

Joe N. Rabl
Rec'd 10-15-79



Water Resources Data for California

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

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-78-4

WATER YEAR 1978

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

CALENDAR FOR WATER YEAR 1978

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Department of Water Resources and with
other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

CECIL D. ANDRUS, Secretary

GEOLOGICAL SURVEY

H. William Menard, Director

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1979

PREFACE

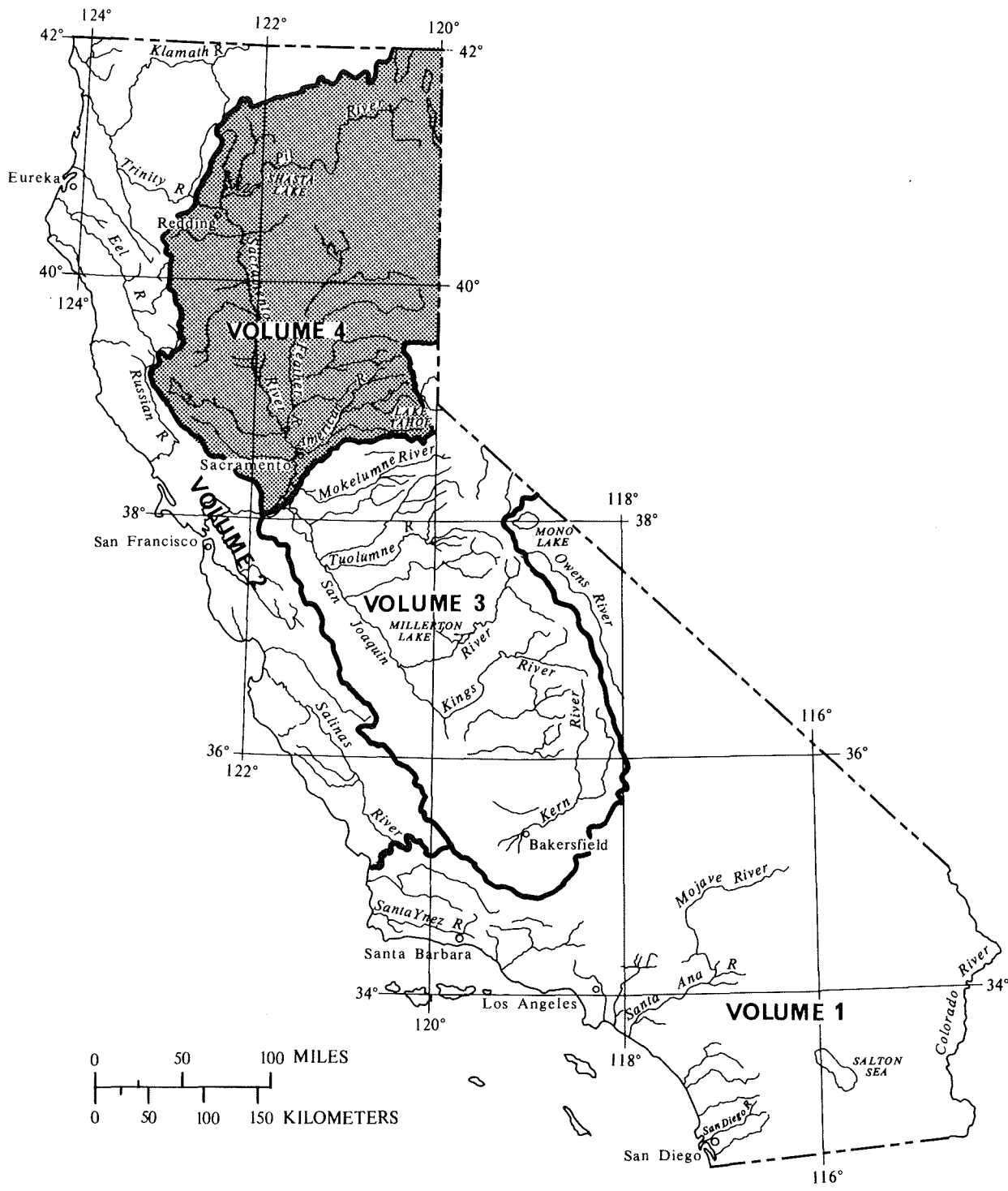
This report was prepared by personnel of the California District, Water Resources Division, U.S. Geological Survey, under the supervision of Richard M. Bloyd, District Chief, and W. H. Robinson, Regional Hydrologist, Western Region. It was done in cooperation with the California Department of Water Resources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

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

BIBLIOGRAPHIC DATA SHEET	1. Report No. USGS/WRD/HD-79/046	2.	3. Recipient's Accession No.
4. Title and Subtitle Water Resources Data for California, Water Year 1978 Volume 4. Northern Central Valley Basins and The Great Basin from Honey Lake Basin to Oregon State Line.		5. Report Date September 1979	
		6.	
7. Author(s) U.S. Geological Survey		8. Performing Organization Rept. No. USGS-WDR-CA-78-4	
9. Performing Organization Name and Address U.S. Geological Survey, Water Resources Division California District 345 Middlefield Rd. Menlo Park, CA 94025		10. Project/Task/Work Unit No.	
		11. Contract/Grant No.	
12. Sponsoring Organization Name and Address U.S. Geological Survey, Water Resources Division California District 345 Middlefield Rd. Menlo Park, CA 94025		13. Type of Report & Period Covered Annual--Oct. 1, 1977 to Sept. 30, 1978	
		14.	
15. Supplementary Notes Prepared in cooperation with the California Department of Water Resources and with other agencies.			
16. Abstracts Volume 4 of the water resources data for the 1978 water year for California consists of records of stage, discharge, and water quality of streams; stage, contents, and water quality in lakes and reservoirs; and water levels in wells. This report contains discharge records for 196 gaging stations; stage and contents for 34 lakes and reservoirs; precipitation data for 2 stations; water quality for 81 stations, and water levels for 1 observation well. Also included are 23 crest-stage partial-record stations, 35 low-flow partial-record stations, and 3 water-quality partial-record stations. Additional water data were collected at various sites, not part of the systematic data collection program, and are published as special investigations and miscellaneous measurements. These data represent that part of the National Water Data system operated by the U.S. Geological Survey and cooperating State and Federal agencies in California.			
17. Key Words and Document Analysis. 17a. Descriptors *California, *Hydrologic data, *Surface water, *Water quality, *Ground water, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediment, Water temperatures, Sampling sites, Water levels, Water analyses. 17b. Identifiers Open-Ended Terms 17c. COSATI Field/Group			
18. Availability Statement No restriction on distribution. This report may be purchased from: National Technical Information Service Springfield, VA 22161		19. Security Class (This Report) UNCLASSIFIED	21. No. of Pages 503
		20. Security Class (This Page) UNCLASSIFIED	22. Price



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; (p) precipitation; (c) chemical;
(b) biological; (t), water temperature; and (s), sediment]

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WATER RESOURCES DATA FOR CALIFORNIA, 1978

Volume 4

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-78-4." 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.
California Water Resources Control Board, Bill B. Dendy,
Executive Officer.
Georgetown Divide Public Utility District, C. F. Gierau, General Manager.
Lake County Flood Control and Water Conservation District,
Willard D. Hansen, Manager.
Modoc County Department of Public Works, J. K. Grove, Director.
Oroville-Wyandotte Irrigation District, Milton R. Emerson,
General Manager-Chief Engineer.
Paradise Irrigation District, C. P. Kelly, Manager.
Placer County Water Agency, W. G. Grant, General Manager.
Sacramento County Department of Public Works, Water Resources Division,
J. P. Alessandri, Chief.
Siskiyou County Flood Control and Water Conservation District,
D. A. Gravenkamp, Director of Public Works.

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

The following organizations aided in collecting records: Pacific Gas and Electric Co., Placer County Water Agency, Sacramento Municipal Utility District, Nevada and Oroville-Wyandotte Districts, and Yuba County Water Agency.

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 raised the monthly median streamflow at the index station, North Fork American River at North Fork Dam, from 27 to 68 percent of the 1941-70 median. In November, the largest storm since 1974 produced 1.5 inches of precipitation over northern and central California. In January, a series of intense storms made that month the wettest on record. The streamflow at the index station rose to 329 percent of median, and the combined contents of the major reservoirs rose from 34 percent of average in October to 90 percent in January. Storms continuing through February and March kept the streamflow above normal. With normal precipitation, 3 years would have been required for the major reservoirs to refill and recover from the effects of the drought. Under actual conditions, the reservoirs not only filled but had to release large volumes of water by the end of January.

In the area covered by this volume, runoff during the water year ranged from 131 percent of the 1941-70 median for the North Yuba River below Goodyears Bar to 178 percent of the median for Thomes Creek at Paskenta. Runoff at selected sites, as shown in figure 1, was above normal for the water year.

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.

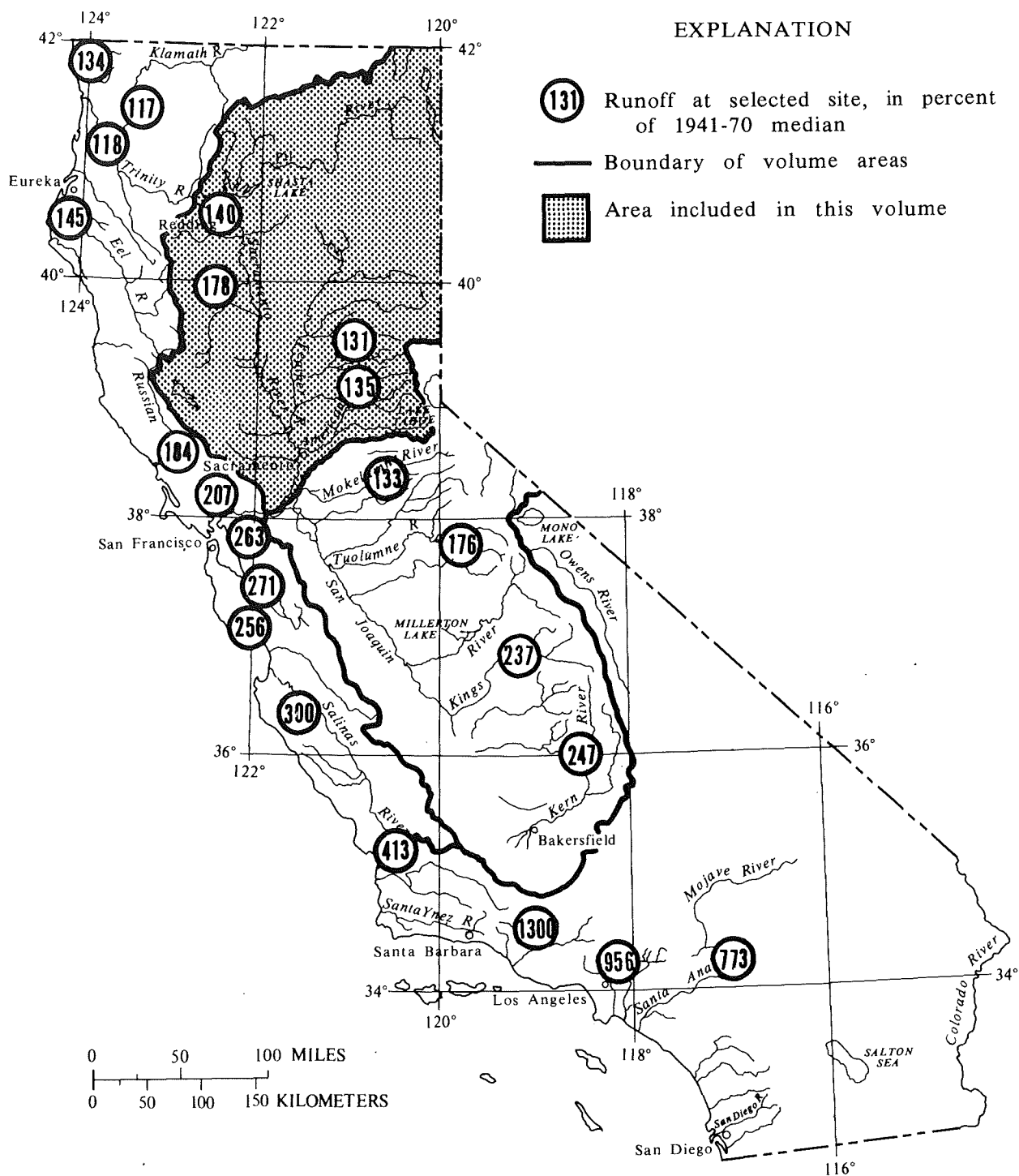


FIGURE 1.--Runoff for the current water year.

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 also bacteria found in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. For the membrane filter method they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C \pm 0.5°C on KF Streptococcus agar medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

Benthic organisms (invertebrates) are the group of organisms 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°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°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 (FT^3/S , ft^3/s), is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

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 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 (CaCO_3).

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

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

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

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

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

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

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

Micrograms per gram (UG/G, $\mu\text{g/g}$) is a unit expressing the concentration of a chemical 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, 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 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 (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 (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

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

Phytoplankton compose the plant part of the plankton. They are usually microscopic and their movement is subject to water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials 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/(m².time) for periphyton and macrophytes and mg C/(m³.time) for phytoplankton] are the units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon-14). The carbon-14 method is of greater sensitivity than the oxygen light- and dark-bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mg O₂/(m².time) for periphyton and macrophytes and mg O₂/(m³.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 (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°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 "stream-flow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff." Streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

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

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

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

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

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

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

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

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 indentation in a list of stations in the front of the report. Each indentation represents one rank. This downstream order and system of indentation 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 11407000, which appears just to the left of the station name, includes the 2-digit number "11" plus the 6-digit downstream order number "407000". 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.

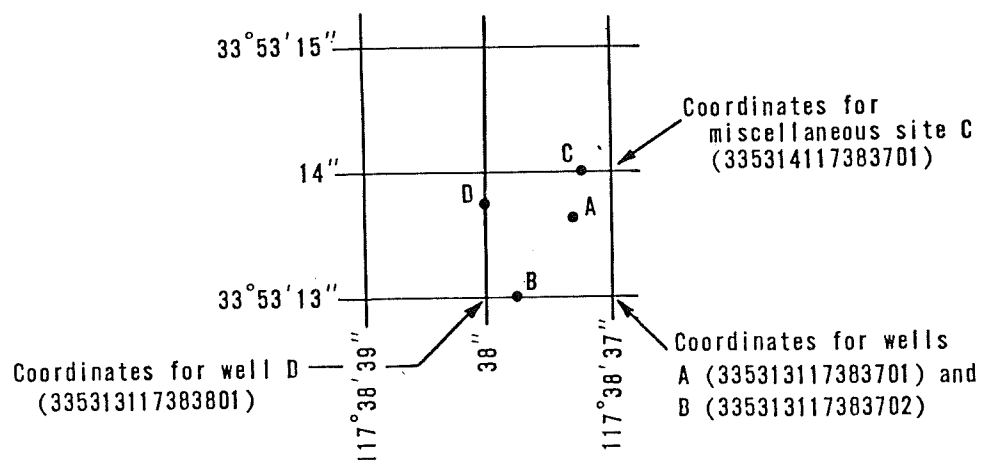


Figure 2.--System for numbering wells and miscellaneous sites (latitude and longitude).

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.

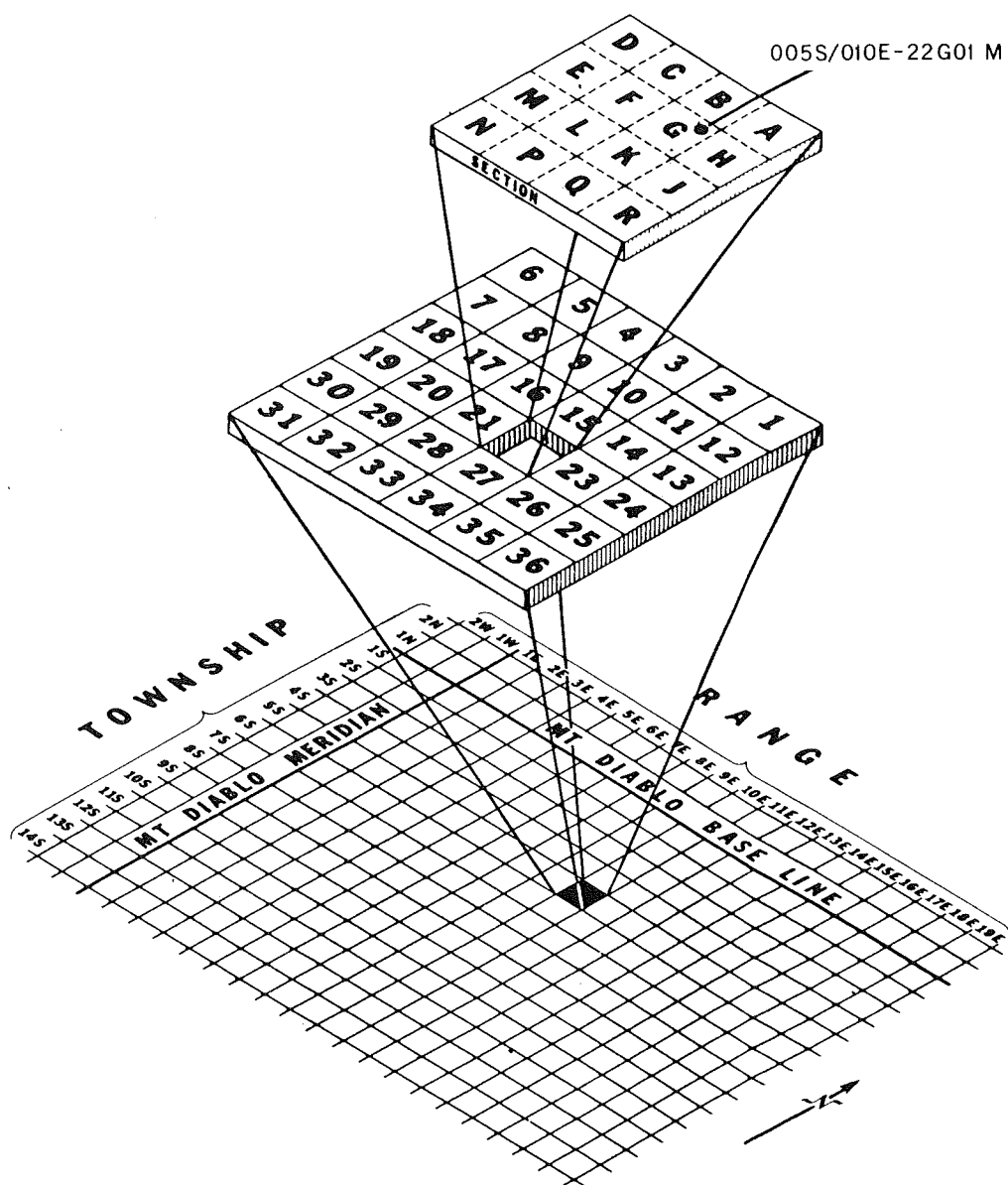


FIGURE 3.--California well-numbering system.

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 ft³/s; to tenths between 1.0 and 10 ft³/s; to whole numbers between 10 and 1,000 ft³/s; and to 3 significant figures above 1,000 ft³/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 programed 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. Greeson, 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.

LOCATION.--Lat 40°25'03", long 120°40'15", in SW¼NE¼ sec.31, T.30 N., R.12 E., Lassen County, on left bank 0.5 mi (0.8 km) west of Susanville, and 1.1 mi (1.8 km) upstream from Piute Creek.

WATER-DISCHARGE RECORDS

GAGE.--Water-stage recorder. Datum of gage is 4,225.72 ft (1,287.999 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1950, nonrecording gages at several sites in vicinity of old powerplant 0.9 mi (1.4 km) upstream at various datums.

AVERAGE DISCHARGE.--34 years (water years 1901, 1904-5, 1918-20, 1951-78), 95.5 ft³/s (2.705 m³/s), 69,190 acre-ft/yr (85.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,850 ft³/s (166 m³/s) Jan. 24, 1970, gage height, 8.89 ft (2.710 m) in gage well, 10.4 ft (3.17 m), from floodmarks, from rating curve extended above 1,000 ft³/s (28.3 m³/s) on basis of slope-area measurement at gage height 6.62 ft (2.018 m) and contracted-opening measurement at gage height 8.89 ft (2.710 m); no flow Aug. 15, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 739 ft³/s (20.9 m³/s) Jan. 14, gage height, 4.41 ft (1.344 m); minimum daily, 3.6 ft³/s (0.10 m³/s) Sept. 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	4.5	6.1	9.6	23	40	102	372	178	149	93	106	3.8
2	4.9	6.4	9.5	22	46	143	280	175	151	88	103	3.7
3	4.7	6.4	9.6	21	56	159	227	178	149	84	102	3.6
4	4.9	7.0	9.6	23	58	248	201	171	141	130	100	3.6
5	4.7	7.5	10	152	108	443	173	155	119	144	98	6.1
6	4.3	7.6	10	93	158	351	167	141	118	142	97	9.5
7	4.4	7.2	10	56	248	275	149	137	116	143	95	6.4
8	3.8	7.0	9.7	44	177	264	136	141	97	135	94	5.7
9	3.8	6.1	9.3	132	142	256	134	152	91	130	94	5.5
10	5.4	6.5	9.6	114	112	223	147	160	87	125	92	7.6
11	6.2	6.6	11	75	86	209	171	165	82	122	90	6.7
12	5.9	6.7	13	68	78	177	181	173	75	119	88	6.3
13	5.4	6.6	12	77	71	158	180	186	66	118	87	6.5
14	5.1	6.6	54	357	64	145	179	191	60	81	84	6.0
15	4.3	6.6	116	314	60	138	167	199	51	22	80	5.7
16	4.3	6.7	32	222	55	140	156	193	51	14	78	4.9
17	4.3	6.7	48	253	52	154	136	189	45	12	74	3.9
18	4.4	6.6	31	164	52	169	127	185	89	42	70	6.0
19	5.0	6.7	22	129	55	194	130	183	104	117	66	6.3
20	4.7	6.9	19	101	62	224	155	188	99	119	58	7.1
21	4.7	9.7	16	84	68	271	133	192	93	118	29	6.1
22	4.7	16	16	73	76	324	124	194	90	117	14	6.6
23	5.1	13	24	58	91	358	116	205	86	115	9.3	5.0
24	5.2	11	22	50	107	317	120	193	80	113	7.7	4.9
25	5.1	11	17	46	122	270	143	187	99	112	6.6	5.2
26	6.6	10	16	43	130	263	150	170	120	112	5.5	5.1
27	7.2	10	16	41	120	268	150	161	118	110	5.3	4.2
28	5.6	10	21	40	105	277	157	159	117	108	5.0	4.6
29	5.3	9.9	29	39	---	282	153	159	109	105	5.1	4.4
30	5.8	9.7	59	40	---	302	190	156	99	104	5.1	5.2
31	6.2	---	25	40	---	341	---	151	---	102	4.6	---
TOTAL	156.5	244.8	715.9	2994	2599	7445	5004	5367	2951	3196	1853.2	166.2
MEAN	5.05	8.16	23.1	96.6	92.8	240	167	173	98.4	103	59.8	5.54
MAX	7.2	16	116	357	248	443	372	205	151	144	106	9.5
MIN	3.8	6.1	9.3	21	40	102	116	137	45	12	4.6	3.6
AC-FT	310	486	1420	5940	5160	14770	9930	10650	5850	6340	3680	330
CAL YR 1977	TOTAL	3113.8	MEAN	8.53	MAX	116	MIN	1.4	AC-FT	6180		
WTR YR 1978	TOTAL	32692.6	MEAN	89.6	MAX	443	MIN	3.6	AC-FT	64850		

10356500 SUSAN RIVER AT SUSANVILLE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1952 to current year.

BIOLOGICAL DATA: 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)	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 CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
MAR											
14...	1100	141	87	8.0	2.5	2.0	12.1	K2	<1	--	0
APR											
18...	0815	133	88	8.2	3.5	2.0	11.9	K8	K6	33	0
MAY											
16...	0900	191	76	8.0	6.0	2.4	10.6	26	30	--	--
JUN											
15...	0930	52	90	8.9	10.5	1.4	9.6	K8	K15	43	0
JUL											
14...	0915	108	62	8.1	18.5	2.8	7.8	100	66	25	3
AUG											
15...	1000	81	73	8.1	14.5	4.0	8.5	K24	K26	22	0
SEP											
12...	1000	5.8	136	--	11.0	1.0	9.5	K28	100	77	1

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)
MAR											
14...	--	2.5	1.9	0	--	.6	40	2.2	1.9	.1	24
APR											
18...	9.0	2.6	2.5	14	.2	.6	39	2.2	.9	.1	18
MAY											
16...	--	2.4	2.0	--	--	.5	39	8.8	.6	.1	20
JUN											
15...	10	4.3	3.8	16	.3	1.2	43	6.1	.8	.1	23
JUL											
14...	6.5	2.2	1.6	12	.1	.7	22	3.4	2.5	.0	15
AUG											
15...	4.5	2.6	1.8	15	.2	.7	29	1.5	.7	.0	10
SEP											
12...	18	7.7	5.9	14	.3	2.5	76	6.0	1.1	.0	28

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	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. 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)
MAR											
14...	66	--	.09	.05	.68	.71	.38	.33	.76	.16	.14
APR											
18...	62	59	.08	.03	.04	.05	.04	.01	.08	.02	.00
MAY											
16...	62	--	.08	.05	--	--	--	.05	--	.04	.01
JUN											
15...	68	75	.09	.07	.13	.16	.06	.10	.23	.02	.01
JUL											
14...	38	45	.05	.05	--	.33	.00	.36	.38	.03	.02
AUG											
15...	44	40	.06	.23	.56	.57	.00	.59	.80	.04	.02
SEP											
12...	95	115	.13	1.4	1.1	1.1	.00	1.2	2.5	.05	.05

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.

HONEY LAKE BASIN

10356500 SUSAN RIVER AT SUSANVILLE, 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)		CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)		CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD)		CADMIUM DIS-SOLVED (UG/L AS CD)	
MAY 16...	0900		0		0		0		0		0		0		0		--		0
AUG 15...	1000		--		--		1		300		200		100		--		1		1

DATE	TIME	CHRO-		CHRO-		COBALT,		COBALT,		COPPER,		COPPER,		IRON,	
		MIMUM, TOTAL RECOV- ERABLE (UG/L AS CR)	SUS- PENDE D TOTAL (UG/L AS CR)	DIS- SOLVED (UG/L AS CR)	TOTAL RECOV- ERABLE (UG/L AS CO)	SUS- PENDE D TOTAL (UG/L AS CO)	DIS- SOLVED (UG/L AS CO)	TOTAL RECOV- ERABLE (UG/L AS CU)	SUS- PENDE D TOTAL (UG/L AS CU)	DIS- SOLVED (UG/L AS CU)	TOTAL RECOV- ERABLE (UG/L AS CU)	DIS- SOLVED (UG/L AS CU)	TOTAL RECOV- ERABLE (UG/L AS CU)	DIS- SOLVED (UG/L AS FE)	TOTAL RECOV- ERABLE (UG/L AS FE)
MAY 16...	10	10	0	0	0	0	6	5	1	570					
AUG 15...	0	--	0	0	0	0	9	8	1	410					

DATE	TIME	IRON,		LEAD,		LEAD,		MANGA-		MANGA-		MANGA-		MERCURY	
		SUS- PENDE D TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	TOTAL RECOV- ERABLE (UG/L AS PB)	SUS- PENDE D TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PR)	TOTAL RECOV- ERABLE (UG/L AS MN)	NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	SUS- PENDE D TOTAL RECOV- ERABLE (UG/L AS MN)	NESE, DIS- SOLVED (UG/L AS MN)	TOTAL RECOV- ERABLE (UG/L AS HG)	DIS- SOLVED (UG/L AS HG)	TOTAL RECOV- ERABLE (UG/L AS HG)	DIS- SOLVED (UG/L AS HG)	TOTAL RECOV- ERABLE (UG/L AS HG)
MAY 16...	500	70	6	5	1	30	10	20	.1	.0					
AUG 15...	100	310	--	--	--	20	0	20	.0	.0					

DATE	TIME	SELE-		SELE-		SILVER,		ZINC,		ZINC,		CARBON,		CARBON,	
		MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SUS- PENDE D TOTAL (UG/L AS SE)	NIUM, DIS- SOLVED (UG/L AS SE)	TOTAL RECOV- ERABLE (UG/L AS AG)	TOTAL RECOV- ERABLE (UG/L AS ZN)	SUS- PENDE D TOTAL RECOV- ERABLE (UG/L AS ZN)	DIS- SOLVED (UG/L AS ZN)	TOTAL RECOV- ERABLE (UG/L AS ZN)	DIS- SOLVED (UG/L AS C)	TOTAL RECOV- ERABLE (MG/L AS C)	DIS- SOLVED (MG/L AS C)	TOTAL RECOV- ERABLE (MG/L AS C)	DIS- SOLVED (MG/L AS C)
MAY 16...	.1	0	0	0	0	10	5	5	1.7	.8					
AUG 15...	.0	0	0	0	0	40	20	20	7.2	--					

10356500 SUSAN RIVER AT SUSANVILLE, CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
PHYTOPLANKTON

DATE TIME	MAR 14,78 1100	MAY 16,78 0900	JUN 15,78 0930	JUL 14,78 0000
TOTAL CELLS/ML	390	560	270	5
DIVERSITY: DIVISION	0.8	1.0	0.3	0.8
..CLASS	0.8	1.0	0.3	0.8
...ORDER	1.3	1.5	0.3	0.8
...FAMILY	3.0	1.7	2.6	1.5
...GENUS	3.2	1.7	3.0	2.0

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	--	-	--	-	1#	25
....CLOSTERIOPSIS	10	2	--	-	--	-	--	-
....OOCYSTIS	10	2	--	-	--	-	--	-
....TETRAEDRON	10	2	--	-	--	-	--	-
...VOLVOCALES								
...CHLAMYDOMONADACEAE								
...CHLAMYDOMONAS	38	10	--	-	--	-	--	-
CHRYSTOPHYTA								
..BACILLARIOPHYCEAE								
...CENTRALES								
...COSCINODISCAEAE								
...CYCLOTELLA	--	-	150#	27	--	-	--	-
....MELOSIRA	19	5	--	-	--	-	--	-
...PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	58	15	--	-	--	-	1#	25
....COCCONEIS	--	-	--	-	--	-	1#	25
....RHOICOSPHEA	--	-	--	-	15	6	--	-
...CYMBELLACEAE								
...CYMBELLA	--	-	26	5	45#	17	--	-
...FRAGILARIACEAE								
....FRAGILARIA	77#	20	--	-	30	11	--	-
....HANNAEA	10	2	--	-	15	6	--	-
....SYNEDRA	--	-	--	-	30	11	--	-
...GOMPHONEMACEAE								
....GOMPHONEMA	48	12	--	-	30	11	--	-
...NAVICULACEAE								
....NAVICULA	38	10	130#	23	45#	17	1#	25
...NITZSCHACEAE								
....NITZSCHIA	67#	17	--	-	45#	17	--	-
EUGLENOPHYTA (EUGLENIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	10	2	260#	45	15	6	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

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
MAR 14...	1100	2.5	141	24	9.1	76
APR 18...	0815	3.5	133	6	2.2	74
JUN 15...	0930	10.5	52	11	1.5	88
AUG 15...	0950	14.5	81	9	2.0	82
15...	1000	14.5	81	9	2.0	82
SEP 12...	1000	11.0	5.8	6	.09	90

HONEY LAKE BASIN

10358500 WILLOW CREEK NEAR SUSANVILLE, CA

LOCATION.--Lat 40°29'21", long 120°32'10", in SW¼NE¼ sec.5, T.30 N., R.13 E., Lassen County, on left bank 4 mi (6 km) upstream from Peters Valley Creek, and 8 mi (13 km) northeast of Susanville.

DRAINAGE AREA.--90.4 mi² (234.1 km²), excludes that of Eagle Lake Basin.

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

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

GAGE.--Water-stage recorder. Datum of gage is 4,836.27 ft (1,474.095 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records excellent. Diversions for irrigation of 5,200 acres (21.0 km²) above station. Some flow at times enters Willow Creek from Eagle Lake through an abandoned tunnel.

AVERAGE DISCHARGE.--28 years, 34.4 ft³/s (0.974 m³/s), 24,920 acre-ft/yr (30.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 816 ft³/s (23.1 m³/s) Feb. 1, 1963, gage height, 5.59 ft (1.704 m); minimum, 8.1 ft³/s (0.23 m³/s) Nov. 16, 1951.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 200 ft³/s (5.66 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 9	2400	203 5.75	3.80 1.158	Jan. 16	2400	*329 9.31	4.33 1.320
Jan. 14	2300	282 7.99	4.16 1.268	Mar. 5	1830	263 7.45	4.10 1.250

Minimum daily, 10 ft³/s (0.28 m³/s) July 31, Aug. 1, 2, 7-21.

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	14	26	29	42	43	44	44	25	13	12	10	11
2	15	26	29	39	39	56	43	21	13	12	10	11
3	15	28	29	40	42	60	41	19	13	12	11	11
4	20	29	29	52	44	147	39	18	13	20	11	11
5	24	31	29	80	57	239	37	18	13	17	11	11
6	24	31	29	102	72	197	37	19	13	14	11	11
7	25	30	29	98	114	136	36	19	12	14	10	11
8	26	29	29	87	132	107	35	18	12	13	10	11
9	26	31	28	143	156	96	34	17	12	13	10	11
10	26	31	29	190	144	83	33	16	11	12	10	11
11	26	30	32	146	87	73	32	16	11	12	10	11
12	27	28	39	123	76	64	15	15	11	12	10	11
13	26	28	39	125	72	57	13	15	11	12	10	11
14	25	28	39	200	70	53	12	14	11	12	10	11
15	22	28	67	261	66	49	13	14	11	12	10	13
16	23	28	58	250	58	47	13	14	11	12	10	15
17	22	27	52	288	55	46	13	14	11	12	10	15
18	22	28	53	184	54	45	13	13	11	12	10	16
19	22	25	43	151	53	44	13	13	11	12	10	19
20	24	26	37	127	54	43	14	13	11	12	10	19
21	32	27	35	109	54	43	15	12	12	12	10	20
22	29	35	34	99	53	51	15	12	11	12	11	20
23	26	35	40	80	53	49	15	12	12	11	11	19
24	27	33	49	70	53	48	14	12	11	11	11	19
25	25	32	45	64	50	46	14	13	11	11	11	19
26	28	31	39	58	49	44	14	13	11	11	11	19
27	33	31	37	51	47	42	15	13	11	11	11	18
28	36	30	40	48	46	42	15	13	11	11	11	15
29	35	30	49	46	---	41	17	13	11	11	11	14
30	32	30	68	45	---	41	23	13	11	11	11	14
31	29	---	58	44	---	42	---	13	---	10	11	---
TOTAL	786	882	1242	3442	1893	2175	687	470	347	381	324	428
MEAN	25.4	29.4	40.1	111	67.6	70.2	22.9	15.2	11.6	12.3	10.5	14.3
MAX	36	35	68	288	156	239	44	25	13	20	11	20
MIN	14	25	28	39	39	41	12	12	11	10	10	11
AC-FT	1560	1750	2460	6830	3750	4310	1360	932	688	756	643	849

CAL YR 1977 TOTAL 8431 MEAN 23.1 MAX 68 MIN 11 AC-FT 16720
WTR YR 1978 TOTAL 13057 MEAN 35.8 MAX 288 MIN 10 AC-FT 25900

10359300 PINE CREEK NEAR SUSANVILLE, CA

LOCATION.--Lat 40°39'54", long 120°47'25", in NE¼SE¼ sec.1, T.32 N., R.10 E., Lassen County, on right bank 0.3 mi (0.5 km) upstream from Eagle Lake, and 18 mi (29 km) northwest of Susanville.

DRAINAGE AREA.--226 mi² (585 km²).

PERIOD OF RECORD.--October 1960 to September 1966, October 1967 to September 1968, October 1969 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,120 ft (1,561 m), from topographic map. Prior to September 1968, at site 1.0 mi (1.6 km) upstream at different datum.

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

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

AVERAGE DISCHARGE.--16 years (water years 1961-66, 1968, 1970-78), 23.6 ft³/s (0.668 m³/s), 17,100 acre-ft/yr (21.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,140 ft³/s (32.3 m³/s) May 15, 1975, gage height, 5.45 ft (1.661 m); maximum gage height, 5.60 ft (1.707 m) Jan. 24, 1970; no flow for several months in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 18, 1967, reached a stage of 5.29 ft (1.612 m), discharge, 826 ft³/s (23.4 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 290 ft³/s (8.21 m³/s) Apr. 1, gage height, 4.44 ft (1.353 m); no flow for several months.

REVISIONS.--Revised average discharges for water years 1965, 1966, 1968, 1970-77 are given below. These figures supersede those published in the reports for 1965, 1966, 1968, 1970-77.

Water year	Number of years	Average discharge (ft ³ /s)	Average discharge (m ³ /s)	Runoff per year (acre-ft/yr)	Runoff per year (hm ³ /yr)
1965	5	25.4	0.719	18400	22.7
1966	6	23.3	.660	16880	20.8
1968	7	22.5	.637	16300	20.1
1970	8	24.9	.705	18040	22.2
1971	9	26.9	.762	19490	24.0
1972	10	25.3	.716	18330	22.6
1973	11	24.0	.680	17390	21.4
1974	12	26.2	.742	18980	23.4
1975	13	27.4	.776	19850	24.5
1976	14	25.5	.722	18470	22.8
1977	15	23.8	.674	17240	21.3

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	280	59	6.3			
2						0	250	65	5.3			
3						0	192	51	4.7			
4						6.3	160	41	4.4			
5						18	119	36	3.7			
6						24	95	33	2.9			
7						25	107	33	.80			
8						37	98	30	0			
9						58	89	27	0			
10						104	89	27	0			
11						148	98	27	0			
12						148	98	25	0			
13						128	96	25	0			
14						110	96	24	0			
15						104	107	27	0			
16						107	93	28	0			
17						131	74	31	0			
18						137	58	29	0			
19						131	51	24	0			
20						131	58	22	0			
21						152	73	21	0			
22						270	62	20	0			
23						270	47	20	0			
24						255	41	21	0			
25						192	43	23	0			
26						192	54	24	0			
27						200	55	22	0			
28						200	55	18	0			
29					---	192	49	14	0			
30					---	188	50	11	0			
31		---			---	220	---	7.6	---			---
TOTAL	0	0	0	0	0	3878.3	2837	865.6	28.10	0	0	0
MEAN	0	0	0	0	0	125	94.6	27.9	.94	0	0	0
MAX	0	0	0	0	0	270	280	65	6.3	0	0	0
MIN	0	0	0	0	0	0	41	7.6	0	0	0	0
AC-FT	0	0	0	0	0	7690	5630	1720	56	0	0	0
CAL YR 1977	TOTAL	0	MEAN	0	MAX	0	MIN	0	AC-FT	0		
WTR YR 1978	TOTAL	7609.00	MEAN	20.8	MAX	280	MIN	0	AC-FT	15090		

SURPRISE VALLEY BASIN

10360900 BIDWELL CREEK BELOW MILL CREEK, NEAR FORT BIDWELL, CA

LOCATION.--Lat 41°52'57", long 120°10'26", in NE¼SE¼ sec.6, T.46 N., R.16 E., Modoc County, on right bank 0.9 mi (1.4 km) downstream from Mill Creek, and 2.0 mi (3.2 km) northwest of Fort Bidwell.

DRAINAGE AREA.--25.6 mi² (66.3 km²).

PERIOD OF RECORD.--October 1960 to current year. Prior to October 1961, published as Bidwell Creek near Fort Bidwell.

REVISED RECORDS.--WDR CA-71-2: 1969-70.

GAGE.--Water-stage recorder. Altitude of gage is 5,000 ft (1,524 m), from topographic map.

REMARKS.--Less than 2 ft³/s (0.057 m³/s) diverted upstream for irrigation. No storage above station.

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

AVERAGE DISCHARGE.--18 years, 22.0 ft³/s (0.623 m³/s), 15,940 acre-ft/yr (19.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 682 ft³/s (19.3 m³/s) Dec. 24, 1964, gage height, 5.64 ft (1.719 m), from rating curve extended above 105 ft³/s (2.97 m³/s) on basis of slope-area measurement of maximum flow; minimum, 1.4 ft³/s (0.040 m³/s) Nov. 5, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 238 ft³/s (6.74 m³/s) May 14, gage height, 4.51 ft (1.375 m); minimum daily, 3.2 ft³/s (0.091 m³/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	5.4	5.2	13	5.5	5.5	11	109	78	90	36	8.5	5.8
2	4.6	5.3	12	5.2	5.4	13	89	79	88	34	8.1	5.6
3	4.2	5.5	17	4.9	5.5	15	73	88	90	34	7.6	5.5
4	4.0	5.4	19	4.8	5.5	17	63	90	97	32	7.5	5.3
5	3.8	5.7	16	5.0	5.6	20	52	82	104	29	7.2	6.1
6	3.8	5.6	15	5.1	6.0	21	46	75	116	27	7.5	6.4
7	3.9	5.6	15	4.7	6.3	21	39	72	131	26	7.3	6.5
8	3.7	5.4	12	4.7	5.9	22	35	78	131	25	7.1	6.2
9	3.5	6.7	12	5.3	5.4	22	36	90	128	24	7.0	6.2
10	3.4	6.2	11	5.5	5.0	20	39	97	124	22	7.2	7.4
11	3.4	6.0	12	5.4	4.4	20	44	103	108	21	6.7	6.6
12	3.3	6.1	11	6.0	5.6	18	51	96	95	20	6.7	6.0
13	3.3	7.2	14	6.9	4.2	17	58	110	87	18	7.6	6.3
14	3.3	6.7	58	10	4.6	15	63	169	83	17	7.7	6.5
15	3.3	7.0	44	13	3.5	14	59	156	78	17	7.7	5.9
16	3.3	7.1	22	10	5.1	14	55	133	73	16	8.2	5.6
17	3.2	6.5	15	9.1	3.5	18	48	118	67	16	7.8	5.7
18	3.3	5.6	12	8.0	3.4	24	44	109	66	15	7.6	6.3
19	3.5	6.6	10	7.4	3.6	35	44	112	65	14	7.2	6.0
20	3.7	6.7	9.2	6.7	4.2	49	44	110	62	13	7.0	5.7
21	3.9	7.7	7.7	6.5	5.7	55	42	112	61	13	6.8	5.4
22	4.0	8.7	6.4	6.3	7.7	59	40	118	60	12	8.0	5.1
23	4.2	9.2	6.2	7.2	11	58	39	114	58	11	7.3	5.1
24	4.2	10	5.6	12	13	48	40	102	55	11	6.8	4.8
25	4.3	11	5.6	10	12	46	46	90	49	11	6.8	4.7
26	4.7	12	4.9	5.8	12	55	82	79	44	11	6.7	4.7
27	4.2	12	5.4	5.2	11	69	104	74	43	10	6.4	4.8
28	4.4	13	5.3	5.1	11	82	94	80	42	9.8	6.1	4.8
29	4.4	14	5.5	5.1	---	83	88	89	42	9.3	5.8	4.8
30	4.9	15	5.6	5.1	---	91	85	91	40	8.7	6.1	4.8
31	5.1	---	5.5	5.4	---	98	---	90	---	8.1	6.1	---
TOTAL	122.2	234.7	412.9	206.9	181.6	1150	1751	3084	2377	570.9	222.1	170.6
MEAN	3.94	7.82	13.3	6.67	6.49	37.1	58.4	99.5	79.2	18.4	7.16	5.69
MAX	5.4	15	58	13	13	98	109	169	131	36	8.5	7.4
MIN	3.2	5.2	4.9	4.7	3.4	11	35	72	40	8.1	5.8	4.7
AC-FT	242	466	819	410	360	2280	3470	6120	4710	1130	441	338

CAL YR 1977 TOTAL 2605.3 MEAN 7.14 MAX 35 MIN 1.5 AC-FT 5170
WTR YR 1978 TOTAL 10483.9 MEAN 28.7 MAX 169 MIN 3.2 AC-FT 20790

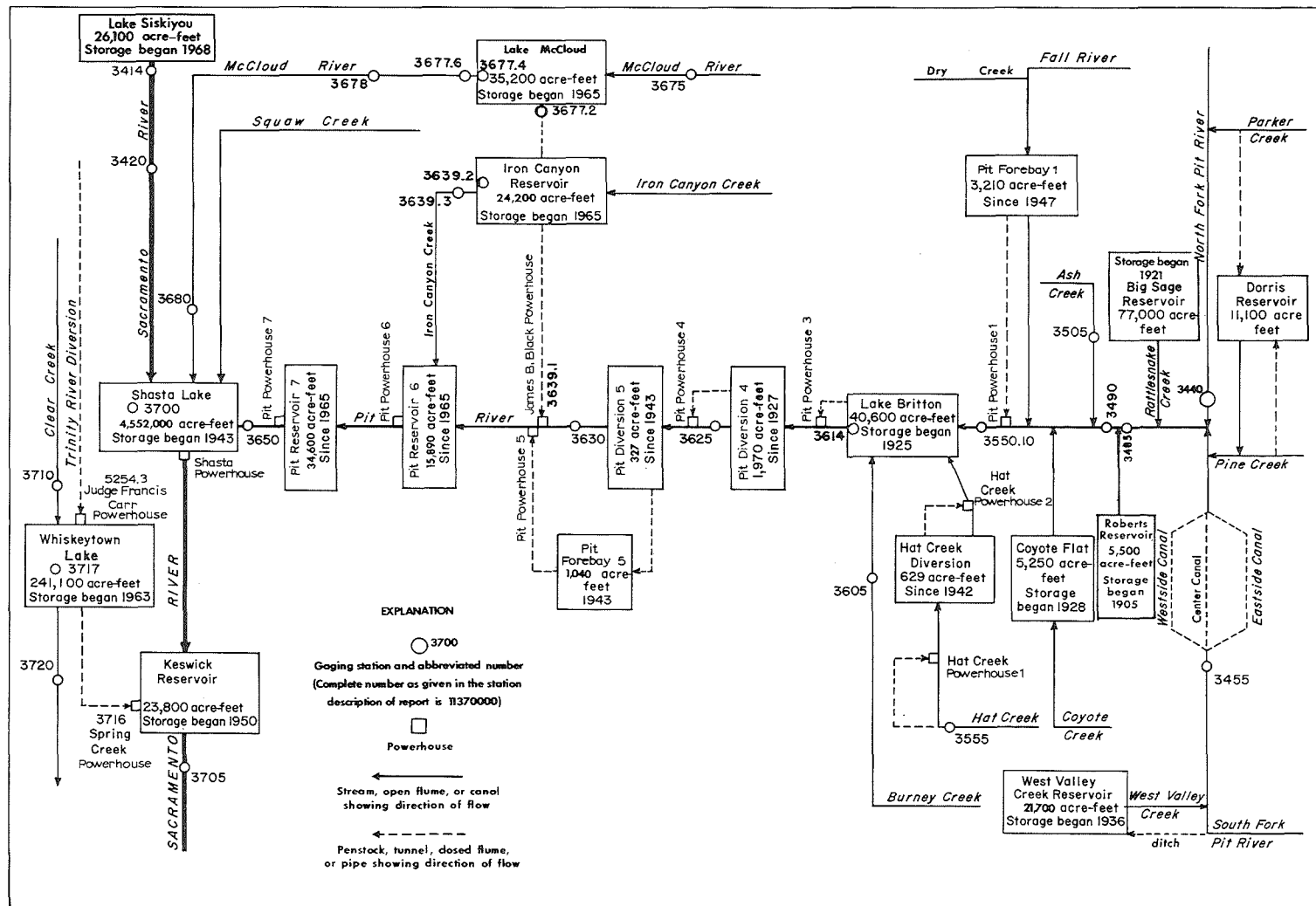


FIGURE 4.--Schematic diagram showing diversions and storage in Pit and McCloud river basins.

SACRAMENTO RIVER BASIN

11341400 SACRAMENTO RIVER NEAR MT SHASTA, CA

LOCATION.--Lat 41°15'56", long 122°18'32", in SE¼SE¼ sec.33, T.40 N., R.4 W., Siskiyou County, on left bank 200 ft (61 m) upstream from Stink Creek, 0.3 mi (0.5 km) upstream from Southern Pacific Railroad bridge, 1.7 mi (2.7 km) downstream from Box Canyon Dam, and 3.3 mi (5.3 km) south of town of Mt Shasta.

DRAINAGE AREA.--135 mi² (350 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,800 ft (853 m), from topographic map. Prior to July 1, 1966, water-stage recorder at site 500 ft (152 m) upstream at datum 7.26 ft (2.213 m) higher, revised, July 1, 1966, to Aug. 13, 1974, at datum 3.00 ft (0.914 m) higher.

REMARKS.--Records good. Flow regulated by Box Canyon Dam 1.7 mi (2.7 km) upstream beginning December 1968, capacity, 26,100 acre-ft (32.2 hm³). See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE (adjusted for change in contents in Lake Siskiyou).--19 years, 251 ft³/s (7.108 m³/s), 181,800 acre-ft/yr (244 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,200 ft³/s (346 m³/s) Dec. 22, 1964, gage height, 15.6 ft (4.75 m) from floodmarks, present site and datum, from slope-area measurement of maximum flow; minimum, 37 ft³/s (1.05 m³/s) Sept. 6, 1962. Maximum discharge since construction of Box Canyon Dam in 1968, 11,500 ft³/s (326 m³/s) Jan. 16, 1974, gage height, 13.25 ft (4.039 m) from floodmarks, from rating curve extended above 2,900 ft³/s (82.1 m³/s) on basis of flow-over-dam computation of maximum flow; minimum daily, 14 ft³/s (0.40 m³/s) Dec. 8-16, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,650 ft³/s (103 m³/s) Jan. 14, gage height, 7.50 ft (2.286 m); minimum daily, 23 ft³/s (0.65 m³/s) Oct. 18-20.

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	84	98	312	441	251	514	1050	537	637	270	77	51
2	76	103	216	319	251	514	833	571	623	272	78	43
3	108	103	118	252	255	542	668	696	648	274	79	43
4	177	101	118	604	258	588	625	721	729	271	80	42
5	173	97	135	977	375	624	586	631	846	269	79	60
6	172	97	155	460	951	582	529	577	915	269	78	141
7	172	97	169	506	1510	565	459	568	887	228	78	127
8	170	95	188	539	1360	1070	438	644	809	160	77	108
9	169	94	169	1370	1270	1340	434	787	796	165	75	174
10	169	85	150	1440	781	1040	402	917	682	187	75	270
11	169	76	150	1240	454	757	427	953	585	197	72	179
12	157	76	140	902	454	738	562	850	540	193	72	136
13	131	76	141	887	448	402	569	904	516	184	74	121
14	120	76	793	2000	396	116	560	1120	496	172	71	112
15	102	76	1350	2540	319	102	559	1120	492	164	71	138
16	102	76	832	2420	284	109	532	854	430	163	75	143
17	54	76	346	1710	284	188	468	778	400	159	73	143
18	23	76	337	1300	284	342	407	675	392	159	70	141
19	23	76	329	1280	284	398	413	632	338	134	71	76
20	23	76	324	1100	284	470	424	753	337	121	71	42
21	29	76	324	550	284	542	419	916	336	121	73	42
22	42	77	320	486	288	738	409	991	342	120	74	46
23	43	80	364	394	288	1140	407	818	340	120	75	69
24	43	92	308	324	292	1050	408	663	342	120	75	82
25	70	94	292	258	292	764	415	618	338	120	77	86
26	90	97	284	258	296	687	473	465	337	104	80	114
27	90	100	517	258	298	668	500	330	337	78	82	108
28	84	110	564	254	369	712	529	444	337	77	80	105
29	76	155	383	254	---	829	544	632	337	75	76	103
30	77	284	505	254	---	975	562	724	293	76	150	104
31	85	---	554	253	---	1020	---	654	---	76	146	---
TOTAL	3103	2895	10887	25830	13160	20126	15611	22543	15437	5098	2484	3149
MEAN	100	96.5	351	833	470	649	520	727	515	164	80.1	105
MAX	177	284	1350	2540	1510	1340	1050	1120	915	274	150	270
MIN	23	76	118	252	251	102	402	330	293	75	70	42
AC-FT	6150	5740	21590	51230	26100	39920	30960	44710	30620	10110	4930	6250
MEAN ‡	67.2	97.8	349	835	488	671	517	730	504	169	76.6	108
AC-FT ‡	4130	5820	21430	51350	27090	41270	30740	44880	29970	10370	4710	6420
†	24170	24250	24090	24210	25200	26550	26330	26500	25850	26110	25890	26060
CAL YR 1977 TOTAL	37091											
WTR YR 1978 TOTAL	140323											
MEAN 102												
MEAN 384												
MAX 1350												
MAX 2540												
MIN 23												
MIN 23												
AC-FT 73570												
AC-FT 278300												
MEAN ‡ 102												
MEAN ‡ 384												
AC-FT ‡ 73570												
AC-FT ‡ 278200												

‡ Adjusted for change in contents in Lake Siskiyou.

† Contents, in acre-feet, at end of month in Lake Siskiyou.

11341400 SACRAMENTO RIVER NEAR MT SHASTA, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

CHEMICAL ANALYSES: Water years 1970-72.

WATER TEMPERATURES: Water years 1966 to current year.

SEDIMENT RECORDS: Water year 1972.

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, 20.0°C July 25-28, 1974, July 12, 1975; minimum recorded, 1.5°C on several days in 1968 and 1969.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 19.0°C Aug. 3, 4; minimum recorded, 4.0°C on many 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	14.0	11.5	12.5	10.5	8.5	7.5	5.5	5.0	5.0	4.5	5.5	4.5
2	14.0	11.0	11.5	10.5	8.5	7.5	5.5	5.0	5.0	4.5	5.5	4.5
3	14.0	11.0	12.0	10.0	9.0	7.0	6.0	5.0	5.5	5.0	5.0	5.0
4	12.5	10.5	11.0	9.0	9.0	7.0	5.5	5.0	5.5	4.5	5.5	5.0
5	12.0	10.5	10.5	10.0	8.5	7.0	5.5	5.0	5.5	5.0	6.0	5.0
6	11.5	10.5	10.5	10.0	8.5	7.5	5.5	5.0	5.0	5.0	5.5	5.0
7	12.0	10.0	11.0	9.5	8.0	7.5	5.5	5.0	5.0	5.0	5.5	5.5
8	12.5	10.5	10.0	9.0	8.0	7.0	5.5	5.0	5.0	4.5	5.5	5.5
9	12.5	10.5	10.5	8.5	8.0	7.0	5.5	4.5	5.0	4.5	5.5	5.5
10	12.0	10.5	10.5	9.0	7.5	7.0	5.0	4.5	4.5	4.5	6.0	5.0
11	12.0	10.5	10.0	9.0	8.0	6.5	5.0	5.0	4.5	4.0	6.0	5.5
12	13.5	10.5	10.5	9.5	7.5	7.0	5.0	4.5	4.5	4.0	6.0	5.5
13	14.5	12.5	10.5	9.5	8.0	7.0	5.0	4.5	5.0	4.5	7.0	5.5
14	14.5	12.5	10.5	9.0	8.0	6.0	5.0	4.5	5.0	4.5	7.0	5.0
15	15.0	12.5	10.5	9.0	7.0	7.0	5.0	4.5	4.5	4.0	7.5	5.0
16	15.0	12.5	10.0	9.0	7.0	6.0	4.5	4.0	5.0	4.0	8.0	5.0
17	15.5	11.0	9.5	8.5	6.5	6.0	4.5	4.0	5.0	4.0	7.5	5.5
18	13.5	9.0	8.5	7.5	6.0	5.5	4.5	4.0	5.5	4.5	7.0	6.0
19	13.0	9.0	8.5	7.0	6.0	5.0	4.5	4.0	5.5	4.5	8.0	6.5
20	12.5	9.0	8.0	7.0	6.0	5.5	4.5	4.0	5.5	4.5	8.5	7.0
21	12.5	9.0	7.5	5.5	6.0	5.5	4.5	4.0	5.5	4.5	7.5	7.0
22	13.5	10.0	8.5	7.5	6.0	5.0	4.5	4.0	5.5	4.5	7.5	6.5
23	12.5	10.5	8.0	7.5	6.0	5.0	4.5	4.0	5.5	4.5	7.5	6.5
24	13.0	11.0	9.0	7.5	6.0	5.0	4.5	4.0	6.0	5.0	7.0	6.0
25	13.5	12.0	9.0	7.5	5.5	5.0	4.5	4.0	5.5	5.0	7.5	6.0
26	13.0	10.5	9.0	7.5	5.5	5.5	5.0	4.5	5.5	5.0	7.0	6.5
27	12.5	10.5	9.0	7.5	5.5	5.5	5.0	4.0	5.5	4.5	8.5	6.0
28	12.5	10.5	9.0	7.5	6.0	5.5	5.0	4.5	5.5	4.5	7.5	6.5
29	12.0	10.5	9.0	7.5	6.0	5.5	5.0	4.5	---	---	8.0	6.5
30	12.0	10.5	8.5	7.5	5.5	5.5	5.0	4.5	---	---	8.5	7.0
31	12.0	10.0	---	---	5.5	5.0	5.0	4.5	---	---	8.5	7.0
MONTH	15.5	9.0	12.5	5.5	9.0	5.0	6.0	4.0	6.0	4.0	8.5	4.5

SACRAMENTO RIVER BASIN

11341400 SACRAMENTO RIVER NEAR MT SHASTA, 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	8.0	6.5	9.5	8.0	11.0	10.0	13.5	10.5	18.0	11.5	18.0	11.5
2	7.5	6.5	9.5	8.5	11.5	10.0	13.0	10.0	18.5	13.5	17.5	11.0
3	7.0	6.5	9.5	8.5	12.5	10.5	13.5	10.0	19.0	13.5	16.0	10.0
4	7.5	6.5	9.5	8.5	12.5	11.0	13.5	10.5	19.0	14.0	15.0	11.0
5	7.5	6.5	9.0	8.0	13.0	10.5	13.5	11.0	18.5	14.0	14.0	11.5
6	7.5	6.0	9.0	7.0	13.0	10.5	14.0	10.5	18.5	13.5	17.5	14.5
7	8.0	6.5	9.5	7.0	13.5	10.5	14.0	10.0	18.5	13.5	16.0	14.0
8	8.5	6.5	9.5	8.5	12.5	10.0	15.0	10.5	18.0	13.5	15.5	13.5
9	8.0	6.5	9.5	8.0	13.0	10.5	15.5	10.0	18.5	13.5	16.0	13.5
10	8.5	6.5	9.5	8.5	12.0	10.0	16.0	13.0	18.0	13.0	16.5	15.5
11	8.5	6.5	9.5	8.0	11.5	10.5	16.0	13.5	17.5	12.0	16.5	15.0
12	8.5	7.5	9.5	8.0	11.0	10.0	16.5	13.0	15.0	11.5	16.5	13.5
13	9.0	7.0	9.5	7.5	11.0	9.5	16.5	11.5	17.0	10.5	15.5	13.5
14	8.0	6.5	9.5	7.5	11.0	10.0	16.5	11.5	16.0	10.5	16.0	13.5
15	7.5	7.0	9.0	8.5	11.0	9.5	15.5	11.0	16.0	10.5	15.5	13.0
16	7.5	6.5	9.0	7.5	11.0	9.5	16.0	11.0	17.0	11.5	15.0	13.0
17	7.5	6.5	9.5	7.5	12.0	10.0	15.5	10.5	16.0	11.0	13.5	11.5
18	8.0	6.5	9.5	7.5	11.5	10.0	15.0	11.5	16.5	11.0	14.5	11.0
19	7.5	6.5	9.5	7.5	12.0	10.0	16.0	10.5	16.5	10.0	15.0	11.0
20	8.0	6.5	10.0	8.5	12.5	10.0	16.5	10.5	17.0	11.0	15.0	10.0
21	8.0	6.5	10.0	9.5	12.0	10.5	16.0	10.5	15.0	10.5	14.0	10.5
22	8.5	6.5	10.5	9.5	12.0	10.0	16.0	11.0	14.0	11.0	15.0	10.5
23	8.0	6.5	10.0	9.0	12.0	10.0	16.5	11.0	16.0	10.5	16.0	10.5
24	8.0	6.5	9.0	8.5	12.5	10.0	16.0	10.5	13.5	11.5	17.5	13.0
25	8.5	6.5	9.5	8.5	12.0	10.0	16.5	11.0	15.5	13.0	16.0	13.5
26	8.5	6.5	9.5	8.5	12.5	10.0	17.0	13.0	16.0	13.0	16.0	13.0
27	9.0	7.0	10.5	9.0	13.5	10.5	18.0	10.5	17.0	10.5	15.0	12.5
28	9.0	8.0	12.0	9.5	12.0	9.5	17.5	12.0	17.5	13.0	15.0	12.5
29	9.5	7.0	12.0	10.5	13.0	10.0	17.5	11.5	16.5	13.0	15.5	12.5
30	9.0	8.0	11.5	9.5	13.5	10.0	17.5	10.5	15.5	13.5	15.5	12.5
31	---	---	10.5	9.5	---	---	18.0	11.5	15.0	13.0	---	---
MONTH	9.5	6.0	12.0	7.0	13.5	9.5	18.0	10.0	19.0	10.0	18.0	10.0

11342000 SACRAMENTO RIVER AT DELTA, CA

LOCATION.--Lat 40°56'23", long 122°24'58", in SW¼NW¼ sec.35, T.36 N., R.5 W, Shasta County, Bureau of Reclamation property, on left bank 0.2 mi (0.3 km) downstream from Dog Creek, 0.6 mi (1.0 km) southeast of Delta, and 2.8 mi (4.5 km) south of Lamaine.

DRAINAGE AREA.--425 mi² (1,101 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,075.00 ft (327.660 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Records good. Some regulation since December 1968 by Lake Siskiyou, capacity, 26,100 acre-ft (32.2 hm³). Some minor diversions for irrigation above station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--34 years, 1,174 ft³/s (33.25 m³/s), 850,600 acre-ft/yr (1,049 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,800 ft³/s (1,980 m³/s) Jan. 16, 1974, gage height, 27.20 ft (8.291 m), from rating curve extended above 19,000 ft³/s (538 m³/s) on basis of slope-area measurements at gage heights, 19.50 ft (5.944 m) in gage well, 20.0 ft (6.10 m) from floodmarks, and 27.20 ft (8.291 m) in gage well, 28.7 ft (8.75 m) from floodmarks; minimum daily, 117 ft³/s (3.31 m³/s) Aug. 5, 6, 12-15, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 30,900 ft³/s (875 m³/s) Jan. 16, gage height, 16.51 ft (5.032 m); minimum daily, 141 ft³/s (3.99 m³/s) Oct. 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	282	275	709	1740	1280	1830	3910	2190	1740	720	293	289
2	246	271	544	1690	1350	2350	3190	2200	1710	737	293	232
3	224	267	403	2500	1880	3930	2840	2370	1730	701	293	229
4	289	272	395	5480	1750	5860	3440	2390	1840	684	290	229
5	306	457	399	9540	5560	10500	3550	2180	2000	662	287	273
6	302	326	415	4520	8640	6440	4170	2020	2100	650	284	485
7	297	297	411	3190	12700	4340	3350	1990	2020	641	278	397
8	291	280	420	3830	9530	11400	2890	2110	1860	523	275	350
9	287	267	412	11800	8090	10500	2680	2390	1810	499	273	965
10	284	259	362	7050	5570	6550	2620	2530	1610	507	268	1160
11	279	243	423	5080	3970	4790	2580	2530	1430	517	268	601
12	278	252	421	4800	3440	3950	2610	2350	1340	509	268	458
13	246	246	713	5520	3070	3270	2490	2460	1290	491	276	406
14	237	239	5500	16600	2740	2460	2390	2790	1240	468	271	382
15	221	235	5820	19000	2440	2200	3090	2790	1180	450	267	362
16	215	232	2920	24700	2190	2020	2840	2250	1110	440	274	395
17	213	228	1760	14000	2040	1950	2530	2070	1030	429	274	379
18	156	225	1410	9070	1920	2070	2270	2030	1040	421	266	377
19	142	224	1170	9210	1880	2090	2360	2040	967	410	264	373
20	141	222	1030	6660	1870	2140	2390	2180	931	371	262	279
21	141	258	983	4580	1870	2300	2220	2370	905	363	265	273
22	150	304	2290	3700	1880	2640	2090	2440	896	362	280	270
23	158	353	5810	2960	1860	4410	2010	2130	887	358	277	279
24	161	411	2860	2520	1870	3580	2000	1840	869	355	274	294
25	186	507	1970	2110	1900	2900	2560	1670	835	351	287	304
26	229	757	1550	1900	1800	2660	2460	1510	818	350	289	310
27	219	668	1830	1720	1700	2540	2390	1260	820	319	281	333
28	236	554	2330	1580	1630	2590	2370	1450	913	306	273	316
29	392	511	2370	1470	---	2750	2300	1790	859	300	265	300
30	434	599	2350	1380	---	3030	2290	1890	793	294	284	300
31	293	---	2030	1310	---	3230	---	1770	---	294	398	---
TOTAL	7535	10239	52010	191210	96420	123270	80880	65980	38573	14482	8697	11600
MEAN	243	341	1678	6168	3444	3976	2696	2128	1286	467	281	387
MAX	434	757	5820	24700	12700	11400	4170	2790	2100	737	398	1160
MIN	141	222	362	1310	1280	1830	2000	1260	793	294	262	229
AC-FT	14950	20310	103200	379300	191200	244500	160400	130900	76510	28730	17250	23010
CAL YR 1977	TOTAL	133672	MEAN	366	MAX	5820	MIN 117	AC-FT	265100			
WTR YR 1978	TOTAL	700896	MEAN	1920	MAX	24700	MIN 141	AC-FT	1390000			

SACRAMENTO RIVER BASIN

11342000 SACRAMENTO RIVER AT DELTA, CA--Continued

WATER-QUALITY RECORDS

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

CHEMICAL ANALYSES: Water years 1951 to current year.

WATER TEMPERATURES: Water years 1951, 1954-57, 1963 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: June to September 1951, October 1953 to September 1957, October 1962 to current year.

INSTRUMENTATION.--Temperature recorder June to September 1951, October 1953 to September 1957, and since October 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, 29.5°C July 15, 1972; minimum recorded, 0.0°C on several days in 1964, 1967, 1968, and 1973.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 25.0°C Aug. 5, 6; minimum recorded, 0.5°C Nov. 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)	HARD- NESS (MG/L AS CACO ₃)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
NOV 15... A	1145	235	176	8.2	--	.00	11.8	56	--	--	10
JAN 04... A	1315	4430	80	7.4	8.0	14	10.9	--	--	--	--
MAR 15... A	0835	2220	81	7.4	7.0	2.0	11.9	--	--	--	--
APR 11... A	0945	2580	82	7.6	11.0	.00	11.1	36	--	--	2.5
MAY 03... A	1300	2370	91	7.4	13.0	3.0	10.4	--	--	--	--
JUN 13... A	1430	1270	64	8.1	14.0	--	--	32	5.2	4.5	2.8
JUL 05... A	0825	674	95	7.5	16.5	.00	9.8	40	5.7	6.5	5.0
SEP 05... A	0915	235	147	7.7	17.5	.00	9.2	--	--	--	10
11... A	1420	569	105	8.1	15.5	--	--	46	13	3.3	4.4

DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY (MG/L AS CACO ₃)	SULFATE DIS- SOLVED (MG/L AS SO ₄)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO ₂)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED PER AC-FT)
NOV 15... A	--	.6	--	65	--	5.8	--	--	--	--	--
JAN 04... A	--	--	--	--	--	--	--	--	--	--	--
MAR 15... A	--	--	--	--	--	--	--	--	--	--	--
APR 11... A	--	.2	--	38	--	--	--	--	--	--	--
MAY 03... A	--	--	--	--	--	--	--	--	--	--	--
JUN 13... A	16	.2	.3	39	2.4	1.8	.0	16	--	57	.08
JUL 05... A	21	.3	.4	46	1.4	3.2	--	--	68	--	.09
SEP 05... A	--	--	--	58	--	5.8	--	--	--	--	--
11... A	17	.3	1.1	49	4.8	1.4	.0	27	--	85	.12

11342000 SACRAMENTO RIVER AT DELTA, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, 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)
NOV 15...A	.02	--	--	.00	.10	.10	--	.02	.01	100
JAN 04...A	--	--	--	--	--	--	--	--	--	--
MAR 15...A	.02	--	--	.00	.00	.00	--	.02	.02	--
APR 11...A	.00	--	--	.02	.20	.22	--	.01	.00	0
MAY 03...A	.01	--	--	.00	.10	.10	--	.02	.02	--
JUN 13...	--	.06	.06	.01	.12	.13	.19	.00	.00	40
JUL 05...A	.01	--	--	.02	.40	.42	--	.01	.01	0
SEP 05...A	.03	--	--	.00	.40	.40	--	.02	.02	200
11...	--	.04	.04	.00	.21	.21	.25	.03	.03	40

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)
APR 11...A	0945	2580		3	.6	3	0	0	0
JUN 13...	1430	1270	--	--	--	--	--	--	--
SEP 05...A	0915	235		1	.6	3	0	0	0
11...	1420	569	--	--	--	--	--	--	--

DATE	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
APR 11...A	0	60	10	0	.1	0	1.3	.00
JUN 13...	--	0	--	--	--	--	--	--
SEP 05...A	0	30	0	0	.1	0	1.2	.00
11...	--	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	15.5	12.5	11.5	9.0	7.0	6.5	6.5	5.5	7.5	6.5	8.0	5.5
2	16.0	12.5	12.5	9.5	7.0	6.5	7.0	6.5	6.5	6.0	8.0	7.5
3	16.0	12.5	11.0	9.5	8.0	6.5	8.5	7.0	8.0	6.5	7.5	7.5
4	15.5	13.0	10.0	9.5	8.5	7.5	---	---	---	---	7.5	7.0
5	15.0	12.5	9.5	8.5	8.0	6.5	---	---	---	---	8.5	7.0
6	14.5	12.0	9.5	8.0	7.0	6.5	---	---	---	---	9.0	7.5
7	14.0	11.0	9.5	8.0	8.5	7.0	---	---	---	---	8.5	8.0
8	14.5	11.0	9.0	7.0	7.5	5.0	---	---	---	---	8.5	8.0
9	14.5	11.5	8.5	6.0	6.0	5.0	---	---	---	---	9.0	7.5
10	14.5	11.0	9.0	6.5	6.0	5.5	---	---	---	---	9.0	7.5
11	15.0	11.5	8.0	7.5	6.0	5.5	---	---	---	---	8.5	8.0
12	15.0	11.5	9.5	8.0	6.5	5.0	---	---	---	---	8.0	6.5
13	15.5	12.0	10.5	9.0	7.0	6.5	---	---	---	---	8.5	6.5
14	15.0	12.5	9.5	8.5	8.5	7.0	---	---	---	---	8.5	6.5
15	15.0	12.0	9.5	8.0	8.5	7.0	---	---	---	---	9.0	6.5
16	15.0	11.5	9.5	7.5	7.0	4.5	---	---	6.5	5.5	9.5	7.0
17	15.0	11.5	9.0	7.0	6.0	4.5	---	---	7.0	6.5	10.0	7.5
18	15.0	11.5	8.0	5.5	6.0	5.5	---	---	8.0	6.5	10.0	7.5
19	14.5	12.0	5.0	4.0	5.5	4.5	---	---	8.0	6.5	10.0	8.0
20	14.0	12.0	4.0	3.0	5.5	4.0	---	---	8.5	6.5	10.5	8.0
21	14.0	11.0	3.0	0.5	6.0	5.5	---	---	8.5	7.0	10.0	9.0
22	13.0	10.5	3.0	1.0	7.0	5.5	---	---	8.5	7.0	9.5	8.5
23	11.5	10.5	5.0	3.0	8.0	7.0	---	---	8.5	7.0	9.0	8.0
24	12.0	11.5	6.0	5.0	7.5	7.0	---	---	8.5	8.0	9.5	7.0
25	13.0	11.5	6.5	5.5	7.0	6.0	---	---	9.5	8.0	10.0	7.0
26	13.5	11.0	7.5	6.5	7.5	6.5	---	---	8.5	7.5	10.0	8.0
27	11.5	10.5	7.5	6.5	7.5	7.5	---	---	8.0	6.5	11.0	7.5
28	10.5	10.5	7.0	6.5	8.0	7.5	---	---	7.5	5.5	11.0	8.5
29	10.5	10.0	7.5	6.5	8.5	8.0	---	---	6.5	---	10.5	8.5
30	11.5	9.5	7.5	7.0	8.0	7.5	---	---	6.5	---	11.0	9.0
31	11.5	9.5	---	---	7.5	6.0	---	---	---	---	10.0	8.5
MONTH	16.0	9.5	12.5	0.5	8.5	4.0	---	---	---	---	11.0	5.5

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

11344000 NORTH FORK PIT RIVER AT ALTURAS, CA

LOCATION.--Lat 41°28'56", long 120°32'16", in SE¼NW¼ sec.13, T.42 N., R.12 E., Modoc County, on right bank 10 ft (3 m) downstream from Estes Street bridge in Alturas, and 1.2 mi (1.9 km) upstream from confluence of North and South Forks.

DRAINAGE AREA.--212 mi² (549 km²), excluding Goose Lake basin.

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,345.00 ft (1,324.356 m) National Geodetic Vertical Datum of 1929. Since Apr. 10, 1973, a supplementary water-stage recorder for winter periods is located above a concrete weir 0.25 mi (0.40 km) upstream.

