>/s (56.6 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Jan. 10	0100	2660 75.3	12.51 3.813	Feb. 9	1630	2000 56.6	10.46 3.188
Jan. 15	0900	4830 137	13.76 4.194	Mar. 6	0130	*5030 142	13.81 4.209
Jan. 17	1300	2300 65.1	11.65 3.551	Apr. 26	1000	2520 71.4	12.25 3.734
Feb. 7	2130	2340 66.3	11.80 3.597				

Minimum, no flow several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	32	51	71	288	335	31	1.5	0	1.4
2			0	18	49	174	247	276	27	1.6	0	2.4
3			0	12	45	606	181	232	31	1.3	0	1.4
4			0	12	42	1050	235	202	17	9.5	0	3.0
5			0	250	81	3420	277	176	18	8.8	0	23
6			0	1400	327	3150	679	155	14	.33	0	31
7			0	513	1280	1270	1180	148	16	0	0	14
8			0	224	1340	744	595	131	14	.28	0	3.2
9			0	1050	1620	520	395	122	26	2.2	0	1.7
10			0	1600	982	412	305	112	5.6	.68	1.0	1.5
11			0	472	889	334	247	95	4.1	.03	.05	.79
12			0	238	604	695	214	90	8.1	0	0	.29
13			0	379	862	441	187	85	10	0	0	.14
14			0	1830	627	313	167	79	12	0	0	0
15			0	3410	421	258	170	71	10	0	3.3	0
16			0	1750	323	220	504	45	3.9	0	.19	0
17			0	1940	251	194	651	55	2.3	0	.01	0
18			20	1030	204	174	404	57	2.0	0	.01	0
19			5.7	778	173	156	308	50	2.3	0	0	0
20			.99	563	150	146	279	47	3.4	.02	0	0
21			.01	360	131	163	323	44	2.5	.87	1.2	0
22			0	258	115	346	252	41	1.4	0	0	0
23			17	199	104	251	213	39	5.9	0	0	.46
24			63	155	95	212	193	40	3.5	0	0	.07
25			11	128	85	170	1140	35	2.8	0	.36	0
26			1.1	112	78	147	2200	35	2.9	0	1.3	.27
27			.14	98	75	133	1170	34	1.8	0	6.9	.98
28			1.3	81	71	125	695	37	.38	0	4.1	.23
29			10	73	---	118	502	38	.11	0	1.3	0
30			79	66	---	113	388	36	.35	0	.15	0
31			---	64	58	---	133	34	---	0	.84	---
TOTAL	0	0	273.24	19089	11075	16259	14589	2976	279.34	27.11	20.71	85.83
MEAN	0	0	8.81	616	396	524	486	96.0	9.31	.87	.67	2.86
MAX	0	0	79	3410	1620	3420	2200	335	31	9.5	6.9	31
MIN	0	0	0	12	42	71	167	34	.11	0	0	0
AC-FT	0	0	542	37860	21970	32250	28940	5900	554	54	41	170
CAL YR 1977	TOTAL	273.24	MEAN	.75	MAX	79	MIN	0	AC-FT	542		
WTR YR 1978	TOTAL	64674.23	MEAN	177	MAX	3420	MIN	0	AC-FT	128300		

## SAN JOAQUIN RIVER BASIN

397

11333000 CAMP CREEK NEAR SOMERSET, CA

LOCATION.--Lat 38°39'26", long 120°39'46", in SW¼SW¼ sec.4, T.9 N., R.12 E., El Dorado County, on right bank 0.2 mi (0.3 km) upstream from mouth, 1.3 mi (2.1 km) northeast of Somerset, and 5.6 mi (9.0 km) south of Camino.

DRAINAGE AREA.--62.6 mi<sup>2</sup> (162.1 km<sup>2</sup>).

PERIOD OF RECORD.--February to May 1924 (published as "near Pleasant Valley"), October 1954 to current year..

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,820 ft (555 m), from topographic map. Feb. 1 to May 31, 1924, nonrecording gage at site 0.2 mi (0.3 km) upstream at different datum.

REMARKS.--Records good. Flow partly regulated since January 1955 by Jenkinson Lake, usable capacity, 40,570 acre-ft (50.0 hm<sup>3</sup>). 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 for irrigation downstream from station.

AVERAGE DISCHARGE (adjusted for change in contents, evaporation, and diversion from Jenkinson Lake).--24 years (water years 1955-78), 77.7 ft<sup>3</sup>/s (2.200 m<sup>3</sup>/s), 56,290 acre-ft/yr (69.4 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,040 ft<sup>3</sup>/s (171 m<sup>3</sup>/s) Dec. 23, 1964, gage height, 12.50 ft (3.810 m); no flow Aug. 7-18, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 689 ft<sup>3</sup>/s (19.5 m<sup>3</sup>/s) Apr. 26, gage height, 5.81 ft (1.771 m); minimum daily, 0.54 ft<sup>3</sup>/s (0.015 m<sup>3</sup>/s) Oct. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	.71	1.1	9.6	5.8	11	302	335	58	22	6.2	4.2
2	1.1	.69	1.1	6.5	6.1	43	268	295	55	24	5.9	4.0
3	.97	.69	1.1	5.7	5.5	62	229	276	51	23	5.8	3.8
4	.83	.69	1.0	7.3	5.1	76	230	264	49	22	5.6	3.8
5	.68	1.6	1.0	30	5.6	240	201	254	50	20	5.3	7.8
6	.57	1.9	1.0	91	11	111	229	231	50	19	5.2	15
7	.56	1.2	1.0	28	34	69	215	205	48	18	5.0	14
8	.54	1.1	.97	16	33	49	190	191	46	18	4.8	10
9	.60	.99	.89	39	50	39	178	186	39	17	4.6	9.5
10	.64	.93	.89	42	47	33	179	187	31	16	4.4	22
11	.62	.87	1.0	21	42	31	184	184	25	15	4.7	17
12	.61	.80	2.1	14	38	32	186	178	18	14	4.5	11
13	.59	.83	2.9	14	47	26	182	169	15	14	4.5	9.1
14	.58	.85	2.5	55	43	23	184	172	12	13	4.6	9.0
15	.59	.84	19	114	36	20	235	201	9.7	12	4.5	9.0
16	.60	.84	6.3	60	29	18	301	195	7.3	12	4.4	8.2
17	.59	.85	19	142	24	17	275	164	5.9	11	4.5	7.6
18	.59	.84	15	74	20	16	258	140	5.4	11	4.5	7.2
19	.60	.82	5.4	54	17	15	258	131	5.2	11	4.4	7.1
20	.64	.71	3.4	41	15	14	379	127	4.8	9.9	4.3	7.0
21	.61	3.7	2.7	30	14	17	385	123	4.7	9.4	4.3	6.9
22	.64	13	3.8	23	12	21	340	120	4.6	9.0	4.3	19
23	.86	3.6	23	18	11	24	312	122	4.5	8.6	4.5	19
24	1.1	2.1	9.9	15	10	27	307	107	4.4	8.2	4.6	18
25	.88	1.5	5.1	12	9.2	22	563	91	4.3	7.7	4.7	18
26	.79	1.3	3.9	11	8.5	22	656	78	4.3	7.5	4.7	18
27	.77	1.2	9.9	9.3	8.3	118	565	71	4.9	7.4	4.7	6.3
28	.74	1.2	10	8.2	7.9	176	489	66	5.7	7.3	4.6	5.2
29	.69	1.1	42	7.4	---	189	424	67	5.0	6.9	4.5	5.1
30	.73	1.1	33	6.7	---	201	377	69	4.6	6.7	4.4	5.0
31	.71	---	17	6.2	---	268	---	63	---	6.4	4.3	---
TOTAL	22.12	48.55	246.95	1010.9	595.0	2030	9081	5052	632.3	407.0	147.3	306.8
MEAN	.71	1.62	7.97	32.6	21.3	65.5	303	163	21.1	13.1	4.75	10.2
MAX	1.1	13	42	142	50	268	656	345	58	24	6.2	22
MIN	.54	.69	.89	5.7	5.1	11	178	63	4.3	6.4	4.3	3.8
AC-FT	44	96	490	2010	1180	4030	18010	10020	1250	807	292	609
†	-690	+130	+3183	+13255	+7338	+13194	+77	-246	-709	-3820	-3720	-1582
‡	61	19	9	18	30	65	74	252	275	319	305	150
††	690	212	93	61	60	156	257	558	2617	3099	3650	1221
CAL YR 1977 TOTAL	742.26			MEAN 2.03	MAX 42	MIN 0	AC-FT 1470	MEAN †† 11.5			AC-FT †† 8320	
WTR YR 1978 TOTAL	19579.92			MEAN 53.6	MAX 656	MIN .54	AC-FT 38840	MEAN †† 110			AC-FT †† 79500	

† Change in contents, in acre-feet, in Jenkinson Lake, furnished by Bureau of Reclamation.

‡ Diversion, in acre-feet, from Jenkinson Lake, furnished by Bureau of Reclamation.

†† Evaporation, in acre-feet, from Jenkinson Lake, furnished by Bureau of Reclamation.

‡‡ Adjusted for change in contents, evaporation, and diversion from Jenkinson Lake.

## SAN JOAQUIN RIVER BASIN

11333500 NORTH FORK COSUMNES RIVER NEAR EL DORADO, CA

LOCATION.--Lat 38°35'20", long 120°50'38", in NE4SW4 sec.35, T.9 N., R.10 E., El Dorado County, on downstream side of left abutment of county road bridge, 0.8 mi (1.3 km) north of Nashville, 2.6 mi (4.2 km) upstream from mouth, and 6 mi (10 km) south of El Dorado.

DRAINAGE AREA.--205 mi<sup>2</sup> (531 km<sup>2</sup>).

PERIOD OF RECORD.--August 1911 to December 1941, October 1948 to current year.

REVISED RECORDS.--WSP 1315-A: 1914(M), 1925(M), 1928(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 840 ft (256 m), from topographic map. Prior to October 1933, nonrecording gage at site 1.5 mi (2.4 km) upstream at different datum. October 1933 to December 1941, water-stage recorder at site 1,000 ft (305 m) upstream at different datum.

REMARKS.--Records good except those for summer months, which are fair. Flow partly regulated since January 1955 by Jenkinson Lake, usable capacity, 40,570 acre-ft (50.0 hm<sup>3</sup>). Camino conduit above the station diverts water out of the basin. See REMARKS for Camp Creek near Somerset (station 11333000). Numerous small diversions above station for irrigation and domestic use.

AVERAGE DISCHARGE.--60 years, 198 ft<sup>3</sup>/s (5.607 m<sup>3</sup>/s), 143,500 acre-ft/yr (177 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,800 ft<sup>3</sup>/s (447 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 14.8 ft (4.51 m), from rating curve extended above 7,500 ft<sup>3</sup>/s (212 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow for part of 1924, 1926, 1931, 1933-34, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,800 ft<sup>3</sup>/s (51.0 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Jan. 6	0300	1930 54.7	6.91 2.106	Mar. 4	2000	2750 77.9	7.84 2.390
Jan. 15	0330	2620 74.2	7.71 2.350	Apr. 26	0500	2480 70.2	7.16 2.182
Jan. 17	0530	*2880 81.6	7.99 2.435				

Minimum daily, no flow Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	2.1	5.4	199	111	190	848	912	229	55	10	18
2	.13	1.9	5.6	152	108	497	756	796	223	62	9.6	15
3	.37	1.9	5.5	129	98	767	637	742	210	59	8.8	10
4	.70	1.9	5.8	134	91	1250	635	703	203	56	8.7	10
5	.99	1.8	7.3	532	100	2070	560	663	206	51	8.3	25
6	1.1	3.8	5.2	1090	215	1390	793	596	206	55	17	45
7	1.2	4.2	6.3	370	536	961	739	542	202	50	26	49
8	1.6	3.2	8.7	247	524	741	605	512	195	46	26	35
9	1.7	2.8	7.9	688	707	621	549	500	182	41	23	27
10	1.6	2.8	8.3	709	614	527	528	497	168	36	14	39
11	1.7	2.4	11	389	606	478	533	485	154	32	19	55
12	1.6	1.6	15	289	498	500	537	468	140	31	24	35
13	1.6	1.8	18	262	550	410	519	453	137	30	21	25
14	1.8	2.0	18	766	479	357	515	455	131	28	22	22
15	1.7	1.7	85	1620	401	320	638	500	123	25	23	20
16	1.6	1.9	104	1020	339	294	1090	490	109	23	22	20
17	1.6	2.7	115	2000	290	280	1020	408	98	22	21	18
18	1.8	3.3	229	954	253	274	801	375	90	20	20	18
19	1.8	3.6	83	742	228	268	738	357	85	18	20	17
20	1.9	3.6	48	578	211	270	1110	349	80	17	20	17
21	2.2	8.8	36	448	197	342	1090	343	77	15	19	17
22	2.2	43	40	366	190	470	912	344	72	18	20	20
23	2.0	32	244	305	192	452	810	343	68	33	20	31
24	2.4	14	188	255	195	498	806	306	65	43	21	30
25	2.2	8.3	99	218	194	414	2020	267	60	29	24	29
26	2.2	6.1	71	192	191	380	2090	238	57	18	23	28
27	2.7	5.5	118	172	189	435	1680	223	56	16	22	26
28	2.5	4.8	190	154	192	506	1430	223	73	16	21	15
29	2.2	4.6	362	140	---	519	1220	230	62	15	21	14
30	2.3	5.5	406	128	---	536	1050	243	53	13	18	13
31	2.3	---	262	120	---	762	---	239	---	12	17	---
TOTAL	51.69	183.6	2808.0	15368	8499	17779	27259	13802	3814	985	589.4	743
MEAN	1.67	6.12	90.6	496	304	574	909	445	127	31.8	19.0	24.8
MAX	2.7	43	406	2000	707	2070	2090	912	229	62	26	55
MIN	0	1.6	5.2	120	91	190	515	223	53	12	8.3	10
AC-FT	103	364	5570	30480	16860	35260	54070	27380	7570	1950	1170	1470

CAL YR 1977	TOTAL	6011.95	MEAN	16.5	MAX	406	MIN	0	AC-FT	11920
WTR YR 1978	TOTAL	91881.69	MEAN	252	MAX	2090	MIN	0	AC-FT	182200

## SAN JOAQUIN RIVER BASIN

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11334300 SOUTH FORK COSUMNES RIVER NEAR RIVER PINES, CA

LOCATION.--Lat 38°33'25", long 120°47'32", in SE¼SW¼ sec.8, T.8 N., R.11 E., Amador County, on left bank 2.4 mi (3.9 km) upstream from mouth, and 2.7 mi (4.3 km) west of River Pines.