REMARKS.--Records good. Flow is regulated by many small irrigation ponds and Dorris Reservoir, capacity, 11,100 acre-ft (13.7 hm³). Diversions above station for irrigation of about 7,100 acres (28.7 km²). See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--7 years, 59.1 ft³/s (1.674 m³/s), 42,820 acre-ft/yr (52.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,800 ft³/s (51.0 m³/s) Feb. 29, 1972, gage height, 11.90 ft (3.627 m), from rating curve extended above 900 ft³/s (25.5 m³/s) on basis of estimate of peak discharge by flow-over-dam computation; minimum daily, 0.01 ft³/s (<0.001 m³/s) July 20, Aug. 2, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1210 ft³/s (34.3 m³/s) Apr. 26, gage height, 9.98 ft (3.042 m); minimum daily, 0.03 ft³/s (0.001 m³/s) Aug. 25, Sept. 4, 5.

REVISIONS.--The maximum discharge and gage height for the water year 1975 and the maximum gage height for the water year 1976 have been revised to 954 ft³/s (27.0 m³/s) Mar. 25, 1975, gage height 8.99 ft (2.740 m) and 381 ft³/s (10.8 m³/s) Mar. 14, 1976, gage height 6.19 ft (1.887 m) superseding figures published in the reports for 1975 and 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	2.1	1.4	9.6	33	22	39	443	465	24	7.4	1.8	.11
2	2.0	1.4	8.4	23	22	47	554	381	18	6.3	.70	.15
3	1.9	1.6	8.9	28	24	100	388	349	21	6.3	.58	.07
4	1.7	2.0	9.5	60	23	226	241	308	15	8.3	.52	.03
5	1.7	2.0	13	87	23	256	212	265	14	8.3	.52	.03
6	1.7	1.8	11	206	24	195	215	235	13	7.0	.52	.08
7	1.8	1.9	10	128	29	119	378	208	15	5.0	1.0	.08
8	1.6	1.9	9.6	87	58	90	401	182	18	5.1	.75	.08
9	1.6	2.0	8.6	258	50	84	241	158	15	5.2	.70	.08
10	1.3	2.2	8.0	345	49	65	224	167	14	4.6	.54	.32
11	1.0	2.6	8.4	121	30	69	235	161	23	3.9	.82	1.2
12	2.7	3.1	32	63	25	67	201	138	14	2.6	.49	1.2
13	2.8	3.6	18	59	26	77	180	140	8.7	2.2	.60	1.1
14	1.6	3.8	75	84	25	55	203	151	5.2	2.4	.81	1.2
15	1.3	4.0	230	71	26	51	195	163	7.8	2.4	.55	1.1
16	1.2	3.7	96	54	23	45	203	158	8.0	2.1	.38	1.1
17	1.1	3.3	40	67	24	45	186	130	8.0	2.2	.37	1.1
18	1.0	3.2	24	61	26	47	167	100	8.0	2.3	.37	1.2
19	1.1	3.3	19	65	31	51	146	80	6.6	2.5	.34	2.6
20	1.2	3.2	23	102	32	55	165	82	6.6	2.2	.30	2.3
21	1.3	10	20	74	29	60	212	77	4.3	2.1	.33	1.6
22	1.4	4.9	19	51	28	124	184	94	3.2	2.1	.37	1.1
23	1.9	4.9	40	32	28	144	165	126	2.6	2.1	.27	1.2
24	2.3	6.9	84	31	34	105	158	135	4.0	2.1	.04	.99
25	1.9	13	63	26	33	82	190	112	4.0	2.5	.03	.45
26	1.4	21	32	29	40	77	629	130	3.7	2.7	.21	.12
27	1.4	25	26	27	61	75	909	51	4.0	2.8	.60	.25
28	1.4	17	60	26	47	75	581	66	5.5	2.8	.67	.38
29	1.3	13	65	25	---	71	468	82	7.3	2.7	.15	.60
30	1.4	11	150	23	---	77	468	64	7.5	2.9	.17	.85
31	1.4	---	54	23	---	87	---	42	---	2.6	.07	---
TOTAL	49.5	178.7	1275.0	2369	892	2760	9142	5000	309.0	115.7	15.57	22.67
MEAN	1.60	5.96	41.1	76.4	31.9	89.0	305	161	10.3	3.73	.58	.76
MAX	2.8	25	230	345	61	256	909	465	24	8.3	1.8	2.6
MIN	1.0	1.4	8.0	23	22	39	146	42	2.6	2.1	.03	.03
AC-FT	98	354	2530	4700	1770	5470	18130	9920	613	229	31	45

CAL YR 1977 TOTAL 4551.40 MEAN 12.5 MAX 230 MIN .01 AC-FT 9030
WTR YR 1978 TOTAL 22129.14 MEAN 60.6 MAX 909 MIN .03 AC-FT 43890

SACRAMENTO RIVER BASIN

11345500 SOUTH FORK PIT RIVER NEAR LIKELY, CA

LOCATION.--Lat 41°13'51", long 120°26'10", in NE¼SE¼ sec.11, T.39 N., R.13 E., Modoc County, on left bank 250 ft (76 m) downstream from highway bridge, 1.4 mi (2.3 km) downstream from West Valley Creek, and 3.5 mi (5.6 km) east of Likely.

DRAINAGE AREA. -- 247 mi² (640 km²).

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,508 ft (1,374 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1931, at site 1,000 ft (305 m) downstream at different datum.

REMARKS.--Records excellent except those for the winter period, which are good. Flow partly regulated by West Valley Creek Reservoir beginning in May 1937, usable capacity, 21,700 acre-ft (26.8 hm³). Diversions for irrigation of about 3,800 acres (1,538 hm²) above station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--50 years, 78.7 ft³/s (2.229 m³/s), 57,020 acre-ft/yr (70.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,620 ft³/s (45.9 m³/s) June 2, 1971, gage height, 6.05 ft (1.844 m); minimum, 0.2 ft³/s (0.006 m³/s) Feb. 3, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 329 ft³/s (9.32 m³/s) Apr. 26, gage height, 3.78 ft (1.152 m); minimum daily, 1.3 ft³/s (0.037 m³/s) Jan. 23, Feb. 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	33	24	11	16	2.0	6.3	137	110	114	131	168	131
2	30	23	15	25	1.9	8.8	94	104	114	128	167	132
3	29	24	12	36	1.8	8.8	62	113	113	129	166	128
4	26	23	21	35	5.6	8.4	55	118	113	126	163	126
5	21	23	19	25	5.5	11	50	106	118	120	162	125
6	23	24	12	15	5.1	14	50	99	122	118	159	132
7	28	25	12	8.5	2.7	4.6	47	105	121	119	161	133
8	39	23	10	8.5	4.6	3.6	38	118	120	118	140	134
9	42	21	5.1	9.1	5.6	5.7	39	133	122	115	123	136
10	39	22	7.5	10	7.1	8.6	49	146	116	113	121	142
11	32	21	11	6.7	5.1	8.7	62	154	108	107	120	94
12	20	22	13	3.8	4.2	12	66	154	120	99	117	53
13	16	22	12	3.0	2.0	12	68	172	133	96	118	51
14	17	23	18	3.7	1.7	7.9	68	207	124	91	118	59
15	17	22	44	8.5	1.3	5.3	63	251	116	92	129	57
16	18	16	20	6.7	3.1	4.4	63	273	121	93	141	54
17	18	6.7	13	8.7	2.6	4.2	58	239	108	95	140	53
18	18	4.7	6.5	11	3.0	6.0	49	207	106	112	138	55
19	19	4.2	4.3	9.2	3.5	8.0	47	208	102	130	137	56
20	19	9.6	3.1	12	3.7	11	49	201	125	136	136	54
21	20	14	3.4	5.8	2.9	16	48	199	156	140	135	53
22	21	15	3.7	5.2	2.9	44	42	206	152	139	135	49
23	20	15	5.9	1.3	3.1	43	39	216	146	138	137	49
24	21	21	6.1	2.4	6.7	36	42	216	142	135	135	49
25	21	25	9.6	7.0	6.6	25	49	210	144	129	134	49
26	24	30	10	4.6	6.5	26	191	191	138	148	132	49
27	26	23	12	3.8	7.5	28	228	167	128	170	132	49
28	28	14	15	2.3	5.6	28	135	157	130	168	132	50
29	24	12	14	2.3	---	36	116	147	134	170	131	51
30	25	12	16	2.2	---	47	115	136	134	168	130	39
31	26	---	9.9	1.8	---	66	---	120	---	168	130	---
TOTAL	760	564.2	375.1	300.1	113.9	554.3	2219	5183	3740	3941	4287	2392
MEAN	24.5	18.8	12.1	9.68	4.07	17.9	74.0	167	125	127	138	79.7
MAX	42	30	44	36	7.5	66	228	273	156	170	168	142
MIN	16	4.2	3.1	1.3	1.3	3.6	38	99	102	91	117	39
AC-FT	1510	1120	744	595	226	1100	4400	10280	7420	7820	8500	4740
CAL YR 1977	TOTAL	16710.3	MEAN	45.8	MAX	195	MIN	3.1	AC-FT	33140		
WTR YR 1978	TOTAL	24429.6	MEAN	66.9	MAX	273	MIN	1.3	AC-FT	48460		

11345500 SOUTH FORK PIT RIVER NEAR LIKELY, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1957 to current year.

COOPERATION.--Chemical-quality records furnished by 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)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 05...	0700	21	111	7.5	7.0	2.0	9.8	4	1.3	42	5.4
JUN 14...	0830	129	82	7.6	11.0	2.0	9.4	5	.8	30	3.5

DATE	SODIUM AD- SORP- TION RATIO	ALKA- LINIT (MG/L AS CACO3)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE 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, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P)	ARSENIC DIS- SOLVED (UG/L AS AS)
OCT 05...	.4	53	1.2	8	.14	.04	.30	.34	.07	.03	0
JUN 14...	.3	36	.0	12	.04	.01	.60	.61	.05	.00	0

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM, DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 05...	0	0	0	0	0	90	0	20	.0	0	3.6
JUN 14...	0	0	0	0	0	120	10	10	.2	0	3.7

SACRAMENTO RIVER BASIN

11348500 PIT RIVER NEAR CANBY, CA

LOCATION.--Lat 41°24'22", long 120°55'36", in NW¼SW¼ sec.10, T.41 N., R.9 E., Modoc County, on right bank at lower end of Warm Spring Valley, 3.9 mi (6.3 km) southwest of Canby.

DRAINAGE AREA.--1,431 mi² (3,706 km²), excluding Goose Lake basin.

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Datum of gage is 4,266 ft (1,300 m) National Geodetic Vertical Datum of 1929. January 1904 to December 1905, nonrecording gage and May 6, 1929, to Sept. 30, 1931, water-stage recorder, at site 100 ft (30 m) upstream at different datum.

REMARKS.--Records excellent. Flow regulated by many small reservoirs, total capacity now, about 144,000 acre-ft (178 hm³). Diversions for irrigation of about 39,000 acres (158 km²) above station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--48 years (water years 1905, 1932-78), 244 ft³/s (6.910 m³/s), 176,800 acre-ft/yr (218 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 13,000 ft³/s (368 m³/s) Mar. 8, 1904, gage height, 15.0 ft (4.57 m) site and datum then in use; minimum, 0.1 ft³/s (0.003 m³/s) Apr. 29, Aug. 5, Sept. 18, 1934, Aug. 18-21, 1935.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,490 ft³/s (42.2 m³/s) Apr. 29, gage height, 5.32 ft (1.622 m); minimum daily, 1.8 ft³/s (0.051 m³/s) Aug. 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	85	42	82	231	103	140	213	1190	85	70	11	86
2	69	39	73	159	99	127	473	1030	43	46	34	102
3	58	38	67	134	96	142	914	893	34	47	18	85
4	61	35	64	132	100	221	926	738	24	46	6.6	82
5	65	69	64	246	100	538	642	613	37	47	4.0	77
6	60	100	62	352	107	697	556	543	65	48	1.8	69
7	61	73	64	419	197	524	608	500	71	49	4.0	67
8	76	58	66	381	243	378	820	449	81	47	3.6	74
9	54	63	64	417	283	289	875	401	94	46	28	78
10	38	78	65	626	262	240	584	345	65	48	42	113
11	31	69	64	593	215	219	453	309	49	46	96	140
12	29	56	64	423	177	202	425	287	43	44	88	151
13	30	58	65	292	145	193	370	270	48	46	61	143
14	35	55	108	250	130	193	402	244	39	51	69	127
15	36	52	175	272	122	170	451	283	27	46	79	95
16	37	51	278	436	117	150	444	313	24	41	78	73
17	38	51	266	454	109	131	410	366	21	39	61	56
18	37	51	233	365	108	123	395	377	22	30	41	53
19	32	48	152	318	111	118	337	337	22	10	36	61
20	27	44	98	277	121	118	342	297	39	17	37	64
21	23	40	95	270	131	122	398	232	46	19	41	82
22	24	47	94	236	122	153	442	252	35	13	52	73
23	28	64	102	189	122	222	379	228	32	15	59	75
24	21	78	120	148	120	305	335	231	33	74	61	89
25	20	95	110	123	122	258	319	290	31	32	66	76
26	27	106	130	123	130	217	352	296	29	6.6	71	65
27	29	104	195	130	135	187	609	303	35	4.4	67	56
28	26	107	235	130	148	171	890	238	54	24	66	48
29	23	97	254	120	---	164	1290	174	62	20	63	44
30	26	94	321	114	---	145	1420	115	66	9.8	64	42
31	33	---	341	108	---	124	---	92	---	13	71	---
TOTAL	1239	1962	4171	8468	3975	6981	17074	12236	1356	1094.8	1480.0	2446
MEAN	40.0	65.4	135	273	142	225	569	395	45.2	35.3	47.7	81.5
MAX	85	107	341	626	283	697	1420	1190	94	74	96	151
MIN	20	35	62	108	96	118	213	92	21	4.4	1.8	42
AC-FT	2460	3890	8270	16800	7880	13850	33870	24270	2690	2170	2940	4850
CAL YR 1977 TOTAL	23401.71			MEAN 64.1	MAX 448	MIN .66	AC-FT 46420					
WTR YR 1978 TOTAL	62482.80			MEAN 171	MAX 1420	MIN 1.8	AC-FT 123900					

SACRAMENTO RIVER BASIN

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11348500 PIT RIVER NEAR CANBY, CA--Continued

WATER-QUALITY RECORDS

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

CHEMICAL ANALYSES: Water years 1951 to current year.

WATER TEMPERATURES: Water years 1965 to current year.

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: March 1965 to current year.

INSTRUMENTATION.--Temperature recorder since March 1965.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 31.0°C June 28, 1973; minimum recorded, 0.0°C on many days during most years.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 29.0°C Aug. 7; minimum recorded, 0.5°C on several days during December.

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)
OCT							
04...	1500	61	314	8.4	17.0	18	10.8
NOV							
14...	1530	53	332	8.3	7.0	15	11.2
DEC							
05...	1450	63	301	8.2	6.0	15	11.6
20...	--	--	300	--	--	38	--
JAN							
03...	1600	131	257	8.1	3.5	34	11.1
FEB							
06...	1600	108	288	8.1	5.5	18	10.0
MAR							
13...	1605	187	239	7.9	8.0	30	10.2
14...	1350	191	259	--	--	33	--
APR							
11...	1530	442	193	--	--	37	--
12...	1415	423	186	7.6	15.0	33	8.3
MAY							
02...	1515	1020	180	7.4	15.0	37	8.2
22...	1430	245	183	--	17.0	--	--
JUN							
13...	1500	49	249	8.2	21.0	13	9.4
28...	0615	44	301	8.0	17.0	12	7.1
28...	1000	51	296	8.2	18.5	13	7.6
28...	1505	60	283	8.2	19.5	12	8.7
28...	1930	60	287	8.0	18.0	14	7.6
28...	2200	60	282	7.9	17.0	15	6.6
29...	0215	62	272	7.9	17.0	14	6.6
JUL							
06...	1325	48	218	8.3	24.0	6.0	9.8
AUG							
02...	0605	12	219	7.8	20.0	5.0	5.7
02...	1035	22	228	8.4	23.5	6.0	8.5
02...	1420	57	234	8.2	27.0	5.0	9.2
02...	1945	93	223	8.4	23.0	6.0	7.1
02...	2220	37	227	8.4	23.0	6.0	6.1
03...	0230	34	218	8.3	21.0	7.0	5.2
10...	1500	44	246	8.2	26.0	4.0	9.9
SEP							
06...	1245	66	243	8.4	18.0	11	9.6

DATE	TIME	HARD- NESS (MG/L AS CACO3)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	ALKA- LINEITY (MG/L AS CACO3)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	BORON, DIS- SOLVED (UG/L AS B)
SEP							
06...	1245	82	22	1.1	120	5.6	0

SACRAMENTO RIVER BASIN
11348500 PIT RIVER NEAR CANBY, 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	---	---	10.5	8.0	5.5	4.0	2.0	1.0	5.0	4.0	8.5	6.5
2	---	---	10.0	8.5	5.5	3.5	2.0	1.0	5.0	3.5	8.0	7.5
3	---	---	9.5	7.5	6.5	5.0	2.5	1.5	6.0	4.5	9.0	7.0
4	---	---	8.5	7.0	7.0	6.0	2.5	2.0	5.5	4.5	8.5	7.5
5	---	---	7.5	6.5	6.5	4.5	3.0	2.0	6.5	5.0	7.5	7.0
6	---	---	8.0	6.5	5.5	4.5	3.0	2.5	6.0	5.5	8.5	6.5
7	---	---	8.0	6.0	5.0	4.5	3.0	2.5	5.5	4.5	9.5	7.5
8	---	---	7.0	5.5	5.0	3.5	4.0	3.0	4.0	3.5	9.5	9.0
9	---	---	5.5	4.5	4.0	2.5	4.5	4.0	5.0	3.5	10.0	8.0
10	---	---	6.0	4.0	3.5	2.5	4.5	4.0	4.5	3.5	10.5	7.5
11	---	---	6.5	5.0	3.5	2.5	4.5	4.0	3.5	2.5	9.5	8.0
12	---	---	8.0	6.5	3.5	2.5	4.5	4.0	3.5	2.5	8.5	6.0
13	15.5	10.5	8.5	7.5	4.0	3.5	5.5	4.5	5.0	3.0	8.0	6.5
14	15.5	10.5	7.5	6.5	5.0	4.0	5.5	5.0	5.0	3.0	8.0	5.5
15	15.5	10.5	7.5	6.0	5.0	3.5	5.5	4.5	4.5	3.0	9.5	5.5
16	16.0	11.5	7.0	5.5	3.0	2.0	4.5	4.0	3.5	2.5	11.0	7.0
17	16.0	11.5	6.0	5.0	2.5	1.5	4.5	4.0	3.5	2.5	12.0	8.5
18	15.5	11.0	5.0	2.5	1.5	1.0	4.5	4.0	6.0	3.0	13.0	9.0
19	15.0	11.0	2.5	1.0	1.0	0.5	4.5	4.0	7.5	4.5	14.0	10.5
20	14.0	10.0	1.5	1.0	1.0	0.5	5.0	4.0	8.5	5.5	14.0	10.0
21	13.0	9.5	1.0	1.0	1.0	0.5	5.0	4.0	8.5	6.5	12.5	11.0
22	12.0	8.5	1.5	1.0	1.0	0.5	4.5	4.0	9.5	6.5	11.0	9.5
23	11.0	9.5	1.5	1.0	1.5	0.5	3.5	2.5	10.0	7.0	9.5	8.5
24	13.0	9.5	3.5	1.5	1.5	0.5	3.0	2.0	9.0	8.0	11.0	7.5
25	13.0	11.5	5.5	2.5	1.0	0.5	3.5	2.0	9.0	7.5	13.0	9.0
26	14.0	11.5	7.0	5.5	1.0	0.5	4.5	3.0	8.0	7.0	13.5	11.0
27	12.5	10.0	7.0	6.0	2.0	1.0	5.0	3.0	8.5	6.0	15.5	11.5
28	11.0	9.0	6.0	5.0	2.5	2.0	5.0	3.5	9.0	6.0	16.0	12.0
29	10.0	8.0	6.5	5.0	3.5	2.5	5.5	3.5	---	---	15.0	12.5
30	10.0	7.5	6.0	4.5	3.5	2.5	5.5	4.0	---	---	16.0	13.0
31	9.5	7.0	---	---	3.0	2.0	5.5	4.0	---	---	14.5	11.0
MONTH	---	---	10.5	1.0	7.0	0.5	5.5	1.0	10.0	2.5	16.0	5.5

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.5	9.0	13.5	10.5	20.5	16.5	22.5	17.5	27.5	20.5	23.0	18.0
2	8.5	7.5	15.5	11.0	22.5	15.5	22.5	18.0	27.0	20.0	21.5	18.0
3	8.0	6.5	16.0	12.5	23.0	16.5	21.0	18.0	28.0	20.5	21.5	18.0
4	8.0	7.0	15.0	12.0	23.5	17.0	21.0	17.5	27.0	22.0	21.0	16.5
5	7.5	7.0	12.0	9.5	25.5	17.5	22.5	18.0	28.0	20.5	18.5	16.5
6	7.5	5.5	11.0	9.0	26.0	19.0	24.0	19.5	28.0	19.5	19.5	16.0
7	8.5	5.5	14.0	9.5	26.5	19.0	23.5	21.0	29.0	19.5	17.5	15.0
8	9.0	5.0	16.5	12.0	25.0	19.5	25.0	19.5	27.5	20.0	18.0	13.5
9	11.5	8.0	17.0	14.5	24.0	20.0	25.5	20.0	27.5	21.5	15.0	13.5
10	14.5	10.5	17.5	14.5	21.0	18.5	25.5	20.5	26.5	20.5	14.0	12.5
11	16.0	12.5	15.5	12.0	23.0	16.5	24.5	19.5	24.5	21.0	16.0	13.0
12	15.0	12.0	16.5	12.5	20.0	17.0	25.0	19.0	23.0	19.0	16.5	13.5
13	15.0	11.0	18.0	13.5	21.5	16.5	25.5	19.5	22.5	18.5	15.5	14.0
14	12.0	9.5	18.0	14.0	22.0	16.0	26.0	20.0	22.5	17.0	15.5	13.5
15	11.0	9.0	14.0	12.0	21.5	15.5	25.5	20.5	22.0	18.0	17.5	13.5
16	9.0	6.5	15.5	10.5	23.0	15.5	25.0	20.0	22.5	19.0	19.0	14.0
17	9.0	6.0	16.0	11.5	23.5	15.5	26.0	20.0	22.0	17.5	16.0	13.0
18	11.5	6.5	18.0	14.0	22.0	17.0	26.5	20.5	23.0	17.0	14.5	12.0
19	12.0	8.5	18.5	15.5	24.5	16.5	27.5	19.0	22.5	16.5	15.0	10.5
20	11.0	8.5	19.5	14.5	24.0	17.5	27.0	20.0	22.0	16.5	15.0	10.0
21	10.0	7.0	20.5	15.5	24.0	18.5	27.0	19.5	21.0	16.0	15.0	11.5
22	11.0	7.5	17.5	14.5	24.0	18.5	28.0	19.5	19.0	16.5	16.0	11.5
23	13.0	8.5	15.5	12.5	23.5	17.5	27.5	20.5	20.0	15.5	17.5	13.0
24	13.0	11.0	12.5	10.5	19.5	16.5	26.5	19.5	20.0	15.5	18.0	14.0
25	12.0	11.0	13.5	9.5	21.5	14.5	26.5	21.5	19.5	16.0	18.0	15.5
26	11.0	9.0	15.5	11.0	21.0	16.5	26.0	20.5	21.0	16.5	16.5	15.0
27	11.0	8.0	18.0	13.0	23.0	16.0	27.5	19.5	21.5	17.0	17.0	13.5
28	12.0	9.0	21.5	21.0	21.0	17.0	26.0	19.5	22.5	18.0	18.0	13.5
29	15.0	9.5	22.0	17.0	21.0	17.0	26.5	20.0	23.5	19.0	18.0	13.5
30	14.5	11.0	20.0	16.5	22.5	17.0	27.0	18.5	21.5	19.5	18.5	14.0
31	---	---	19.5	15.5	---	---	27.5	21.0	22.5	18.5	---	---
MONTH	16.0	5.0	22.0	9.0	26.5	14.5	28.0	17.5	29.0	15.5	23.0	10.0

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LOCATION.--Lat 41°19'27", long 121°07'36", in SE¼NE¼ sec.11, T.40 N., R.7 E., Modoc County, on right bank 0.2 mi (0.3 km) downstream from unnamed tributary, and 8.2 mi (13.2 km) north of Lookout.

GAGE.--Water-stage recorder. Datum of gage is 4,147.9 ft (1,264.28 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). January 1929 to September 1931 at site approximately 2.5 mi (4.0 km) downstream at different datum.

AVERAGE DISCHARGE.--15 years (water years 1930-31, 1959-71), 299 ft³/s (8.468 m³/s), 216,600 acre-ft/yr (267 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,900 ft³/s (309 m³/s) Jan. 24, 1970, gage height, 20.96 ft (6.389 m); no flow Aug. 29, 1931.

[illegible]

SACRAMENTO RIVER BASIN

11350500 ASH CREEK AT ADIN, CA

LOCATION.--Lat 41°11'54", long 120°56'32", in SE¼SW¼ sec.21, T.39 N., R.9 E., Modoc County, on left bank 300 ft (91 m) upstream from highway bridge at Adin, and 0.4 mi (0.6 km) upstream from Butte Creek.

DRAINAGE AREA.--258 mi² (668 km²).

PERIOD OF RECORD.--March 1904 to December 1905, October 1928 to November 1932, October 1957 to current year.
Records of daily discharge for Oct. 19-31, 1928, are in error and should not be used.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,190 ft (1,277 m), on basis of bench mark 300 ft (91 m) downstream. Prior to Sept. 12, 1957, water-stage recorder or nonrecording gage at sites within 1 mi (2 km) of present site, at different datums.

REMARKS.--Small diversions above station for irrigation. Flow regulated by many small reservoirs, total capacity, 4,732 acre-ft (5.83 hm³). See schematic diagram of Pit and McCloud River basins.

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

AVERAGE DISCHARGE.--26 years (water years 1905, 1929-32, 1958-78), 75.3 ft³/s (2.132 m³/s), 54,550 acre-ft/yr (67.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,950 ft³/s (83.5 m³/s) Jan. 24, 1970, gage height, 14.69 ft (4.478 m) in gage well, 15.24 ft (4.645 m) from floodmarks; no flow for part of Aug. 26, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 638 ft³/s (18.1 m³/s) Apr. 26, gage height, 8.41 ft (2.563 m); minimum daily, 5.2 ft³/s (0.15 m³/s) Aug. 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	31	33	33	47	45	68	476	268	24	26	23	17
2	31	33	33	46	47	76	352	188	25	25	18	8.7
3	32	34	33	53	49	93	219	162	23	26	19	8.1
4	29	34	33	58	47	212	192	144	22	28	18	8.5
5	27	36	34	156	46	331	167	131	20	25	18	11
6	27	34	33	240	57	315	299	119	17	19	18	17
7	29	34	33	124	129	256	266	110	16	21	17	15
8	28	33	32	111	115	189	184	101	15	18	17	15
9	27	33	31	199	143	167	152	92	15	17	17	16
10	27	33	31	200	110	144	138	92	18	16	17	21
11	26	33	37	118	77	141	130	84	20	14	17	25
12	27	34	49	106	65	131	120	79	21	14	19	22
13	27	34	45	107	66	118	111	73	21	14	22	19
14	28	34	92	124	70	104	151	66	19	13	21	23
15	28	33	141	121	72	94	136	82	19	11	21	19
16	28	33	56	140	59	91	161	87	25	13	23	17
17	29	33	42	221	57	79	139	71	28	13	22	17
18	29	33	42	156	61	73	122	61	28	11	22	18
19	29	30	37	152	70	68	116	55	24	11	22	18
20	30	30	36	127	72	67	197	46	18	10	17	17
21	31	34	34	99	67	72	165	38	19	11	18	18
22	32	38	40	90	66	177	133	34	17	11	24	18
23	32	41	127	68	67	149	120	39	15	11	20	19
24	34	40	102	58	68	152	116	54	16	11	19	21
25	34	46	59	59	68	122	149	56	18	9.9	11	23
26	35	47	44	59	77	110	386	49	20	11	5.2	27
27	34	40	122	55	79	101	462	40	21	21	8.2	22
28	34	36	103	52	71	94	328	35	23	14	13	22
29	33	34	96	50	---	91	255	29	31	13	14	22
30	35	33	133	49	---	88	326	25	27	14	15	23
31	33	---	80	47	---	103	---	25	---	20	18	---
TOTAL	936	1053	1843	3292	2020	4076	6268	2535	625	491.9	553.4	547.3
MEAN	30.2	35.1	59.5	106	72.1	131	209	81.8	20.8	15.9	17.9	18.2
MAX	35	47	141	240	143	331	476	268	31	28	24	27
MIN	26	30	31	46	45	67	111	25	15	9.9	5.2	8.1
AC-FT	1860	2090	3660	6530	4010	8080	12430	5030	1240	976	1100	1090
CAL YR 1977	TOTAL	11524.9	MEAN	31.6	MAX	141	MIN	5.2	AC-FT	22860		
WTR YR 1978	TOTAL	24240.6	MEAN	66.4	MAX	476	MIN	5.2	AC-FT	48080		

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

LOCATION.--Lat 40°59'00", long 121°30'39", in NE¼NW¼ sec.15, T.36 N., R.4 E., Shasta County, on left bank 0.9 mi (1.4 km) downstream from Pit No. 1 powerhouse and 4 mi (6 km) southwest of Fall River Mills.

DRAINAGE AREA.--3,761 mi² (9,741 km²), excluding Goose Lake basin.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 2,840 ft (865.6 m), from topographic map.

REMARKS.--Records good. Flow regulated by many small reservoirs, total usable reservoir capacity, 210,000 acre-ft (259 hm³), and Pit No. 1 powerplant. Many diversions above station for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,290 ft³/s (121 m³/s) Apr. 8, 1978, gage height, 8.36 ft (2.548 m); minimum daily, 920 ft³/s (26.1 m³/s) Oct. 26, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of January 1974 reached a stage of 14.8 ft (4.51 m), from floodmarks, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,290 ft³/s (121 m³/s) Apr. 8, gage height, 8.36 ft (2.548 m); minimum daily, 920 ft³/s (26.1 m³/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	1250	1380	1440	2210	1280	2000	2380	3710	1390	1280	1310	1260
2	1360	1330	1410	2050	1630	1950	2950	3710	1410	1240	1290	1260
3	1410	1340	1380	1910	1760	2020	3120	3570	1390	1310	1280	1260
4	1300	1360	1490	1890	1740	2430	3210	3220	1330	1280	1170	1260
5	1480	1180	1340	2010	1760	3220	3280	3100	1370	1330	1260	1300
6	1350	1520	1520	2640	1990	3950	3360	2800	1340	1290	1260	1310
7	1270	1340	1400	2860	2420	3790	3610	2500	1330	1300	1270	1260
8	1310	1300	1450	2690	2980	3540	4030	2410	1300	1310	1350	1320
9	1300	1360	1360	2780	3530	3340	3800	2310	1320	1300	1200	1280
10	1290	1360	1380	3120	3330	3260	3560	2240	1340	1280	1290	1340
11	1330	1320	1440	3140	2950	3120	3410	2080	1250	1200	1280	1360
12	1310	1430	1430	2980	2570	2920	2920	2050	1300	1260	1240	1360
13	1330	1440	1440	2930	2400	2760	2650	1960	1310	1360	1280	1330
14	1320	1440	1620	2720	2270	2520	2650	1920	1320	1260	1320	1350
15	1290	1480	1680	2700	2200	2250	2900	2100	1320	1250	1290	1320
16	1290	1330	2230	3100	2160	2370	3000	2280	1320	1280	1310	1330
17	1330	1370	2090	3790	2000	2180	2860	2020	1310	1270	1220	1260
18	1390	1370	1930	4050	1990	2170	2700	2050	1280	1260	1330	1370
19	1330	1420	1650	3840	2040	2090	2570	1990	1300	1350	1270	1280
20	1290	1360	1690	3280	1910	2040	2940	1880	1260	1180	1250	1280
21	1360	1550	1600	2980	1950	1970	3180	1770	1340	1270	1270	1290
22	1250	1350	1540	2590	1920	2290	3080	1880	1230	1180	1260	1320
23	1400	1470	1960	2400	1940	2380	2940	1760	1270	1290	1300	1320
24	1300	1400	2030	2210	1880	2520	2760	1900	1280	1240	1250	1350
25	1410	1440	1940	2030	1870	2710	2570	1910	1280	1240	1300	1310
26	920	1470	2000	2000	1940	2570	2590	1760	1320	1280	1280	1220
27	1580	1500	2030	1920	1950	2430	2570	1750	1240	1280	1240	1320
28	1330	1540	2040	1840	1930	2320	2690	1710	1280	1270	1370	1410
29	1280	1480	1970	1900	---	2210	2980	1640	1290	1280	1270	1400
30	1400	1510	2140	1830	---	2210	3280	1620	1290	1280	1240	1330
31	1370	---	2380	1640	---	2170	---	1420	---	1270	1360	---
TOTAL	41130	42140	53000	80030	60290	79700	90540	69020	39310	39470	39610	39360
MEAN	1327	1405	1710	2582	2153	2571	3018	2226	1310	1273	1278	1312
MAX	1580	1550	2380	4050	3530	3950	4030	3710	1410	1360	1370	1410
MIN	920	1180	1340	1640	1280	1950	2380	1420	1230	1180	1170	1220
AC-FT	81580	83580	105100	158700	119600	158100	179600	136900	77970	78290	78570	78070
CAL YR 1977 TOTAL	510351			1398	2380	920	AC-FT	1012000				
WTR YR 1978 TOTAL	673600			1845	4050	920	AC-FT	1336000				

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL ANALYSES: Water year 1977 to September 1978 (discontinued).

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)	ALKA- LITY (MG/L AS CAC03)
DEC 13...	1300	1390	169	7.8	8.5	10.7	75

SACRAMENTO RIVER BASIN

11355500 HAT CREEK NEAR HAT CREEK, CA

LOCATION.--Lat 40°41'12", long 121°25'25", in NW¼SE¼ sec.28 (revised), T.33 N., R.5 E., Shasta County, on right bank 0.8 mi (1.3 km) northeast of Old Station Post Office, and 8 mi (13 km) southeast of Hat Creek Post Office.

DRAINAGE AREA.--162 mi² (420 km²), hydrologic drainage boundary uncertain owing to ground-water exchange.

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Altitude of gage is 4,300 ft (1,311 m), from topographic map. July 1926 to April 1928 at site 0.5 mi (0.8 km) upstream at different datum. May 1928 to July 1965 at site 80 ft (24 m) upstream at datum 2.76 ft (0.841 m) higher.

REMARKS.--Records excellent. Diversions for irrigation of 260 acres (1.05 km²) above station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--51 years, 140 ft³/s (3.965 m³/s), 101,400 acre-ft/yr (125 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,320 ft³/s (94.0 m³/s) Dec. 11, 1937, gage height, 7.75 ft (2.362 m) in gage well, affected by drawdown, site and datum then in use, from rating curve extended above 610 ft³/s (17.3 m³/s) on basis of slope-area measurement of maximum flow; minimum, 67 ft³/s (1.90 m³/s) Sept. 7, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 220 ft³/s (6.23 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 15	0500	*398 11.3	4.17 1.271
May 15	0330	278 7.87	3.57 1.088
June 9	2315	302 8.55	3.69 1.125

Minimum daily, 118 ft³/s (3.34 m³/s) November, December, February, and March.

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	128	124	120	122	123	118	148	148	219	203	145	122
2	127	124	120	127	124	118	141	151	206	199	144	121
3	127	124	120	126	123	119	135	148	215	191	142	122
4	127	124	120	126	122	124	133	153	227	189	141	120
5	127	125	120	127	126	125	131	150	244	187	140	121
6	127	124	120	123	126	124	131	146	261	190	138	127
7	126	124	120	123	127	122	131	148	265	192	137	123
8	125	123	118	125	122	121	129	154	265	185	137	126
9	125	122	118	134	122	121	129	164	279	188	134	141
10	125	122	119	130	122	120	130	176	269	192	131	154
11	125	122	121	128	121	122	132	189	250	188	131	136
12	125	121	120	125	120	121	135	189	246	182	131	133
13	123	121	120	127	120	121	135	203	249	178	131	132
14	123	120	171	134	120	120	136	234	247	177	130	132
15	123	120	284	131	120	120	135	251	232	179	129	130
16	123	120	163	129	119	120	134	203	235	177	126	130
17	123	120	146	128	120	121	132	194	220	171	125	130
18	122	119	133	129	120	122	130	201	228	168	127	130
19	122	119	126	128	120	122	130	212	231	167	129	130
20	122	118	127	127	120	123	131	220	231	165	132	130
21	122	121	130	126	120	126	129	227	227	163	131	129
22	122	121	130	125	118	129	128	226	229	160	135	129
23	122	118	128	122	118	129	128	219	228	158	133	128
24	122	118	125	122	118	128	130	189	226	156	132	128
25	123	120	123	125	118	127	137	175	217	154	132	127
26	123	122	126	127	118	128	140	170	211	153	132	127
27	123	121	129	125	118	130	137	175	202	152	131	127
28	122	120	130	125	118	131	143	196	209	149	129	127
29	122	120	128	124	---	134	143	219	209	146	123	127
30	123	120	127	124	---	138	149	223	206	147	125	126
31	124	---	121	124	---	147	---	221	---	148	123	---
TOTAL	3843	3637	4103	3918	3383	3871	4032	5874	6983	5354	4106	3865
MEAN	124	121	132	126	121	125	134	189	233	173	132	129
MAX	128	125	284	134	127	147	149	251	279	203	145	154
MIN	122	118	118	122	118	118	128	146	202	146	123	120
AC-FT	7620	7210	8140	7770	6710	7680	8000	11650	13850	10620	8140	7670

CAL YR 1977 TOTAL 46021 MEAN 126 MAX 284 MIN 112 AC-FT 91280
WTR YR 1978 TOTAL 52969 MEAN 145 MAX 284 MIN 118 AC-FT 105100

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1977-78.

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)	ALKA- LITY (MG/L AS CaCO3)
DEC 13...	1500	121	154	7.7	8.5	10.5	75

11360500 BURNEY CREEK AT PARK AVENUE, NEAR BURNEY, CA

LOCATION.--Lat 40°52'35", long 121°40'13", in NE&SE¼ sec.19, T.35 N., R.3 E., Shasta County, on right bank upstream edge of Park Avenue bridge, 0.4 mi (0.6 km) southwest of Burney Post Office, and 3.5 mi (5.6 km) upstream from Goose Creek.

DRAINAGE AREA.--94.6 mi² (245.0 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1911 to August 1913 (published as "at Burney"), March 1921 to September 1922, April 1958 to September 1964, October 1965 to September 1974 (published as "near Burney"), October 1974 to September 1975, October 1976 to September 1977. Monthly discharge only for some periods, published in WSP 1315-A.

REVISIONS.--WSP 1931: Drainage area. WDR CA-71-2: 1970.

GAGE.--Water-stage recorder. Altitude of gage is 3,180 ft (969 m), from topographic map. August 1911 to August 1913 and March 1921 to September 1922, nonrecording gage or water-stage recorder at different site and datum. April 1958 to September 1964, October 1965 to Nov. 6, 1974, at site 1.0 mi (1.6 km) upstream at different datum.

REMARKS.--Small diversions upstream for irrigation. Slight regulation probably caused by logging operations.

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

AVERAGE DISCHARGE.--21 years (water years 1912-13, 1922, 1959-64, 1966-75, 1977-78), 70.0 ft³/s (1.982 m³/s), 50,720 acre-ft/yr (62.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,910 ft³/s (139 m³/s) Jan. 23, 1970, gage height, 15.89 ft (4.843 m), from rating curve extended above 2,500 ft³/s (70.8 m³/s) on basis of contracted-opening measurement of maximum flow; minimum, 3.4 ft³/s (0.096 m³/s) Aug. 4, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 837 ft³/s (23.7 m³/s) Jan. 16, gage height, 6.17 ft (1.881 m); minimum daily, 6.6 ft³/s (0.187 m³/s) Aug. 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	11	11	15	57	72	107	297	149	58	20	10	11
2	11	11	15	58	86	132	241	144	55	20	9.7	11
3	11	11	15	74	103	187	193	138	58	19	9.0	11
4	10	11	15	75	88	314	187	130	63	19	9.5	11
5	11	13	16	173	121	432	175	122	60	18	8.2	11
6	10	12	15	139	233	384	207	117	58	18	6.6	12
7	9.2	11	16	109	403	268	185	113	56	17	7.0	11
8	8.4	11	15	126	307	358	167	110	54	17	7.4	11
9	8.7	11	16	402	236	397	163	111	52	16	8.1	14
10	9.5	11	16	392	194	295	164	112	49	15	8.5	16
11	9.0	11	22	268	157	275	161	110	46	15	9.2	13
12	8.6	12	22	250	137	233	151	105	43	15	10	12
13	8.4	12	22	236	124	201	144	105	40	15	11	12
14	8.4	12	109	390	120	180	171	111	38	14	12	12
15	8.6	12	216	477	118	166	149	174	35	14	12	12
16	8.7	12	74	624	105	155	149	164	36	15	12	12
17	8.7	12	59	586	98	149	143	139	34	18	13	12
18	8.7	12	46	384	96	145	131	122	32	17	13	13
19	8.7	12	40	351	96	138	148	111	29	16	13	15
20	8.7	12	35	287	96	134	212	105	28	15	13	14
21	8.7	12	33	217	94	141	176	102	27	15	13	14
22	8.4	12	43	184	93	185	159	99	26	14	14	14
23	8.6	13	88	148	93	199	154	99	25	14	13	14
24	8.7	13	67	124	95	192	148	97	23	13	12	15
25	11	13	52	113	94	161	185	92	22	12	12	15
26	11	14	45	103	122	149	178	86	22	12	12	15
27	11	15	62	93	139	141	161	81	21	11	12	15
28	11	15	68	88	115	136	154	77	22	11	12	16
29	12	16	68	83	---	134	146	76	21	11	11	16
30	13	15	93	79	---	145	141	74	21	11	12	17
31	11	---	68	76	---	156	---	70	---	10	12	---
TOTAL	300.7	370	1486	6766	3835	6389	5140	3445	1154	467	337.2	397
MEAN	9.70	12.3	47.9	218	137	206	171	111	38.5	15.1	10.9	13.2
MAX	13	16	216	624	403	432	297	174	63	20	14	17
MIN	8.4	11	15	57	72	107	131	70	21	10	6.6	11
AC-FT	596	734	2950	13420	7610	12670	10200	6830	2290	926	669	787
CAL YR 1977 TOTAL	6055.9			MEAN 16.6	MAX 216	MIN 5.4	AC-FT 12010					
WTR YR 1978 TOTAL	30086.9			MEAN 82.4	MAX 624	MIN 6.6	AC-FT 59680					

SACRAMENTO RIVER BASIN

11360500 BURNEY CREEK AT PARK AVENUE, NEAR BURNEY, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1951-58, 1977, 1977 to September 1978 (discontinued).

REMARKS.--Reported as "Burney Creek near Burney during period 1951-58.

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)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
DEC 13...	0945	16	91	7.4	5.0	3	11.3	9.2	4.6	4.0	1.2

DATE	BICAR- BONATE (MG/L AS HCO3)	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, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)
DEC 13...	59	48	4.5	.9	.1	27	70	81	.10	3.02

RESERVOIRS IN PIT AND MCCLLOUD RIVER BASINS, CA

11361400 LAKE BRITTON NEAR BURNEY.--Lat 41°01'20", long 121°40'32", in SW¼SW¼ sec.30, T.37 N., R.3 E., Shasta County, Shasta National Forest, at control house on right bank 200 ft (61 m) upstream from dam on Pit River, 1.1 mi (1.8 km) downstream from Clark Creek, 1.3 mi (2.1 km) northwest of Burney Falls, and 9 mi (14 km) north of Burney. DRAINAGE AREA, 4,607 mi² (11,932 km²). PERIOD OF RECORD, October 1965 to current year. GAGE, remote telemark read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.).

Reservoir is formed by gravity-type concrete dam. Storage began July 15, 1925. Maximum storage, 40,626 acre-ft (50.1 hm³). Dead storage, 30 acre-ft (370 m³). Normal operating pool is from elevation 2,744.0 ft (836.37 m), capacity, 26,183 acre-ft (32.3 hm³) to 2,757.0 ft (840.33 m), capacity, 40,626 acre-ft (50.1 hm³). Record of contents collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project. See schematic diagram of Pit and McCloud River basins. Records prior to water year 1977 reported usable contents only.

EXTREMES FOR PERIOD OF RECORD: Maximum total contents, 46,576 acre-ft (57.4 hm³) Jan. 25, 1970, elevation, 2,761.55 ft (841.720 m); minimum total contents, 26,755 acre-ft (33.0 hm³) Oct. 9, 1976, elevation, 2,744.60 ft (836.554 m).

EXTREMES FOR CURRENT YEAR: Maximum contents, 39,994 acre-ft (49.3 hm³) Aug. 13, Sept. 25, elevation, 2,756.50 ft (840.181 m); minimum, 27,435 acre-ft (33.8 hm³) May 31, elevation, 2,745.30 ft (836.767 m).

11363920 IRON CANYON RESERVOIR NEAR BIG BEND.--Lat 41°02'41", long 121°58'52", in SW¼SE¼ sec.21, T.37 N., R.1 W., Shasta County, Shasta National Forest, in control house on left bank 500 ft (150 m) upstream from Iron Canyon Dam on Iron Canyon Creek, 3.7 mi (6.0 km) northwest of Big Bend. DRAINAGE AREA, 11.1 mi² (28.7 km²). PERIOD OF RECORD, December 1965 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 a rockfill dam completed in 1965. Capacity is 24,200 acre-ft (29.8 hm³) between elevations 2,525.00 ft (769.620 m), invert of sluice pipe and 2,665.00 ft (812.292 m), crest of spillway. No dead storage. Water is diverted from Lake McCloud through a tunnel to Iron Canyon Reservoir and thence into the Pit River via a powerplant. Record of contents collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project. See schematic diagram of Pit and McCloud River basins.

EXTREMES FOR PERIOD OF RECORD: Maximum contents, 23,539 acre-ft (29.0 hm³) May 16, 22, 1977, elevation, 2,663.60 ft (811.865 m); normal minimum since initial operation of reservoir, 2,860 acre-ft (3.53 hm³) May 23, 24, 29, June 2, 7, 9, 14, 23, 24, 1966, elevation, 2,590.00 ft (789.432 m). Reservoir drained for inspection Feb. 10, 1971. Contents reduced to 195 acre-ft (240,000 m³), elevation, 2,540.00 ft (774.192 m).

EXTREMES FOR CURRENT YEAR: Maximum contents, 21,468 acre-ft (26.5 hm³) Mar. 19, elevation, 2,659.30 ft (810.555 m); minimum, 3,404 acre-ft (4.20 hm³) Jan. 20, elevation, 2,594.70 ft (790.865 m).

11367740 LAKE MCCLLOUD NEAR MCCLLOUD.--Lat 41°08'06", long 122°04'26", in SE¼SW¼ sec.22, T.38 N., R.2 W., Shasta County, Shasta National Forest, on McCloud Dam near spillway on McCloud River, 200 ft (61 m) downstream from Panther Creek, and 8.8 mi (14.1 km) southeast of McCloud. DRAINAGE AREA, 403 mi² (1,044 km²). PERIOD OF RECORD, October 1965 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 a rockfill dam completed in 1965. Capacity, 35,234 acre-ft (43.4 hm³) between elevations 2,471.30 ft (753.252 m), invert of sluice pipe and 2,680.00 ft (816.864 m), maximum operational water surface. No dead storage. Water is diverted from Lake McCloud through a diversion tunnel to Iron Canyon Reservoir and thence into the Pit River. Record of contents collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project. See schematic diagram of Pit and McCloud River basins.

EXTREMES FOR PERIOD OF RECORD: Maximum contents, 35,967 acre-ft (44.3 hm³) Jan. 15, 1974, elevation, 2,681.40 ft (817.291 m); minimum since storage pool first filled, 15,700 acre-ft (19.4 hm³) Jan. 22, 1967, elevation, 2,632.60 ft (802.416 m).

EXTREMES FOR CURRENT YEAR: Maximum contents, 34,717 acre-ft (42.8 hm³) Apr. 12, elevation, 2,679.00 ft (816.559 m); minimum, 17,814 acre-ft (22.0 hm³) Oct. 28, elevation, 2,639.20 ft (804.428 m).

MONTHEND ELEVATION NGVD AND CONTENTS, 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)	Elevation (feet)	Contents (acre- feet)	Change in contents (acre- feet)
	11361400 LAKE BRITTON			11363920 IRON CANYON RESERVOIR			11367740 LAKE MCCLLOUD		
Sept. 30.....	2753.75	36626	--	2637.90	13010	--	2657.90	24900	--
Oct. 31.....	2752.00	34577	-2049	2631.10	10905	-2105	2640.40	18224	-6676
Nov. 30.....	2750.80	33215	-1362	2630.30	10637	-268	2643.10	19169	+945
Dec. 31.....	2746.90	29037	-4178	2610.80	5937	-4700	2651.90	22463	+3294
CAL YR 1977..	--	--	-1509	--	--	-2678	--	--	+4273
Jan. 31.....	2746.35	28479	-558	2598.10	3848	-2089	2669.70	30124	+7661
Feb. 28.....	2747.55	29707	+1228	2636.60	12589	+8741	2675.80	33094	+2970
Mar. 31.....	2752.40	35038	+5331	2596.30	3608	-8981	2678.90	34665	+1571
Apr. 30.....	2754.20	37164	+2126	2597.90	3821	+213	2673.90	32154	-2511
May 31.....	2745.30	27435	-9729	2621.10	8214	+4393	2670.30	30424	-1730
June 30.....	2752.60	35271	+7836	2648.80	16939	+8725	2677.30	33848	+3424
July 31.....	2755.60	38872	+3601	2637.70	12944	-3995	2668.90	29768	-4080
Aug. 31.....	2753.40	36210	-2662	2632.90	11438	-1506	2654.20	23379	-6389
Sept. 30.....	2754.40	37406	+1196	2623.00	8691	-2747	2646.30	20329	-3050
WTR YR 1978..	--	--	+780	--	--	-4319	--	--	-4571

SACRAMENTO RIVER BASIN

11362500 PIT RIVER BELOW PIT NO. 4 DAM, CA

LOCATION.--Lat 40°58'25", long 121°46'42", unsurveyed, T.36 N., R.2 E., Shasta County, Shasta National Forest, on right bank 0.6 mi (1.0 km) downstream from Ruling Creek, 1.3 mi (2.1 km) downstream from Pit No. 4 Dam, and 2.7 mi (4.3 km) downstream from Pit No. 3 powerhouse.

DRAINAGE AREA.--4,648 mi² (12,038 km²), excluding Goose Lake basin.

PERIOD OF RECORD.--May 1922 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "near Pecks Bridge" April to October 1922, and as "at Lindsay Flat" November 1922 to June 1927.

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

GAGE.--Water-stage recorder. Altitude of gage is 2,358 ft (718.7 m), from river-profile map. Prior to November 1922, water-stage recorder at site at Pecks Bridge 7.4 mi (11.9 km) upstream at different datum. November 1922 to June 20, 1927, at site at Lindsay Flat 1.8 mi (2.9 km) upstream at different datum.

REMARKS.--Flow regulated by small reservoirs and powerplants, total usable reservoir capacity, 253,000 acre-ft (312 hm³). Many diversions above station; diversion to Pit No. 4 powerplant began June 9, 1955. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records 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.--56 years (water years 1923-78), 2,716 ft³/s (76.92 m³/s), 1,968,000 acre-ft/yr (2.43 km³/yr), adjusted for diversion to Pit No. 4 powerplant.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,000 ft³/s (878 m³/s) Jan. 25, 1970, gage height, 18.04 ft (5.499 m), from rating curve extended above 17,000 ft³/s (481 m³/s); minimum daily, 234 ft³/s (6.63 m³/s) Sept. 13, 1953. Minimum daily discharge since diversion to Pit No. 4 powerplant in 1955, 22 ft³/s (0.62 m³/s) Dec. 2-4, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,200 ft³/s (147 m³/s) Mar. 9, gage height, 9.58 ft (2.920 m); minimum daily, 41 ft³/s (1.16 m³/s) Feb. 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	109	86	59	57	51	55	68	484	148	147	143	141
2	102	68	52	55	49	55	102	771	154	151	140	145
3	87	74	52	57	49	55	287	712	153	148	147	139
4	87	80	52	56	50	56	624	484	151	145	146	138
5	91	78	53	59	48	57	1110	293	153	145	145	141
6	98	80	62	57	50	57	944	148	151	150	141	140
7	103	78	63	101	52	1060	695	149	148	149	145	144
8	103	74	62	67	49	1920	562	148	148	147	145	145
9	104	75	64	68	58	2290	988	153	147	148	146	139
10	105	73	65	63	858	1170	712	153	150	146	143	144
11	106	75	64	50	646	1060	571	157	150	146	142	143
12	106	74	64	165	196	735	200	150	154	147	145	139
13	105	72	64	475	41	512	98	157	151	144	141	141
14	104	74	67	365	50	218	95	151	141	143	143	146
15	108	74	63	473	53	79	101	149	146	148	145	146
16	107	75	65	999	52	52	137	151	148	149	143	143
17	104	77	64	1950	53	51	236	157	151	144	146	142
18	107	76	63	2190	54	50	132	147	151	142	148	147
19	108	72	64	2000	54	50	98	153	147	142	144	140
20	109	70	64	1260	54	50	116	150	146	146	140	143
21	108	81	65	737	54	50	592	152	148	150	145	139
22	103	77	65	277	53	52	562	144	150	148	143	138
23	104	76	64	94	52	53	352	158	146	146	143	141
24	105	75	63	49	52	52	247	153	147	144	143	140
25	110	76	63	48	51	50	126	157	148	149	138	139
26	109	78	64	48	53	49	96	157	149	150	140	141
27	106	76	65	48	54	50	97	147	150	143	146	148
28	108	77	65	49	54	52	141	155	147	143	139	153
29	106	76	69	49	---	52	150	158	150	143	142	155
30	109	79	66	49	---	52	155	152	149	149	140	154
31	109	---	61	50	---	52	---	149	---	147	143	---
TOTAL	3230	2276	1936	12065	2990	10196	10394	6699	4472	4539	4440	4294
MEAN	104	75.9	62.5	389	107	329	346	216	149	146	143	143
MAX	110	86	69	2190	858	2290	1110	771	154	151	148	155
MIN	87	68	52	48	41	49	68	144	141	142	138	138
AC-FT	6410	4510	3840	23930	5930	20220	20620	13290	8870	9000	8810	8520
MEAN ‡	2113	2267	2809	4056	3464	3934	4289	3427	2012	1922	2005	2017
AC-FT ‡	129900	134900	172700	249400	192400	241900	255200	210700	119700	118200	123300	120000

CAL YR 1977 TOTAL 38250 MEAN 105 MAX 162 MIN 41 AC-FT 75870 MEAN ‡ 2214 AC-FT ‡ 1603000
WTR YR 1978 TOTAL 67531 MEAN 185 MAX 2290 MIN 41 AC-FT 133900 MEAN ‡ 2856 AC-FT ‡ 2068000

‡ Adjusted for diversion to Pit No. 4 powerplant.

11363000 PIT RIVER AT BIG BEND, CA

LOCATION.--Lat 41°01'10", long 121°54'36", in NW¼SW¼ sec.31, T.37 N., R.1 E., Shasta County, on left bank at Big Bend, 0.4 mi (0.6 km) downstream from Nelson Creek, and 1.5 mi (2.4 km) upstream from Kosk Creek.

DRAINAGE AREA.--4,711 mi² (12,201 km²), excluding Goose Lake basin.

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

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

GAGE.--Water-stage recorder. Datum of gage is 1,674.47 ft (510.378 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 28, 1912, nonrecording gage and Dec. 28, 1912, to June 21, 1924, water-stage recorder at same site at datum 7.69 ft (2.344 m) higher.

REMARKS.--Flow regulated by many reservoirs and powerplants, total usable reservoir capacity, about 253,000 acre-ft (312 hm³). Many diversions above station; diversion to Pit No. 5 powerhouse began May 1, 1944. See schematic diagram of Pit and McCloud River basins.

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 diversion to Pit No. 5 powerplant).--33 years (water years 1911-43), 2,931 ft³/s (83.0 m³/s), 2,122,000 acre-ft/yr (2.62 km³/yr); 35 years (water years 1944-78), 567 ft³/s (16.06 m³/s), 410,800 acre-ft/yr (507 hm³/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,000 ft³/s (1,390 m³/s) Jan. 25, 1970, gage height, 18.17 ft (5.538 m) in gage well, 19.0 ft (5.79 m) from floodmarks, from rating curve extended above 17,000 ft³/s (481 m³/s), partly affected by gate operation at Pit No. 4 Dam; minimum daily, 34 ft³/s (0.96 m³/s) Mar. 29, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,730 ft³/s (162 m³/s) Jan. 18, gage height, 10.57 ft (3.222 m); minimum daily, 48 ft³/s (1.36 m³/s) Dec. 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	143	97	94	186	183	189	351	968	161	131	127	120
2	135	81	59	167	213	199	346	1310	164	131	125	114
3	116	82	54	280	220	271	749	1230	156	132	124	114
4	114	82	52	472	194	356	895	1030	161	137	125	115
5	110	87	52	901	280	393	1160	808	159	137	118	117
6	108	78	52	804	493	497	1410	463	154	134	119	119
7	106	80	52	664	1130	1440	1640	280	153	136	116	117
8	105	78	51	588	1340	2450	2330	237	153	128	115	118
9	105	80	50	611	839	2380	2590	232	154	122	117	123
10	104	81	48	690	1670	1930	2370	229	148	126	120	128
11	107	83	53	681	1590	1840	2170	221	144	130	122	120
12	102	87	53	769	1100	1430	1800	212	146	134	121	124
13	102	82	70	1390	805	1140	753	205	147	131	121	125
14	105	83	293	1600	376	835	692	194	149	128	123	118
15	100	79	331	1830	317	603	619	194	142	122	124	114
16	104	79	403	2470	291	355	643	192	142	122	125	112
17	105	78	162	3320	272	289	615	192	142	127	124	110
18	107	81	125	3350	252	246	602	190	140	128	120	116
19	104	78	105	3300	242	234	588	190	141	128	112	118
20	102	77	94	2450	232	225	658	188	141	131	116	122
21	103	88	87	1810	223	236	1080	188	141	127	116	121
22	99	99	146	1260	215	253	1110	189	141	120	126	113
23	105	103	344	860	208	259	879	183	143	118	120	114
24	103	97	472	435	203	237	755	184	140	120	120	110
25	112	110	329	287	199	221	667	181	130	122	121	112
26	102	123	252	262	219	220	593	179	133	125	116	121
27	108	117	186	240	208	204	571	183	138	124	113	121
28	105	110	186	223	197	197	698	176	137	126	116	122
29	126	106	214	209	---	194	591	174	139	118	118	117
30	126	98	232	198	---	190	695	174	136	119	119	111
31	109	---	214	186	---	218	---	169	---	126	118	---
TOTAL	3382	2684	4915	32493	13711	19731	30620	10745	4375	3940	3717	3526
MEAN	109	89.5	159	1048	490	636	1021	347	146	127	120	118
MAX	143	123	472	3350	1670	2450	2590	1310	164	137	127	128
MIN	99	77	48	167	183	189	346	169	130	118	112	110
AC-FT	6710	5320	9750	64450	27200	39140	60730	21310	8680	7810	7370	6990
CAL YR 1977 TOTAL	35246			96.6	MAX 472	MIN 45	AC-FT 69910					
WTR YR 1978 TOTAL	133839			367	MAX 3350	MIN 48	AC-FT 265500					

11363910 JAMES B. BLACK POWERPLANT NEAR BIG BEND, CA

LOCATION.--Lat 40°59'12", long 121°58'35", in SW¼SE¼ sec.9, T.36 N., R.1 W., Shasta County, at powerplant on right bank of Pit River, 5.8 mi (9.3 km) downstream from Big Bend.

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

GAGE.--Recorded output from powerplant turbines.

REMARKS.--Water is diverted from Lake McCloud (station 11367740) at SE¼SW¼ sec.22, T.38 N., R.2 W., to Iron Canyon Reservoir (station 11363920), and then into the penstock for James B. Black powerplant. Records are combined flow of diversion from McCloud River at McCloud Dam plus Iron Canyon Creek.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--12 years, 997 ft³/s (28.24 m³/s), 722,300 acre-ft/yr (891 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,420 ft³/s (68.5 m³/s) July 15, 1966; no flow for several days 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	575	740	643	1060	1440	0	1260	1260	891	897	817	880
2	617	102	771	1140	1370	0	1470	1370	1300	736	1000	495
3	906	494	552	1160	1400	0	1470	1420	294	1150	790	979
4	1070	308	113	1660	1320	0	1310	1330	269	830	853	778
5	982	261	1080	1050	1350	0	1450	1340	880	1180	865	634
6	898	487	500	216	1360	0	1460	1320	879	901	616	972
7	828	825	613	1120	1820	0	1490	1320	950	769	1040	626
8	333	640	628	1580	386	0	1450	1340	1410	756	1200	617
9	666	647	474	1530	0	0	1450	749	991	780	1270	685
10	951	627	383	1890	0	0	1420	1180	837	1010	1110	455
11	1000	733	364	1820	0	0	1340	1320	1040	812	965	1180
12	1220	275	801	1630	0	0	1490	1470	616	854	674	417
13	859	322	786	1630	0	0	1400	631	869	840	588	1020
14	755	876	196	1730	0	0	1440	1040	875	794	1330	675
15	163	590	153	1850	0	0	1440	1300	899	1150	649	893
16	734	657	1130	1820	0	0	1320	1440	1120	613	910	311
17	758	684	1650	1860	0	0	1510	1130	0	1070	1080	773
18	829	665	788	1680	0	0	1360	1160	0	1350	1070	900
19	846	289	1270	1680	0	423	1470	1140	732	1280	521	997
20	725	707	1470	1580	0	1990	1370	1090	1000	858	629	1050
21	437	800	778	1580	0	2010	1440	1150	955	943	1040	939
22	307	495	1060	1520	0	2010	1370	1070	785	499	969	762
23	769	914	1280	1410	0	1980	1410	1140	595	1140	739	866
24	462	0	1330	1570	0	2020	1370	979	779	1160	743	752
25	923	378	1280	1460	0	2010	1350	1210	626	1370	859	864
26	576	577	1070	1430	0	1990	1340	1200	1030	1410	634	585
27	436	492	1120	1410	0	1960	1470	1000	762	866	699	632
28	326	551	863	1400	0	1940	1390	920	999	1240	1060	1170
29	209	737	1030	1380	---	1510	1270	1120	713	169	758	1210
30	497	569	1110	1370	---	1440	1180	1070	1120	959	814	578
31	444	---	1050	1260	---	1340	---	1130	---	1340	621	---
TOTAL	21101	16442	26336	45476	10446	22623	41960	36339	24206	29726	26913	23695
MEAN	681	548	850	1467	373	730	1399	1172	807	959	868	790
MAX	1220	914	1650	1890	1820	2020	1510	1470	1410	1410	1330	1210
MIN	163	0	113	216	0	0	1180	631	0	169	521	311
AC-FT	41850	32610	52240	90200	20720	44870	83230	72080	48010	58960	53380	47000
CAL YR 1977 TOTAL	223565			MEAN 613	MAX 1650	MIN 0	AC-FT 443400					
WTR YR 1978 TOTAL	325263			MEAN 891	MAX 2020	MIN 0	AC-FT 645200					

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

LOCATION.--Lat 41°02'27", long 121°59'02", in NW¼NW¼ sec.28, T.37 N., R.1 W., Shasta County, on left bank 0.2 mi (0.3 km) downstream from Iron Canyon Dam, and 4.2 mi (6.8 km) west of Big Bend.

DRAINAGE AREA.--11.6 mi² (30.0 km²).

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

GAGE.--Water-stage recorder, 60° sharp-crested V-notch weir, and concrete control. Datum of gage is 2,461.52 ft (750.271 m) National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.).

REMARKS.--Flow is regulated by Iron Canyon Dam. There is interbasin diversion from Lake McCloud (station 11367790) to Iron Canyon Reservoir (station 11363920) and then into a tunnel to James. B. Black powerplant on the Pit River (station 11363910). See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records 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.--12 years, 7.63 ft³/s (0.216 m³/s), 5,530 acre-ft/yr (6.82 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 582 ft³/s (16.5 m³/s) Feb. 25, 1978, gage height, 3.24 ft (0.988 m), flow was the result of failure of the James B. Black penstock; no flow July 15-18, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 582 ft³/s (16.5 m³/s) Feb. 25, gage height, 3.24 ft (0.988 m); minimum daily, 2.7 ft³/s (0.076 m³/s) Nov. 6, Sept. 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	3.1	3.1	3.1	3.1	3.1	501	3.2	3.1	3.1	3.1	3.1	3.1
2	3.1	3.1	3.2	3.1	3.1	480	3.1	3.1	3.1	3.1	3.1	3.1
3	3.1	3.1	3.1	3.1	3.1	475	3.1	3.1	3.1	3.1	3.1	3.1
4	3.1	3.4	3.1	3.2	3.1	450	3.1	3.1	3.1	3.1	3.1	3.1
5	3.1	3.1	3.1	3.7	3.2	480	3.2	3.1	3.1	3.1	3.1	3.2
6	3.1	2.7	3.1	3.1	3.9	496	3.1	3.1	3.1	3.1	3.1	3.1
7	3.1	3.1	3.1	3.1	6.2	470	3.2	3.1	3.1	3.1	3.1	3.1
8	3.2	3.1	3.1	3.1	20	465	3.1	3.1	3.1	3.1	3.1	3.1
9	3.2	3.1	3.1	3.4	363	435	3.1	3.2	3.1	3.1	3.1	3.2
10	3.1	3.1	3.1	3.1	396	430	3.1	3.2	3.1	3.1	3.1	3.1
11	3.2	3.1	3.1	3.5	386	439	3.1	3.1	3.1	3.1	3.1	3.1
12	3.1	3.1	3.1	3.2	377	430	3.1	3.1	3.1	3.1	3.1	3.1
13	3.1	3.1	3.1	3.1	372	425	3.2	3.1	3.1	2.9	3.1	3.1
14	3.1	3.1	3.3	3.9	377	59	3.1	3.1	3.1	3.1	3.1	3.1
15	3.1	3.1	3.1	4.8	460	3.1	3.2	3.1	3.1	3.1	3.1	3.1
16	3.1	3.1	3.1	6.3	439	3.1	3.1	3.2	3.1	3.1	3.1	3.2
17	3.1	3.1	3.1	4.8	430	3.1	3.1	3.1	3.1	3.1	3.1	3.1
18	3.1	3.1	3.1	3.7	465	3.1	3.1	3.1	3.1	3.1	3.1	3.1
19	3.1	3.1	3.2	3.7	485	3.1	3.1	3.1	3.1	3.1	3.1	2.7
20	2.9	3.1	3.1	3.1	490	3.1	3.1	3.1	3.1	3.1	3.1	3.1
21	3.1	3.1	3.1	3.1	465	3.1	3.1	3.1	3.1	3.1	2.9	3.1
22	3.1	2.9	3.2	3.1	470	3.1	3.1	3.1	3.1	3.1	3.1	3.1
23	3.1	3.1	3.7	3.1	527	3.1	3.1	3.2	3.1	3.1	3.2	3.1
24	3.1	3.1	3.1	3.1	522	3.1	3.1	3.1	3.1	3.1	3.1	3.1
25	3.1	3.1	3.1	3.1	538	3.1	3.1	3.1	3.1	3.1	3.1	3.1
26	3.1	3.1	3.1	3.1	522	3.1	3.1	3.1	3.1	3.1	3.1	3.1
27	3.1	3.1	3.1	3.1	517	3.1	3.1	3.2	3.1	3.1	3.1	3.1
28	3.1	3.1	3.1	3.1	511	3.1	3.1	3.1	3.1	3.1	3.1	3.1
29	3.1	3.1	3.2	3.1	---	3.1	3.1	3.1	3.1	3.1	3.1	3.1
30	3.1	3.2	3.1	3.1	---	3.1	3.1	2.9	3.1	3.1	3.1	3.1
31	3.1	---	3.1	3.1	---	3.1	---	3.1	---	3.1	3.1	---
TOTAL	96.2	92.8	97.3	106.2	9157.7	6087.7	93.5	96.4	93.0	95.9	96.0	92.9
MEAN	3.10	3.09	3.14	3.43	327	196	3.12	3.11	3.10	3.09	3.10	3.10
MAX	3.2	3.4	3.7	6.3	538	501	3.2	3.2	3.1	3.1	3.2	3.2
MIN	2.9	2.7	3.1	3.1	3.1	3.1	3.1	2.9	3.1	2.9	2.9	2.7
AC-FT	191	184	193	211	18160	12070	185	191	184	190	190	184
CAL YR 1977 TOTAL	1147.2			MEAN 3.14	MAX 4.7	MIN 2.7	AC-FT 2280					
WTR YR 1978 TOTAL	16205.6			MEAN 44.4	MAX 538	MIN 2.7	AC-FT 32140					

11365000 PIT RIVER NEAR MONTGOMERY CREEK, CA

LOCATION.--Lat 40°50'36", long 122°00'58", in NW¼SE¼ sec.31, T.35 N., R.1 W., Shasta County, Shasta National Forest, on right bank 0.5 mi (0.8 km) upstream from Potem Creek, 1.9 mi (3.1 km) downstream from Pit No. 7 Dam and powerhouse, and 5.0 mi (8.0 km) west of town of Montgomery Creek.

DRAINAGE AREA.--4,952 mi² (12,823 km²), excluding Goose Lake basin.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,036 ft (315.773 m) National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.). October 1944 to Feb. 17, 1963, at site 1.9 mi (3.1 km) upstream at different datum. Feb. 17, 1963, to May 21, 1965, at site 2.7 mi (4.3 km) upstream at different datum.

REMARKS.--Flow regulated by many reservoirs and powerplants, total usable reservoir capacity, 337,000 acre-ft (416 hm³). Many diversions above station for irrigation. Diversion from McCloud River to Pit River began December 1965 (station 11367720). See schematic diagram of Pit and McCloud River basins.

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 diversion from McCloud River).--21 years (water years 1945-65), 3,759 ft³/s (106.5 m³/s), 2,721,000 acre-ft/yr (3.35 km³/yr); 13 years (water years 1966-78), 5,208 ft³/s (147.5 m³/s), 3,773,000 acre-ft/yr (4.65 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,000 ft³/s (2,070 m³/s) Jan. 24, 1970, gage height, 32.36 ft (9.863 m); minimum daily, 30 ft³/s (0.85 m³/s) July 12, 27, 1975, result of construction work below Pit No. 7 powerplant.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22,700 ft³/s (643 m³/s) Feb. 7, gage height, 27.89 ft (8.501 m); minimum daily, 191 ft³/s (5.41 m³/s) June 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	2610	3170	3720	6360	5620	5500	6830	6880	3070	1830	2940	4130
2	2290	2790	3470	6680	5830	7340	8260	7060	4070	1610	4150	974
3	4330	3970	2850	6960	6610	7430	7330	8060	2180	3930	3760	2650
4	3580	3650	1340	7860	5490	8230	7880	6960	1770	3520	3740	2390
5	3480	1970	4320	8260	6370	8820	8260	7490	2600	4420	1520	3700
6	3400	982	2740	8320	10300	8940	8240	6650	3550	3990	1560	3400
7	3220	3150	3590	8270	15800	8850	8300	6200	4010	4150	3050	3000
8	1710	3190	5340	8300	11200	10200	8380	6130	5070	2580	3680	2650
9	2540	3680	2340	9510	9820	10900	8320	5620	3920	632	3970	2490
10	3290	3210	1930	10200	9060	9670	8390	4520	1620	3700	3900	1930
11	3690	3270	1800	10100	8780	9480	8370	6020	1630	3560	3370	3840
12	3690	2200	4220	10300	8660	8800	8420	6060	3070	4380	2240	2330
13	3790	1970	3690	9940	7980	8360	8340	4350	4920	3760	1190	4150
14	3240	3300	7430	11700	7460	7090	7620	5120	2860	3880	3940	3620
15	1140	3310	8230	13400	7310	6750	6770	6010	3710	1980	3470	4090
16	2390	3120	8210	16100	6080	6400	7200	5780	3450	1440	3860	1430
17	3350	3700	7360	16800	5450	5830	7210	4820	2860	3900	4040	1520
18	3470	3080	5500	13200	6140	5690	7080	5370	191	4080	4000	2940
19	3160	2310	3980	14700	6180	5680	7010	5510	2490	3940	1030	3410
20	3170	2380	6450	11100	5900	6970	7520	5840	3340	4050	1220	3600
21	5340	3870	3620	9690	6330	6780	8340	4730	3750	4020	3780	3970
22	1080	5410	6180	8830	6100	7050	8160	4330	3070	1810	3860	3070
23	397	3920	8180	7810	6160	8130	7660	3960	3790	1340	3460	2990
24	1250	802	7250	8440	6030	8240	7590	3680	2600	3690	3390	1910
25	3870	2690	6370	7510	4740	7840	7650	3800	432	4290	3800	2870
26	3570	2900	5700	7340	4790	7700	6800	4580	4170	4180	1550	3020
27	3610	3150	5400	7440	6430	7520	7610	5860	2730	4080	1940	3510
28	2870	3120	3800	6670	6950	7450	6440	4360	4540	4320	3970	3970
29	1920	3870	6930	7050	---	8530	6600	4600	4270	834	3170	4690
30	2850	4110	7950	6760	---	4910	6710	4090	3670	1410	3330	1110
31	3110	---	5480	6120	---	6180	---	5420	---	4800	2750	---
TOTAL	91407	92244	155370	291720	203570	237260	229290	169860	93403	100106	95630	89354
MEAN	2949	3075	5012	9410	7270	7654	7643	5479	3113	3229	3085	2978
MAX	5340	5410	8230	16800	15800	10900	8420	8060	5070	4800	4150	4690
MIN	397	802	1340	6120	4740	4910	6440	3680	191	632	1030	974
AC-FT	181300	183000	308200	578600	403800	470600	454800	336900	185300	198600	189700	177200
CAL YR 1977 TOTAL	1122122			3074	MAX 8230	MIN 134	AC-FT 2226000					
WTR YR 1978 TOTAL	1849214			5066	MAX 16800	MIN 191	AC-FT 3668000					

11365000 PIT RIVER NEAR MONTGOMERY CREEK, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951, 1953 to current year.

CHEMICAL ANALYSES: Water years 1951, 1953, 1955 to current year.