DRAINAGE AREA.--64.3 mi<sup>2</sup> (166.5 km<sup>2</sup>).

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,220 ft (372 m), from topographic map.

REMARKS.--No storage or known diversion above station.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

AVERAGE DISCHARGE.--21 years, 44.0 ft<sup>3</sup>/s (1.246 m<sup>3</sup>/s), 31,880 acre-ft/yr (39.3 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,540 ft<sup>3</sup>/s (157 m<sup>3</sup>/s) Feb. 1, 1963, gage height, 10.90 ft (3.322 m), from rating curve extended above 1,900 ft<sup>3</sup>/s (53.8 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 9.90 ft (3.018 m); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1890 ft<sup>3</sup>/s (53.5 m<sup>3</sup>/s) Jan. 15, gage height, 5.57 ft (1.698 m); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	32	28	46	98	158	21	9.0	1.0	.20
2			0	25	27	237	93	136	20	8.7	.90	.20
3			0	22	25	323	79	121	20	8.8	.80	.20
4			.10	22	24	680	96	108	20	7.9	.80	.10
5			.10	191	27	1170	87	96	18	7.6	.60	1.3
6			.10	516	59	695	203	87	17	7.3	.50	4.4
7			.20	124	340	378	188	80	16	7.0	.50	2.9
8			.20	68	255	253	154	74	15	6.2	.50	1.8
9			.20	409	461	196	139	66	14	6.0	.30	1.6
10			.30	276	335	159	122	63	13	5.3	.20	5.1
11			.90	136	297	140	111	59	14	4.8	.20	5.3
12			2.3	85	251	148	101	54	13	4.7	.10	3.1
13			2.3	75	336	117	92	51	13	4.8	.10	2.6
14			2.4	620	248	102	87	48	12	4.2	.10	2.3
15			18	896	185	90	130	46	12	3.8	.30	2.2
16			13	480	148	81	318	48	12	3.7	.30	2.0
17			32	739	121	75	260	44	12	3.5	.20	1.9
18			46	344	101	69	203	41	11	3.2	.20	1.8
19			18	296	89	64	178	40	11	2.9	.20	1.7
20			10	202	78	60	234	36	10	2.4	.20	1.7
21			7.9	139	71	73	246	34	9.6	2.4	.20	1.7
22			9.2	106	65	94	191	33	9.5	2.3	.20	1.6
23			110	84	60	82	165	31	9.2	2.0	.20	1.6
24			42	68	56	84	155	31	8.8	1.8	.30	1.5
25			22	58	51	74	641	31	9.2	1.6	.40	1.4
26			16	51	48	65	520	28	9.0	1.4	.50	1.3
27			20	45	46	62	334	28	9.4	1.4	.50	1.3
28			24	40	43	59	254	26	12	1.3	.50	1.2
29			97	36	---	56	210	24	11	1.3	.40	1.2
30			96	34	---	53	179	24	9.5	1.2	.30	1.2
31		---	51	31	---	89	---	22	---	1.1	.20	---
TOTAL	0	0	641.20	6250	3875	5874	5868	1768	391.2	129.6	11.70	56.40
MEAN	0	0	20.7	202	138	189	196	57.0	13.0	4.18	.38	1.88
MAX	0	0	110	896	461	1170	641	158	21	9.0	1.0	5.3
MIN	0	0	0	22	24	46	79	22	8.8	1.1	.10	.10
AC-FT	0	0	1270	12400	7690	11650	11640	3510	776	257	23	112
CAL YR 1977	TOTAL	1317.80	MEAN	3.61	MAX	110	MIN	0	AC-FT	2610		
WTR YR 1978	TOTAL	24865.10	MEAN	68.1	MAX	1170	MIN	0	AC-FT	49320		

## SAN JOAQUIN RIVER BASIN

11335000 COSUMNES RIVER AT MICHIGAN BAR, CA

LOCATION.--Lat 38°30'01", long 121°02'39", in NW¼SE¼ sec.36, T.8 N., R.8 E., Sacramento County, on downstream side of midstream pier of highway bridge at Michigan Bar, 5.5 mi (8.8 km) southwest of Latrobe, and 12 mi (19 km) downstream from confluence of North and Middle Forks of Cosumnes River.

DRAINAGE AREA.--536 mi<sup>2</sup> (1,388 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1907 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 331: 1911-12. WSP 1315-A: 1980-9, 1911(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 168.09 ft (51.234 m) National Geodetic Vertical Datum of 1929. Prior to July 10, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow partly regulated since January 1955 by Jenkinson Lake, usable capacity, 40,570 acre-ft (50.0 hm<sup>3</sup>). Camino conduit above the station diverts water out of the basin. See REMARKS for Camp Creek near Somerset (station 11333000). Numerous small diversions above station for irrigation and domestic use.

AVERAGE DISCHARGE.--71 years, 476 ft<sup>3</sup>/s (13.48 m<sup>3</sup>/s), 344,900 acre-ft/yr (425 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,000 ft<sup>3</sup>/s (1,190 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 14.59 ft (4.447 m); no flow at times in many years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1907 reached a stage of 16.3 ft (4.97 m), discharge unknown.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft<sup>3</sup>/s (113 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Jan. 6	0030	5680 161	7.10 2.164	Jan. 17	0700	7320 207	7.62 2.323
Jan. 9	1900	4400 125	6.63 2.021	Mar. 4	2230	*8250 234	7.88 2.402
Jan. 15	0345	7500 212	7.67 2.338	Apr. 26	0700	5090 144	6.89 2.100

Minimum daily, no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	17	476	364	542	1760	1790	521	153	30	16
2		0	15	367	355	1130	1570	1600	553	162	29	14
3		0	13	323	337	2160	1310	1490	517	158	28	12
4		0	13	372	319	3710	1330	1410	503	149	27	12
5		0	14	1670	346	5980	1180	1330	502	138	26	21
6		0	14	3580	647	4020	1930	1220	502	129	22	38
7		0	14	1210	2110	2650	1870	1110	491	132	26	83
8		0	12	754	2010	2000	1410	1050	474	122	21	73
9		0	12	2280	2680	1660	1230	1030	450	115	20	55
10		0	12	2380	2030	1420	1150	1020	423	105	18	52
11		0	13	1260	2020	1260	1130	1000	392	97	19	97
12		0	14	889	1600	1550	1130	960	363	93	17	83
13		4.4	15	955	1930	1150	1100	924	353	89	15	58
14		4.0	19	3190	1550	991	1080	938	339	80	13	46
15		3.5	58	5240	1220	873	1200	995	324	76	16	42
16		3.1	253	3540	1020	801	2300	973	300	73	17	41
17		3.0	170	5630	852	757	2230	818	274	69	17	39
18		3.0	534	2800	744	738	1690	750	257	64	15	35
19		3.1	244	2270	672	718	1520	726	243	64	15	34
20		3.9	137	1730	622	713	1870	715	228	59	15	33
21		6.0	95	1290	590	926	2060	707	218	55	12	32
22		11	89	1020	580	1400	1720	716	212	52	13	32
23		148	536	831	580	1180	1550	709	201	50	15	33
24		77	527	697	586	1260	1500	645	190	45	21	42
25		46	275	613	587	1070	3980	581	184	44	16	41
26		34	200	564	576	980	4450	528	173	44	14	39
27		26	216	509	565	970	3250	486	167	42	16	39
28		23	401	465	556	1030	2670	483	206	40	16	36
29		21	699	429	---	1040	2300	503	199	40	16	28
30		19	1120	404	---	1060	2010	524	168	41	15	25
31		---	723	384	---	1490	---	533	---	36	15	---
TOTAL	0	439.0	6474	48122	28048	47229	55480	28264	9927	2616	575	1231
MEAN	0	14.6	209	1552	1002	1524	1849	912	331	84.4	18.5	41.0
MAX	0	148	1120	5630	2680	5980	4450	1790	553	162	30	97
MIN	0	0	12	323	319	542	1080	483	167	36	12	12
AC-FT	0	871	12840	95450	55630	93680	110000	56060	19690	5190	1140	2440
CAL YR 1977	TOTAL	13263.34	MEAN	36.3	MAX	1120	MIN	0	AC-FT	26310		
WTR YR 1978	TOTAL	228405.00	MEAN	626	MAX	5980	MIN	0	AC-FT	453000		



11335000 COSUMNES RIVER AT MICHIGAN BAR, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1953 to current year.

CHEMICAL ANALYSES: Water years 1953 to current year.

WATER TEMPERATURES: Water years 1963 to current year.

SEDIMENT RECORDS: Water years 1958-74.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1962 to current year.

SEDIMENT RECORDS: October 1962 to September 1970.

INSTRUMENTATION.--Temperature recorder since October 1962.

COOPERATION.--Chemical-quality records furnished by California Department of Water Resources.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 32.5°C Aug. 8-10, 1978; minimum recorded, 1.5°C on several days in 1965, 1968, and 1973.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 32.5°C Aug. 8-10; minimum recorded, 5.5°C Jan. 24, 25.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)
NOV 21...	1245	5.9	162	7.5	10.0	.00	11.2	64
DEC 29...	1430	724	130	7.4	11.0	6.0	10.7	46
MAR 13...	1045	1160	103	7.4	9.0	3.0	9.6	34
JUN 06...	1045	510	54	7.4	21.0	.00	9.1	19
SEP 13...	0830	58	78	7.4	20.0	1.0	9.5	28

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	SODIUM, DIS- SOLVED (MG/L AS NA)	ALKA- LINITY (MG/L AS CACO3)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
NOV 21...	8	12	7.8	56	8.6	111	.15
DEC 29...	10	11	7.0	36	4.2	76	.10
MAR 13...	0	7.2	5.0	37	1.2	40	.05
JUN 06...	--	4.2	2.4	22	.4	47	.06
SEP 13...	--	6.6	3.7	30	.7	59	.08

## SAN JOAQUIN RIVER BASIN

11335000 COSUMNES RIVER AT MICHIGAN BAR, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	12.5	11.0	15.0	11.5	20.5	18.5	24.0	20.5	30.5	25.5	27.5	22.5
2	13.0	11.0	17.0	14.0	20.5	18.0	23.5	21.0	30.0	25.0	28.0	23.0
3	12.5	10.5	17.5	14.5	20.5	18.5	24.0	21.0	30.0	25.0	28.0	23.0
4	13.0	11.0	16.5	15.0	22.0	18.5	24.5	21.5	30.0	25.5	26.5	23.5
5	11.5	10.0	15.5	13.5	22.5	20.0	25.5	22.5	31.0	26.0	23.5	22.0
6	11.0	10.0	15.5	12.0	23.0	20.0	26.0	23.0	32.0	26.5	24.5	21.5
7	10.5	8.5	16.5	13.5	23.0	21.0	26.5	23.5	32.0	27.5	23.5	21.5
8	12.5	9.0	17.5	14.5	23.0	20.5	27.0	23.5	32.5	27.5	23.0	20.5
9	14.0	10.5	18.0	15.5	22.5	20.0	27.5	24.5	32.5	28.0	21.5	19.0
10	15.0	12.5	18.0	15.5	21.5	19.5	27.5	24.5	32.5	27.5	21.5	19.0
11	15.5	13.0	17.5	15.0	22.0	19.0	26.5	23.5	30.5	27.0	21.5	19.5
12	15.0	13.5	18.0	15.0	21.0	19.0	26.0	23.0	29.0	25.5	22.0	19.0
13	14.5	13.0	18.5	15.5	22.5	19.0	27.0	23.5	29.5	24.5	21.5	19.5
14	13.0	11.5	19.0	16.5	22.0	20.0	28.0	24.5	29.5	24.0	23.0	19.5
15	11.5	10.5	18.0	16.5	22.0	19.0	28.0	25.0	29.0	24.5	24.0	20.5
16	10.5	9.5	16.5	14.0	22.0	19.0	28.0	25.0	28.0	23.5	24.5	21.5
17	12.0	8.5	17.0	14.0	22.5	19.5	28.0	25.0	27.5	22.5	24.0	20.0
18	13.0	10.0	18.0	15.5	23.0	19.5	28.0	25.5	27.5	22.5	22.5	19.0
19	14.0	11.0	19.0	16.0	23.0	20.0	28.5	25.5	27.5	22.5	22.0	17.5
20	13.0	11.0	19.5	17.0	23.0	20.5	28.5	26.0	27.5	22.5	21.5	17.0
21	12.0	9.5	19.0	17.5	23.5	20.5	28.5	25.5	27.0	22.5	21.5	17.0
22	13.0	10.5	18.5	16.5	24.0	21.0	29.5	26.5	27.0	22.0	22.5	17.5
23	14.0	11.0	18.0	16.0	24.0	21.5	29.5	27.0	26.5	21.5	23.0	18.5
24	13.5	13.0	16.0	14.0	23.5	21.0	30.0	26.5	26.0	21.0	23.0	19.5
25	13.0	12.0	16.0	13.5	24.0	21.0	29.5	26.5	26.5	21.5	24.0	20.0
26	13.5	11.5	17.5	14.5	23.5	21.0	29.5	26.0	27.0	22.5	24.0	21.0
27	15.0	12.0	19.0	16.0	22.5	21.5	30.0	25.5	27.0	22.0	24.0	20.5
28	14.5	13.0	21.0	17.0	21.5	19.5	29.5	25.5	27.0	22.5	24.0	20.0
29	15.0	12.5	21.5	18.5	23.0	20.0	29.5	24.5	28.0	23.5	24.0	19.5
30	14.5	12.5	21.5	19.5	24.0	21.0	29.5	25.0	27.5	23.5	24.5	20.0
31	---	---	21.0	19.0	---	---	29.5	25.0	27.5	22.5	---	---
MONTH	15.5	8.5	21.5	11.5	24.0	18.0	30.0	20.5	32.5	21.0	28.0	17.0

## 11336000 COSUMNES RIVER AT McCONNELL, CA

LOCATION.--Lat 38°21'29", long 121°20'34", in NE¼NE¼ sec.20, T.6 N., R.6 E., Sacramento County, on downstream side of bridge on U.S. Highway 99, 0.2 mi (0.3 km) south of McConnell, 1 mi (2 km) downstream from Deer Creek, and 7 mi (11 km) north of Galt.

DRAINAGE AREA.--724 mi<sup>2</sup> (1,875 km<sup>2</sup>).

PERIOD OF RECORD.--October 1941 to current year. 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

REVISED RECORDS.--WSP 1315-A: 1947(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3.34 ft (1.018 m) below National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for the summer months, which are poor. Diversions for irrigation of about 2,100 acres (8.50 km<sup>2</sup>) between stations at Michigan Bar and at McConnell.

AVERAGE DISCHARGE.--37 years, 529 ft<sup>3</sup>/s (14.98 m<sup>3</sup>/s), 383,300 acre-ft/yr (473 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (water years 1944-78).--Maximum discharge, 54,000 ft<sup>3</sup>/s (1,530 m<sup>3</sup>/s) Dec. 23, 1955, gage height, 46.26 ft (14.100 m), from rating curve extended above 36,000 ft<sup>3</sup>/s (1,020 m<sup>3</sup>/s); no flow for parts of each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 23, 24, 1936, reached a stage of 45.94 ft (14.003 m), discharge unknown.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,600 ft<sup>3</sup>/s (102 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Jan. 6	1430	5290 150	41.78 12.735	Feb. 9	2200	4010 114	39.68 12.094
Jan. 10	0600	4870 138	40.88 12.460	Mar. 5	2030	9470 268	43.59 13.286
Jan. 15	1830	*10300 292	44.07 13.433	Apr. 26	1700	5260 149	41.09 12.524

Minimum, no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	528	360	503	1760	1970	518	113	.58	0
2			0	369	347	716	1710	1720	521	88	1.0	0
3			0	291	325	2970	1410	1580	501	91	1.0	0
4			0	263	306	2980	1330	1490	478	87	2.0	0
5			0	708	303	8070	1320	1410	466	79	2.0	0
6			0	4390	437	7140	1520	1300	470	62	2.0	0
7			0	2420	1980	3510	2540	1180	455	61	1.7	0
8			0	1030	3430	2470	1730	1100	443	67	1.2	1.9
9			0	1490	3160	2000	1380	1050	422	52	4.7	50
10			0	4090	2930	1700	1220	1030	390	46	4.0	20
11			0	1910	2380	1420	1170	1020	360	40	4.0	14
12			0	1140	1810	1710	1160	983	326	39	3.0	63
13			0	1020	2550	1480	1130	943	298	33	2.0	39
14			0	3880	2380	1100	1100	941	292	31	.80	15
15			0	8780	1560	950	1140	968	281	26	1.0	14
16			0	6000	1280	845	1990	1010	264	29	1.5	19
17			135	8200	1030	773	2640	879	238	28	2.0	1.3
18			307	5100	873	734	1950	780	220	17	2.0	0
19			308	3200	761	703	1670	745	206	18	2.0	0
20			151	2480	680	675	1700	727	187	17	2.0	0
21			82	1650	624	736	2310	724	170	9.9	1.6	0
22			54	1250	584	1360	1890	727	160	6.2	1.6	0
23			161	996	567	1230	1690	730	148	8.2	.33	0
24			633	813	566	1300	1590	698	132	6.3	.40	0
25			323	679	563	1110	2980	610	128	5.0	.45	0
26			198	590	549	981	4910	543	119	5.0	.52	0
27			155	522	534	925	3870	499	106	4.0	1.5	0
28			252	472	522	979	3010	483	111	4.0	.54	0
29			378	433	---	999	2550	495	170	3.0	.45	0
30			1000	401	---	1000	2200	520	130	3.0	.40	0
31		---	834	376	---	1260	---	526	---	2.0	.38	---
TOTAL	0	0	4971	65471	33391	54329	58570	29381	8710	1080.6	48.65	237.2
MEAN	0	0	160	2112	1193	1753	1952	948	290	34.9	1.57	7.91
MAX	0	0	1000	8780	3430	8070	4910	1970	521	113	4.7	63
MIN	0	0	0	263	303	503	1100	483	106	2.0	.33	0
AC-FT	0	0	9860	129900	66230	107800	116200	50280	17280	2140	96	470

CAL YR 1977	TOTAL	5378.97	MEAN 14.7	MAX 1000	MIN 0	AC-FT 10670
WTR YR 1978	TOTAL	256189.45	MEAN 702	MAX 8780	MIN 0	AC-FT 508200

## SAN JOAQUIN RIVER BASIN

11336580 MORRISON CREEK NEAR SACRAMENTO, CA

LOCATION.--Lat 38°29'55", long 121°27'06", in SW¼SE¼ sec.32, T.8 N., R.5 E., Sacramento County, on right bank 750 ft (229 m) upstream from Florin Road, 1.6 mi (2.6 km) upstream from Elder Creek, and 3.8 mi (6.1 km) south of State Capitol Building in Sacramento.

DRAINAGE AREA.--53.4 mi<sup>2</sup> (138.3 km<sup>2</sup>).

PERIOD OF RECORD.--July 1959 to current year.

REVISED RECORDS.--WDR CA-72-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7.60 ft (2.316 m) National Geodetic Vertical Datum of 1929. Prior to June 29, 1960, at site 650 ft (198 m) downstream at datum 1.55 ft (0.472 m) higher. June 29, 1960, to Sept. 12, 1965, at site 475 ft (144.8 m) upstream at datum 2.71 ft (0.826 m) higher.

REMARKS.--Records good. No regulation or diversion above station. Summer flow is sustained by waste water from domestic and industrial use.

AVERAGE DISCHARGE.--19 years, 18.0 ft<sup>3</sup>/s (0.510 m<sup>3</sup>/s), 13,040 acre-ft/yr (16.1 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,610 ft<sup>3</sup>/s (45.6 m<sup>3</sup>/s) Jan. 26, 1969, gage height, 8.53 ft (2.600 m); no flow at times in 1960, 1962, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft<sup>3</sup>/s (8.50 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 14	2345	303 8.58	3.43 1.046	Jan. 16	1915	1260 35.7	6.65 2.027
Dec. 17	1015	356 10.1	3.70 1.128	Feb. 5	1415	387 11.0	3.78 1.152
Jan. 6	0200	731 20.7	5.18 1.579	Feb. 7	0945	861 24.4	5.56 1.695
Jan. 9	2015	332 9.40	3.60 1.097	Feb. 12	2315	326 9.23	3.48 1.061
Jan. 14	2000	*1330 37.7	6.83 2.082	Mar. 4	1730	1150 32.6	6.39 1.948

Minimum daily, 0.39 ft<sup>3</sup>/s (0.011 m<sup>3</sup>/s) Oct. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	3.1	3.6	3.7	7.2	11	18	11	4.1	1.7	4.7	3.3
2	2.0	2.9	3.4	7.4	6.9	162	8.4	5.6	3.9	1.8	4.9	3.4
3	2.1	2.8	1.5	26	6.9	31.4	6.7	5.3	4.2	2.1	5.3	3.2
4	2.7	2.9	1.1	80	6.5	395	30	4.7	3.9	1.9	5.4	2.0
5	3.0	24	3.4	385	84	296	14	5.2	3.9	4.5	3.8	3.6
6	2.7	3.9	4.0	344	196	94	77	2.3	4.5	5.9	3.5	3.4
7	2.7	5.6	3.4	47	518	46	42	1.4	4.6	5.7	6.9	3.4
8	1.0	4.7	3.6	27	207	59	18	4.4	4.5	2.7	7.3	2.4
9	.62	5.3	3.5	253	198	156	10	4.7	5.2	2.3	6.2	9.1
10	.54	5.0	3.8	128	72	58	10	5.5	3.0	5.4	7.4	5.5
11	2.6	4.3	7.0	38	35	28	8.8	5.8	1.7	6.5	6.5	3.8
12	2.9	2.6	4.6	46	107	28	7.6	4.6	2.4	6.5	3.2	3.8
13	4.2	2.7	4.4	238	230	18	7.1	2.5	3.0	7.7	5.0	4.7
14	3.4	7.7	36	992	74	15	6.3	3.1	3.6	7.8	5.9	8.0
15	1.3	6.5	66	658	40	12	28	3.3	5.1	3.2	6.7	6.8
16	1.3	4.7	16	752	27	10	44	3.7	4.9	1.6	6.3	5.4
17	6.9	3.8	129	515	19	9.4	13	4.7	1.9	7.7	6.1	4.7
18	6.3	3.6	35	297	13	5.4	9.0	4.5	4.9	9.4	6.1	4.8
19	4.6	3.3	9.5	295	11	4.4	7.7	5.7	4.7	11	4.4	4.7
20	3.5	3.2	5.1	165	9.1	6.5	7.1	5.5	3.1	15	2.9	4.5
21	2.8	71	5.7	101	10	29	7.0	4.9	3.0	14	2.9	4.6
22	1.3	38	50	55	9.5	21	3.2	4.8	3.1	13	3.2	5.3
23	.39	13	80	25	8.6	12	2.4	5.0	4.5	13	2.2	2.8
24	1.4	4.8	16	17	8.5	6.5	7.6	5.9	4.2	15	3.3	1.6
25	1.7	2.5	6.7	14	7.2	5.4	58	5.7	4.9	12	3.2	3.1
26	1.6	1.9	14	12	6.8	4.5	26	4.2	5.7	5.9	3.2	4.5
27	8.2	1.7	12	11	6.6	6.9	11	1.6	6.0	5.1	2.2	3.5
28	1.5	4.1	21	6.8	6.8	6.4	7.2	1.3	5.6	4.9	3.3	3.6
29	1.8	4.0	19	5.7	---	6.2	6.7	1.3	5.4	2.4	3.1	3.9
30	.55	3.8	10	7.6	---	5.9	8.2	4.1	4.7	1.9	3.1	1.9
31	2.7	---	5.7	7.8	---	35	---	4.5	---	4.2	2.2	---
TOTAL	80.20	247.4	584.0	5560.0	1931.6	1866.5	510.0	136.8	124.2	201.8	140.4	125.3
MEAN	2.59	8.25	18.8	179	69.0	60.2	17.0	4.41	4.14	6.51	4.53	4.18
MAX	8.2	71	129	992	518	395	77	11	6.0	15	7.4	9.1
MIN	.39	1.7	1.1	3.7	6.5	4.4	2.4	1.3	1.7	1.6	2.2	1.6
AC-FT	159	491	1160	11030	3830	3700	1010	271	246	400	278	249
CAL YR 1977	TOTAL	2185.03	MEAN	5.99	MAX 129	MIN .33	AC-FT	4330				
WTR YR 1978	TOTAL	11508.20	MEAN	31.5	MAX 992	MIN .39	AC-FT	22830				

## 405

LOCATION.--Lat 37°59'44", long 121°42'03", in NW¼NE¼ sec.25, T.2 N., R.2 E., Contra Costa County, at pumping plant No. 1, 0.7 mi (1.1 km) east of Oakley, and 2.6 mi (4.2 km) northwest of Knightsen.

GAGE.--Recording flowmeters on pumps. Prior to Jan. 1, 1953, water-stage recorder at site 3.2 mi (5.1 km) downstream at datum 121.72 ft (37.100 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Water is diverted from Sacramento-San Joaquin Delta by way of Old River, Rock Slough, and a dredged channel. A series of four pumps lift the water 115 ft (35.1 m) into the canal. Water is used for municipal, agricultural, and industrial purposes. The canal is a part of the Central Valley Project.

AVERAGE DISCHARGE.--28 years, 97.8 ft<sup>3</sup>/s (2.770 m<sup>3</sup>/s), 70,860 acre-ft/yr (87.4 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 255 ft<sup>3</sup>/s (7.22 m<sup>3</sup>/s) June 23, 1972; minimum daily, 4.0 ft<sup>3</sup>/s (0.11 m<sup>3</sup>/s) Jan. 20, 1970.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	111	136	136	77	33	42	37	70	106	190	204	155
2	114	141	135	71	36	35	37	78	107	172	205	159
3	117	147	132	59	35	37	42	83	95	171	204	150
4	116	146	133	57	34	29	40	87	86	174	204	150
5	126	139	138	49	30	34	50	84	105	182	199	135
6	118	137	134	52	39	40	63	85	109	187	199	126
7	119	147	136	57	30	41	65	81	110	179	198	110
8	116	147	135	57	36	32	45	93	111	179	200	109
9	115	141	132	56	34	35	38	83	115	176	177	108
10	117	138	132	58	35	33	59	86	115	184	186	108
11	135	140	126	76	38	30	61	88	112	190	186	118
12	141	138	136	80	28	26	71	84	110	191	195	129
13	145	138	133	79	36	32	61	83	114	191	188	125
14	145	144	110	69	33	32	59	85	111	196	184	124
15	137	137	92	74	40	35	53	90	114	192	191	114
16	115	141	93	55	35	35	55	84	112	193	179	111
17	151	141	94	43	36	35	69	84	122	196	171	114
18	147	149	91	46	33	45	69	101	128	198	174	120
19	150	138	97	39	34	40	67	107	149	199	165	111
20	153	131	93	35	40	31	63	110	166	203	163	115
21	150	132	94	39	39	29	73	107	169	203	173	117
22	148	106	95	41	40	29	76	98	173	202	172	120
23	147	97	96	45	40	33	78	92	176	203	168	118
24	157	71	65	38	42	40	80	93	176	211	168	118
25	154	72	70	35	38	40	77	85	176	209	161	124
26	147	69	85	33	35	41	77	92	188	207	151	122
27	145	68	108	28	35	38	77	90	188	203	128	121
28	141	75	105	37	36	45	80	85	183	203	158	122
29	140	77	106	33	---	39	79	87	188	197	159	131
30	141	106	101	34	---	44	74	94	190	199	159	130
31	139	---	91	35	---	39	---	108	---	202	159	---
TOTAL	4197	3689	3424	1587	1000	1116	1875	2777	4104	5982	5528	3714
MEAN	135	123	110	51.2	35.7	36.0	62.5	89.6	137	193	178	124
MAX	157	149	138	80	42	45	80	110	190	211	205	159
MIN	111	68	65	28	28	26	37	70	86	171	128	108
AC-FT	8320	7320	6790	3150	1980	2210	3720	5510	8140	11870	10960	7370
CAL YR 1977	TOTAL	48205	MEAN 132	MAX 220	MIN 65	AC-FT	95610					
WTR YR 1978	TOTAL	38993	MEAN 107	MAX 211	MIN 26	AC-FT	77340					

## SAN JOAQUIN RIVER BASIN

11337500 MARSH CREEK NEAR BYRON, CA

LOCATION.--Lat 37°52'24", long 121°43'34", in Los Meganos Grant, Contra Costa County, Hydrologic Unit 18040003, on right bank 40 ft (12 m) downstream from highway bridge on Marsh Creek Road, 1.2 mi (1.9 km) upstream from Marsh Creek Dam, and 5.0 mi (8.0 km) west of Byron.