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: June to September 1951, October 1953 to September 1957, October 1958 to August 1959.

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW (CFS)	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)
NOV									
15... A	0855	--	3060	164	7.9	10.0	1.0	11.2	--
JAN									
04... A	1000	--	8050	143	8.0	7.0	8.0	11.0	--
MAR									
14... A	0750	--	7940	125	7.3	8.0	15	11.6	--
APR									
12... A	1030	8420	--	127	7.6	11.5	8.0	10.8	4
MAY									
03... A	0945	8060	--	136	7.6	13.0	6.0	10.0	--
JUL									
06... A	1015	3990	--	133	8.0	19.0	3.0	10.1	--
SEP									
06... A	0930	--	451	143	7.9	17.0	2.0	8.9	1
11... A	0920	--	3280	133	7.9	16.0	--	--	--

DATE	TIME	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (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)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO
NOV									
15... A		--	--	--	--	--	--	--	--
JAN									
04... A		--	--	--	--	--	--	--	--
MAR									
14... A		--	--	--	--	--	--	--	--
APR									
12... A		.7	46	--	--	--	7.7	--	.5
MAY									
03... A		--	--	--	--	--	--	--	--
JUL									
06... A		--	--	--	--	--	--	--	--
SEP									
06... A		.8	50	--	--	--	10	--	.6
11... A		--	48	0	10	5.6	8.6	27	.5

DATE	TIME	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)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
NOV											
15... A	0855	--	--	--	--	--	--	--	--	--	.07
JAN											
04... A	1000	--	--	--	--	--	--	--	--	--	.16
MAR											
14... A	0750	--	--	--	--	--	--	--	--	--	.10
APR											
12... A	1030	--	57	--	.1	--	--	--	--	9	.06
MAY											
03... A	0945	--	--	--	--	--	--	--	--	--	.08
JUL											
06... A	1015	--	--	--	--	--	--	--	--	--	.02
SEP											
06... A	0930	--	63	--	2.1	--	--	--	--	9	.06
11... A	0920	2.0	62	2.7	2.9	.1	17	87	.12	--	--

SACRAMENTO RIVER BASIN

11365000 PIT RIVER NEAR MONTGOMERY CREEK, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NO2+N03 TOTAL (MG/L AS N)	NITRO- GEN, NO2+N03 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)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BORON, DIS- SOLVED (UG/L AS B)
NOV 15...A	--	--	.02	.10	.12	--	.04	.02	--	--	--
JAN 04...A	--	--	.03	.10	.13	--	.06	.04	--	--	--
MAR 14...A	--	--	.01	.20	.21	--	.07	.03	--	--	--
APR 12...A	--	--	.05	.20	.25	--	.05	.04	0	0	100
MAY 03...A	--	--	.04	.50	.54	--	.05	.03	--	--	--
JUL 06...A	--	--	.04	.80	.84	--	.05	.01	--	--	--
SEP 06...A	--	--	.00	.30	.30	--	.05	.03	0	0	100
11...A	.02	.01	.01	.25	.26	.28	.04	.03	--	--	80

DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
NOV 15...A	--	--	--	--	--	--	--	--	--	--
JAN 04...A	--	--	--	--	--	--	--	--	--	--
MAR 14...A	--	--	--	--	--	--	--	--	--	--
APR 12...A	0	0	0	220	0	0	.1	0	2.7	.00
MAY 03...A	--	--	--	--	--	--	--	--	--	--
JUL 06...A	--	--	--	--	--	--	--	--	--	--
SEP 06...A	0	0	0	90	0	0	.0	0	1.1	.00
11...A	--	--	--	10	--	--	--	--	--	--

SACRAMENTO RIVER BASIN

61

11365500 SQUAW CREEK ABOVE SHASTA LAKE, CA

LOCATION.--Lat 40°51'25", long 122°05'08", in SE¼ sec.29, T.35 N., R.2 W., Shasta County.
 DRAINAGE AREA.--64.0 mi² (165.8 km²).

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)	PH (UNITS)	TEMPER- ATURE (DEG C)	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
JUN 13...	1010	71	169	8.2	15.0	110	12	37	3.5	3.6	7
SEP 11...	1105	31	204	7.6	13.5	98	8	34	3.1	3.8	8

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	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, 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 13...	.2	.2	98	16	.7	.1	15	135	.18	.04
SEP 11...	.2	.3	89	20	1.1	.1	12	129	.18	.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 13...	.01	.01	.25	.26	.30	.00	.00	.00	10	0
SEP 11...	.01	.00	.21	.21	.22	.02	.02	.06	40	10

SACRAMENTO RIVER BASIN

11367500 MC CLOUD RIVER NEAR MC CLOUD, CA

LOCATION.--Lat 41°11'18", long 122°03'52", in NW¼NE¼ sec.34, T.39 N., R.2 W., Siskiyou County, on right bank 0.4 mi (0.6 km) downstream from Angel Creek, and 6 mi (10 km) southeast of McCloud.

DRAINAGE AREA.--358 mi² (927 km²).

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

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

GAGE.--Water-stage recorder. Datum of gage is 2,711.2 ft (826.37 m) National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--Two small diversions above station for irrigation, and one 22-in (0.56-m) pipeline for town of McCloud and millpond. See schematic diagram of Pit and McCloud River basins.

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, 930 ft³/s (26.34 m³/s), 673,800 acre-ft/yr (831 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,800 ft³/s (334 m³/s) Dec. 21, 1955, gage heights, 9.42 ft (2.871 m) in gage well, 10.7 ft (3.26 m) from floodmarks, from rating curve extended above 8,800 ft³/s (249 m³/s) on basis of slope-area measurement of maximum flow; minimum, 524 ft³/s (14.8 m³/s) Nov. 23, 24, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)				
Jan. 9	1615	2150	60.9	3.10	0.945	Mar. 9	0300	2680	75.9	3.61	1.100
Jan. 14	2215	*3000	85.0	3.90	1.189	Mar. 24	0045	1580	44.7	2.49	0.759
Feb. 7	1600	2760	78.2	3.68	1.122	Apr. 1	2015	1720	48.7	2.65	0.808

Minimum daily, 609 ft³/s (17.2 m³/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	617	652	657	812	874	965	1640	1160	1030	886	817	785
2	609	652	657	804	876	986	1550	1150	1020	884	817	780
3	633	650	657	838	909	1140	1420	1150	1020	880	813	780
4	655	651	659	933	916	1310	1400	1140	1020	877	811	780
5	652	657	662	1320	1100	1700	1370	1130	1020	871	811	780
6	652	652	658	1200	1600	1610	1360	1110	1020	865	808	784
7	650	652	660	1030	2350	1440	1310	1100	1030	861	805	783
8	647	649	658	1030	2010	2030	1270	1100	1020	861	805	783
9	646	647	653	1840	1600	2390	1260	1120	1020	856	805	804
10	646	646	652	1600	1410	1900	1270	1140	1010	854	804	825
11	646	649	655	1340	1280	1710	1290	1140	993	853	804	791
12	646	652	652	1680	1210	1550	1290	1130	982	848	804	782
13	646	657	663	1540	1150	1430	1260	1140	971	845	804	780
14	646	652	851	2370	1090	1340	1260	1170	966	842	803	778
15	646	652	1140	2470	1060	1280	1290	1260	957	842	803	774
16	646	652	919	2770	1030	1240	1260	1200	949	842	803	774
17	646	648	830	2410	1000	1220	1210	1150	939	842	800	774
18	646	646	773	1820	984	1210	1190	1120	938	836	798	771
19	646	646	739	1590	980	1200	1190	1120	933	833	798	768
20	646	647	719	1400	973	1200	1220	1120	931	829	798	768
21	646	652	711	1270	964	1220	1180	1120	925	829	800	768
22	646	653	731	1190	959	1330	1150	1130	924	828	799	768
23	646	655	888	1110	959	1460	1140	1110	917	824	798	766
24	646	653	950	1050	965	1490	1130	1090	912	823	798	762
25	648	656	852	1010	979	1370	1200	1070	906	823	798	762
26	647	674	793	979	991	1330	1210	1050	903	823	796	762
27	646	673	794	949	983	1300	1180	1040	902	823	793	762
28	646	665	811	928	971	1290	1170	1040	921	818	792	759
29	653	661	827	909	---	1290	1170	1040	908	817	792	756
30	655	658	941	895	---	1320	1170	1040	899	817	792	756
31	659	---	861	882	---	1350	---	1030	---	817	792	---
TOTAL	20005	19609	23673	41969	32173	43601	38010	34610	28886	26149	24861	23265
MEAN	645	654	764	1354	1149	1406	1267	1116	963	844	802	776
MAX	659	674	1140	2770	2350	2390	1640	1260	1030	886	817	825
MIN	609	646	652	804	874	965	1130	1030	899	817	792	756
AC-FT	39680	38890	46960	83250	63820	86480	75390	68650	57300	51870	49310	46150
CAL YR 1977 TOTAL	250004			MEAN 685	MAX 1140	MIN 609	AC-FT 495900					
WTR YR 1978 TOTAL	356811			MEAN 978	MAX 2770	MIN 609	AC-FT 707700					

11367720 MCCLLOUD-IRON CANYON DIVERSION TUNNEL NEAR MCCLLOUD, CA

LOCATION.--Lat 41°08'06", long 122°04'26", in SE¼SW¼ sec.22, T.38 N., R.2 W., Shasta County, Shasta National Forest, on left bank of Lake McCloud, 8.8 mi (14.2 km) southeast of McCloud.

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

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

GAGE.--None. Water-stage recorders on Lake McCloud and Iron Canyon Reservoir used to compute record.

REMARKS.--Water is diverted from Lake McCloud (station 11367740) to Iron Canyon Reservoir (station 11363920) and thence into James B. Black powerplant (station 11363910) on the Pit River. Diversion began Dec. 1, 1965. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records 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.--12 years, 997 ft³/s (28.24 m³/s), 722,300 acre-ft/yr (891 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,890 ft³/s (53.5 m³/s) May 20-22, June 1-3, 10, 1967; no flow for several days in 1965-68, 1971, 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	632	477	526	980	1300	0	1370	1330	1050	802	829	697
2	612	398	559	982	1290	0	1390	1340	1080	790	832	663
3	627	421	542	1000	1290	0	1410	1360	992	814	810	691
4	654	404	461	1100	1280	0	1390	1350	926	803	804	683
5	669	383	553	1080	1290	1060	1400	1350	924	827	798	669
6	674	404	533	950	1300	1000	1410	1350	926	826	768	691
7	663	474	535	973	1360	0	1400	1330	933	812	778	674
8	609	487	542	1060	0	0	1400	1330	979	803	803	654
9	593	479	524	1160	0	0	1410	1230	978	795	832	665
10	616	510	497	1280	0	0	1410	1230	964	804	849	636
11	645	534	467	1350	0	0	1400	1240	968	796	842	688
12	687	479	515	1380	0	0	1410	1270	929	790	805	650
13	687	443	551	1400	0	1060	1410	1190	924	796	769	679
14	670	510	531	1410	0	988	1410	1170	915	782	810	665
15	578	510	551	1410	0	905	1410	1190	902	805	775	681
16	580	515	665	1390	0	829	1390	1210	917	779	772	622
17	586	533	783	1410	853	762	1400	1190	837	796	789	630
18	604	535	774	1410	1080	694	1390	1190	769	833	806	652
19	614	490	833	1400	949	673	1400	1180	767	851	756	670
20	610	513	904	1410	781	759	1400	1170	789	842	732	702
21	557	544	865	1410	673	846	1400	1170	801	834	751	706
22	501	538	873	1410	938	927	1390	1150	798	795	759	696
23	533	570	921	1400	906	1000	1380	1130	781	811	740	696
24	504	462	976	1410	882	1080	1370	1110	781	830	730	691
25	566	443	1000	1400	863	1150	1370	1120	762	858	734	701
26	540	467	995	1390	848	1230	1360	1120	779	890	707	675
27	511	474	990	1380	0	1300	1370	1100	773	875	693	661
28	462	484	957	1370	0	1380	1380	1070	788	890	719	716
29	413	520	951	1360	---	1400	1360	1070	781	814	712	758
30	433	518	981	1350	---	1410	1340	1070	800	810	705	718
31	427	---	983	1300	---	1400	---	1070	---	840	685	---
TOTAL	18057	14519	22338	39715	17883	21853	41730	37380	26313	25393	23894	20380
MEAN	582	484	721	1281	639	705	1391	1206	877	819	771	679
MAX	687	570	1000	1410	1360	1410	1410	1360	1080	890	849	758
MIN	413	383	461	950	0	0	1340	1070	762	779	685	622
AC-FT	35820	28800	44310	78770	35470	43350	82770	74140	52190	50370	47390	40420
CAL YR 1977	TOTAL	201912	MEAN 553	MAX 1000	MIN 266	AC-FT 400500						
WTR YR 1978	TOTAL	309455	MEAN 848	MAX 1410	MIN .00	AC-FT 613800						

SACRAMENTO RIVER BASIN

11367760 MCCLLOUD RIVER BELOW MCCLLOUD DAM, NEAR MCCLLOUD, CA

LOCATION.--Lat 41°07'44", long 122°04'08", in SW¼NE¼ sec.27, T.38 N., R.2 W., Shasta County, Shasta National Forest, on left bank 0.1 mi (0.2 km) downstream from Lizard Creek, 0.6 mi (1.0 km) downstream from McCloud Dam, and 9 mi (14 km) southeast of McCloud.

DRAINAGE AREA.--404 mi² (1,046 km²).

PERIOD OF RECORD.--April 1966 to current year (low flow only).

GAGE.--Water-stage recorder. Datum of gage is 2,401.76 ft (732.056 m) National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.).

REMARKS.--Flow regulated by Lake McCloud (station 11367740) since November 1965. Most of McCloud River runoff is diverted from reservoir through tunnel to Iron Canyon Reservoir (station 11363920) in Pit River basin. This station records fishwater release. Prior to water year 1974, flow was computed up to 400 ft³/s (11.3 m³/s). Because of channel changes, flow is computed only up to 200 ft³/s (5.66 m³/s). See schematic diagram of Pit and McCloud River basins.

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.

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	160	175	159	40	49	---	---	47	142	166	175	197
2	167	175	163	42	46	---	---	55	145	166	176	200
3	170	176	164	40	42	---	251	60	145	166	176	200
4	172	177	167	46	42	---	---	62	146	167	175	200
5	173	159	167	63	52	---	---	63	147	168	175	200
6	174	166	167	49	64	---	---	69	149	169	177	197
7	174	168	167	45	93	---	---	72	151	169	176	196
8	175	170	167	45	---	---	48	75	152	169	177	196
9	175	174	168	73	---	---	46	77	152	169	176	183
10	175	177	168	63	---	---	65	77	154	170	177	166
11	176	177	166	57	---	---	69	78	155	169	177	189
12	177	175	167	60	---	---	54	80	156	169	176	192
13	177	175	161	63	---	---	135	83	156	169	176	197
14	179	175	70	---	---	---	110	83	157	171	176	198
15	180	175	40	---	---	---	48	75	157	171	176	197
16	181	176	40	---	---	---	47	111	158	172	175	198
17	180	177	75	---	---	---	47	114	159	171	175	200
18	179	177	99	---	43	---	47	117	161	171	175	200
19	177	177	112	---	43	---	47	120	161	171	175	200
20	177	177	118	---	43	---	47	122	162	172	175	201
21	177	175	124	---	43	---	47	124	163	173	175	200
22	177	173	93	52	43	---	46	125	163	173	174	196
23	177	166	50	47	43	---	46	127	163	173	177	195
24	177	168	45	51	43	---	45	127	163	175	188	194
25	177	164	41	51	43	---	45	130	163	173	188	195
26	177	152	40	45	43	---	45	133	164	175	188	194
27	177	144	44	43	44	---	45	135	165	174	187	197
28	177	148	40	42	47	136	45	138	164	174	187	198
29	173	154	40	41	---	64	44	139	164	174	189	197
30	163	159	41	40	---	46	44	141	164	174	190	196
31	172	---	40	40	---	---	---	142	---	174	188	---
TOTAL	5422	5081	3303	---	---	---	---	3101	4701	5297	5547	5869
MEAN	175	169	107	---	---	---	---	100	157	171	179	196
MAX	181	177	168	---	---	---	---	142	165	175	190	201
MIN	160	144	40	---	---	---	---	47	142	166	174	166
AC-FT	10750	10080	6550	---	---	---	---	6150	9320	10510	11000	11640
CAL YR 1977	TOTAL	56438	MEAN 155	MAX	185	MIN	40	AC-FT	111900			
WTR YR 1978	TOTAL	--	MEAN --	MAX	--	MIN	--	AC-FT	--			

11367800 MCCLOUD RIVER AT AH-DI-NA, NEAR MCCLOUD, CA

LOCATION.--Lat 41°06'39", long 122°05'42", in NE¼SW¼ sec.33, T.38 N., R.2 W., Shasta County, Shasta National Forest, on right bank at Ah-Di-Na, 1.8 mi (2.9 km) downstream from Squirrel Creek, 3.9 mi (6.3 km) downstream from McCloud Dam, and 9.6 mi (15.4 km) south of McCloud.

DRAINAGE AREA.--427 mi² (1,106 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 2,160 ft (658 m), from topographic map.

REMARKS.--Flow regulated by Lake McCloud 3.9 mi (6.3 km) upstream (station 11367740) since November 1965. Diversion to Iron Canyon Reservoir (station 11363920) through McCloud River diversion tunnel (station 11367720) started Dec. 1, 1965. See schematic diagram of Pit and McCloud River basins.

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 diversion to Iron Canyon Reservoir and change in contents in Lake McCloud).--14 years, 1,284 ft³/s (36.36 m³/s), 930,300 acre-ft/yr (1.15 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge prior to construction of McCloud Dam, 9,660 ft³/s (274 m³/s) Dec. 22, 1964, gage height, 9.43 ft (2.874 m), from rating curve extended above 2,500 ft³/s (70.8 m³/s); minimum daily, 86 ft³/s (2.44 m³/s) Oct. 1-26, 1964. Maximum discharge since construction of McCloud Dam in 1965, 26,400 ft³/s (748 m³/s) Jan. 16, 1974, gage height, 13.68 ft (4.170 m) in gage well, 15.38 ft (4.688 m) from floodmarks, from rating curve extended above 8,000 ft³/s (227 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 41 ft³/s (1.16 m³/s) Dec. 18-20, 1971 (caused by valve malfunction at dam).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 21, 1955, reached a stage of 12.5 ft (3.81 m), discharge, 17,800 ft³/s (504 m³/s), from rating curve extended above 2,500 ft³/s (70.8 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,550 ft³/s (185 m³/s) Jan. 16, gage height, 7.84 ft (2.390 m); minimum daily, 156 ft³/s (4.42 m³/s) Jan. 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	179	181	181	174	161	423	778	166	200	198	192	213
2	179	181	182	174	166	1090	687	170	201	199	193	216
3	179	181	181	246	195	1550	421	173	200	198	193	216
4	179	184	183	325	199	2100	481	172	201	196	192	216
5	180	184	182	870	369	3100	493	168	200	195	192	216
6	179	180	182	601	754	1950	549	171	200	197	194	217
7	179	180	181	411	1580	1680	431	170	202	196	194	213
8	180	180	180	370	4320	3400	265	171	200	193	194	214
9	178	180	181	946	3610	4090	248	172	200	192	194	224
10	178	183	179	701	2600	2980	275	171	201	194	193	208
11	179	184	182	570	2240	2540	294	170	200	193	194	211
12	178	182	181	710	1820	2100	266	170	201	192	193	211
13	179	181	187	605	1540	1510	313	171	200	192	194	215
14	181	181	310	3100	1380	787	287	173	201	194	193	215
15	181	179	433	3950	1290	814	229	167	200	193	193	213
16	181	180	203	5490	1210	739	211	199	200	193	193	216
17	182	181	186	3750	617	783	201	200	200	193	192	216
18	181	181	181	1950	184	877	195	200	201	192	192	216
19	179	180	176	1450	175	840	201	200	201	192	192	216
20	179	179	171	866	172	866	211	200	201	192	192	217
21	179	182	171	571	174	628	203	200	200	193	194	216
22	178	184	193	379	181	809	192	201	201	193	193	211
23	178	180	494	323	186	943	181	200	201	192	195	211
24	178	183	396	291	189	866	177	201	201	195	206	210
25	180	185	252	259	191	637	194	200	200	192	206	209
26	179	187	186	230	188	488	198	199	201	194	206	209
27	178	183	178	207	181	328	193	200	199	193	205	211
28	180	181	176	190	175	277	185	200	201	193	203	211
29	185	180	238	176	---	199	176	201	198	192	205	211
30	179	183	301	165	---	172	169	200	197	193	206	211
31	182	---	216	156	---	268	---	200	---	192	206	---
TOTAL	5566	5450	6823	30206	26047	39834	8904	5756	6009	6006	6084	6409
MEAN	180	182	220	974	930	1285	297	186	200	194	196	214
MAX	185	187	494	5490	4320	4090	778	201	202	199	206	224
MIN	178	179	171	156	161	172	169	166	197	192	192	208
AC-FT	11040	10810	13530	59910	51660	79010	17660	11420	11920	11910	12070	12710
MEAN ‡	653	682	994	2379	1622	2015	1646	1363	1135	947	863	842
AC-FT ‡	40180	40560	61130	146300	90100	123900	97920	83830	67530	58200	53070	50080
CAL YR 1977 TOTAL	62696											
MEAN 172												
MAX 494												
MIN 146												
AC-FT 124400												
WTR YR 1978 TOTAL	153094											
MEAN 419												
MAX 5490												
MIN 156												
AC-FT 303700												
MEAN ‡ 731												
AC-FT ‡ 529200												
MEAN ‡ 1261												
AC-FT ‡ 912900												

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

SACRAMENTO RIVER BASIN

11368000 MCCLLOUD RIVER ABOVE SHASTA LAKE, CA

LOCATION.--Lat 40°57'30", long 122°13'07", unsurveyed, T.36 N., R.3 W., Shasta County, on right bank just upstream from Shasta Lake, 0.2 mi (0.3 km) downstream from Big Bollibokka Creek, and 11.3 mi (18.2 km) east of Lamoine.

DRAINAGE AREA.--604 mi² (1,564 km²).

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Datum of gage is 1,100.00 ft (335.280 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Flow partially regulated by Lake McCloud (station 11367740) since Nov. 3, 1965. Diversions to Iron Canyon Reservoir (station 11363920) began Dec. 1, 1965. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records 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 regulation by Lake McCloud and diversion to Pit River basin).--20 years (water years 1946-65), 1,699 ft³/s (48.12 m³/s), 1,230,000 acre-ft/yr (1.52 km³/yr); 13 years (water years 1966-78), 820 ft³/s (23.22 m³/s), 594,100 acre-ft/yr (733 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,500 ft³/s (1,290 m³/s) Jan. 16, 1974, gage height, 28.26 ft (8.614 m), from rating curve extended above 15,000 ft³/s (425 m³/s) on basis of slope-area measurement of maximum flow; minimum daily, 109 ft³/s (3.09 m³/s) Dec. 16-20, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17,900 ft³/s (507 m³/s) Jan. 16, gage height, 22.27 ft (6.788 m); minimum daily, 244 ft³/s (6.91 m³/s) Oct. 22, 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	286	272	346	839	874	1120	1780	808	447	379	320	300
2	265	268	333	851	912	1910	1790	770	442	392	317	305
3	272	264	321	1250	1100	3340	1430	749	441	377	315	302
4	264	272	314	2140	1070	5020	1890	716	437	369	317	302
5	260	371	311	5520	2260	9550	2030	692	437	367	313	317
6	260	305	306	3500	5090	6470	2750	676	434	365	313	356
7	260	288	303	2360	9330	4240	2340	654	428	366	310	323
8	256	280	296	2280	9030	6880	1770	633	427	368	306	322
9	252	272	291	7000	7360	8620	1480	624	425	367	304	470
10	252	268	287	4520	5240	6060	1370	612	425	367	301	541
11	248	271	314	3420	4300	4900	1340	596	422	364	300	362
12	248	281	317	4220	3680	4060	1230	583	411	363	301	336
13	248	268	399	3690	3200	3340	1140	573	413	359	303	332
14	249	264	2430	10100	2860	2230	1160	565	411	356	301	329
15	248	261	2970	13800	2670	2070	1160	589	406	357	297	321
16	248	260	1240	18600	2480	1910	1150	566	403	355	298	318
17	252	260	935	11300	1920	1830	1090	560	395	351	296	317
18	248	260	791	6370	1230	1870	1050	549	395	348	294	318
19	248	260	652	5810	1160	1740	1050	540	393	346	293	317
20	248	257	569	4150	1120	1760	1090	526	390	347	293	313
21	248	291	532	3060	1090	1520	1040	521	389	342	294	313
22	244	338	885	2320	1070	1650	985	514	389	343	300	310
23	244	370	3500	1930	1050	1840	933	505	387	343	296	307
24	248	362	2320	1670	1020	1850	905	506	387	342	305	305
25	264	398	1450	1480	997	1420	1000	505	384	341	312	305
26	256	460	1030	1320	972	1260	980	484	379	341	310	305
27	252	459	947	1190	946	1050	947	477	380	342	304	305
28	256	411	938	1090	904	963	914	471	409	340	300	305
29	309	378	1060	1010	---	851	875	460	399	337	297	301
30	330	362	1190	949	---	790	847	455	388	332	300	300
31	284	---	994	896	---	833	---	450	---	327	304	---
TOTAL	8047	9331	28571	128635	74935	92947	39516	17929	12273	10993	9414	9857
MEAN	260	311	922	4150	2676	2998	1317	578	409	355	304	329
MAX	330	460	3500	18600	9330	9550	2750	808	447	392	320	541
MIN	244	257	287	839	874	790	847	450	379	327	293	300
AC-FT	15960	18510	56670	255100	148600	184400	78380	35560	24340	21800	18670	19550
CAL YR 1977 TOTAL	108103			296	3500	187	AC-FT	214400				
WTR YR 1978 TOTAL	442448			1212	18600	244	AC-FT	877600				

11368000 MC CLOUD RIVER ABOVE SHASTA LAKE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951, 1953 to current year.

CHEMICAL ANALYSES: Water years 1951, 1953 to current year.

WATER TEMPERATURES: Water years 1951, 1954-59.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: June to September 1951, October 1953 to September 1959.

COOPERATION.--The letter "A" following a date indicates chemical-quality data furnished by 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)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)
NOV 15... A	1050	260	141	7.7	8.5	.00	11.7	0	.9	47	--	--
JAN 04... A	1215	1630	111	7.4	8.0	3.0	10.8	--	--	--	--	--
MAR 15... A	1040	2120	100	7.2	8.5	5.0	11.7	--	--	--	--	--
APR 11... A	0830	1350	--	7.5	10.5	.00	11.0	1	.5	43	--	--
MAY 03... A	1145	750	120	7.6	14.0	2.0	10.2	--	--	--	--	--
JUN 13... A	1250	418	88	8.1	15.5	--	--	--	--	50	0	14
JUL 05... A	0710	366	107	8.0	15.0	1.0	10.1	--	--	--	--	--
SEP 05... A	0800	305	114	7.6	15.0	1.0	9.4	2	.8	45	--	--
11... A	1310	362	103	7.9	13.5	--	--	--	--	48	0	7.0

DATE	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)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
NOV 15...	--	5.7	--	.4	--	52	--	1.0	--	--	--
JAN 04...	--	--	--	--	--	--	--	--	--	--	--
MAR 15...	--	--	--	--	--	--	--	--	--	--	--
APR 11...	--	2.9	--	.2	--	44	--	.0	--	--	--
MAY 03...	--	--	--	--	--	--	--	--	--	--	--
JUN 13...	3.6	3.9	14	.2	.7	52	2.4	1.1	.1	21	78
JUL 05...	--	--	--	--	--	--	--	--	--	--	--
SEP 05...	--	5.6	--	.4	--	49	--	.1	--	--	--
11...	7.4	5.6	20	.4	.7	56	3.5	4.1	.0	14	76

DATE	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, 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)	PHOS- PHATE, ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P04)
NOV 15...	--	.00	--	--	.00	.10	.10	--	.01	.00	.00
JAN 04...	--	.03	--	--	.05	.10	.15	--	.02	.01	.03
MAR 15...	--	.03	--	--	.05	.00	.05	--	.03	.01	.03
APR 11...	--	.02	--	--	.00	.20	.20	--	.01	.00	.00
MAY 03...	--	.01	--	--	.02	.40	.42	--	.02	.00	.00
JUN 13...	.11	--	.02	.02	.01	.14	.15	.17	.01	.01	.03
JUL 05...	--	.02	--	--	.02	.40	.42	--	.02	.01	.03
SEP 05...	--	.01	--	--	.00	.20	.20	--	.03	.01	.03
11...	.10	--	.04	.03	.00	.49	.49	.53	.02	.02	.06

SACRAMENTO RIVER BASIN

11368000 MCCLOUD RIVER ABOVE SHASTA LAKE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)
NOV 15...A	1050	--	--	0	--	--	--
APR 11...A	0830	0	0	0	0	0	0
JUN 13...	1250	--	--	20	--	--	--
SEP 05...A	0800	0	0	0	0	0	0
11...	1310	--	--	110	--	--	--

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
NOV 15...	--	--	--	--	--	1.5	--
APR 11...	40	10	0	.1	0	.8	.00
JUN 13...	50	--	--	--	--	--	--
SEP 05...	40	0	0	.0	0	.7	.00
11...	20	--	--	--	--	--	--

11370000 SHASTA LAKE NEAR REDDING, CA

LOCATION.--Lat 40°43'08", long 122°25'12", in SE¼NW¼ sec.15, T.33 N., R.5 W., Shasta County, in Shasta Dam on Sacramento River near right bank, 2 mi (3 km) downstream from Squaw Creek, and 9.5 mi (15.3 km) north of Redding.

DRAINAGE AREA.--6,421 mi² (16,630 km²), excluding Goose Lake basin.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to July 10, 1944, nonrecording gage at various sites near dam at same datum.

REMARKS.--Reservoir is formed by concrete gravity-type dam completed in 1949; regulation began Dec. 30, 1943. Usable capacity, 4,430,300 acre-ft (5.47 km³) between elevations 737.75 ft (224.866 m), bottom of lowest set of river outlets and 1,067.0 ft (325.22 m), top of flashboard gates on drum-type spillway gates. Dead storage, 115,700 acre-ft (143 hm³). Installation of flashboard gates on top of drum gates completed Nov. 12, 1964. Gates increased elevation to 1,067.0 ft (325.22 m), total capacity, 4,552,100 acre-ft (5.61 km³). All water passes down the Sacramento River, most of which is through powerplant at dam. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,550,300 acre-ft (5.61 km³) May 19, 1967, elevation, 1,066.94 ft (325.203 m); minimum since reservoir first filled, 562,600 acre-ft (694 hm³) Sept. 13, 1977, elevation, 836.08 ft (255.020 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,477,700 acre-ft (5.52 km³) May 31, elevation, 1,064.49 ft (324.457 m); minimum, 615,300 acre-ft (759 hm³) Nov. 20, elevation, 843.70 ft (257.160 m).

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

830	515500	910	1291900	990	2616600
840	587100	920	1424800	1000	2828500
850	665500	930	1566200	1010	3051800
860	751000	940	1717300	1020	3286900
870	843600	950	1877000	1030	3533500
880	943900	960	2046800	1050	4063100
890	1052000	970	2226100	1067	4552100
900	1167900	980	2416000		

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	631700	654400	652100	1193600	2996200	3624800	4009600	4433900	4476200	4276900	3890900	3493500
2	632000	652200	655800	1215700	3013400	3649800	4033500	4435400	4476800	4264500	3879600	3483200
3	635700	651900	656900	1242200	3033500	3693900	4053700	4438600	4475100	4256000	3868600	3475900
4	639700	652100	656000	1285700	3050400	3741900	4080000	4440700	4473300	4246200	3857400	3468200
5	642800	648600	660400	1365200	3094800	3812400	4114600	4441600	4471500	4237700	3841400	3464500
6	646600	641500	661600	1417500	3178900	3836900	4160300	4441300	4471200	4230000	3825400	3463700
7	648800	639600	664600	1455900	3305500	3843500	4191100	4440400	4471200	4222900	3810100	3460700
8	648200	637600	670600	1500000	3374000	3898700	4207200	4440700	4470300	4211200	3797600	3455500
9	649200	637500	672600	1607700	3423500	3930600	4219700	4441000	4467400	4196500	3786800	3458200
10	651500	636000	671800	1675500	3456200	3926500	4228300	4440100	4460300	4186000	3775400	3457200
11	654800	634300	672100	1732800	3478200	3910000	4236000	4441600	4452700	4176100	3760800	3457200
12	658400	631900	676200	1795900	3497700	3886100	4242500	4444800	4446800	4166200	3743200	3456200
13	661900	627700	683100	1856800	3506500	3850700	4249400	4446000	4444200	4155200	3724800	3458000
14	664200	626200	731600	1983500	3508300	3818300	4254000	4448000	4436600	4142000	3710900	3457500
15	663200	625400	778500	2138400	3508000	3792100	4267100	4453000	4429800	4124900	3696600	3458500
16	662800	623300	807100	2324700	3507800	3779600	4275400	4456200	4422800	4107600	3682200	3455200
17	664600	623000	830900	2449500	3508000	3778600	4280300	4458000	4414900	4095900	3667700	3449800
18	665900	621200	847000	2537100	3515800	3782500	4283500	4460300	4400700	4083900	3654700	3448500
19	667500	618000	858100	2631700	3521400	3789100	4292100	4462400	4391400	4072500	3636900	3447300
20	667800	615300	872900	2696600	3527200	3802400	4303900	4467100	4383200	4060300	3619400	3446800
21	672600	616800	885800	2742000	3534200	3819300	4315500	4469500	4375100	4047600	3606800	3447300
22	670500	622200	914000	2776200	3543900	3835000	4326200	4470900	4365500	4031300	3596100	3446000
23	665500	625800	976800	2805300	3554300	3860400	4338300	4471500	4358000	4014600	3584800	3446000
24	661100	624000	1013300	2829000	3564400	3881800	4355400	4471800	4349000	4001400	3573300	3441800
25	660800	626200	1039000	2851200	3574600	3899200	4377100	4471800	4334600	3989900	3563900	3436800
26	660800	629500	1060100	2876200	3586100	3914600	4394800	4472400	4326400	3976500	3549900	3431900
27	660700	633200	1081100	2900200	3598900	3928900	4413200	4474500	4315500	3963700	3536800	3431100
28	659900	636000	1098300	2922000	3614000	3940600	4420500	4475400	4308200	3951700	3527900	3431400
29	657800	641700	1123300	2944300	---	3948700	4427200	4476800	4300500	3934400	3517800	3432100
30	657000	648200	1151500	2964600	---	3962600	4431900	4476800	4290400	3917600	3508300	3427900
31	656000	---	1172300	2979700	---	3982200	---	4477700	---	3906500	3498500	---
MAX	672600	654400	1172300	2979700	3614000	3982200	4431900	4477700	4476800	4276900	3890900	3493500
MIN	631700	615300	652100	1193600	2996200	3624800	4009600	4433900	4290400	3906500	3498500	3427900
†	848.83	847.86	900.37	1006.83	1033.16	1047.06	1062.93	1064.49	1058.05	1044.27	1028.61	1025.78
‡	+25400	-7800	+524100	+1807400	+634300	+368200	+449700	+45800	-187300	-383900	-408000	-70600
††	1960	780	810	1560	2330	5110	6770	15690	17630	18660	16080	9300
CAL YR 1977	†	-426800										
WTR YR 1978	†	+2797300										

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

‡ Change in contents, in acre-feet.

†† Evaporation, in acre-feet.

SACRAMENTO RIVER BASIN

11370000 SHASTA LAKE NEAR REDDING, CA--Continued

WATER-QUALITY RECORDS

SACRAMENTO RIVER ARM OF SHASTA LAKE NEAR LAKEHEAD, CA

LOCATION.--Lat 40°48'08", long 122°22'50", Shasta County, 7.2 mi (11.6 km) south of Lakehead.

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							
13...	1000	.50	72	8.5	21.7	8.8	101
13...	1001	1.0	72	8.4	21.6	9.1	104
13...	1002	2.0	72	8.4	21.6	9.5	109
13...	1003	3.0	72	8.4	21.4	9.7	111
13...	1004	4.0	72	8.4	21.4	9.5	109
13...	1005	5.0	72	8.4	21.3	9.5	108
13...	1006	7.0	72	8.5	19.4	9.8	108
13...	1007	9.0	76	8.1	17.5	9.1	96
13...	1008	10.0	80	8.0	16.4	8.7	90
13...	1009	15.0	80	7.9	13.8	8.5	84
13...	1010	20.0	74	7.8	12.0	8.8	83
13...	1011	25.0	72	7.8	11.2	9.1	85
13...	1012	30.0	72	7.7	10.5	9.2	84
13...	1013	35.0	76	7.7	10.1	9.3	85
13...	1014	40.0	78	7.7	9.8	9.4	85
13...	1015	45.0	73	7.7	9.6	9.4	84
13...	1016	50.0	68	7.7	9.3	9.2	82
13...	1017	55.0	66	7.7	9.0	9.2	82
13...	1018	58.0	63	7.7	9.0	9.2	82
13...	1019	59.0	63	7.7	9.0	9.2	82
SEP							
12...	1024	.50	98	8.0	20.8	7.5	84
12...	1025	1.0	98	8.0	20.8	7.5	84
12...	1026	2.0	98	8.0	20.8	7.4	82
12...	1027	3.0	98	7.9	20.8	7.4	82
12...	1028	4.0	98	7.9	20.8	7.4	82
12...	1029	5.0	98	7.9	20.8	7.3	81
12...	1030	6.0	98	7.9	20.8	7.3	81
12...	1031	8.0	98	7.9	20.8	7.2	80
12...	1032	10.0	98	7.9	20.7	7.2	80
12...	1033	12.0	98	7.9	20.7	7.1	79
12...	1034	14.0	100	7.9	20.4	6.6	73
12...	1035	16.0	113	7.7	18.9	5.1	55
12...	1036	18.0	116	7.6	18.0	5.1	54
12...	1037	20.0	115	7.6	17.8	5.0	53
12...	1038	25.0	107	7.6	16.8	4.9	50
12...	1039	30.0	92	7.6	15.3	5.3	53
12...	1040	35.0	88	7.5	13.9	5.6	55
12...	1041	40.0	86	7.4	12.7	6.2	59
12...	1042	45.0	83	7.2	11.9	6.5	61

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							
12...	1043	50.0	81	7.2	11.3	6.7	62
12...	1044	60.0	80	7.1	10.3	6.8	61

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											
13...	1030	1.0	72	8.4	21.6	9.1	39	7	10	3.3	3.8
13...	1035	10.0	80	8.0	16.4	8.7	37	1	8.9	3.5	4.0
13...	1040	50.0	68	7.7	9.3	9.2	36	1	6.6	4.8	4.3
SEP											
12...	1050	1.0	98	8.0	20.8	7.5	39	0	9.0	4.0	5.4
12...	1055	20.0	115	7.6	17.8	5.0	45	0	10	4.8	6.6
12...	1100	40.0	86	7.4	12.7	6.2	37	0	7.0	4.8	3.6

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

11370000 SHASTA LAKE NEAR REDDING, CA--Continued

SACRAMENTO RIVER ARM OF SHASTA LAKE NEAR LAKEHEAD, 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 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 SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
JUN										
13...	17	.3	.6	32	6.0	1.8	.0	15	60	.08
13...	19	.3	.6	36	5.7	1.4	.0	17	63	.09
13...	20	.3	.4	35	4.1	1.4	.0	16	59	.08
SEP										
12...	23	.4	1.0	44	6.2	2.0	.1	19	74	.10
12...	24	.4	1.4	53	3.1	2.3	.0	7.7	68	.09
12...	17	.3	.6	41	4.4	1.4	.0	9.0	56	.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, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
JUN										
13...	.01	.01	.01	.45	.46	.47	.00	.00	20	0
13...	.01	.01	.01	.74	.75	.76	.01	.00	20	0
13...	.25	.10	.01	.13	.14	.39	.00	.00	20	60
SEP										
12...	.01	.01	.00	.26	.26	.27	.01	.01	60	10
12...	.02	.00	.01	.18	.19	.21	.02	.01	60	10
12...	.05	.02	.00	.17	.17	.22	.02	.02	40	40

PIT RIVER ARM OF SHASTA LAKE BELOW BRUSHY CANYON, NEAR PROJECT CITY, CA

LOCATION.--Lat 40°48'08", long 122°22'50", Shasta County, 8.7 mi (14.0 km) northeast of Project City.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water year 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)
OCT							
04...	1515	.50	155	8.1	19.0	9.7	105
04...	1516	1.0	155	8.2	18.9	9.7	105
04...	1517	2.0	156	7.9	17.3	9.3	98
04...	1518	3.0	153	7.9	17.2	9.1	95
04...	1519	4.0	152	7.7	16.8	8.2	85
04...	1520	5.0	150	7.7	15.7	8.6	87
04...	1521	6.0	144	7.8	15.3	9.2	93
04...	1522	7.0	138	7.8	14.8	9.0	90
04...	1523	8.0	138	7.8	14.8	8.8	88
04...	1524	9.0	135	7.8	14.8	9.0	90
04...	1525	10.0	136	7.8	14.5	9.0	89
04...	1526	11.0	134	7.8	14.3	9.0	89
04...	1527	12.0	134	7.8	14.3	9.2	91
04...	1528	13.0	135	7.7	14.2	9.2	91
04...	1529	14.0	135	7.7	14.2	9.3	92
04...	1530	15.0	135	7.7	14.2	9.2	91
04...	1531	16.0	135	7.7	14.1	9.2	90
04...	1532	18.0	135	7.7	14.1	9.0	89
04...	1533	20.0	135	7.7	14.1	8.9	88
04...	1534	22.0	133	7.7	14.0	8.8	86
JUN							
14...	1215	.50	90	8.8	24.0	8.9	106
14...	1216	1.0	90	8.8	23.9	8.9	106
14...	1217	2.0	90	8.7	23.6	8.9	105
14...	1218	3.0	90	8.7	23.0	9.2	108
14...	1219	4.0	90	8.5	22.5	9.4	109
14...	1220	5.0	90	8.5	21.2	9.6	109
14...	1221	6.0	90	8.5	20.5	9.5	107
14...	1222	8.0	114	8.2	17.6	9.0	95
14...	1223	10.0	122	8.1	16.5	8.8	91
14...	1224	15.0	125	8.1	15.5	8.5	87
14...	1225	20.0	124	7.9	13.2	7.7	75
14...	1226	25.0	113	7.8	11.9	7.9	75
14...	1227	30.0	110	7.8	11.1	8.1	75
14...	1228	35.0	112	7.8	10.6	8.2	75
14...	1229	40.0	112	7.8	10.3	8.4	77
14...	1230	45.0	112	7.7	9.9	8.5	77
14...	1231	50.0	110	7.7	9.8	8.5	77
14...	1232	60.0	108	7.7	9.3	8.2	73
14...	1233	76.0	108	7.6	9.0	7.9	70

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

SACRAMENTO RIVER BASIN

11370000 SHASTA LAKE NEAR REDDING, CA--Continued

PIT RIVER ARM OF SHASTA LAKE BELOW BRUSHY CANYON, NEAR PROJECT CITY, 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)
JUN							
14...	1234	80.0	112	7.6	8.7	7.3	64
14...	1235	83.0	112	7.2	8.7	7.2	63
14...	1236	84.0	112	7.2	8.7	7.1	62
SEP							
13...	1220	.50	103	8.5	21.4	7.9	89
13...	1221	1.0	103	8.3	21.4	7.8	88
13...	1222	2.0	103	8.3	21.4	7.8	88
13...	1223	4.0	103	8.2	21.3	7.7	87
13...	1224	5.0	103	8.2	21.3	7.7	87
13...	1225	6.0	103	8.2	21.3	7.7	87
13...	1226	8.0	103	8.2	21.3	7.6	86
13...	1227	10.0	104	8.2	21.3	7.6	86
13...	1228	12.0	104	8.2	21.2	7.4	83
13...	1229	14.0	118	7.7	19.8	4.7	51
13...	1230	15.0	120	7.7	19.2	6.0	65
13...	1231	16.0	120	7.7	18.8	6.7	72
13...	1232	18.0	122	7.9	18.3	7.2	77
13...	1233	20.0	124	7.9	17.9	7.6	81
13...	1234	22.0	124	7.9	17.7	7.6	80
13...	1235	24.0	124	7.9	17.4	7.6	80
13...	1236	26.0	124	7.9	17.2	7.3	76
13...	1237	28.0	124	7.8	16.8	6.0	62
13...	1238	30.0	118	7.4	15.8	4.8	49
13...	1239	32.0	115	7.4	15.0	4.7	47
13...	1240	34.0	117	7.4	14.7	4.7	47
13...	1241	36.0	116	7.3	13.9	4.8	47
13...	1242	38.0	115	7.3	13.5	4.8	46
13...	1243	40.0	114	7.3	13.1	4.9	47
13...	1244	45.0	113	7.3	12.3	5.5	50
13...	1245	50.0	112	7.3	11.7	5.3	48
13...	1246	55.0	115	7.2	11.2	4.4	41
13...	1247	60.0	118	7.1	10.8	3.8	35
13...	1248	70.0	118	7.0	10.1	4.0	36
13...	1249	80.0	120	6.9	9.6	3.5	31

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)
OCT											
04...	1500	1.0	--	--	--	--	--	--	--	--	--
04...	1505	6.0	--	--	--	--	--	--	--	--	--
04...	1510	--	135	7.7	14.1	9.0	--	--	--	--	--
JUN											
14...	1245	1.0	90	8.8	23.9	8.9	44	3	12	3.5	4.7
14...	1250	15.0	125	8.1	15.5	8.5	53	0	12	5.5	8.4
14...	1255	50.0	110	7.7	9.8	8.5	51	6	14	4.0	3.0
SEP											
13...	1405	1.0	103	8.3	21.4	7.9	44	0	11	3.9	5.5
13...	1410	15.0	120	7.6	19.3	5.6	48	0	11	5.1	7.8
13...	1415	60.0	117	7.3	10.8	3.8	48	0	12	4.4	6.7

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 PER AC-FT)
OCT										
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	64	--	--	--	--	--	--
JUN										
14...	18	.3	.8	41	6.4	1.4	.1	18	72	.10
14...	25	.5	1.7	59	3.7	2.5	.1	28	98	.13
14...	11	.2	1.1	46	5.6	1.8	.0	20	78	.11
SEP										
13...	21	.4	1.1	50	5.4	1.8	.0	15	74	.10
13...	25	.5	1.8	62	3.1	2.6	.1	15	84	.11
13...	23	.4	1.4	59	5.2	2.0	.0	23	91	.12

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

11370000 SHASTA LAKE NEAR REDDING, CA--Continued

PIT RIVER ARM OF SHASTA LAKE BELOW BRUSHY CANYON, NEAR PROJECT CITY, 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, ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT										
04...	.51	.31	.01	.17	.18	.69	.03	.01	--	--
04...	.57	.11	.05	.15	.20	.77	.09	.02	--	--
04...	.14	.10	.07	.17	.24	.38	.10	.03	--	--
JUN										
14...	.04	.01	.01	.11	.12	.16	.01	.00	20	0
14...	.06	.03	.03	.22	.25	.31	.03	.03	50	0
14...	.15	.14	.01	.02	.03	.18	.03	.02	30	10
SEP										
13...	.01	.00	.01	.26	.27	.28	.01	.01	50	10
13...	.01	.00	.01	.21	.22	.23	.03	.02	80	70
13...	.16	.19	.01	.29	.30	.46	.04	.04	40	20

PIT RIVER ARM OF SHASTA LAKE AT ALLIE COVE, NEAR LAKEHEAD, CA

LOCATION.--Lat 40°45'50", long 122°16'50", Shasta County, 11.2 mi (18.0 km) southeast of Lakehead.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water year 1978.

DATE	TIME	SAM- PLING DEPTH (M)	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							
13...	1500	.50	82	8.6	24.5	8.7	105
13...	1501	1.0	82	8.6	23.6	8.9	106
13...	1502	2.0	83	8.5	23.0	9.0	106
13...	1503	3.0	82	8.5	22.4	9.1	106
13...	1504	4.0	82	8.4	22.1	9.0	104
13...	1505	5.0	79	8.4	22.0	9.1	105
13...	1506	7.0	84	8.3	19.9	9.0	100
13...	1507	9.0	92	8.2	17.9	8.2	87
13...	1508	10.0	102	7.9	17.0	7.8	82
13...	1509	15.0	120	7.8	14.4	7.9	79
13...	1510	20.0	120	7.8	12.9	7.7	74
13...	1511	25.0	104	7.8	11.5	8.2	77
13...	1512	30.0	94	7.7	11.0	8.3	77
13...	1513	35.0	108	7.7	10.5	8.6	79
13...	1514	40.0	108	7.7	10.2	8.8	80
13...	1515	45.0	106	7.7	10.0	8.9	81
13...	1516	50.0	104	7.7	9.8	9.0	81
13...	1517	60.0	100	7.7	9.3	9.1	81
13...	1518	70.0	102	7.6	9.0	9.0	80
13...	1519	80.0	102	7.6	8.8	8.8	78
13...	1520	90.0	103	7.6	8.4	8.6	75
13...	1521	100	112	7.5	8.1	7.9	69
SEP							
12...	1500	.50	102	8.2	21.3	7.8	88
12...	1501	1.0	102	8.2	21.3	7.8	88
12...	1502	2.0	102	8.2	21.2	7.8	88
12...	1503	3.0	102	8.2	21.1	7.9	89
12...	1504	4.0	102	8.2	21.0	7.8	87
12...	1505	5.0	102	8.2	20.9	7.6	85
12...	1506	6.0	102	8.1	20.9	7.6	85
12...	1507	8.0	102	8.1	20.8	7.6	85
12...	1508	10.0	102	8.1	20.8	7.6	85
12...	1509	12.0	103	8.0	20.7	7.3	81
12...	1510	14.0	104	7.9	20.6	7.0	78
12...	1511	16.0	105	7.9	20.0	5.4	59
12...	1512	18.0	117	7.6	19.4	4.7	51
12...	1513	20.0	123	7.6	18.3	6.5	69
12...	1514	22.0	124	7.7	17.9	6.6	70
12...	1515	24.0	123	7.7	17.6	6.6	69
12...	1516	25.0	123	7.7	17.5	6.4	67

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

SACRAMENTO RIVER BASIN

11370000 SHASTA LAKE NEAR REDDING, CA--Continued

PIT RIVER ARM OF SHASTA LAKE AT ALLIE COVE, NEAR LAKEHEAD, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAM- PLING DEPTH (M)	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							
12...	1517	26.0	117	7.6	17.1	5.6	58
12...	1518	28.0	116	7.5	16.3	5.2	53
12...	1519	30.0	114	7.5	15.8	5.4	55
12...	1520	32.0	113	7.5	15.2	5.5	55
12...	1521	34.0	112	7.5	14.6	5.6	55
12...	1522	35.0	111	7.4	14.2	5.7	56
12...	1523	40.0	111	7.4	13.1	6.0	58
12...	1524	45.0	108	7.4	12.3	6.2	59
12...	1525	50.0	107	7.4	11.7	6.3	59
12...	1526	55.0	110	7.4	11.2	6.3	58
12...	1527	60.0	118	7.3	10.7	6.2	57
12...	1528	70.0	115	7.3	10.0	6.4	58
12...	1529	80.0	115	7.3	9.1	6.2	55
12...	1530	89.0	116	7.2	8.6	5.0	43

DATE	TIME	SAM- PLING DEPTH (M)	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											
13...	1530	1.0	82	8.6	23.6	8.9	40	1	10	3.6	3.9
13...	1535	15.0	120	7.8	14.4	7.9	49	5	12	4.6	6.4
13...	1540	60.0	100	7.7	9.3	9.1	47	0	13	3.6	5.5
SEP											
12...	1535	1.0	102	8.2	21.3	7.8	41	0	10	3.9	5.7
12...	1540	20.0	123	7.6	18.3	6.5	49	0	11	5.2	8.6
12...	1545	50.0	107	7.4	11.7	6.3	46	0	12	4.0	5.9

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										
13...	17	.3	.7	39	3.0	1.3	.0	16	62	.08
13...	22	.4	1.2	44	2.5	9.3	.0	23	87	.12
13...	20	.3	1.1	48	5.7	1.6	.1	20	80	.11
SEP										
12...	23	.4	1.1	52	6.0	1.6	.0	11	70	.10
12...	27	.5	1.9	60	1.7	2.6	.1	30	98	.13
12...	21	.4	1.2	54	6.2	1.7	.0	23	87	.12

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										
13...	.02	.02	.01	.32	.33	.35	.00	.00	30	30
13...	.01	.01	.01	.29	.30	.31	.01	.01	40	30
13...	--	--	--	--	--	--	--	--	30	30
SEP										
12...	.01	.00	.00	.22	.22	.23	.02	.02	50	0
12...	.05	.04	.01	.19	.20	.25	.05	.05	70	10
12...	.39	.08	.01	.92	.93	1.3	.03	.03	40	10

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

11370000 SHASTA LAKE NEAR REDDING, CA--Continued

SQUAW CREEK ARM OF SHASTA LAKE NEAR PROJECT CITY, CA

LOCATION.--Lat 40°46'35", long 122°11'58", Shasta County, 9.7 mi (15.6 km) northeast of Project City.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water year 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAM- PLING DEPTH (M)	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)
OCT							
04...	1315	.50	172	7.5	17.6	8.0	84
04...	1316	1.0	172	7.5	17.4	7.9	83
04...	1317	2.0	173	7.4	17.1	7.5	78
04...	1318	3.0	172	7.4	17.0	7.3	76
04...	1319	4.0	172	7.4	17.0	7.2	75
04...	1320	5.0	171	7.3	16.9	7.1	74
04...	1321	6.0	171	7.2	16.7	6.5	67
04...	1322	7.0	174	7.2	16.6	6.7	69
04...	1323	8.0	188	7.3	16.4	7.0	72
04...	1324	9.0	213	7.3	16.0	7.5	77
04...	1325	10.0	218	7.4	15.7	7.8	80
04...	1326	11.0	234	7.4	15.1	8.1	81
04...	1327	12.0	237	7.4	15.0	8.3	83
JUN							
14...	1000	.50	89	8.8	23.5	9.0	107
14...	1001	1.0	89	8.8	23.5	9.1	108
14...	1002	2.0	88	8.8	23.3	9.2	109
14...	1003	3.0	88	8.6	23.2	9.5	112
14...	1004	4.0	88	8.6	22.8	9.6	112
14...	1005	5.0	92	8.4	21.4	9.8	112
14...	1006	6.0	89	8.4	20.5	9.8	110
14...	1007	8.0	98	8.1	18.5	9.1	98
14...	1008	10.0	101	8.0	17.2	8.7	92
14...	1009	15.0	120	7.9	14.8	8.5	85
14...	1010	20.0	117	7.8	13.0	8.1	78
14...	1011	25.0	113	7.9	11.7	8.2	77
14...	1012	30.0	112	7.8	11.0	8.4	78
14...	1013	35.0	118	7.7	10.6	8.5	78
14...	1014	40.0	120	7.6	10.3	8.6	78
14...	1015	45.0	118	7.6	10.1	8.6	78
14...	1016	50.0	118	7.6	9.8	8.7	79
14...	1017	60.0	118	7.6	9.4	8.6	77
14...	1018	64.0	115	7.6	9.3	8.6	77
14...	1019	65.0	115	7.6	9.2	8.5	76
SEP							
13...	1030	.50	107	8.2	21.3	7.8	88
13...	1031	1.0	107	8.1	21.3	7.8	88
13...	1032	2.0	106	8.1	21.3	7.7	87
13...	1033	3.0	106	8.1	21.2	7.7	87
13...	1034	4.0	106	8.1	21.2	7.7	87
13...	1035	5.0	106	8.1	21.2	7.7	87
13...	1036	6.0	106	8.1	21.2	7.6	86
13...	1037	8.0	106	8.1	21.2	7.6	86
13...	1038	10.0	106	8.1	21.2	7.6	86
13...	1039	12.0	106	8.1	21.2	7.4	83
13...	1040	14.0	119	7.6	19.8	4.7	51
13...	1041	15.0	120	7.6	19.1	4.9	53
13...	1042	16.0	122	7.6	18.7	5.3	57
13...	1043	18.0	122	7.6	18.4	5.7	61
13...	1044	20.0	122	7.6	18.2	5.9	63
13...	1045	22.0	122	7.5	17.9	6.1	65
13...	1046	24.0	121	7.5	17.6	5.6	59
13...	1047	25.0	121	7.4	17.3	5.1	53
13...	1048	26.0	119	7.3	16.9	4.4	46
13...	1049	28.0	119	7.3	16.4	4.2	43
13...	1050	30.0	120	7.2	15.7	4.1	41
13...	1051	35.0	121	7.2	14.2	4.5	44
13...	1052	40.0	124	7.2	13.1	4.3	41
13...	1053	45.0	129	7.2	12.2	4.4	41
13...	1054	50.0	128	7.1	11.7	4.8	45
13...	1055	55.0	127	7.1	11.3	5.0	46
13...	1056	60.0	128	7.1	10.8	5.0	46
13...	1057	63.0	128	7.0	10.5	4.8	45

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

SACRAMENTO RIVER BASIN

11370000 SHASTA LAKE NEAR REDDING, CA--Continued

SQUAW CREEK ARM OF SHASTA LAKE NEAR PROJECT CITY, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMPLING DEPTH (M) $\frac{1}{2}$	SPECIFIC CONDUCTANCE (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)
OCT											
04...	1300	1.0	172	7.4	17.4	7.9	26	0	6.6	2.3	7.6
04...	1305	8.0	188	7.2	16.4	7.0	34	0	10	2.2	4.8
04...	1310	12.0	191	7.4	15.0	8.3	36	0	12	1.6	4.4
JUN											
14...	1030	1.0	89	8.8	23.5	9.1	42	4	11	3.5	4.5
14...	1035	5.0	92	8.4	21.4	9.8	44	16	12	3.5	4.5
14...	1040	15.0	120	7.9	14.8	8.5	51	0	12	5.1	7.6
SEP											
13...	1100	1.0	107	8.1	21.3	7.8	46	0	12	3.9	5.8
13...	1105	14.0	119	7.6	19.8	4.7	47	0	11	4.8	7.9
13...	1110	45.0	129	7.2	12.2	4.4	61	0	19	3.3	4.4

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 CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT										
04...	38	.6	.7	59	--	2.2	.1	19	--	--
04...	23	.4	.8	59	--	4.9	.2	18	--	--
04...	21	.3	.4	72	--	7.9	.1	15	--	--
JUN										
14...	19	.3	.8	38	5.7	1.5	.1	18	68	.09
14...	18	.3	.7	29	7.5	1.5	.0	18	65	.09
14...	24	.5	1.5	54	4.3	2.2	.1	26	91	.12
SEP										
13...	21	.4	1.1	52	6.5	1.7	.0	13	75	.10
13...	26	.5	1.7	61	2.5	2.4	.1	22	89	.12
13...	13	.2	.8	62	11	1.2	.0	11	89	.12

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)
OCT										
04...	.02	.02	.06	.19	.25	.27	.03	.01	0	--
04...	.51	.51	.22	.12	.34	.85	.05	.01	0	--
04...	.31	.31	.26	.11	.37	.68	.07	.01	0	--
JUN										
14...	.03	.01	.01	.54	.55	.58	.00	.00	30	0
14...	.02	.02	.01	.34	.35	.37	.01	.01	30	0
14...	.01	.01	.01	.26	.27	.28	.03	.02	40	0
SEP										
13...	.01	.00	.00	.34	.34	.35	.01	.01	50	0
13...	.01	.00	.01	.18	.19	.20	.02	.02	60	10
13...	.07	.06	.00	.78	.78	.85	.02	.02	40	10

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

11370000 SHASTA LAKE NEAR REDDING, CA--Continued

MCCLLOUD RIVER ARM OF SHASTA LAKE NEAR LAKEHEAD, CA

LOCATION.--Lat 40°48'30", logn 122°17'30", Shasta County, 8.4 mi (13.5 km) southeast of Lakehead.

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							
13...	1300	.50	80	8.7	22.9	8.9	104
13...	1301	1.0	80	8.6	22.6	9.1	106
13...	1302	2.0	80	8.5	22.4	9.1	106
13...	1303	3.0	80	8.5	22.3	9.1	106
13...	1304	4.0	80	8.5	22.0	9.1	105
13...	1305	5.0	82	8.5	22.0	9.1	105
13...	1306	6.0	82	8.5	21.7	9.1	105
13...	1307	8.0	92	8.1	17.2	8.6	91
13...	1308	10.0	94	7.9	16.5	8.3	86
13...	1309	15.0	96	7.8	14.9	8.0	80
13...	1310	20.0	110	7.8	13.0	7.9	76
13...	1311	25.0	102	7.7	11.8	8.2	77
13...	1312	30.0	100	7.7	10.9	8.6	80
13...	1313	35.0	103	7.7	10.4	8.8	80
13...	1314	40.0	102	7.7	10.1	9.0	82
13...	1315	45.0	98	7.7	9.9	9.2	83
13...	1316	50.0	92	7.7	9.6	9.3	84
13...	1317	60.0	84	7.7	9.1	9.5	84
13...	1318	70.0	82	7.7	8.7	9.5	84
13...	1319	80.0	82	7.7	8.4	9.5	83
13...	1320	81.0	82	7.2	8.4	9.5	83
13...	1321	82.0	82	7.3	8.4	9.3	81
SEP							
12...	1323	.50	102	8.1	20.8	7.5	84
12...	1324	1.0	102	8.0	20.8	7.5	84
12...	1325	2.0	102	8.0	20.8	7.5	84
12...	1326	3.0	102	8.0	20.8	7.5	84
12...	1327	4.0	102	8.0	20.8	7.5	84
12...	1328	5.0	103	8.0	20.8	7.4	82
12...	1329	6.0	103	8.0	20.7	7.4	82
12...	1330	8.0	103	8.0	20.6	7.3	81
12...	1331	10.0	103	8.0	20.6	7.2	80
12...	1332	12.0	103	7.9	20.6	7.2	80
12...	1333	14.0	103	7.9	20.6	7.2	80
12...	1334	16.0	112	7.7	19.3	5.3	57
12...	1335	18.0	120	7.7	18.2	5.6	59
12...	1336	20.0	117	7.6	17.9	5.6	59
12...	1337	22.0	117	7.6	17.4	5.6	58
12...	1338	24.0	116	7.6	17.0	5.5	57
12...	1339	25.0	114	7.6	16.6	5.4	55
12...	1340	30.0	110	7.5	15.3	5.4	54
12...	1341	32.0	108	7.5	14.5	5.6	55

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)	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											
13...	1330	1.0	80	8.6	22.6	9.1	39	0	10	3.5	4.0
13...	1335	20.0	110	7.8	13.0	7.9	50	0	12	4.8	6.8
13...	1340	60.0	84	7.7	9.1	9.5	43	3	12	3.1	3.8
SEP											
12...	1345	1.0	102	8.0	20.8	7.5	44	0	11	3.9	5.2
12...	1350	20.0	117	7.6	17.9	5.6	47	0	11	4.7	7.4

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 SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
JUN										
13...	18	.3	.7	39	3.0	1.2	.0	17	63	.09
13...	22	.4	1.4	54	1.3	8.3	.1	24	91	.12
13...	16	.3	.7	40	2.5	1.5	.0	18	66	.09
SEP										
12...	20	.3	1.1	53	4.6	1.5	.1	11	71	.10
12...	25	.5	1.6	57	2.3	2.0	.0	7.9	71	.10

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

SACRAMENTO RIVER BASIN

11370000 SHASTA LAKE NEAR REDDING, CA--Continued

MCCLLOUD RIVER ARM OF SHASTA LAKE NEAR LAKEHEAD, 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, ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
JUN										
13...	.01	.01	.01	.13	.14	.15	.02	.00	20	20
13...	.01	.01	.01	.30	.31	.32	.02	.01	40	40
13...	.13	.13	.01	.09	.10	.23	.00	.01	20	20
SEP										
12...	.01	.01	.01	.30	.31	.32	.01	.01	40	10
12...	.05	.03	.01	.30	.31	.36	.03	.02	60	20

SHASTA LAKE AT SHASTA DAM, NEAR PROJECT CITY, CA

LOCATION.--Lat 40°43'33", long 122°24'36", Shasta County, 4.4 mi (7.1 km) northwest of Project City.

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)
OCT							
05...	1215	.50	140	7.9	17.8	7.6	80
05...	1216	1.0	142	7.9	17.6	7.9	83
05...	1217	2.0	140	7.9	17.5	7.7	81
05...	1218	3.0	140	7.8	17.5	7.7	81
05...	1219	4.0	139	7.8	17.4	7.6	80
05...	1220	5.0	139	7.8	17.4	7.4	78
05...	1221	6.0	140	7.8	17.3	7.4	78
05...	1222	7.0	140	7.7	17.3	7.4	78
05...	1223	8.0	140	7.7	17.2	7.3	76
05...	1224	9.0	140	7.7	17.2	7.3	76
05...	1225	10.0	140	7.7	17.2	7.2	75
05...	1226	12.0	142	7.6	17.0	6.9	72
05...	1227	14.0	142	7.3	16.2	4.9	50
05...	1228	16.0	142	7.4	15.5	4.4	44
05...	1229	18.0	143	7.2	15.1	4.3	43
05...	1230	20.0	145	7.2	14.1	3.4	34
05...	1231	22.0	147	7.2	11.8	4.3	40
05...	1232	24.0	148	7.2	10.0	5.0	45
05...	1233	26.0	146	7.3	9.4	5.4	48
05...	1234	28.0	146	7.3	8.8	5.6	49
05...	1235	30.0	146	7.3	8.6	5.6	49
05...	1236	32.0	144	7.3	8.4	5.7	50
05...	1237	34.0	145	7.3	8.3	5.8	50
05...	1238	36.0	145	7.3	8.0	6.0	52
05...	1239	38.0	145	7.3	8.0	6.0	52
05...	1240	40.0	145	7.2	8.0	5.8	50
05...	1241	42.0	145	7.2	8.0	5.7	49
05...	1242	44.0	145	7.2	8.0	5.7	49
05...	1243	46.0	145	7.2	8.0	5.7	49
05...	1244	48.0	143	7.2	8.0	5.7	49
05...	1245	50.0	143	7.2	7.9	5.8	50
05...	1246	55.0	144	7.2	7.7	6.0	51
05...	1247	60.0	146	7.2	7.5	6.0	51
05...	1248	65.0	146	7.2	7.5	6.0	51
05...	1249	70.0	146	7.2	7.5	5.8	49
05...	1250	75.0	145	7.2	7.6	5.5	47
JUN							
12...	1430	.50	72	8.4	21.5	8.9	102
12...	1431	1.0	72	8.2	21.5	9.0	103
12...	1432	2.0	72	8.3	21.4	9.1	104

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

11370000 SHASTA LAKE NEAR REDDING, CA--Continued

SHASTA LAKE AT SHASTA DAM, NEAR PROJECT CITY, CA--Continued

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											
12...	1433	3.0	72	8.3	21.3	9.2	105				
12...	1434	4.0	72	8.3	21.1	9.3	106				
12...	1435	5.0	72	8.3	20.6	9.5	107				
12...	1436	10.0	86	7.9	16.0	9.5	98				
12...	1437	15.0	98	7.8	13.6	9.5	93				
12...	1438	20.0	85	7.8	12.5	9.6	92				
12...	1439	25.0	81	7.7	11.5	9.2	86				
12...	1440	30.0	78	7.6	10.9	9.4	87				
12...	1441	35.0	86	7.6	10.4	9.6	88				
12...	1442	40.0	91	7.6	10.1	9.8	89				
12...	1443	45.0	86	7.6	9.7	10.0	90				
12...	1444	50.0	83	7.7	9.4	10.0	90				
12...	1445	55.0	80	7.7	9.2	10.1	90				
12...	1446	60.0	80	7.6	9.0	10.1	90				
12...	1447	65.0	82	7.6	8.8	10.0	88				
12...	1448	70.0	84	7.6	8.7	10.0	88				
12...	1449	75.0	84	7.6	8.5	9.9	87				
12...	1450	80.0	84	7.6	8.4	9.9	87				
12...	1451	85.0	86	7.6	8.2	9.8	85				
12...	1452	90.0	88	7.6	8.1	9.9	86				
12...	1453	95.0	94	7.6	7.9	9.9	86				
12...	1454	100	98	7.6	7.8	9.9	85				
SEP											
11...	1513	.50	100	8.1	20.8	7.4	83				
11...	1514	1.0	100	8.1	20.8	7.4	83				
11...	1515	2.0	100	8.0	20.8	7.4	93				
11...	1516	3.0	100	8.0	20.8	7.4	83				
11...	1517	4.0	100	8.0	20.8	7.4	83				
11...	1518	5.0	100	7.9	20.8	7.4	83				
11...	1519	6.0	100	7.9	20.8	7.4	83				
11...	1520	8.0	100	7.9	20.7	7.3	81				
11...	1521	10.0	100	7.9	20.7	7.3	81				
11...	1522	12.0	100	7.9	20.7	7.3	81				
11...	1523	14.0	100	7.9	20.7	7.3	81				
11...	1524	16.0	100	7.9	20.7	7.3	81				
11...	1525	18.0	100	7.8	20.6	7.2	80				
11...	1526	19.0	114	7.5	19.3	4.8	52				
11...	1527	20.0	114	7.5	18.5	4.9	52				
11...	1528	22.0	112	7.5	17.9	5.2	55				
11...	1529	24.0	110	7.4	17.3	5.2	54				
11...	1530	26.0	107	7.4	16.6	5.4	56				
11...	1531	28.0	103	7.4	16.0	5.6	57				
11...	1532	30.0	102	7.4	15.5	5.8	59				
11...	1533	35.0	99	7.4	14.3	6.2	61				
11...	1534	40.0	94	7.4	12.8	6.8	65				
11...	1535	45.0	90	7.4	12.0	7.2	68				
11...	1536	50.0	89	7.4	11.4	7.3	68				
11...	1537	60.0	97	7.3	10.6	7.3	67				
11...	1538	70.0	98	7.3	9.8	7.4	66				
11...	1539	80.0	95	7.3	9.0	7.4	65				
11...	1540	90.0	101	7.2	7.9	7.3	63				
11...	1541	93.0	102	6.9	7.9	1.3	11				
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 CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT											
05...	1200	1.0	142	7.9	17.6	7.9	26	0	5.6	2.9	5.1
05...	1205	22.0	146	7.2	11.8	4.3	26	0	5.4	3.0	5.1
05...	1210	60.0	146	7.2	7.5	6.0	43	0	9.3	4.9	7.6
JUN											
12...	1500	1.0	72	8.2	21.5	9.0	37	0	9.0	3.5	3.8
12...	1505	15.0	98	7.8	16.0	9.5	44	3	11	4.1	4.0
12...	1510	60.0	80	7.6	9.0	10.1	41	10	10	3.8	4.3
SEP											
11...	1545	1.0	100	8.1	20.8	7.4	41	0	10	3.9	5.0
11...	1550	20.0	114	7.5	18.5	4.9	44	10	10	4.7	7.2
11...	1555	60.0	97	7.3	10.6	7.3	41	4	10	4.0	4.8

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

SACRAMENTO RIVER BASIN

11370000 SHASTA LAKE NEAR REDDING, CA--Continued

SHASTA LAKE AT SHASTA DAM, NEAR PROJECT 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- LINE- ITY (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)
OCT										
05...	29	.4	1.0	66	--	3.2	.1	26	--	--
05...	29	.4	.8	63	--	3.0	.1	26	--	--
05...	27	.5	1.4	63	--	3.5	.1	28	--	--
JUN										
12...	18	.3	.5	37	6.7	1.8	.0	15	63	.09
12...	16	.3	1.0	42	5.4	1.8	.1	21	74	.10
12...	18	.3	.8	30	6.1	1.2	.0	17	62	.08
SEP										
11...	20	.3	1.1	46	3.3	.7	.0	19	71	.10
11...	25	.5	1.5	34	4.6	2.3	.0	13	64	.09
11...	20	.3	1.0	38	6.3	1.5	.0	12	63	.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,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)
OCT										
05...	.17	.03	.01	.22	.23	.40	.03	.01	0	--
05...	.24	.16	.00	.07	.07	.31	.03	.00	0	--
05...	.72	.54	.00	.05	.05	.77	.04	.01	0	--
JUN										
12...	.03	.03	.01	.25	.26	.29	.00	.00	30	0
12...	.27	.01	.01	.16	.17	.44	.02	.01	30	0
12...	.16	.12	.01	1.8	1.8	2.0	.02	.01	20	0
SEP										
11...	.00	.00	.00	.20	.20	.20	.01	.01	50	10
11...	.01	.01	.00	.40	.40	.41	.02	.02	60	100
11...	.09	.09	.00	.17	.17	.26	.02	.02	40	10

11370500 SACRAMENTO RIVER AT KESWICK, CA

LOCATION.--Lat 40°36'04", long 122°26'36", in SW¼NW¼ sec.28, T.32 N., R.5 W., Shasta County, on right bank 0.4 mi (0.6 km) upstream from Middle Creek, 0.8 mi (1.3 km) downstream from Keswick Dam, 1.6 mi (2.6 km) downstream from Keswick, and 10 mi (16 km) downstream from Shasta Dam.

DRAINAGE AREA.--6,468 mi² (16,752 km²), excluding Goose Lake basin.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 479.81 ft (146.246 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1939, at site 1.5 mi (2.4 km) upstream at datum 20.2 ft (6.16 m) higher and Oct. 1, 1939, to Apr. 30, 1942, at site 1.5 mi (2.4 km) upstream at datum 15.2 ft (4.63 m) higher. Aug. 20, 1960, to July 3, 1973, auxiliary water-stage recorder at city of Redding pumping plant 2.1 mi (3.4 km) downstream.

REMARKS.--Records good. Flow regulated by Shasta Dam beginning Dec. 30, 1943 (station 11370000). Diurnal fluctuations from Shasta powerplant re-regulated by Keswick Reservoir, capacity, 4,170 acre-ft (5.14 hm³) between normal operations elevations 579.0 ft (176.48 m) and 586.0 ft (178.61 m) and powerplant. No diversion for irrigation between Shasta Dam and station at Keswick. Since December 1963, water is released from Whiskeytown Lake (station 11371700) at lat 40°37'03", long 122°31'31", through a tunnel to Spring Creek powerplant (station 11371600) and then into Keswick Reservoir. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE (adjusted for change in contents in and evaporation from Shasta Lake and transbasin diversion into Keswick Reservoir).--40 years, 8,589 ft³/s (243.2 m³/s), 6,223,000 acre-ft/yr (7,673 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 186,000 ft³/s (5,270 m³/s) Feb. 23, 1940, gage height, 47.2 ft (14.39 m) site and datum then in use, from rating curve extended above 75,000 ft³/s (2,120 m³/s) on basis peak discharge at Kennet plus 4,000 ft³/s (113 m³/s) estimated inflow; minimum observed, 2,730 ft³/s (77.3 m³/s) Aug. 22, 1939. Maximum discharge since construction of Shasta Dam in 1944, 81,400 ft³/s (2,310 m³/s) Apr. 1, 1974, gage height, 31.92 ft (9.729 m); maximum gage height, 32.22 ft (9.821 m) Jan. 24, 1970; minimum discharge, 154 ft³/s (4.36 m³/s) May 15, 1948.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 39,800 ft³/s (1,130 m³/s) Mar. 9, gage height, 25.05 ft (7.635 m); minimum daily, 2,460 ft³/s (69.7 m³/s) Dec. 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	3230	5110	3200	2500	2600	4160	6630	11300	7380	9810	11000	8380	
2	3010	5190	3190	2530	2550	4160	6590	11300	7380	9830	10900	8350	
3	3000	5140	3180	2520	2560	3630	6540	11300	7380	9700	10900	8420	
4	2860	5160	3180	2700	2560	12700	5640	11000	7300	9750	11000	8420	
5	2830	5160	3190	2990	2740	19600	4540	11300	7570	9740	11000	8410	
6	2780	5190	3210	2860	4380	25200	4550	11300	8080	9740	10900	7640	
7	2820	5180	3190	2700	13300	25100	7330	11300	8100	9700	11000	7590	
8	2800	5150	3210	2930	18400	25900	11800	10300	8250	9710	11100	7560	
9	2810	5130	3260	7020	16500	34100	12400	10400	8690	9740	11000	7110	
10	2800	4690	3260	5230	16400	39300	12400	9720	8650	9710	10900	7140	
11	2760	4710	3270	4890	16100	39200	12200	9520	8700	9710	11500	7040	
12	2840	4690	3220	4960	14400	39000	11100	9530	8760	9750	12300	6100	
13	2830	4700	3170	5390	16300	39000	11100	9550	8770	10200	12300	6050	
14	2830	4660	3000	13300	17900	34700	11100	9530	9300	10900	12300	6040	
15	2890	4780	2580	15400	17800	27700	11100	8590	9310	10900	12200	6040	
16	3250	4800	2610	20100	14500	20200	11200	8310	9310	10900	12200	6050	
17	3370	4730	2750	10400	12600	13700	12300	8340	9340	10900	12100	6030	
18	3490	4690	2600	6490	8940	10700	12300	8310	9370	10900	10900	6110	
19	3380	4690	2530	9480	8760	9380	10300	8320	9370	10900	10900	6010	
20	3380	4690	2480	6390	8780	7850	8970	8250	9370	10900	10900	6040	
21	3380	4680	2490	8590	8760	6650	8730	8130	9360	10900	10900	6140	
22	3380	4240	2590	8580	6610	6520	8690	7470	9370	11000	9940	6090	
23	3410	4170	2750	8540	6360	6580	7760	7230	9370	10900	9770	6070	
24	3960	3740	2640	8410	6300	6520	5440	7310	9690	10900	9720	6070	
25	4600	3690	2570	6600	4300	6510	5350	7360	9700	11000	9750	6080	
26	4590	3680	2500	4240	4090	6480	5360	7290	9720	10900	9770	6080	
27	4580	3690	2490	4040	4120	6510	5600	7320	9750	10900	9770	6120	
28	4610	3680	2460	4040	4130	6520	10800	7330	9790	11000	9740	6070	
29	4630	3250	2510	4020	---	6520	11400	7390	9780	11000	9270	6130	
30	4620	3220	2490	3890	---	6530	11500	7350	9740	11000	9120	6040	
31	4650	---	2490	3160	---	6590	---	7270	---	10900	8360	---	
TOTAL	106370	136280	88260	194890	262740	507210	270720	278920	266650	323790	333410	201420	
MEAN	3431	4543	2847	6287	9384	16360	9024	8997	8888	10440	10760	6714	
MAX	4650	5190	3270	20100	18400	39300	12400	11300	9790	11000	12300	8420	
MIN	2760	3220	2460	2500	2550	3630	4540	7230	7300	9700	8360	6010	
AC-FT	211000	270300	175100	386600	521100	1006000	537000	553200	528900	642200	661300	399500	
MEAN ‡	3612	4280	10548	32348	19338	20915	15996	9735	5647	4254	3749	4064	
AC-FT ‡	222100	254700	648600	1989000	1074000	1286000	951800	598600	336000	261600	230500	241800	
CAL YR 1977 TOTAL	2322790	MEAN	6364	MAX	11500	MIN	2460	AC-FT	4607000	MEAN ‡	4252	AC-FT ‡	3078000
WTR YR 1978 TOTAL	2970660	MEAN	8139	MAX	39300	MIN	2460	AC-FT	5892000	MEAN ‡	11180	AC-FT ‡	8095000

‡ Adjusted for change in contents in and evaporation from Shasta Lake and transbasin diversion into Keswick Reservoir.

SACRAMENTO RIVER BASIN

11370500 SACRAMENTO RIVER AT KESWICK, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

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

SEDIMENT RECORDS: Water year 1978.

COOPERATION.--Chemical analyses data furnished by 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 CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT									
14...	1100	2780	147	7.1	18.0	2.0	9.3	50	--
NOV									
09...	1305	5070	177	7.2	9.0	5.0	10.0	49	10
DEC									
14...	1000	3200	154	7.6	9.5	12	10.2	50	--
JAN									
11...	1255	4020	95	6.9	10.0	4.0	11.8	43	--
FEB									
14...	1345	18000	109	6.8	9.0	33	12.2	--	--
MAR									
13...	1400	39000	105	7.0	10.0	23	13.1	--	--
APR									
24...	1215	5340	98	8.1	10.0	7.0	11.1	37	--
MAY									
16...	1015	8140	94	7.0	10.5	12	10.1	--	--
JUN									
19...	1320	9340	95	7.0	13.0	3.0	10.6	39	--
JUL									
18...	1115	10800	107	7.1	11.5	5.0	10.3	--	--
AUG									
18...	1255	10800	106	7.1	11.5	2.0	9.5	--	--
SEP									
26...	0930	6020	102	7.0	13.0	2.0	9.5	41	--

DATE	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)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT									
14...	--	8.6	--	.5	--	56	--	3.1	--
NOV									
09...	5.8	8.6	27	.5	1.9	59	5.3	4.4	102
DEC									
14...	--	9.0	--	.6	--	61	--	2.5	--
JAN									
11...	--	5.0	--	.3	--	37	--	2.0	--
FEB									
14...	--	--	--	--	--	--	--	--	--
MAR									
13...	--	--	--	--	--	--	--	--	--
APR									
24...	--	4.1	--	.3	--	38	--	--	--
MAY									
16...	--	--	--	--	--	--	--	--	--
JUN									
19...	--	4.5	--	.3	--	39	--	1.5	--
JUL									
18...	--	--	--	--	--	--	--	--	--
AUG									
18...	--	--	--	--	--	--	--	--	--
SEP									
26...	--	4.8	--	.3	--	42	--	2.4	--

11370500 SACRAMENTO RIVER AT KESWICK, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE 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)
OCT 14...	--	.13	.03	.10	.13	.02	.00	0
NOV 09...	.14	.15	.02	.10	.12	.02	.00	100
DEC 14...	--	.23	.03	.20	.23	.05	.02	100
JAN 11...	--	.06	.04	.10	.14	.03	.00	0
FEB 14...	--	.24	--	.10	--	.05	.00	--
MAR 13...	--	.22	.02	.20	.22	.10	.01	--
APR 24...	--	.22	.01	.10	.11	.03	.02	0
MAY 16...	--	.20	.00	.30	.30	.04	.02	--
JUN 19...	--	.15	.02	.20	.22	.02	.02	0
JUL 18...	--	.14	.00	.20	.20	.02	.02	--
AUG 18...	--	.11	.00	.30	.30	.02	.01	--
SEP 26...	--	.13	.00	.10	.10	.01	.01	0

DATE	TIME	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)
APR 24...	1215	17	1.3	4	0	0	0	0
SEP 26...	0930	1	.3	2	0	0	0	0

DATE	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
APR 24...	10	440	0	10	.1	0	1.0	.00
SEP 26...	20	60	0	10	.1	0	1.0	.00

SACRAMENTO RIVER BASIN

11370500 SACRAMENTO RIVER AT KESWICK, CA--Continued

WATER QUALITY DATA, 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)
NOV					
08...	1400	14.0	5020	11	149
16...	1130	13.5	4760	8	103
DEC					
01...	1040	12.0	3160	7	60
20...	0950	8.5	2520	21	143
28...	0930	14.0	2470	6	40
JAN					
10...	1550	10.0	4900	10	132
15...	0945	10.0	12600	73	2480
23...	1545	10.0	8590	20	464
FEB					
06...	1015	11.0	2930	15	119
09...	0945	9.0	16500	26	1160
MAR					
01...	0915	9.5	4170	18	203
07...	0945	9.0	25200	37	2520
09...	1445	9.5	39500	74	7890
APR					
11...	1325	10.0	12200	12	395
20...	1100	9.0	8700	11	258
MAY					
05...	1015	9.5	11300	12	366
23...	0945	9.5	7270	10	196
JUL					
12...	1300	10.5	9820	3	79
26...	1015	10.0	10900	4	118
AUG					
31...	1345	12.0	8340	2	45

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 .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM
DEC							
20...	0950	8.5	2520	21	143	--	99
JAN							
15...	0945	10.0	12600	73	2480	--	98
FEB							
09...	0945	9.0	16500	26	1160	--	95
MAR							
01...	0915	9.5	4170	18	203	--	96
07...	0945	9.0	25200	37	2520	--	90
09...	1445	9.5	39500	74	7890	92	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
DEC						
20...	--	100	--	--	--	--
JAN						
15...	--	99	--	100	--	--
FEB						
09...	--	96	--	98	--	100
MAR						
01...	--	100	--	--	--	--
07...	--	92	--	96	--	100
09...	94	--	97	--	100	--

11371000 CLEAR CREEK AT FRENCH GULCH, CA

LOCATION.--Lat 40°41'42", long 122°38'08", unsurveyed, Shasta County, on right bank 1,200 ft (366 m) downstream from French Gulch, 0.3 mi (0.5 km) south of town of French Gulch, and 15 mi (24 km) northwest of Redding.

DRAINAGE AREA.--115 mi² (298 km²).

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

REVISED RECORDS.--WSP 1285: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,320.60 ft (402.519 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 28, 1959, water-stage recorder at datum 3.00 ft (0.914 m) higher.

REMARKS.--Records excellent. No large diversion above station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--28 years, 219 ft³/s (6.202 m³/s), 158,700 acre-ft/yr (196 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,600 ft³/s (413 m³/s) Jan. 16, 1974, gage height, 14.99 ft (4.569 m), from rating curve extended above 5,200 ft³/s (147 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 1.5 ft³/s (0.042 m³/s) July 19-22, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 23	0300	2250 63.7	7.94 2.420	Jan. 16	1130	7910 224	12.61 3.844
Jan. 5	0600	3350 94.9	9.13 2.783	Feb. 7	1530	3290 93.2	8.87 2.704
Jan. 9	1030	3570 101	9.34 2.847	Mar. 5	1330	2370 67.1	7.83 2.387
Jan. 14	2230	*9130 259	13.35 4.069	Mar. 8	2200	4370 124	9.91 3.021

Minimum daily, 11 ft³/s (0.31 m³/s) Oct. 6-10.

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	16	18	62	205	321	308	441	397	127	66	24	18
2	13	16	54	232	314	385	421	367	123	68	23	17
3	12	15	48	380	310	608	424	344	118	67	23	17
4	12	17	45	1120	306	1170	671	327	113	63	22	23
5	12	49	44	2560	955	2130	721	313	109	59	21	33
6	11	37	43	1180	1590	1700	1010	300	102	56	20	44
7	11	26	39	736	2540	1220	850	287	98	53	20	36
8	11	21	35	740	2300	2840	745	274	96	53	18	24
9	11	19	32	2820	2110	3210	653	269	93	49	17	72
10	11	18	29	1670	1480	1990	601	260	93	46	17	109
11	12	17	44	989	1090	1440	559	249	92	46	17	42
12	12	21	53	746	894	1110	506	239	90	46	18	28
13	12	20	193	825	754	899	463	233	89	45	20	25
14	12	18	1020	4090	660	766	438	230	87	43	20	25
15	13	17	872	5500	599	676	669	228	85	41	20	23
16	13	16	436	6450	554	609	686	218	83	40	20	22
17	13	16	364	4190	509	558	601	205	80	39	20	21
18	13	14	272	2450	473	516	550	198	78	38	20	22
19	14	13	194	2530	448	480	532	192	76	36	19	22
20	14	14	149	1810	437	451	519	186	73	35	19	22
21	15	31	137	1310	427	444	481	181	71	33	21	23
22	16	64	441	984	414	433	447	176	70	32	24	22
23	17	80	1450	795	401	511	423	171	70	30	23	23
24	18	110	632	673	387	476	415	169	71	29	23	22
25	19	132	398	584	375	437	530	167	69	28	26	21
26	21	167	287	516	355	411	559	161	66	28	26	22
27	20	146	287	463	340	389	525	152	67	28	24	21
28	23	99	314	418	323	370	484	143	85	27	22	22
29	32	79	322	384	---	357	450	137	74	26	20	23
30	40	69	310	357	---	344	425	133	68	25	19	22
31	24	---	247	334	---	362	---	129	---	25	19	---
TOTAL	493	1379	8853	48041	21666	27600	16799	7035	2616	1300	645	866
MEAN	15.9	46.0	286	1550	774	890	560	227	87.2	41.9	20.8	28.9
MAX	40	167	1450	6450	2540	3210	1010	397	127	68	26	109
MIN	11	13	29	205	306	308	415	129	66	25	17	17
AC-FT	978	2740	17560	95290	42970	54740	33320	13950	5190	2580	1280	1720
CAL YR 1977 TOTAL	15600.9		MEAN 42.7	MAX 1450	MIN 1.5	AC-FT 30940						
WTR YR 1978 TOTAL	137293.0		MEAN 376	MAX 6450	MIN 11	AC-FT 272300						

KLAMATH RIVER BASIN

11525430 JUDGE FRANCIS CARR POWERPLANT NEAR FRENCH GULCH, CA

LOCATION.--Lat 40°38'49", long 122°37'34", Shasta County, at powerplant 1.6 mi (2.6 km) downstream from Mill Creek, and 3.8 mi (6.1 km) south of French Gulch.

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

GAGE.--Recorded powerplant output.

REMARKS.--Water is diverted from Trinity River at NW4SE4 sec.8, T.33 N., R.8 W., through a tunnel to powerplant and then into Whiskeytown Lake (station 11371700). See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records furnished by Bureau of Reclamation, rounded to Geological Survey standards.

AVERAGE DISCHARGE.--15 years, 1,632 ft³/s (46.22 m³/s), 1,182,000 acre-ft/yr (1.46 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 3,910 ft³/s (111 m³/s) Feb. 11, 1970; no flow for several days 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	319	383	0	495	0	0		0	336	205	512	1580
2	316	321	0	497	0	0		0	394	198	509	1570
3	631	333	0	487	0	0		0	433	497	513	1560
4	533	324	0	501	0	0		0	490	788	521	1540
5	237	326	0	559	0	0		0	433	0	528	1540
6	292	204	0	0	0	0		0	550	0	526	1530
7	295	201	0	0	0	0		0	440	410	976	1540
8	298	271	0	0	258	0		436	526	196	651	1510
9	302	0	0	0	0	151		345	316	189	779	1370
10	295	0	0	0	0	0		501	316	239	449	1490
11	302	0	0	0	0	0		513	379	247	545	1510
12	307	0	0	0	0	0		511	313	263	1470	1560
13	302	0	0	0	0	0		509	194	260	1440	1520
14	297	0	316	0	0	0		521	196	209	1480	1500
15	297	0	0	465	0	0		516	201	207	1440	1460
16	262	0	0	450	0	0		510	201	281	1440	1570
17	205	0	0	0	0	0		0	204	138	1440	1400
18	206	0	0	0	0	0		521	206	196	309	1370
19	197	0	0	0	0	0		39	211	195	288	1450
20	256	0	0	0	0	0		543	201	208	386	1530
21	256	0	1290	0	0	0		0	199	248	333	1430
22	254	0	1540	0	0	0		0	205	192	324	1440
23	254	0	1190	0	0	0		0	208	215	377	1450
24	261	0	0	0	0	0		0	197	191	302	1440
25	256	0	0	0	0	0		0	214	207	321	121
26	256	0	0	0	0	0		0	215	529	356	2.0
27	195	0	1330	0	0	0		0	204	502	312	1430
28	256	0	1500	0	0	0		0	221	198	388	1440
29	269	0	1550	0	---	0		0	211	195	372	1490
30	244	0	1560	4.0	---	0		2.0	195	195	334	508
31	272	---	1550	0	---	0	---	0	---	248	335	---
TOTAL	8922	2363	11826	3458.0	258	151	0	5467.0	8609	7846	19956	40851.0
MEAN	288	78.8	381	112	9.21	4.87	0	176	287	253	644	1362
MAX	631	383	1560	559	258	151	0	543	550	788	1480	1580
MIN	195	0	0	0	0	0	0	0	194	0	288	2.0
AC-FT	17700	4690	23460	6860	512	300	0	10840	17080	15560	39580	81030
CAL YR 1977	TOTAL	548184.00	MEAN	1502	MAX	3670	MIN	0	AC-FT	1087000		
WTR YR 1978	TOTAL	109707.00	MEAN	301	MAX	1580	MIN	0	AC-FT	217600		

11371600 SPRING CREEK POWERPLANT AT KESWICK, CA

LOCATION.--Lat 40°37'41", long 122°27'59", in NE¼SE¼ sec.18, T.32 N., R.5 W., Shasta County, at powerplant on Spring Creek, 0.4 mi (0.6 km) northwest of Keswick, and 4.9 mi (7.9 km) northwest of Redding.

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

GAGE.--Discharge computed from powerplant output.

REMARKS.--Water is released from Whiskeytown Lake (station 11371700) at lat 40°37'03", long 122°31'31", through a tunnel to powerplant and then into Keswick Reservoir. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records furnished by Bureau of Reclamation, rounded to Geological Survey standards.

AVERAGE DISCHARGE.--14 years, 2,033 ft³/s (57.57 m³/s), 1,473,000 acre-ft/yr (1.82 km²).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,700 ft³/s (133 m³/s) Jan. 21, 1971; no flow for many days in 1974-78.

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	388	2.0	2350	498	158	0	6.0	366	221	217	1510
2	0	324	0	2330	436	155	0	0	508	228	793	1520
3	613	317	0	2330	509	113	0	0	641	362	792	1480
4	635	310	0	1120	582	158	0	0	805	306	579	1560
5	346	314	6.0	1520	1340	2050	0	0	719	292	592	1550
6	335	308	0	1680	2120	2040	982	0	719	363	587	1840
7	349	310	0	2430	3930	2030	1060	0	724	833	634	1980
8	354	311	0	1730	4310	3020	1060	0	739	293	656	1520
9	346	360	0	3470	4330	4220	1060	0	508	223	600	1580
10	348	0	0	4270	4350	4260	496	0	440	222	558	1990
11	344	0	0	4290	4370	4410	0	0	364	250	914	2010
12	339	0	0	3970	1980	4110	0	863	365	0	1390	1990
13	336	0	0	4190	1420	2130	0	738	365	150	1390	1990
14	340	0	0	4530	1410	2190	0	725	346	224	1390	1710
15	338	0	0	4510	1420	2130	0	740	366	224	1380	1710
16	337	0	0	4470	814	1660	0	741	292	225	1390	1710
17	223	0	0	4410	670	2050	1160	418	315	235	1390	1710
18	152	0	0	4420	716	1200	966	743	155	219	306	1700
19	154	0	0	4110	788	949	489	425	151	266	312	1990
20	150	0	0	4410	787	874	971	808	151	222	286	2000
21	151	0	2450	4470	788	846	873	292	166	227	307	2010
22	147	0	2460	4470	784	806	793	367	158	227	412	1650
23	151	0	2480	4290	838	884	796	299	156	238	378	1640
24	151	0	2330	3960	730	867	361	309	342	212	296	1640
25	149	0	1890	3270	723	878	1220	233	357	296	305	449
26	147	0	2340	3290	689	878	1490	224	297	0	301	0
27	146	0	2310	3300	426	879	2010	152	302	279	295	1490
28	230	2.0	2320	3310	539	0	1710	0	229	152	300	1510
29	219	700	2330	3350	---	0	2010	2.0	418	307	296	1500
30	286	700	2340	3230	---	657	1510	0	225	223	265	1650
31	390	---	2670	516	---	659	---	0	---	235	276	---
TOTAL	8206	4344.0	25928.0	103996	42297	47261	21017	8085.0	11689	7754	19587	48589
MEAN	265	145	836	3355	1511	1525	701	261	390	250	632	1620
MAX	635	700	2670	4530	4370	4410	2010	863	805	833	1390	2010
MIN	0	0	0	516	426	0	0	0	151	0	217	0
AC-FT	16280	8620	51430	206300	83900	93740	41690	16040	23190	15380	38850	96380

CAL YR 1977 TOTAL 576426.00 MEAN 1579 MAX 4170 MIN 0 AC-FT 1143000
#TR YR 1978 TOTAL 348753.00 MEAN 955 MAX 4530 MIN 0 AC-FT 691800

11371700 WHISKEYTOWN LAKE NEAR IGO, CA

LOCATION.--Lat 40°37'03", long 122°31'31", unsurveyed, Shasta County, at outlet works to Spring Creek powerplant on Clear Creek, 1.8 mi (2.9 km) downstream from Whiskey Creek, and 7.8 mi (12.6 km) northeast of Igo.

DRAINAGE AREA.--200 mi² (518 km²).

PERIOD OF RECORD.--May 1963 to current year. Prior to October 1964 published as Whiskeytown Reservoir near Igo.

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

REMARKS.--Reservoir is formed by earth- and rockfill dam. Storage began in May 1963. Capacity, 241,100 acre-ft (297 hm³) between elevations 1,100.00 ft (335.280 m), minimum operating level and 1,210.00 ft (368.808 m), crest of spillway. No dead storage. Transbasin water enters the reservoir through Judge Francis Carr powerplant (station 11525430) and is released through Spring Creek tunnel to Spring Creek powerplant (station 11371600) and Keswick Reservoir. Records, including extremes, represent contents at 2400 hours. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 253,100 acre-ft (312 hm³) Mar. 30, 1974, elevation, 1,213.69 ft (369.933 m); minimum since reservoir was first filled, 159,000 acre-ft (196 hm³) Oct. 25, 1970, elevation, 1,181.48 ft (360.115 m).

EXTREMES FOR CURRENT YEAR: Maximum contents, 249,700 acre-ft (308 hm³) Jan. 16, elevation, 1,212.65 ft (369.616 m); minimum, 192,500 acre-ft (237 hm³) Feb. 15, elevation, 1,193.94 ft (363.913 m).

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

1015	714	1080	15100
1020	994	1100	27500
1030	1800	1120	46700
1040	3060	1140	74000
1050	4900	1180	155300
1060	7420	1220	274400

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	217100	217400	212900	207800	193200	194000	205800	224900	239000	238300	239600	238800
2	217700	217300	212900	205300	196100	196100	207400	226100	239100	238400	239000	239000
3	217700	217200	212800	202900	193500	198900	209000	227200	239000	238900	238400	239200
4	217600	217300	212800	207400	193400	204600	211300	228100	238800	240000	238300	239200
5	217400	217300	212700	214400	195700	209900	214800	229100	238500	239500	238200	239900
6	217300	217000	212600	214700	198200	211900	217000	230000	238400	238800	238100	239300
7	217200	216700	212600	212300	202300	212600	218000	230900	238000	238000	238500	238700
8	217000	216500	212500	213300	203000	219100	218600	232600	237800	237800	238600	238700
9	216900	215600	212400	219000	201900	221500	218700	234100	237500	237800	239000	240500
10	216800	215500	212300	216100	198500	219500	219700	235900	237400	237800	238600	240100
11	216700	215400	212500	211500	193600	215500	221500	237500	237600	237800	237800	239300
12	216500	215300	212500	206800	193400	211100	223100	237600	237700	238300	237900	238700
13	216400	215200	213000	203400	193400	210200	224600	237900	237600	238600	238000	238000
14	216300	215000	216900	213300	193000	208600	226100	238200	237400	238600	238200	237700
15	216300	214900	219100	229200	192500	206800	228900	238400	237300	238600	238400	237400
16	216100	214800	220600	249700	192900	205700	231200	238600	237200	238700	238500	237100
17	216000	214600	221900	247800	193400	203600	230900	238300	237100	238500	238600	236600
18	216100	214400	222600	245600	193700	203000	230800	238500	237300	238500	238500	236100
19	216100	214300	223000	244300	193700	202800	231700	237900	237600	238300	238400	235200
20	216300	214200	223300	241400	193700	202600	231400	238300	237800	238300	238500	234400
21	216400	214800	221600	237400	193700	202700	231200	238200	238000	238300	238500	233500
22	216600	215000	222300	232300	193600	202600	231100	238000	238100	238300	238500	233200
23	216700	215000	224300	226700	193300	202700	230800	237700	238300	238200	238400	232900
24	217000	215200	221400	221400	193200	202500	231700	237500	238200	238100	238400	232700
25	217100	215300	218700	217200	193100	202300	232000	237500	238000	237900	238400	232100
26	217300	215500	215000	212600	193000	201900	231200	237500	237900	238900	238500	232100
27	217400	215600	214100	207900	193300	201400	229200	237500	237900	239400	238600	232100
28	217400	215700	213400	202900	193300	202600	227700	237800	238100	239500	238600	232100
29	217700	214300	212800	197800	---	203800	225200	238100	237900	239200	238600	232200
30	217700	212900	212200	192700	---	203700	223700	238400	238000	239100	238500	230100
31	217500	---	210800	192900	---	204100	---	238700	---	239000	238500	---
MAX	217700	217400	224300	249700	203000	221500	232000	238700	239100	240000	239600	240500
MIN	216000	212900	210800	192700	192500	194000	205800	224900	237100	237800	237800	230100
†	1202.44	1200.94	1200.22	1194.09	1194.22	1197.96	1204.49	1209.26	1209.03	1209.36	1209.20	1206.53
‡	+1000	-4600	-2100	-17900	+400	+10800	+19600	+15000	-700	+1000	-500	-8400
††	550	190	110	100	130	400	550	1380	1650	1840	1750	880

CAL YR 1977 ‡ +9000
WTR YR 1978 ‡ +13600

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

‡ Change in contents, in acre-feet.

†† Evaporation, in acre-feet.

11372000 CLEAR CREEK NEAR IGO, CA

LOCATION.--Lat 40°30'48", long 122°31'23", unsurveyed, Shasta County, on left bank at highway bridge on Redding-Igo Road 1.0 mi (1.6 km) northeast of Igo, 8.3 mi (13.4 km) southwest of Redding, and 10.4 mi (16.7 km) upstream from mouth.

DRAINAGE AREA.--228 mi² (590 km²).

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Datum of gage is 672.99 ft (205.127 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records excellent. Flow regulated by Whiskeytown Lake since May 1963 (station 11371700). Transbasin diversion from Trinity River through Judge Francis Carr powerplant to Whiskeytown Lake began in April 1963 (station 11525430). Diversions from Whiskeytown Lake to Spring Creek powerplant (station 11371600) began in December 1963. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE (adjusted for change in contents and diversions in and out of Whiskeytown Lake).--38 years, 462 ft³/s (13.08 m³/s), 334,700 acre-ft/yr (413 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s (694 m³/s) Dec. 21, 1955, gage height, 13.75 ft (4.191 m); minimum, 8.6 ft³/s (0.24 m³/s) Sept. 4, 6, 7, 1950. Maximum discharge since construction of Whiskeytown Dam in 1963, 9,940 ft³/s (282 m³/s) Dec. 22, 1964, gage height, 9.23 ft (2.813 m); minimum daily, 30 ft³/s (0.85 m³/s) Oct. 10, 11, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,660 ft³/s (160 m³/s) Jan. 17, gage height, 8.20 ft (2.499 m); minimum daily, 30 ft³/s (0.85 m³/s) Oct. 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	34	61	98	93	129	103	562	148	70	53	50	50
2	33	92	97	89	131	223	301	136	70	61	49	50
3	32	93	97	105	122	423	244	127	69	55	49	50
4	32	96	97	303	117	700	240	121	69	53	49	50
5	31	100	97	528	305	1030	257	115	67	58	49	52
6	31	96	97	233	475	534	394	110	65	52	49	53
7	31	95	97	149	906	386	331	106	62	52	49	52
8	31	95	97	288	617	1840	265	103	58	52	49	50
9	31	95	97	1050	585	885	223	100	59	52	49	91
10	30	95	97	334	366	495	196	97	59	50	49	107
11	30	95	106	256	275	382	177	94	58	50	49	58
12	31	95	103	319	289	306	162	92	58	50	50	53
13	31	95	118	619	278	260	154	90	58	50	50	52
14	31	95	328	1280	251	229	148	89	58	50	50	51
15	31	95	229	1370	227	205	197	89	58	50	50	50
16	31	95	170	2720	203	188	170	86	58	52	50	50
17	31	95	229	4920	185	175	155	83	56	50	49	50
18	31	95	147	2680	169	163	145	81	56	50	49	50
19	37	95	122	2480	157	153	144	79	56	50	49	50
20	47	96	113	1000	147	145	141	78	55	50	49	50
21	50	123	112	387	138	169	133	77	55	50	52	50
22	49	141	207	295	131	163	126	77	55	50	49	50
23	49	123	348	246	125	158	120	74	55	50	49	50
24	49	122	166	213	122	144	127	74	56	50	49	50
25	49	113	135	190	117	137	278	74	55	50	49	50
26	49	109	123	174	113	131	342	72	52	50	49	50
27	50	106	126	158	109	125	246	70	52	50	49	50
28	50	102	115	146	106	120	203	69	53	50	49	50
29	55	100	117	136	---	117	178	74	53	50	50	50
30	54	99	113	129	---	114	162	72	52	50	50	50
31	51	---	110	122	---	219	---	70	---	50	50	---
TOTAL	1202	3007	4308	23012	6895	10422	6521	2827	1757	1590	1531	1619
MEAN	38.8	100	139	742	246	336	217	91.2	58.6	51.3	49.4	54.0
MAX	55	141	348	4920	906	1840	562	148	70	61	52	107
MIN	30	61	97	89	106	103	120	69	52	50	49	50
AC-FT	2380	5960	8540	45640	13680	20670	12930	5610	3490	3150	3040	3210
MEAN ‡	40.8	92.1	561	3706	1756	2036	1254	442	177	94.5	60.8	185
AC-FT ‡	2510	5480	34510	227900	97550	125200	74600	27190	10550	5810	3740	11030

CAL YR 1977 TOTAL 22182 MEAN 60.8 MAX 348 MIN 30 AC-FT 44000 MEAN ‡ 166 AC-FT ‡ 119900
WTR YR 1978 TOTAL 64691 MEAN 177 MAX 4920 MIN 30 AC-FT 128300 MEAN ‡ 865 AC-FT ‡ 626100

‡ Adjusted for change in contents in and evaporation from Whiskeytown Lake, diversion from Trinity River through Judge Francis Carr powerplant, and diversion to Spring Creek powerplant, furnished by Bureau of Reclamation.

SACRAMENTO RIVER BASIN

11372000 CLEAR CREEK NEAR IGO, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958 to current year.

CHEMICAL ANALYSES: Water years 1958-66.

WATER TEMPERATURES: Water years 1965 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: March 1965 to current year.

INSTRUMENTATION.--Temperature recorder since March 1965.

REMARKS.--Clock stopped Oct. 1-4, Nov. 18 to Dec. 13, Apr. 7-18, June 5-9, Aug. 15 to Sept. 6; range in temperature, 14.0°C to 18.0°C, 6.5°C to 11.0°C, 9.0°C to 14.5°C, 15.5°C to 18.5°C, and 15.5°C to 20.0°C, respectively.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 22.0°C Sept. 6, 1977; minimum recorded, 2.0°C sometime during periods Jan. 3 to Feb. 1, 1968, and Jan. 13 to Feb. 6, 1975.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 19.5°C July 27, 28; Aug. 4-8, 10; minimum recorded, 6.5°C Jan. 24, Feb. 12.

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	---	---	14.0	13.0	---	---	8.0	7.0	8.5	8.0	9.0	7.5
2	---	---	14.0	13.5	---	---	8.5	8.0	8.5	8.0	9.5	9.0
3	---	---	14.5	13.5	---	---	9.0	8.5	9.5	8.5	10.0	9.5
4	---	---	14.0	13.5	---	---	9.5	9.0	9.5	8.5	10.0	9.5
5	17.0	16.0	13.5	11.0	---	---	10.0	9.5	10.0	9.5	11.0	10.0
6	17.0	16.0	11.5	10.0	---	---	10.0	9.5	10.5	9.5	11.0	9.5
7	17.0	15.0	11.5	10.5	---	---	9.5	9.0	10.5	9.5	11.0	10.0
8	17.0	14.5	11.0	9.5	---	---	10.0	9.5	10.0	9.5	11.5	11.0
9	17.0	15.0	11.0	9.5	---	---	11.0	10.5	10.0	9.0	12.0	11.0
10	17.0	15.0	11.0	10.0	---	---	11.0	10.0	9.0	7.5	11.5	9.5
11	17.0	15.5	11.0	10.0	---	---	10.5	9.5	8.0	7.0	10.5	9.5
12	16.5	15.0	11.5	11.0	---	---	11.0	10.0	7.5	6.5	10.0	8.0
13	16.5	15.0	11.5	11.0	---	---	11.0	10.5	8.5	7.0	9.5	8.0
14	16.5	15.0	11.0	10.0	10.0	9.5	11.0	10.5	9.0	8.0	10.0	7.5
15	16.5	15.0	11.5	10.5	10.0	8.5	10.5	10.0	8.5	7.0	10.0	7.5
16	16.0	14.5	11.0	10.0	9.0	7.0	10.0	9.5	8.5	7.0	11.0	8.0
17	15.5	14.0	11.0	10.0	8.0	7.0	9.5	9.5	8.5	7.5	11.0	8.5
18	16.0	14.5	---	---	8.0	7.0	10.0	9.5	9.5	8.0	11.5	8.5
19	16.0	14.5	---	---	7.5	7.0	10.0	10.0	10.0	8.0	11.5	9.5
20	16.0	15.0	---	---	8.0	7.0	10.0	9.5	10.0	8.0	12.0	9.5
21	15.0	14.0	---	---	8.0	8.0	10.5	9.5	10.5	8.5	12.0	11.0
22	14.5	14.0	---	---	8.5	8.0	10.0	8.0	10.5	8.5	11.0	10.5
23	15.0	14.5	---	---	9.5	9.0	8.5	7.0	10.5	9.0	12.0	11.0
24	15.0	14.5	---	---	9.0	8.0	8.0	6.5	10.5	10.0	11.5	9.0
25	15.5	15.0	---	---	8.0	7.0	8.5	7.5	10.5	10.0	12.0	9.0
26	15.5	14.0	---	---	8.0	7.5	8.5	7.5	10.5	9.0	12.0	10.0
27	15.0	14.5	---	---	9.0	8.0	8.5	7.5	10.0	8.0	12.5	9.5
28	14.5	13.5	---	---	9.5	9.0	8.5	7.5	9.0	7.0	13.0	10.0
29	13.5	13.5	---	---	9.5	9.5	8.5	7.5	---	---	13.0	11.5
30	14.0	13.5	---	---	9.5	8.5	8.5	7.5	---	---	13.0	11.5
31	14.0	13.0	---	---	8.5	7.0	9.0	8.5	---	---	13.5	11.5
MONTH	17.0	13.0	---	---	---	---	11.0	6.5	10.5	6.5	13.5	7.5

11372000 CLEAR CREEK NEAR IGO, 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	11.0	14.5	10.5	17.5	15.0	18.0	16.5	19.0	17.5	---	---
2	12.0	9.5	15.0	11.5	18.0	15.5	18.0	16.0	19.0	17.5	---	---
3	11.0	10.5	15.0	12.0	18.5	15.5	17.5	15.5	18.5	17.5	---	---
4	11.0	9.5	14.5	11.5	18.5	16.0	18.0	16.0	19.5	18.5	---	---
5	11.0	9.5	14.5	10.5	---	---	18.0	16.0	19.5	18.5	---	---
6	10.5	9.5	15.0	12.0	---	---	18.5	17.0	19.5	18.5	---	---
7	---	---	15.0	13.0	---	---	19.0	17.5	19.5	17.5	17.0	15.0
8	---	---	15.0	12.0	---	---	18.5	17.5	19.5	17.5	17.0	15.5
9	---	---	15.0	12.5	---	---	19.0	17.5	18.5	17.5	17.5	14.5
10	---	---	15.0	12.0	17.0	15.0	19.0	17.5	19.5	17.5	16.5	14.5
11	---	---	15.5	13.0	16.5	15.0	18.5	17.0	18.5	17.0	16.5	14.5
12	---	---	15.5	13.0	16.5	15.0	18.0	17.0	19.0	16.5	16.0	15.0
13	---	---	14.5	12.5	16.5	15.0	18.0	16.5	17.5	16.5	16.5	15.0
14	---	---	14.5	11.0	16.5	15.0	18.0	17.0	17.5	16.5	16.5	15.0
15	---	---	15.0	12.0	16.0	14.5	19.0	17.5	---	---	17.0	15.5
16	---	---	15.5	13.0	16.0	13.5	18.5	16.5	---	---	17.0	15.0
17	---	---	16.0	13.5	16.5	14.5	18.5	17.5	---	---	16.5	15.0
18	---	---	16.0	13.5	17.0	15.5	18.5	17.5	---	---	15.0	13.5
19	12.5	10.5	16.5	14.5	16.5	15.0	18.5	17.5	---	---	15.0	13.5
20	12.0	10.0	16.5	14.0	17.0	15.5	18.5	17.5	---	---	14.5	13.0
21	11.5	8.5	16.0	13.5	16.5	15.0	18.5	17.0	---	---	15.0	14.0
22	12.5	9.0	15.0	13.0	17.0	16.0	18.5	17.5	---	---	15.0	14.0
23	12.5	10.0	14.0	12.0	17.0	16.0	19.0	17.5	---	---	16.0	14.5
24	12.5	11.0	15.0	13.0	17.0	15.0	18.5	17.5	---	---	16.5	15.0
25	12.5	11.0	16.0	14.0	16.5	15.0	19.0	17.5	---	---	16.5	15.0
26	13.0	11.5	17.0	15.0	17.0	16.0	19.0	17.5	---	---	16.0	15.0
27	14.0	11.0	17.5	13.5	17.0	16.0	19.5	18.0	---	---	---	---
28	14.0	11.0	17.0	14.0	18.0	15.5	19.5	17.5	---	---	---	---
29	14.5	11.0	16.5	14.0	18.0	15.5	18.0	17.0	---	---	---	---
30	14.0	11.5	17.0	14.0	18.0	16.5	18.0	17.0	---	---	---	---
31	---	---	17.5	14.5	---	---	18.5	17.0	---	---	---	---
MONTH	---	---	17.5	10.5	18.5	13.5	19.5	15.5	---	---	---	---

SACRAMENTO RIVER BASIN

11374000 COW CREEK NEAR MILLVILLE, CA

LOCATION.--Lat 40°30'19", long 122°13'56", in NE¼NW¼ sec.32, T.31 N., R.3 W., Shasta County, on right bank 2.9 mi (4.7 km) upstream from mouth, 4.2 mi (6.8 km) southwest of Millville, and 4.3 mi (6.9 km) downstream from Little Cow Creek.

DRAINAGE AREA.--425 mi² (1,100 km²).

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 388.7 ft (118.48 m) corrected, National Geodetic Vertical Datum of 1929.

REMARKS.--Records excellent. Numerous small diversions above station for irrigation.

AVERAGE DISCHARGE.--29 years, 681 ft³/s (19.29 m³/s), 493,400 acre-ft/yr (608 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,200 ft³/s (1,280 m³/s) Dec. 27, 1951, gage height, 21.55 ft (6.568 m); minimum daily, 0.02 ft³/s (<0.001 m³/s) July 29, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1937 or 1940 reached a stage of 23.8 ft (7.25 m) from floodmarks. Probable backwater effect from high flows on the Sacramento River.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 10,000 ft³/s (283 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 14	2215	19300 547	13.80 4.206	Jan. 16	1245	11600 329	10.62 3.237
Dec. 23	0230	13600 385	11.46 3.493	Feb. 6	1700	20900 592	13.83 4.215
Jan. 9	1215	*36000 1020	18.31 5.581	Mar. 4	1830	20700 586	13.78 4.200
Jan. 14	2230	16300 462	12.31 3.752	Mar. 8	1115	15500 439	12.02 3.664

Minimum daily, 20 ft³/s (0.57 m³/s) Aug. 9-11, 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	97	70	128	650	519	823	3230	1090	279	102	32	39
2	77	61	119	744	1800	2070	2150	949	274	92	29	41
3	67	59	110	1200	1280	4640	1460	876	257	92	27	37
4	57	59	108	1190	865	12100	3350	814	256	90	27	39
5	52	86	106	3390	3000	7040	1810	760	246	84	26	40
6	53	104	106	2100	9640	3910	5980	711	234	81	26	69
7	52	83	106	1210	9050	2420	3170	677	226	76	24	75
8	51	75	104	2140	4180	8550	1930	636	221	84	25	62
9	48	68	100	16700	4140	5580	1480	620	217	84	20	73
10	40	68	94	6790	2220	3100	1280	621	209	75	20	128
11	31	68	114	2840	1620	4320	1170	608	204	64	20	140
12	29	67	325	2250	2210	2470	1060	582	190	57	22	94
13	28	65	360	3980	3180	1850	1240	572	182	59	25	73
14	23	70	8340	9760	2030	1540	1800	581	176	57	27	71
15	26	74	4910	6690	2030	1330	2510	776	169	53	24	68
16	26	73	1690	6130	1410	1160	2120	689	177	47	25	63
17	23	71	5570	4000	1160	1050	1640	580	165	48	23	53
18	24	70	1430	3220	992	965	1210	532	147	49	20	56
19	23	67	715	5770	874	892	1910	498	138	44	21	57
20	21	69	502	2870	801	840	3400	471	133	41	22	54
21	24	110	408	1930	739	854	1790	446	128	35	25	56
22	23	379	1730	1550	691	1210	1330	433	123	39	53	56
23	22	944	4880	1200	655	1710	1150	419	122	37	48	54
24	30	623	1190	973	629	1420	1060	404	119	39	40	52
25	33	462	739	843	612	1060	3270	386	112	32	42	53
26	36	339	567	761	1640	922	3180	359	109	34	39	52
27	42	286	900	684	1640	851	1910	329	112	37	41	54
28	42	201	839	624	989	802	1500	322	121	35	38	59
29	56	160	1360	576	---	775	1310	317	123	34	37	53
30	72	139	1530	533	---	754	1170	298	114	34	34	52
31	92	---	893	502	---	921	---	282	---	32	33	---
TOTAL	1320	5070	40073	93800	60596	77929	61570	17638	5283	1767	915	1873
MEAN	42.6	169	1293	3026	2164	2514	2052	569	176	57.0	29.5	62.4
MAX	97	944	8340	16700	9640	12100	5980	1090	279	102	53	140
MIN	21	59	94	502	519	754	1060	282	109	32	20	37
AC-FT	2620	10060	79480	186100	120200	154600	122100	34980	10480	3500	1810	3720

CAL YR 1977	TOTAL	64529.85	MEAN	177	MAX	8340	MIN	.02	AC-FT	128000
WTR YR 1978	TOTAL	367834.00	MEAN	1008	MAX	16700	MIN	20	AC-FT	729600

11374000 COW CREEK NEAR MILLVILLE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1959-71, 1973-76, 1978.

CHEMICAL ANALYSES: Water years 1959-66.

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

SEDIMENT RECORDS: Water year 1978 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1965 to September 1971, October 1972 to September 1976, October 1977 to current year.

SEDIMENT RECORDS: November 1977 to May 1978 (discontinued).

INSTRUMENTATION.--Temperature recorder October 1965 to September 1971, October 1972 to September 1976, and since October 1977.

REMARKS.--Since Sept. 14, 1973, temperature recorder 2.6 mi (4.2 km) upstream.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 35.5°C July 25, 1976; minimum recorded, 0.0°C Dec. 14, 15, 1967, Jan. 10, 11, 1968.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 34.5°C Aug. 6; minimum recorded, 4.5°C Nov. 24, 25.

SEDIMENT CONCENTRATIONS (November to May): Maximum daily mean, 1,500 mg/L Jan. 9. Minimum daily mean, 1 mg/L Nov. 8, 9, 18, 20.

SEDIMENT DISCHARGE (November to May): Maximum daily, 85,000 tons (77,100 metric tons); minimum daily, 0.18 ton (0.16 metric ton) Nov. 9.

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	21.0	17.5	14.5	11.0	10.5	8.0	10.0	10.0	9.5	9.0	12.0	10.0
2	22.0	18.5	14.5	12.5	9.5	7.5	10.0	10.0	9.0	8.5	11.5	10.5
3	22.0	18.5	14.0	12.5	10.0	8.0	10.0	10.0	9.5	8.5	12.0	11.0
4	21.5	18.5	13.0	12.5	11.0	8.5	10.0	10.0	10.0	9.5	11.0	10.0
5	20.5	18.0	12.5	11.0	11.0	9.0	10.0	10.0	10.0	9.5	12.0	10.5
6	20.0	18.0	11.0	10.0	10.0	10.0	10.5	10.0	10.0	9.5	13.0	10.0
7	20.0	16.0	10.5	9.5	11.5	10.0	10.5	10.0	10.5	10.0	11.5	10.5
8	20.0	17.0	10.0	8.5	10.5	8.5	10.5	10.5	10.0	9.5	11.5	11.0
9	20.0	17.0	12.0	10.0	8.5	7.5	11.0	10.5	10.5	10.0	14.0	10.5
10	20.0	17.0	11.5	10.0	9.0	7.0	11.0	10.0	10.5	9.5	13.0	9.5
11	20.5	17.5	13.5	10.0	8.5	8.0	11.0	10.5	10.0	9.0	12.5	10.5
12	20.5	16.5	13.0	10.5	10.0	8.0	11.0	10.5	9.0	8.5	12.0	9.0
13	21.0	18.0	13.5	11.5	10.0	9.5	11.5	11.0	8.5	8.0	11.5	9.0
14	20.5	16.5	15.5	12.0	10.5	9.5	11.0	11.0	9.0	8.5	13.0	8.5
15	20.0	16.5	14.0	12.0	11.0	9.5	10.5	10.0	9.5	9.5	13.0	8.5
16	20.0	16.5	14.0	12.0	9.0	7.5	10.5	10.0	10.0	9.5	14.5	9.5
17	19.5	15.5	13.5	11.5	8.0	7.0	11.5	10.5	9.5	9.5	15.5	10.5
18	19.0	15.5	13.5	11.5	8.0	6.5	11.0	10.0	10.5	10.0	15.5	11.0
19	19.0	16.0	12.0	9.5	7.5	5.5	10.5	10.0	11.5	10.5	16.5	11.0
20	18.5	16.0	11.0	8.0	7.0	5.0	11.0	10.0	12.0	11.5	16.0	11.5
21	17.0	14.0	9.0	8.0	8.0	7.0	11.0	10.0	12.5	11.5	13.5	12.5
22	16.5	13.0	8.0	6.0	9.5	8.0	10.0	9.5	13.0	11.5	12.5	11.5
23	16.5	14.5	6.0	5.0	10.5	9.5	9.5	9.0	13.5	12.0	12.5	11.0
24	16.5	14.5	5.0	4.5	10.5	9.5	9.0	8.5	13.5	12.5	14.5	10.0
25	17.0	16.0	7.0	4.5	10.0	9.0	8.5	8.5	13.5	12.5	15.5	10.5
26	16.5	14.0	8.5	5.0	9.0	8.5	9.0	8.5	13.5	12.0	16.0	12.0
27	16.5	15.0	10.0	7.0	9.5	9.0	9.0	8.5	13.0	10.5	17.5	12.0
28	15.0	14.0	10.5	8.0	10.5	9.5	9.5	8.5	13.0	10.0	18.5	13.0
29	14.0	14.0	10.0	7.0	11.0	10.5	9.5	8.5	---	---	17.0	14.5
30	15.0	12.0	10.5	7.5	10.5	10.5	9.5	9.0	---	---	19.5	14.0
31	14.5	12.5	---	---	10.5	10.0	9.5	9.0	---	---	16.5	13.5
MONTH	22.0	12.0	15.5	4.5	11.5	5.0	11.5	8.5	13.5	8.0	19.5	8.5

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	11.0	18.0	11.5	26.0	18.5	28.0	22.0	32.5	26.5	28.5	23.0
2	13.0	9.5	20.0	13.5	27.0	20.0	28.0	22.0	33.0	26.0	27.5	22.5
3	13.0	11.0	20.0	14.5	28.0	21.0	28.5	21.5	32.5	26.0	27.0	22.0
4	13.5	10.0	19.0	13.0	28.5	21.5	28.5	22.5	32.5	27.0	26.5	21.5
5	12.0	10.0	18.0	12.0	30.0	22.0	30.0	23.5	33.5	26.5	22.5	21.5
6	10.0	9.0	---	---	31.0	23.5	30.5	24.5	34.5	27.5	25.0	20.0
7	13.5	8.5	---	---	30.0	22.5	30.5	25.5	34.0	28.0	24.0	19.0
8	14.5	9.5	---	---	30.0	22.5	31.5	24.5	33.5	28.0	25.5	19.5
9	16.5	11.0	---	---	28.5	22.5	31.5	26.0	34.0	27.0	22.0	18.0
10	18.0	13.0	---	---	27.5	21.0	30.5	25.0	33.0	26.5	21.0	17.5
11	19.0	14.0	---	---	28.0	21.0	29.0	23.5	31.0	25.5	22.0	17.5
12	18.0	13.0	---	---	25.5	21.5	30.0	23.0	28.0	24.5	22.5	18.0
13	16.0	11.0	---	---	27.0	20.5	30.5	23.5	29.0	22.0	22.0	19.0
14	14.0	11.5	---	---	27.5	21.0	31.5	24.0	29.0	22.5	23.0	18.0
15	11.5	10.0	---	---	26.5	20.0	31.0	25.0	28.0	22.5	24.5	19.0
16	13.0	9.5	---	---	27.5	20.0	30.0	23.5	28.5	22.5	25.0	20.0
17	14.5	10.0	---	---	27.5	21.0	31.0	23.0	27.0	21.0	22.0	18.5
18	16.0	11.0	---	---	27.0	22.0	32.0	24.5	28.5	20.5	21.5	16.0
19	13.5	11.0	---	---	28.0	21.5	32.0	25.0	28.0	21.5	21.0	16.0
20	11.5	9.5	---	---	27.5	21.5	32.5	25.0	27.5	21.5	21.5	15.5
21	14.0	8.0	---	---	28.0	21.5	32.5	25.5	24.5	22.0	21.0	16.5
22	15.5	10.5	---	---	28.0	23.0	32.5	25.0	25.5	19.5	22.0	16.5
23	15.5	11.5	---	---	27.5	22.0	32.0	26.0	25.0	19.5	23.5	17.5
24	14.5	12.5	---	---	27.5	21.5	33.0	26.0	24.5	19.5	25.0	19.0
25	14.0	12.0	---	---	26.5	21.0	32.5	26.5	25.5	20.5	23.5	19.5
26	14.5	12.5	20.5	15.0	26.0	22.0	32.0	27.0	27.0	21.0	23.0	20.0
27	17.5	12.0	24.5	16.5	26.5	22.0	33.0	26.5	28.0	21.5	23.0	18.0
28	18.0	13.5	26.5	19.0	26.0	22.5	32.0	26.0	29.0	22.5	23.0	17.5
29	18.0	12.5	25.5	20.0	28.0	22.0	31.5	24.5	29.5	23.5	23.5	18.0
30	16.5	13.5	23.0	18.0	28.0	22.5	32.0	24.5	29.0	24.5	24.0	19.0
31	---	---	24.5	17.5	---	---	32.0	25.5	29.0	23.5	---	---
MONTH	19.0	8.0	---	---	31.0	18.5	33.0	21.5	34.5	19.5	28.5	15.5

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

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1				70	2	.38	128	3	1.0
2				61	2	.33	119	4	1.3
3				59	2	.32	110	4	1.2
4				59	2	.32	108	5	1.5
5				86	2	.46	106	4	1.1
6				104	2	.56	106	12	3.4
7				83	2	.45	106	14	4.0
8				75	1	.20	104	4	1.1
9				68	1	.18	100	2	.54
10				68	2	.37	94	7	1.8
11				68	3	.55	114	9	2.8
12				67	2	.36	325	10	8.8
13				65	2	.35	360	24	23
14				70	2	.38	8340	1170	36200
15				74	2	.40	4910	465	9290
16				73	2	.39	1690	73	778
17				71	2	.38	5570	354	6150
18				70	1	.19	1430	65	251
19				67	2	.36	715	12	23
20				69	1	.19	502	7	9.5
21				110	9	2.7	408	7	7.7
22				379	34	42	1730	92	580
23				944	83	237	4880	328	8070
24				623	19	32	1190	55	183
25				462	8	10	739	35	70
26				339	6	5.5	567	21	32
27				286	5	3.9	900	21	51
28				201	4	2.2	839	12	27
29				160	3	1.3	1360	13	48
30				139	3	1.1	1530	13	54
31				---	---	---	893	13	31
TOTAL				5070	---	344.82	40073	---	61906.74

11374000 COW CREEK NEAR MILLVILLE, 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	650	7	12	519	2	2.8	823	10	22
2	744	6	12	1800	26	157	2070	36	201
3	1200	51	165	1280	16	55	4640	103	1490
4	1190	74	238	865	7	16	12100	409	15600
5	3390	272	3560	3000	105	2100	7040	234	4910
6	2100	80	454	9640	408	14800	3910	104	1100
7	1210	15	49	9050	399	11400	2420	40	261
8	2140	162	1750	4180	153	1830	8550	206	6050
9	16700	1500	85000	4140	128	1580	5580	131	2260
10	6790	570	14000	2220	56	341	3100	73	644
11	2840	140	1070	1620	38	166	4320	98	1310
12	2250	126	765	2210	63	450	2470	18	120
13	3980	154	1650	3180	58	498	1850	11	55
14	9760	277	9590	2030	38	208	1540	14	58
15	6690	209	4930	2030	44	241	1330	24	86
16	6130	249	5170	1410	24	91	1160	12	38
17	4000	193	2230	1160	11	34	1050	8	23
18	3220	146	1430	992	8	21	965	12	31
19	5770	118	2170	874	9	21	892	8	19
20	2870	7	54	801	15	32	840	11	25
21	1930	7	36	739	21	42	854	10	23
22	1550	9	38	691	21	39	1210	8	26
23	1200	8	26	655	17	30	1710	30	192
24	973	6	16	629	15	25	1420	19	73
25	843	5	11	612	39	64	1060	30	86
26	761	4	8.2	1640	104	521	922	19	47
27	684	3	5.5	1640	87	401	851	28	64
28	624	3	5.1	989	26	69	802	25	54
29	576	3	4.7	---	---	---	775	25	52
30	533	3	4.3	---	---	---	754	32	65
31	502	2	2.7	---	---	---	921	40	99
TOTAL	93800	---	134456.5	60596	---	35234.8	77929	---	35084
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	3230	62	559	1090	21	62			
2	2150	40	232	949	12	31			
3	1460	29	114	876	9	21			
4	3350	74	846	814	8	18			
5	1810	38	196	760	19	39			
6	5980	150	2500	711	20	38			
7	3170	55	534	677	16	29			
8	1930	14	73	636	13	22			
9	1480	13	52	620	18	30			
10	1280	10	35	621	11	18			
11	1170	13	41	608	14	23			
12	1060	16	46	582	16	25			
13	1240	24	131	572	21	32			
14	1800	28	177	581	22	35			
15	2510	47	561	776	18	37			
16	2120	35	230	689	14	26			
17	1640	18	80	580	13	20			
18	1210	12	39	532	12	17			
19	1910	41	569	498	11	15			
20	3400	87	949	471	10	13			
21	1790	32	155	446	9	11			
22	1330	21	75	433	9	11			
23	1150	20	62	419	8	9.1			
24	1060	20	57	404	8	8.7			
25	3270	66	660	386	8	8.3			
26	3180	67	600	359	8	7.8			
27	1910	46	237	329	7	6.2			
28	1500	35	142	322	7	6.1			
29	1310	33	117	317	7	6.0			
30	1170	23	73	298	6	4.8			
31	---	---	---	282	6	4.6			
TOTAL	61570	---	10142	17638	---	634.6			
PERIOD	356676	---	277803.46						

SACRAMENTO RIVER BASIN

11374000 COW CREEK NEAR MILLVILLE, CA--Continued

SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	WATER DISCHARGE CFS-DAYS	SUSPENDED SEDIMENT DISCHARGE TONS	BEDLOAD DISCHARGE TONS	TOTAL SEDIMENT DISCHARGE TONS
NOVEMBER ...	5070.00	344.82	107	452
DECEMBER ...	40073.00	61906.74	4560	66500
JANUARY 1978	93800.00	134456.50	13300	148000
FEBRUARY ...	60596.00	35234.80	7060	42300
MARCH	77929.00	35084.00	9900	45000
APRIL	61570.00	10142.00	5700	15800
MAY	17638.00	634.60	557	1190
PERIOD	356676.00	277803.46	41184	319242

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
NOV								
23...	1445	3.5	207	52	29	--	--	--
DEC								
14...	0906	9.5	8130	979	21500	33	45	58
15...	1445	10.0	2930	228	1800	--	--	--
JAN								
09...	1440	10.5	25300	1750	120000	25	31	45
09...	1615	10.5	16200	1230	53800	23	32	42
10...	1120	10.0	5580	485	7310	--	--	--
FEB								
07...	1630	10.0	11900	543	17400	20	27	35
MAR								
06...	1014	10.5	3840	100	1040	--	--	--
08...	1451	8.5	10700	317	9160	20	27	35
10...	1050	10.5	2810	71	539	--	--	--

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
NOV								
23...	--	--	92	94	98	100	--	--
DEC								
14...	70	77	84	88	94	99	100	--
15...	--	--	65	69	75	94	100	--
JAN								
09...	55	67	77	89	98	100	--	--
09...	53	63	74	86	95	100	--	--
10...	--	--	52	64	75	88	99	100
FEB								
07...	44	54	61	71	86	99	100	--
MAR								
06...	--	--	49	58	71	88	100	--
08...	44	53	60	72	88	99	100	--
10...	--	--	30	38	61	97	100	--

11374000 COW CREEK NEAR MILLVILLE, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM
NOV								
17...	1515	--	5	70	1	4	16	67
17...	1516	--	--	--	1	4	12	52
17...	1517	--	--	--	1	2	7	42
17...	1518	--	--	--	1	3	8	20
17...	1519	--	--	--	1	2	4	6

DATE	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 128 MM
NOV								
17...	87	95	99	100	--	--	--	--
17...	58	61	66	75	83	100	--	--
17...	52	56	61	70	86	100	--	--
17...	23	28	37	52	69	90	100	--
17...	7	8	10	12	15	23	41	100

PARTICLE-SIZE DISTRIBUTION OF SEDIMENT IN TRANSIT WITHIN 0.25 FOOT OF BED SURFACE,
WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	STREAM WIDTH (FT)	SEDI- MENT DIS- CHARGE, BEDLOAD (TONS/ DAY)	SED. BEDLOAD SIEVE DIAM. % FINER THAN .062 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN .125 MM
NOV								
28...	1245	9.0	18	201	161	1.9	0	0
FEB								
08...	1317	9.5	15	3560	198	172	0	1

DATE	SED. BEDLOAD SIEVE DIAM. % FINER THAN .250 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN .500 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 1.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 2.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 4.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 8.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 16.0 MM
NOV							
28...	2	64	98	100	--	--	--
FEB							
08...	5	49	89	93	95	98	100

11374400 MIDDLE FORK COTTONWOOD CREEK NEAR ONO, CA

LOCATION.--Lat 40°22'03", long 122°34'19", in SW¼NW¼ sec.17, T.29 N., R.6 W., Shasta County, on left bank 700 ft (213 m) downstream from Poverty Gulch, 4.6 mi (7.4 km) upstream from North Fork Cottonwood Creek, and 7.8 mi (12.6 km) southeast of Ono.

DRAINAGE AREA.--244 mi² (632 km²).

PERIOD OF RECORD.--Water years 1964-72, January 1977 to current year.

WATER TEMPERATURES: Water years 1964-65, 1968-72, January 1977 to current year.

SEDIMENT RECORDS: Water years 1963-70.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1963 to September 1965, July 1968 to September 1972, January 1977 to current year.

INSTRUMENTATION.--Temperature recorder July 24, 1968 to Sept. 30, 1972, and since Jan. 24, 1977.

REMARKS.--Prior to June 24, 1970, water temperature data collected at site 4.2 mi (6.8 km) downstream.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 37.0°C Aug. 6, 1978; minimum recorded, 0.0°C on several days in 1968, 1971, 1972, and 1977.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 37.0°C Aug. 6; minimum recorded, 0.0°C Nov. 22.

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	20.0	14.0	14.5	10.5	10.5	7.0	---	---	8.0	7.5	10.5	7.5
2	20.5	14.5	14.5	10.5	10.5	6.5	---	---	8.0	7.5	11.0	9.5
3	20.5	14.5	15.5	10.0	11.0	6.5	---	---	10.0	8.0	12.5	10.0
4	20.5	14.5	12.5	8.5	11.5	8.0	---	---	10.0	7.5	11.0	10.0
5	19.0	14.5	13.0	8.0	12.0	7.5	---	---	10.0	9.0	12.5	10.5
6	18.5	15.0	13.5	6.5	10.0	8.5	---	---	10.0	8.5	11.5	9.5
7	18.0	13.0	13.5	8.0	12.0	8.0	---	---	10.5	8.5	11.5	11.0
8	19.0	13.5	12.5	6.0	10.0	5.5	---	---	9.0	8.0	11.5	10.5
9	18.5	13.5	12.0	5.5	7.5	4.0	---	---	9.5	8.0	13.0	10.0
10	18.5	13.5	12.0	6.0	8.5	4.0	---	---	8.5	7.0	12.0	10.0
11	19.5	14.0	10.5	7.5	7.0	6.0	---	---	9.0	6.0	11.5	10.0
12	19.0	14.0	13.5	8.5	9.0	6.5	---	---	7.5	5.5	11.5	8.0
13	19.5	14.5	14.5	10.0	8.5	8.5	---	---	9.0	6.0	12.0	8.5
14	18.5	14.5	13.0	8.0	9.5	8.5	---	---	10.0	7.5	13.0	8.0
15	18.5	14.0	14.5	8.5	10.0	7.5	---	---	10.0	7.5	13.5	8.5
16	18.0	14.0	14.0	9.0	7.5	6.0	---	---	8.5	7.0	14.5	9.0
17	18.0	13.0	12.5	8.5	8.0	4.5	---	---	9.5	8.0	15.0	9.5
18	18.0	13.5	10.0	6.0	7.5	5.0	---	---	12.5	8.0	15.0	10.5
19	17.5	13.5	7.0	3.0	6.0	4.0	---	---	13.0	8.5	16.0	11.0
20	16.0	13.0	6.0	2.0	6.0	3.5	---	---	13.0	8.5	15.5	11.0
21	15.5	11.0	2.5	0.5	7.0	5.5	---	---	13.5	9.0	13.5	12.5
22	15.0	11.0	2.5	0.0	9.5	7.0	---	---	13.5	9.0	13.5	12.0
23	14.5	12.5	5.0	1.5	9.5	9.5	---	---	13.0	9.5	15.0	12.0
24	15.5	12.0	8.5	5.0	8.5	7.0	7.5	5.0	11.5	10.5	15.0	10.0
25	15.5	13.5	8.5	5.0	8.0	6.0	8.5	5.5	13.5	10.5	16.0	10.5
26	15.0	11.0	9.5	7.5	8.5	7.0	9.5	6.5	12.0	9.5	16.0	11.5
27	14.5	12.5	10.0	7.5	9.5	8.5	10.0	6.5	12.5	8.5	18.0	12.0
28	12.5	11.5	9.0	6.0	---	---	10.0	6.5	12.0	7.0	18.5	13.0
29	13.0	11.0	11.0	7.0	---	---	9.5	6.5	---	---	18.0	14.5
30	14.5	11.0	11.0	8.5	---	---	9.5	7.0	---	---	19.0	13.5
31	14.5	10.5	---	---	---	---	9.0	8.0	---	---	17.0	13.5
MONTH	20.5	10.5	15.5	0.0	12.0	3.5	---	---	13.5	5.5	19.0	7.5

11374400 MIDDLE FORK COTTONWOOD CREEK NEAR ONO, 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	15.0	12.5	21.0	13.0	26.0	18.0	29.0	20.5	36.0	24.5	31.5	20.5
2	15.0	9.5	20.0	15.0	27.5	19.0	27.5	20.0	36.0	25.0	31.0	20.5
3	11.5	10.0	21.5	14.0	29.0	19.5	29.0	18.0	36.0	24.0	30.0	19.5
4	14.5	9.0	20.0	13.5	29.5	20.5	30.0	20.5	36.5	25.5	29.0	20.5
5	11.5	9.5	18.0	12.5	30.0	21.5	31.0	21.0	36.5	25.0	22.0	20.0
6	11.0	9.5	19.0	12.0	30.0	21.0	32.5	22.0	37.0	25.0	23.5	18.5
7	15.0	9.0	21.5	13.0	29.5	20.0	33.0	23.5	36.5	25.0	27.0	16.5
8	17.0	9.5	23.0	14.5	30.0	21.0	34.5	23.5	34.0	26.0	28.0	16.5
9	19.0	11.0	22.0	16.0	26.5	18.5	34.5	24.0	35.0	24.0	20.5	17.0
10	20.5	13.5	22.0	15.0	26.0	16.0	32.5	22.5	34.0	22.0	22.5	16.5
11	21.5	15.5	22.0	14.5	28.0	17.5	31.5	22.0	32.0	20.5	25.5	15.5
12	20.5	14.0	22.5	15.0	26.5	20.0	32.5	22.0	30.0	21.0	26.0	16.5
13	20.0	14.5	23.5	16.5	26.5	18.0	33.0	22.0	30.5	17.5	25.5	18.0
14	16.5	14.0	21.5	16.5	26.0	15.5	34.0	23.0	30.5	18.5	27.0	17.0
15	14.0	13.0	18.5	13.5	25.5	16.0	33.0	23.5	30.5	20.0	29.5	18.0
16	16.5	11.0	21.0	12.0	27.0	16.5	32.5	20.5	30.0	20.0	28.5	18.5
17	15.5	12.0	23.0	14.5	28.5	18.5	33.5	22.5	28.5	17.0	23.0	16.0
18	19.5	12.5	23.0	15.5	28.0	20.0	35.0	23.0	30.5	17.5	23.5	13.0
19	17.0	14.0	24.5	16.5	29.5	20.0	35.0	24.0	30.5	19.0	23.5	13.0
20	17.5	13.5	25.0	17.5	29.5	19.5	35.5	23.5	30.0	20.0	25.0	13.5
21	19.0	12.0	25.5	17.5	29.5	19.5	35.0	24.0	25.0	18.5	24.0	15.0
22	19.5	13.0	22.5	16.5	29.5	21.0	35.5	24.0	28.0	15.0	26.0	14.5
23	19.0	14.5	20.5	14.5	29.5	20.5	35.5	24.5	27.0	17.0	28.0	16.0
24	18.0	15.5	18.5	13.0	26.5	18.0	36.5	24.5	27.0	16.5	29.5	18.0
25	19.0	15.5	20.0	13.0	28.0	17.0	35.5	25.0	27.0	18.5	26.5	18.0
26	22.0	16.5	20.5	14.0	28.5	20.5	35.5	26.5	30.0	19.5	25.5	18.5
27	21.5	17.0	24.5	16.0	29.5	20.5	36.5	26.0	31.5	19.5	27.0	16.5
28	20.0	15.0	26.0	18.0	26.0	22.0	35.0	24.5	33.0	20.0	27.5	16.5
29	20.0	13.5	26.0	19.0	29.0	20.0	35.5	23.0	32.0	21.5	28.5	17.5
30	18.0	13.5	24.0	18.0	30.0	20.5	36.0	22.5	31.5	22.5	28.0	18.0
31	---	---	24.5	17.0	---	---	36.0	23.5	32.0	20.0	---	---
MONTH	22.0	9.0	26.0	12.0	30.0	15.5	36.5	18.0	37.0	15.0	31.5	13.0

11375700 NORTH FORK COTTONWOOD CREEK NEAR IGO, CA

LOCATION.--Lat 40°26'32", long 122°32'57", in SE¼NW¼ sec.21, T.30 N., R.6 W., Shasta County, near right bank on downstream side of bridge on Gas Point Road, 1.2 mi (1.9 km) downstream from Huling Creek, 4.4 mi (7.1 km) south of Igo, and 4.5 mi (7.2 km) upstream from Middle Fork.

DRAINAGE AREA.--88.7 mi² (229.7 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1956 to current year.

REVISED RECORDS.--WSP 1931: 1960(M).

GAGE.--Water-stage recorder. Altitude of gage is 630 ft (192 m), from topographic map.

REMARKS.--Some storage for irrigation above station in Rainbow Lake, capacity, 4,800 acre-ft (5.92 hm³). Some flow diverted upstream to Clear Creek basin by Happy Valley Irrigation Canal.

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

AVERAGE DISCHARGE.--22 years, 169 ft³/s (4.786 m³/s), 122,400 acre-ft/yr (151 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft³/s (312 m³/s) Dec. 22, 1964, gage height, 39.45 ft (12.024 m) in gage well 41.7 ft (12.71 m), from floodmarks, from rating curve extended above 4,400 ft³/s (125 m³/s) on basis of slope-area measurement of maximum flow; minimum daily, 0.30 ft³/s (0.008 m³/s) Sept. 5, 11-15, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 21, 1955, reached a peak discharge of 14,300 ft³/s (405 m³/s) by slope-area measurement at site 1.2 mi (1.9 km) upstream (above Huling Creek) adjusted for intervening drainage area.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,500 ft³/s (127 m³/s) Jan. 16, gage height, 35.39 ft (10.787 m); minimum daily, 4.4 ft³/s (0.125 m³/s) Oct. 22.