DRAINAGE AREA.--42.6 mi<sup>2</sup> (110.3 km<sup>2</sup>).

PERIOD OF RECORD.--February 1953 to current year.

REVISED RECORDS.--WSP 1635: 1955.

GAGE.--Water-stage recorder and concrete control (control ineffective since 1972 due to gravel fill). Datum of gage is 177.87 ft (54.215 m) National Geodetic Vertical Datum of 1929.

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

AVERAGE DISCHARGE.--25 years, 8.23 ft<sup>3</sup>/s (0.233 m<sup>3</sup>/s), 5,960 acre-ft/yr (7.35 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,880 ft<sup>3</sup>/s (110 m<sup>3</sup>/s) Jan. 31, 1963, gage height, 11.62 ft (3.542 m), from rating curve extended above 880 ft<sup>3</sup>/s (24.9 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 10.90 ft (3.322 m); maximum gage height, 12.98 ft (3.956 m) Dec. 23, 1955; no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 140 ft<sup>3</sup>/s (4.0 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Dec. 23	0045	167 4.73	4.66 1.420	Feb. 8	2315	492 13.9	5.96 1.817
Jan. 5	2030	306 8.67	5.30 1.615	Feb. 12	1445	625 17.7	6.37 1.942
Jan. 9	1200	233 6.60	4.99 1.521	Mar. 4	1945	335 9.49	5.41 1.649
Jan. 16	1415	*887 25.1	7.06 2.152	Mar. 8	2230	231 6.54	4.98 1.518

Minimum daily discharge, no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	9.0	10	12	17	6.3	.62	.08		
2			0	9.4	9.6	52	12	5.5	.62	.07		
3			0	9.6	9.2	59	11	5.2	.62	.09		
4			0	39	8.9	115	17	4.9	.57	.10		
5			0	131	13	175	13	5.2	.52	.08		
6			0	106	20	103	36	4.9	.40	.03		
7			0	50	121	70	22	4.9	.29	0		
8			0	36	105	81	15	4.9	.29	0		
9			0	126	207	142	12	5.2	.13	0		
10			0	63	79	85	12	4.9	.05	0		
11			0	40	53	70	11	4.7	.24	0		
12			0	36	205	73	10	4.5	.21	0		
13			0	53	174	54	9.6	4.0	.19	0		
14			0	350	100	48	9.2	3.8	.21	0		
15			0	299	69	41	12	3.6	.37	0		
16			0	433	54	38	14	3.6	.45	0		
17			19	266	44	35	12	3.2	.32	0		
18			28	103	38	32	10	2.9	.40	0		
19			9.3	149	33	29	9.2	2.6	.38	0		
20			5.1	81	29	26	9.6	2.2	.27	0		
21			3.0	53	26	29	9.2	2.0	.21	0		
22			4.9	38	24	35	8.2	1.9	.21	0		
23			47	29	22	24	7.9	2.0	.21	0		
24			19	23	20	22	7.9	1.8	.16	0		
25			14	19	18	19	11	1.8	.22	0		
26			12	17	14	18	9.2	1.7	.20	0		
27			12	15	13	17	7.5	1.4	.16	0		
28			10	14	12	15	6.9	1.3	.14	0		
29			10	12	---	14	6.6	1.2	.13	0		
30			9.1	12	---	13	6.3	.98	.11	0		
31		---	9.2	11	---	21	---	.78	---	0	---	---
TOTAL	0	0	211.6	2632.0	1530.7	1567	354.3	103.86	8.90	.45	0	0
MEAN	0	0	6.83	84.9	54.7	50.5	11.8	3.35	.30	.015	0	0
MAX	0	0	47	433	207	175	36	6.3	.62	.10	0	0
MIN	0	0	0	9.0	8.9	12	6.3	.78	.05	0	0	0
AC-FT	0	0	420	5220	3040	3110	703	206	18	.9	0	0
CAL YR 1977	TOTAL	211.60	MEAN	.58	MAX	47	MIN	0	AC-FT	420		
WTR YR 1978	TOTAL	6408.81	MEAN	17.6	MAX	433	MIN	0	AC-FT	12710		

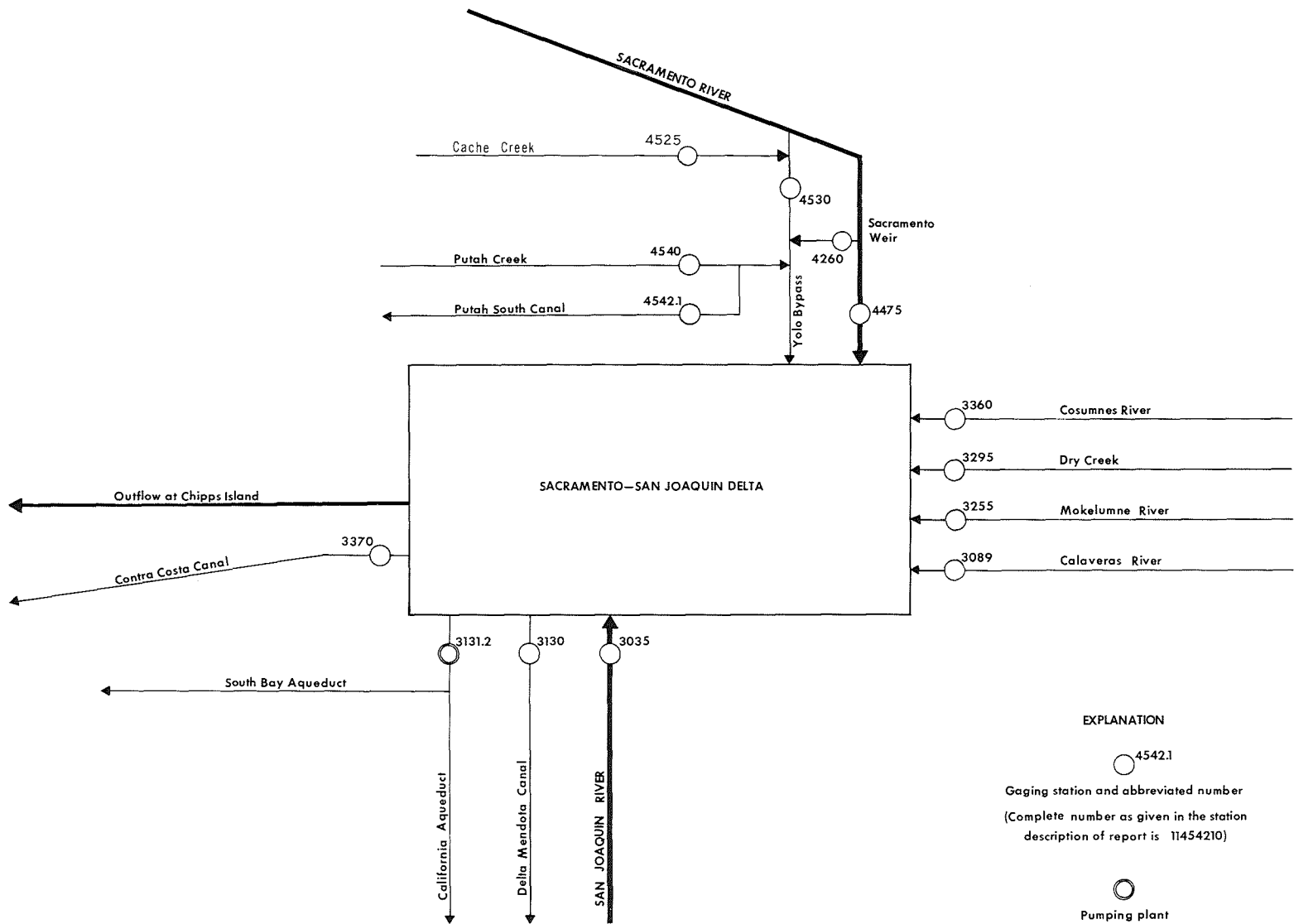


FIGURE 12.--Schematic diagram showing principal inflows and diversions, Sacramento-San Joaquin Delta.

LOCATION.--See schematic diagram of inflows and diversions, Sacramento-San Joaquin Delta.

DRAINAGE AREA.--Total drainage area of inflow streams tabulated below is 39,699 mi<sup>2</sup> (102,820 km<sup>2</sup>).

PERIOD OF RECORD.--October 1971 to current year. Data for periods prior to October 1971, can be obtained from published records for stations tabulated below.

REMARKS.--Quality of water data for the Sacramento-San Joaquin Delta is published in Part 2 of this report.

COOPERATION.--Records for Delta-Mendota, Contra Costa, and Putah South Canals furnished by Bureau of Reclamation, California Aqueduct by California Department of Water Resources.

SUMMARY OF PRINCIPAL INFLOWS AND DIVERSIONS IN THE  
SACRAMENTO-SAN JOAQUIN DELTA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Inflows, in thousands of acre-feet													
Month												Water year	
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		
11303500 SAN JOAQUIN RIVER NEAR VERNALIS													
15.16	25.57	31.10	139.9	406.5	705.6	1192	1180	420.7	117.3	87.19	162.5	4484	
11308900 CALAVERAS RIVER BELOW NEW HOGAN DAM													
0.09	0.10	0.12	0.62	1.01	0.74	1.30	8.91	16.06	15.56	16.23	9.28	70.02	
11325500 MOKELUMNE RIVER AT WOODBRIDGE													
0.13	1.39	2.55	3.48	2.70	4.79	32.96	46.71	20.13	5.46	42.33	52.12	214.8	
11329500 DRY CREEK NEAR GALT													
0	0	0.54	37.86	21.97	32.25	28.94	5.90	0.55	0.05	0.04	0.17	128.3	
11336000 COSUMNES RIVER AT MCCONNELL													
0	0	9.86	129.9	66.23	107.8	116.2	58.28	17.28	2.14	0.10	0.47	508.3	
11426000 SACRAMENTO WEIR SPILL													
0	0	0	2.82	0.22	6.42	0	0	0	0	0	0	9.46	
11447500 SACRAMENTO RIVER AT SACRAMENTO													
276.3	397.9	722.2	2797	2483	3417	2314	1549	753.3	879.3	981.8	1067	17640	
114530000 YOLO BYPASS NEAR WOODLAND <sup>1/</sup>													
--	--	--	1124	470.0	1119	80.50	--	--	--	--	--	2794	
11454000 PUTAH CREEK NEAR WINTERS													
11.67	3.72	4.12	5.61	3.14	2.97	8.15	32.96	40.53	42.07	40.47	24.91	220.3	
Total	303.4	428.7	770.5	4241	3455	5397	3774	2882	1269	1062	1168	1316	26069

Diversions, in thousands of acre-feet													
Month												Water year	
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		
11313000 DELTA-MENDOTA CANAL													
30.04	97.39	133.3	238.0	225.7	245.0	162.9	127.0	245.9	276.9	256.1	224.3	2263	
11313120 CALIFORNIA AQUEDUCT (DELTA PUMPING PLANT)													
7.78	51.27	223.8	365.4	343.3	107.7	34.63	58.55	200.8	212.1	246.8	210.6	2063	
11337000 CONTRA COSTA CANAL													
8.34	7.32	6.79	3.15	1.98	2.21	3.71	5.51	8.14	11.86	10.96	7.37	77.34	
11454210 PUTAH SOUTH CANAL													
9.94	2.94	2.51	1.63	1.28	1.40	5.49	29.56	36.94	37.67	35.71	20.54	185.6	
Total	56.10	158.9	366.4	608.2	572.3	356.3	206.7	220.6	491.8	538.5	549.6	462.8	4589

1. Flow not computed below 1000 ft<sup>3</sup>/s.

NOTE.--Minor inflow streams and diversions are not included.



As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low- or flood-flow analyses, depending on the type of data collected.

Records collected at partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations and the second is a table of annual maximum discharge at crest-stage stations.

## Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of the stream. The column headed "Period of record" shows the water years in which measurements were made at the same or practically the same site.