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	22	9.2	45	149	429	252	898	295	71	60	13	6.5
2	19	8.7	42	239	392	505	567	297	66	65	13	6.2
3	18	8.7	40	239	306	660	516	279	64	60	13	5.6
4	18	9.4	39	747	266	1340	517	280	66	56	13	5.9
5	18	17	38	1090	554	1240	600	285	64	53	13	13
6	18	12	36	490	611	993	918	270	62	50	12	22
7	17	10	36	339	1130	913	729	259	62	46	12	14
8	17	12	34	546	1010	2820	637	249	62	43	11	12
9	17	12	34	1910	999	2230	575	242	59	41	10	106
10	16	11	32	775	706	1410	535	234	57	40	7.5	129
11	8.0	11	50	573	590	1130	508	223	57	37	7.1	46
12	7.3	12	51	611	772	980	477	216	59	35	7.2	32
13	7.4	12	62	1380	622	867	464	213	59	32	7.1	27
14	7.3	11	566	2420	563	780	447	205	58	29	7.2	23
15	7.2	11	304	2570	523	664	514	200	58	28	7.1	18
16	7.2	10	352	3840	493	625	455	187	58	27	7.1	17
17	7.0	9.3	442	2600	458	584	416	176	58	27	6.9	17
18	7.0	9.3	174	2180	429	546	394	167	56	26	7.0	17
19	6.0	9.3	130	2260	415	514	392	128	58	25	6.5	16
20	5.2	9.5	113	1330	403	489	373	109	58	24	5.9	15
21	5.7	43	114	1040	380	525	348	108	58	22	6.2	16
22	4.4	111	459	908	366	526	326	100	58	18	6.9	16
23	4.5	72	728	806	332	519	300	84	58	17	7.2	16
24	5.1	73	277	713	309	477	277	86	58	17	7.7	15
25	6.5	53	219	647	296	452	600	86	58	16	8.4	15
26	7.0	53	188	597	285	394	578	84	60	16	9.2	15
27	7.6	51	217	552	268	338	430	84	60	15	8.5	15
28	9.8	45	184	524	257	322	374	78	61	14	8.0	14
29	13	41	193	486	---	308	337	77	60	14	6.9	14
30	14	41	177	458	---	294	311	76	59	14	6.0	14
31	11	---	158	436	---	673	---	74	---	14	6.7	---
TOTAL	338.2	797.4	5534	33455	14164	24370	14813	5451	1802	981	268.3	698.2
MEAN	10.9	26.6	179	1079	506	786	494	176	60.1	31.6	8.65	23.3
MAX	22	111	728	3840	1130	2820	918	297	71	65	13	129
MIN	4.4	8.7	32	149	257	252	277	74	56	14	5.9	5.6
AC-FT	671	1580	10980	66360	28090	48340	29380	10810	3570	1950	532	1380
CAL YR 1977 TOTAL	9869.10		MEAN	27.0	MAX	728	MIN	4.30	AC-FT	19580		
WTR YR 1978 TOTAL	102672.10		MEAN	281	MAX	3840	MIN	4.4	AC-FT	203600		

11375700 NORTH FORK COTTONWOOD CREEK NEAR IGO, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: January 1977 to current year.

INSTRUMENTATION.--Temperature recorder since Jan. 14, 1977.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 36.0°C July 16, 1977; minimum recorded, 0.0°C Nov. 21, 22, 1977.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 33.0°C Aug. 6, 7; minimum recorded, 0.0°C Nov. 21, 22.

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	18.0	13.0	13.5	10.5	---	---	7.5	5.5	8.0	7.5	10.5	6.5
2	18.0	12.5	15.0	10.5	---	---	8.5	7.5	8.0	7.5	11.0	9.5
3	18.0	13.0	12.5	10.0	---	---	9.5	8.5	10.0	8.0	11.0	10.5
4	18.0	13.0	11.5	9.5	---	---	9.5	9.5	10.0	8.0	10.5	10.0
5	17.5	13.0	11.0	9.0	---	---	9.5	9.0	10.0	9.0	12.5	9.5
6	17.0	14.0	10.0	7.5	---	---	9.5	8.5	10.0	9.0	12.0	9.0
7	16.5	11.5	11.0	8.5	---	---	9.5	8.5	10.5	8.0	11.0	10.5
8	17.0	12.0	9.5	7.0	---	---	10.0	9.5	8.5	7.5	11.0	10.5
9	17.0	12.5	8.5	6.0	---	---	10.5	10.0	9.0	7.5	12.5	10.0
10	17.0	12.5	8.5	6.0	---	---	10.0	9.5	---	---	12.0	9.0
11	19.0	13.5	9.0	8.0	---	---	10.0	9.5	8.0	6.0	11.0	9.5
12	18.5	13.5	11.5	8.5	---	---	10.0	10.0	7.0	5.0	10.5	8.0
13	19.0	14.0	12.5	10.5	---	---	10.5	10.0	8.0	6.0	11.0	8.0
14	19.5	14.0	10.5	8.5	10.0	9.0	10.5	10.0	9.0	7.0	11.5	7.5
15	19.0	13.5	10.5	8.0	10.0	6.5	10.0	9.5	9.0	6.5	13.0	7.5
16	19.0	13.0	10.5	8.0	7.0	6.0	9.5	9.5	8.0	7.0	13.0	8.0
17	18.5	12.5	10.0	8.0	8.0	6.0	10.5	9.5	9.0	7.0	13.0	8.5
18	18.5	13.0	8.5	5.5	7.0	5.0	9.5	9.5	11.0	7.0	13.0	9.0
19	19.0	13.0	5.0	3.0	5.5	3.5	10.0	9.5	11.5	7.5	14.0	9.5
20	16.0	13.0	4.0	2.0	6.0	3.5	10.0	8.5	11.5	8.0	13.5	9.5
21	16.5	11.0	1.0	0.0	6.5	5.5	9.5	8.0	12.0	8.5	12.0	11.0
22	16.5	10.0	5.0	0.0	9.5	7.0	9.0	7.0	12.5	8.5	12.0	11.0
23	15.0	12.0	6.0	3.5	9.5	8.5	8.0	6.5	13.0	9.0	14.0	10.5
24	17.0	12.0	---	---	8.5	6.5	8.0	6.0	10.5	10.5	13.5	9.0
25	17.0	14.0	---	---	7.5	6.0	8.5	6.5	12.5	10.0	14.5	9.5
26	15.5	11.0	---	---	8.0	7.0	9.0	7.0	12.0	9.0	15.0	10.5
27	13.5	12.5	---	---	9.0	8.0	9.0	7.0	11.0	8.0	16.0	10.0
28	12.5	11.5	---	---	10.5	8.5	9.5	7.0	11.0	6.5	16.5	10.5
29	12.5	11.5	---	---	11.0	8.5	9.5	7.0	---	---	15.5	13.0
30	14.0	11.5	---	---	9.5	7.5	9.0	7.5	---	---	17.0	12.5
31	13.5	10.5	---	---	7.5	5.5	8.5	8.0	---	---	14.0	12.5
MONTH	19.5	10.0	---	---	---	---	10.5	5.5	13.0	5.0	17.0	6.5
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	14.5	10.0	17.5	10.0	24.0	13.5	26.5	18.0	31.0	24.0	29.5	21.5
2	12.0	9.0	18.5	11.0	25.5	15.0	25.0	17.5	31.0	24.0	29.0	21.0
3	11.0	9.5	19.0	12.0	26.5	15.5	26.5	16.5	31.5	24.0	28.5	20.5
4	12.5	9.0	17.5	11.5	27.0	16.5	28.0	18.0	31.5	25.5	26.5	21.0
5	9.5	9.0	16.0	10.0	28.0	17.5	29.0	19.0	32.5	24.5	21.5	19.5
6	10.0	8.5	17.0	10.0	28.5	18.0	29.5	19.5	33.0	25.0	22.5	18.5
7	12.0	7.5	18.5	11.0	28.0	16.5	28.5	21.5	33.0	25.0	22.5	17.0
8	13.5	8.0	19.5	11.5	28.0	17.5	30.5	20.5	32.5	26.0	23.5	17.0
9	15.5	9.0	18.5	13.0	26.0	17.5	30.5	21.0	32.0	24.5	21.0	15.0
10	16.0	10.5	19.5	12.0	26.0	16.5	29.5	21.0	32.5	24.0	20.0	14.5
11	16.5	11.5	19.0	12.5	26.0	15.0	28.0	20.0	30.5	22.5	21.0	13.5
12	15.5	10.5	20.0	12.5	24.0	17.0	28.5	19.5	29.5	22.5	21.5	14.5
13	15.0	11.0	20.5	13.5	24.5	16.0	29.0	19.5	28.5	19.5	21.5	16.0
14	11.5	10.5	18.5	14.5	25.5	15.5	30.0	20.5	29.0	19.5	22.0	16.0
15	10.5	8.5	17.5	12.5	24.5	14.5	29.0	21.0	29.0	20.0	23.5	16.0
16	11.5	7.5	18.5	10.5	25.5	14.0	28.5	19.0	28.5	21.0	23.0	17.5
17	12.0	8.0	20.0	11.5	26.0	15.5	29.5	20.5	28.0	19.5	21.0	16.0
18	14.0	9.0	21.0	12.5	25.5	17.0	30.0	20.5	28.5	18.5	19.0	13.5
19	12.0	10.0	22.0	14.0	26.5	16.0	30.0	21.5	28.5	19.0	18.5	12.5
20	12.5	9.5	22.0	14.5	26.5	17.0	30.0	21.0	28.5	19.5	19.0	13.0
21	13.0	7.5	22.5	14.5	27.0	16.0	30.5	21.5	25.0	19.5	19.0	14.5
22	14.0	8.0	21.0	14.0	26.5	17.5	30.5	21.5	25.0	16.5	20.0	14.0
23	13.5	9.5	20.0	12.5	26.0	17.0	30.0	23.0	25.0	17.5	22.0	15.5
24	13.0	11.0	16.0	11.0	25.5	16.5	31.0	22.5	25.0	18.5	23.0	17.5
25	14.5	11.5	18.5	10.0	26.0	15.0	30.5	23.5	24.5	20.0	21.5	18.0
26	14.5	11.5	18.5	10.5	26.0	18.5	31.0	25.0	27.0	19.5	21.5	18.5
27	17.0	11.0	23.0	12.5	26.0	17.5	31.0	24.0	28.0	20.0	21.0	16.0
28	16.5	11.0	24.0	13.5	22.5	19.5	30.0	23.5	29.5	21.0	21.5	16.0
29	17.0	10.5	24.0	14.5	27.0	18.0	30.0	21.5	30.0	22.0	22.0	16.5
30	16.0	11.5	22.5	14.0	27.0	18.5	30.0	21.5	30.5	23.5	22.5	17.0
31	---	---	23.5	14.0	---	---	31.0	23.0	30.0	21.5	---	---
MONTH	17.0	7.5	24.0	10.0	28.5	13.5	31.0	16.5	33.0	16.5	29.5	12.5

SACRAMENTO RIVER BASIN

11375810 COTTONWOOD CREEK NEAR OLINDA, CA

LOCATION.--Lat 40°23'06", long 122°28'31", in SE¼NW¼ sec.7, T.29 N., R.5 W., Shasta County, on left bank 1.0 mi (1.6 km) downstream from Dutch Gulch, and 5.5 mi (8.8 km) southwest of Olinda.

DRAINAGE AREA.--395 mi² (1,023 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1971 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 515 ft (157 m), from topographic map.

REMARKS.--Records good. Numerous pumping diversions above station.

AVERAGE DISCHARGE.--7 years, 452 ft³/s (12.80 m³/s), 327,500 acre-ft/yr (404 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,900 ft³/s (1,050 m³/s) Jan. 16, 1974, gage height, 21.44 ft (6.535 m) from rating curve extended above 14,000 ft³/s (396 m³/s) on basis of slope-area measurement of peak flow; no flow Aug. 30, Sept. 7, 8, 1972, and many days in 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s (85.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 14	2230	3910 111	10.38 3.164	Feb. 5	1945	4020 114	10.19 3.106
Dec. 17	0045	5890 167	11.38 3.469	Feb. 8	2215	7080 201	12.32 3.755
Dec. 23	0045	8200 232	12.69 3.868	Feb. 12	1645	4000 113	10.18 3.103
Jan. 5	0630	6200 176	11.56 3.523	Mar. 2	1900	3530 100	9.79 2.984
Jan. 9	0745	11100 314	14.85 4.526	Mar. 4	0330	5940 168	11.57 3.527
Jan. 14	2100	12400 351	15.51 4.727	Mar. 8	1315	9170 260	13.69 4.173
Jan. 16	1015	*13600 385	16.08 4.901	Apr. 6	1930	3710 105	9.94 3.030
Jan. 19	0015	9990 283	14.02 4.273				

Minimum daily, 9.1 ft³/s (0.26 m³/s) Oct. 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	43	23	129	494	871	727	1890	671	214	103	32	12
2	30	19	111	803	934	1200	1150	649	192	132	30	12
3	26	18	100	959	825	1470	1070	610	183	117	25	11
4	25	19	91	2390	765	3860	1060	589	183	103	22	11
5	23	31	88	4100	2000	2930	1030	580	182	92	22	16
6	23	46	83	1790	2360	2300	2160	558	172	89	20	48
7	23	36	77	1140	4300	2040	1630	536	161	84	18	44
8	22	27	74	1550	3860	6680	1350	516	161	82	19	26
9	22	26	66	5730	3480	5680	1200	502	151	80	17	47
10	20	22	61	2940	2590	3560	1100	490	143	79	14	149
11	17	22	76	2190	2190	2710	1020	469	143	64	12	39
12	11	22	193	2050	2790	2160	959	457	141	72	11	14
13	9.4	23	151	4080	2260	1870	916	447	139	74	12	11
14	9.1	24	2240	6650	1960	1670	898	437	132	68	13	10
15	10	21	2330	6250	1770	1450	992	438	122	62	14	10
16	11	21	1340	10100	1600	1340	911	424	128	56	14	11
17	11	20	2310	7000	1490	1240	828	397	122	61	13	9.9
18	9.9	19	839	5330	1390	1160	788	382	118	56	12	10
19	10	18	562	5640	1340	1080	776	361	118	50	13	11
20	10	18	449	3600	1300	1010	776	330	117	48	22	11
21	9.7	36	410	2710	1260	1030	729	321	114	47	31	12
22	10	369	1180	2160	1190	1100	693	311	112	46	13	13
23	9.3	508	2850	1800	1120	1040	659	284	109	42	14	15
24	9.7	300	1040	1580	1050	969	620	280	111	40	15	16
25	11	292	703	1400	987	897	1110	279	107	35	15	17
26	12	254	566	1260	911	830	1290	268	103	34	15	18
27	13	264	764	1150	843	756	916	256	100	30	18	18
28	16	190	789	1060	782	731	821	243	126	26	18	21
29	20	150	732	981	---	714	756	236	138	29	14	23
30	33	138	681	920	---	743	712	226	112	31	11	23
31	29	---	570	864	---	1190	---	220	---	33	11	---
TOTAL	538.1	2976	21655	90671	48218	56137	30810	12767	4154	1965	530	688.9
MEAN	17.4	99.2	699	2925	1722	1811	1027	412	138	63.4	17.1	23.0
MAX	43	508	2850	10100	4300	6680	2160	671	214	132	32	149
MIN	9.1	18	61	494	765	714	620	220	100	26	11	9.9
AC-FT	1070	5900	42950	179800	95640	111300	61110	25320	8240	3900	1050	1370

CAL YR 1977 TOTAL 34489.84 MEAN 94.5 MAX 2850 MIN 0 AC-FT 68410
WTR YR 1978 TOTAL 271110.00 MEAN 743 MAX 10100 MIN 9.1 AC-FT 537700

11375810 COTTONWOOD CREEK NEAR OLINDA, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1971, 1973 to current year.

CHEMICAL ANALYSES: Water year 1971.

WATER TEMPERATURES: Water years 1973 to current year.

SEDIMENT RECORDS: Water years 1977 to current year.

TURBIDITY: Water years 1977 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: February 1973 to current year.

SEDIMENT RECORDS: January 1977 to current year (storm season only).

INSTRUMENTATION.--Temperature recorder since February 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 33.5°C Aug. 6, 7, 1978; minimum recorded, 2.0°C Nov. 21, 1977.

SEDIMENT CONCENTRATIONS (storm season only): Maximum daily mean, 3,600 mg/L Jan. 16, 1978; minimum daily mean, 1 mg/L on many days in 1977.

SEDIMENT DISCHARGE (storm season only): Maximum daily, 113,000 tons (103,000 metric tons) Jan. 16, 1978; minimum daily, 0.07 ton (0.06 metric ton) Feb. 20, Oct. 14, 1977.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 33.5°C Aug. 6, 7; minimum recorded, 2.0°C Nov. 21.

SEDIMENT CONCENTRATIONS (storm season only): Maximum daily mean, 3,600 mg/L Jan. 16; minimum daily mean, 2 mg/L on several days during November, December, and May.

SEDIMENT DISCHARGE (storm season only): Maximum daily, 113,000 tons (103,000 metric tons) Jan. 16; minimum daily, 0.07 ton (0.06 metric ton) Oct. 14.

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	16.0	17.5	12.5	11.0	8.0	7.5	6.0	8.0	7.5	11.0	7.5
2	22.5	15.5	18.0	12.5	10.5	7.5	8.5	7.5	8.0	7.5	11.5	10.0
3	22.5	15.5	16.0	12.0	10.5	8.0	10.0	8.5	10.0	8.0	11.5	10.0
4	22.5	15.5	14.0	11.5	11.5	9.0	10.0	9.5	9.5	7.5	10.5	10.0
5	20.0	15.5	14.0	11.0	11.5	8.5	10.0	9.5	10.0	9.0	12.5	10.5
6	21.0	16.0	14.5	10.0	10.5	9.5	10.0	9.0	10.0	8.5	11.5	9.0
7	20.5	14.5	14.5	10.5	12.0	9.5	10.0	9.0	10.5	8.5	11.0	10.5
8	21.5	14.5	14.0	10.0	10.5	8.0	10.5	9.5	8.5	7.5	11.0	10.5
9	21.5	15.0	13.0	9.0	8.5	6.5	11.0	10.5	9.5	7.5	12.5	10.0
10	21.5	15.0	13.0	9.0	9.0	6.0	11.0	10.0	8.5	6.5	12.5	9.0
11	22.0	15.0	12.0	10.5	8.0	7.5	10.0	9.0	8.5	6.0	11.5	8.5
12	22.0	15.5	14.5	11.0	9.0	7.5	10.5	10.0	7.0	5.5	11.5	7.5
13	22.5	15.5	16.0	12.0	9.5	9.0	11.0	10.5	8.5	6.0	11.5	8.0
14	21.5	15.5	14.0	10.5	9.5	9.0	11.0	10.5	9.5	7.5	12.0	8.0
15	22.0	15.0	15.5	10.5	10.0	7.5	10.5	10.0	9.5	7.0	13.0	8.0
16	21.5	15.5	15.0	10.5	7.0	5.5	10.5	10.0	8.0	7.0	13.5	8.5
17	21.5	14.5	14.0	10.5	7.5	5.0	11.0	10.0	9.0	7.5	14.0	9.0
18	21.5	15.0	12.5	8.5	7.0	5.0	10.0	10.0	11.5	8.0	14.0	10.0
19	20.5	15.5	10.5	6.5	6.0	4.0	11.0	10.0	12.0	8.0	15.0	11.0
20	17.5	15.0	8.5	5.5	6.0	4.0	10.5	9.0	12.0	8.5	14.5	9.5
21	19.5	13.5	6.0	2.0	7.0	6.0	10.0	9.0	12.5	9.0	13.5	12.0
22	18.5	13.0	5.0	2.5	9.5	7.0	9.0	7.0	13.0	9.0	13.0	11.5
23	16.5	14.5	5.5	2.5	10.0	9.0	8.0	6.5	13.0	9.0	15.0	11.5
24	19.0	14.5	8.5	5.5	8.5	7.0	8.0	5.5	12.0	10.5	15.0	10.0
25	19.0	15.5	9.0	6.5	7.5	6.0	8.5	6.5	13.0	10.5	16.0	10.0
26	19.0	13.0	10.5	8.5	8.0	7.0	9.0	7.0	12.5	10.0	16.0	11.5
27	16.0	14.0	10.0	8.5	9.0	8.0	9.5	6.5	12.5	7.5	17.0	11.5
28	14.5	13.5	9.5	7.5	10.5	9.0	9.5	6.5	12.0	7.5	18.0	12.0
29	14.5	13.5	10.5	8.0	10.5	10.0	9.5	6.5	---	---	17.0	14.5
30	17.5	13.0	11.5	9.0	10.0	8.0	9.5	7.5	---	---	18.5	13.5
31	17.0	12.5	---	---	8.0	6.0	9.0	8.0	---	---	16.5	13.0
MONTH	22.5	12.5	18.0	2.0	12.0	4.0	11.0	5.5	13.0	5.5	18.5	7.5

11375810 COTTONWOOD CREEK NEAR OLINDA, 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	15.0	12.0	18.0	10.5	24.0	17.0	27.0	21.5	32.0	25.0	28.5	22.5
2	13.5	9.5	19.5	12.0	25.0	18.5	25.0	20.5	32.0	24.5	28.0	22.5
3	11.5	10.5	19.5	13.5	26.0	19.0	27.0	20.0	32.0	24.5	27.5	22.0
4	13.5	9.5	18.5	13.0	26.5	20.0	28.0	21.0	32.0	25.5	27.0	22.0
5	11.0	9.5	17.0	11.5	27.5	20.5	28.5	22.0	33.0	26.0	23.0	21.5
6	10.0	8.5	18.0	11.5	28.0	21.5	29.0	22.5	33.5	26.0	24.0	20.0
7	13.0	8.0	19.5	12.5	27.5	20.5	29.0	23.5	33.5	26.5	24.0	19.0
8	14.5	8.5	21.0	13.5	27.0	21.0	30.5	23.0	31.5	27.0	25.0	19.0
9	16.0	10.0	20.5	15.5	25.0	19.5	31.0	24.0	32.5	25.5	22.5	18.0
10	17.5	11.0	20.5	14.5	24.5	17.5	30.0	23.5	32.0	24.5	20.0	15.5
11	18.0	13.0	20.5	14.5	25.5	18.5	28.5	22.5	30.5	23.0	22.5	17.0
12	17.0	11.5	21.5	14.5	24.0	20.0	29.5	22.5	28.5	23.0	23.5	18.0
13	16.0	12.0	21.5	16.0	25.0	18.5	30.0	22.5	28.5	21.0	23.0	18.5
14	13.5	11.0	19.5	16.5	25.0	18.5	30.5	23.0	29.0	22.0	24.0	18.5
15	11.0	9.5	18.0	14.0	24.0	18.0	30.5	23.5	28.5	22.0	25.5	19.0
16	12.5	8.0	19.5	12.0	25.0	17.5	29.5	22.5	28.5	22.0	25.5	19.5
17	12.5	9.0	21.0	13.5	26.0	19.0	30.0	22.5	27.0	21.0	23.0	19.0
18	15.0	9.5	21.5	15.0	25.5	20.0	30.5	23.0	28.5	20.5	22.0	16.0
19	12.5	10.5	22.5	15.5	26.5	20.0	31.0	23.5	28.5	21.0	22.0	15.5
20	13.0	9.5	23.5	17.0	27.0	20.5	31.5	23.5	28.5	21.5	22.5	15.5
21	14.5	8.0	23.5	17.0	27.0	20.0	31.0	23.5	24.0	21.5	22.0	16.5
22	15.0	9.0	21.5	16.5	27.0	21.0	31.5	24.0	26.0	19.0	23.0	16.5
23	14.0	10.0	20.5	15.0	26.5	21.0	31.0	24.5	25.5	19.5	24.5	18.0
24	13.5	11.5	17.5	13.5	25.5	20.0	32.0	24.5	25.0	19.5	25.0	19.0
25	14.5	11.5	19.0	12.5	26.0	19.0	31.0	25.0	25.5	20.5	23.5	19.5
26	16.0	11.5	20.0	14.0	26.0	21.5	31.5	26.0	27.0	21.0	23.0	20.0
27	18.0	11.5	23.0	15.5	26.0	20.5	32.0	25.0	28.0	21.0	24.0	18.0
28	17.5	12.5	24.0	17.0	24.0	22.0	31.0	24.5	29.5	22.0	24.0	18.0
29	18.0	12.0	24.0	18.0	26.5	20.5	31.0	23.0	29.0	23.0	25.0	18.5
30	16.0	12.0	22.0	17.0	27.5	21.5	31.5	23.0	29.0	24.0	24.5	19.0
31	---	---	23.5	16.5	---	---	32.0	24.0	29.0	22.5	---	---
MONTH	18.0	8.0	24.0	10.5	28.0	17.0	32.0	20.0	33.5	19.0	28.5	15.5

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	43	10	1.2	23	6	.37	129	8	2.8
2	30	8	.65	19	5	.26	111	8	2.4
3	26	7	.49	18	4	.19	100	9	2.4
4	25	7	.47	19	9	.46	91	7	1.7
5	23	7	.43	31	5	.42	88	4	.95
6	23	6	.37	46	2	.25	83	3	.67
7	23	6	.37	36	4	.39	77	7	1.5
8	22	6	.36	27	6	.44	74	5	1.0
9	22	6	.36	26	3	.21	66	3	.53
10	20	6	.32	22	3	.18	61	2	.33
11	17	5	.23	22	8	.48	76	9	2.6
12	11	4	.12	22	9	.53	193	60	32
13	9.4	3	.08	23	2	.12	151	22	9.4
14	9.1	3	.07	24	2	.13	2240	1940	14600
15	10	4	.11	21	3	.17	2330	2000	16700
16	11	4	.12	21	2	.11	1340	753	7500
17	11	4	.12	20	3	.16	2310	1940	21700
18	9.9	3	.08	19	3	.15	839	160	337
19	10	4	.11	18	7	.34	562	60	79
20	10	4	.11	18	16	.78	449	34	35
21	9.7	3	.08	36	20	1.9	410	235	215
22	10	3	.08	369	418	681	1180	1030	7890
23	9.3	3	.08	508	1100	2790	2850	2270	30700
24	9.7	3	.08	300	115	93	1040	314	882
25	11	4	.12	292	90	71	703	122	232
26	12	4	.13	254	32	22	566	67	102
27	13	4	.14	264	11	7.8	764	107	221
28	16	5	.22	190	9	4.6	789	116	247
29	20	5	.27	150	10	4.1	732	93	184
30	33	6	.53	138	12	4.5	681	69	127
31	29	8	.63	---	---	---	570	59	91
TOTAL	538.1	---	8.53	2976	---	3686.04	21655	---	101900.28

11375810 COTTONWOOD CREEK NEAR OLINDA, 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	494	119	159	871	46	108	727	13	26
2	803	276	693	934	83	209	1200	77	434
3	959	207	536	825	55	123	1470	179	766
4	2390	1860	21700	765	29	60	3860	823	9470
5	4100	3080	41300	2000	1620	11200	2930	1280	10400
6	1790	500	2420	2360	1510	9860	2300	1350	8380
7	1140	412	1270	4300	1770	26200	2040	476	2650
8	1550	794	3790	3860	1090	13200	6680	1140	23400
9	5730	1950	38900	3480	1380	13300	5680	1250	20800
10	2940	450	3570	2590	756	5290	3560	374	3590
11	2190	225	1330	2190	288	1700	2710	176	1290
12	2050	180	996	2790	2430	20000	2160	114	665
13	4080	1030	12300	2260	468	2860	1870	220	1110
14	6650	2180	52300	1960	250	1320	1670	251	1130
15	6250	1250	21900	1770	86	411	1450	223	873
16	10100	3600	113000	1600	54	233	1340	132	478
17	7000	1420	29900	1490	106	426	1240	57	191
18	5330	1170	19800	1390	202	758	1160	69	216
19	5640	1410	24800	1340	154	557	1080	79	230
20	3600	438	4260	1300	115	404	1010	40	109
21	2710	292	2140	1260	86	293	1030	33	92
22	2160	285	1660	1190	67	215	1100	49	146
23	1800	270	1310	1120	50	151	1040	30	84
24	1580	145	619	1050	62	176	969	18	47
25	1400	90	340	987	62	165	897	21	51
26	1260	191	650	911	34	84	830	26	58
27	1150	374	1160	843	17	39	756	28	57
28	1060	224	641	782	19	40	731	18	36
29	981	91	241	---	---	---	714	18	35
30	920	50	124	---	---	---	743	26	52
31	864	37	86	---	---	---	1190	358	2280
TOTAL	90671	---	403895	48218	---	109382	56137	---	89146

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	1890	419	2410	671	12	22			
2	1150	100	310	649	12	21			
3	1070	34	98	610	12	20			
4	1060	28	80	589	11	17			
5	1030	92	256	580	9	14			
6	2160	258	1700	558	8	12			
7	1630	172	757	536	9	13			
8	1350	114	416	516	8	11			
9	1200	48	156	502	12	16			
10	1100	34	101	490	11	15			
11	1020	25	69	469	8	10			
12	959	19	49	457	6	7.4			
13	916	21	52	447	5	6.0			
14	898	17	41	437	6	7.1			
15	992	25	67	438	5	5.9			
16	911	33	81	424	6	6.9			
17	828	15	34	397	22	24			
18	788	13	28	382	24	25			
19	776	14	29	361	25	24			
20	776	12	25	330	26	23			
21	729	13	26	321	26	23			
22	693	17	32	311	23	19			
23	659	25	44	284	12	9.2			
24	620	63	105	280	7	5.3			
25	1110	129	421	279	6	4.5			
26	1290	108	435	268	6	4.3			
27	916	28	69	256	8	5.5			
28	821	18	40	243	10	6.6			
29	756	12	24	236	9	5.7			
30	712	11	21	226	5	3.1			
31	---	---	---	220	2	1.2			
TOTAL	30810	---	7976	12767	---	387.7			
PERIOD	263772.1	---	716381.55						

SACRAMENTO RIVER BASIN

11375810 COTTONWOOD CREEK NEAR OLINDA, CA--Continued

SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	WATER DISCHARGE CFS-DAYS	SUSPENDED SEDIMENT DISCHARGE TONS	BEDLOAD DISCHARGE TONS	TOTAL SEDIMENT DISCHARGE TONS
OCTOBER 1977	538.10	8.53	0	9
NOVEMBER ...	2976.00	3686.04	17	3700
DECEMBER ...	21655.00	101900.28	3500	105000
JANUARY 1978	90671.00	403895.00	18500	422000
FEBRUARY ...	48218.00	109382.00	6840	116000
MARCH	56137.00	89146.00	8690	97800
APRIL	30810.00	7976.00	2440	10400
MAY	12767.00	387.70	115	503
PERIOD.....	263772.10	716381.55	40102	755412

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	
NOV									
23...	1055	3.5	410	408	452	62	82	91	
DEC									
14...	1515	9.5	2810	1960	14900	--	--	--	
JAN									
09...	1125	10.0	7570	2740	56000	29	38	41	
14...	1540	10.5	6030	1400	22800	--	--	--	
16...	0815	10.0	12900	1950	67900	28	41	57	
19...	1115	10.0	5280	1080	15400	14	19	28	
FEB									
08...	1015	8.0	3180	579	4970	--	--	--	
MAR									
09...	1510	13.0	5050	895	12200	--	--	--	
APR									
07...	1100	9.5	1600	115	497	--	--	--	
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
NOV									
23...	96	98	99	100	--	--	--	--	
DEC									
14...	--	--	86	90	93	96	99	100	
JAN									
09...	57	68	76	84	92	97	99	100	
14...	--	--	69	79	87	96	99	100	
16...	74	89	98	100	--	--	--	--	
19...	37	47	54	65	81	96	100	--	
FEB									
08...	--	--	47	54	66	90	99	100	
MAR									
09...	--	--	58	69	82	94	99	100	
APR									
07...	--	--	52	56	70	93	100	--	

11375810 COTTONWOOD CREEK NEAR OLINDA, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM
JAN							
05...	1400	10.0	5	3670	1	8	18
05...	1401	--	--	--	--	8	18
05...	1402	--	--	--	1	10	28
05...	1403	--	--	--	--	--	1
05...	1404	--	--	--	1	2	3
MAR							
03...	1115	10.5	5	1520	--	--	4
03...	1116	--	--	--	1	19	45
03...	1117	--	--	--	1	16	55
03...	1118	--	--	--	1	30	86
03...	1119	--	--	--	3	32	94

DATE	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
JAN						
05...	47	75	91	100	--	--
05...	33	51	68	81	100	--
05...	46	62	74	88	100	--
05...	3	12	34	64	75	100
05...	10	24	39	77	100	--
MAR						
03...	30	64	83	100	--	--
03...	73	86	92	100	--	--
03...	83	92	96	100	--	--
03...	96	98	100	--	--	--
03...	99	100	--	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SEDIMENT IN TRANSIT WITHIN 0.25 FOOT OF BED SURFACE,
WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	STREAM WIDTH (FT)	SEDI- MENT DIS- CHARGE, BEDLOAD (TONS/ DAY)	SED. BEDLOAD SIEVE DIAM. % FINER THAN .250 MM
DEC							
14...	1530	9.0	9	2800	148	534	2
DATE	SED. BEDLOAD SIEVE DIAM. % FINER THAN .500 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 1.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 2.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 4.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 8.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 16.0 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 32.0 MM
DEC							
14...	8	34	60	75	84	90	100

SACRAMENTO RIVER BASIN

11375810 COTTONWOOD CREEK NEAR OLINDA, CA--Continued

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT
CONCENTRATION AND TURBIDITY, 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						
04...	1145	25	18.0	6	.40	2.0
04...	1146	25	18.0	8	.54	2.0
26...	1600	12	19.0	4	.13	1.0
30...	1500	35	18.0	6	.57	2.0
31...	1700	26	17.0	9	.63	2.0
NOV						
03...	1330	18	15.0	5	.24	1.0
03...	1335	18	15.0	3	.15	1.0
04...	1400	18	13.5	11	.53	1.0
05...	0945	28	12.0	5	.38	1.0
06...	1015	48	12.5	2	.26	1.0
07...	0800	37	11.0	2	.20	1.0
08...	0800	26	10.0	8	.56	3.0
09...	0800	26	9.0	4	.28	1.0
10...	0800	22	9.0	1	.06	1.0
11...	0800	22	10.5	7	.42	2.0
12...	0745	22	10.5	12	.71	2.0
13...	0800	23	13.0	1	.06	1.0
14...	1715	23	14.0	2	.12	1.0
15...	0800	21	10.0	3	.17	1.0
16...	1730	21	15.0	2	.11	1.0
17...	0800	20	10.5	3	.16	1.0
19...	0800	18	6.5	4	.19	2.0
20...	0815	18	5.5	14	.68	1.0
21...	1045	32	3.0	12	1.0	2.0
22...	1000	312	3.5	168	142	50
22...	1155	410	3.5	213	236	55
22...	1445	442	4.5	510	609	210
22...	2200	499	4.0	499	672	200
23...	1055	410	3.5	408	452	290
23...	1056	410	3.5	422	467	310
23...	1600	307	4.0	118	98	60
24...	1450	345	--	114	106	60
26...	1710	289	10.0	34	27	8.0
27...	1500	259	10.0	14	9.8	6.0
28...	0815	197	8.0	14	7.4	9.0
28...	0930	193	7.5	16	8.3	7.0
28...	0945	192	7.5	10	5.2	4.0
29...	0820	151	8.0	14	5.7	8.0
30...	0745	139	10.0	16	6.0	4.0
DEC						
01...	0745	132	8.0	6	2.1	2.0
02...	0730	115	7.0	8	2.5	2.0
03...	0830	100	7.5	9	2.4	2.0
04...	0810	91	8.5	8	2.0	3.0
05...	0800	89	8.5	5	1.2	1.0
06...	1400	83	10.0	2	.45	1.0
07...	1645	78	12.0	11	2.3	3.0
08...	1730	71	8.5	3	.58	1.0
09...	1045	66	6.5	1	.18	1.0
09...	1046	66	6.5	3	.53	1.0
09...	1047	66	6.5	2	.36	1.0
10...	1400	63	9.0	1	.17	1.0
11...	0800	55	8.5	3	.45	1.0
11...	1545	80	8.5	11	2.4	4.0
12...	1000	224	8.5	65	39	40
12...	1700	197	9.0	72	38	45
13...	1030	143	9.0	20	7.7	6.0
13...	1415	143	9.0	6	2.3	3.0
14...	0855	2030	9.5	3010	16500	1400
14...	1255	2690	9.5	2310	16800	700
14...	1440	2870	9.5	2140	16600	700
14...	1500	2830	9.5	2900	22200	1400
14...	1510	2830	9.5	2020	15400	650
14...	1545	2650	9.5	1920	13700	650
15...	0800	2330	9.5	2850	17900	1300
15...	1215	1820	9.0	850	4180	300
15...	1220	1810	9.0	775	3790	300
15...	1615	1410	9.5	3170	12100	1400
16...	1150	946	7.0	169	432	90
16...	1200	946	7.0	192	490	90
16...	1230	940	7.0	154	391	80
17...	1100	1670	7.5	2790	12600	290
17...	1630	1350	7.5	424	1550	180
18...	1650	658	7.5	144	256	75
19...	1700	452	6.0	32	39	20
20...	1045	380	4.0	23	24	25
20...	1050	380	4.0	41	42	23
20...	1620	365	6.0	32	32	17
21...	1800	334	6.0	508	458	280

11375810 COTTONWOOD CREEK NEAR OLINDA, CA--Continued

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT
CONCENTRATION AND TURBIDITY, 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)
DEC						
22...	0800	843	7.5	514	1170	280
23...	1230	2200	9.5	774	4600	320
23...	1830	1670	9.5	1560	7030	90
24...	1800	897	8.0	307	744	95
25...	1400	682	7.5	96	177	55
26...	1620	546	8.5	60	88	28
27...	1630	864	9.0	120	280	65
28...	1400	773	10.0	122	255	70
29...	1555	750	10.5	92	186	50
30...	1830	653	10.0	60	106	33
31...	0930	578	6.0	58	91	33
JAN						
01...	1645	483	--	168	219	70
03...	1615	875	9.5	152	359	70
04...	1530	3720	--	1990	20000	750
04...	1730	4270	10.0	1970	22700	750
04...	2015	4890	10.0	1900	25100	700
05...	2000	3260	10.0	1880	16500	700
06...	1555	1520	10.0	320	1310	140
07...	2000	1030	10.0	436	1210	180
08...	1530	1750	10.5	888	4200	220
09...	0800	11000	11.0	3960	118000	1200
09...	0930	9550	10.0	4170	108000	1000
09...	1115	7690	10.0	2800	58100	750
09...	1730	4340	11.0	482	5650	180
10...	0840	3010	10.0	489	3970	170
10...	1245	2840	10.5	516	3960	170
11...	1700	2080	10.0	189	1060	80
12...	1615	1880	11.0	130	660	55
13...	0940	4480	--	1270	15400	450
13...	1630	3400	11.0	1170	10700	400
14...	0800	4530	--	578	7070	210
14...	1115	6460	11.0	1890	33000	450
14...	1210	8020	11.0	1950	42200	450
14...	1400	7120	10.5	3100	59600	600
14...	1401	7120	10.5	3100	59600	600
14...	1540	6030	10.5	1400	22800	360
14...	1605	6000	10.5	1600	25900	360
14...	1650	6020	10.5	2380	38700	300
14...	1715	6130	11.0	2750	45500	800
14...	1915	7980	11.0	1960	42200	400
15...	1130	5360	9.5	924	13400	250
15...	1430	6440	10.0	1050	18300	340
15...	2015	6580	10.0	1050	18700	300
16...	0730	12100	--	2140	69900	700
16...	0815	12900	10.0	1950	67900	650
16...	1200	11600	10.0	4560	143000	900
16...	1500	9480	10.0	2060	52700	700
17...	1134	6850	--	989	18300	260
17...	1630	6120	11.0	930	15400	250
18...	1730	4880	10.0	1380	18200	170
19...	0940	5460	10.0	1290	19000	220
19...	1115	5280	10.0	1080	15400	180
19...	1644	4590	11.0	1470	18200	180
20...	1700	3330	11.0	1540	13800	170
21...	1630	3140	10.0	364	3090	60
22...	1530	2100	9.0	396	2250	60
23...	1730	1740	8.0	367	1720	60
24...	1615	1540	8.0	101	420	36
25...	1800	1400	9.0	106	401	26
26...	1555	1240	9.0	224	750	22
27...	1140	1150	7.5	507	1570	23
28...	1800	1040	9.5	206	578	22
29...	1730	970	9.5	94	246	13
30...	1745	904	9.5	44	107	10
31...	1730	847	9.0	44	101	12
FEB						
01...	1800	904	--	60	146	13
02...	1830	898	8.0	136	330	11
03...	1330	816	10.0	176	388	11
03...	1640	804	10.0	64	139	11
03...	1641	804	10.0	53	115	11
04...	1900	750	9.5	32	65	10
05...	1330	2450	10.5	3580	23700	160
05...	1549	2560	10.5	2700	18700	160
05...	1700	2170	10.5	1360	7970	160
05...	1940	4440	10.0	929	11100	160
05...	1950	4440	10.0	1970	23600	550
06...	1620	2500	10.0	3470	23400	75
06...	2100	2470	10.0	4910	32700	75

SACRAMENTO RIVER BASIN

11375810 COTTONWOOD CREEK NEAR OLINDA, CA--Continued

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT
CONCENTRATION AND TURBIDITY, 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)
FER						
07...	0900	3870	10.0	918	9590	190
07...	1130	6520	10.0	861	15200	190
07...	1430	5500	10.0	1620	24100	500
07...	1530	5370	10.0	1960	28400	500
07...	2300	4190	10.0	2430	27500	500
08...	1015	3180	8.0	579	4970	120
08...	2015	5460	9.0	1580	23300	450
09...	1100	3330	9.5	1720	15500	110
09...	1700	3000	10.0	1600	13000	100
10...	1500	2540	8.0	957	6560	190
11...	1600	2120	8.0	171	979	70
12...	1000	2100	5.5	4770	27000	220
12...	1530	3780	5.5	6060	61800	170
12...	1900	3460	5.5	2530	23600	210
13...	0800	2280	8.5	692	4260	35
13...	1700	2120	8.5	481	2750	35
14...	1335	1930	10.0	222	1160	27
15...	1700	1730	9.5	60	280	18
16...	1715	1600	8.0	52	225	17
17...	1030	1490	9.0	91	366	15
18...	1900	1370	9.0	253	936	15
19...	1159	1350	10.5	143	521	11
20...	1830	1300	12.0	244	856	10
21...	1144	1270	11.0	296	1020	11
22...	1850	1180	13.0	61	194	10
23...	1619	1110	13.0	49	147	7.0
24...	1730	1040	12.0	73	205	7.0
25...	1815	970	12.0	64	168	9.0
26...	1730	898	13.0	33	80	7.0
27...	1644	835	13.0	14	32	6.0
28...	1315	780	11.5	26	55	6.0
MAR						
01...	1615	721	11.0	11	21	4.0
02...	1145	816	10.0	25	55	6.0
02...	1146	816	10.0	26	57	6.0
02...	1700	1030	10.0	845	2350	260
03...	0800	1780	10.0	803	3860	260
03...	1045	1580	10.5	294	1250	80
03...	1046	1580	10.5	254	1080	75
03...	1130	1500	10.5	252	1020	45
04...	0800	3850	10.0	796	8270	230
04...	0910	3340	10.0	1350	12200	250
04...	1830	3450	10.0	1900	17700	250
04...	1945	3630	--	1700	16700	250
04...	2230	4580	10.0	850	10500	75
05...	0830	2650	--	563	4030	85
05...	1630	3110	12.5	2550	21400	100
06...	1010	2320	10.0	1580	9900	110
06...	1815	2180	11.5	125	736	50
07...	1055	1940	11.5	534	2800	35
07...	1130	1940	11.5	570	2990	150
07...	1155	1930	11.5	521	2720	150
08...	0830	6300	11.0	884	15000	330
08...	0915	6940	11.0	1130	21200	310
08...	1045	8150	11.0	1430	31500	370
08...	1130	8610	11.0	1440	33500	330
08...	1350	9090	11.0	2410	59100	550
08...	1500	8520	11.0	2290	52700	550
08...	1755	7500	--	1560	31600	280
08...	2100	7530	11.0	1400	28500	280
09...	0930	5840	10.0	1810	28500	280
09...	1510	5050	13.0	895	12200	150
09...	1640	4820	12.5	792	10300	160
09...	2000	4580	12.5	834	10300	160
10...	1405	3390	10.0	2480	22700	110
10...	1735	3260	10.0	274	2410	90
10...	2100	3170	10.0	1960	16800	500
10...	2145	3130	10.0	2010	17000	120
12...	1815	2050	11.5	116	642	45
13...	1700	1840	12.0	275	1370	32
14...	1500	1650	12.0	294	1310	18
15...	1420	1480	12.0	257	1030	22
16...	1555	1330	13.5	450	1620	12
17...	1830	1210	14.0	30	98	11
18...	1715	1140	14.0	107	329	11
19...	1600	1070	15.0	92	266	7.0
20...	1830	1000	14.0	30	81	7.0
21...	1400	997	13.5	35	94	8.0
22...	1600	1030	12.0	66	184	8.0

11375810 COTTONWOOD CREEK NEAR OLINDA, CA--Continued

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT
CONCENTRATION AND TURBIDITY, 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)	TUR- BID- ITY (NTU)
MAR						
23...	1830	1060	14.0	22	63	9.0
24...	1730	950	14.0	19	49	5.0
25...	1240	904	16.0	24	59	5.0
26...	1800	786	16.5	340	722	28
27...	1815	750	17.0	35	71	4.0
28...	1330	738	12.0	12	24	4.0
29...	1620	715	17.0	21	41	3.0
30...	1845	709	19.0	52	100	10
30...	2110	698	19.0	33	62	12
31...	1715	1070	13.5	301	870	25
31...	2030	3060	13.0	65	537	25
31...	2120	3140	13.0	1740	14800	450
31...	2300	2780	13.0	1040	7810	390
31...	2340	2680	13.0	964	6980	390
APR						
01...	0845	2080	12.0	742	4170	300
01...	1130	1830	12.0	881	4350	360
01...	1500	1600	12.0	276	1190	100
01...	1900	1410	14.0	220	838	85
01...	2320	1270	12.0	193	662	85
02...	1850	1090	14.0	30	88	8.0
03...	1515	1030	11.5	36	100	11
04...	1300	1050	13.0	19	54	8.0
05...	1800	970	10.5	98	257	8.0
06...	0755	1630	9.0	136	599	50
06...	0940	1700	9.0	142	652	60
06...	1142	1980	8.0	150	802	60
06...	1230	2140	9.0	799	4620	150
06...	1345	2320	9.0	849	5320	180
06...	1500	2060	8.5	362	2010	120
06...	1730	1890	8.5	194	990	55
06...	1805	2440	8.5	207	1360	95
06...	1930	3710	8.5	188	1880	45
06...	2200	3610	--	666	6490	160
07...	0830	1660	10.0	168	753	60
07...	1100	1600	9.5	115	497	29
07...	2145	1440	10.0	168	653	55
08...	1700	1310	14.5	86	304	11
09...	1930	1150	16.0	29	90	10
10...	1900	1070	18.0	44	127	7.0
11...	1315	1030	17.5	22	61	4.0
12...	1850	943	17.5	18	46	5.0
13...	1430	917	16.0	23	57	6.0
14...	1645	892	13.0	16	39	5.0
15...	0945	917	11.0	18	45	5.0
15...	1800	1140	11.5	32	98	8.0
15...	2300	1040	10.0	26	73	8.0
16...	1650	873	12.5	43	101	4.0
16...	2205	866	9.5	16	37	4.0
17...	1800	810	12.5	76	166	3.0
18...	1430	792	15.0	13	28	3.0
19...	1535	792	12.5	14	30	3.0
20...	1715	768	13.0	12	25	4.0
21...	1545	721	14.0	13	25	3.0
22...	1245	698	15.0	18	34	4.0
23...	1430	664	14.0	25	45	4.0
24...	1030	626	14.0	57	96	15
25...	1030	1180	13.0	158	503	40
25...	1135	1130	13.5	96	293	30
25...	1420	1020	14.0	664	1830	55
25...	2240	1750	12.0	933	4410	60
25...	2330	1890	12.0	233	1190	37
26...	0715	1440	12.0	591	2300	40
26...	0815	1380	12.0	134	499	50
26...	1435	1130	16.0	50	153	18
26...	1615	1090	16.0	44	129	15
26...	2045	1020	16.0	36	99	17
27...	0710	943	12.0	113	288	10
27...	1730	892	18.5	26	63	7.0
28...	1840	798	17.5	76	164	6.0
29...	1955	732	18.0	11	22	3.0
30...	1815	709	16.5	11	21	1.0
MAY						
01...	2000	648	18.0	13	23	2.0
02...	2355	621	19.0	11	18	2.0
03...	1310	618	15.5	12	20	2.0
03...	1644	607	20.0	12	20	2.0
04...	2030	590	18.5	10	16	2.0
05...	1455	584	16.5	8	13	2.0
06...	1935	550	18.0	8	12	1.0

SACRAMENTO RIVER BASIN

11375810 COTTONWOOD CREEK NEAR OLINDA, CA--Continued

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT
CONCENTRATION AND TURBIDITY, 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)	TUR- BID- ITY (NTU)
MAY						
07...	1130	541	16.0	10	15	2.0
08...	1739	514	18.5	7	9.7	1.0
09...	1158	509	18.5	13	18	3.0
10...	1639	494	20.5	11	15	2.0
11...	1945	463	20.0	6	7.5	1.0
12...	2330	444	17.0	7	8.4	2.0
13...	0930	449	--	5	6.1	1.0
14...	1638	439	19.0	6	7.1	2.0
15...	2030	444	17.0	5	6.0	1.0
16...	1840	415	20.0	7	7.8	2.0
17...	1235	400	18.0	31	33	2.0
18...	1836	378	21.5	22	22	3.0
19...	2030	335	22.0	27	24	3.0
20...	2030	326	23.5	35	31	7.0
21...	2100	321	24.0	53	46	1.0
22...	1010	316	20.0	25	21	1.0
23...	1533	285	19.0	9	6.9	1.0
24...	1948	280	17.0	6	4.5	1.0
26...	1230	268	17.0	6	4.3	1.0
27...	1915	251	19.0	43	29	3.0
28...	1615	247	24.0	11	7.3	1.0
29...	2010	235	24.0	8	5.1	1.0
30...	2100	224	--	3	1.8	1.0
31...	2000	218	--	2	1.2	1.0
JUN						
02...	1245	197	22.0	5	2.7	1.0

11375820 SOUTH FORK COTTONWOOD CREEK NEAR COTTONWOOD, CA

LOCATION.--Lat 40°18'59", long 122°26'52", in SW&SE¼ sec.32, T.29 N., R.5 W., Tehama County, on right bank 15 ft (5 m) downstream from highway bridge, 0.7 mi (1.1 km) upstream from Dry Fork, and 10.3 mi (16.6 km) southwest of Cottonwood.

DRAINAGE AREA.--217 mi² (562 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1962 to September 1978 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 525 ft (160 m), from topographic map. October 1962 to Dec. 22, 1964, at site 85 ft (26 m) upstream at different datum.

REMARKS.--Small diversion above station.

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

AVERAGE DISCHARGE.--16 years, 221 ft³/s (6.259 m³/s), 160,100 acre-ft/yr (197 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,700 ft³/s (530 m³/s) Jan. 16, 1974, gage height, 14.05 ft (4.282 m); no flow many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,100 ft³/s (286 m³/s) Jan. 9, gage height, 10.14 ft (3.091 m); no flow many days during the 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	52	259	304	363	738	261	158	75	11	4.2
2		0	45	302	292	566	501	249	154	73	9.8	4.1
3		0	40	555	298	799	435	240	155	73	9.1	3.9
4		0	36	1370	282	1810	492	234	160	64	8.6	3.9
5		0	34	2080	1120	1150	382	231	172	58	8.2	4.4
6		0	33	1210	1290	828	544	228	184	54	7.8	14
7		0	32	675	2590	679	514	225	185	51	7.0	40
8		0	31	914	1950	1790	400	225	176	50	6.4	30
9		0	29	4750	1550	1810	348	225	164	47	5.6	25
10		0	28	2470	867	1180	328	229	152	44	5.0	79
11		0	30	1290	657	907	340	230	139	43	4.4	46
12		0	89	903	1030	715	339	222	126	42	4.1	30
13		0	98	1600	645	615	323	225	120	41	4.0	22
14		0	499	4600	519	567	311	235	111	38	3.9	17
15		0	2040	4040	437	526	361	244	104	35	3.9	14
16		0	711	4880	389	490	321	222	126	34	3.8	13
17		0	831	2850	352	477	300	196	99	31	3.9	12
18		0	454	1720	335	470	282	185	91	29	3.9	11
19		0	317	1980	393	467	267	180	89	27	3.8	11
20		0	242	1300	453	465	261	187	86	25	3.8	11
21		4.0	204	953	511	473	252	204	84	23	3.8	11
22		207	582	740	559	490	249	213	82	21	4.1	11
23		163	1690	627	555	468	246	199	81	20	4.3	10
24		121	628	553	536	454	243	185	77	19	4.4	9.5
25		178	409	482	508	429	282	169	73	17	5.1	9.3
26		130	304	413	474	425	512	153	68	16	6.4	9.1
27		123	361	356	439	417	335	141	64	15	6.9	8.8
28		94	588	331	392	416	300	139	63	14	7.1	8.6
29		72	447	314	---	420	285	144	78	14	6.3	8.0
30		57	414	298	---	414	273	156	78	13	5.4	7.5
31		---	332	284	---	459	---	162	---	12	4.6	---
TOTAL	0	1149.0	11630	45099	19727	21539	10764	6338	3499	1118	176.4	488.3
MEAN	0	38.3	375	1455	705	695	359	204	117	36.1	5.69	16.3
MAX	0	207	2040	4880	2590	1810	738	261	185	75	11	79
MIN	0	0	28	259	282	363	243	139	63	12	3.8	3.9
AC-FT	0	2280	23070	89450	39130	42720	21350	12570	6940	2220	350	969
CAL YR 1977	TOTAL	17139.30	MEAN	47.0	MAX	2040	MIN	0	AC-FT	34000		
WTR YR 1978	TOTAL	121527.70	MEAN	333	MAX	4880	MIN	0	AC-FT	241100		

11375820 SOUTH FORK COTTONWOOD CREEK NEAR COTTONWOOD, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1957, 1959-66, January 1977 to current year.

CHEMICAL ANALYSES: Water years 1957, 1959-66. Prior to water year 1963 published as sta 11375900.

WATER TEMPERATURES: January 1977 to current year.

SEDIMENT RECORDS: Water years 1963-70.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: January 1977 to current year.

INSTRUMENTATION.--Temperature recorder since January 1977.

REMARKS.--Prior to October 1965, chemical-quality and sediment samples were collected 6.6 mi (10.6 km) downstream.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 37.5°C Aug. 6, 7, 1978; minimum recorded, 3.0°C Jan. 26, Nov. 23, 1977.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 37.5°C Aug. 6, 7; minimum recorded, 3.0°C Nov. 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			---	---	11.5	8.0	---	---	8.0	7.5	11.0	7.0
2			---	---	11.0	7.0	---	---	8.0	7.5	11.0	9.5
3			---	---	11.5	7.5	---	---	10.0	8.0	12.0	10.0
4			---	---	12.5	8.5	9.5	8.5	9.5	7.5	10.5	10.0
5			---	---	12.0	8.0	9.5	8.5	10.0	9.0	12.5	10.0
6			---	---	11.0	10.0	9.0	8.0	10.0	8.5	11.5	9.5
7			---	---	12.0	9.5	9.5	7.5	10.0	8.0	11.0	9.0
8			---	---	10.5	7.0	9.5	9.0	8.5	7.0	11.0	10.5
9			---	---	9.0	5.5	10.0	9.5	9.0	7.0	12.5	9.5
10			---	---	9.5	5.5	10.5	9.0	8.0	6.5	12.5	8.5
11			---	---	8.0	7.5	9.5	8.0	8.5	5.5	12.0	9.5
12			---	---	---	---	10.0	9.0	7.0	5.5	12.0	7.5
13			---	---	---	---	10.0	9.5	8.0	5.5	11.5	8.0
14			---	---	---	---	10.5	9.5	9.5	6.5	13.0	7.5
15			---	---	---	---	---	---	10.0	7.0	13.5	8.0
16			---	---	---	---	---	---	8.5	7.0	14.5	8.5
17			---	---	---	---	---	---	9.0	7.5	15.0	9.5
18			---	---	---	---	---	---	12.5	7.5	15.0	10.0
19			---	---	---	---	---	---	12.5	8.0	16.5	11.0
20			---	---	---	---	10.0	8.0	12.5	8.0	15.5	11.0
21			---	---	---	---	9.0	8.0	12.5	8.0	13.5	12.0
22			---	---	---	---	8.5	6.5	12.5	8.0	13.0	11.0
23			6.0	3.0	---	---	7.5	5.0	12.5	8.0	16.0	11.0
24			10.0	6.0	---	---	7.5	4.5	11.0	10.0	15.0	9.0
25			9.0	6.0	---	---	8.0	5.5	12.5	9.5	16.5	9.5
26			---	---	---	---	9.5	6.0	12.0	9.0	16.5	11.0
27			---	---	---	---	10.0	6.0	12.5	7.5	18.0	11.0
28			---	---	---	---	10.0	6.5	12.0	7.0	18.0	11.5
29			11.5	7.5	---	---	10.0	6.5	---	---	16.5	13.5
30			12.0	8.5	---	---	10.0	8.0	---	---	18.5	13.0
31			---	---	---	---	9.0	8.0	---	---	16.0	12.0
MONTH			---	---	---	---	---	---	12.5	5.5	18.5	7.0

11375820 SOUTH FORK COTTONWOOD CREEK NEAR COTTONWOOD, 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	13.0	8.0	20.5	12.0	26.0	16.5	28.5	19.0	35.5	25.0	31.5	21.0
2	13.5	9.0	22.5	14.0	27.0	18.0	26.5	19.5	36.0	24.5	30.5	21.0
3	12.0	10.0	22.0	15.5	27.5	18.5	28.5	18.5	35.5	24.5	30.0	20.0
4	14.5	8.5	20.5	13.5	28.0	19.0	29.5	20.0	36.0	26.0	29.0	20.5
5	11.0	9.5	19.0	11.5	28.5	19.5	30.0	20.5	36.5	25.5	22.0	20.5
6	11.0	9.5	20.0	12.0	29.0	20.0	31.0	21.0	37.5	25.5	26.0	19.5
7	15.0	8.0	22.0	13.5	28.5	19.5	31.5	23.0	37.5	26.0	25.5	17.5
8	15.5	9.0	23.5	14.5	28.0	19.5	32.5	21.5	34.5	27.0	26.5	18.0
9	18.0	10.5	23.0	16.0	26.0	19.0	32.5	22.5	36.5	25.0	21.5	17.0
10	19.5	12.0	22.5	15.0	25.5	17.0	31.0	22.0	35.5	24.5	22.0	16.5
11	20.0	13.5	22.0	15.0	27.0	17.0	30.0	21.0	34.0	23.0	24.0	16.5
12	18.0	12.5	23.5	15.0	25.5	19.5	31.0	21.5	31.5	22.5	25.0	16.5
13	17.5	13.0	22.5	16.0	26.5	18.0	31.5	21.5	32.0	20.5	25.0	18.0
14	15.0	12.0	21.0	16.5	27.0	17.0	32.5	22.0	32.0	20.5	26.0	17.5
15	12.0	9.5	19.0	14.0	25.0	17.0	32.0	22.5	31.5	20.5	28.0	18.0
16	14.0	9.0	21.0	12.0	25.5	16.0	30.5	21.0	31.0	21.5	27.5	18.5
17	16.0	10.0	22.0	14.0	27.5	17.5	32.5	21.5	29.5	19.5	23.5	17.0
18	17.0	10.0	23.0	15.0	27.5	19.0	33.5	22.5	31.5	18.5	23.0	14.5
19	14.0	11.0	24.5	16.0	28.5	18.5	33.0	22.5	31.5	19.5	23.0	13.5
20	14.5	10.0	25.0	17.0	28.5	19.0	34.0	23.0	31.0	20.5	24.5	13.5
21	16.5	8.5	24.5	17.0	28.5	18.5	33.5	23.0	26.0	20.0	23.5	15.0
22	17.0	10.0	23.5	16.5	28.5	20.5	34.0	22.5	29.0	17.5	25.5	14.5
23	17.0	11.5	21.5	13.5	28.5	19.5	34.5	24.0	28.0	18.0	27.5	16.0
24	15.5	12.5	18.5	13.0	26.5	18.5	35.0	24.0	26.5	18.0	28.5	17.5
25	17.0	13.0	21.5	12.5	27.5	17.5	33.5	24.5	28.0	19.5	26.0	18.0
26	18.5	12.5	22.0	14.0	27.5	20.5	33.5	25.5	30.5	19.5	24.5	19.0
27	21.0	13.0	25.5	15.5	27.5	19.5	35.0	24.5	31.0	20.0	26.0	16.0
28	20.5	14.0	26.0	17.0	25.0	20.5	34.0	24.0	32.0	21.0	26.0	16.0
29	20.5	13.5	26.0	18.0	27.5	19.5	34.5	22.0	32.5	22.0	27.0	16.5
30	19.0	14.0	23.0	16.5	28.5	19.5	35.0	22.0	31.0	23.5	27.0	17.0
31	---	---	25.0	16.0	---	---	35.5	24.0	32.0	21.5	---	---
MONTH	21.0	8.0	26.0	11.5	29.0	16.0	35.5	18.5	37.5	17.5	31.5	13.5

11375870 SOUTH FORK COTTONWOOD CREEK NEAR OLINDA, CA

LOCATION.--Lat 40°19'34", long 122°26'40", in SE&NE¼ sec.32, T.29 N., R.5 W., Tehama County, on left bank 250 ft (76 m) downstream from Dry Creek and 8.0 mi (12.9 km) south of Olinda.

DRAINAGE AREA.--371 mi² (961 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 540 ft (165 m), from topographic map.

REMARKS.--Records good. No regulation or diversion upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,500 ft³/s (467 m³/s) Jan. 9, 1978, gage height, 10.86 ft (3.310 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 13.5 ft (4.11 m) Jan. 16, 1974, from floodmarks, discharge unknown.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft³/s (70.8 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 15	0130	3170 89.8	5.53 1.686	Jan. 18	2400	4950 140	6.27 1.911
Dec. 23	0130	5920 168	7.06 2.152	Feb. 7	1145	9310 264	8.30 2.530
Jan. 4	1900	4800 136	6.50 1.981	Feb. 12	1615	3780 107	5.43 1.655
Jan. 9	0930	*16500 467	10.86 3.310	Mar. 4	2130	7460 211	7.43 2.265
Jan. 14	2115	12400 351	9.47 2.886	Mar. 8	1200	3230 91.5	5.16 1.573
Jan. 16	0845	11100 314	9.01 2.746				

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	61	387	394	459	1020	298	187	72	12	4.8
2		0	52	593	451	774	604	288	177	67	11	4.6
3		0	46	947	445	1230	501	291	178	67	10	4.3
4		0	42	2080	433	3140	635	295	181	62	9.7	4.2
5		0	39	2610	1940	1710	466	291	190	57	8.7	4.5
6		0	38	1360	2090	1050	827	278	199	53	8.1	11
7		0	35	877	4350	926	794	262	200	50	7.4	35
8		0	33	1040	3060	2330	528	252	192	48	7.0	30
9		0	31	6470	2570	2230	478	261	186	47	6.9	23
10		0	29	2740	1500	1500	449	276	171	45	6.3	65
11		0	33	1440	1120	1200	442	277	161	44	5.6	44
12		0	128	1130	1920	992	432	268	148	42	5.2	30
13		0	99	2680	1280	858	413	269	142	42	5.0	23
14		0	836	7040	1020	765	399	277	132	40	5.0	18
15		0	2190	5180	855	672	441	285	126	37	4.9	15
16		0	805	7340	756	601	403	265	141	35	4.8	13
17		0	1540	4130	684	550	361	242	119	33	4.9	11
18		0	798	2800	619	530	326	227	107	31	5.0	10
19		0	457	2510	638	512	311	222	103	30	4.8	10
20		0	286	1550	672	510	321	224	97	28	4.7	9.6
21		4.0	241	1220	704	530	301	235	92	26	4.4	9.4
22		304	1060	1000	750	582	282	240	89	24	4.8	9.0
23		365	2320	835	752	554	269	230	86	22	4.9	9.0
24		178	874	694	725	536	262	215	85	21	5.1	8.5
25		257	590	627	685	468	507	201	79	20	5.5	8.1
26		192	437	569	616	436	685	187	77	18	6.1	7.9
27		163	613	520	567	443	355	177	74	17	6.9	7.6
28		112	805	482	502	441	325	176	70	16	7.1	7.4
29		82	623	457	---	449	303	179	85	16	6.8	7.1
30		70	559	433	---	462	298	187	80	15	6.0	6.7
31		---	464	410	---	518	---	191	---	14	5.1	---
TOTAL	0	1727.0	16164	62151	32098	27958	13738	7566	3954	1139	199.7	450.7
MEAN	0	57.6	521	2005	1146	902	458	244	132	36.7	6.44	15.0
MAX	0	365	2320	7340	4350	3140	1020	298	200	72	12	65
MIN	0	0	29	387	394	436	262	176	70	14	4.4	4.2
AC-FT	0	3430	32060	123300	63670	55450	27250	15010	7840	2260	396	894
CAL YR 1977	TOTAL	23560.33		MEAN 64.5	MAX 2320	MIN 0	AC-FT 46730					
WTR YR 1978	TOTAL	167145.40		MEAN 458	MAX 7340	MIN 0	AC-FT 331500					

11375870 SOUTH FORK COTTONWOOD CREEK NEAR OLINDA, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

WATER TEMPERATURES: Water years 1977 to current year.

SEDIMENT RECORDS: Water years 1977 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: November 1976 to current year.

SEDIMENT RECORDS: January 1977 to current year (storm season only).

INSTRUMENTATION.--Temperature recorder since November 1976.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 36.5°C Aug. 6, 1978; minimum recorded, 0.5°C Jan. 7-9, 1977.

SEDIMENT CONCENTRATIONS (storm season only): Maximum daily mean, 6,300 mg/L Jan. 9, 16, 1978; minimum daily mean, no flow for many days in November 1977.

SEDIMENT DISCHARGE (storm season only): Maximum daily, 175,000 tons (159,000 metric tons) Jan. 9, 1978; minimum daily, 0 ton (0 metric ton) Nov. 21, 1977.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 36.5°C Aug. 6; minimum recorded, 3.0°C Dec. 19, 20.

SEDIMENT CONCENTRATIONS (storm season only): Maximum daily mean, 6,300 mg/L Jan. 9, 16; minimum daily mean, no flow for many days in November.

SEDIMENT DISCHARGE (storm season only): Maximum daily, 175,000 tons (159,000 metric tons) Jan. 9; minimum daily, 0 ton (0 metric ton) Nov. 21.

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			---	---	11.5	7.5	7.0	5.5	8.5	8.0	11.5	8.0
2			---	---	11.5	7.0	8.5	7.0	8.5	8.0	12.0	10.5
3			---	---	12.0	7.5	9.5	8.5	11.0	8.5	13.5	10.5
4			---	---	13.0	8.5	10.0	9.5	10.0	8.0	11.5	10.5
5			---	---	12.5	8.0	10.0	9.5	10.5	9.5	14.0	11.0
6			---	---	11.0	10.0	10.5	9.0	11.0	9.0	13.0	10.0
7			---	---	13.0	9.5	10.5	8.5	11.0	9.0	12.0	10.5
8			---	---	11.0	6.5	10.5	9.5	9.0	7.5	12.5	11.5
9			---	---	9.0	5.0	---	---	10.0	7.5	15.0	10.5
10			---	---	9.5	5.0	---	---	9.0	6.5	14.5	9.5
11			---	---	8.0	7.5	---	---	9.5	5.5	13.5	11.0
12			---	---	9.5	7.5	---	---	8.0	6.0	13.5	8.5
13			---	---	9.5	9.0	---	---	9.0	6.0	13.5	9.0
14			---	---	10.0	9.0	---	---	10.5	7.5	14.5	8.5
15			---	---	10.0	6.5	---	---	11.0	7.5	15.5	9.0
16			---	---	7.0	6.5	---	---	9.0	7.5	17.0	10.0
17			---	---	7.5	4.5	---	---	10.0	8.0	17.5	10.5
18			---	---	7.0	4.5	---	---	13.5	8.0	17.0	11.5
19			---	---	6.0	3.0	---	---	14.0	8.5	19.0	12.5
20			---	---	5.5	3.0	---	---	14.0	9.0	18.0	12.5
21			---	---	6.5	5.5	---	---	14.0	9.0	15.0	13.0
22			---	---	9.5	7.0	---	---	14.0	9.0	15.0	12.0
23			---	---	10.5	9.0	---	---	14.0	9.0	17.5	12.0
24			10.0	5.0	9.0	6.5	---	---	12.5	10.5	17.5	10.0
25			10.0	6.0	7.5	5.5	---	---	13.5	10.0	19.0	11.0
26			12.0	8.5	8.0	6.5	---	---	13.0	9.5	19.0	12.5
27			12.0	8.5	9.5	8.0	11.0	6.5	13.5	8.5	20.5	12.0
28			11.0	6.5	10.5	8.5	11.5	7.0	13.0	7.5	20.5	13.0
29			12.0	7.5	11.0	10.0	11.5	7.0	---	---	18.5	15.5
30			12.0	8.5	10.5	8.0	11.5	9.0	---	---	21.0	15.0
31			---	---	8.5	5.5	9.5	8.5	---	---	18.0	14.0
MONTH			---	---	13.0	3.0	---	---	14.0	5.5	21.0	8.0

11375870 SOUTH FORK COTTONWOOD CREEK NEAR OLINDA, 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	14.0	4.5	23.5	13.5	28.0	17.0	29.0	19.5	34.5	23.5	30.5	20.5
2	15.5	9.5	26.0	15.0	29.0	19.0	27.0	19.5	34.5	23.5	30.0	20.5
3	13.5	11.0	26.0	17.0	29.5	20.0	29.0	18.5	34.5	21.0	29.5	19.5
4	15.5	9.5	24.0	14.5	30.0	20.0	29.5	20.0	35.0	21.5	28.0	20.0
5	12.5	10.5	22.0	12.5	30.0	20.5	30.0	20.5	35.5	24.5	21.5	19.5
6	12.0	10.0	23.5	13.0	31.0	21.0	31.0	21.0	36.5	20.5	26.0	19.0
7	16.5	9.0	25.0	14.5	30.0	20.0	31.0	22.5	36.0	20.0	25.0	17.0
8	18.0	10.0	27.5	15.5	29.0	20.0	32.0	21.5	33.5	26.0	26.0	17.5
9	20.5	12.0	26.0	17.5	27.0	19.5	32.0	22.5	35.5	20.5	21.0	17.0
10	23.0	13.5	26.5	16.5	26.0	17.5	30.5	22.0	34.5	22.5	21.5	16.5
11	24.0	15.5	25.5	16.5	27.5	17.5	29.5	21.0	32.5	22.0	24.0	16.0
12	21.5	14.5	27.5	16.0	26.5	19.5	30.5	21.5	30.0	21.5	24.5	16.5
13	20.5	15.0	26.5	17.5	27.5	18.5	31.0	21.5	30.0	19.0	24.0	17.5
14	17.5	13.0	24.0	17.5	27.5	18.0	32.0	21.5	30.5	19.5	25.0	17.5
15	13.0	10.5	22.0	15.5	26.0	17.5	31.5	22.0	30.5	19.5	27.5	17.5
16	16.0	9.5	24.0	13.0	27.0	16.5	29.5	21.0	30.5	20.5	27.0	18.0
17	18.5	11.0	25.0	15.0	29.0	18.0	31.5	21.5	28.0	18.5	23.0	16.5
18	20.5	11.0	26.0	16.0	28.0	19.5	32.5	22.0	30.0	18.0	22.5	14.0
19	16.0	13.0	28.0	17.0	29.0	19.0	32.5	22.0	30.5	19.0	22.5	13.5
20	18.0	11.0	28.0	18.0	29.0	19.5	33.5	22.5	30.0	20.0	24.0	13.0
21	19.5	9.5	27.5	18.5	29.0	19.0	32.5	22.5	25.5	19.5	23.0	14.5
22	20.0	11.0	26.0	18.0	29.0	20.5	33.5	21.5	28.0	16.5	25.0	14.5
23	20.0	12.5	23.5	15.0	28.5	20.0	33.5	23.5	27.5	17.0	27.0	16.0
24	18.0	14.0	20.5	13.5	27.0	19.0	34.5	23.5	26.0	17.0	28.0	17.0
25	19.0	13.5	24.0	13.5	27.5	17.5	32.5	21.5	27.0	19.0	25.5	17.5
26	20.0	13.5	25.0	15.0	27.5	20.5	32.5	25.0	29.5	19.0	24.0	19.0
27	24.5	14.5	28.0	17.0	27.5	19.5	34.0	21.5	30.0	19.0	25.5	15.5
28	24.5	15.5	28.5	18.5	25.0	21.0	33.0	22.0	31.5	20.5	25.5	16.0
29	24.5	15.0	27.5	19.0	29.5	19.5	33.5	20.5	32.0	21.5	27.0	16.5
30	22.5	14.5	24.5	17.0	29.5	20.0	33.5	21.5	31.0	22.0	26.5	17.0
31	---	---	26.5	16.0	---	---	34.0	23.0	31.5	20.5	---	---
MONTH	24.5	4.5	28.5	12.5	31.0	16.5	34.5	18.5	36.5	16.5	30.5	13.0

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

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1				0	0	0	61	47	7.7
2				0	0	0	52	25	3.5
3				0	0	0	46	20	2.5
4				0	0	0	42	15	1.7
5				0	0	0	39	10	1.1
6				0	0	0	38	9	.92
7				0	0	0	35	8	.76
8				0	0	0	33	7	.62
9				0	0	0	31	6	.50
10				0	0	0	29	5	.39
11				0	0	0	33	7	.62
12				0	0	0	128	147	59
13				0	0	0	99	162	43
14				0	0	0	836	3060	10800
15				0	0	0	2190	4290	28500
16				0	0	0	805	1050	2630
17				0	0	0	1540	2180	11100
18				0	0	0	798	850	1830
19				0	0	0	457	400	494
20				0	0	0	286	205	158
21				4.0	0	0	241	170	111
22				304	1760	2920	1060	1980	17200
23				365	3100	5930	2320	5160	53700
24				178	300	144	874	1100	2600
25				257	792	550	590	594	946
26				192	392	203	437	380	448
27				163	262	115	613	700	1160
28				112	108	33	805	1010	2200
29				82	88	19	623	700	1180
30				70	68	13	559	525	792
31				---	---	---	464	400	501
TOTAL				1727.00	---	9927.00	16164	---	136472.3

11375870 SOUTH FORK COTTONWOOD CREEK NEAR OLINDA, CA--Continued

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

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	387	254	265	394	42	45	459	82	102
2	593	553	1360	451	55	67	774	207	643
3	947	1250	3200	445	78	94	1230	359	1570
4	2080	3450	28700	433	95	111	3140	1550	17500
5	2610	5180	38300	1940	756	5460	1710	589	3240
6	1360	1950	7160	2090	911	5540	1050	290	822
7	877	932	2210	4350	2520	37200	926	205	513
8	1040	800	2250	3060	1570	15300	2330	892	5960
9	6470	6300	175000	2570	1120	9120	2230	787	4550
10	2740	2160	16000	1500	410	1660	1500	457	1940
11	1440	1080	4200	1120	272	823	1200	306	1000
12	1130	706	2150	1920	652	4280	992	182	487
13	2680	1880	15800	1280	252	916	858	140	324
14	7040	5650	127000	1020	144	397	765	123	254
15	5180	3820	56500	855	119	275	672	120	218
16	7340	6300	142000	756	92	188	601	95	154
17	4130	3000	33500	684	74	137	550	60	89
18	2800	1430	12100	619	75	125	530	70	100
19	2510	1290	10100	638	109	188	512	80	111
20	1550	730	3060	672	132	240	510	85	117
21	1220	500	1650	704	160	304	530	100	143
22	1000	392	1060	750	187	379	582	150	236
23	835	370	834	752	157	319	554	125	187
24	694	280	525	725	136	266	536	100	145
25	627	170	288	685	121	224	468	85	107
26	569	125	192	616	90	150	436	60	71
27	520	112	157	567	82	126	443	58	69
28	482	90	117	502	82	111	441	56	67
29	457	64	79	---	---	---	449	60	73
30	433	57	67	---	---	---	462	70	87
31	410	45	50	---	---	---	518	87	135
TOTAL	62151	---	685874	32098	---	84045	27958	---	41014
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	1020	259	792	298	14	11			
2	604	135	220	288	16	12			
3	501	80	108	291	25	20			
4	635	120	229	295	25	20			
5	466	71	106	291	25	20			
6	827	183	447	278	26	20			
7	794	167	387	262	26	18			
8	528	90	128	252	26	18			
9	478	67	86	261	30	21			
10	449	56	68	276	34	25			
11	442	57	68	277	28	21			
12	432	50	58	268	23	17			
13	413	43	48	269	22	16			
14	399	44	47	277	21	16			
15	441	71	85	285	33	25			
16	403	41	45	265	38	27			
17	361	41	40	242	17	11			
18	326	22	19	227	14	8.6			
19	311	32	27	222	13	7.8			
20	321	38	33	224	16	9.7			
21	301	24	20	235	21	13			
22	282	22	17	240	24	16			
23	269	27	20	230	15	9.3			
24	262	23	16	215	10	5.8			
25	507	103	296	201	9	4.9			
26	685	145	360	187	7	3.5			
27	355	37	35	177	8	3.8			
28	325	37	32	176	8	3.8			
29	303	28	23	179	7	3.4			
30	298	25	20	187	9	4.5			
31	---	---	---	191	10	5.2			
TOTAL	13738	---	3880	7566	---	417.3			
PERIOD	161402	---	961629.61						

SACRAMENTO RIVER BASIN

11375870 SOUTH FORK COTTONWOOD CREEK NEAR OLINDA, CA--Continued

SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	WATER DISCHARGE CFS-DAYS	SUSPENDED SEDIMENT DISCHARGE TONS	BEDLOAD DISCHARGE TONS	TOTAL SEDIMENT DISCHARGE TONS
NOVEMBER ...	1727.00	9927.00	52	9980
DECEMBER ...	16164.00	136472.31	2960	139000
JANUARY 1978	62151.00	685874.00	18100	704000
FEBRUARY ...	32098.00	84045.00	7400	91400
MARCH	27958.00	41014.00	5500	46500
APRIL	13738.00	3880.00	1280	5160
MAY	7566.00	417.30	241	658
PERIOD.....	161402.60	961629.61	35533	996698

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	
NOV									
23...	1255	4.5	352	1830	1740	51	71	89	
DEC									
02...	0835	7.0	52	25	3.5	--	--	--	
14...	1145	9.5	753	2910	5920	--	--	--	
15...	1520	9.5	2020	3380	18400	29	36	57	
20...	1015	3.0	293	159	126	56	75	88	
23...	1115	9.5	1860	3160	15900	--	--	--	
JAN									
09...	1216	11.0	8830	8430	201000	22	31	42	
10...	1520	12.0	2300	1750	10900	--	--	--	
14...	1316	11.0	9180	615	15200	22	24	27	
MAR									
03...	1510	12.0	980	229	606	--	--	--	
09...	1045	11.5	2320	762	4770	18	25	33	
APR									
07...	1340	13.5	710	102	196	--	--	--	
SEP									
08...	1645	26.0	26	864	61	82	97	99	
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. FALL DIAM. % FINER THAN .125 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
NOV									
23...	98	99	100	--	--	--	--	--	--
DEC									
02...	--	--	98	100	--	--	--	--	--
14...	--	--	97	--	98	99	100	--	--
15...	76	90	96	--	98	99	100	--	--
20...	97	99	100	--	--	--	--	--	--
23...	--	--	92	--	96	98	100	--	--
JAN									
09...	55	65	77	--	88	98	100	--	--
10...	--	--	78	--	87	94	99	100	--
14...	40	55	74	--	94	100	--	--	--
MAR									
03...	--	--	68	--	78	91	100	--	--
09...	48	58	67	--	77	90	99	100	--
APR									
07...	--	--	86	--	90	94	100	--	--
SEP									
08...	99	99	100	--	--	--	--	--	--

11375870 SOUTH FORK COTTONWOOD CREEK NEAR OLINDA, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM
FEB							
08...	1210	8.0	5	2180	1	8	47
08...	1211	--	--	--	--	2	25
08...	1212	--	--	--	--	1	5
08...	1213	--	--	--	--	1	5
08...	1214	--	--	--	--	--	--
MAR							
09...	1115	--	5	2270	--	--	--
09...	1116	--	--	--	--	--	--
09...	1117	--	--	--	--	--	1
09...	1118	--	--	--	--	1	7
09...	1119	--	--	--	2	9	48

DATE	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
FEB							
08...	57	61	68	81	100	--	--
08...	71	91	96	98	100	--	--
08...	10	14	23	55	91	100	--
08...	19	38	56	80	100	--	--
08...	--	1	3	10	39	100	--
MAR							
09...	1	3	13	35	75	75	100
09...	--	1	1	2	20	42	100
09...	2	4	14	43	82	100	--
09...	18	26	37	47	53	100	--
09...	74	85	97	100	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SEDIMENT IN TRANSIT WITHIN 0.25 FOOT OF BED SURFACE,
WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	STREAM WIDTH (FT)	SEDI- MENT DIS- CHARGE, BEDLOAD (TONS/ DAY)	SED. BEDLOAD SIEVE DIAM. % FINER THAN .062 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN .125 MM
NOV								
23...	1340	4.5	8	338	122	2.9	1	1
JAN								
26...	1510	10.0	6	561	122	323	--	--
FEB								
08...	1300	9.0	23	2150	143	134	--	1
MAR								
02...	1115	10.5	15	524	118	45	--	--
JUN								
06...	1045	22.0	3	204	91	3.9	--	--
DATE	SED. BEDLOAD SIEVE DIAM. % FINER THAN .250 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN .500 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 1.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 2.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 4.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 8.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 16.0 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 32.0 MM
NOV								
23...	5	20	39	54	60	67	87	100
JAN								
26...	--	2	14	40	70	91	100	--
FEB								
08...	6	20	28	33	41	57	82	100
MAR								
02...	6	61	82	91	96	99	100	--
JUN								
06...	4	15	26	52	80	97	100	--

11375870 SOUTH FORK COTTONWOOD CREEK NEAR OLINDA, 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						
23...	1000	469	3.5	2860	3620	1500
23...	1240	366	4.5	1920	1900	1200
23...	1300	352	4.5	1900	1810	1100
28...	1245	112	9.0	118	36	110
28...	1250	112	9.0	113	34	85
DEC						
02...	0835	52	7.0	25	3.5	20
02...	0837	52	7.0	24	3.4	20
06...	0930	39	10.0	7	.74	8.0
06...	0935	39	10.0	9	.95	6.0
14...	1145	762	9.5	3550	7300	1600
14...	1150	762	9.5	2910	5990	1700
14...	1200	753	9.5	3280	6670	1500
14...	1645	920	9.5	1280	3180	600
15...	1520	2020	9.5	3890	21200	1400
15...	1525	2000	9.5	3380	18300	1300
15...	1640	1790	10.0	4540	21900	1400
16...	0905	797	6.5	1550	3340	650
16...	1045	738	6.5	1260	2510	650
17...	1020	1450	7.0	1220	4780	550
18...	1020	805	5.0	893	1940	450
19...	1635	415	5.5	309	346	180
20...	1015	293	3.0	190	150	130
20...	1021	292	3.0	216	170	120
20...	1030	293	3.0	184	146	120
20...	1645	265	6.0	150	107	100
22...	1640	785	8.0	812	1720	450
23...	1115	1860	9.5	1860	9340	1400
23...	1120	1850	9.5	3160	15800	1200
23...	1645	1480	10.0	2880	11500	1000
24...	0945	880	6.5	1260	2990	550
25...	1000	600	6.5	594	962	290
26...	0925	439	7.0	325	385	200
27...	1630	712	9.0	835	1610	360
28...	1645	762	10.0	990	2040	400
29...	1715	611	10.0	616	1020	310
30...	1705	547	10.0	544	803	260
31...	1000	476	6.5	409	526	210
JAN						
01...	0955	388	6.0	254	266	150
02...	0745	395	8.0	200	213	120
03...	1645	821	9.0	903	2000	320
04...	1210	910	9.5	1610	3960	450
04...	1215	912	9.5	1280	3150	380
04...	1645	4020	10.0	6850	74400	1500
05...	1640	2390	9.5	3610	23300	1000
06...	1650	1200	9.5	1420	4600	500
07...	0925	912	8.5	932	2300	400
08...	0950	770	9.5	613	1270	250
09...	1215	8830	11.0	8900	212000	2200
09...	1500	6740	11.5	7100	129000	1600
09...	1505	6700	11.5	5010	90600	1300
09...	1645	6170	10.0	5150	85800	1400
10...	1525	2270	12.0	2210	13500	600
10...	1530	2280	12.0	1840	11300	650
10...	1650	2200	11.0	2000	11900	650
11...	1645	1340	9.5	1060	3840	380
12...	1640	1070	10.0	746	2160	250
13...	1700	2680	11.0	1920	13900	450
14...	0915	6240	10.0	2930	49400	600
14...	1315	9180	11.0	6150	152000	1100
14...	1605	6630	11.0	4060	72700	990
15...	1010	4570	9.5	3170	39100	750
16...	1650	6460	10.0	4860	84800	1400
17...	1655	3510	10.5	2200	20800	550
18...	1645	2310	10.0	1110	6920	350
19...	1645	2000	10.0	980	5290	300
20...	1655	1410	10.5	612	2330	210
21...	1025	1220	9.0	520	1710	180
22...	0925	1020	7.5	395	1090	260
23...	1700	799	8.0	368	794	220
24...	1645	666	8.5	262	471	75
25...	1710	619	9.0	143	239	55
26...	1445	561	10.0	87	132	35
26...	1450	561	10.0	90	136	40
26...	1645	554	10.0	122	182	50
27...	1700	507	10.0	111	152	40
28...	0930	488	7.0	95	125	33
29...	0950	457	7.5	62	77	24

11375870 SOUTH FORK COTTONWOOD CREEK NEAR OLINDA, 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- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	TUR- BID- ITY (NTU)
JAN						
30...	1655	422	10.5	58	66	23
31...	1700	410	9.0	38	42	15
FEB						
01...	1710	388	8.5	40	42	15
02...	1640	439	8.5	58	69	18
03...	1250	451	9.0	66	80	29
03...	1255	451	9.0	74	90	28
03...	1700	445	10.5	85	102	27
04...	0940	433	8.0	96	112	25
05...	1230	2820	10.5	3200	24400	500
06...	1645	2440	10.5	1500	9880	340
07...	1655	5090	10.5	3480	47800	850
08...	1145	2220	8.0	1060	6350	310
08...	1655	2020	9.0	806	4400	260
09...	1700	2030	10.0	667	3660	220
10...	1730	1390	9.0	432	1620	140
11...	1000	1140	8.0	342	1050	110
12...	1150	1760	7.0	630	2990	90
12...	1540	3730	7.0	1930	19400	300
13...	1700	1150	9.0	221	686	75
14...	1700	958	10.0	167	432	60
15...	1700	821	10.5	144	319	45
16...	1710	745	9.0	106	213	36
17...	1700	661	10.0	87	155	28
18...	1630	611	13.0	85	140	28
19...	1000	649	9.5	133	233	37
20...	1645	704	13.0	167	317	50
21...	1650	728	13.0	206	405	65
22...	1700	770	13.0	240	499	65
23...	1700	753	13.0	178	362	55
24...	1645	728	11.0	336	660	50
25...	1020	696	11.0	160	301	38
26...	1050	619	11.0	100	167	32
27...	1650	554	13.0	204	305	22
MAR						
01...	1900	445	11.5	100	120	17
02...	1045	517	10.5	68	95	13
02...	1050	518	10.5	97	136	13
02...	1715	854	11.0	269	620	50
03...	1510	958	12.0	229	592	70
03...	1715	897	12.5	238	576	60
04...	1015	2180	11.0	662	3900	240
05...	1035	1680	12.0	443	2010	130
06...	1720	1010	13.0	262	714	85
07...	1700	906	12.0	196	479	65
08...	1645	2500	12.0	1240	8370	340
09...	1045	2300	11.5	762	4730	200
09...	1700	2010	14.0	666	3610	220
10...	1710	1430	13.5	396	1530	130
11...	1720	1140	13.0	250	769	90
12...	0850	1020	9.0	186	512	75
13...	1730	844	12.0	135	308	45
14...	1750	754	13.5	119	242	35
15...	1720	657	14.0	120	213	32
16...	1640	600	15.0	85	138	22
17...	1740	554	15.5	60	90	18
18...	0945	527	12.0	70	100	21
19...	0925	514	13.0	86	119	19
20...	1700	520	16.0	85	119	19
21...	1655	532	14.0	82	118	17
22...	1800	565	14.0	152	232	45
23...	1755	564	15.5	112	171	30
24...	1640	522	16.0	87	123	21
25...	0910	476	12.0	58	75	26
26...	0930	439	13.0	59	70	15
27...	0845	439	12.0	56	66	16
28...	1005	447	14.5	52	63	17
28...	1645	451	12.5	128	156	20
29...	0900	453	15.0	64	78	17
30...	0900	494	14.5	70	93	19
31...	0825	445	14.5	62	74	17
APR						
01...	0925	881	12.0	488	1160	140
01...	1445	1770	4.0	1300	6210	360
02...	0905	620	10.0	161	270	40
03...	0855	507	11.0	81	111	25
04...	0915	728	10.0	246	484	85
05...	0955	416	11.0	54	61	17
06...	0925	696	10.0	182	342	26
06...	1030	680	10.0	270	496	65

SACRAMENTO RIVER BASIN

11375870 SOUTH FORK COTTONWOOD CREEK NEAR OLINDA, 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- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	TUR- BID- ITY (NTU)
APR						
06...	1035	680	10.0	128	235	36
07...	1155	744	13.0	102	205	28
07...	1340	710	13.5	102	196	45
08...	0945	540	12.0	50	73	17
09...	0925	482	13.0	57	74	16
10...	1250	457	18.0	45	56	13
11...	0845	445	15.0	48	58	7.0
12...	0835	431	14.0	42	49	9.0
13...	1305	416	17.0	34	38	10
14...	0905	399	13.0	36	39	8.0
15...	1215	449	12.0	68	82	9.0
16...	0940	398	10.0	29	31	9.0
17...	0915	365	11.0	38	37	8.0
18...	0825	328	11.0	16	14	5.0
19...	0910	307	13.0	24	20	6.0
20...	0815	328	11.5	35	31	7.0
21...	0830	302	10.0	21	17	6.0
22...	0850	283	12.0	17	13	5.0
23...	0815	269	12.0	23	17	6.0
24...	1105	260	15.0	17	12	5.0
26...	0840	686	13.5	9	17	4.0
28...	0830	323	15.5	16	14	5.0
29...	0820	302	15.0	12	9.8	4.0
30...	0900	288	14.0	12	9.3	3.0
MAY						
01...	0815	298	14.0	6	4.8	1.0
02...	0845	283	14.5	6	4.6	2.0
03...	0820	394	17.0	10	11	3.0
03...	1040	291	20.0	25	20	6.0
03...	1045	291	20.0	23	18	6.0
04...	0830	291	14.0	13	10	6.0
05...	0810	285	13.0	14	11	4.0
06...	0815	278	13.0	18	14	4.0
07...	0900	262	14.5	18	13	4.0
08...	1645	261	24.0	20	14	5.0
09...	1640	278	23.0	32	24	7.0
10...	1645	284	23.0	34	26	7.0
11...	1645	285	22.0	28	22	6.0
12...	1650	272	24.0	21	15	2.0
13...	1640	277	23.0	22	16	4.0
14...	0820	273	17.5	19	14	6.0
15...	0825	273	15.5	29	21	5.0
16...	0840	269	13.0	45	33	5.0
17...	0830	242	15.0	16	10	5.0
18...	0900	224	16.0	14	8.5	2.0
19...	0900	222	17.0	12	7.2	4.0
20...	0950	224	19.0	16	9.7	4.0
21...	0910	235	18.0	20	13	5.0
22...	1120	250	19.0	27	18	7.0
23...	0835	233	15.0	15	9.4	4.0
24...	0910	215	14.0	10	5.8	2.0
25...	0845	201	13.5	10	5.4	2.0
26...	0850	187	15.0	7	3.5	1.0
27...	0910	177	17.5	8	3.8	2.0
28...	0915	173	19.0	8	3.7	3.0
29...	0905	176	19.0	7	3.3	2.0
30...	0900	191	17.0	9	4.6	2.0
31...	0845	191	17.0	10	5.2	3.0
JUN						
06...	1035	204	22.0	20	11	6.0

11375970 COTTONWOOD CREEK AT COTTONWOOD, CA

LOCATION.--Lat 40°22'35", long 122°16'57", in SW¼SE¼ sec.11, T.29 N., R.4 W., Shasta County, at bridge on U.S. Highway 99 business route, 0.7 mi (1.1 km) south of Cottonwood.

DRAINAGE AREA.--836 mi² (2,165 km²).

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1951 to current year. Prior to 1975 water year published as station 11376000 Cottonwood Creek near Cottonwood.

REMARKS.--Records of discharge given for Cottonwood Creek near Cottonwood (station 11376000).

COOPERATION.--Records furnished by California Department of Water Resources.

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)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)
OCT								
14...	0930	55	217	7.3	18.0	3.0	10.1	--
NOV								
09...	0945	55	319	7.2	11.0	2.0	11.0	--
DEC								
14...	0900	2080	303	7.6	9.5	210	10.6	120
JAN								
11...	1005	3470	159	7.2	10.5	110	10.2	69
FEB								
14...	1150	3330	133	6.8	10.0	15	10.3	54
MAR								
13...	1220	3550	214	7.4	11.0	18	10.6	--
APR								
18...	1100	1270	230	7.7	14.0	7.0	10.1	--
MAY								
16...	0815	770	198	8.2	14.0	4.0	9.4	--
JUN								
19...	1230	289	219	7.9	26.0	3.0	9.2	--
JUL								
18...	0930	151	248	7.7	25.0	1.0	9.3	--
AUG								
18...	1205	59	230	7.4	24.0	1.0	11.0	--
SEP								
20...	1035	111	220	7.6	18.0	1.0	10.9	--

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	ALKA- LITY (MG/L AS CACO3)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)
OCT								
14...	--	--	--	--	--	--	--	--
NOV								
09...	--	--	--	--	--	--	--	--
DEC								
14...	16	.6	99	21	.29	.60	.09	100
JAN								
11...	8.0	.4	61	40	--	--	--	0
FEB								
14...	7.0	.4	51	2.4	--	--	--	0
MAR								
13...	--	--	--	--	--	--	--	--
APR								
18...	--	--	--	--	--	--	--	--
MAY								
16...	--	--	--	--	--	--	--	--
JUN								
19...	--	--	--	--	--	--	--	--
JUL								
18...	--	--	--	--	--	--	--	--
AUG								
18...	--	--	--	--	--	--	--	--
SEP								
20...	--	--	--	--	--	--	--	--

11376000 COTTONWOOD CREEK NEAR COTTONWOOD, CA

LOCATION.--Lat 40°23'14", long 122°14'15", in NE¼NE¼ sec.7, T.29 N., R.3 W., Shasta County, on left bank 2.2 mi (3.5 km) east of Cottonwood, and 2.5 mi (4.0 km) upstream from mouth.

DRAINAGE AREA.--927 mi² (2,401 km²).

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Datum of gage is 364.0 ft (110.95 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to July 26, 1963, at site 100 ft (30 m) downstream on right bank at datum 3.59 ft (1.094 m) higher. July 26, 1963, to Sept. 13, 1972, at site 350 ft (107 m) downstream on right bank. Sept. 21, 1967, to Jan. 14, 1968, supplementary gage at a site 1,550 ft (472 m) downstream on right bank at datum 2.35 ft (0.716 m) higher.

REMARKS.--Records good. Small diversions for irrigation above station. At times during irrigation season, Cottonwood Creek receives water above station from Sacramento River by way of Anderson-Cottonwood Canal.

AVERAGE DISCHARGE.--38 years, 853 ft³/s (24.16 m³/s), 618,000 acre-ft/yr (762 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,000 ft³/s (1,980 m³/s) Jan. 16, 1974, gage height, 20.15 ft (6.142 m); minimum, 15 ft³/s (0.42 m³/s) for several days in September 1945.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 7,100 ft³/s (201 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 17	0415	9170 260	12.34 3.761	Feb. 7	1400	21600 612	14.99 4.569
Dec. 23	0315	16900 479	14.19 4.325	Feb. 9	0100	14800 419	13.43 4.093
Jan. 4	2315	10500 297	12.54 3.822	Feb. 12	1830	9200 260	11.92 3.633
Jan. 9	1230	*39100 1110	17.92 5.462	Mar. 4	2400	23400 663	14.91 4.545
Jan. 14	2345	37200 1050	17.64 5.377	Mar. 9	0045	21300 603	14.57 4.441
Jan. 16	1200	36500 1030	17.55 5.349	Mar. 11	0230	11800 334	12.52 3.816
Jan. 19	0300	17600 498	14.01 4.270				

Minimum daily, 39 ft³/s (1.10 m³/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	81	55	220	929	1460	1480	3580	1080	461	261	87	74
2	79	51	192	1050	1480	1990	2180	1030	452	256	84	73
3	74	46	168	2030	1360	4360	1810	975	446	258	79	65
4	68	45	147	3720	1320	11700	2100	940	436	239	142	62
5	64	53	138	8560	4020	9420	1650	928	436	213	210	62
6	72	59	132	4440	6060	4960	3340	893	446	197	215	103
7	67	72	125	2580	11400	3820	3150	855	438	191	221	156
8	62	63	119	2940	8300	13700	2160	819	425	187	126	180
9	57	55	114	18000	8550	12500	1860	813	404	183	69	193
10	57	53	108	7600	5350	6780	1790	838	385	184	60	354
11	81	48	114	3470	3950	6820	1660	878	367	184	58	310
12	83	47	240	2550	5170	4470	1560	836	352	175	52	201
13	65	45	278	6640	4710	3550	1490	790	344	173	51	171
14	55	45	2080	18000	3330	2930	1440	760	337	169	52	150
15	81	45	5310	16600	2780	2370	1620	765	322	162	50	141
16	55	45	2290	22300	2420	2130	1630	770	336	161	59	160
17	57	45	5010	15500	2220	2000	1390	745	322	152	57	170
18	77	45	2050	9110	2080	1900	1270	735	303	151	59	138
19	101	43	1180	11600	2020	1810	1210	710	289	139	58	121
20	106	39	873	6930	2020	1740	1220	640	285	134	62	111
21	129	75	744	4620	2100	1720	1150	605	274	127	64	105
22	143	295	1440	3700	1980	1860	1070	595	275	126	66	93
23	162	957	7570	2990	1970	1740	1030	551	267	131	67	88
24	169	486	2370	2660	1870	1700	982	550	261	118	60	91
25	176	571	1460	2350	1810	1560	1530	557	257	113	64	96
26	151	452	1120	2060	1640	1470	3090	532	256	112	63	105
27	121	473	1240	1900	1570	1390	1650	501	244	114	72	110
28	119	372	1580	1780	1530	1340	1370	478	251	103	69	100
29	99	284	1370	1680	---	1330	1240	468	284	97	68	116
30	63	241	1280	1600	---	1350	1140	460	301	89	71	148
31	58	---	1090	1520	---	1440	---	467	---	90	77	---
TOTAL	2832	5205	42152	191409	94470	117330	52362	22564	10256	4989	2592	4047
MEAN	91.4	174	1360	6174	3374	3785	1745	728	342	161	83.6	135
MAX	176	957	7570	22300	11400	13700	3580	1080	461	261	221	354
MIN	55	39	108	929	1320	1330	982	460	244	89	50	62
AC-FT	5620	10320	83610	379700	187400	232700	103900	44760	20340	9900	5140	8030
CAL YR 1977 TOTAL	76888			211	MAX 7570	MIN 36	AC-FT 152500					
WTR YR 1978 TOTAL	550208			1507	MAX 22300	MIN 39	AC-FT 1091000					

11376000 COTTONWOOD CREEK NEAR COTTONWOOD, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1957-67, 1977 to current year.

WATER TEMPERATURES: Water years 1963-67, 1977 to current year.

SEDIMENT RECORDS: Water years 1957-67, 1977 to current year.

TURBIDITY: Water years 1977 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1962 to September 1967, December 1976 to current year.

SEDIMENT RECORDS: October 1962 to September 1967, November 1977 to May 1978 (storm season record only for water year 1978).

INSTRUMENTATION.--Temperature recorder June 1965 to June 1967, and since December 1976.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 31.0°C June 27, 1977; minimum recorded, 2.5°C Nov. 23, 1977.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 4,650 mg/L Jan. 5, 1978; minimum daily mean, 1 mg/L on many days during 1963-65, July 29, 30, 1967.

SEDIMENT DISCHARGE: Maximum daily, 597,000 tons (542,000 metric tons) Dec. 22, 1964; minimum daily, 0.1 ton (0.09 metric ton) Sept. 30, Oct. 1, 6, 1964.

EXTREMES OUTSIDE PERIOD OF DAILY RECORD.--Water temperatures of 0.0°C were observed many days during 1963-64.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 30.5°C July 20, 24, Aug. 6; minimum recorded, 2.5°C Nov. 23.

SEDIMENT CONCENTRATIONS (storm season only): Maximum daily mean, 4,650 mg/L Jan. 5; minimum daily mean, 3 mg/L Nov. 7, 8.

SEDIMENT DISCHARGE (storm season only): Maximum daily, 298,000 tons (270,000 metric tons) Jan. 16; minimum daily, 0.42 ton (0.38 metric ton) 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	21.5	15.5	18.0	13.5	11.0	9.0	7.0	6.5	---	---	---	---
2	22.0	15.5	18.5	14.0	11.0	8.5	8.5	7.5	---	---	---	---
3	22.0	16.0	17.5	13.5	11.0	9.0	9.0	8.5	---	---	---	---
4	22.0	15.5	15.0	13.5	12.0	9.5	9.5	9.0	---	---	---	---
5	21.0	16.0	15.0	13.0	12.0	10.0	9.5	9.5	---	---	---	---
6	20.0	16.5	16.0	12.0	11.0	10.5	9.5	9.0	---	---	---	---
7	20.5	15.0	15.5	12.5	12.5	11.0	9.5	8.5	---	---	---	---
8	21.0	15.0	15.0	11.0	11.0	9.5	10.5	9.5	---	---	---	---
9	21.0	15.0	15.0	11.0	9.5	8.0	11.0	10.5	---	---	---	---
10	21.0	15.5	15.5	11.0	10.0	7.5	11.0	10.0	---	---	---	---
11	21.5	15.5	14.0	12.0	9.0	8.5	10.5	9.5	---	---	---	---
12	21.0	15.5	16.0	13.5	9.5	9.0	10.5	10.0	---	---	---	---
13	21.0	15.5	17.5	14.0	9.5	9.5	11.0	10.5	---	---	---	---
14	20.5	15.5	16.0	12.5	10.0	9.5	11.0	10.5	---	---	---	---
15	19.5	15.5	16.5	12.0	10.0	8.5	10.5	9.5	---	---	13.0	9.5
16	20.5	15.5	16.0	12.5	8.0	7.0	10.0	9.5	---	---	13.5	10.0
17	20.0	15.0	15.5	12.5	7.0	5.5	10.5	10.0	---	---	14.0	11.0
18	19.5	15.0	14.0	11.0	7.0	5.5	10.5	10.0	---	---	14.5	11.5
19	19.0	15.0	12.5	9.0	6.5	5.0	10.5	10.0	---	---	16.0	12.5
20	17.5	15.5	11.0	8.5	6.0	4.5	---	---	---	---	15.5	13.0
21	18.0	14.0	8.5	5.5	7.5	6.0	---	---	---	---	14.5	13.5
22	17.5	13.5	7.5	3.0	9.0	7.5	---	---	---	---	13.5	12.5
23	16.5	14.5	5.0	2.5	10.5	9.0	---	---	---	---	15.5	12.5
24	18.0	15.0	8.5	5.5	9.5	7.5	---	---	---	---	15.5	11.5
25	18.0	15.5	9.5	7.0	8.0	7.0	---	---	---	---	16.0	12.0
26	17.5	14.0	11.0	9.0	8.5	7.5	---	---	---	---	16.5	13.5
27	17.5	15.0	11.0	9.5	9.0	8.5	---	---	---	---	17.5	13.5
28	15.5	14.5	10.5	8.5	10.0	9.0	---	---	---	---	18.5	14.5
29	15.5	14.0	11.0	9.0	10.5	10.0	---	---	---	---	17.5	16.0
30	18.0	14.0	11.5	9.5	10.5	9.0	---	---	---	---	19.0	15.0
31	18.0	14.0	---	---	8.5	7.0	---	---	---	---	17.5	13.5
MONTH	22.0	13.5	18.5	2.5	12.5	4.5	---	---	---	---	---	---

SACRAMENTO RIVER BASIN

11376000 COTTONWOOD CREEK NEAR COTTONWOOD, 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	9.0	---	---	26.0	19.0	27.0	21.0	30.0	23.0	26.5	20.5
2	14.0	11.0	---	---	27.0	20.0	26.0	20.5	30.0	22.0	25.0	19.5
3	13.0	11.5	---	---	28.0	21.0	27.0	20.5	30.0	22.0	25.0	19.5
4	14.0	10.0	20.5	15.5	26.0	21.5	28.0	21.5	29.5	23.5	24.5	19.5
5	13.0	11.0	19.0	14.5	29.0	22.0	28.5	22.0	29.5	23.0	21.0	19.0
6	10.5	9.5	19.5	14.0	30.0	22.5	29.0	22.5	30.5	23.5	21.5	18.0
7	14.0	9.5	21.0	15.5	29.0	21.5	28.5	23.0	30.0	23.5	22.5	17.0
8	15.0	10.5	22.5	16.5	28.5	22.0	30.0	22.5	28.5	23.5	23.5	17.0
9	16.5	12.0	22.5	18.0	27.0	21.5	30.0	23.5	30.0	22.5	20.0	15.5
10	18.0	13.5	22.0	17.0	26.0	19.5	28.5	22.5	29.5	22.5	20.0	15.5
11	19.0	15.0	21.5	16.5	27.0	19.5	27.5	21.5	27.5	21.5	21.0	16.0
12	17.5	14.5	22.5	16.5	25.0	21.0	28.5	21.5	25.0	20.5	21.5	15.5
13	17.5	14.5	22.5	18.0	26.5	19.5	29.0	22.0	26.0	19.5	21.5	17.5
14	15.5	12.5	22.0	18.5	26.5	20.0	29.5	22.5	26.0	19.0	22.0	16.5
15	12.5	10.5	20.0	16.5	25.0	19.0	29.0	23.0	25.0	19.5	24.0	17.5
16	13.0	9.5	20.5	14.5	26.0	18.5	28.0	22.0	26.0	19.5	22.5	17.5
17	15.0	10.5	22.0	16.0	26.5	20.0	28.5	20.5	24.0	18.0	19.5	15.5
18	16.0	11.5	23.0	17.0	26.0	20.5	30.0	22.5	25.5	18.0	21.0	14.5
19	14.5	12.5	24.0	18.0	27.0	20.0	29.5	22.5	26.0	19.0	20.5	14.5
20	14.0	11.5	25.0	19.0	27.5	20.5	30.5	22.5	25.5	19.5	22.0	15.0
21	15.5	10.5	25.0	19.5	27.5	20.5	29.0	22.0	22.0	19.0	21.0	16.0
22	16.0	11.5	23.5	19.5	27.5	21.5	30.0	22.0	24.5	17.5	23.0	16.0
23	16.0	12.5	22.0	17.0	27.0	20.5	29.5	23.0	23.0	18.0	24.0	17.0
24	15.5	13.5	20.0	16.0	27.0	20.0	30.5	23.0	23.0	17.0	24.0	18.0
25	---	---	22.0	15.0	26.0	19.5	29.0	23.5	23.5	18.0	22.5	18.0
26	---	---	22.0	16.0	26.5	20.5	29.0	23.5	24.5	18.5	21.5	18.5
27	---	---	25.0	17.5	25.5	21.0	30.0	23.0	25.5	18.5	22.5	16.5
28	---	---	26.0	19.5	25.0	21.5	29.0	22.5	27.0	20.0	22.5	16.5
29	---	---	25.5	20.0	26.0	20.5	29.5	21.0	27.0	21.0	23.0	17.5
30	---	---	23.0	18.0	27.0	21.0	29.5	21.0	26.0	21.5	22.5	16.5
31	---	---	25.0	17.5	---	---	29.5	22.0	26.0	20.0	---	---
MONTH	19.0	9.0	26.0	14.0	30.0	18.5	30.5	20.5	30.5	17.0	26.5	14.5

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

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1				55	5	.74	220	11	6.5
2				51	4	.55	192	10	5.2
3				46	4	.50	168	10	4.5
4				45	4	.49	147	9	3.6
5				53	4	.57	138	9	3.4
6				59	4	.64	132	8	2.9
7				72	3	.58	125	7	2.4
8				63	3	.51	119	6	1.9
9				55	4	.59	114	5	1.5
10				53	4	.57	108	5	1.5
11				48	4	.52	114	5	1.5
12				47	5	.63	240	12	7.8
13				45	7	.85	278	13	9.8
14				45	5	.61	2080	2400	21300
15				45	4	.49	5310	3180	47900
16				45	4	.49	2290	750	4640
17				45	4	.49	5010	3350	60700
18				45	4	.49	2050	650	3600
19				43	4	.46	1180	195	621
20				39	4	.42	873	88	207
21				75	8	1.6	744	65	131
22				295	221	430	1440	312	1380
23				957	2790	9440	7570	4380	142000
24				486	120	157	2370	440	2820
25				571	190	293	1460	150	591
26				452	65	79	1120	95	287
27				473	95	121	1240	113	378
28				372	45	45	1580	175	747
29				284	20	15	1370	136	503
30				241	12	7.8	1280	118	408
31				---	---	---	1090	88	259
TOTAL				5205	---	10600.59	42152	---	288524.5

11376000 COTTONWOOD CREEK NEAR COTTONWOOD, CA--Continued

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

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	929	65	163	1460	56	221	1480	68	272
2	1050	82	232	1480	58	232	1990	133	1160
3	2030	290	1590	1360	50	184	4360	486	6720
4	3720	1390	28000	1320	45	160	11700	1700	64600
5	8560	2720	65100	4020	421	7250	9420	1240	39600
6	4440	1060	13400	6060	635	11400	4960	560	7500
7	2580	460	3200	11400	1590	65300	3820	365	3760
8	2940	360	3130	8300	1070	26100	13700	2070	93600
9	18000	3420	234000	8550	1120	30000	12500	1680	63000
10	7600	2070	52400	5350	400	5780	6780	709	13600
11	3470	230	2150	3950	260	2770	6820	695	14400
12	2550	135	929	5170	571	10100	4470	480	5790
13	6640	625	13100	4710	380	4830	3550	350	3350
14	18000	3080	189000	3330	210	1890	2930	280	2220
15	16600	2640	147000	2780	152	1140	2370	150	960
16	22300	4190	298000	2420	128	836	2130	100	575
17	15500	2360	107000	2220	112	671	2000	73	394
18	9110	1190	29300	2080	102	573	1900	70	359
19	11600	1710	69200	2020	94	513	1810	66	323
20	6930	677	12900	2020	94	513	1740	64	301
21	4620	500	6240	2100	97	550	1720	62	288
22	3700	370	3700	1980	94	503	1860	64	321
23	2990	285	2300	1970	87	463	1740	68	319
24	2660	215	1540	1870	84	424	1700	70	321
25	2350	165	1050	1810	78	381	1560	65	274
26	2060	122	679	1640	70	310	1470	58	230
27	1900	102	523	1570	65	276	1390	52	195
28	1780	88	423	1530	65	269	1340	49	177
29	1680	78	354	---	---	---	1330	48	172
30	1600	68	294	---	---	---	1350	48	175
31	1520	62	254	---	---	---	1440	64	289
TOTAL	191409	---	1287151	94470	---	173639	117330	---	325245
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	3580	459	5150	1080	38	111			
2	2180	130	765	1030	34	95			
3	1810	118	577	975	30	79			
4	2100	160	907	940	26	66			
5	1650	96	428	928	25	63			
6	3340	263	2730	893	25	60			
7	3150	244	2520	855	25	58			
8	2160	200	1170	819	24	53			
9	1860	120	603	813	24	53			
10	1790	60	290	838	23	52			
11	1660	48	215	878	23	55			
12	1560	40	168	836	22	50			
13	1490	38	153	790	20	43			
14	1440	36	140	760	19	39			
15	1620	48	210	765	18	37			
16	1630	48	211	770	16	33			
17	1390	45	169	745	15	30			
18	1270	42	144	735	14	28			
19	1210	38	124	710	13	25			
20	1220	35	115	640	12	21			
21	1150	35	109	605	11	18			
22	1070	40	116	595	10	16			
23	1030	40	111	551	9	13			
24	982	40	106	550	9	13			
25	1530	70	289	557	8	12			
26	3090	294	3300	532	8	11			
27	1650	80	356	501	8	11			
28	1370	56	207	478	8	10			
29	1240	48	161	468	8	10			
30	1140	42	129	460	8	9.9			
31	---	---	---	467	8	10			
TOTAL	52362	---	21673	22564	---	1184.9			
PERIOD	525492	---	2108017.99						

SACRAMENTO RIVER BASIN

11376000 COTTONWOOD CREEK NEAR COTTONWOOD, CA--Continued

SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	WATER DISCHARGE CFS-DAYS	SUSPENDED SEDIMENT DISCHARGE TONS	BEDLOAD DISCHARGE TONS	TOTAL SEDIMENT DISCHARGE TONS
NOVEMBER ...	5205.00	10600.59	1	10600
DECEMBER ...	42152.00	288524.50	3630	292000
JANUARY 1978	191409.00	1287151.00	59100	1350000
FEBRUARY ...	94470.00	173639.00	13500	187000
MARCH	117330.00	325245.00	23500	349000
APRIL	52362.00	21673.00	712	22400
MAY	22564.00	1184.90	8	1190
PERIOD.....	525492.00	2108017.99	100451	2212190

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- 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
NOV 28...	1415	10.0	359	43	42	--	--	--
DEC 15...	1122	9.5	5460	3410	50300	24	40	61
20...	1430	6.0	850	90	207	--	--	--
JAN 19...	1445	10.0	6460	1240	21600	--	--	--
23...	1300	7.5	2980	256	2060	18	26	35
FEB 08...	1315	8.0	7400	900	18000	17	24	31
MAR 06...	1315	11.0	4930	803	10700	--	--	--
08...	1130	12.0	17400	2120	99600	12	16	22
08...	1350	12.0	19100	2360	122000	13	18	25
10...	1110	10.5	6780	692	12700	--	--	--

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
NOV 28...	--	--	98	100	--	--	--	--
DEC 15...	78	88	92	93	95	97	100	--
20...	--	--	96	98	100	--	--	--
JAN 19...	--	--	59	74	90	98	100	--
23...	43	49	55	67	83	97	100	--
FEB 08...	39	47	54	65	85	95	99	100
MAR 06...	--	--	21	25	36	51	78	96
08...	30	38	50	66	84	95	99	100
08...	34	45	58	75	90	96	99	100
10...	--	--	47	58	78	95	100	--

11376000 COTTONWOOD CREEK NEAR COTTONWOOD, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM
JAN							
10...	1130	10.0	5	7310	--	1	3
10...	1131	--	--	--	--	--	2
10...	1132	--	--	--	--	1	5
10...	1133	--	--	--	--	--	2
10...	1134	--	--	--	--	--	--
23...	1345	--	5	2960	--	--	--
23...	1346	--	--	--	--	1	23
23...	1347	--	--	--	--	--	1
23...	1348	--	--	--	--	--	1
23...	1349	--	--	--	--	--	--
MAR							
08...	1245	12.0	5	17600	--	1	2
08...	1246	--	--	--	--	1	3
08...	1247	--	--	--	--	--	1
08...	1248	--	--	--	--	--	1
08...	1249	--	--	--	2	5	16

DATE	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM
JAN							
10...	10	19	27	33	43	57	100
10...	7	18	30	40	52	66	100
10...	24	46	67	83	95	100	--
10...	8	13	22	32	44	63	100
10...	1	2	11	36	58	75	100
23...	11	33	67	100	--	--	--
23...	40	45	51	62	83	100	--
23...	4	7	10	19	36	70	100
23...	9	11	15	22	35	60	100
23...	1	1	2	7	23	41	100
MAR							
08...	5	14	37	61	78	88	100
08...	15	50	77	90	94	100	--
08...	2	8	27	49	65	75	100
08...	9	27	36	45	56	71	100
08...	46	70	78	84	100	--	--

PARTICLE-SIZE DISTRIBUTION OF SEDIMENT IN TRANSIT WITHIN 0.25 FOOT OF BED SURFACE,
WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	STREAM WIDTH (FT)	SEDI- MENT DIS- CHARGE, BEDLOAD (TONS/ DAY)	SED. BEDLOAD SIEVE DIAM. % FINER THAN .125 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN .250 MM
JAN							
23...	1500	21	2920	220	87	1	7
SEDIMENT IN TRANSIT							
DATE	SED. BEDLOAD SIEVE DIAM. % FINER THAN .500 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 1.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 2.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 4.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 8.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 16.0 MM	
JAN							
23...	32	53	68	86	96	100	

SACRAMENTO RIVER BASIN

11376000 COTTONWOOD CREEK NEAR COTTONWOOD, 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- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	TUR- BID- ITY (NTU)
OCT						
04...	1535	68	22.0	14	2.6	1.0
NOV						
04...	1115	45	14.5	8	.97	2.0
04...	1120	45	14.5	4	.49	2.0
23...	1600	858	4.0	1690	3920	1100
23...	1700	787	4.0	1490	3170	950
25...	1230	634	8.0	235	402	140
28...	1415	359	10.0	43	42	38
28...	1420	359	10.0	42	41	33
DEC						
30...	1545	1270	10.5	212	727	120
JAN						
09...	1400	32100	10.5	1680	146000	400
10...	0935	7830	10.0	2520	53300	600
10...	1220	7130	10.0	1660	32000	450
16...	1145	35500	10.0	2520	242000	500
16...	1645	24700	10.0	2810	187000	450
19...	1445	6460	10.0	1340	23400	250
23...	1300	2980	7.5	270	2170	60
23...	1700	2870	9.0	212	1640	60
FEB						
03...	1050	1390	8.5	49	184	17
03...	1100	1390	8.5	39	146	18
08...	1315	7400	8.0	920	18400	180
27...	1500	1570	12.5	65	276	21
MAR						
02...	1445	1580	11.0	73	311	13
03...	1640	3430	12.0	344	3190	100
06...	1315	4930	11.0	317	4220	75
08...	1130	17400	12.0	2300	108000	270
08...	1350	19100	12.0	2420	125000	350
10...	1110	6780	10.5	692	12700	120
15...	1100	2420	10.0	147	960	26
17...	0900	1970	11.0	74	394	18
21...	1040	1660	14.0	60	269	13
24...	0830	1680	11.5	74	336	18
28...	1045	1330	15.0	48	172	10
APR						
03...	1445	1780	13.0	371	1780	18
04...	1430	2090	13.5	225	1270	45
06...	1510	3420	10.0	321	2960	90
10...	1130	1780	14.0	53	255	14
13...	1545	1480	17.0	37	148	8.0
17...	1500	1370	13.5	45	166	8.0
20...	1320	1220	13.5	35	115	7.0
21...	1330	1150	14.5	33	102	4.0
21...	1345	1150	14.5	36	112	5.0
22...	1730	1070	15.0	40	116	3.0
24...	1600	967	15.0	40	104	2.0
26...	1005	3090	13.5	686	5720	100
MAY						
04...	0930	933	15.5	26	65	3.0
11...	1315	899	19.5	23	56	5.0
23...	1200	557	18.5	9	14	3.0
JUN						
01...	1430	458	23.0	21	26	1.0
02...	1245	447	22.0	8	9.7	1.0
06...	1220	442	25.0	6	7.2	2.0
13...	0900	344	19.5	6	5.6	2.0
26...	1130	257	22.5	10	6.9	1.0
JUL						
11...	1230	191	24.5	5	2.6	1.0
26...	1300	116	27.0	6	1.9	1.0

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

LOCATION.--Lat 40°23'54", long 122°08'43", in SW¼NE¼ sec.1, T.29 N., R.3 W., Shasta County, U.S. Fish and Wildlife service land, on right bank 3.7 mi (6.0 km) downstream from Spring Branch, 5.7 mi (9.2 km) upstream from mouth, and 7.0 mi (11.3 km) east of Cottonwood.

DRAINAGE AREA.--357 mi² (925 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1961 to current year. October 1940 to September 1961 at site 0.6 mi (1.0 km) upstream published as "near Cottonwood"; low-flow records not equivalent owing to Coleman Fish Hatchery diversion.

GAGE.--Water-stage recorder. Altitude of gage is 415 ft (126 m), from topographic map.

REMARKS.--Records good. Flow regulated by four small powerplants, several small reservoirs, and Coleman Fish Hatchery. Coleman Fish Hatchery diverts from 50 ft³/s (1.42 m³/s) to 90 ft³/s (2.55 m³/s) which is returned above the station. At times, 10 ft³/s (0.28 m³/s) diverted above station for irrigation. Maximum flows considered equivalent to former station, Battle Creek near Cottonwood.

AVERAGE DISCHARGE.--17 years, 513 ft³/s (14.53 m³/s), 371,700 acre-ft/yr (458 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,300 ft³/s (688 m³/s) Jan. 24, 1970, gage height, 14.75 ft (4.496 m), from rating curve extended above 4,200 ft³/s (119 m³/s) on basis of slope-area measurement of peak flow; minimum since 1961, 52 ft³/s (1.47 m³/s) Aug. 8, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 15.8 ft (4.82 m) Dec. 11, 1937, from floodmarks at former site and datum, discharge, 35,000 ft³/s (991 m³/s) by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft³/s (70.8 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 15	0530	2610 73.9	4.81 1.466	Mar. 2	1515	2990 84.7	5.19 1.582
Dec. 17	0245	2700 76.5	4.90 1.494	Mar. 4	1100	5860 166	7.51 2.289
Jan. 9	1615	5540 157	7.29 2.222	Mar. 11	0330	5610 159	7.34 2.237
Jan. 14	2245	5550 157	7.30 2.225	Apr. 1	1730	5320 151	7.14 2.176
Jan. 16	1230	*5900 167	7.54 2.298	Apr. 6	0530	3650 103	5.79 1.765
Feb. 7	1345	4300 122	6.34 1.932				

Minimum daily, 194 ft³/s (5.49 m³/s) Oct. 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	224	215	244	349	421	461	1970	727	566	430	290	224
2	214	218	239	406	458	1650	1210	689	530	421	287	220
3	207	219	235	540	481	1110	877	697	540	424	284	217
4	202	218	230	507	445	3840	1320	698	549	410	282	215
5	198	242	238	948	852	2690	902	672	589	394	272	221
6	198	237	245	1060	1610	1900	2300	644	622	387	269	238
7	198	223	241	608	2400	1200	1530	628	636	401	266	241
8	197	221	243	703	1380	1640	972	645	606	417	259	236
9	197	220	237	3380	1170	1600	900	665	611	410	263	240
10	197	219	234	2040	850	1100	857	681	592	415	261	289
11	197	218	314	920	717	2470	817	685	543	407	254	268
12	197	225	336	791	952	1130	796	695	536	397	251	248
13	194	224	282	983	1220	913	752	679	507	383	251	251
14	204	224	717	2670	836	826	734	708	517	377	248	256
15	203	222	1340	2490	781	757	819	815	499	376	241	250
16	200	221	650	3350	655	717	847	728	557	382	236	243
17	202	223	1520	1690	605	691	749	639	511	374	236	248
18	202	221	596	1170	569	675	683	635	496	360	233	243
19	202	218	405	1180	549	654	699	650	482	359	232	244
20	202	218	339	920	531	653	809	660	476	358	231	242
21	205	352	324	764	514	681	721	672	460	354	233	242
22	204	641	512	716	502	765	651	690	452	344	239	241
23	205	536	1060	623	493	769	614	717	444	342	239	239
24	208	292	491	566	486	746	607	641	439	337	239	237
25	209	296	384	538	479	677	1260	590	429	335	234	234
26	213	273	342	510	502	660	1320	539	419	336	230	236
27	211	266	573	483	519	655	885	531	414	332	228	237
28	212	262	527	464	475	658	789	551	449	324	227	234
29	213	249	414	451	---	668	739	586	512	314	223	231
30	216	243	453	439	---	687	741	593	449	299	223	230
31	216	---	397	425	---	774	---	579	---	291	225	---
TOTAL	6347	7856	14362	32684	21452	34417	28870	20329	15432	11490	7686	7195
MEAN	205	262	463	1054	766	1110	962	656	514	371	248	240
MAX	224	641	1520	3380	2400	3840	2300	815	636	430	290	289
MIN	194	215	230	349	421	461	607	531	414	291	223	215
AC-FT	12590	15580	28490	64830	42550	68270	57260	40320	30610	22790	15250	14270

CAL YR 1977 TOTAL 92659 MEAN 254 MAX 1520 MIN 180 AC-FT 183800
WTR YR 1978 TOTAL 208120 MEAN 570 MAX 3840 MIN 194 AC-FT 412800

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

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962 to current year.

CHEMICAL ANALYSES: Water years 1962-66.

WATER TEMPERATURES: Water years 1966 to current year.

SEDIMENT RECORDS: Water years 1962-70.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: December 1965 to current year.

INSTRUMENTATION.--Temperature recorder since December 1965.

REMARKS.--Clock stopped Dec. 3-5; range in temperature, 9.0°C to 10.5°C.

COOPERATION.--Temperature record furnished by U.S. Fish and Wildlife Service.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 23.0°C July 20, 1971, July 23, 24, 1975; minimum recorded, 2.0°C Dec. 23, 24, 1968.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 21.5°C July 18; minimum recorded, 5.0°C Feb. 12, 13.

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	13.5	11.5	11.0	10.0	9.5	9.0	8.0	7.0	8.5	8.0	10.0	8.5
2	14.0	12.0	11.5	10.5	9.5	9.0	---	---	8.5	8.0	10.5	9.5
3	14.0	12.0	11.5	10.5	---	---	---	---	10.0	8.5	10.5	9.5
4	14.0	13.0	11.0	10.0	---	---	9.0	8.5	9.5	9.0	10.0	9.5
5	14.0	12.0	10.0	9.5	---	---	9.0	8.0	9.5	9.5	10.0	8.5
6	13.5	12.0	---	---	10.0	10.0	8.5	8.0	9.5	8.5	10.0	9.0
7	13.0	11.0	---	---	10.5	9.5	8.5	7.0	10.0	9.0	10.0	9.5
8	13.5	11.5	---	---	9.5	8.0	9.0	8.5	9.0	8.0	10.5	10.0
9	13.5	11.5	---	---	8.0	6.5	---	---	9.5	8.0	11.0	9.5
10	14.0	12.0	---	---	8.5	7.0	9.0	8.5	8.0	6.5	11.0	9.0
11	14.0	12.0	---	---	9.0	8.5	9.0	8.5	6.5	5.5	10.5	9.5
12	14.0	13.0	---	---	9.5	9.0	9.0	8.5	6.5	5.0	10.0	8.5
13	14.0	12.0	---	---	10.0	9.5	9.5	9.0	7.0	5.0	9.5	8.5
14	13.5	12.0	---	---	11.0	9.5	9.5	9.0	8.5	6.5	10.0	8.5
15	13.5	12.0	---	---	11.0	8.5	9.0	8.0	8.5	8.0	10.5	8.5
16	13.5	12.0	---	---	8.5	7.0	8.5	8.5	8.5	7.0	11.5	9.0
17	13.5	11.5	---	---	7.0	6.5	9.0	8.0	8.5	7.0	12.0	10.0
18	13.5	12.0	10.0	8.0	7.0	6.0	9.0	8.0	10.0	8.5	12.0	10.0
19	13.5	12.0	---	---	6.5	5.5	9.0	8.5	10.5	9.0	13.0	10.5
20	13.0	11.5	---	---	7.0	5.5	9.0	8.5	10.5	9.5	13.0	11.0
21	12.0	11.0	---	---	8.0	7.0	8.5	8.0	10.5	9.5	13.0	11.0
22	12.0	11.0	---	---	9.0	8.0	8.5	8.0	11.0	9.5	11.0	10.5
23	12.0	11.0	8.5	7.0	9.5	8.5	8.0	6.0	11.0	9.5	11.5	10.0
24	13.5	11.5	9.5	8.5	8.5	8.0	7.0	5.5	11.0	9.5	11.0	9.0
25	14.0	13.0	10.0	9.0	8.5	7.0	8.0	6.5	10.5	10.0	12.0	9.5
26	13.5	12.0	10.5	9.5	8.5	8.0	9.0	7.0	10.5	10.0	13.0	10.5
27	13.5	11.5	10.5	9.5	9.0	8.5	8.5	8.0	10.0	9.0	13.5	11.0
28	12.0	11.0	10.0	9.0	9.5	8.5	9.0	8.0	10.0	8.5	13.5	11.0
29	11.0	10.5	10.0	9.0	10.0	9.5	9.0	8.0	---	---	13.5	11.5
30	11.5	10.5	10.0	9.5	9.5	8.5	9.0	8.0	---	---	13.5	11.0
31	11.5	10.5	---	---	8.5	7.0	9.0	8.0	---	---	13.5	11.0
MONTH	14.0	10.5	---	---	11.0	5.5	9.5	5.5	11.0	5.0	13.5	8.5

11376550 BATTLE CREEK BELOW COLEMAN FISH HATCHERY, NEAR COTTONWOOD, 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	8.5	13.5	10.0	19.0	13.0	16.5	14.5	19.5	17.0	16.5	15.0
2	10.0	8.5	14.5	11.5	16.0	13.5	16.0	15.5	19.0	17.0	16.5	14.5
3	10.0	9.0	14.5	12.0	16.0	14.0	16.5	14.0	19.0	16.5	16.5	14.5
4	11.0	9.0	14.0	11.5	17.0	14.5	17.0	14.5	19.0	17.0	16.0	14.5
5	10.5	9.0	13.0	10.5	17.0	14.5	17.0	15.0	19.5	16.5	16.0	14.5
6	9.0	8.0	13.0	10.0	17.0	15.5	18.5	15.5	20.0	17.0	15.5	14.0
7	10.5	7.0	14.0	11.0	16.5	14.5	18.5	16.0	20.0	18.0	15.0	13.0
8	11.5	9.0	15.0	12.0	16.5	14.5	18.5	15.5	20.0	18.0	14.5	12.0
9	13.0	10.0	15.0	13.0	16.5	14.5	19.0	16.5	19.5	17.0	14.5	13.0
10	14.0	11.0	14.5	12.0	16.0	14.0	18.5	16.5	19.5	16.5	14.0	12.0
11	14.5	12.0	14.5	12.0	16.0	13.5	18.0	15.5	18.5	16.0	14.5	12.0
12	14.0	11.5	14.5	11.5	---	---	17.0	15.5	18.0	15.5	14.5	12.0
13	12.0	11.0	15.0	13.0	---	---	18.0	15.5	17.0	15.0	14.0	13.0
14	12.0	10.5	14.5	13.0	---	---	18.5	15.5	17.0	14.5	15.0	12.0
15	11.0	9.0	13.0	11.0	---	---	18.5	16.0	17.0	15.0	15.5	13.5
16	9.5	8.5	12.0	9.5	---	---	18.0	16.0	17.0	15.0	15.5	13.5
17	10.5	8.5	14.0	11.0	---	---	19.0	16.0	16.5	14.5	15.0	13.0
18	11.5	9.0	15.0	12.0	---	---	21.5	16.5	16.5	14.0	13.0	11.0
19	11.0	10.0	15.0	13.0	---	---	19.0	16.5	18.0	14.0	13.5	11.0
20	10.5	9.5	15.5	13.0	16.5	14.0	19.0	16.5	16.5	14.5	13.5	11.0
21	11.0	8.0	15.5	13.5	16.5	14.5	19.0	16.5	16.5	14.5	13.5	11.5
22	12.0	9.5	15.0	13.5	17.0	15.0	19.0	16.0	15.5	13.5	14.0	11.5
23	12.0	10.0	14.0	11.5	16.5	14.5	19.0	16.5	15.5	13.5	15.0	12.0
24	12.0	11.0	11.5	10.0	16.0	14.5	19.5	16.5	15.0	13.0	15.0	13.0
25	12.0	11.0	13.0	9.5	16.0	14.0	19.0	17.0	16.0	14.0	15.0	13.5
26	12.0	11.0	13.5	10.5	16.0	15.0	19.5	17.0	16.0	14.0	14.5	13.5
27	14.0	10.5	15.5	12.0	16.0	14.0	20.0	17.0	16.0	14.0	14.0	12.0
28	14.0	11.5	16.5	13.5	16.0	14.5	19.0	17.0	17.0	14.5	14.0	12.0
29	14.0	11.5	16.0	14.0	16.0	14.0	18.5	16.0	17.0	15.5	15.0	12.0
30	13.5	11.5	15.5	13.5	16.5	14.5	18.5	16.0	17.0	15.5	15.0	13.5
31	---	---	15.0	13.0	---	---	19.5	16.5	17.0	15.0	---	---
MONTH	14.5	7.0	16.5	9.5	---	---	21.5	14.0	20.0	13.0	16.5	11.0

SACRAMENTO RIVER BASIN

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

LOCATION.--Lat 40°17'19", long 122°11'08", in NW¼NE¼ sec.15, T.28 N., R.3 W., Tehama County, on left bank 2.7 mi (4.3 km) upstream from Bend Bridge, and 8.1 mi (13.0 km) northeast of Red Bluff.

DRAINAGE AREA.--8,900 mi² (23,051 km²), excluding Goose Lake basin.

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Datum of gage is 285.77 ft (87.103 m) National Geodetic Vertical Datum of 1929. See WSP 2131 for history of changes prior to September 1968.

REMARKS.--Records excellent. Flow regulated by Shasta Lake (station 11370000) since Dec. 30, 1943. Diversions, in addition to those on tributaries, for irrigation of 22,000 acres (8,900 hm²) between stations at Keswick and above Bend Bridge. Transbasin diversions from Trinity River to Whiskeytown Lake via Judge Francis Carr powerplant (station 11525430) started in April 1963.

AVERAGE DISCHARGE (prior to transbasin diversion from Trinity River).--71 years (water years 1892-1962), 11,400 ft³/s (323 m³/s), 8,253,000 acre-ft/yr (10.2 km³/yr); 16 years (water years 1963-78), 13,540 ft³/s (383.5 m³/s), 9,810,000 acre-ft/yr (12.1 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 291,000 ft³/s (8,240 m³/s) Feb. 28, 1940, gage height, 38.9 ft (11.86 m) site and datum then in use, from rating curve extended above 170,000 ft³/s (4,810 m³/s) on basis of velocity-area studies; minimum (water years 1892-1978), 2,000 ft³/s (56.6 m³/s) Mar. 29, 1944.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 106,000 ft³/s (3,000 m³/s) Jan. 9, gage height, 28.00 ft (8.534 m); minimum daily, 3,200 ft³/s (90.6 m³/s) Oct. 11-15.

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	4300	5610	4210	5380	5910	7190	19600	15200	8250	10500	11300	8570
2	4060	5880	4160	5580	7040	11200	15900	14700	8280	10500	11200	8530
3	3840	5900	4100	8090	7000	20400	12300	14500	8240	10600	11200	8570
4	3770	5840	4090	8540	6140	45000	15700	14000	8160	10700	11200	8520
5	3660	5960	4070	19500	10500	53600	11100	14100	8210	10600	11200	8520
6	3630	5940	4050	14500	26900	43500	20900	14000	8910	10300	11200	8420
7	3600	5920	4060	9390	42400	35700	19700	13900	8950	10100	11200	8050
8	3520	5840	3960	10600	39100	61500	18200	13100	8960	10200	11200	8040
9	3450	5820	3990	60400	36400	61700	18100	12700	9330	10200	11300	7860
10	3230	5540	4050	36400	27700	54400	17400	12300	9440	10200	11100	8010
11	3200	5410	4170	16000	24500	60500	17000	11700	9370	10100	11100	7940
12	3200	5480	4610	14300	25000	50000	15900	11600	9410	10200	12600	7330
13	3200	5480	4490	20800	28700	47100	15200	11500	9410	10300	12600	6920
14	3200	5540	15000	43900	27100	43300	16700	11600	9840	11300	12600	6810
15	3200	5510	22000	64200	25700	37100	17200	11300	10000	11300	12600	6690
16	3270	5470	9120	64800	21800	29600	18900	10600	10100	11400	12600	6560
17	3440	5410	21800	51100	18600	22400	17600	10200	10100	11300	12500	6530
18	3620	5330	9700	26400	15000	17100	16700	10100	10100	11300	11500	6510
19	3690	5300	6430	37900	13200	15100	15200	9970	10000	11300	11000	6460
20	3650	5290	5340	23500	12900	13100	18000	9910	10000	11300	11100	6410
21	3700	5690	4880	18400	12700	11700	14100	9780	9920	11300	11100	6430
22	3710	6680	7820	17300	11300	11900	12900	9350	9930	11300	10600	6500
23	3720	8190	21900	15600	10100	12100	12300	8860	9920	11400	9920	6460
24	4060	5990	9870	14400	9910	11900	9760	8710	10200	11300	9880	6480
25	4760	5520	6920	12500	8580	10900	14600	8650	10400	11300	9900	6490
26	5040	5080	5850	10100	8230	10500	18100	8560	10400	11300	9920	6510
27	5110	5030	6510	8490	8520	10300	12200	8370	10400	11300	9930	6540
28	5170	4840	7270	8090	7560	10100	13800	8400	10500	11300	9910	6500
29	5350	4520	6630	7750	---	9940	15900	8410	10600	11300	9560	6500
30	5320	4230	7590	7480	---	9900	15500	8410	10500	11300	9310	6490
31	5320	---	6080	6730	---	10000	---	8270	---	11300	8800	---
TOTAL	121990	168240	234720	668120	498490	848730	476460	342750	287830	338100	341130	216150
MEAN	3935	5608	7572	21550	17800	27380	15880	11060	9594	10910	11000	7205
MAX	5350	8190	22000	64800	42400	61700	20900	15200	10600	11400	12600	8570
MIN	3200	4230	3960	5380	5910	7190	9760	8270	8160	10100	8800	6410
AC-FT	242000	333700	465600	1325000	988800	1683000	945100	679800	570900	670600	676600	428700
CAL YR 1977 TOTAL	2660300		MEAN	7288	MAX	22000	MIN	3200	AC-FT	5277000		
WTR YR 1978 TOTAL	4542710		MEAN	12450	MAX	64800	MIN	3200	AC-FT	9010000		

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

WATER-QUALITY RECORDS

LOCATION.--Samples collected 2.7 mi (4.3 km) downstream from gaging station.

PERIOD OF RECORD.--Water years 1955 to current year.

CHEMICAL ANALYSES: Water years 1955 to current year. Reported as "Sacramento River at Bend" during period May 1955 to September 1973; as Sacramento River at Bend Bridge (sta 11377200) for period October 1973 to September 1976.

WATER TEMPERATURES: Water years 1955 to current year (water years 1955-63 reported as station 11377200 and water years 1964-70 reported as station 11378000).

SEDIMENT RECORDS: Water years 1958-70 (water years 1958-67 reported as station 11378500 and water years 1968-70 reported as station 11377200), 1977 to current year.

TURBIDITY: Water years 1977 to current year.

PERIOD OF DAILY RECORD:

CHEMICAL ANALYSES: May 1955 to September 1963.

SPECIFIC CONDUCTANCE: May 1955 to September 1963.

WATER TEMPERATURES: May 1955 to current year.

SEDIMENT RECORDS: October 1957 to September 1970, January 1977 to current year (storm season record only for water year 1977).

INSTRUMENTATION.--Temperature recorder since March 1970.

REMARKS.--Unpublished records of specific conductance available in files of district office.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 19.0°C on several days in 1976; minimum recorded, 4.0°C Dec. 17, 1972, Jan. 9, 10, 1973.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 3,470 mg/L Jan. 24, 1970; minimum daily mean, 1 mg/L on many days in 1974 and 1967.

SEDIMENT DISCHARGE (1957-70, 1977-78): Maximum daily, 1,200,000 tons (1,090,000 metric tons) Jan. 24, 1970; minimum daily, 12 tons (11 metric tons) Dec. 8-10, 15, 1964.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 18.5°C Oct. 2-5; minimum recorded, 6.5°C Dec. 17.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,320 mg/L Jan. 9; minimum daily mean, 1 mg/L Sept. 18, 19.

SEDIMENT DISCHARGE: Maximum daily, 477,000 tons (433,000 metric tons) Jan. 9; minimum daily, 17 tons (15 metric tons) Sept. 19.