Discharge measurements made at low-flow partial-record stations during water year 1978

Station No.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
Pyramid and Winnemucca Lake basins						
10336760	Edgewood Creek at Stateline, NV	Lat 38°58'00", long 119°56'10", in NE¼NE¼ sec.27, T.13 N., R.18 E., Douglas County, on upstream side of culvert on U.S. Highway 50 and 0.5 mi (0.8 km) northeast of Stateline.	5.58	1967-74a 1975-78	10-13-77 1-19-78 3-22-78 4-26-78 6-20-78 7-31-78	b 1.98 3.27 6.05 6.70 b 2.71 b 1.86
Buena Vista Lake basin						
*11185300	Golden Trout Creek near Cartago, CA	Lat 36°22'30", long 118°17'16", in NW¼SW¼ sec.10, T.18 S., R.34 E., Tulare County, 0.5 mi (0.8 km) upstream from Tunnel Ranger Station, and 15 mi (24km) west of Cartago.	23.6	1956-67† 1969†, 1970-75c, 1976-78d	10-13-77 9-20-78	b 4.76 20.2
*11185350	Kern River near Quaking Aspen Camp, CA	Lat 36°08'04", long 118°25'49", in SW¼SW¼ sec.32, T.20 R.33 E., Tulare County, Sequoia National Forest, 0.4 mi (0.6 km) upstream from Little Kern River, and 6.8 mi (10.9 km) east of Quaking Aspen Camp.	530	1960-74†, 1975c, 1976-78d	10-13-77	b 99.4
*11185400	Little Kern River near Quaking Aspen Camp, CA	Lat 36°08'05", long 118°26'10", in SE¼SE¼ sec.31, T.20 S., R.33 E., Tulare County, 600 ft (183 m) upstream from mouth and 5 mi (8 km) east of Quaking Aspen Camp.	132	1957-69†, 1970-75c, 1976-78d	10-13-77 9-20-78	b 5.57 59.0
*11188200	South Fork Kern River near Olancho, CA	Lat 36°10'57", long 118°07'40", in NW¼SW¼ sec.18, T.20 S., R.36 E., Tulare County, 2.0 mi (3.2 km) downstream from Snake Creek and 9.7 mi (15.6 km) southwest of Olancho.	146	1956-67†, 1969†, 1970-75c, 1976-78d	10-13-77 9-20-78	b 3.82 35.7
11189700	Kelso Creek near Weldon, CA	Lat 35°34'10", long 118°15'05", in NW¼ sec.20, T.27 S., R.35 E., Kern County, 0.5 mi (0.8 km) upstream from Wool- staff Creek, and 7 mi (11 km) southeast of Weldon.	101	1958-66†, 1968-75c, 1976-78d	10-7-77	b 1.12
11209500	North Fork Kaweah River near Kaweah, CA	Lat 36°29'25", long 118°55'12", in SE¼ sec.34, T.16 S., R.28 E., Tulare County, 1.2 mi (1.9 km) upstream from Manniken Creek and 1.5 mi (2.4 km) north of town of Kaweah.	129	1919-60†, 1963-67c, 1977-78d	10-18-77	b 2.13
11212320	Copper Creek near Cedar Grove, CA <sup>1/</sup>	Lat 36°47'56", long 118°34'47", unsurveyed, Fresno County, Kings Canyon National Park, 0.5 mi (0.8 km) upstream from South Fork Kings River and 5.0 mi (8.0 km) east of Cedar Grove.	7.24	1965-68c, 1970-75c, 1976-78	10-14-77	0

See footnotes at end of table.

## DISCHARGE AT PARTIAL-RECORD STATIONS

Discharge measurements made at low-flow partial-record stations during water year 1978--Continued

Station No.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
Buena Vista Lake basin--Continued						
11212430	Sheep Creek at Cedar Grove, CA	Lat 36°47'08", long 118°40'34", unsurveyed, Fresno County, Kings Canyon National Park, 0.4 mi (0.6 km) southwest of Cedar Grove, and 0.7 mi (1.1 km) upstream from South Fork Kings River.	7.62	1965-68c, 1970-75c, 1976-78	10-14-77	b 0.50
11212440	Lewis Creek near Cedar Grove, CA	Lat 36°48'14", long 118°41'29", unsurveyed, Fresno County, Kings Canyon National Park, 0.3 mi (0.5 km) upstream from South Fork Kings River and 1.5 mi (2.4 km) northwest of Cedar Grove.	16.4	1965-68c, 1970-75c, 1976-78	10-14-77	b 1.20
11212500	South Fork Kings River near Cedar Grove, CA	Lat 36°48'11", long 118°44'52", unsurveyed, Sequoia National Forest, Fresno County, 0.3 mi (0.5 km) downstream from Grizzly Creek, and 4.5 mi (7.2 km) west of Cedar Grove.	408	1950-57†, 1959-61c, 1963-66c, 1968c, 1970-75c, 1976-78	10-14-77	b 69.4
11213000	Kings River near Hume, CA	Lat 36°50'38", long 118°53'36", unsurveyed, Fresno County, Sierra National Forest, 0.9 mi (1.4 km) downstream from Ten Mile Creek and 3.8 mi (6.1 km) north of Hume.	835	1921-36†, 1951-58†, 1959c, 1977-78d	10-14-77	b 116
*11216800	Rock Creek at Dinkey Creek, CA	Lat 37°05'24", long 119°09'39", in NE¼SW¼ sec.5, T.10 S., R.26 E., Fresno County, 0.4 mi (0.6 km) northwest of town of Dinkey Creek, and 0.5 mi (0.8 km) upstream from mouth.	7.60	1961-70†, 1971-75c, 1976-78d	10-5-77	b .04
11217100	Dinkey Creek above Bear Creek, near Shaver Lake, CA	Lat 37°02'16", long 119°08'32", in NE¼NW¼ sec.28, T.10 S., R.26 E., Fresno County, Sierra National Forest, 600 ft (183 m) upstream from Bear Creek and 11.1 mi (17.9 km) southeast of Shaver Lake.	51.2	1977-78	10-12-77	b .83
11217500	Deer Creek below East Fork, near Shaver Lake, CA	Lat 37°00'19", long 119°03'48", in SE¼NE¼ sec.6, T.11 S., R.27 E., Fresno County, Sierra National Forest, 200 ft (61 m) downstream from East Fork Deer Creek, 7.5 mi (12.1 km) southeast of town of Dinkey Creek, and 16.0 mi (25.7 km) southeast of Shaver Lake.	19.0	1923-35†, 1977-78d	10-5-77	b .59
11218000	Dinkey Creek at mouth, near Trimmer, CA	Lat 36°54'35", long 119°07'39", in SE¼SW¼ sec.3, T.12 S., R.26 E., Fresno County, 0.5 mi (0.8 km) upstream from mouth and 0.5 mi (0.8 km) northwest of Balch Camp.	132	1920-37†, 1959c, 1961-68c, 1970-75c, 1977-78d	10-20-77	b 3.22
*11220000	Big Creek above Pine Flat Lake, near Trimmer, CA	Lat 36°54'59", long 119°14'37", in SE¼NE¼ sec.4, T.12 S., R.25 E., Fresno County, 2.4 mi (3.9 km) upstream from mouth and 2.7 mi (4.3 km) northeast of Trimmer.	70.0	1953-73†, 1974-76e, 1977-78d	10-20-77 12-8-77	0 1.01
San Joaquin River basin						
11264700	Porcupine Creek at Porcupine Flat Camp-ground, near Yosemite Village, CA	Lat 37°48'19", long 119°33'36", in NE¼SW¼ sec.33, T.1 S., R.22 E., Mariposa County, in Yosemite National Park, at Porcupine Flat Campground, 1,500 ft (457 m) downstream from highway bridge, and 4.1 mi (6.6 km) northeast of Yosemite Village.	3.60	1970-78d	10-19-77	0

See footnotes at end of table.

## DISCHARGE AT PARTIAL-RECORD STATIONS

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Discharge measurements made at low-flow partial-record stations during water year 1978--Continued

Station No.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
San Joaquin River basin--Continued						
11265000	Tenaya Creek near Yosemite CA	Lat 37°44'32", long 119°33'25", unsurveyed, Mariposa County, in Yosemite National Park, at bridge 0.7 mi (1.1 km) upstream from mouth and 1.7 mi (2.7 km) east of Yosemite National Park.	46.9	1904-9†, 1912-58†, 1961c, 1966-71c, 1974-75, 1977-78d	10-27-77	b 1.41
11265700	Yosemite Creek at Yosemite Creek Camp- ground, near Yosemite Village, CA	Lat 37°49'43", long 119°35'31", in SW¼NE¼ sec.30, T.1 S., R.22 E., Mariposa County, in Yosemite National Park, at Yosemite Creek Campground, 5.6 mi (9.0 km) north of Yosemite Village.	18.5	1970-76, 1977-78d	10-19-77	0
11266000	Yosemite Creek at Yosemite, CA	Lat 37°44'45", long 119°35'40", unsurveyed, Mariposa County, in Yosemite National Park, 0.3 mi (0.5 km) upstream from mouth, and 0.7 mi (1.1 km) west of Yosemite National Park Headquarters.	42.7	1904-9†, 1912-26†, 1960c, 1966-69c, 1971-75c, 1976-78d	10-20-77 9-17-78	0 0
11266600	Cascade Creek near El Portal, CA	Lat 37°44'31", long 119°42'09", in NW¼SW¼ sec.19, T.2 S., R.21 E., Mariposa County, in Yosemite National Park, 200 ft (61 m) upstream from unnamed tributary, 6.2 mi (10.0 km) northeast of El Portal, and 6.5 mi (10.5 km) west of Yosemite Village.	10.3	1971-78d	10-19-77	0
11266700	Tamarack Creek at Tamarack Flat Camp- ground, near El Portal, CA	Lat 37°45'03", long 119°44'03", in NE¼NW¼ sec.23, T.2 S., R.20 E., Mariposa County, in Yosemite National Park, at culvert on Big Oak Flat Road at Tamarack Flat Campground, 5.7 mi (9.2 km) northeast of El Portal, and 8.2 mi (13.2 km) west of Yosemite Village.	4.31	1970-76 1977-78d	10-19-77	b .03
11266800	Wildcat Creek near El Portal, CA	Lat 37°43'31", long 119°43'03", in SE¼SW¼ sec.25, T.2 S., R.20 E., Mariposa County, in Yosemite National Park, upstream from highway bridge, and 4.9 mi (7.9 km) north- east of El Portal.	1.24	1971-78d	10-19-77	0
11266900	Crane Creek above diversion dam, near El Portal, CA	Lat 37°42'36", long 119°45'13", in SE¼SW¼ sec.34, T.2 S., R.20 E., Mariposa County, in Yosemite National Park, 40 ft (12 m) upstream from head of diversion ditch and 2.8 mi (4.5 km) north- east of El Portal.	8.10	1964-70c, 1971-78d	10-19-77	b .06
11267000	Little Crane Creek near El Portal, CA	Lat 37°43'15", long 119°46'58", in NW¼NE¼ sec.32, T.2 S., R.20 E., Mariposa County, Stanislaus National Forest, on left bank 80 ft (24 m) upstream from Little Nellie Falls and 3.2 mi (5.1 km) north of El Portal.	1.31	1971-73, 1975-78d,	10-19-77	b .02
11267100	Moss Creek near El Portal, CA	Lat 37°43'57", long 119°49'39", in SE¼NW¼ sec.25, T.2 S., R.19 E., Mariposa County, in Stanislaus National Forest, 120 ft (37 m) downstream from road crossing, 300 ft (91 m) downstream from unnamed tributary, and 4.7 mi (7.6 km) northwest of El Portal.	4.45	1971-78d	10-19-77	0

See footnotes at end of table.

## DISCHARGE AT PARTIAL-RECORD STATIONS

Discharge measurements made at low-flow partial-record stations during water year 1978--Continued

Station No.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
San Joaquin River basin--Continued						
11267300	South Fork Merced River at Wawona, CA	Lat 37°32'20", long 119°39'40", in SW¼ sec.34, T.4 S., R.21 E., Mariposa County, in Yosemite National Park, 1,000 ft (305 m) downstream from highway bridge at Wawona, and 1,200 ft (366 m) upstream from Big Creek.	100	1958-68†, 1969-71c, 1974-75c, 1976-78d	10-17-77	b 1.25
11279400	Smoky Jack Creek at Smoky Jack Campground, near Yosemite Village, CA	Lat 37°49'00", long 119°42'41", in NW¼NW¼ sec.31, T.1 S., R.21 E., Tuolumne County, in Yosemite National Park, 12 ft (4 m) downstream from culvert on Tioga Road, 8.5 mi (13.7 km) northeast of Yosemite Village, and 10.6 mi (17.1 km) north- east of El Portal.	4.15	1970-78d	10-19-77	0
11285200	Hunter Creek near Tuolumne, CA	Lat 37°55'43", long 120°08'42", in SW¼NE¼ sec.19, T.1 N., R.17 E., Tuolumne County, Stanislaus National Forest, at road ford 5.5 mi (8.8 km) southeast of Tuolumne.	6.68	1911c, 1964c, 1967-75c, 1976-78d	9-17-78	b 1.02
11307000	Esperanza Creek near Mokelumne Hill, CA	Lat 38°18'59", long 120°35'37", in SW¼NW¼ sec.6, T.5 N., R.13 E., Calaveras County, 600 ft (183 m) upstream from mouth and 6.0 mi (9.6 km) east of Mokelumne Hill.	16.6	1951-59†, 1967-71c, 1977-78d	10-4-77	b .10
11307500	Jesus Maria Creek near Mokelumne Hill, CA	Lat 38°17'01", long 120°38'59", in NE¼SE¼ sec.16, T.5 N., R.12 E., Calaveras County, 0.6 mi (1.0 km) upstream from mouth and 3.2 mi (5.1 km) northeast of Mokelumne Hill.	34.6	1950-59†, 1967-71c, 1977-78d	10-4-77	b .06
11330000	North Fork Cosumnes River at Cosumnes Mine, near Grizzly Flat, CA	Lat 38°40'11", long 120°31'57", in SW¼SW¼ sec.34, T.10 N., R.13 E., El Dorado County, 0.3 mi (0.5 km) downstream from Cosumnes Mine, 2.5 mi (4.0 km) north of Grizzly Flat, 4.3 mi (6.9 km)† upstream from Steeley Fork, and 15 mi (24 km) southeast of Placerville.	38.7	1949-53†, 1977-78d	10-6-77	b .84
*11334200	Middle Fork Cosumnes River near Somerset, CA	Lat 38°37'29", long 120°42'02", in NW¼NW¼ sec.19, T.9 N., R.12 E., El Dorado County, 1,000 ft (305 m) downstream from county road bridge and 1.8 mi (2.9 km) southwest of Somerset.	107	1957-71†, 1973-76c, 1977-78d	10-6-77 9-27-78	b 1.53 b 12.7

1. Published as Cooper Creek in 1966-68.

\* Also a crest-stage partial-record station.

† Operated as a continuous-record gaging station.

a Published in Water Resources Data for Nevada.

b Base flow.

c Published as a miscellaneous measurement.

d Discontinued.

## Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. 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 1978

					Annual maximum		
Station No.	Station name	Location	Drain- age area (mi <sup>2</sup> )	Period of record	Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
Buena Vista Lake basin							
*11185300	Golden Trout Creek near Cartago, CA	Lat 36°22'30", long 118°17'16", in NW¼SW¼ sec.10, T.18 S., R.34 E., Tulare County, Inyo National Forest, 0.5 mi (0.8 km) upstream from Tunnel Ranger Station and 15 mi (24 km) west of Cartago.	23.6	1956-67†, 1969†, 1970, 1972-78a	6-9-78	4.18	326
*11185350	Kern River near Quaking Aspen Camp, CA	Lat 36°08'04", long 118°25'49", in SW¼SW¼ sec.32, T.20 S., R.33 E., Tulare County, Sequoia National Forest, 0.4 mi (0.6 km) upstream from Little Kern River and 6.8 mi (10.9 km) east of Quaking Aspen Camp.	530	1960-74†, 1975-78a	6-9-78	8.73	5370
*11185400	Little Kern River near Quaking Aspen Camp, CA	Lat 36°08'05", long 118°26'10", in SE¼SE¼ sec.31, T.20 S., R.33 E., Tulare County, Sequoia National Forest, 600 ft (183 m) upstream from mouth and 5 mi (8 km) east of Quaking Aspen Camp.	132	1957-68†, 1969†, 1970, 1972-78a	6-9-78	5.86	1520
*11188200	South Fork Kern River near Olancha, CA	Lat 36°10'57", long 118°07'40", in NW¼SW¼ sec.18, T.20 S., R.36 E., Tulare County, Sequoia National Forest, 2.0 mi (3.2 km) downstream from Snake Creek and 9.7 mi (15.6 km) southwest of Olancha.	146	1956-67†, 1969†, 1970, 1973-78a	6-9-78	5.34	1220
11189800	Kelso Creek above Isabella Lake, near Weldon, CA	Lat 35°38'50", long 118°45'13", in SW¼SW¼ sec.20, T.26 S., R.35 E., Kern County, on right bank 2.9 mi (4.7 km) southeast of Weldon and 3.3 mi (5.3 km) southwest of Onyx.	151	1976-78a	3-3-78	--	7600
11191500	Erskine Creek near Bodfish, CA	Lat 35°35'07", long 118°25'56", in NE¼NE¼ sec.16, T.27 S., R.33 E., Kern County, 1.5 mi (2.4 km) downstream from Spring Gulch and 3.3 mi (5.3 km) southeast of Bodfish.	30.4	1976-78a	2-9-78	6.09	366
11191600	Bodfish Creek near Bodfish, CA	Lat 35°34'59", long 118°27'41", in SE¼NW¼ sec.17, T.27 S., R.33 E., Kern County, at culvert on county road 1.9 mi (3.1 km) southeast of Bodfish.	7.95	1976-78a	2-9-78	14.16	192
11191650	Bodfish Creek tributary near Bodfish, CA	Lat 35°35'00", long 118°28'09", in SE¼NE¼ sec.18, T.27 S., R.33 E., Kern County, at culvert on private road 0.6 mi (1.0 km) upstream from Bodfish Creek and 1.5 mi (2.4 km) southeast of Bodfish.	3.70	1976-78a	2-9-78	8.96	24
11195510	Pleito Creek near Lake- view, CA	Lat 35°02'52", long 119°04'21", in NW¼NE¼ sec.13, T.11 N., R.21 W., Kern County, at overshoot on California Aqueduct, 3.8 mi (6.1 km) southeast of Lakeview, and 5.9 mi (9.5 km) west of Mettler.	39.7	1975-78a	2-9-78	6.69	1230

See footnotes at end of table.

## DISCHARGE AT PARTIAL-RECORD STATIONS

Annual maximum discharge at crest-stage partial-record stations during water year 1978--Continued

					Annual maximum		
Station No.	Station name	Location	Drain- age area (mi <sup>2</sup> )	Period of record	Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
Buena Vista Lake basin--Continued							
11195520	Cuddy Creek at Lake of the Woods, near Frazier Park, CA	Lat 34°49'04", long 118°59'48", in NE¼SE¼ sec.33, T.9 N., R.20 W., Kern County, at culvert on Lakewood Drive, 500 ft (152 m) downstream from the Lake of the Woods, at the village of Lake of the Woods, and 2.8 mi (4.5 km) west of Frazier Park.	25.1	1975-78a	3-3-78	13.16	1270
11195610	Pastoria Creek near Grapevine, CA	Lat 34°56'08", long 118°50'27", unsurveyed, T.10 N., R.18 W., Kern County, on left bank 4,000 ft (1,219 m) upstream from California Aqueduct and 4.9 mi (7.9 km) east of Grapevine.	31.1	1975-78a	3-3-78	--	200
11195890	El Paso Creek above diversion dam, near Wheeler Ridge, CA	Lat 35°00'50", long 118°42'47", unsurveyed, T.11 N., R.17 W., Kern County, on right bank 300 ft (91 m) upstream from Tejon Reservoir No. 2 diver- sion ditch, 13.2 mi (21.2 km) east of Wheeler Ridge, and 14.8 mi (23.8 km) southeast of Mettler.	31.1	1976-78a	2-9-78	--	528
11196010	Tejon Creek near Arvin, CA	Lat 35°05'02", long 118°47'26", in SW¼NE¼ sec.33, T.12 N., R.18 E., Kern County, on left bank 0.8 mi (1.3 km) east of Commanche Oil Field Head- quarters, 8.7 mi (14.0 km) southeast of Arvin, and 9.9 mi (15.9 km) east of Mettler.	110	1975-78a	2-9-78	10.98	1050
11196200	Sycamore Creek near Keene, CA	Lat 35°10'05", long 118°39'58", in SE¼SE¼ sec.5, T.32 S., R.31 E., Kern County, on right bank at west boundary of Bear Valley Springs development, 6.5 mi (10.5 km) southwest of Keene, and 9.4 mi (15.1 km) southeast of Arvin.	15.0	1975-78a	2-9-78	5.91	100
11196210	Sycamore Creek near Arvin, CA	Lat 35°11'19", long 118°44'14", in SE¼NE¼ sec.34, T.31 S., R.30 E., Kern County, on right bank 1.8 mi (2.9 km) upstream from Arvin-Edison Canal, 5.1 mi (8.2 km) southeast of Arvin and 10.1 mi (16.3 km) southwest of Keene.	28.3	1975-78a	2-9-78	5.30	221
Tulare Lake basin							
11197360	Franciscan Creek at Kecks Corner, near Lost Hills, CA	Lat 35°39'57", long 120°04'56", in SE¼NE¼ sec.13, T.26 S., R.17 E., Kern County, on left bank 0.4 mi (0.6 km) south of Kecks Corner, 0.9 mi (1.4 km) downstream from Barrel Valley Creek, and 25 mi (40 km) north- west of Lost Hills.	20.4	1969b, 1974-78a	2-9-78	14.88	1860
11197370	Bitterwater Creek near Lost Hills, CA	Lat 35°33'40", long 120°02'25", in NW¼SE¼ sec.21, T.27 S., R.18 E., Kern County, 0.2 mi (0.3 km) downstream from Cedar Canyon, 21 mi (34 km) west of Lost Hills.	76.4	1962-78a	2-9-78	16.76	2410
11205680	Frazier Creek near Strathmore, CA	Lat 36°08'33", long 118°57'17", in NE¼SE¼ sec.32, T.20 S., R.28 E., Tulare County, at culvert on county road No. J28, 5.9 mi (9.5 km) east of Strathmore.	3.05	1974-78	2-10-78	7.75	108
11205690	Lewis Creek near Lindsay, CA	Lat 36°11'11", long 118°59'46", in NW¼NE¼ sec.13, T.20 S., R.27 E., Tulare County, at culvert on Road 258, 0.2 mi (0.4 km) downstream from unnamed tributary, and 7.0 mi (11.3 km) southeast of Lindsay.	21.5	1969b, 1974-78	2-10-78	--	753

See footnotes at end of table.

Annual maximum discharge at crest-stage partial-record stations during water year 1978--Continued

					Annual maximum		
Station No.	Station name	Location	Drain- age area (mi <sup>2</sup> )	Period of record	Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
Tulare Lake basin--Continued							
11210970	Antelope Creek at Woodlake, CA	Lat 36°24'50", long 119°06'31", in SE¼SW¼ sec.25, T.17 S., R.26 E., Tulare County, at culvert on State Highway 216, and 0.6 mi (1.0 km) west of town of Woodlake.	19.2	1969b, 1974-78	2-10-78	8.04	341
*11216800	Rock Creek at Dinkey Creek, CA	Lat 37°05'24", long 119°09'39", in NE¼SW¼ sec.5, T.10 S., R.26 E., Fresno County, 0.4 mi (0.6 km) northwest of town of Dinkey Creek and 0.5 mi (0.8 km) upstream from mouth.	7.60	1960-70†, 1971-78a	5-29-78	4.89	228
*11220000	Big Creek above Pine Flat Lake, near Trimmer, CA	Lat 36°54'59", long 119°14'37", in SE¼NE¼ sec.4, T.12 S., R.25 E., Fresno County, on right bank 2.4 mi (3.9 km) upstream from mouth, and 2.7 mi (4.3 km) northeast of Trimmer.	70.0	1957-73†, 1974-78a	2-10-78	7.19	4280
San Joaquin River basin							
11304000	Corral Hollow Creek near Tracy, CA	Lat 37°39'24", long 121°28'40", in SE¼NE¼ sec.24, T.3 S., R.4 E., San Joaquin County, just upstream from highway bridge, 0.8 mi (1.3 km) down- stream from Elk Ravine, and 6.3 mi (10.1 km) southwest of Tracy.	61.6	1959-65†, 1967, 1972-78a	2-10-78	--	333
11305500	San Antonio Creek near San Andreas, CA	Lat 38°07'49", long 120°38'08", in NW¼NE¼ sec.10, T.3 N., R.12 E., Calaveras County, 800 ft (244 m) downstream from highway bridge, 1.9 mi (3.1 km) upstream from mouth, and 5 mi (8 km) southeast of San Andreas.	48.0	1950-59†, 1962-78a	3-5-78	3.54	768
11309000	Cosgrove Creek near Valley Springs, CA	Lat 38°08'10", long 120°50'05", in SE¼ sec.35, T.4 N., R.10 E., Calaveras County, 0.4 mi (0.6 km) upstream from mouth and 2.7 mi (4.3 km) south of Valley Springs.	21.1	1930-69†, 1970-71, 1973-78a	1-14-78	6.56	1480
*11334200	Middle Fork Cosumnes River near Somerset, CA	Lat 38°37'29", long 120°42'02", in NW¼NW¼ sec.19, T.9 N., R.12 E., El Dorado County, 1,000 ft (305 m) downstream from county road bridge and 1.8 mi (2.9 km) southwest of Somerset.	107	1957-71†, 1973-78a	3-5-78	9.59	2130
11336030	Badger Creek at Riley Road, near Galt, CA	Lat 38°20'21", long 121°17'48", in San Jon de Los Moquelumnes Land Grant, T.6 N., R.6 E., Sacramento County, at bridge on Riley Road, 2.3 mi (3.7 km) upstream from U.S. Highway 99, and 5.9 mi (9.5 km) north of Galt.	13.0	1972-78	1-15-78	39.94	370
11336040	North Fork Badger Creek at Riley Road, near Galt, CA	Lat 38°21'06", long 121°17'48", in San Jon de Los Moquelumnes Land Grant, T.6 N., R.6 E., Sacramento County, at bridge on Riley Road, 2.4 mi (3.9 km) upstream from U.S. Highway 99, and 6.8 mi (10.9 km) north of Galt.	12.6	1972-78	1-15-78	39.46	360
11336050	Willow Creek at McKenzie Road, near Galt, CA	Lat 39°19'08", long 121°18'01", in San Jon de Los Moquelumnes Land Grant, T.5 N., R.6 E., Sacramento County, at bridge on McKenzie Road, 1.5 mi (2.4 km) upstream from U.S. Highway 99, and 4.5 mi (7.2 km) north of Galt.	2.95	1972-78	1-15-78	39.12	82

See footnotes at end of table.

## DISCHARGE AT PARTIAL-RECORD STATIONS

Annual maximum discharge at crest-stage partial-record stations during water year 1978--Continued

					Annual maximum		
Station No.	Station name	Location	Drain- age area (mi <sup>2</sup> )	Period of record	Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
San Joaquin River basin--Continued							
11336070	Cosumnes River at State Highway 104, near Galt, CA	Lat 38°17'27", long 121°22'45", in San Jon de Los Moquelemnes Land Grant, T.5 N., R.5 E., Sacramento County, at State Highway 104 crossing and 5.0 mi (8.0 km) northwest of Galt.	Not deter- mined	1972-78	1-16-78	19.85	--
11336530	Laguna Creek at McKenzie Road, near Galt, CA	Lat 38°18'46", long 121°18'01", in San Jon de Los Moquelumnes Land Grant, T.5 N., R.6 E., Sacramento County, at bridge on McKenzie Road, 1.2 mi (1.9 km) upstream from U.S. Highway 99, and 4.1 mi (6.6 km) north of Galt.	117	1972-78	1-15-78	38.70	5200
11336550	Skunk Creek at McKenzie Road, near Galt, CA	Lat 38°17'57", long 121°18'01", in San Jon de Los Moquelemnes Land Grant, T.5 N., R.6 E., Sacramento County, at bridge on McKenzie Road, 1.6 mi (2.6 km) upstream from U.S. Highway 99, and 3.1 mi (5.0 km) north of Galt.	11.7	1972-78	3-6-78	39.03	160
11336555	Laguna Creek at State Highway 104, near Galt, CA	Lat 38°17'27", long 121°22'29", in San Jon de Los Moquelemnes Land Grant, T.5 N., R.5 E., Sacramento County, at bridge on State Highway 104, 4.8 mi (7.7 km) northwest of Galt.	Not deter- mined	1972-78	1-16-78	18.67	--
11336560	Deadman Gulch at Christenson Road, near Galt, CA	Lat 38°16'44", long 121°21'11", in San Jon de Los Moquelumnes Land Grant, T.5 N., R.6 E., Sacramento County, at bridge on Christenson Road, 2.6 mi (4.2 km) downstream from U.S. Highway 99, and 2.6 mi (4.2 km) northwest of Galt.	8.82	1972-78	1-15-78	24.96	310

\* Also a low-flow partial-record station.

‡ Operated as a continuous-record gaging station.

a Discontinued.

b Published as miscellaneous measurement.



## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

CARSON RIVER BASIN  
10305500 EAST FORK CARSON RIVER NEAR MARKLEEVILLE, CA

LOCATION.--Lat 38°41'20", long 119°45'52", in NW¼NE¼ sec.27, T.10 N., R.20 E., Alpine County.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1959 to current year. Published as 10308200 in water years 1966-68, 1970.  
COOPERATION.--Chemical-quality records furnished by California Department of Water Resources.

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CAC03)
APR 11...	1145	E401	121	7.5	6.5	6.0	10.6	42
SEP 13...	1415	E126	89	7.7	9.5	.00	8.8	32

DATE	TIME	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	ALKA- LINEITY (MG/L AS CAC03)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
APR 11...	12		2.9	9.0	.6	48	2.2	96	.13
SEP 13...	8.4		2.7	5.7	.4	39	.2	76	.10

PYRAMID AND WINNEMUCCA LAKES BASIN  
UPPER TRUCKEE RIVER AT MOUTH, AT SOUTH LAKE TAHOE, CA

LOCATION.--Lat 38°56'30", long 119°59'42", in SW¼SE¼ sec.31, T.13 N., R.18 E., El Dorado County.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water year 1978.

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUN 22...	0906	--	21	7.5	9.2	9.0	6	0	1.9	.2	1.5
SEP 21...	0840	31	55	7.2	6.0	8.8	18	0	4.6	1.7	5.8

DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
JUN 22...	34	.3	.5	7	3.2	1.2	.0	8.7	22	.03	.01
SEP 21...	39	.6	1.3	25	1.5	2.5	.0	16	49	.07	.02

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTH., DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTH., DIS- SOLVED (MG/L AS P04)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
JUN 22...	.05	.01	.09	.10	.11	.03	.02	.06	10	60
SEP 21...	.02	.01	.17	.18	.20	.01	.00	.00	10	160

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PYRAMID AND WINNEMUCCA LAKES BASIN--Continued

10336700 INCLINE CREEK NEAR CRYSTAL BAY, NV

LOCATION.--Lat 39°14'25", long 119°56'38", in SW¼NE¼ sec.22, T.16 N., R.18 E., Washoe County.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water year 1978.

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUN 20...	1351	15	39	7.8	12.0	8.9	14	0	4.1	.9	3.1
SEP 19...	1340	3.7	74	8.3	7.0	10.1	27	0	7.3	2.1	4.6

DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
JUN 20...	31	.4	.7	21	2.6	.7	.0	17	42	.06
SEP 19...	26	.4	1.4	34	.9	1.8	.0	26	65	.09

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
JUN 20...	.04	.06	.01	.16	.21	.03	.01	.03	10	40
SEP 19...	.11	.04	.01	.56	.68	.02	.00	.00	2	340

## TULARE LAKE BASIN

11222700 KINGS RIVER AT PEOPLES WEIR, NEAR KINGSBURG, CA

LOCATION.--Lat 36°29'06", long 119°32'22", in NW¼NE¼ sec.1, T.17 S., R.22 E., Kings County.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water year 1951 to current year.

COOPERATION.--Chemical-quality records furnished by California Department of Water Resources.

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT 26...	1315	148	8.0	20.0	8.4	3	.6	56	0	14
DEC 28...	0945	126	7.2	13.0	9.3	--	--	--	--	--
FEB 22...	1100	172	7.4	13.0	10.2	--	--	50	1	12
APR 26...	0930	72	7.2	11.0	10.5	--	--	30	--	8.5
JUN 21...	1100	46	7.2	16.0	10.0	2	1.5	16	--	4.1
AUG 23...	0800	30	6.8	14.0	--	--	--	10	--	2.0

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

TULARE LAKE BASIN--Continued  
 11222700 KINGS RIVER AT PEOPLES WEIR, NEAR KINGSBURG, CA--Continued

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	ALKA- LINITY (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHL0- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT 26...	5.1	11	.6	63	8.6	5.1	82	.11	4	.07
DEC 28...	--	--	--	--	--	--	--	--	--	.69
FEB 22...	4.7	9.0	.6	49	7.2	6.1	100	.14	--	.64
APR 26...	2.2	5.0	.4	30	6.7	1.0	51	.07	--	.37
JUN 21...	1.4	2.3	.3	17	2.5	.0	40	.05	22	.02
AUG 23...	1.2	1.5	.2	10	.5	.9	26	.04	--	.04

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
OCT 26...	.00	.24	.20	.44	.03	.02	0	3.1	.00
DEC 28...	--	.18	.20	.38	.11	.05	--	--	--
FEB 22...	--	.05	.30	.35	.08	.04	0	--	--
APR 26...	--	.01	.40	.41	.11	.04	0	--	--
JUN 21...	--	.01	.40	.41	.03	.01	0	3.0	.00
AUG 23...	--	.01	.10	.11	.01	.00	0	--	--

Merced County

WELL 012S012E16H05M

SITE NUMBER 365325120391504

4.4 MILES SOUTHWEST OF SOUTH DOS PALOS. HYDRAULIC ROTARY UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAM 4 IN. DEPTH 720 FT, CASSED TO 720 FT, PERFORATED 670-712 FT. ALTITUDE OF LSD 165 FT. RECORDS AVAILABLE 1958-PRESENT. RECORDER INSTALLED FEB. 26, 1958.

HIGHEST WATER LEVEL 118.00 FEET BELOW LAND SURFACE DATUM JUL 07, 1976.

LOWEST WATER LEVEL 133.4 FEET BELOW LAND SURFACE DATUM OCT 23, 1967.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 28, 1977	129.7	APR 24, 1978	129.9	AUG 14, 1978	127.5		
JAN 27, 1978	128.4	JUN 20	128.6				

WELL 012S012E16H06M

SITE NUMBER 365325120391505

4.4 MILES SOUTHWEST OF SOUTH DOS PALOS. HYDRAULIC ROTARY UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAM 8 IN. DEPTH 926 FT, CASSED TO 926 FT, PERFORATED 770-926 FT. ALTITUDE OF LSD 165 FT. RECORDS AVAILABLE 1960-PRESENT. RECORDER INSTALLED SEPT, 1960.

HIGHEST WATER LEVEL 150.50 FEET BELOW LAND SURFACE DATUM APR 05, 1976.

LOWEST WATER LEVEL 207.5 FEET BELOW LAND SURFACE DATUM SEP 13, 1960.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 28, 1977	187.1	JAN 27, 1978	186.4	MAR 24, 1978	169.4	AUG 14, 1978	162.1

Fresno County

WELL 013S015E35D05M

SITE NUMBER 364536120184301

4.4 MILES EAST OF MENDOTA. UNUSED WATER - TABLE WELL IN ALLUVIUM. DIAMETER 4 IN, DEPTH 433 FT, CASSED TO 433 FT, PERFORATED 373-433 FT. ALTITUDE OF LSD 165 FT. RECORDS AVAILABLE DUG 1960 TO PRESENT. RECORDER INSTALLED 1970.

HIGHEST WATER LEVEL 29.00 FEET BELOW LAND SURFACE DATUM FEB 11, 1970.

LOWEST WATER LEVEL 100.1 FEET BELOW LAND SURFACE DATUM SEP 01, 1977.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31, 1977	66.4	JAN 27, 1978	45.3	JUN 20, 1978	65.6	SEP 30, 1978	53.1
NOV 30	72.7	APR 25	41.4	JUL 30	88.9		
DEC 31	51.6	MAY 30	49.9	AUG 14	90.6		

WELL 014S012E12H01M

SITE NUMBER 364340120361201

12.8 MILES EAST OF MENDOTA. UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAM 6 IN, DEPTH 936 FT, CASSED TO 936 FT, PERFORATED 740-936 FT. ALTITUDE OF LSD. 338 FT. RECORDS AVAILABLE OCT. 1964-PRESENT. RECORDER INSTALLED OCT. 1964

HIGHEST WATER LEVEL 400.10 FEET BELOW LAND SURFACE DATUM FEB 11, 1977.

LOWEST WATER LEVEL 609.9 FEET BELOW LAND SURFACE DATUM JUL 29, 1965.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 01, 1977	464.8	JAN 27, 1978	485.6	MAY 24, 1978	435.3	SEP 15, 1978	422.7
30	457.6	FEB 28	477.	JUN 20	433.		
NOV 28	469.4	MAR 28	448.1	JUL 20	433.5		
DEC 30	482.2	APR 24	435.4	AUG 14	431.5		

Fresno County--Continued

WELL 014S013E11D06M

SITE NUMBER 364358120314906

7.6 MILES EAST OF MENDOTA. HYDRAULIC ROTARY UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAM 8 IN, DEPTH 1358 FT, CASED TO 1358 FT, PERFORATED 1133-1196 FT. ALTITUDE OF LSD 284 FT. RECORDS AVAILABLE 1961 TO PRESENT. RECORDER INSTALLED 1961.

HIGHEST WATER LEVEL 330.10 FEET BELOW LAND SURFACE DATUM DEC 30, 1976.

LOWEST WATER LEVEL 514.4 FEET BELOW LAND SURFACE DATUM AUG 01, 1967.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 28, 1977	378.6	FEB 28, 1978	390.3	MAY 31, 1978	357.7	AUG 14, 1978	353.2
DEC 31	395.9	MAR 31	370.1	JUN 20	354.5	SEP 06	350.9
JAN 27, 1978	402.8	APR 24	361.1	JUL 31	353.5		

WELL 015S013E11D02M

SITE NUMBER 363851120313901

10.4 MILES SOUTHWEST OF MENDOTA. HYDRAULIC ROTARY, UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAMETER 6 IN, DEPTH 960 FT, CASED TO 960 FT, PERFORATED 900-960 FT. ALTITUDE OF LSD 346 FT. RECORDS AVAILABLE NOV. 1964 TO PRESENT. RECORDER INSTALLED 1964

HIGHEST WATER LEVEL 397.10 FEET BELOW LAND SURFACE DATUM JAN 11, 1977.

LOWEST WATER LEVEL 652.3 FEET BELOW LAND SURFACE DATUM AUG 02, 1966.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31, 1977	470.2	JAN 27, 1978	523.9	APR 24, 1978	444.6	AUG 14, 1978	436.
NOV 30	483.2	FEB 28	493.7	JUN 20	433.5	SEP 30	420.7
DEC 19	533.1	MAR 31	461.4	JUL 31	435.8		

WELL 015S016E31N03M

SITE NUMBER 363425120164202

4.8 MI SOUTHWEST OF SAN JOAQUIN. HYDRAULIC ROTARY UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAMETER 6.62 IN, DEPTH 595 FT, CASED TO 595 FT, PERFORATED 497-537 FT. ALTITUDE OF LSD 188 FT. RECORDS AVAILABLE MAR. 1967-PRESENT. RECORDER INSTALLED 1967.

HIGHEST WATER LEVEL 85.50 FEET BELOW LAND SURFACE DATUM JAN 11, 1977.

LOWEST WATER LEVEL 159.3 FEET BELOW LAND SURFACE DATUM AUG 27, 1968.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 30, 1977	109.	FEB 28, 1978	108.	MAY 23, 1978	97.4	AUG 14, 1978	99.1
DEC 31	124.	MAR 31	101.5	JUN 20	97.9	SEP 20	97.1
JAN 26, 1978	130.4	APR 25	99.1	JUL 16	101.2		

WELL 016S015E34N04M

SITE NUMBER 362913120195701

1.2 MILES WEST OF CANTUA CREEK. HYDRAULIC ROTARY, UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAMETER 8 IN, DEPTH 1130 FT, CASED TO 1130 FT, PERFORATED 1052-1112 FT. ALTITUDE OF LSD 334 FT. RECORDS AVAILABLE AUG 1960 TO PRESENT. RECORDER INSTALLED 1960

HIGHEST WATER LEVEL 352.70 FEET BELOW LAND SURFACE DATUM NOV 30, 1976.

LOWEST WATER LEVEL 617.7 FEET BELOW LAND SURFACE DATUM AUG 29, 1967.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31, 1977	477.8	JAN 25, 1978	480.4	APR 24, 1978	422.2	JUL 31, 1978	409.9
NOV 30	481.4	FEB 28	464.9	MAY 31	412.9	AUG 14	405.9
DEC 31	496.4	MAR 31	443.9	JUN 20	411.9	SEP 30	392.8

Fresno County--Continued

WELL 016S015E34N05M

SITE NUMBER 362913120195601

1.2 MILES WEST OF CANTUA CREEK. HYDRAULIC ROTARY UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAMETER 4 IN, DEPTH 300 FT, CASSED TO 300 FT, PERFORATED 240-300 FT. ALTITUDE OF LSD 334 FT. RECORDS AVAILABLE 1960 TO PRESENT.

HIGHEST WATER LEVEL 172.10 FEET BELOW LAND SURFACE DATUM JAN 09, 1979.

LOWEST WATER LEVEL 196.3 FEET BELOW LAND SURFACE DATUM JUN 03, 1969.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 30, 1977	174.7	APR 24, 1978	174.5	AUG 14, 1978	173.8		
JAN 25, 1978	174.7	JUN 20	174.4				

WELL 017S015E14Q01M

SITE NUMBER 362645120183401

2.4 MILES SOUTH OF CANTUA CREEK. HYDRAULIC ROTARY UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAMETER 10.75 IN, DEPTH 2315 FT, CASSED TO 2315 FT, PERFORATED 1064-1094 FT. ALTITUDE OF LSD 342 FT. RECORDS AVAILABLE 1969 TO PRESENT. RECORDER INSTALLED 1969.

HIGHEST WATER LEVEL 366.00 FEET BELOW LAND SURFACE DATUM OCT 31, 1976.

LOWEST WATER LEVEL 605.3 FEET BELOW LAND SURFACE DATUM JUL 01, 1970.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31, 1977	517.3	JAN 25, 1978	526.5	APR 27, 1978	434.1	JUL 31, 1978	435.1
NOV 30	536.6	FEB 28	503.2	MAY 31	428.1	AUG 14	427.6
DEC 31	547.8	MAR 12	490.1	JUN 20	436.2	SEP 30	414.2

WELL 018S016E33A01M

SITE NUMBER 361935120134501

7.2 MILES NORTHEAST OF OILFIELD. HYDRAULIC ROTARY. UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAMETER 8 IN, DEPTH 1070 FT, CASSED TO 1070 FT, PERFORATED 858-1070 FT. ALTITUDE OF LSD 320 FT. RECORDS AVAILABLE OCT. 1964 TO PRESENT. RECORDER INSTALLED 1964.