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)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 18...	1200	3620	138	7.6	17.0	2.0	9.5	54	--	--	9.1
NOV 28...	1435	4840	197	7.6	12.0	9.0	10.8	58	13	6.2	11
DEC 19...	1020	6470	173	7.2	7.0	27	11.8	58	--	--	10
JAN 17...	0845	58700	103	7.4	10.0	280	10.1	42	10	4.1	5.0
FEB 21...	1045	12700	132	7.1	10.0	22	10.4	--	--	--	--
APR 24...	1100	9780	114	7.8	12.0	9.0	10.0	50	--	--	5.7
MAY 23...	0800	8810	110	7.3	13.0	8.0	10.0	--	--	--	--
JUN 26...	0730	10300	112	7.2	13.5	6.0	10.4	--	--	--	--
JUL 26...	0800	11200	112	7.3	13.0	3.0	10.2	--	--	--	--
AUG 29...	0800	9580	111	7.3	13.5	3.0	9.9	--	--	--	--
SEP 26...	0815	6520	112	7.2	14.0	3.0	9.8	--	--	--	--

11377100 SACRAMENTO RIVER ABOVE BEND BRIDGE, NEAR RED BLUFF, 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 CAC03)	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)
OCT 18...	--	.5	--	62	--	5.6	--	--	--	0
NOV 28...	29	.6	1.6	64	7.7	6.0	114	.16	.16	100
DEC 19...	--	.6	--	58	--	6.5	--	--	--	0
JAN 17...	20	.3	1.4	39	10	2.2	84	.11	.43	0
FEB 21...	--	--	--	--	--	--	--	--	--	--
APR 24...	--	.4	--	49	--	3.1	--	--	--	0
MAY 23...	--	--	--	--	--	--	--	--	--	--
JUN 26...	--	--	--	--	--	--	--	--	--	--
JUL 26...	--	--	--	--	--	--	--	--	--	--
AUG 29...	--	--	--	--	--	--	--	--	--	--
SEP 26...	--	--	--	--	--	--	--	--	--	--

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

DAY	OCT			NOV			DEC			JAN			FEB			MAR			
	MAX	DAILY	MIN	MAX	DAILY	MIN	MAX	DAILY	MIN	MAX	DAILY	MIN	MAX	DAILY	MIN	MAX	DAILY	MIN	
1	18.0	--	16.5	15.0	--	14.0	11.0	--	10.5	--	8.5	--	--	9.5	--	10.5	--	10.0	
2	18.5	--	17.0	15.0	--	14.0	10.5	--	10.0	--	9.0	--	--	10.0	--	11.0	--	10.5	
3	18.5	--	17.0	14.5	--	14.0	10.5	--	10.0	--	9.5	--	--	9.5	--	11.5	--	10.5	
4	18.5	--	17.0	14.0	--	13.0	11.0	--	10.5	10.0	--	9.5	--	--	10.0	--	11.5	--	11.0
5	18.5	--	17.5	14.0	--	13.0	11.0	--	10.5	10.0	--	9.5	--	--	10.0	--	11.0	--	10.5
6	18.0	--	17.0	13.5	--	13.0	10.5	--	10.5	10.0	--	9.5	--	--	10.0	--	11.0	--	10.0
7	17.5	--	16.0	13.5	--	13.0	11.0	--	10.5	10.0	--	9.5	--	--	10.5	--	10.5	--	10.0
8	18.0	--	16.0	13.0	--	12.0	10.5	--	9.5	--	9.5	--	--	9.5	--	11.0	--	10.0	
9	18.0	--	16.5	12.5	--	12.0	9.5	--	9.0	--	10.5	--	--	9.5	--	11.0	--	10.5	
10	18.0	--	16.0	13.0	--	12.5	9.5	--	9.0	--	10.0	--	--	9.0	--	10.5	--	10.0	
11	18.0	--	16.0	13.0	--	12.5	9.5	--	9.5	11.0	--	10.0	9.0	--	8.5	10.5	--	10.0	
12	18.0	--	16.5	13.5	--	12.5	10.0	--	9.5	10.5	--	10.0	8.5	--	8.0	10.0	--	9.5	
13	18.0	--	16.5	14.0	--	13.0	10.0	--	10.0	11.0	--	10.5	8.5	--	8.0	10.0	--	9.5	
14	18.0	--	16.5	13.0	--	12.5	10.0	--	9.5	11.0	--	11.0	8.5	--	8.5	10.0	--	9.5	
15	17.5	--	16.5	13.0	--	12.5	10.5	--	9.5	11.0	--	10.0	9.0	--	8.5	10.0	--	9.5	
16	17.5	--	16.0	13.0	--	12.5	9.5	--	8.0	--	10.5	--	9.0	--	8.5	10.0	--	9.5	
17	17.5	--	16.0	12.5	--	12.5	8.0	--	6.5	--	10.0	--	9.0	--	8.5	10.5	--	10.0	
18	17.5	--	16.0	12.0	--	11.0	7.5	--	7.5	--	10.0	--	10.0	--	9.0	11.0	--	10.0	
19	17.0	--	16.0	11.0	--	10.5	7.5	--	7.0	--	10.0	--	10.5	--	9.5	11.5	--	10.5	
20	16.5	--	15.5	10.5	--	10.0	7.0	--	7.0	--	10.0	--	10.5	--	9.5	11.5	--	11.0	
21	16.0	--	15.0	--	--	--	8.0	--	7.0	--	9.5	--	10.5	--	9.5	11.5	--	11.0	
22	16.0	--	15.0	--	--	--	9.0	--	8.0	--	--	--	10.5	--	9.5	11.0	--	11.0	
23	16.0	--	15.5	--	--	--	10.0	--	9.5	--	--	--	11.0	--	10.0	12.0	--	11.0	
24	16.0	--	15.0	--	--	--	10.0	--	9.5	--	10.0	--	11.0	--	10.0	12.0	--	10.5	
25	16.5	--	16.0	--	--	--	9.5	--	8.5	--	8.0	--	11.0	--	10.0	12.5	--	11.0	
26	16.0	--	15.0	--	--	--	9.0	--	8.5	--	9.0	--	11.5	--	11.0	12.5	--	11.0	
27	15.5	--	15.0	--	--	--	9.5	--	9.0	--	9.0	--	11.0	--	10.5	13.0	--	11.5	
28	15.0	--	14.5	--	8.0	--	--	9.0	--	--	11.0	--	11.0	--	10.0	13.5	--	11.5	
29	--	--	--	--	7.5	--	--	9.0	--	--	10.5	--	--	--	--	13.5	--	12.0	
30	--	--	--	--	7.5	--	--	9.5	--	--	10.0	--	--	--	--	13.5	--	12.0	
31	--	--	--	--	--	--	--	9.0	--	--	9.5	--	--	--	--	13.5	--	11.5	
MONTH	18.5	--	14.5	--	--	--	11.0	--	6.5	--	--	--	--	--	--	13.5	--	9.5	

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

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

DAY	MAX	APR	MIN	MAX	MAY	MIN	MAX	JUN	MIN	MAX	JUL	MIN	MAX	AUG	MIN	MAX	SEP	MIN
		DAILY			DAILY			DAILY			DAILY			DAILY			DAILY	
1	11.5	--	10.0	13.0	--	10.5	15.0	--	13.0	14.0	--	12.0	14.5	--	12.0	14.5	--	13.0
2	11.5	--	10.5	13.5	--	11.0	15.0	13.5	13.5	14.0	--	12.0	14.5	--	12.0	15.0	--	13.0
3	11.5	--	11.0	13.0	--	11.5	15.5	--	13.5	14.0	--	11.5	14.5	--	12.0	15.0	--	13.5
4	12.0	--	10.0	13.0	--	11.0	15.5	--	14.0	14.0	--	12.0	14.5	--	12.5	15.0	--	13.5
5	12.0	--	10.5	12.5	--	10.5	16.0	--	14.0	14.5	--	12.0	14.5	--	12.5	15.0	--	13.5
6	10.5	--	10.0	12.5	--	10.0	15.5	--	13.5	14.5	--	12.0	14.5	--	12.5	15.0	--	13.0
7	11.5	--	9.5	13.0	--	10.5	15.5	--	13.5	14.5	--	12.0	14.5	--	12.5	14.5	--	13.0
8	11.5	--	10.5	13.5	--	11.0	15.5	--	13.5	14.5	--	12.0	14.5	--	12.5	15.0	--	13.0
9	12.0	--	10.5	13.5	--	11.5	15.0	--	13.0	15.0	--	12.5	14.5	--	12.0	14.5	--	13.0
10	12.5	--	11.0	13.5	--	11.5	15.0	--	13.0	15.0	--	12.5	14.5	--	12.0	14.5	--	13.0
11	12.5	--	11.0	13.5	--	11.5	14.5	--	12.5	14.5	--	12.0	14.5	--	12.0	14.5	--	14.0
12	12.5	--	11.0	14.0	--	11.5	14.5	--	12.5	14.5	--	12.0	14.0	--	12.0	15.0	--	14.0
13	12.0	--	11.0	14.0	--	12.0	14.5	--	12.5	14.0	--	12.0	14.0	--	11.5	14.0	--	14.0
14	11.5	--	10.5	14.0	--	12.0	14.0	--	12.0	14.0	--	11.5	14.0	--	11.5	14.0	--	13.0
15	11.0	--	10.0	13.0	--	11.5	14.0	--	12.0	14.5	--	12.0	14.0	--	11.5	13.5	--	12.5
16	10.5	--	9.5	13.0	--	11.0	14.0	--	11.5	14.5	--	12.0	14.0	--	11.5	14.5	--	13.5
17	11.0	--	10.0	13.5	--	11.5	14.0	--	12.0	14.5	--	12.0	14.0	--	11.5	14.5	--	13.5
18	11.5	--	10.0	14.0	--	12.0	14.0	--	12.0	14.5	--	12.0	14.0	--	11.5	--	--	--
19	11.5	--	10.5	14.0	--	12.5	14.0	--	12.0	14.5	--	12.0	14.0	--	11.5	--	--	--
20	11.0	--	10.5	14.5	--	12.5	14.0	--	12.0	14.5	--	12.0	14.0	--	11.5	--	--	--
21	11.5	--	10.0	14.5	--	12.5	14.0	--	12.0	14.5	--	12.0	14.0	--	12.0	--	--	--
22	12.0	--	10.0	14.5	--	13.0	14.0	--	12.0	14.5	--	12.0	13.5	--	11.5	--	--	--
23	12.0	--	10.5	14.0	--	12.5	14.5	--	12.0	14.5	--	12.0	13.5	--	11.5	--	--	--
24	12.0	--	11.5	13.5	--	11.5	14.0	--	12.0	14.5	--	12.0	13.5	--	12.0	--	--	--
25	13.0	--	11.5	13.5	--	11.0	14.0	--	11.5	14.0	--	12.0	14.0	--	12.5	--	--	--
26	13.5	--	12.5	13.5	--	11.5	14.0	--	12.0	14.5	--	12.0	14.0	--	12.0	--	--	--
27	15.0	--	13.0	14.5	--	12.0	14.0	--	11.5	14.5	--	12.0	14.0	--	12.0	--	--	--
28	15.0	--	13.0	15.0	--	13.0	14.0	--	12.0	14.5	--	12.0	14.5	--	12.5	--	--	--
29	13.5	--	11.5	15.0	--	13.5	14.0	--	11.5	14.0	--	11.5	14.5	--	12.5	--	--	--
30	13.0	--	11.5	15.0	--	13.0	14.5	--	12.0	14.5	--	11.5	14.5	--	13.0	--	--	--
31	--	--	--	14.5	--	12.5	--	--	--	14.5	--	12.0	14.5	--	13.0	--	--	--
MONTH	15.0	--	9.5	15.0	--	10.5	16.0	--	11.5	15.0	--	11.5	14.5	--	11.5	--	--	--

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	4300	12	139	5610	15	227	4210	7	80
2	4060	12	132	5880	15	238	4160	7	79
3	3840	12	124	5900	13	207	4100	6	66
4	3770	12	122	5840	12	189	4090	7	77
5	3660	11	109	5960	12	193	4070	7	77
6	3630	10	98	5940	11	176	4050	8	87
7	3600	9	87	5920	11	176	4060	10	110
8	3520	8	76	5840	10	158	3960	9	96
9	3450	8	75	5820	10	157	3990	11	119
10	3230	8	70	5540	9	135	4050	9	98
11	3200	8	69	5410	9	131	4170	15	169
12	3200	8	69	5480	9	133	4610	17	212
13	3200	8	69	5480	10	148	4490	30	364
14	3200	8	69	5540	9	135	15000	637	32300
15	3200	9	78	5510	8	119	22000	1560	104000
16	3270	9	79	5470	8	118	9120	483	12800
17	3440	9	84	5410	8	117	21800	1100	70500
18	3620	9	88	5330	8	115	9700	789	21500
19	3690	9	90	5300	8	114	6430	125	2170
20	3650	8	79	5290	8	114	5340	35	505
21	3700	8	80	5690	142	2240	4880	29	382
22	3710	8	80	6680	265	4810	7820	113	3000
23	3720	8	80	8190	370	8270	21900	1890	134000
24	4060	10	110	5990	192	3150	9870	283	8180
25	4760	12	154	5520	35	522	6920	53	990
26	5040	13	177	5080	14	192	5850	39	616
27	5110	13	179	5030	12	163	6510	48	844
28	5170	14	195	4840	12	157	7270	75	1470
29	5350	14	202	4520	9	110	6630	45	806
30	5320	14	201	4230	8	91	7590	78	1600
31	5320	14	201	---	---	---	6080	40	657
TOTAL	121990	---	3465	168240	---	22805	234720	---	397954

11377100 SACRAMENTO RIVER ABOVE BEND BRIDGE, NEAR RED BLUFF, 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	5380	18	261	5910	24	383	7190	22	427
2	5580	32	482	7040	38	763	11200	124	4070
3	8090	184	4230	7000	40	756	20400	600	35000
4	8540	86	2430	6140	29	481	45000	430	54300
5	19500	493	27800	10500	253	12800	53600	492	78800
6	14500	451	17600	26900	972	69300	43500	311	39100
7	9390	208	5510	42400	783	105000	35700	136	13100
8	10600	172	5780	39100	600	63300	61500	401	77700
9	60400	2320	477000	36400	480	49200	61700	610	104000
10	36400	1230	155000	27700	146	11200	54400	283	42000
11	16000	244	10700	24500	84	5590	60500	367	61100
12	14300	278	10800	25000	123	9860	50000	93	12600
13	20800	571	35000	28700	190	15200	47100	109	13900
14	43900	1140	147000	27100	130	9510	43300	98	11500
15	64200	1390	266000	25700	130	9020	37100	80	8010
16	64800	1460	278000	21800	85	5000	29600	89	7110
17	51100	1050	152000	18600	50	2510	22400	76	4600
18	26400	553	40200	15000	42	1700	17100	44	2030
19	37900	879	91900	13200	63	2250	15100	38	1550
20	23500	223	16000	12900	68	2370	13100	41	1450
21	18400	173	8690	12700	48	1650	11700	26	821
22	17300	190	8870	11300	41	1250	11900	34	1090
23	15600	145	6110	10100	37	1010	12100	32	1050
24	14400	100	3890	9910	38	1020	11900	41	1320
25	12500	70	2360	8580	24	556	10900	36	1060
26	10100	54	1470	8230	25	556	10500	19	539
27	8490	42	963	8520	24	552	10300	20	556
28	8090	38	830	7560	22	449	10100	22	600
29	7750	35	732	---	---	---	9940	17	456
30	7480	27	545	---	---	---	9900	18	481
31	6730	24	436	---	---	---	10000	14	378
TOTAL	668120	---	1778589	498490	---	383236	848730	---	580698

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	19600	67	3630	15200	33	1350	8250	13	290
2	15900	68	2920	14700	23	913	8280	11	246
3	12300	49	1630	14500	20	783	8240	15	334
4	15700	62	2740	14000	21	794	8160	18	397
5	11100	36	1080	14100	13	495	8210	22	488
6	20900	64	3880	14000	9	340	8910	21	505
7	19700	30	1750	13900	12	450	8950	11	266
8	18200	42	2060	13100	18	637	8960	9	218
9	18100	41	2000	12700	14	480	9330	10	252
10	17400	41	1930	12300	15	498	9440	9	229
11	17000	35	1610	11700	13	411	9370	9	228
12	15900	33	1420	11600	13	407	9410	12	305
13	15200	30	1230	11500	17	528	9410	17	432
14	16700	28	1260	11600	25	783	9840	20	531
15	17200	44	2250	11300	8	244	10000	12	324
16	18900	34	1900	10600	9	258	10100	7	191
17	17600	31	1470	10200	8	220	10100	3	82
18	16700	32	1440	10100	7	191	10100	3	82
19	15200	30	1230	9970	9	242	10000	3	81
20	18000	43	2230	9910	11	294	10000	3	81
21	14100	27	1030	9780	11	290	9920	5	134
22	12900	18	627	9350	10	252	9930	12	322
23	12300	23	764	8860	10	239	9920	17	455
24	9760	15	395	8710	10	235	10200	11	303
25	14600	241	10700	8650	13	304	10400	9	253
26	18100	239	12100	8560	15	347	10400	8	225
27	12200	36	1190	8370	7	158	10400	9	253
28	13800	45	1680	8400	7	159	10500	10	283
29	15900	62	2660	8410	6	136	10600	12	343
30	15500	60	2510	8410	7	159	10500	8	227
31	---	---	---	8270	16	357	---	---	---
TOTAL	476460	---	73316	342750	---	12954	287830	---	8360

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

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

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	10500	5	142	11300	9	275	8570	4	93
2	10500	5	142	11200	9	272	8530	4	92
3	10600	6	172	11200	8	242	8570	3	69
4	10700	6	173	11200	8	242	8520	3	69
5	10600	7	200	11200	7	212	8520	3	69
6	10300	9	250	11200	7	212	8420	3	68
7	10100	11	300	11200	6	181	8050	4	87
8	10200	15	413	11200	6	181	8040	4	87
9	10200	19	523	11300	5	153	7860	5	106
10	10200	11	303	11100	5	150	8010	6	130
11	10100	4	109	11100	5	150	7940	6	129
12	10200	5	138	12600	6	204	7330	5	99
13	10300	6	167	12600	5	170	6920	4	75
14	11300	10	305	12600	4	136	6810	4	74
15	11300	14	427	12600	3	102	6690	3	54
16	11400	12	369	12600	3	102	6560	3	53
17	11300	10	305	12500	3	101	6530	2	35
18	11300	7	214	11500	4	124	6510	1	18
19	11300	4	122	11000	4	119	6460	1	17
20	11300	6	183	11100	4	120	6410	2	35
21	11300	8	244	11100	4	120	6430	3	52
22	11300	7	214	10600	5	143	6500	4	70
23	11400	6	185	9920	5	134	6460	5	87
24	11300	5	153	9880	5	133	6480	6	105
25	11300	3	92	9900	5	134	6490	6	105
26	11300	6	183	9920	4	107	6510	6	105
27	11300	9	275	9930	4	107	6540	6	106
28	11300	5	153	9910	4	107	6500	6	105
29	11300	2	61	9560	4	103	6500	6	105
30	11300	2	61	9310	4	101	6490	6	105
31	11300	3	92	8800	4	95	---	---	---
TOTAL	338100	---	6670	341130	---	4732	216150	---	2404
YEAR	4542710		3275183						

SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	WATER DISCHARGE CFS-DAYS	SUSPENDED SEDIMENT DISCHARGE TONS	BEDLOAD DISCHARGE TONS	TOTAL SEDIMENT DISCHARGE TONS
OCTOBER 1977	121990.00	3465.00	125	3590
NOVEMBER ...	168240.00	22805.00	378	23200
DECEMBER ...	234720.00	397954.00	1410	399000
JANUARY 1978	668120.00	1778589.00	11200	1790000
FEBRUARY ...	498490.00	383236.00	6490	390000
MARCH	848730.00	580698.00	15900	597000
APRIL	476460.00	73316.00	4680	78000
MAY	342750.00	12954.00	2290	15200
JUNE	287830.00	8360.00	1560	9920
JULY	338100.00	6670.00	2140	8810
AUGUST	341130.00	4732.00	2190	6920
SEPTEMBER ..	216150.00	2404.00	764	3170
TOTAL	4542710.00	3275183.00	49127	3324810

SACRAMENTO RIVER BASIN

11377100 SACRAMENTO RIVER ABOVE BEND BRIDGE, NEAR RED BLUFF, 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
DEC								
15...	1516	10.5	17600	1160	55100	29	47	65
JAN								
03...	1231	10.0	8200	293	6490	36	51	68
10...	1316	10.0	28000	616	46600	24	37	48
MAR								
01...	1106	10.0	7160	20	387	--	--	--
13...	0931	9.0	47100	112	14200	--	--	--
13...	1446	9.5	47000	156	19800	--	--	--
APR								
03...	1046	11.0	12400	42	1410	--	--	--
MAY								
01...	1201	11.0	15200	27	1110	--	--	--

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
DEC							
15...	81	91	94	95	96	99	100
JAN							
03...	84	92	96	97	98	99	100
10...	61	72	83	92	98	100	--
MAR							
01...	--	--	73	80	90	98	100
13...	--	--	38	52	78	99	100
13...	--	--	32	40	56	79	100
APR							
03...	--	--	35	43	63	96	100
MAY							
01...	--	--	49	58	78	97	100

PARTICLE-SIZE DISTRIBUTION OF SEDIMENT IN TRANSIT WITHIN 0.25 FOOT OF BED SURFACE,
WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	STREAM WIDTH (FT)	SEDI- MENT DIS- CHARGE, BEDLOAD (TONS/ DAY)	SED. BEDLOAD SIEVE DIAM. % FINER THAN .125 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN .250 MM
DEC								
01...	1315	10.5	18	4220	340	1.9	0	1
JAN								
03...	1430	9.5	20	8560	359	24	0	2
FEB								
02...	1430	9.0	20	6880	360	40	0	3
MAR								
01...	1300	10.0	19	7140	358	24	0	3
MAY								
01...	1330	11.0	20	15200	368	86	0	2
JUN								
02...	1245	13.5	19	8270	360	23	0	1
JUL								
05...	1115	12.0	17	10600	365	98	0	1
31...	1130	12.0	18	11200	365	44	0	1

DATE	SED. BEDLOAD SIEVE DIAM. % FINER THAN .500 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 1.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 2.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 4.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 8.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 16.0 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 32.0 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 64.0 MM
DEC								
01...	15	49	79	92	95	100	--	--
JAN								
03...	17	49	71	79	85	92	100	--
FEB								
02...	12	20	26	36	50	83	85	100
MAR								
01...	35	61	76	85	88	90	100	--
MAY								
01...	36	62	66	67	68	72	85	100
JUN								
02...	25	65	86	92	94	96	100	--
JUL								
05...	30	92	97	98	100	--	--	--
31...	29	74	81	82	83	84	86	100

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

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT
CONCENTRATION AND TURBIDITY, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

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)
MAR						
03...	1100	5550	10.0	14	210	3.0
07...	1200	6820	9.5	10	184	1.0
11...	1100	6910	9.5	12	224	3.0
15...	1300	6970	9.5	12	226	2.0
19...	1400	6200	9.0	18	301	2.0
23...	1200	6040	10.0	16	261	4.0
27...	1200	6090	10.5	14	230	6.0
30...	1200	5930	11.0	12	192	2.0
APR						
01...	1015	6310	12.0	10	170	2.0
04...	1345	6240	12.5	9	152	2.0
07...	0830	6260	13.0	11	186	3.0
07...	1115	6400	12.0	8	138	3.0
07...	1445	6560	13.0	7	124	3.0
08...	1105	6790	11.5	9	165	4.0
11...	1230	7520	12.5	12	244	3.0
14...	1400	8810	12.5	14	333	2.0
19...	1330	9580	12.0	11	285	4.0
21...	1145	9470	12.0	10	256	4.0
26...	0845	10000	10.5	14	378	3.0
29...	0915	10000	12.0	12	324	3.0
MAY						
02...	1100	10300	11.5	11	306	3.0
04...	1045	10200	11.0	11	303	5.0
04...	1525	10200	11.0	6	165	3.0
06...	1315	8430	11.0	6	137	3.0
06...	1400	8430	11.0	6	137	3.0
07...	0900	8380	11.5	7	158	2.0
10...	1315	9160	12.0	11	272	3.0
14...	0830	7750	14.0	24	502	5.0
18...	0915	7400	13.5	14	280	4.0
22...	0900	7400	14.0	14	280	2.0
27...	0915	7630	13.0	16	330	4.0
31...	0845	7350	16.0	12	238	3.0
JUN						
01...	0800	7050	16.5	8	152	3.0
01...	1200	6980	15.5	6	113	3.0
01...	1325	6790	16.0	6	110	2.0
05...	0845	8190	16.0	12	265	2.0
09...	1345	8750	15.5	10	236	3.0
14...	1345	9420	15.5	12	305	4.0
19...	0845	10400	15.0	12	337	4.0
22...	0815	10500	16.0	11	312	4.0
JUL						
05...	1045	10800	16.0	14	408	3.0
05...	1445	10700	16.5	9	260	4.0
08...	1145	10700	17.0	20	578	1.0
16...	0815	10700	17.5	24	693	1.0
22...	0900	11200	18.0	22	665	3.0
27...	1250	10600	20.5	16	458	7.0
30...	0830	10800	18.5	23	671	4.0
AUG						
01...	0840	10800	19.5	12	350	5.0
01...	1230	10800	19.0	13	379	6.0
01...	1350	10700	20.5	24	693	6.0
05...	0830	10300	19.0	26	723	2.0
13...	0815	8260	19.5	20	446	2.0
27...	0845	7110	19.5	12	230	3.0
SEP						
03...	0845	6400	20.5	6	104	1.0
06...	0905	6020	21.0	8	130	3.0
06...	1240	5950	20.5	13	209	2.0
10...	0915	5250	21.0	13	184	3.0
17...	1015	6460	17.0	21	366	4.0
21...	1740	4970	19.0	27	362	15
24...	0900	4770	18.0	6	77	15
30...	0900	4460	18.0	14	169	5.0

SACRAMENTO RIVER BASIN

11377100 SACRAMENTO RIVER ABOVE BEND BRIDGE, NEAR RED BLUFF, 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)
OCT						
08...	0900	3530	16.5	8	76	4.0
15...	0900	3200	16.5	9	78	5.0
18...	1200	3620	17.0	--	--	2.0
22...	0845	3710	15.0	8	80	5.0
29...	0900	5360	14.0	14	203	6.0
NOV						
01...	0800	5530	14.0	14	209	6.0
01...	1145	5770	14.5	15	234	7.0
01...	1146	5770	14.5	12	187	7.0
01...	1310	5810	15.5	16	251	6.0
02...	0845	5890	14.0	15	239	4.0
03...	0845	5960	14.0	13	209	6.0
04...	0900	5930	14.0	12	192	6.0
05...	0930	6000	13.0	12	194	6.0
07...	1300	5960	14.0	11	177	6.0
08...	0915	5850	12.0	10	158	6.0
09...	1245	5870	13.0	10	158	5.0
12...	0915	5510	13.0	9	134	4.0
12...	0945	5510	12.0	9	134	5.0
13...	1415	5490	14.0	10	148	5.0
15...	0945	5450	13.0	8	118	5.0
23...	1545	7850	7.5	361	7650	170
25...	1100	5580	10.0	20	301	13
28...	0945	4860	10.0	11	144	10
28...	1435	4840	12.0	--	--	9.0
28...	1600	4790	10.5	12	155	10
29...	0920	4630	12.0	9	113	8.0
29...	1630	4300	13.0	8	93	7.0
30...	0950	4200	11.0	8	91	7.0
30...	1220	4200	11.0	8	91	6.0
30...	1620	4270	12.0	7	81	6.0
DEC						
01...	0745	4220	10.0	13	148	5.0
01...	0900	4220	10.0	8	91	6.0
01...	1135	4220	10.5	7	80	4.0
01...	1136	4220	10.5	9	103	5.0
01...	1225	4220	10.5	8	91	6.0
01...	1445	4220	10.5	9	103	5.0
02...	1250	4170	11.0	7	79	5.0
03...	1255	4070	11.0	5	55	6.0
04...	1305	4040	10.5	8	87	6.0
05...	1315	4070	11.0	7	77	6.0
06...	1000	4040	11.0	8	87	7.0
07...	0845	4100	10.0	10	111	7.0
08...	1110	3980	11.0	9	97	8.0
09...	1325	3980	10.0	12	129	8.0
10...	1230	4070	10.0	7	77	7.0
11...	1130	4120	9.5	14	156	6.0
11...	1500	4150	10.0	7	78	7.0
12...	0900	4610	10.0	14	174	9.0
13...	1405	4440	10.5	27	324	18
14...	1030	18100	10.0	517	25300	230
14...	1540	18900	10.0	985	50300	310
14...	1645	18900	10.0	561	28600	250
15...	1115	24100	11.0	1560	102000	500
15...	1415	18800	10.5	1270	64500	500
15...	1515	17600	10.5	1200	57000	450
15...	1600	16900	10.5	1230	56100	450
15...	1615	16600	10.5	302	13500	120
16...	1215	8420	9.0	326	7410	150
16...	1600	7810	8.5	885	18700	300
17...	0900	30700	8.0	766	63500	320
17...	1640	19200	7.0	748	38800	240
18...	1000	9780	8.0	1060	28000	370
19...	1020	6470	7.0	--	--	27
19...	1400	6220	8.0	54	907	36
20...	1350	5270	7.0	33	470	23
21...	1200	4880	8.0	28	369	18
22...	0950	6990	8.0	32	604	22
22...	1545	9310	9.0	66	1660	40
23...	0915	33900	9.5	1600	146000	650
24...	1220	9500	10.0	232	5950	120
25...	1100	6930	8.5	48	898	17
26...	1050	5850	8.0	42	663	27
27...	1300	6440	10.0	32	556	15
28...	0945	7450	9.0	78	1570	27
29...	1400	6180	8.5	--	--	10
30...	1340	7140	11.0	74	1430	45
31...	1400	5790	9.0	37	578	33

11377100 SACRAMENTO RIVER ABOVE BEND BRIDGE, NEAR RED BLUFF, 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						
01...	0910	5400	8.5	14	204	9.0
02...	1130	5380	9.0	17	247	11
03...	0830	9070	9.5	331	8110	110
03...	1230	8300	9.5	334	7490	140
03...	1540	7980	9.5	118	2540	120
04...	0945	6920	10.0	86	1610	50
04...	1655	7860	9.0	46	976	30
05...	1000	17500	10.0	1460	69000	410
06...	1330	13700	10.5	660	24400	150
07...	1045	9470	10.5	206	5270	85
07...	1612	8900	10.0	141	3390	75
08...	1100	8280	9.5	118	2640	65
09...	1020	50500	11.0	2160	295000	230
10...	0845	38800	10.0	278	29100	220
10...	0945	35900	10.0	1260	122000	200
10...	1315	27600	10.0	685	51000	190
10...	1400	26300	10.5	705	50100	210
10...	1545	24200	10.5	500	32700	160
11...	1400	15000	11.0	256	10400	75
11...	1548	14700	10.5	100	3970	65
12...	1020	14500	10.5	161	6300	50
12...	1545	13600	10.5	306	11200	130
13...	0845	19600	--	334	17700	65
13...	1600	24100	10.0	854	55600	230
14...	0930	30800	11.0	916	76200	230
15...	0948	69600	10.5	730	137000	250
15...	1520	46000	10.5	934	116000	290
16...	1105	53000	10.0	1570	225000	230
16...	1538	89300	10.5	765	184000	350
17...	0845	58700	10.0	--	--	280
17...	0850	58700	10.0	1140	181000	280
18...	0850	26700	10.0	566	40800	140
19...	0855	44900	10.0	1100	133000	270
20...	0850	25300	10.0	314	21400	100
20...	1530	22000	10.0	59	3510	55
21...	0940	19100	10.0	230	11900	50
24...	1630	15400	10.0	80	3330	24
25...	1000	12500	8.0	69	2330	20
25...	1538	11800	8.0	26	828	22
26...	0950	10400	8.0	56	1570	20
26...	1538	9100	9.0	24	590	17
27...	0905	8580	9.0	45	1040	18
28...	1545	7990	11.0	36	777	16
29...	1330	7710	10.5	38	791	40
30...	0900	7470	10.0	25	504	12
31...	0905	6730	9.5	26	472	12
FEB						
01...	1050	5800	9.5	23	360	11
02...	0900	6610	10.0	26	464	10
02...	0915	6610	8.5	32	571	9.0
02...	1240	6660	9.0	30	539	10
02...	1525	7210	9.0	32	623	11
03...	0910	7000	9.0	42	794	15
03...	1530	6680	9.5	28	505	11
04...	0905	6230	10.0	29	488	12
05...	1000	6380	10.0	53	913	12
05...	1540	12100	10.0	28	915	9.0
06...	1200	18700	10.0	446	22500	110
06...	1555	23700	10.0	285	18200	90
07...	0900	28900	10.0	288	22500	75
07...	1230	37800	10.5	722	73700	85
07...	1515	53400	10.5	738	106000	85
08...	0845	39800	9.5	527	56600	100
08...	1538	34800	9.5	480	45100	100
09...	1000	38800	9.5	636	66600	120
09...	1538	33500	9.0	305	27600	120
10...	1010	27900	9.0	189	14200	50
10...	1539	27000	9.0	66	4810	33
11...	1020	24600	8.0	142	9430	33
11...	1514	24200	8.5	43	2810	26
12...	0905	21200	9.0	44	2520	28
12...	1545	22900	8.5	69	4270	35
13...	0918	27500	8.0	200	14900	40
13...	1528	26900	8.0	45	3270	31
14...	0925	27200	8.5	172	12600	29
14...	1538	26300	9.0	94	6680	34
15...	0945	26200	9.0	142	10000	28
15...	1518	26000	9.0	36	2530	22
16...	1030	21100	8.0	90	5130	22

SACRAMENTO RIVER BASIN

11377100 SACRAMENTO RIVER ABOVE BEND BRIDGE, NEAR RED BLUFF, 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- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	TUR- BID- ITY (NTU)
FEB						
16...	1518	20500	8.5	32	1770	25
17...	0915	18700	9.0	66	3330	23
17...	1540	17900	9.0	34	1640	18
18...	0940	15100	8.5	34	1390	22
18...	1539	13600	9.0	52	1910	24
19...	1030	13100	9.5	62	2190	23
20...	1045	12900	9.5	76	2650	23
21...	0945	12700	10.0	46	1580	22
21...	1045	12700	10.0	--	--	22
22...	0935	11700	10.0	42	1330	22
23...	1015	10100	11.0	36	982	20
24...	1015	9930	10.0	38	1020	18
25...	1020	8900	10.0	33	793	17
25...	1400	8090	10.5	17	371	12
26...	1530	8170	10.5	32	706	13
27...	1425	9160	11.0	34	841	17
28...	1055	7530	10.0	26	529	14
MAR						
01...	0800	7230	10.0	30	586	10
01...	1050	7170	10.0	26	503	12
01...	1105	7160	10.0	22	425	13
01...	1106	7160	10.0	22	425	13
01...	1410	7140	10.5	24	463	12
02...	0900	8400	10.5	154	3490	19
02...	1455	13800	11.0	155	5780	18
03...	0908	17300	10.5	732	34200	180
03...	1530	28600	11.0	844	65200	180
04...	0905	44300	11.0	455	54400	180
04...	1618	56700	11.0	388	59400	170
05...	0939	50200	10.5	343	46500	300
05...	1540	41000	10.5	200	22100	260
06...	0918	43600	10.5	192	22600	40
06...	1405	40700	10.5	212	23300	40
07...	1025	35800	10.0	143	13800	32
07...	1538	35100	10.0	126	11900	29
08...	1008	60900	9.5	155	25500	130
08...	1538	81000	10.0	323	70600	190
09...	0940	63100	10.5	556	94700	120
09...	1520	53300	10.0	479	68900	120
10...	0900	54800	10.0	233	34500	60
10...	1540	53300	10.0	216	31100	60
11...	0905	68700	9.5	58	10800	30
11...	1548	56800	10.0	404	62000	180
12...	0945	50300	9.5	64	8690	33
12...	1540	49300	9.5	72	9580	26
13...	0910	47200	10.0	96	12200	24
13...	0930	47100	9.0	125	15900	24
13...	1445	47000	9.5	137	17400	30
13...	1510	47000	9.5	120	15200	32
14...	0945	43400	9.5	104	12200	29
14...	1720	41700	10.5	87	9800	27
15...	0915	38200	9.0	80	8250	27
15...	1538	34600	9.5	64	5980	24
16...	0900	30800	10.0	92	7650	23
17...	1015	23000	11.0	81	5030	20
17...	1550	20400	10.5	62	3420	22
17...	1615	20300	10.5	35	1920	22
18...	1045	16900	10.5	64	2920	22
18...	1600	16500	11.0	16	713	16
19...	0938	15200	10.0	30	1230	16
19...	1600	14800	10.5	42	1680	20
20...	0910	13300	11.0	48	1720	18
20...	1618	12700	10.5	20	686	18
21...	0940	11700	10.5	28	885	13
21...	1620	11300	11.0	22	671	15
22...	0830	12400	11.0	50	1670	16
22...	1615	11900	10.5	24	771	17
23...	0900	11400	11.0	18	554	12
23...	1400	11500	11.5	31	963	16
24...	0920	12000	10.5	17	551	12
24...	1618	11600	10.0	64	2000	17
25...	1000	10900	11.0	36	1060	14
25...	1545	10800	11.5	36	1050	14
26...	1015	10500	11.0	14	397	14
27...	0940	10200	11.5	24	661	13
27...	1525	10200	12.0	16	441	13
28...	0920	10100	12.0	27	736	14
29...	1538	9940	13.0	12	322	11
29...	1549	9950	12.5	12	322	12

11377100 SACRAMENTO RIVER ABOVE BEND BRIDGE, NEAR RED BLUFF, 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- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	TUR- BID- ITY (NTU)
MAR						
29...	2145	9910	12.0	22	589	13
30...	0830	9880	13.0	24	640	14
30...	1545	9950	12.5	9	242	8.0
31...	0910	9840	13.0	10	266	7.0
31...	1600	10000	12.0	8	216	9.0
APR						
01...	0915	17200	11.0	298	13800	90
02...	0940	15600	11.0	159	6700	28
03...	0915	12500	10.5	60	2030	26
03...	1045	12400	11.0	54	1810	17
03...	1200	12300	11.0	47	1560	15
04...	2050	13900	10.0	55	2060	22
05...	0905	11500	11.0	244	7580	75
05...	1530	10200	11.0	28	771	12
06...	0930	23900	10.5	142	9160	16
06...	1630	23000	10.0	44	2730	10
07...	0845	19500	10.0	24	1260	21
07...	0930	19200	10.0	253	13100	90
08...	0915	18000	11.5	40	1940	14
09...	0948	18200	12.0	38	1870	16
10...	0920	17500	12.0	46	2170	16
11...	0930	17000	13.0	34	1560	16
12...	0845	16000	12.0	35	1510	15
13...	0915	15200	12.0	28	1150	17
14...	0905	16800	11.5	14	635	8.0
15...	0945	15400	10.5	31	1290	20
16...	1030	18200	10.5	28	1380	22
17...	1000	18000	10.0	32	1560	18
18...	0930	16700	11.0	36	1620	13
19...	0920	15200	10.5	24	985	15
20...	0830	18200	10.0	18	885	12
21...	0930	14200	10.5	31	1190	16
22...	0948	12900	10.5	16	557	10
23...	1000	12400	10.0	24	804	10
24...	0900	9970	12.5	16	431	11
24...	1100	9780	12.0	--	--	9.0
25...	0950	18100	12.5	420	20500	140
26...	0900	21600	13.0	324	18900	120
27...	0930	12400	14.0	32	1070	12
28...	0925	12600	13.5	27	919	13
29...	1020	15900	13.5	61	2620	11
30...	0938	15300	13.0	67	2770	13
MAY						
01...	0820	15300	13.5	50	2070	10
01...	0850	15300	12.0	29	1200	12
01...	1200	15200	11.0	30	1230	10
01...	1500	15100	11.5	34	1390	6.0
02...	0900	14700	13.0	24	953	7.0
03...	0915	14500	12.5	20	783	9.0
04...	1045	14000	12.0	22	832	12
05...	1020	14100	11.5	14	533	10
06...	0920	14000	11.5	8	302	7.0
07...	0830	13800	11.5	9	335	7.0
08...	0900	12800	13.0	20	691	14
09...	0930	12700	13.0	13	446	5.0
10...	0930	12500	13.0	16	540	9.0
11...	0845	11600	13.0	13	407	8.0
12...	0900	11500	13.0	13	404	8.0
13...	0920	11500	13.0	12	373	8.0
14...	0835	11500	12.5	33	1030	8.0
15...	0930	11500	13.0	4	124	1.0
16...	0920	10600	13.0	11	315	5.0
17...	0900	10200	13.0	8	220	8.0
18...	0910	10100	13.0	6	164	4.0
19...	0930	9910	13.5	9	241	5.0
20...	0830	9860	13.5	11	293	6.0
21...	0928	9710	14.0	11	288	6.0
22...	0900	9480	13.5	10	256	7.0
23...	0800	8810	13.0	--	--	8.0
23...	0910	8830	14.0	10	238	6.0
24...	0940	8690	13.5	10	235	7.0
25...	0939	8690	13.5	13	305	7.0
26...	1100	8650	13.0	18	420	7.0
27...	1000	8310	13.0	5	112	5.0
28...	1020	8400	13.0	8	181	5.0
29...	1100	8500	13.0	6	138	3.0
30...	1000	8430	13.0	5	114	4.0
31...	0945	8330	13.0	18	405	4.0
JUN						
02...	0820	8310	14.0	10	224	6.0

SACRAMENTO RIVER BASIN

11377100 SACRAMENTO RIVER ABOVE BEND BRIDGE, NEAR RED BLUFF, 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- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	TUR- BID- ITY (NTU)
JUN						
02...	1200	8270	13.5	9	201	7.0
02...	1400	8260	14.5	12	268	7.0
05...	1130	8200	14.0	22	487	7.0
07...	1000	8920	13.5	9	217	5.0
09...	0940	9410	13.5	10	254	6.0
11...	1000	9370	13.5	9	228	4.0
13...	1000	9500	15.0	16	410	5.0
15...	0930	9950	14.0	12	322	4.0
17...	0945	10100	14.0	2	55	3.0
19...	1100	9990	14.5	29	782	6.0
21...	0940	9940	14.0	4	107	3.0
23...	0900	9910	14.0	18	482	5.0
25...	0948	10400	14.0	8	225	4.0
26...	0730	10300	13.5	--	--	6.0
27...	1045	10400	13.5	8	225	5.0
29...	0900	10500	13.0	13	369	3.0
JUL						
01...	0910	10400	13.5	5	140	3.0
03...	1000	10500	13.0	6	170	4.0
05...	0815	10800	13.0	17	496	4.0
05...	0845	10700	14.0	11	318	5.0
05...	1100	10600	12.0	7	200	4.0
05...	1245	10500	14.0	14	397	4.0
07...	0910	10100	13.5	15	409	4.0
09...	0850	10300	13.5	19	528	6.0
11...	0905	10100	13.5	4	109	5.0
13...	0930	10200	13.5	6	165	5.0
15...	0830	11300	13.5	14	427	7.0
17...	0940	11300	14.0	10	305	3.0
19...	0950	11300	14.0	4	122	5.0
21...	0845	11200	13.5	8	242	4.0
23...	0938	11400	14.0	6	185	2.0
25...	1015	11300	14.0	3	92	3.0
26...	0800	11200	13.0	--	--	3.0
27...	0945	11300	14.0	9	275	4.0
29...	1005	11300	14.0	2	61	2.0
31...	0800	11200	14.0	3	91	2.0
31...	0900	11200	13.0	12	363	4.0
31...	1100	11200	12.0	9	272	4.0
AUG						
01...	1000	11300	14.0	9	275	2.0
10...	0958	11100	14.0	5	150	2.0
15...	1015	12700	14.0	3	103	2.0
23...	1118	9910	13.5	5	134	2.0
29...	0800	9580	13.5	--	--	3.0
31...	1045	8630	14.0	4	93	1.0
SEP						
05...	0945	8490	13.5	3	69	1.0
12...	1000	7410	13.5	9	180	3.0
19...	0945	6420	13.5	1	17	1.0
26...	0815	6520	14.0	--	--	3.0
26...	0900	6500	13.5	6	105	3.0

11378800 RED BANK CREEK NEAR RED BLUFF, CA

LOCATION.--Lat 40°05'25", long 122°24'45", in NE¼SE¼ sec.22, T.26 N., R.5 W., Tehama County, on road bridge near left bank 0.1 mi (0.2 km) downstream from unnamed tributary, 1.8 mi (2.9 km) southeast of town of Red Bank, and 11 mi (18 km) southwest of Red Bluff.

DRAINAGE AREA.--89.6 mi² (232.1 km²).

PERIOD OF RECORD.--October 1959 to current year.

REVISED RECORDS.--WDR CA-77-4: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 470 ft (143 m), from topographic map.

REMARKS.--Some small storage ponds and possibly some diversions for irrigation upstream.

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

AVERAGE DISCHARGE.--19 years, 48.4 ft³/s (1.371 m³/s), 35,070 acre-ft/yr (43.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,730 ft³/s (276 m³/s) Jan. 5, 1965, gage height, 10.06 ft (3.066 m); no flow for several months in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,320 ft³/s (264 m³/s) Jan. 14, gage height, 10.15 ft (3.094 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	0	11	19	1.5	126	48	3.6			
2		0	0	106	31	427	46	40	3.6			
3		0	0	132	17	536	42	34	3.4			
4		0	0	1140	10	1520	184	30	3.2			
5		0	0	570	1230	361	171	26	2.9			
6		0	0	121	906	95	413	23	2.4			
7		0	0	20	1610	67	262	20	1.9			
8		0	0	144	1060	1570	129	19	1.6			
9		0	0	2710	669	1410	94	18	1.2			
10		0	0	645	219	489	82	17	1.0			
11		0	0	219	112	350	74	15	.90			
12		0	.10	260	848	250	68	16	.90			
13		0	.10	1350	226	189	63	15	.90			
14		0	25	3930	114	150	60	14	.80			
15		0	162	2000	76	120	120	13	.70			
16		0	125	3490	52	101	93	12	.50			
17		0	508	869	34	87	69	11	.40			
18		0	47	1170	21	77	63	9.9	.30			
19		0	18	1140	15	67	60	9.4	.20			
20		0	11	425	10	60	59	9.1	.20			
21		0	12	265	7.1	59	57	8.5	.10			
22		3.7	732	189	4.7	57	52	7.9	.10			
23		2.4	997	138	3.7	49	49	6.9	.10			
24		.20	117	108	3.2	42	49	6.8	0			
25		0	56	96	2.7	39	419	8.7	0			
26		0	34	86	2.1	37	562	8.4	0			
27		0	43	74	3.8	34	120	7.1	0			
28		0	35	57	1.7	31	82	5.8	0			
29		0	23	43	---	28	66	4.8	0			
30		0	18	32	---	26	56	3.8	0			
31		---	14	23	---	52	---	3.5	---			---
TOTAL	0	6.30	2977.20	21563	7308.0	8381.5	3790	471.6	30.90	0	0	0
MEAN	0	.21	96.0	696	261	270	126	15.2	1.03	0	0	0
MAX	0	3.7	997	3930	1610	1570	562	48	3.6	0	0	0
MIN	0	0	0	11	1.7	1.5	42	3.5	0	0	0	0
AC-FT	0	12	5910	42770	14500	16620	7520	935	61	0	0	0
CAL YR 1977	TOTAL	3491.40	MEAN	9.57	MAX	997	MIN	0	AC-FT	6930		
WTR YR 1978	TOTAL	44528.50	MEAN	122	MAX	3930	MIN	0	AC-FT	88320		

SACRAMENTO RIVER BASIN

11379000 ANTELOPE CREEK NEAR RED BLUFF, CA

LOCATION.--Lat 40°12'14", long 122°07'02", in Rio De Los Berrendos Grant, Tehama County, on right bank 1.8 mi (2.9 km) upstream from diversion dam of Los Molinos Mutual Water Co., 6.5 mi (10.5 km) east of Red Bluff, and 9.7 mi (15.6 km) upstream from mouth.

DRAINAGE AREA.--123 mi² (319 km²).

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

REVISED RECORDS.--WSP 1315-A: 1949(M). WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 360 ft (110 m), from topographic map. Prior to Sept. 18, 1954, at site 0.6 mi (1.0 km) downstream at different datum. Sept. 18, 1954, to July 9, 1969, at datum 2.00 ft (0.610 m) higher.

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

AVERAGE DISCHARGE.--38 years, 149 ft³/s (4.220 m³/s), 108,000 acre-ft/yr (133 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,200 ft³/s (487 m³/s) Jan. 23, 1970, gage height, 17.95 ft (5.471 m) from rating curve extended above 6,000 ft³/s (170 m³/s) on basis of slope-area measurement at gage height 15.96 ft (4.865 m), present datum; minimum, 8.2 ft³/s (0.23 m³/s) Oct. 27, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of December 1937 reached a stage of about 22 ft (6.7 m) from floodmarks, at former site and datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,200 ft³/s (62.3 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 9	1400	3000 85.0	10.83 3.301	Mar. 2	1600	3100 87.8	10.72 3.267
Jan. 14	2330	3860 109	11.76 3.584	Mar. 4	1130	4080 116	11.93 3.636
Jan. 16	1230	*4920 139	12.69 3.868	Apr. 6	0545	2610 73.9	10.01 3.051
Feb. 7	1245	2790 79.0	10.27 3.130				

Minimum daily, 35 ft³/s (0.99 m³/s) Oct. 4-7.

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	40	42	39	86	108	126	335	224	118	61	39	41
2	37	40	39	90	112	1320	338	202	111	58	40	40
3	36	40	39	155	115	1190	276	194	110	61	41	40
4	35	41	39	186	110	2580	529	188	107	59	41	41
5	35	58	39	819	359	1870	364	179	109	57	40	41
6	35	51	39	752	1080	1160	1490	172	111	54	40	42
7	35	43	39	282	1690	730	929	165	111	53	39	46
8	36	42	39	262	982	824	478	163	108	53	39	41
9	37	40	38	1880	936	904	338	166	106	51	39	45
10	37	40	38	1450	539	568	285	167	103	50	38	52
11	37	40	46	508	371	616	262	167	96	49	39	47
12	37	40	68	377	460	474	241	165	93	48	39	43
13	37	40	51	424	727	366	222	162	89	48	39	42
14	38	40	55	1790	428	314	206	167	87	47	39	41
15	38	40	264	2100	327	279	294	186	83	45	38	41
16	38	40	123	2930	260	256	299	172	94	45	38	40
17	39	39	720	1410	221	240	222	157	82	45	38	40
18	39	39	196	763	193	228	196	153	79	44	38	39
19	39	39	106	973	174	217	183	153	76	44	38	39
20	40	40	81	532	162	209	190	149	73	44	39	39
21	41	67	69	356	153	212	184	149	71	43	39	39
22	42	178	162	275	146	226	172	151	68	42	40	39
23	42	73	571	216	141	221	163	153	67	42	40	39
24	42	57	184	182	136	220	158	141	66	41	40	39
25	42	50	115	162	133	208	494	133	65	40	39	38
26	43	45	91	150	132	204	477	124	63	40	39	38
27	43	43	185	139	137	200	321	119	62	40	40	38
28	42	41	171	130	129	199	267	119	66	40	40	38
29	42	39	125	123	---	201	247	121	74	39	41	38
30	44	39	111	117	---	201	246	125	65	39	41	38
31	44	---	102	112	---	218	---	123	---	39	41	---
TOTAL	1212	1466	3984	19731	10461	16781	10406	4909	2613	1461	1221	1224
MEAN	39.1	48.9	129	636	374	541	347	158	87.1	47.1	39.4	40.8
MAX	44	178	720	2930	1690	2580	1490	224	118	61	41	52
MIN	35	39	38	86	108	126	158	119	62	39	38	38
AC-FT	2400	2910	7900	39140	20750	33290	20640	9740	5180	2900	2420	2430
CAL YR 1977	TOTAL	17628	MEAN	48.3	MAX	720	MIN	27	AC-FT	34970		
WTR YR 1978	TOTAL	75469	MEAN	207	MAX	2930	MIN	35	AC-FT	149700		

11379500 ELDER CREEK NEAR PASKENTA, CA

LOCATION.--Lat 40°01'29", long 122°30'31", in SE&NW¼ sec.14, T.25 N., R.6 W., Tehama County, on left bank 2.5 mi (4.0 km) downstream from South Fork Elder Creek, 8.2 mi (13.2 km) northwest of Flourney, and 10 mi (19 km) north of Paskenta.

DRAINAGE AREA.--92.4 mi² (239.3 km²), revised.

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

REVISED RECORDS.--WSP 1515: 1956. WSP 1931: Drainage area. WDR CA-70-2: 1967(P). WDR CA-75-4: 1966-67(P), 1969-71(P), 1973(P).

GAGE.--Water-stage recorder. Datum of gage is 718.1 ft (218.88 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 13, 1965, water-stage recorder at site 300 ft (91 m) downstream at datum 5.13 ft (1.564 m) lower.

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

AVERAGE DISCHARGE.--30 years, 101 ft³/s (2.860 m³/s), 73,170 acre-ft/yr (90.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s (331 m³/s) Feb. 24, 1958, gage height, 13.90 ft (4.237 m) site and datum then in use, from rating curve extended above 3,500 ft³/s (99.1 m³/s) on basis of slope-area measurements at gage heights 10.97 ft (3.344 m) and 13.90 ft (4.237 m); no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft³/s (34.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 14	2030	1350 38.2	5.14 1.567	Feb. 5	1330	3260 92.3	7.36 2.243
Dec. 22	2245	5040 143	8.77 2.673	Feb. 7	1015	4780 135	8.58 2.615
Jan. 4	1515	3800 108	7.82 2.384	Feb. 12	1030	1510 42.8	5.39 1.643
Jan. 9	0600	4970 141	8.72 2.658	Mar. 4	0145	3310 93.7	7.40 2.256
Jan. 14	1830	*6430 182	9.74 2.969	Mar. 8	2200	3470 98.3	7.54 2.298
Jan. 16	0815	5450 154	9.07 2.765	Apr. 5	1645	1520 43.0	5.41 1.649
Jan. 18	2015	2770 78.4	6.89 2.100				

Minimum daily, 0.84 ft³/s (0.024 m³/s) Oct. 11, 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	2.1	2.8	14	87	140	166	376	133	48	20	4.7	5.0
2	1.4	2.5	12	191	182	346	251	130	46	22	4.5	4.0
3	1.2	2.4	10	217	169	528	220	133	44	25	4.4	3.8
4	1.1	2.7	9.5	1340	157	1480	265	134	42	21	4.2	3.9
5	1.1	4.6	8.9	970	1190	716	480	126	39	19	4.3	5.2
6	1.1	4.5	8.4	407	1060	484	407	117	37	17	4.1	9.6
7	1.1	3.4	8.3	256	1870	408	295	110	35	16	4.1	23
8	1.0	3.0	7.9	342	1290	1740	237	108	34	15	3.9	8.7
9	1.0	2.9	7.5	2310	935	1390	208	113	32	14	4.0	57
10	.93	2.9	7.3	594	558	707	193	115	32	13	3.8	49
11	.84	2.9	31	360	419	527	192	111	32	13	3.7	25
12	.84	2.8	51	368	731	425	187	108	31	13	3.6	14
13	.87	2.9	29	1200	450	357	181	107	30	12	3.6	12
14	.88	2.9	382	3570	352	309	174	106	29	11	3.6	11
15	.91	2.8	491	2170	305	272	270	105	29	10	3.5	9.4
16	.89	2.7	241	3480	271	247	205	94	28	9.8	3.6	8.4
17	.89	2.8	373	1430	246	234	174	86	27	9.1	3.5	7.6
18	.88	2.7	138	1280	232	226	160	82	26	8.7	3.6	7.2
19	.89	2.6	81	1030	238	221	154	80	26	8.2	3.6	6.6
20	.96	2.8	55	604	243	219	151	79	25	7.8	3.8	6.5
21	1.1	17	67	446	246	236	138	79	24	7.2	3.8	6.9
22	1.1	151	761	364	245	238	128	77	24	6.9	4.0	6.9
23	1.1	75	807	304	240	219	124	74	23	6.6	4.2	6.6
24	1.2	54	203	262	234	199	123	71	23	6.5	4.4	6.2
25	1.3	47	129	236	225	182	280	68	23	6.2	4.6	6.0
26	1.4	45	101	213	212	180	219	64	22	6.1	5.2	6.3
27	1.6	36	157	188	196	184	162	59	22	5.7	5.9	6.4
28	1.9	25	166	169	178	184	155	56	22	5.5	5.9	6.1
29	2.6	18	151	155	---	192	143	54	24	5.4	5.8	5.7
30	3.4	16	134	146	---	186	141	51	22	5.1	5.7	5.4
31	3.1	---	105	139	---	263	---	49	---	4.9	5.6	---
TOTAL	40.68	543.6	4746.8	24828	12814	13265	6393	2879	901	350.7	133.2	339.4
MEAN	1.31	18.1	153	801	458	428	213	92.9	30.0	11.3	4.30	11.3
MAX	3.4	151	807	3570	1870	1740	480	134	48	25	5.9	57
MIN	.84	2.4	7.3	87	140	166	123	49	22	4.9	3.5	3.8
AC-FT	81	1080	9420	49250	25420	26310	12680	5710	1790	696	264	673
CAL YR 1977	TOTAL	7439.20	MEAN	20.4	MAX	807	MIN	0	AC-FT	14760		
WTR YR 1978	TOTAL	67234.38	MEAN	184	MAX	3570	MIN	.84	AC-FT	133400		

SACRAMENTO RIVER BASIN

11380500 ELDER CREEK AT GERBER, CA

LOCATION.--Lat 40°03'05", long 122°09'53", in Saucos Grant, Tehama County, on right bank 1.0 mi (1.6 km) west of Gerber and 3.5 mi (5.6 km) upstream from mouth.

DRAINAGE AREA.--136 mi² (353 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1949 to September 1969, water years 1970, 1972-77 (annual maximum), water year 1977 (periodic daily flows), October 1977 to September 1978 (storm season only).

GAGE.--Water-stage recorder. Datum of gage is 232.14 ft (70.756 m) National Geodetic Vertical Datum of 1929 (from Bureau of Reclamation bench mark). Prior to Oct. 1, 1961, at site about 150 ft upstream at datum 4.32 ft (1.317 m) higher.

REMARKS.--Records good. Diversions above station.

AVERAGE DISCHARGE.--20 years (water years 1950-69), 105 ft³/s (2.974 m³/s), 76,070 acre-ft/yr (93.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,100 ft³/s (399 m³/s) Jan. 5, 1965, gage height, 14.90 ft (4.543 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft³/s (34.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 15	0215	2050 58.1	8.55 2.606	Feb. 7	1330	7730 219	11.87 3.618
Dec. 17	0500	1690 47.9	8.24 2.512	Feb. 12	1515	3300 93.5	9.45 2.880
Dec. 23	0245	7370 209	11.66 3.554	Mar. 2	2045	2030 57.5	8.53 2.600
Jan. 4	1945	4300 122	10.03 3.057	Mar. 4	0515	6000 170	10.90 3.322
Jan. 9	1015	8120 230	12.09 3.685	Mar. 9	0200	6570 186	11.21 3.417
Jan. 14	2215	*12400 351	14.19 4.325	Apr. 5	2200	1400 39.6	7.96 2.426
Jan. 16	1200	9750 276	12.95 3.947	Apr. 26	0330	1990 56.4	8.50 2.591
Jan. 19	0030	4940 140	10.37 3.161				

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	2.0	47	46	175	450	139				
2		0	.50	63	62	449	216	132				
3		0	0	206	60	637	169	132				
4		0	0	1110	54	2520	273	132				
5		0	0	1430	1270	1210	302	129				
6		0	0	505	1390	726	705	122				
7		0	0	248	2550	592	481	113				
8		0	0	207	1540	2560	288	107				
9		0	0	3610	1430	2520	237	109				
10		0	0	785	682	931	209	110				
11		0	0	326	500	739	203	109				
12		0	8.5	240	1170	541	197	107				
13		0	19	1220	645	387	188	106				
14		0	48	5640	461	303	178	104				
15		0	1030	3170	361	244	283	103				
16		0	227	4850	302	210	248	96				
17		0	813	1700	271	191	189	87				
18		0	193	1090	249	178	172	80				
19		0	80	1520	243	169	159	75				
20		0	49	552	245	167	159	75				
21		0	38	315	245	175	150	75				
22		0	262	210	245	196	138	73				
23		21	1960	149	243	167	131	73				
24		14	206	113	235	152	131	67				
25		14	86	92	228	135	186	65				
26		14	58	79	215	128	502	63				
27		15	65	69	211	130	176	59				
28		11	94	62	187	130	163	55				
29		8.0	79	56	---	136	152	52				
30		5.0	72	53	---	134	148	51				
31		---	58	49	---	168	---	51				
TOTAL		102.0	5448.00	29766	15340	17100	7183	2851				
MEAN		3.40	176	960	548	552	239	92.0				
MAX		21	1960	5640	2550	2560	705	139				
MIN		0	0	47	46	128	131	51				
AC-FT		202	10810	59040	30430	33920	14250	5650				

WATER-QUALITY RECORDS

CHEMICAL ANALYSES: Water years 1959-66.

WATER TEMPERATURES: Water years 1977 to current year.

SEDIMENT RECORDS.--Water years 1977 to current year.

WATER TEMPERATURES: February 1977 to current year (storm season only).

SEDIMENT RECORDS.--March 1977 to current year (storm season only).

SEDIMENT CONCENTRATIONS: Maximum daily mean, 4,870 mg/L Jan. 14, 1978; minimum daily mean, no flow for many days during November and December 1977.

SEDIMENT DISCHARGE: Maximum daily, 91,600 tons (83,100 metric tons) Jan. 14, 1978; minimum daily, 0 ton (0 metric ton) on many days during November and December 1977.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 4,870 mg/L Jan. 14; minimum daily mean, no flow for many days during November and December.

SEDIMENT DISCHARGE: Maximum daily, 91,600 tons (83,100 metric tons) Jan 14; minimum daily, 0 ton (0 metric ton) on many days during November and December.

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

[illegible]

11380500 ELDER CREEK AT GERBER, 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	13	.07
2				0	0	0	.50	4	.01
3				0	0	0	0	0	0
4				0	0	0	0	0	0
5				0	0	0	0	0	0
6				0	0	0	0	0	0
7				0	0	0	0	0	0
8				0	0	0	0	0	0
9				0	0	0	0	0	0
10				0	0	0	0	0	0
11				0	0	0	0	0	0
12				0	0	0	8.5	7	.16
13				0	0	0	19	9	.46
14				0	0	0	48	82	62
15				0	0	0	1030	1460	5680
16				0	0	0	227	175	107
17				0	0	0	813	3130	9090
18				0	0	0	193	189	126
19				0	0	0	80	20	4.3
20				0	0	0	49	15	2.0
21				0	0	0	38	10	1.0
22				0	0	0	262	240	220
23				21	36	3.6	1960	2510	22700
24				14	12	.45	206	8	4.4
25				14	8	.30	86	68	16
26				14	13	.49	58	60	9.4
27				15	67	2.7	65	72	13
28				11	42	1.2	94	59	15
29				8.0	21	.45	79	38	8.1
30				5.0	32	.43	72	19	3.7
31				---	---	---	58	13	2.0
TOTAL				102.00	---	9.62	5448.00	---	38064.60

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	47	13	1.6	46	11	1.4	175	11	5.2
2	63	28	8.8	62	36	6.0	449	635	1580
3	206	190	121	60	34	5.5	637	638	1360
4	1110	1800	12900	54	32	4.7	2520	1590	14800
5	1430	720	2780	1270	1380	7020	1210	985	4140
6	505	375	511	1390	1710	8750	726	197	386
7	248	300	201	2550	3090	32000	592	96	153
8	207	461	381	1540	1650	9590	2560	1240	11900
9	3610	4670	56900	1430	1210	4670	2520	1430	14600
10	785	1250	2650	682	395	727	931	192	483
11	326	705	621	500	175	236	739	97	194
12	240	625	405	1170	1090	4700	541	58	85
13	1220	1460	5700	645	262	456	387	36	38
14	5640	4870	91600	461	139	173	303	22	18
15	3170	3130	33700	361	51	50	244	19	13
16	4850	4030	71000	302	36	29	210	19	11
17	1700	1480	6790	271	32	23	191	19	9.8
18	1090	1110	5620	249	28	19	178	19	9.1
19	1520	993	6300	243	25	16	169	19	8.7
20	552	217	323	245	22	15	167	18	8.1
21	315	193	164	245	20	13	175	15	7.1
22	210	126	71	245	18	12	196	14	7.4
23	149	66	27	243	16	10	167	13	5.9
24	113	48	15	235	15	9.5	152	12	4.9
25	92	28	7.0	228	14	8.6	135	11	4.0
26	79	16	3.4	215	13	7.5	128	10	3.5
27	69	16	3.0	211	12	6.8	130	10	3.5
28	62	17	2.8	187	11	5.6	130	10	3.5
29	56	18	2.7	---	---	---	136	10	3.7
30	53	14	2.0	---	---	---	134	10	3.6
31	49	11	1.5	---	---	---	168	45	20
TOTAL	29766	---	298812.8	15340	---	68564.6	17100	---	49869.0

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

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. 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
JAN 09...	46	59	72	87	98	100	--
FEB 05...	40	52	63	78	94	100	--
07...	46	59	71	86	98	100	--
APR 04...	--	--	66	74	87	99	100

SACRAMENTO RIVER BASIN

11381500 MILL CREEK NEAR LOS MOLINOS, CA

LOCATION.--Lat 40°03'17", long 122°01'23", in NE¼NW¼ sec.6, T.25 N., R.1 W., Tehama County, on right bank 4.5 mi (7.2 km) northeast of Los Molinos, and 5.5 mi (8.8 km) upstream from mouth.

DRAINAGE AREA.--131 mi² (339 km²).

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

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

GAGE.--Water-stage recorder. Altitude of gage is 385 ft (117 m), from topographic map. Prior to September 1913, nonrecording gage at site 0.3 mi (0.5 km) downstream at different datum.

REMARKS.--Records excellent. No storage or large diversion above station.

AVERAGE DISCHARGE.--50 years (water years 1929-78), 301 ft³/s (8.524 m³/s), 218,100 acre-ft/yr (269 hm³/yr).

EXTREMES FOR PERIOD OF RECORD (water years 1929-78): Maximum discharge, 36,400 ft³/s (1,030 m³/s) Dec. 11, 1937, gage height, 23.4 ft (7.13 m) from floodmarks, from rating curve extended above 14,000 ft³/s (396 m³/s) on basis of step-backwater computation and slope-area measurement of peak flow; minimum, 49 ft³/s (1.39 m³/s) Dec. 13, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,400 ft³/s (68.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s)	(m ³ /s)	Gage height (ft)	(m)	Date	Time	Discharge (ft ³ /s)	(m ³ /s)	Gage height (ft)	(m)
Jan. 5	2100	3180	90.1	7.26	2.213	Feb. 7	1130	3520	99.7	7.58	2.310
Jan. 9	1100	3320	94.0	7.40	2.256	Mar. 2	1445	3570	101	7.63	2.326
Jan. 14	2245	5050	143	8.83	2.691	Mar. 4	1015	*6700	190	9.97	3.039
Jan. 16	1145	6640	188	9.93	3.027	Apr. 6	0445	3720	105	7.76	2.365

Minimum daily, 75 ft³/s (2.12 m³/s) Oct. 14-16.

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	102	86	116	244	209	280	889	496	481	337	165	120
2	93	86	111	244	223	1530	775	492	443	325	162	118
3	88	86	111	318	268	1570	580	512	474	308	160	116
4	84	86	113	424	252	3370	932	510	490	291	158	116
5	82	109	128	1780	578	2780	621	481	553	284	153	117
6	82	97	118	1180	1230	1720	1800	443	590	293	150	134
7	80	90	123	565	2030	1030	963	431	605	308	146	126
8	80	88	115	545	1290	907	643	446	573	312	145	127
9	80	86	108	2160	1140	1000	557	486	591	312	145	130
10	80	86	106	1470	731	751	537	517	553	314	141	181
11	78	88	111	716	557	669	547	527	491	296	139	146
12	78	93	126	622	633	606	548	523	486	279	138	131
13	78	93	113	619	743	504	503	527	442	266	138	126
14	75	90	457	2150	523	459	496	581	474	258	136	124
15	75	88	1270	2660	487	408	561	649	433	260	135	121
16	75	88	430	3980	402	378	545	522	447	260	133	119
17	78	86	871	1820	355	363	452	465	413	250	132	118
18	78	86	407	1060	321	364	406	459	422	242	131	117
19	78	86	267	1130	301	354	383	483	419	239	130	117
20	78	84	213	749	291	369	428	485	412	234	128	116
21	78	111	188	571	285	409	417	518	396	228	127	116
22	78	220	285	474	284	456	379	546	393	219	132	116
23	78	133	784	399	286	464	356	546	391	215	130	114
24	78	123	358	336	288	470	349	457	383	207	126	113
25	80	150	256	294	283	417	884	405	354	200	126	111
26	82	128	216	275	301	413	723	369	347	197	126	111
27	84	140	395	256	314	418	590	369	333	195	125	111
28	84	130	390	242	291	438	555	437	370	184	123	109
29	84	121	319	231	---	462	518	501	369	179	122	109
30	95	121	366	223	---	471	530	525	345	174	121	109
31	93	---	290	215	---	542	---	496	---	169	122	---
TOTAL	2536	3159	9261	27952	14896	24372	18467	15204	13473	7835	4245	3639
MEAN	81.8	105	299	902	532	786	616	490	449	253	137	121
MAX	102	220	1270	3980	2030	3370	1800	649	605	337	165	181
MIN	75	84	106	215	209	280	349	369	333	169	121	109
AC-FT	5030	6270	18370	55440	29550	48340	36630	30160	26720	15540	8420	7220
CAL YR 1977	TOTAL	40994	MEAN 112	MAX	1270	MIN 62	AC-FT	81310				
WTR YR 1978	TOTAL	145039	MEAN 397	MAX	3980	MIN 75	AC-FT	287700				

11381595 MILL CREEK AT SHERWOOD BRIDGE, NEAR LOS MOLINOS, CA

LOCATION.--Lat 40°02'44", long 122°05'39", in Rio De Los Molinos Grant, T.25 N., R.2 W., Tehama County, at Sherwood Bridge on Mill Creek, 1.6 mi (2.6 km) north (revised) of Los Molinos.

DRAINAGE AREA.--133 mi² (344 km²).

PERIOD OF RECORD.--

WATER TEMPERATURES: Water years 1977 to current year.

SEDIMENT RECORDS: Water years 1977 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: January 1977 to current year (storm season only).

SEDIMENT RECORDS: January 1977 to current year (storm season only).

REMARKS.--Streamflow data obtained from once-daily staff-gage readings.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATIONS: Maximum daily mean, 2040 mg/L Dec. 15, 1977; minimum daily mean, 1 mg/L

Feb. 19, 1977.

SEDIMENT DISCHARGE: Maximum daily, 11,100 tons (10,100 metric tons) Jan. 16, 1978; minimum daily, 0.01 ton (0.009 metric ton) on many days during February to May, 1977.

EXTREMES FOR NOVEMBER TO MAY.--

SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,040 mg/L Dec. 15; minimum daily mean, 2 mg/L many days during November to February.

SEDIMENT DISCHARGE: Maximum daily, 11,100 tons (10,100 metric tons) Jan. 16; minimum daily, 0.03 ton (0.03 metric ton) Nov. 9-11.

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		---	---	---	8.0	10.5	12.0	15.0				
2		---	10.0	8.0	---	11.0	---	18.0				
3		---	---	9.5	11.0	11.0	11.5	16.5				
4		---	---	10.0	10.5	10.5	11.0	16.0				
5		12.0	13.0	9.0	10.0	10.5	10.0	14.0				
6		---	---	9.5	9.5	11.0	8.0	15.0				
7		13.0	10.0	9.5	9.5	10.5	11.0	---				
8		---	---	---	9.0	11.0	13.0	17.5				
9		10.5	9.0	10.5	9.0	12.0	---	18.0				
10		---	---	10.0	8.5	12.0	16.5	17.0				
11		12.0	7.5	9.5	8.5	11.5	17.0	17.5				
12		---	9.5	10.0	---	---	15.5	18.0				
13		---	---	10.5	7.0	10.0	14.5	18.0				
14		13.5	10.0	11.0	7.5	---	14.0	17.0				
15		---	10.0	9.5	10.0	12.5	10.0	15.0				
16		13.5	7.0	9.5	8.0	---	10.0	14.0				
17		---	8.5	10.0	8.0	14.5	12.5	17.0				
18		11.0	7.5	8.5	12.0	---	14.0	18.5				
19		---	7.0	9.0	---	15.5	12.0	19.0				
20		7.5	6.5	10.0	12.5	---	12.0	19.0				
21		6.0	7.0	8.5	13.0	12.5	13.0	18.0				
22		10.0	---	---	---	---	14.0	18.0				
23		---	10.0	8.0	13.5	14.0	---	18.5				
24		11.5	---	8.5	---	---	13.5	15.0				
25		---	9.0	8.0	11.5	14.0	13.5	15.5				
26		13.5	---	---	---	---	14.5	17.0				
27		---	9.5	10.0	12.0	15.5	15.0	19.0				
28		12.0	10.0	---	10.5	---	17.0	20.5				
29		---	11.5	10.0	---	14.5	16.0	20.0				
30		12.5	10.5	---	---	---	14.5	19.0				
31		---	8.5	9.0	---	13.0	---	18.0				
MONTH		---	---	9.5	10.0	---	13.0	17.5				

11381595 MILL CREEK AT SHERWOOD BRIDGE, NEAR LOS MOLINOS, CA

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				9.0	7	.17	135	12	4.4
2				10	8	.22	123	10	3.3
3				10	9	.24	132	11	3.9
4				11	9	.27	143	12	4.6
5				12	8	.26	156	12	5.1
6				12	5	.16	144	10	3.9
7				11	3	.09	140	11	4.2
8				9.0	2	.05	123	8	2.7
9				5.3	2	.03	115	6	1.9
10				6.0	2	.03	123	8	2.7
11				6.2	2	.03	127	9	3.1
12				11	2	.06	153	9	3.7
13				13	2	.07	129	9	3.1
14				13	2	.07	457	688	2420
15				17	2	.09	1270	2040	8390
16				14	3	.11	430	280	325
17				11	14	.42	871	354	917
18				5.3	26	.37	407	48	53
19				17	23	1.1	267	20	14
20				38	22	2.3	213	12	6.9
21				128	33	11	188	10	5.1
22				228	74	46	285	27	21
23				195	31	16	784	170	487
24				128	15	5.2	358	19	18
25				153	65	27	256	8	5.5
26				151	48	20	216	7	4.1
27				154	33	14	395	22	25
28				156	26	11	390	16	17
29				151	21	8.6	319	11	9.5
30				148	17	6.8	366	10	9.9
31				---	---	---	290	9	7.0
TOTAL				1832.8	---	171.74	9505	---	12781.6

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	244	7	4.6	209	2	1.1	280	3	2.3
2	244	7	4.6	223	3	1.8	1530	328	2360
3	318	9	7.7	268	4	2.9	1570	174	800
4	424	44	80	252	2	1.4	3370	900	10200
5	1780	568	3390	578	15	40	2780	420	3150
6	1180	201	815	1230	196	856	1720	120	557
7	565	38	58	2030	353	2500	1030	40	111
8	545	59	87	1290	56	195	907	31	76
9	2160	471	3130	1140	33	102	1000	33	89
10	1470	160	798	731	15	30	751	17	34
11	716	23	44	557	9	14	669	12	22
12	622	16	27	633	13	22	606	9	15
13	619	18	30	743	13	26	504	6	8.2
14	2150	359	3650	523	6	8.5	459	4	5.0
15	2660	330	2370	487	7	9.2	408	4	4.4
16	3980	880	11100	402	4	4.3	378	4	4.1
17	1820	335	1650	355	3	2.9	363	4	3.9
18	1060	57	163	321	2	1.7	364	3	2.9
19	1130	42	128	301	2	1.6	354	3	2.9
20	749	22	44	291	2	1.6	369	4	4.0
21	571	13	20	285	2	1.5	409	6	6.6
22	474	6	7.7	284	2	1.5	456	6	7.4
23	399	5	5.4	286	2	1.5	464	6	7.5
24	336	5	4.5	288	2	1.6	470	5	6.3
25	294	4	3.2	283	2	1.5	417	4	4.5
26	275	4	3.0	301	2	1.6	413	4	4.5
27	256	3	2.1	314	3	2.5	418	4	4.5
28	242	3	2.0	291	3	2.4	438	6	7.1
29	231	3	1.9	---	---	---	462	10	12
30	223	2	1.2	---	---	---	471	12	15
31	215	2	1.2	---	---	---	542	19	28
TOTAL	27952	---	27633.1	14896	---	3836.1	24372	---	17555.1

11381595 MILL CREEK AT SHERWOOD BRIDGE, NEAR LOS MOLINOS, CA

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	889	77	196	462	8	10			
2	775	48	108	463	10	13			
3	580	15	23	472	12	15			
4	932	74	237	484	14	18			
5	621	11	18	442	11	13			
6	1800	210	1400	406	7	7.7			
7	963	28	73	393	6	6.4			
8	643	13	23	356	7	6.7			
9	557	10	15	431	13	15			
10	518	8	11	421	21	24			
11	512	10	14	421	22	25			
12	526	9	13	416	22	25			
13	479	8	10	419	25	28			
14	458	7	8.7	471	52	66			
15	576	17	26	522	65	92			
16	525	12	17	425	31	36			
17	417	5	5.6	333	17	15			
18	376	5	5.1	321	12	10			
19	347	5	4.7	370	13	13			
20	395	6	6.4	354	14	13			
21	380	5	5.1	400	17	18			
22	345	5	4.7	427	33	38			
23	323	5	4.4	424	31	35			
24	322	5	4.3	330	17	15			
25	863	37	104	287	11	8.5			
26	679	17	31	244	11	7.2			
27	554	10	15	246	9	6.0			
28	526	7	9.9	298	13	10			
29	488	7	9.2	378	25	26			
30	504	9	12	407	44	48			
31	---	---	---	373	33	33			
TOTAL	17873	---	2414.1	12196	---	696.5			
PERIOD	108626.8		65088.24						

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.	SED. SUSP. FALL DIAM.	SED. SUSP. FALL DIAM.
						% FINER THAN .002 MM	% FINER THAN .004 MM	% FINER THAN .008 MM
DEC								
15...	1330	9.5	1230	1730	5750	--	--	--
15...	1700	10.0	1050	1830	5190	--	--	--
JAN								
16...	1030	9.5	5400	191	2790	--	--	--
16...	1400	9.5	6550	1150	20300	9	16	23
FEB								
07...	1500	10.0	2720	554	4070	--	--	--
DATE						SED. SUSP. FALL DIAM.	SED. SUSP. FALL DIAM.	SED. SUSP. FALL DIAM.
						% FINER THAN .016 MM	% FINER THAN .031 MM	% FINER THAN .062 MM
DEC								
15...	--	--	--	94	99	100	--	--
15...	--	--	--	95	99	100	--	--
JAN								
16...	--	--	--	95	100	--	--	--
16...	33	45	57	57	76	92	99	100
FEB								
07...	--	--	--	34	51	73	92	100

SACRAMENTO RIVER BASIN

11381620 MILL CREEK AT MOUTH, NEAR LOS MOLINOS, CA

LOCATION.--Lat 40°02'34", long 122°05'57", T.25 N., R.2 W., in Rio de Los Molinos Grant, Tehama County.

DRAINAGE AREA.--131 mi² (399 km²), at gaging station.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1953 to current year.

REMARKS.--Discharge given for Mill Creek near Los Molinos (station 11381500), 5.5 mi (8.8 km) upstream from mouth.

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

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)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)
NOV 08...	1545	88	290	7.8	11.0	.00	10.9
DEC 15...	1245	1270	102	8.4	9.5	380	10.8
23...	1050	784	117	--	--	17	--
JAN 11...	1430	716	100	7.4	9.5	3.0	10.9
MAR 14...	1515	459	120	7.3	11.0	2.0	11.0
MAY 17...	1415	465	100	7.4	16.5	5.0	9.6
JUL 19...	1340	239	135	7.9	26.5	2.0	8.5
SEP 21...	1420	116	226	8.1	20.5	1.0	12.6

DATE	HARD- NESS (MG/L AS CAC03)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	ALKA- LINEITY (MG/L AS GAC03)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	BORON, DIS- SOLVED (UG/L AS B)
NOV 08...	71	24	1.2	55	32	1100
DEC 15...	22	9.0	.8	7	6.2	300
23...	--	--	--	--	--	--
JAN 11...	33	9.0	.7	35	7.2	200
MAR 14...	--	--	--	--	--	--
MAY 17...	--	--	--	--	--	--
JUL 19...	--	--	--	--	--	--
SEP 21...	--	--	--	--	--	--

11382000 THOMES CREEK AT PASKENTA, CA

LOCATION.--Lat 39°53'16", long 122°31'41", in SE¼SW¼ sec.34, T.24 N., R.6 W., Tehama County, on left bank 1.2 mi (1.9 km) downstream from Digger Creek, and 1.0 mi (1.6 km) downstream from highway bridge at Paskenta.