HIGHEST WATER LEVEL 346.10 FEET BELOW LAND SURFACE DATUM OCT 06, 1976.

LOWEST WATER LEVEL 466.1 FEET BELOW LAND SURFACE DATUM JUL 30, 1968.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 30, 1977	409.4	APR 25, 1978	401.	AUG 15, 1978	392.		
JAN 25, 1978	421.3	JUN 20	397.5				

WELL 020S018E06D01M

SITE NUMBER 361334120035101

2.8 MILES NORTHEAST OF HURON. HYDRAULIC ROTARY UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAMETER 6 IN, DEPTH 1007 FT, CASSED TO 1007 FT, PERFORATED 720-1007 FT. ALTITUDE OF LSD 324 FT. RECORDS AVAILABLE DEC. 1964-PRESENT. RECORDER INSTALLED 1964.

HIGHEST WATER LEVEL 342.70 FEET BELOW LAND SURFACE DATUM OCT 31, 1976.

LOWEST WATER LEVEL 596.3 FEET BELOW LAND SURFACE DATUM FEB 13, 1968.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21, 1977	583.2	FEB 28, 1978	460.8	JUN 21, 1978	459.4	SEP 30, 1978	403.4
NOV 29	567.	MAR 20	447.8	JUL 31	422.2		
DEC 31	513.9	APR 25	430.4	AUG 15	417.9		
JAN 25, 1978	494.8	MAY 31	434.4	31	422.4		

Fresno County--Continued

WELL 020S018E11Q01

SITE NUMBER 361156119585501

2.0 MILES SOUTHEAST OF WESTHAVEN. HYDRAULIC ROTARY, UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAMETER 4 IN. DEPTH 710 FT, CASSED TO 710 FT, PERFORATED 650 TO 710 FT. ALTITUDE OF LSD 268 FT. RECORDS AVAILABLE SEPT. 1958 TO PRESENT.

HIGHEST WATER LEVEL 256.90 FEET BELOW LAND SURFACE DATUM JAN 04, 1977.

LOWEST WATER LEVEL 494.8 FEET BELOW LAND SURFACE DATUM JUL 31, 1968.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 30, 1977	417.	APR 27, 1978	354.6	AUG 15, 1978	325.8		
JAN 25, 1978	431.3	JUN 21	335.5				

WELL 020S018E11Q03M

SITE NUMBER 361156119585503

2.0 MILES SOUTHEAST OF WESTHAVEN. HYDRAULIC ROTARY, UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAMETER 4 IN. DEPTH 1930 FT, CASSED TO 1930 FT, PERFORATED 1885-1925 FT. ALTITUDE OF LSD 268 FT. RECORDS AVAILABLE APR 1958 TO PRESENT. RECORDER INSTALLED 1958.

HIGHEST WATER LEVEL 220.90 FEET BELOW LAND SURFACE DATUM JAN 04, 1977.

LOWEST WATER LEVEL 461. FEET BELOW LAND SURFACE DATUM SEP 24, 1968.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 30, 1977	401.1	JAN 25, 1978	408.9	APR 27, 1978	362.2	JUN 26, 1978	327.6

Kings County

WELL 018S019E20P01M

SITE NUMBER 362036119555301

6 MILES SOUTH OF LANARE. HYDRAULIC ROTARY UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAMETER 6.62 IN, DEPTH 695 FT, CASSED TO 695 FT, PERFORATED 647-687 FT. ALTITUDE OF LSD 222 FT. RECORDS AVAILABLE MAR. 1967-PRESENT. RECORDER INSTALLED MARCH 1967.

HIGHEST WATER LEVEL 141.50 FEET BELOW LAND SURFACE DATUM JAN 31, 1975.

LOWEST WATER LEVEL 218.9 FEET BELOW LAND SURFACE DATUM SEP 24, 1968.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31, 1977	202.9	JAN 25, 1978	200.3	APR 25, 1978	182.6	JUL 31, 1978	179.8
NOV 29	198.	FEB 28	194.8	MAY 31	176.2	AUG 15	181.5
DEC 31	200.	MAR 31	187.8	JUN 21	177.4	SEP 30	174.2

WELL 018S019E20P02M

SITE NUMBER 362036119555302

6 MILES SOUTH OF LANARE. HYDRAULIC ROTARY UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAMETER 6.62 IN, DEPTH 577 FT, CASSED TO 577 FT, PERFORATED 497-537 FT. ALTITUDE OF LSD 222 FT. RECORDS AVAILABLE MAR. 1967-PRESENT. RECORDER INSTALLED MARCH 1967.

HIGHEST WATER LEVEL 132.80 FEET BELOW LAND SURFACE DATUM JAN 07, 1975.

LOWEST WATER LEVEL 229.5 FEET BELOW LAND SURFACE DATUM AUG 25, 1971.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31, 1977	188.8	FEB 28, 1978	165.3	JUN 21, 1978	160.7	SEP 30, 1978	155.3
NOV 29	182.	MAR 31	156.	JUL 31	172.8		
DEC 30	187.1	APR 25	151.9	AUG 15	172.4		
JAN 25, 1978	178.7	MAY 31	149.6	30	173.		

Kings County--Continued

WELL 018S019E20P03M

SITE NUMBER 362035119555203

6 MILES SOUTH OF LANARE, HYDRAULIC ROTARY UNUSED WATER-TABLE WELL IN ALLUVIUM, DIAMETER 4 IN, DEPTH 222 FT, CASED TO 222 FT, PERFORATED 200-222 FT, ALTITUDE OF LSD 222 FT, RECORDS AVAILABLE OCT. 1972- PRESENT. RECORDER INSTALLED SEP. 1972.

HIGHEST WATER LEVEL 121.40 FEET BELOW LAND SURFACE DATUM JAN 07, 1975.

LOWEST WATER LEVEL 155.3 FEET BELOW LAND SURFACE DATUM SEP 29, 1972.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31, 1977	141.2	FEB 28, 1978	133.7	JUN 21, 1978	131.	SEP 30, 1978	129.9
NOV 29	143.7	MAR 31	131.	JUL 31	133.6		
DEC 30	139.9	APR 25	129.3	AUG 15	138.5		
JAN 25, 1978	137.2	MAY 29	128.5	31	133.6		

Tulare County

WELL 022S027E30D02M

SITE NUMBER 355933119062001

3.6 MILES NORTHWEST OF TERRA BELLA, HYDRAULIC ROTARY, UNUSED WATER-TABLE WELL IN ALLUVIUM, DIAM 10.75 IN, DEPTH 1246 FT, CASED TO 1246 FT, PERFORATED 1083-1207 FT, ALTITUDE OF LSD 407 FT, RECORDS AVAILABLE 1970 TO PRESENT. RECORDER INSTALLED 1970.

HIGHEST WATER LEVEL 210.30 FEET BELOW LAND SURFACE DATUM MAR 09, 1971.

LOWEST WATER LEVEL 357.5 FEET BELOW LAND SURFACE DATUM JUL 31, 1967.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 31, 1977	271.6	MAR 31, 1978	237.6	JUL 31, 1978	306.5		
JAN 24, 1978	257.	APR 26	231.9	AUG 16	321.8		
FEB 28	245.3	JUN 21	297.5	SEP 30	273.		

WELL 023S025E16N03M

SITE NUMBER 355523119170602

2.4 MILES SOUTH OF PIXLEY. UNUSED WATER-TABLE WELL IN ALLUVIUM, DIAMETER 8 IN, DEPTH 430 FT, CASED TO 430 FT, PERFORATED 360-420 FT, ALTITUDE OF LSD 267 FT, RECORDS AVAILABLE JUNE 1959 TO PRESENT. RECORDER INSTALLED 1959.

HIGHEST WATER LEVEL 128.80 FEET BELOW LAND SURFACE DATUM FEB 09, 1970.

LOWEST WATER LEVEL 288.5 FEET BELOW LAND SURFACE DATUM JUL 31, 1977.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 09, 1977	209.7	JAN 24, 1978	158.2	APR 26, 1978	144.3	JUL 31, 1978	201.7
DEC 01	180.4	FEB 28	150.6	MAY 31	165.2	AUG 15	209.3
31	165.7	MAR 31	143.5	JUN 21	184.2	SEP 14	182.7

WELL 023S025E16N04M

SITE NUMBER 355523119170603

2.4 MILES SOUTH OF PIXLEY, ROTARY, UNUSED WATER-TABLE WELL IN ALLUVIUM, DIAMETER 8 IN, DEPTH 250 FT, CASED TO 250 FT, PERFORATED 200-240 FT, RECORDS AVAILABLE JUNE 1959 TO PRESENT. RECORDER INSTALLED 1959.

HIGHEST WATER LEVEL 77.10 FEET BELOW LAND SURFACE DATUM JAN 07, 1975.

LOWEST WATER LEVEL 122.9 FEET BELOW LAND SURFACE DATUM AUG 17, 1961.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29, 1977	95.2	JAN 24, 1978	92.8	APR 26, 1978	91.	JUL 31, 1978	89.9
NOV 30	94.	FEB 27	91.8	MAY 29	90.9	AUG 15	89.8
DEC 01	94.4	MAR 31	91.2	JUN 21	90.7	SEP 30	85.8



Tulare County--Continued

WELL 024S026E34F01M

SITE NUMBER 354800119090501

.8 MILES EAST OF JOVISTA. HYDRAULIC ROTARY, UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAMETER 16 IN, DEPTH 1522 FT, CASSED TO 1522 FT, PERFORATED 400-1522 FT. ALTITUDE OF LSD 445 FT. RECORDS AVAILABLE OCT. 1957 TO PRESENT. RECORDER INSTALLED 1957.

HIGHEST WATER LEVEL 193.10 FEET BELOW LAND SURFACE DATUM FEB 28, 1975.

LOWEST WATER LEVEL 327.5 FEET BELOW LAND SURFACE DATUM JUL 20, 1961.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31, 1977	254.3	JAN 24, 1978	226.8	APR 26, 1978	213.1	JUL 31, 1978	227.4
DEC 01	247.3	FEB 28	219.3	MAY 30	221.	AUG 16	229.6
31	235.4	MAR 31	215.8	JUN 21	222.7	SEP 30	216.

Kern County

WELL 011N021W03B01S

SITE NUMBER 350436119061901

9.6 MILES NORTHWEST OF WHEELER RIDGE. HYDRAULIC ROTARY, UNUSED WATER-TABLE WELL IN ALLUVIUM. DIAM 8 IN, DEPTH 1477 FT, CASSED TO 1477 FT, PERFORATED 1037-1237 FT. ALTITUDE OF LSD 435 FT. RECORDS AVAILABLE APR 1963 TO PRESENT. RECORDER INSTALLED 1963.

HIGHEST WATER LEVEL 373.70 FEET BELOW LAND SURFACE DATUM JAN 12, 1979.

LOWEST WATER LEVEL 539.5 FEET BELOW LAND SURFACE DATUM JUN 29, 1970.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31, 1977	452.8	FEB 28, 1978	414.3	MAY 31, 1978	388.	SEP 30, 1978	378.3
NOV 30	455.6	MAR 31	404.8	JUN 22	385.2		
DEC 01	453.6	APR 27	394.8	JUL 31	381.2		
JAN 23, 1978	433.5	MAY 09	392.	AUG 16	380.7		



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# FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	$2.54 \times 10^1$	millimeters (mm)
	$2.54 \times 10^{-2}$	meters (m)
feet (ft)	$3.048 \times 10^{-1}$	meters (m)
miles (mi)	$1.609 \times 10^0$	kilometers (km)
<i>Area</i>		
acres	$4.047 \times 10^3$	square meters (m <sup>2</sup> )
	$4.047 \times 10^{-1}$	square hectometers (hm <sup>2</sup> )
	$4.047 \times 10^{-3}$	square kilometers (km <sup>2</sup> )
square miles (mi <sup>2</sup> )	$2.590 \times 10^0$	square kilometers (km <sup>2</sup> )
<i>Volume</i>		
gallons (gal)	$3.785 \times 10^0$	liters (L)
	$3.785 \times 10^0$	cubic decimeters (dm <sup>3</sup> )
	$3.785 \times 10^{-3}$	cubic meters (m <sup>3</sup> )
million gallons	$3.785 \times 10^3$	cubic meters (m <sup>3</sup> )
	$3.785 \times 10^{-3}$	cubic hectometers (hm <sup>3</sup> )
cubic feet (ft <sup>3</sup> )	$2.832 \times 10^1$	cubic decimeters (dm <sup>3</sup> )
	$2.832 \times 10^{-2}$	cubic meters (m <sup>3</sup> )
cfs-days	$2.447 \times 10^3$	cubic meters (m <sup>3</sup> )
	$2.447 \times 10^{-3}$	cubic hectometers (hm <sup>3</sup> )
acre-feet (acre-ft)	$1.233 \times 10^3$	cubic meters (m <sup>3</sup> )
	$1.233 \times 10^{-3}$	cubic hectometers (hm <sup>3</sup> )
	$1.233 \times 10^{-6}$	cubic kilometers (km <sup>3</sup> )
<i>Flow</i>		
cubic feet per second (ft <sup>3</sup> /s)	$2.832 \times 10^1$	liters per second (L/s)
	$2.832 \times 10^1$	cubic decimeters per second (dm <sup>3</sup> /s)
	$2.832 \times 10^{-2}$	cubic meters per second (m <sup>3</sup> /s)
gallons per minute (gal/min)	$6.309 \times 10^{-2}$	liters per second (L/s)
	$6.309 \times 10^{-2}$	cubic decimeters per second (dm <sup>3</sup> /s)
	$6.309 \times 10^{-5}$	cubic meters per second (m <sup>3</sup> /s)
million gallons per day	$4.381 \times 10^1$	cubic decimeters per second (dm <sup>3</sup> /s)
	$4.381 \times 10^{-2}$	cubic meters per second (m <sup>3</sup> /s)
<i>Mass</i>		
tons (short)	$9.072 \times 10^{-1}$	megagrams (Mg) or metric tons

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