DRAINAGE AREA.--203 mi² (526 km²), revised.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1345: 1923, 1924-28(M), 1938, 1940(M). WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 720 ft (219 m), from topographic map. Prior to June 20, 1942, nonrecording gage and water-stage recorder at several sites about 1.5 mi (2.4 km) upstream at different datums, June 21, 1942, to Sept. 30, 1959, water-stage recorder at site 1.4 mi (2.3 km) upstream at datum 732.85 ft (223.373 m) and Oct. 1, 1959, to Oct. 9, 1974, at datum 731.10 ft (222.839 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No storage or large diversions above station.

AVERAGE DISCHARGE.--58 years, 287 ft³/s (8.128 m³/s), 207,900 acre-ft/yr (256 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,800 ft³/s (1,070 m³/s) Dec. 22, 1964, gage height, 11.4 ft (3.47 m) from floodmarks, present site and datum, from rating curve extended above 6,000 ft³/s (170 m³/s) on basis of slope-area measurement of peak flow; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,800 ft³/s (51.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Nov. 22	0130	1920 54.4	5.33 1.625	Jan. 16	0630	6340 180	7.21 2.198
Dec. 14	2400	6070 172	7.13 2.173	Feb. 7	1000	5560 157	6.96 2.121
Jan. 4	1830	2940 83.3	5.92 1.804	Mar. 4	0130	2590 73.3	5.74 1.750
Jan. 9	0800	7270 206	7.47 2.277	Mar. 8	1330	4190 119	6.48 1.975
Jan. 14	1900	*7420 210	7.51 2.289	Mar. 31	2400	1870 53.2	5.30 1.615

Minimum daily, 2.2 ft³/s (0.062 m³/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	22	29	111	573	513	589	1330	443	350	83	15	7.6
2	15	23	94	703	822	821	987	473	333	85	14	6.0
3	13	21	82	774	1010	1120	834	551	314	87	13	5.5
4	11	20	76	1450	1110	1910	759	554	312	84	13	5.5
5	8.8	40	76	2000	1900	1840	701	507	324	80	12	8.7
6	6.6	46	69	1280	2230	1540	763	439	347	75	11	12
7	5.9	30	63	873	2980	1220	735	415	326	70	8.7	32
8	5.5	27	57	1160	2030	3100	566	442	294	68	7.0	20
9	5.3	26	49	4150	1590	2450	507	521	282	67	7.0	21
10	4.9	24	44	1840	1250	1650	651	531	248	67	6.0	94
11	4.5	22	73	1200	1030	1320	682	511	221	68	6.0	71
12	4.3	22	261	1050	1140	1050	687	455	204	67	6.0	45
13	4.3	29	134	2210	775	916	675	499	190	68	6.0	30
14	4.1	24	2140	4290	656	796	655	527	181	63	6.0	27
15	3.9	22	3180	3500	571	738	647	535	168	60	5.0	23
16	3.8	20	1050	4600	550	698	536	429	156	58	5.0	21
17	3.5	19	883	3170	506	732	444	375	146	51	5.5	18
18	3.3	18	594	2330	527	748	410	367	144	45	5.5	17
19	3.3	17	413	1960	617	808	414	390	148	40	5.5	16
20	3.1	16	348	1490	741	855	436	412	147	42	5.0	16
21	2.8	40	333	1240	843	906	382	446	124	36	5.0	15
22	2.5	787	601	1030	903	964	362	440	114	34	5.5	15
23	2.5	261	1210	931	904	900	336	397	111	34	6.0	14
24	2.5	258	750	794	925	846	349	330	107	32	6.5	14
25	2.5	372	573	731	853	767	449	282	103	27	7.0	14
26	2.2	391	497	629	792	822	437	263	102	18	7.6	14
27	3.8	290	835	589	708	868	420	252	99	21	8.7	14
28	8.3	198	917	616	622	896	467	289	95	20	8.7	13
29	9.4	153	880	646	---	929	452	315	91	18	8.7	12
30	40	132	891	564	---	704	484	338	87	15	8.1	12
31	47	---	657	544	---	1050	---	338	---	15	8.1	---
TOTAL	259.6	3377	17941	48917	29098	34553	17557	13066	5868	1598	242.1	633.3
MEAN	8.37	113	579	1578	1039	1115	585	421	196	51.5	7.81	21.1
MAX	47	787	3180	4600	2980	3100	1330	554	350	87	15	94
MIN	2.2	16	44	544	506	589	336	252	87	15	5.0	5.5
AC-FT	515	6700	35590	97030	57720	68540	34820	25920	11640	3170	480	1260

CAL YR 1977 TOTAL 28661.59 MEAN 78.5 MAX 3180 MIN 0 AC-FT 56850
WTR YR 1978 TOTAL 173110.00 MEAN 474 MAX 4600 MIN 2.2 AC-FT 343400

SACRAMENTO RIVER BASIN

11382000 THOMES CREEK AT PASKENTA, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958 to current year.

CHEMICAL ANALYSES: Water years 1959 to current year.

WATER TEMPERATURES: Water years 1962 to current year.

SEDIMENT RECORDS: Water years 1963-73.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1961 to current year.

SEDIMENT RECORDS: October 1962 to September 1973.

INSTRUMENTATION.--Temperature recorder since October 1961.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 36.5°C Aug. 2, 4, 1974; minimum recorded, 0.0°C on several days during most years.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 36.0°C Aug. 7; minimum recorded, 2.5°C Nov. 21, 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)	HARD- NESS (MG/L AS CACO3)
OCT								
13...	1330	4.3	417	8.2	23.5	.00	9.5	--
NOV								
08...	0930	27	327	8.0	10.0	1.0	10.8	--
DEC								
15...	0945	3040	103	8.4	9.0	800	11.2	59
JAN								
11...	0930	1190	135	7.9	7.0	95	11.4	65
FEB								
15...	0845	604	216	8.0	6.5	20	12.2	--
MAR								
14...	0930	806	192	7.7	8.0	13	11.5	--
APR								
20...	0830	436	133	7.8	12.0	11	10.3	--
MAY								
17...	0830	410	133	7.8	12.0	3.0	10.3	--
JUN								
20...	0845	154	167	8.0	19.0	1.0	8.9	--
JUL								
19...	0820	42	261	8.3	26.0	1.0	9.1	--
AUG								
18...	0800	5.5	321	8.2	21.0	1.0	9.5	--
SEP								
21...	0800	15	339	8.1	16.0	1.0	10.3	--

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	ALKA- LITY (MG/L AS CACO3)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)
OCT								
13...	--	--	--	--	--	--	--	--
NOV								
08...	--	--	--	--	--	--	--	--
DEC								
15...	3.0	.2	54	.0	.29	.80	2.5	100
JAN								
11...	5.0	.3	57	1.7	.16	--	--	0
FEB								
15...	--	--	--	--	--	--	--	--
MAR								
14...	--	--	--	--	--	--	--	--
APR								
20...	--	--	--	--	--	--	--	--
MAY								
17...	--	--	--	--	--	--	--	--
JUN								
20...	--	--	--	--	--	--	--	--
JUL								
19...	--	--	--	--	--	--	--	--
AUG								
18...	--	--	--	--	--	--	--	--
SEP								
21...	--	--	--	--	--	--	--	--

11382000 THOMES CREEK AT PASKENTA, 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			---	---	10.0	8.0	6.5	6.0	7.0	6.5	9.0	6.5
2			---	---	9.5	7.0	7.0	6.0	8.0	6.5	10.5	8.5
3			---	---	9.0	6.5	7.5	6.5	9.0	7.5	9.5	8.5
4			---	---	10.5	7.5	8.5	7.5	8.5	7.0	9.5	8.0
5			---	---	10.5	8.0	8.5	8.0	9.5	8.5	10.0	8.5
6			---	---	9.0	8.0	7.5	7.0	9.5	7.5	10.0	8.0
7			---	---	9.5	8.0	7.5	7.0	9.5	7.5	10.0	9.0
8			13.0	10.0	8.0	6.5	8.0	7.5	8.0	7.0	10.0	9.0
9			12.5	9.0	7.5	5.5	9.0	7.5	8.0	6.5	10.5	8.5
10			13.0	9.5	7.5	5.5	8.0	8.0	7.5	6.5	10.5	8.0
11			12.0	10.5	7.0	6.5	8.0	7.0	7.5	6.0	9.5	8.5
12			13.5	10.0	8.0	6.5	8.5	7.5	6.5	6.0	9.5	7.0
13			14.0	11.0	8.0	7.0	8.5	8.5	7.5	6.0	10.0	7.0
14			13.5	10.5	9.5	8.0	9.5	8.0	9.0	6.0	11.0	7.0
15			14.0	10.5	9.5	7.0	8.0	7.0	9.5	6.5	11.5	7.5
16			13.5	10.5	7.0	6.5	8.5	7.5	7.5	6.5	12.5	8.0
17			13.0	10.5	6.5	5.5	9.0	8.0	9.0	7.0	12.5	8.5
18			11.0	8.0	6.0	5.0	8.5	8.0	11.5	7.0	12.5	9.0
19			9.0	5.5	5.0	4.0	8.5	7.5	11.0	7.0	13.5	9.5
20			8.0	5.0	5.0	3.5	8.5	7.0	10.5	7.0	12.0	9.5
21			5.0	2.5	6.0	5.0	8.5	7.5	10.5	7.5	11.0	10.0
22			6.5	2.5	7.5	6.0	7.5	6.0	10.5	7.5	10.5	9.5
23			7.0	5.5	8.0	7.0	7.0	5.0	10.5	7.5	13.0	9.5
24			8.5	6.5	7.0	6.0	7.5	4.5	9.0	8.0	12.0	8.0
25			8.5	6.5	6.5	5.5	8.0	5.5	9.5	8.5	13.0	8.5
26			9.5	8.0	7.0	6.0	9.0	6.5	9.0	7.0	13.0	10.0
27			9.5	8.0	7.5	7.0	9.0	6.0	10.0	6.5	14.0	10.0
28			9.5	7.0	8.5	7.5	9.5	6.5	9.5	6.0	14.0	10.0
29			10.0	7.5	8.5	7.5	9.5	6.5	---	---	13.0	10.0
30			10.0	8.0	8.0	7.0	9.0	7.0	---	---	14.0	10.0
31			---	---	7.0	6.0	8.0	7.0	---	---	12.0	10.5
MONTH			---	---	10.5	3.5	9.5	4.5	11.5	6.0	14.0	6.5

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.0	9.5	15.5	9.5	20.5	13.0	26.5	19.0	34.0	25.0	31.0	22.0
2	10.0	7.5	16.5	10.5	21.0	14.0	24.5	18.0	34.0	25.0	30.5	22.0
3	9.5	8.0	16.0	11.0	21.0	14.5	26.5	18.0	34.5	25.0	30.0	20.5
4	11.5	7.5	15.0	10.5	22.0	15.0	27.5	19.5	34.5	26.0	28.5	20.5
5	9.0	7.5	14.0	9.5	22.5	15.5	27.5	20.0	35.5	25.5	22.0	20.0
6	9.5	7.5	15.0	8.5	23.0	16.0	28.5	21.0	35.5	26.0	24.0	19.0
7	11.5	7.0	16.0	10.0	22.5	15.5	29.0	22.0	36.0	26.5	24.5	17.5
8	12.5	7.5	17.0	11.0	24.0	16.0	30.5	22.0	33.5	27.0	26.5	17.5
9	14.5	9.0	16.0	12.0	23.0	16.5	30.5	23.0	33.5	25.5	21.0	17.5
10	15.5	10.0	16.5	11.5	22.5	16.0	29.5	22.5	33.5	23.5	20.5	17.0
11	15.5	11.0	15.5	11.0	23.0	15.0	29.0	22.0	33.0	23.5	22.0	16.0
12	14.5	10.0	17.0	11.0	22.0	16.0	29.5	22.0	31.5	22.5	23.0	16.0
13	14.0	10.5	17.5	12.0	23.0	15.0	30.5	22.5	31.0	21.5	24.0	17.5
14	11.5	9.5	16.5	11.5	23.0	15.5	31.0	23.0	30.5	21.0	24.0	16.5
15	9.5	8.0	14.0	10.0	23.0	15.5	30.5	22.5	31.0	21.0	26.0	18.0
16	11.0	6.5	15.0	8.5	23.5	14.5	29.5	22.0	30.5	21.5	26.0	19.0
17	10.5	6.5	17.0	10.5	24.5	16.0	31.0	22.5	28.5	19.5	22.5	17.0
18	13.5	7.0	18.0	11.5	24.5	17.0	31.5	23.0	30.0	19.0	22.0	14.5
19	12.0	8.5	18.5	12.0	25.5	17.5	32.0	24.0	30.5	20.0	22.0	14.5
20	12.0	7.5	19.0	13.0	25.0	17.5	32.0	23.5	30.5	21.0	23.5	14.5
21	13.0	6.5	18.5	12.5	26.0	17.0	32.0	24.0	24.5	19.5	22.0	15.5
22	13.5	7.5	18.0	12.5	26.0	18.5	32.5	24.0	27.0	17.0	24.5	15.5
23	13.5	8.5	15.5	11.0	26.0	18.0	33.5	25.0	27.5	18.0	26.5	17.0
24	12.5	10.0	14.5	10.0	25.0	17.0	33.5	25.0	27.5	18.5	27.5	18.5
25	12.5	10.0	16.5	9.5	23.5	17.0	34.0	25.5	27.5	19.0	25.5	19.0
26	13.0	9.5	17.0	10.0	25.0	18.5	33.5	26.0	29.5	20.5	24.5	19.5
27	14.5	10.0	20.0	12.0	24.0	18.5	33.5	25.5	30.5	20.0	25.5	17.0
28	14.5	10.5	20.5	14.0	24.0	19.5	33.0	24.5	31.5	21.5	26.0	17.5
29	15.5	10.5	20.0	14.0	26.5	18.5	33.0	24.0	31.5	22.5	26.5	18.0
30	14.0	11.0	19.0	13.5	26.5	19.0	33.5	23.5	30.5	23.5	27.0	18.0
31	---	---	19.5	13.0	---	---	34.0	24.5	31.5	22.0	---	---
MONTH	15.5	6.5	20.5	8.5	26.5	13.0	34.0	18.0	36.0	17.0	31.0	14.5

SACRAMENTO RIVER BASIN

11382090 THOMES CREEK AT RAWSON ROAD BRIDGE, NEAR RICHFIELD, CA

LOCATION.--Lat 39°58'32", long 122°13'28", in SW¼SE¼ sec.32, T.25 N., R.3 W., Tehama County, on right bank
2.6 mi (4.2 km) west of Richfield and 7.0 mi (11.3 km) upstream from mouth.

DRAINAGE AREA.--284 mi² (736 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to May 1977 (fragmentary) published as water-quality partial-record station,
October 1977 to September 1978.

GAGE.--Water-stage recorder. Altitude of gage is 291.55 ft (88.864 m) National Geodetic Vertical Datum of 1929.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,800 ft³/s (79.3 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 15	0700	6150 174	13.05 3.978	Jan. 18	2330	6680 189	13.22 4.029
Dec. 23	0200	5840 165	12.95 3.947	Feb. 5	1300	4190 119	12.31 3.752
Jan. 4	1930	5750 163	12.92 3.938	Feb. 7	1300	8220 233	13.68 4.170
Jan. 9	1030	9360 265	13.99 4.264	Feb. 12	1430	5220 148	12.74 3.883
Jan. 14	2100	*10300 292	14.22 4.334	Mar. 4	0445	5020 142	12.67 3.862
Jan. 16	1215	9290 263	13.97 4.258	Mar. 8	1230	5840 165	12.95 3.947

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	124	826	531	758	994	505	275	4.7	.60	.19
2		0	95	998	665	1090	891	501	312	4.5	.50	.19
3		0	71	1520	769	1300	866	512	300	4.2	.50	.09
4		0	61	2420	710	2950	872	519	290	3.9	.28	0
5		0	58	2590	2300	2040	845	509	288	3.7	.38	0
6		0	54	1620	2830	1470	941	488	297	3.6	.47	0
7		0	47	1240	3820	980	883	475	332	1.6	.38	0
8		0	44	1410	2860	3830	845	479	302	.81	.38	0
9		0	36	5320	2230	3260	836	499	261	.39	.56	0
10		0	31	2230	1390	1300	835	510	218	.19	.56	0
11		0	38	1560	1040	838	837	503	196	0	.47	0
12		0	291	1380	2020	793	815	445	170	0	.38	0
13		0	186	2730	1080	765	797	510	149	.15	.38	0
14		0	1420	6160	852	776	823	540	130	.68	.38	0
15		0	4430	4040	787	784	813	510	114	2.3	.28	0
16		0	1310	5740	753	813	762	455	101	2.2	.19	0
17		0	1280	3280	736	814	695	400	91	2.1	.28	0
18		0	919	2960	734	809	649	375	78	2.0	.38	0
19		0	715	2420	755	823	591	405	69	1.9	.47	0
20		0	584	1540	782	835	558	425	61	1.8	.47	0
21		20	558	1210	857	838	532	403	59	1.7	.38	0
22		645	890	1020	921	840	507	370	59	1.6	.47	0
23		297	2390	832	931	835	488	350	56	1.5	.47	0
24		176	1130	692	923	829	488	315	50	1.4	.56	0
25		452	853	613	890	815	547	282	44	1.3	.66	0
26		433	748	573	858	815	582	262	37	1.2	.66	0
27		385	1130	541	832	828	541	241	27	1.1	.66	0
28		267	1670	543	763	844	521	258	18	1.0	.66	0
29		186	1510	537	---	851	513	270	10	.90	.56	0
30		147	1570	529	---	863	518	287	5.7	.80	.28	0
31		---	1140	530	---	885	---	300	---	.70	.28	---
TOTAL	0	3008	25383	59604	34619	36271	21385	12943	4399.7	53.92	13.93	.47
MEAN	0	100	819	1923	1236	1170	713	418	147	1.74	.45	.016
MAX	0	645	4430	6160	3820	3830	994	540	332	4.7	.66	.19
MIN	0	0	31	529	531	758	488	241	5.7	0	.19	0
AC-FT	0	5970	50350	118200	68670	71940	42420	25670	8730	107	28	.9

CAL YR 1977 TOTAL -- MEAN -- MAX -- MIN -- AC-FT --
WTR YR 1978 TOTAL 197681.02 MEAN 542 MAX 6160 MIN 0 AC-FT 392100

11382090 THOMES CREEK AT RAWSON ROAD BRIDGE, NEAR RICHFIELD, CA--Continued

WATER-QUALITY RECORDS

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

WATER TEMPERATURES: Water year 1978.

SEDIMENT RECORDS: Water years 1977 to current year (water year 1977 periodic readings only).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: November 1977 to May 1978 (storm season only).

SEDIMENT RECORDS: November 1977 to May 1978, (storm season only).

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATIONS (storm season only): Maximum daily mean, 6,620 mg/L Jan. 14; minimum daily mean, no flow for many days during November.

SEDIMENT DISCHARGE (storm season only): Maximum daily, 113,000 tons (103,000 metric tons) Jan. 14; minimum daily, 0 ton (0 metric ton) on many days during November.

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	---	---	10.0	---	---				
2		---	13.0	8.0	---	---	---	17.0				
3		---	---	10.0	---	---	---	---				
4		---	14.0	10.5	---	---	---	---				
5		---	9.5	9.5	10.5	---	---	---				
6		---	12.0	9.5	11.5	---	---	---				
7		---	11.0	8.5	9.5	---	---	---				
8		---	13.0	10.5	9.0	12.5	---	---				
9		---	12.0	11.0	---	---	---	---				
10		---	12.0	9.0	7.0	13.0	---	---				
11		---	9.5	---	---	---	---	---				
12		---	8.5	---	---	---	---	---				
13		---	10.5	10.0	8.5	12.5	12.0	---				
14		---	10.0	11.0	7.0	---	---	---				
15		---	10.5	9.5	---	---	---	---				
16		---	8.0	10.5	---	---	---	---				
17		---	8.5	10.5	---	---	---	---				
18		---	7.0	9.5	---	---	---	---				
19		---	8.0	9.0	---	---	---	---				
20		---	7.5	9.0	---	---	---	---				
21		---	7.5	---	---	14.0	---	---				
22		5.5	9.0	---	---	13.0	---	---				
23		7.0	10.0	8.5	---	---	---	---				
24		---	9.0	6.0	---	---	---	---				
25		13.0	---	8.5	---	---	---	---				
26		13.0	8.0	6.5	---	---	---	---				
27		12.0	9.0	8.0	9.5	---	---	---				
28		13.5	9.5	---	10.0	---	---	---				
29		10.0	10.0	---	---	---	---	---				
30		11.0	9.5	8.5	---	---	---	---				
31		---	---	8.5	---	---	---	21.0				
MONTH		---	10.0	---	---	---	---	---				

SACRAMENTO RIVER BASIN

111382090 THOMES CREEK AT RAWSON ROAD BRIDGE, NEAR RICHFIELD, 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	124	8	2.7
2				0	0	0	95	5	1.3
3				0	0	0	71	3	.58
4				0	0	0	61	2	.33
5				0	0	0	58	2	.31
6				0	0	0	54	1	.15
7				0	0	0	47	1	.13
8				0	0	0	44	2	.24
9				0	0	0	36	2	.19
10				0	0	0	31	2	.17
11				0	0	0	38	9	1.0
12				0	0	0	291	95	106
13				0	0	0	186	22	11
14				0	0	0	1420	1370	11400
15				0	0	0	4430	3890	54500
16				0	0	0	1310	825	2920
17				0	0	0	1280	538	1960
18				0	0	0	919	217	538
19				0	0	0	715	54	104
20				0	0	0	584	36	57
21				20	2	.11	558	34	51
22				645	777	2350	890	274	983
23				297	92	74	2390	4660	41500
24				176	98	47	1130	300	915
25				452	125	161	853	98	226
26				433	75	90	748	52	105
27				385	42	44	1130	250	763
28				267	22	16	1670	355	1600
29				186	16	8.0	1510	248	1010
30				147	11	4.4	1570	250	1060
31				---	---	---	1140	105	323
TOTAL				3008.00	---	2794.51	25383	---	120139.1

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	826	75	167	531	18	26	758	35	72
2	998	160	594	665	19	34	1090	228	1150
3	1520	400	1640	769	18	37	1300	175	614
4	2420	1530	17400	710	18	35	2950	1440	13300
5	2590	1780	12800	2300	1220	11300	2040	544	3570
6	1620	725	3170	2830	1760	18300	1470	155	615
7	1240	285	954	3820	2200	30900	980	100	265
8	1410	718	4020	2860	1330	15200	3830	1320	16100
9	5320	5740	98000	2230	950	5720	3260	1160	12100
10	2230	1020	6140	1390	270	1010	1300	395	1390
11	1560	280	1180	1040	155	435	838	318	720
12	1380	215	801	2020	1280	12900	793	215	460
13	2730	3110	24400	1080	210	612	765	140	289
14	6160	6620	113000	852	146	336	776	100	210
15	4040	4220	46000	787	134	285	784	94	199
16	5740	5110	89900	753	121	246	813	94	206
17	3280	1890	16700	736	105	209	814	95	209
18	2960	1700	18900	734	82	163	809	95	208
19	2420	1040	9720	755	64	130	823	95	211
20	1540	329	1370	782	48	101	835	95	214
21	1210	260	849	857	41	95	838	96	217
22	1020	189	521	921	45	112	840	96	218
23	832	130	292	931	43	108	835	95	214
24	692	84	157	923	41	102	829	95	213
25	613	56	93	890	40	96	815	94	207
26	573	45	70	858	39	90	815	93	205
27	541	45	66	832	38	85	828	92	206
28	543	40	59	763	36	74	844	88	201
29	537	35	51	---	---	---	851	87	200
30	529	32	46	---	---	---	863	83	193
31	530	24	34	---	---	---	885	80	191
TOTAL	59604	---	469094	34619	---	98741	36271	---	54367

111382090 THOMES CREEK AT RAWSON ROAD BRIDGE, NEAR RICHFIELD, 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	994	80	215	505	18	25			
2	891	71	171	501	19	26			
3	866	63	147	512	23	32			
4	872	57	134	519	22	31			
5	845	52	119	509	16	22			
6	941	68	193	488	15	20			
7	883	48	114	475	14	18			
8	845	48	110	479	14	18			
9	836	45	102	499	17	23			
10	835	45	101	510	13	18			
11	837	45	102	503	12	16			
12	815	44	97	485	17	22			
13	797	42	90	510	19	26			
14	823	41	91	540	20	29			
15	813	40	88	510	19	26			
16	762	34	70	455	16	20			
17	695	26	49	400	14	15			
18	649	22	39	375	12	12			
19	591	21	34	405	14	15			
20	558	21	32	425	16	18			
21	532	20	29	403	14	15			
22	507	20	27	370	12	12			
23	488	19	25	350	11	10			
24	488	20	26	315	9	7.7			
25	547	36	53	282	8	6.1			
26	582	31	49	262	7	5.0			
27	541	22	32	241	6	3.9			
28	521	21	30	258	7	4.9			
29	513	19	26	270	7	5.1			
30	518	18	25	287	8	6.2			
31	---	---	---	300	9	7.3			
TOTAL	21385	---	2420	12943	---	515.2			
PERIOD	193213	---	748070.81						

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.	SED. SUSP. FALL DIAM.	SED. SUSP. FALL DIAM.
						% FINER THAN .002 MM	% FINER THAN .004 MM	% FINER THAN .008 MM
NOV								
22...	1205	3.5	1090	1210	3560	36	50	64
22...	1300	3.5	1020	993	2740	38	51	65
22...	1430	5.0	924	784	1960	42	57	71
22...	1445	5.5	846	750	1790	41	58	72
23...	1200	6.5	334	129	116	--	--	--
23...	1330	7.0	334	83	75	--	--	--
DEC								
15...	1145	10.5	4160	3920	44000	27	32	46
16...	1340	7.0	1120	785	2370	20	29	38
20...	1415	6.5	537	35	51	--	--	--
JAN								
05...	1230	9.0	2780	1670	12500	18	28	39
09...	0935	11.0	9020	9040	220000	16	21	24
FEB								
27...	1055	9.5	876	80	189	--	--	--

SACRAMENTO RIVER BASIN

111382090 THOMES CREEK AT RAWSON ROAD BRIDGE, NEAR RICHFIELD, 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 .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	SED. SUSP. FALL DIAM. % FINER THAN 2.00 MM	SED. SUSP. FALL DIAM. % FINER THAN 4.00 MM
NOV									
22...	77	83	85	89	96	100	--	--	--
22...	77	83	85	89	95	99	100	--	--
22...	82	87	89	92	97	99	100	--	--
22...	84	88	92	94	98	100	--	--	--
23...	--	--	58	66	81	100	--	--	--
23...	--	--	83	86	93	99	100	--	--
DEC									
15...	60	73	80	87	94	98	100	--	--
16...	46	52	55	58	65	74	79	94	100
20...	--	--	92	94	97	100	--	--	--
JAN									
05...	51	63	73	82	92	98	100	--	--
09...	35	46	57	70	88	97	100	--	--
FEB									
27...	--	--	81	84	89	99	100	--	--

PARTICLE-SIZE DISTRIBUTION OF SEDIMENT IN TRANSIT WITHIN 0.25 FOOT OF BED SURFACE,
WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	STREAM WIDTH (FT)	SEDI- MENT DIS- CHARGE, BEDLOAD (TONS/ DAY)	SED. BEDLOAD SIEVE DIAM. % FINER THAN .125 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN .250 MM
NOV								
22...	1520	5.5	9	810	76	31	1	10
DEC								
06...	1300	11.0	23	56	60	2.8	--	1

DATE	SED. BEDLOAD SIEVE DIAM. % FINER THAN .500 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 1.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 2.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 4.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 8.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 16.0 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 32.0 MM
NOV							
22...	46	71	79	85	92	97	100
DEC							
06...	10	47	85	99	100	--	--

11383500 DEER CREEK NEAR VINA, CA

LOCATION.--Lat 40°00'51", long 121°56'50", in NW¼NE¼ sec.23, T.25 N., R.1 W., Tehama County, on left bank 0.5 mi (0.8 km) upstream from diversion dam, and 7.9 mi (12.7 km) northeast of Vina.

DRAINAGE AREA.--208 mi² (539 km²).

PERIOD OF RECORD.--October 1911 to December 1915, March 1920 to December 1937, January 1939 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1315-A: 1940-42(M). WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 479.5 ft (146.15 m) National Geodetic Vertical Datum of 1929 (river-profile survey). Prior to Oct. 9, 1928, nonrecording gage at site 0.8 mi (1.3 km) downstream at different datum. Oct. 9, 1928, to Jan. 19, 1939, water-stage recorder at present site at datum 2.64 ft (0.805 m) higher.

REMARKS.--Records excellent. No storage or large diversions above station.

AVERAGE DISCHARGE.--60 years, 316 ft³/s (8.949 m³/s), 228,900 acre-ft/yr (282 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,800 ft³/s (674 m³/s) Dec. 10, 1937, gage height, 19.2 ft (5.85 m) present datum, from floodmarks, from rating curve extended above 9,200 ft³/s (261 m³/s) on basis of velocity-area studies; minimum, 43 ft³/s (1.22 m³/s) Dec. 13, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft³/s (70.8 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 5	2045	3450 97.7	7.38 2.249	Feb. 7	1200	4880 138	8.69 2.649
Jan. 9	1115	4310 122	8.06 2.457	Mar. 4	1000	6980 198	9.89 3.014
Jan. 14	2145	7070 200	9.79 2.984	Apr. 6	0200	3080 87.2	7.37 2.246
Jan. 16	1200	*8350 236	10.60 3.231				

Minimum daily, 69 ft³/s (1.954 m³/s) Oct. 6-15.

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	80	77	85	220	239	345	827	585	259	136	101	91
2	74	74	83	207	251	1240	736	543	252	134	99	92
3	72	74	81	292	300	1780	602	532	247	142	98	90
4	71	75	82	492	274	4250	948	509	242	136	98	90
5	71	93	84	2260	735	4100	709	477	239	129	97	92
6	69	89	88	1440	1480	2640	1700	441	239	125	96	107
7	69	81	84	650	2890	1690	967	418	237	124	95	101
8	69	79	84	535	2100	1330	761	407	234	126	95	99
9	69	77	81	2830	1860	1310	679	411	232	121	96	105
10	69	75	80	1500	1170	1030	638	418	226	118	94	129
11	69	75	83	782	862	894	629	409	221	117	93	113
12	69	76	102	641	881	786	611	398	209	116	93	102
13	69	77	93	627	1010	667	572	395	202	115	93	97
14	69	77	186	3120	740	589	551	405	193	113	93	96
15	69	76	976	4110	658	527	652	468	187	112	93	96
16	71	75	298	5870	551	484	629	453	200	110	92	95
17	71	75	652	2720	485	464	532	382	189	111	93	94
18	71	75	367	1580	430	450	479	359	176	109	92	93
19	71	74	214	1610	399	429	461	352	170	109	91	93
20	71	74	166	1030	380	443	539	341	164	107	91	93
21	72	102	147	775	364	475	512	336	160	106	92	93
22	72	179	278	636	353	532	479	336	156	105	99	93
23	71	126	808	519	352	572	446	366	152	104	98	93
24	71	109	358	436	349	598	446	354	148	105	94	92
25	72	119	238	384	338	532	934	330	146	104	93	92
26	74	104	193	347	383	509	816	304	144	103	94	91
27	76	102	293	315	400	494	693	283	144	103	93	90
28	74	98	342	291	360	501	651	272	164	102	91	90
29	74	92	278	274	---	505	598	270	162	101	91	90
30	80	87	360	260	---	509	611	270	144	101	91	90
31	84	---	275	249	---	576	---	264	---	101	91	---
TOTAL	2233	2666	7539	37002	20594	31251	20408	12088	5838	3545	2920	2882
MEAN	72.0	88.9	243	1194	736	1008	680	390	195	114	94.2	96.1
MAX	84	179	976	5870	2890	4250	1700	585	259	142	101	129
MIN	69	74	80	207	239	345	446	264	144	101	91	90
AC-FT	4430	5290	14950	73390	40850	61990	40480	23980	11580	7030	5790	5720
CAL YR 1977	TOTAL	35672	MEAN	97.7	MAX	976	MIN	58	AC-FT	70760		
WTR YR 1978	TOTAL	148966	MEAN	408	MAX	5870	MIN	69	AC-FT	295500		

SACRAMENTO RIVER BASIN

11383800 SACRAMENTO RIVER NEAR HAMILTON CITY, CA

LOCATION.--Lat 39°45'06", long 121°59'43", in NE¼NE¼ sec.20, R.1 W., T.22 N., Butte County, on left bank upstream end of Gianella Bridge on the Sacramento River, 1.3 mi (2.1 km) northeast of Hamilton City, and 2.4 mi (3.9 km) upstream from Pine Creek.

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

CHEMICAL ANALYSES: Water years 1951 to current year.

WATER TEMPERATURES: Water year 1977.

SEDIMENT RECORDS: Water year 1977.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: December 1976 to June 1977.

SEDIMENT RECORDS: January to June 1977.

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

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)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)
OCT 19...	0635	3100	150	7.4	16.5	4.0	9.0
NOV 29...	0735	5540	209	7.6	11.5	9.0	10.4
DEC 19...	1400	10400	151	7.2	8.0	60	11.4
JAN 17...	1245	107000	96	7.2	10.0	270	10.0
FEB 21...	1500	16300	153	7.3	11.5	17	10.5
APR 24...	1700	11800	141	7.2	13.0	5.0	9.9
MAY 23...	1145	8410	122	7.4	16.0	7.0	9.5
JUN 26...	1200	8090	117	7.6	16.0	5.0	10.0
JUL 26...	1115	8670	114	7.4	18.0	3.0	10.0
AUG 29...	1145	7730	118	7.5	17.0	2.0	10.0
SEP 26...	1405	6120	124	7.5	17.5	2.0	9.9

DATE	HARD- NESS (MG/L AS CAC03)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	ALKA- LITY (MG/L AS CAC03)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	BORON, DIS- SOLVED (UG/L AS B)
OCT 19...	57	10	.6	63	8.2	14	0
NOV 29...	64	12	.7	65	9.1	20	100
DEC 19...	--	--	--	--	--	127	--
JAN 17...	40	6.0	.4	37	1.2	657	0
FEB 21...	64	7.0	.4	70	3.4	--	0
APR 24...	55	5.9	.3	53	2.8	--	0
MAY 23...	--	--	--	--	--	--	--
JUN 26...	--	--	--	--	--	--	--
JUL 26...	--	--	--	--	--	--	--
AUG 29...	--	--	--	--	--	--	--
SEP 26...	48	6.0	.4	50	3.4	6	0

11383800 SACRAMENTO RIVER NEAR HAMILTON CITY, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)
APR 24...	1700	5	1.1	0	0	0	0	10
SEP 26...	1405	2	1.0	0	0	0	0	10

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
APR 24...	360	0	20	1.0	0	1.4	.00
SEP 26...	70	0	10	.0	0	1.5	.00

SACRAMENTO RIVER BASIN

11384000 BIG CHICO CREEK NEAR CHICO, CA

LOCATION.--Lat 39°46'35", long 121°45'10", in Arroyo Chico Grant, Butte County, on right bank 1.8 mi (2.9 km) upstream from golf clubhouse in Bidwell Park, 2.6 mi (4.2 km) upstream from Lindo Channel, and 7 mi (11 km) northeast of Chico.

DRAINAGE AREA.--72.4 mi² (187.5 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1930 to current year. Prior to October 1952, published as Chico Creek near Chico.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 300 ft (91 m), from topographic map. Prior to Oct. 1, 1955, at site 0.6 mi (1.0 km) downstream at different datum.

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

AVERAGE DISCHARGE.--48 years, 145 ft³/s (4.106 m³/s), 105,100 acre-ft/yr (130 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,580 ft³/s (271 m³/s) Jan. 5, 1965, gage height, 15.36 ft (4.682 m); minimum, 10 ft³/s (0.28 m³/s) Dec. 11, 1932, Aug. 15, 1939, Sept. 18, 1947.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,600 ft³/s (45.3 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 5	2200	2210 62.6	6.86 2.091	Jan. 16	1830	*4700 133	10.25 3.124
Jan. 9	1500	2050 58.1	6.60 2.012	Feb. 7	1530	2890 81.8	7.84 2.390
Jan. 14	2230	3280 92.9	8.39 2.557	Mar. 4	1900	4540 129	10.05 3.063

Minimum daily, 17 ft³/s (0.48 m³/s) many days in 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	27	19	22	96	91	150	245	268	55	37	24	21
2	24	17	22	83	99	646	293	235	61	36	24	20
3	24	17	22	114	95	1450	236	211	64	43	22	20
4	21	17	22	178	88	3180	381	193	57	41	22	20
5	20	32	22	1390	267	3300	365	175	54	36	23	19
6	19	29	24	988	896	2000	942	161	52	35	23	24
7	20	20	24	381	1990	1160	689	146	50	35	22	28
8	19	18	22	275	1620	795	490	132	50	34	21	25
9	19	17	23	1420	1430	733	387	123	50	33	21	27
10	19	17	23	964	947	567	326	115	52	32	21	45
11	18	17	27	452	607	475	289	108	51	32	21	29
12	19	17	34	331	565	419	263	101	52	32	21	26
13	19	18	29	283	749	351	240	96	61	33	21	24
14	18	17	140	1380	571	303	218	92	64	30	21	24
15	18	17	491	2510	485	267	252	95	65	30	21	24
16	19	17	131	3890	404	241	286	94	52	29	21	23
17	19	17	389	2180	341	219	252	86	45	29	21	23
18	18	17	223	1000	294	200	229	81	42	28	21	22
19	18	18	110	1080	261	183	216	77	42	27	21	22
20	18	19	75	746	237	167	232	74	41	27	21	22
21	18	46	61	510	216	166	225	72	41	27	21	22
22	18	161	139	388	197	159	213	70	41	26	23	23
23	19	58	461	305	182	152	195	81	46	26	28	22
24	18	45	205	248	170	145	191	78	49	25	24	22
25	18	38	121	206	159	128	561	78	46	25	22	22
26	18	33	89	178	179	120	558	73	38	25	22	21
27	19	29	139	153	172	113	432	67	39	25	22	21
28	19	27	168	132	159	108	353	61	41	24	22	21
29	18	25	134	117	---	103	310	58	42	24	22	21
30	24	23	137	105	---	98	289	58	40	25	21	21
31	22	---	118	96	---	113	---	56	---	25	21	---
TOTAL	607	862	3647	22179	13471	18211	10158	3415	1483	936	681	704
MEAN	19.6	28.7	118	715	481	587	339	110	49.4	30.2	22.0	23.5
MAX	27	161	491	3890	1990	3300	942	268	65	43	28	45
MIN	18	17	22	83	88	98	191	56	38	24	21	19
AC-FT	1200	1710	7230	43990	26720	36120	20150	6770	2940	1860	1350	1400
CAL YR 1977	TOTAL	12065	MEAN	33.1	MAX	491	MIN	14	AC-FT	23930		
WTR YR 1978	TOTAL	76354	MEAN	209	MAX	3890	MIN	17	AC-FT	151400		

11384000 BIG CHICO CREEK NEAR CHICO, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1953-69, 1975 to current year.

COOPERATION.--Chemical-quality records furnished by 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)	SODIUM, DIS- SOLVED (MG/L AS NA)	ALKA- LITY (MG/L AS CAC03)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	BORON, DIS- SOLVED (UG/L AS B)
NOV 08...	1300	19	238	8.0	11.0	.00	11.0	--	--	--	--
MAR 14...	1315	302	94	7.4	10.0	2.0	11.6	--	--	--	--
MAY 17...	1200	85	133	8.0	15.0	1.0	10.1	--	--	--	--
JUL 19...	1130	27	193	8.0	24.0	1.0	8.5	--	--	--	--
SEP 21...	1230	22	204	8.1	16.5	.00	9.9	15	87	10	200

11384600 LITTLE STONY CREEK ABOVE EAST PARK RESERVOIR, NEAR LODOGA, CA

LOCATION.--Lat 39°17'48", long 122°32'22", in NE&SW¼ sec.28, T.17 N., R.6 W., Colusa County, on left bank 1.1 mi (1.8 km) upstream from county bridge on Lodoga-Stonyford Road, 1.4 mi (2.3 km) downstream from Frenzel Creek, and 2.8 mi (4.5 km) southwest of Lodoga.

DRAINAGE AREA.--45.6 mi² (118.1 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 1,300 ft (396 m), from topographic map.

REMARKS.--Records good. No known storage or diversions above station.

AVERAGE DISCHARGE.--12 years, 59.2 ft³/s (1.677 m³/s), 42,890 acre-ft/yr (52.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,000 ft³/s (113 m³/s) Jan. 23, 1970, gage height, 11.39 ft (3.472 m), from rating curve extended above 1,500 ft³/s (42.5 m³/s); no flow at times in 1972, 1976, and 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 5	0700	1200 34.0	7.10 2.164	Jan. 16	0600	*2530 71.6	9.51 2.899
Jan. 9	0700	1850 52.4	8.41 2.563	Feb. 7	1000	1680 47.6	8.08 2.463
Jan. 14	1900	1990 56.4	8.66 2.640				

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	3.0	49	76	100	88	54	19	8.6	2.2	1.4
2		0	2.8	87	103	118	72	51	18	8.6	2.1	1.2
3		0	2.6	100	87	191	70	49	18	8.7	1.9	.98
4		0	2.4	214	80	366	91	47	17	8.3	1.9	.86
5		0	2.2	878	348	328	83	45	16	7.9	1.7	1.1
6		0	2.0	521	543	269	191	44	15	7.3	1.5	1.8
7		0	2.0	246	1010	227	135	42	14	7.0	1.2	1.9
8		0	1.8	213	803	427	118	40	14	6.6	1.1	1.8
9		0	1.8	938	630	455	107	39	14	6.2	1.1	3.2
10		0	1.8	359	397	330	99	37	14	5.6	.94	5.6
11		0	3.0	226	283	275	92	35	14	5.6	.83	3.1
12		0	6.4	239	270	226	86	34	13	5.7	.86	2.6
13		0	4.0	520	263	191	80	32	13	5.5	.98	2.0
14		0	128	1210	247	166	76	32	13	5.0	1.2	2.0
15		0	205	1310	223	148	103	34	13	4.5	1.2	1.9
16		0	50	1970	196	134	83	31	12	4.3	1.1	1.8
17		0	227	1030	179	124	75	29	12	4.2	1.1	1.8
18		0	58	528	167	115	71	28	12	4.0	1.1	1.8
19		0	31	412	157	106	73	27	12	3.7	1.0	2.0
20		0	22	279	148	100	77	26	11	3.5	.98	2.0
21		200	29	220	135	95	71	25	11	3.4	.97	2.0
22		170	205	178	132	90	67	25	10	3.2	1.0	1.9
23		70	362	148	126	90	65	24	10	3.1	1.3	1.9
24		40	105	127	120	80	66	24	9.9	3.0	1.5	1.7
25		20	65	112	115	75	80	24	9.9	2.8	1.7	1.5
26		10	57	101	111	71	68	23	10	2.8	1.8	1.4
27		6.0	82	93	107	68	64	22	9.6	2.6	1.8	1.3
28		4.5	70	86	102	65	62	21	9.9	2.6	1.6	1.2
29		4.0	63	81	---	62	60	20	9.7	2.6	1.3	1.2
30		3.5	60	76	---	60	58	19	9.0	2.5	1.4	1.2
31		---	53	71	---	84	---	19	---	2.4	1.5	---
TOTAL	0	528.0	1907.8	12622	7158	5236	2531	1002	383.0	151.8	41.86	56.14
MEAN	0	17.6	61.5	407	256	169	84.4	32.3	12.8	4.90	1.35	1.87
MAX	0	200	362	1970	1010	455	191	54	19	8.7	2.2	5.6
MIN	0	0	1.8	49	76	60	58	19	9.0	2.4	.83	.86
AC-FT	0	1050	3780	25040	14200	10390	5020	1990	760	301	83	111
CAL YR 1977	TOTAL	2948.38		MEAN 8.08	MAX 362	MIN 0	AC-FT 5850					
WTR YR 1978	TOTAL	31617.60		MEAN 86.6	MAX 1970	MIN 0	AC-FT 62710					

11384600 LITTLE STONY CREEK ABOVE EAST PARK RESERVOIR, NEAR LODOGA, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: May 1967 to current year.

INSTRUMENTATION.--Temperature recorder since May 1967.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 33.5°C July 15, 1972; minimum recorded, 0.0°C Dec. 21-23, 1968, Jan. 28 to Feb. 1, 1975.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 32.0°C Aug. 7; minimum recorded, 3.5°C 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					---	---	6.5	6.0	---	---	11.0	11.0
2					---	---	7.0	6.5	9.0	8.0	11.0	11.0
3					---	---	8.0	7.0	9.0	9.0	11.0	9.5
4					---	---	8.0	8.0	9.0	9.0	10.0	9.0
5					---	---	8.5	8.0	9.0	9.0	9.0	10.0
6					---	---	9.0	8.0	9.0	9.0	10.0	8.0
7					---	---	8.5	7.5	9.0	8.0	10.5	9.0
8					7.0	5.5	9.5	8.5	8.5	8.0	10.5	10.0
9					6.0	4.0	9.5	9.0	8.5	8.0	10.0	9.0
10					5.5	4.0	9.5	8.5	8.0	7.0	10.0	8.0
11					6.5	5.0	9.5	8.0	8.0	6.5	9.5	8.0
12					7.0	6.0	9.5	9.0	7.0	4.5	8.5	6.5
13					9.0	7.0	9.5	9.5	7.5	5.5	9.0	7.0
14					10.5	9.0	9.5	9.0	8.0	6.5	9.0	8.5
15					10.5	7.0	9.5	9.0	8.0	6.5	9.5	9.0
16					7.0	6.5	9.5	9.5	8.0	7.0	9.5	9.0
17					8.0	6.5	9.5	9.5	8.0	7.0	10.0	9.5
18					6.5	5.5	9.5	9.5	8.5	8.0	10.5	10.0
19					5.5	4.0	10.0	9.0	8.5	8.0	10.5	10.0
20					5.5	3.5	9.5	8.5	9.0	8.5	11.0	10.5
21					7.0	5.5	9.5	8.5	10.0	9.0	11.0	11.0
22					8.5	6.5	---	---	10.5	10.0	11.0	11.0
23					8.5	8.0	---	---	10.5	10.0	11.5	11.0
24					8.0	7.0	---	---	11.0	10.5	12.5	11.0
25					7.5	6.0	---	---	11.0	10.5	12.5	10.0
26					8.0	7.0	---	---	11.0	10.5	12.5	11.0
27					8.5	8.0	---	---	11.0	10.5	13.0	11.0
28					9.0	8.0	---	---	11.0	10.5	13.5	11.5
29					9.5	9.0	---	---	---	---	13.5	12.0
30					9.0	7.5	---	---	---	---	13.5	12.0
31					8.0	6.5	---	---	---	---	13.5	12.5
MONTH					---	---	---	---	11.0	4.5	13.5	6.5

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	12.5	11.5	13.0	12.0	21.5	14.5	26.0	17.0	31.0	21.5	26.0	19.5
2	12.0	11.0	14.0	12.5	21.5	15.5	23.5	16.5	30.5	21.5	25.5	19.5
3	11.5	10.5	14.5	13.0	22.5	15.5	25.5	16.0	31.0	22.0	25.0	18.0
4	11.0	10.0	14.5	13.5	23.0	16.0	25.5	17.0	31.0	23.5	25.0	18.5
5	11.0	10.5	14.0	13.0	24.0	17.0	28.0	18.0	31.5	23.0	21.5	19.0
6	11.0	9.0	13.5	12.0	24.5	17.5	28.5	18.5	31.5	23.5	21.5	16.0
7	11.0	10.0	13.5	12.0	24.5	17.0	28.5	20.0	32.0	23.0	20.5	15.5
8	11.0	10.0	14.0	12.5	25.5	18.0	29.5	20.0	31.5	23.5	22.5	14.5
9	12.0	11.0	14.5	13.5	24.5	18.5	30.0	20.5	30.5	23.0	19.0	16.5
10	12.5	11.5	14.5	13.5	24.0	18.5	28.5	18.5	30.5	22.5	20.5	15.5
11	13.0	12.5	15.0	14.0	23.5	17.0	28.0	19.5	29.0	21.5	21.5	14.5
12	13.0	12.5	15.0	14.0	19.5	16.5	28.5	19.5	28.5	21.0	22.0	15.5
13	13.5	12.5	15.0	14.0	22.5	15.0	29.5	19.5	27.0	19.5	21.0	15.0
14	13.5	12.5	15.0	14.0	22.5	15.0	29.5	20.0	27.0	18.5	22.0	16.0
15	12.5	11.5	15.0	13.5	22.5	15.5	29.0	20.5	27.0	18.5	23.0	16.0
16	11.5	11.0	14.0	12.5	23.0	15.5	29.0	19.0	27.0	19.5	23.0	16.5
17	11.5	11.0	14.0	12.5	23.5	16.0	30.0	19.5	26.0	18.5	20.5	16.0
18	11.5	11.0	15.0	13.0	23.5	16.5	30.0	20.0	26.0	17.0	19.0	13.0
19	12.5	11.5	15.0	13.0	24.5	17.0	30.5	20.5	26.5	18.0	19.5	13.5
20	12.5	12.0	15.5	13.5	24.0	16.5	30.5	20.5	26.5	18.5	19.5	12.0
21	12.0	11.0	15.5	14.0	26.0	18.5	30.5	20.5	25.0	18.5	19.5	13.5
22	12.5	11.0	15.5	14.5	25.5	18.0	30.5	20.5	23.0	16.5	20.5	13.5
23	12.5	11.5	15.0	14.0	24.5	17.5	30.5	21.5	24.0	16.0	22.0	15.0
24	12.5	12.5	14.5	12.5	23.5	17.5	31.0	20.5	21.5	16.0	22.5	16.5
25	12.5	12.0	12.5	11.5	24.5	17.5	30.5	22.0	22.0	16.5	22.5	17.0
26	12.5	12.0	13.0	11.5	20.0	18.0	31.5	24.0	24.0	16.5	20.0	17.0
27	13.0	12.0	14.5	12.5	22.5	20.0	31.5	22.5	25.5	17.0	20.0	14.0
28	13.5	12.5	15.5	14.0	22.5	18.5	30.0	20.5	26.5	18.5	21.0	15.0
29	13.5	12.5	16.5	14.5	26.0	17.0	30.0	20.0	27.0	19.5	21.5	15.5
30	13.5	13.0	16.5	15.0	26.5	16.5	30.0	20.0	26.0	20.0	21.5	16.0
31	---	---	20.5	15.0	---	---	30.5	20.5	26.0	19.5	---	---
MONTH	13.5	9.0	20.5	11.5	26.5	14.5	31.5	16.0	32.0	16.0	26.0	12.0

SACRAMENTO RIVER BASIN

RESERVOIRS IN STONY CREEK BASIN, CA

11385100 EAST PARK RESERVOIR NEAR STONYFORD.--Lat 39°21'24", long 122°30'53", in SW¼NE¼ sec.3, T.17 N., R.6 W., Colusa County, near south side of spillway section on East Park Dam on Little Stony Creek, 1.9 mi (3.1 km) southeast of Stonyford. DRAINAGE AREA, 98.2 mi² (254.3 km²). PERIOD OF RECORD, October 1969 to current year. GAGE, nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

Reservoir is formed by a concrete arch-type dam. Storage began in 1910. Capacity, 48,211 acre-ft (59.4 hm³) between elevations 1,131.68 ft (344.936 m), invert of sluice pipe and 1,198.18 ft (365.205 m), crest of spillway. Capacity increased to 50,889 acre-ft (62.7 hm³) with the addition of flashboards to an elevation of 1,199.68 ft (365.662 m). Dead storage, 279 acre-ft (344,000 m³). Records of contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 53,500 acre-ft (66.0 hm³) Mar. 30, 1974, elevation, 1,201.10 ft (366.095 m); minimum, 280 acre-ft (345,000 m³) Aug. 8 to Oct. 31, 1972, Apr. 30 to Nov. 1, 1977, elevation, 1,131.68 ft (344.936 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 51,400 acre-ft (63.4 hm³) Apr. 6, 7, elevation, 1,199.96 ft (365.748 m); minimum, 280 acre-ft (345,000 m³) Oct. 1 to Nov. 1, elevation, 1,131.68 ft (344.936 m).

11386100 STONY GORGE RESERVOIR NEAR ELK CREEK.--Lat 39°35'09", long 122°31'54", in NE¼SE¼ sec.16, T.20 N., R.6 W., Glenn County, on south end of Stony Gorge Dam on Stony Creek, 1.3 mi (2.1 km) southeast of Elk Creek. DRAINAGE AREA, 301 mi² (780 km²). PERIOD OF RECORD, October 1969 to current year. GAGE, nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

Reservoir is formed by slab and buttress-type dam. Storage began in 1928. Capacity, 50,383 acre-ft (62.1 hm³) between elevations, 728.0 ft (221.89 m), top of low intake and 841.0 ft (256.34 m), crest of spillway. No dead storage. Records of contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 54,630 acre-ft (67.4 hm³) Mar. 26, 1971, elevation, 844.20 ft (257.312 m); minimum, 3,810 acre-ft (4.70 hm³) Nov. 6, 1971, elevation, 779.20 ft (237.500 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 51,900 acre-ft (64.0 hm³) Apr. 29, 30, elevation, 842.16 ft (256.690 m); minimum, 4,010 acre-ft (4.94 hm³) Oct. 17, 19-25, Nov. 1-5, elevation, 779.90 ft (237.714 m).

MONTHEND ELEVATION NGVD AND CONTENTS, AT 0800, 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)
11381500 EAST PARK RESERVOIR				11386100 STONY GORGE RESERVOIR		
Sept. 30.....	1131.68	280	--	780.20	4090	--
Oct. 31.....	1131.68	280	--	779.95	4020	--
Nov. 30.....	1149.28	2790	+2510	783.40	5070	+1050
Dec. 31.....	1170.16	13290	+10500	814.54	22410	+17340
CAL YR 1977.....	--	--	+10040	--	--	+13300
Jan. 31.....	1198.38	48570	+35280	837.44	45880	+23470
Feb. 28.....	1198.42	48640	+70	837.60	46080	+200
Mar. 31.....	1199.60	50750	+2110	841.32	50800	+4720
Apr. 30.....	1199.86	51220	+470	842.16	51900	+1100
May 31.....	1191.92	37940	-13280	830.02	37230	-14670
June 30.....	1187.86	32050	-5890	836.92	45240	+8010
July 31.....	1187.30	31290	-760	836.20	44360	-880
Aug. 31.....	1186.50	30210	-1080	810.72	19420	-24940
Sept. 30.....	1185.98	29530	-680	801.74	13380	-6040
WTR YR 1978.....	--	--	+29250	--	--	+9290

11387000 STONY CREEK NEAR FRUTO, CA

LOCATION.--Lat 39°40'18", long 122°31'01", in SW¼SE¼ sec.15, T.21 N., R.6 W., Glenn County, on right bank 0.3 mi (0.5 km) downstream from Grindstone Creek, and 6.5 mi (10.5 km) northwest of Fruto.

DRAINAGE AREA.--597 mi² (1,546 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1901 to October 1912, October 1960 to September 1978 (discontinued).

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 600 ft (183 m), from topographic map. Prior to Oct. 6, 1912, nonrecording gage at site 1.0 mi (1.6 km) downstream at different datum.

REMARKS.--Records fair. Many diversions above station for irrigation. Flow regulated by Stony Gorge Reservoir (station 11386100) 6.9 mi (11.1 km) upstream since 1928, and by East Park Reservoir (station 11385100) since 1910, combined usable capacity, 100,700 acre-ft (124 hm³).

AVERAGE DISCHARGE (unadjusted).--29 years, 648 ft³/s (18.35 m³/s), 469,500 acre-ft/yr (579 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,200 ft³/s (1,140 m³/s) Dec. 23, 1964, gage height, 15.94 ft (4.858 m) in gage well, 16.1 ft (4.91 m), from floodmarks; no flow at times in 1901 and 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 24,200 ft³/s (685 m³/s) Jan. 14, gage height, 12.72 ft (3.877 m); 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	1.0	1.2	30	217	755	970	1190	715	253	72	110	338
2	.98	1.4	26	415	1100	1210	1010	733	247	71	149	334
3	.32	1.5	23	534	1110	1960	926	881	243	69	157	362
4	.04	1.4	20	1720	1030	6640	925	918	242	69	161	302
5	0	1.4	18	3380	4880	4260	861	890	238	66	160	160
6	0	1.4	17	1610	6430	2860	1230	859	227	67	157	89
7	0	1.4	16	797	9450	2390	1330	831	187	75	157	92
8	0	1.3	15	1070	9440	4820	1170	828	161	77	338	90
9	0	1.3	13	10300	7450	5380	910	839	162	69	645	94
10	0	1.3	11	2790	3880	3740	874	960	149	64	731	100
11	0	1.2	14	1240	3010	2930	885	1030	144	67	713	100
12	0	1.2	120	1330	3810	2510	885	1130	138	76	697	87
13	0	1.2	49	5460	3940	1950	846	1200	134	75	678	71
14	0	1.2	493	14400	3050	1640	812	1200	131	70	696	70
15	0	1.2	1620	9460	2260	1600	887	1210	127	60	717	68
16	0	1.2	369	15000	2010	1480	841	1190	124	60	609	61
17	0	1.2	647	9380	1610	1360	772	1160	119	64	504	59
18	0	1.1	329	4360	1620	991	735	1170	117	65	417	64
19	0	1.1	161	3990	1630	896	713	1170	116	67	349	63
20	0	1.0	103	3280	1620	722	769	1160	113	69	338	64
21	0	10	105	2690	1340	542	729	1170	110	70	326	64
22	0	100	776	1850	1240	522	703	1170	107	70	321	64
23	0	70	1590	1590	1300	616	681	1150	104	70	329	64
24	0	40	484	989	1290	681	674	1130	93	70	381	64
25	0	45	240	664	1240	695	794	889	78	70	388	72
26	0	50	185	588	1180	702	570	582	78	70	343	68
27	0	45	385	504	1130	707	512	334	76	70	352	56
28	0	40	391	564	1030	710	588	265	74	70	361	56
29	0	36	355	690	---	685	617	262	78	69	374	56
30	0	32	366	744	---	675	641	261	76	69	437	56
31	0	---	272	734	---	915	---	259	---	67	394	---
TOTAL	2.34	493.2	9243	102340	79835	57759	25080	27546	4246	2137	12489	3288
MEAN	.076	16.4	298	3301	2851	1863	836	889	142	68.9	403	110
MAX	1.0	100	1620	15000	9450	6640	1330	1210	253	77	731	362
MIN	0	1.0	11	217	755	522	512	259	74	60	110	56
AC-FT	4.6	978	18330	203000	158400	114600	49750	54640	8420	4240	24770	6520
CAL YR 1977	TOTAL	20922.41	MEAN	57.3	MAX	1620	MIN	0	AC-FT	41500		
WTR YR 1978	TOTAL	324458.54	MEAN	889	MAX	15000	MIN	0	AC-FT	643600		

SACRAMENTO RIVER BASIN

11387000 STONY CREEK NEAR FRUTO, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-66, 1971 to September 1978 (discontinued).

CHEMICAL ANALYSES: Water years 1964-66.

WATER TEMPERATURES: Water years 1971 to September 1978 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: December 1970 to September 1978 (discontinued).

INSTRUMENTATION.--Temperature recorder Dec. 1, 1970, to Sept. 30, 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 33.5°C Aug. 9; 1972; minimum recorded, 0.0°C on several days in 1972 and 1973.

EXTREMES FOR CURRENT YEAR:

WATER TEMPERATURES: Maximum recorded, 31.0°C July 27; minimum recorded, 1.5°C Nov. 22.

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	18.0	13.5	15.5	11.0	12.5	8.5	7.5	6.5	9.0	8.5	12.0	9.5
2	17.0	13.5	16.0	12.0	12.5	7.5	8.0	7.5	9.0	8.5	12.5	11.0
3	16.5	14.0	15.5	11.5	12.5	7.5	9.0	8.0	11.0	8.5	13.0	11.0
4	16.5	13.5	13.0	10.5	13.5	8.5	9.0	8.5	10.0	8.5	11.0	10.0
5	---	---	15.0	11.0	13.0	9.0	9.5	8.5	10.0	9.0	12.0	10.0
6	---	---	15.0	10.0	11.5	9.5	10.0	8.0	10.0	9.0	12.5	9.5
7	---	---	15.5	11.5	12.5	9.0	10.0	7.5	10.0	9.0	12.0	10.0
8	---	---	14.0	10.5	11.0	7.5	10.0	9.0	9.5	9.0	12.0	11.0
9	---	---	14.5	9.0	10.5	6.5	10.5	9.5	10.0	9.0	11.5	10.0
10	---	---	14.5	9.5	10.5	6.0	10.5	9.0	9.5	8.5	12.5	10.0
11	---	---	14.5	11.0	9.5	8.0	10.0	9.0	10.0	8.0	11.0	10.0
12	---	---	14.5	11.0	9.5	7.0	10.0	9.5	9.0	7.5	11.5	9.5
13	---	---	15.0	11.0	10.0	8.5	10.5	10.0	9.0	8.5	12.0	9.0
14	---	---	14.5	11.0	10.0	9.5	10.5	10.0	10.0	8.0	13.5	9.5
15	---	---	15.0	10.5	10.0	8.5	10.5	9.5	10.5	8.0	13.5	9.5
16	---	---	15.0	10.5	8.5	7.5	10.5	10.0	9.5	8.0	14.5	10.0
17	---	---	14.0	11.0	8.0	7.5	10.5	9.5	10.0	8.5	14.5	10.5
18	---	---	12.0	9.0	7.5	6.0	10.0	10.0	11.5	8.5	15.0	10.5
19	---	---	9.5	6.5	6.5	5.5	10.5	10.0	11.5	8.0	17.0	11.0
20	---	---	9.0	5.5	6.5	5.5	11.0	9.5	11.5	8.5	14.5	11.5
21	---	---	7.0	2.5	7.5	6.5	10.5	9.5	13.5	9.0	13.0	11.5
22	---	---	7.0	1.5	9.0	7.5	10.5	8.5	13.5	9.0	14.0	11.0
23	---	---	7.5	5.5	9.5	8.5	9.5	8.0	13.5	9.0	16.0	11.5
24	---	---	11.5	7.5	8.0	7.0	9.0	7.5	12.0	10.0	16.5	10.0
25	---	---	11.0	7.0	7.5	6.5	9.5	7.0	11.5	10.0	17.0	10.0
26	---	---	12.0	8.5	8.0	7.5	10.0	7.0	12.5	10.0	17.5	12.0
27	---	---	12.0	8.5	9.0	8.0	9.5	7.0	12.5	9.0	19.0	11.5
28	---	---	12.5	8.0	9.5	8.5	11.5	7.0	13.5	8.5	16.5	10.0
29	---	---	13.0	8.5	9.5	9.0	11.5	7.5	---	---	15.5	11.0
30	---	---	13.0	9.0	9.0	8.0	10.5	8.0	---	---	16.5	11.0
31	---	---	---	---	8.5	7.5	9.0	7.5	---	---	12.5	11.5
MONTH	---	---	16.0	1.5	13.5	5.5	11.5	6.5	13.5	7.5	19.0	9.0

11387000 STONY CREEK NEAR FRUTO, 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	14.5	10.5	18.5	12.5	25.0	16.0	---	---	28.5	23.0	28.0	22.0
2	14.5	9.5	20.0	12.5	25.5	17.0	---	---	28.0	22.0	28.0	22.0
3	12.5	10.0	18.0	13.5	25.5	17.0	---	---	28.5	22.5	28.0	21.5
4	14.0	9.0	17.5	12.0	26.5	18.0	---	---	27.0	20.0	27.5	22.0
5	12.5	9.5	16.5	11.0	27.0	18.5	---	---	27.5	19.5	23.5	21.5
6	13.5	9.5	18.0	11.0	27.5	18.0	---	---	29.0	20.0	23.5	19.5
7	14.0	10.0	19.0	11.5	---	---	---	---	28.5	19.0	26.0	18.5
8	14.5	9.5	20.0	13.5	---	---	---	---	25.0	19.5	26.5	18.5
9	16.5	10.0	19.5	13.0	---	---	---	---	24.0	19.0	22.0	19.5
10	18.0	10.5	19.5	13.5	---	---	---	---	24.0	19.0	24.5	19.0
11	19.0	12.5	19.0	14.0	---	---	---	---	24.0	19.0	24.0	18.0
12	18.5	12.0	19.0	14.5	---	---	28.5	20.0	24.0	19.0	24.0	17.5
13	18.0	13.0	19.5	15.0	---	---	29.0	20.0	24.0	19.5	24.5	18.0
14	16.0	12.5	19.5	15.0	---	---	29.5	20.0	24.0	17.5	24.0	17.0
15	13.5	11.5	18.5	14.5	---	---	29.0	20.0	25.0	19.5	25.5	17.5
16	16.5	11.0	18.5	14.0	---	---	29.0	20.0	26.0	21.0	25.0	18.5
17	16.5	10.5	19.0	14.5	---	---	29.5	20.5	25.0	20.5	22.0	17.0
18	18.0	11.0	19.5	15.0	---	---	30.5	21.5	27.5	21.0	20.5	15.0
19	15.0	11.5	20.5	15.5	---	---	30.0	21.5	28.0	21.0	21.0	14.0
20	16.0	10.5	20.5	16.0	---	---	30.5	22.0	28.5	22.0	22.5	14.5
21	17.0	10.0	20.5	16.0	---	---	30.5	22.0	27.0	22.0	22.0	15.5
22	17.5	10.5	20.5	16.5	---	---	30.5	22.0	27.0	21.5	23.5	15.5
23	17.5	11.0	20.0	16.0	---	---	30.5	23.0	27.5	21.5	24.5	16.0
24	16.0	13.0	20.5	16.0	---	---	30.5	22.5	27.5	21.0	25.0	17.0
25	17.0	13.0	21.0	16.5	---	---	29.5	23.0	27.0	22.5	24.0	17.5
26	17.5	12.5	22.5	16.0	---	---	30.5	24.0	28.0	22.0	22.0	15.0
27	20.0	12.0	25.0	15.5	---	---	31.0	20.5	28.0	21.0	23.0	15.5
28	20.0	13.5	25.5	16.0	---	---	29.5	22.0	28.5	22.0	24.0	16.0
29	20.5	12.5	25.0	16.5	---	---	29.5	22.0	28.0	22.5	24.0	16.5
30	18.0	14.0	22.5	15.5	---	---	29.5	21.5	27.5	22.0	24.5	17.0
31	---	---	24.0	15.0	---	---	30.0	22.5	28.0	22.0	---	---
MONTH	20.5	9.0	25.5	11.0	---	---	---	---	29.0	17.5	28.0	14.0

11387990 SOUTH DIVERSION CANAL NEAR ORLAND, CA

LOCATION.--Lat 39°48'36", long 122°19'45", in SE&NE¼ sec.32, T.23 N., R.4 W., Tehama County, on left bank 0.4 mi (0.6 km) downstream from Black Butte Dam, and 8.2 mi (13.2 km) northwest of Orland.

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

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 372.64 ft (113.581 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 23, 1956, at site 0.5 mi (0.8 km) upstream at different datum. Oct. 23, 1956, to Sept. 30, 1960, at present site and datum. Oct. 1, 1960, to Sept. 30, 1961, at datum 1.00 ft (0.305 m) lower.

REMARKS.--Records good. Canal diverts from Black Butte Lake at right end of Black Butte Dam; water is used for irrigation. A pump with a capacity of 6 ft³/s (0.17 m³/s) diverted water at times above station and was included in the canal record prior to Mar. 1, 1970. Total diverted during the current year was 959 acre-ft (1.18 hm³).

AVERAGE DISCHARGE.--23 years, 102 ft³/s (2.889 m³/s), 73,900 acre-ft/yr (91.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 320 ft³/s (9.06 m³/s) May 8, 1969; 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	6.5	8.5	0	.20	1.3	1.4	1.7	16	209	221	248	173
2	2.1	11	0	.30	1.9	1.7	1.7	6.8	236	179	241	146
3	2.1	4.0	.60	.40	2.2	1.9	1.7	0	246	174	238	136
4	2.4	1.9	.30	.40	1.9	6.8	1.7	40	244	178	246	138
5	14	.40	.30	.20	3.1	2.0	1.7	83	240	199	220	140
6	17	0	.10	.20	2.1	1.9	1.7	127	244	198	192	165
7	6.1	0	0	.80	1.6	1.9	1.4	157	261	190	177	187
8	1.4	0	0	1.5	1.4	2.9	1.2	167	264	216	188	196
9	1.7	0	0	3.4	.60	.90	1.1	164	259	243	192	148
10	1.6	0	0	.20	.20	.60	.80	169	243	229	200	23
11	2.0	.40	0	0	.20	.60	.80	178	224	218	215	1.2
12	14	1.0	0	0	1.3	.20	.80	169	214	214	234	4.9
13	18	1.2	0	.60	.40	0	16	175	199	209	218	4.3
14	15	0	0	2.7	.20	1.2	21	173	225	202	208	99
15	.90	0	1.2	.20	.20	1.0	16	156	243	189	205	162
16	.20	0	1.5	1.4	.20	1.0	6.9	159	256	202	206	185
17	.20	0	1.7	0	.90	1.9	3.8	137	256	214	214	212
18	.10	0	1.4	.20	1.1	3.8	3.8	145	261	227	207	199
19	.20	0	.60	0	1.3	4.0	2.9	173	250	228	157	164
20	.10	0	.90	0	1.3	4.0	3.0	194	236	259	136	153
21	0	0	.50	0	1.4	4.8	3.1	210	246	256	154	170
22	0	0	1.1	0	1.5	1.7	3.2	220	250	242	196	169
23	0	0	.30	0	1.3	0	3.1	227	236	241	207	134
24	0	0	.30	0	1.3	.80	11	227	229	240	178	100
25	0	0	.20	.60	1.3	2.2	16	229	213	227	165	79
26	0	0	1.1	.70	1.3	2.3	16	209	213	199	182	78
27	0	0	.50	.60	1.3	2.3	16	190	249	205	184	88
28	0	0	.10	.50	1.5	4.1	16	169	259	198	174	94
29	0	0	.10	.30	---	2.3	16	160	261	178	150	127
30	0	0	.10	.30	---	2.3	16	185	261	184	164	158
31	0	---	.10	1.4	---	2.0	---	204	---	223	181	---
TOTAL	105.60	28.40	13.00	17.10	34.30	64.50	206.10	4818.8	7227	6582	6077	3833.4
MEAN	3.41	.95	.42	.55	1.23	2.08	6.87	155	241	212	196	128
MAX	18	11	1.7	3.4	3.1	6.8	21	229	264	259	248	212
MIN	0	0	0	0	.20	0	.80	0	199	174	136	1.2
AC-FT	209	56	26	34	68	128	409	9560	14330	13060	12050	7600
CAL YR 1977	TOTAL	7651.00	MEAN	21.0	MAX	152	MIN	0	AC-FT	15180		
WTR YR 1978	TOTAL	29007.20	MEAN	79.5	MAX	264	MIN	0	AC-FT	57540		

11387995 BLACK BUTTE LAKE NEAR ORLAND, CA

LOCATION.--Lat 39°48'50", long 122°20'12", in SE4SW4 sec.29, T.23 N., R.4 W., Tehama County, in control tower in right abutment of main dam on Stony Creek, 8 mi (13 km) northwest of Orland.

DRAINAGE AREA.--738 mi² (1,911 km²).

PERIOD OF RECORD.--October 1963 to current year. Prior to October 1971, published as Black Butte Reservoir near Orland.

REVISED RECORDS.--WDR CA-77-4: Drainage area.

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

REMARKS.--Reservoir is formed by seven earthfill dams. Storage began Oct. 28, 1963. Usable capacity, 143,607 acre-ft (177 hm³) between elevations 414.6 ft (126.37 m) minimum operating level, and 473.5 ft (144.32 m) spillway crest. Additional storage of 10,000 acre-ft (12.3 hm³) is not available for release. South Diversion Canal (station 11397990) diverts at right end of dam. Water is released down Stony Creek for irrigation. Records, including extremes, represent total contents at 2400 hours.

COOPERATION.--Records of contents furnished by Corps of Engineers, not rounded to Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 149,700 acre-ft (185 hm³) June 8, 9, 1967, elevation, 471.19 ft (143.619 m); minimum since initial season of operation, 1,006 acre-ft (1.24 hm³) Nov. 6, 1977, elevation, 397.20 ft (121.067 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 137,963 acre-ft (170 hm³) Apr. 25, elevation, 470.58 ft (143.433 m); minimum, 1,006 acre-ft (1.24 hm³) Nov. 6, elevation, 397.20 ft (121.067 m).

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

397	978	415	7751
398	1121	420	11500
399	1282	430	23222
400	1462	440	40852
403	2135	450	65126
406	3040	460	96558
409	4218	470	135472
412	5709	480	182008

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	1334	1231	1653	23558	46523	64932	96874	135771	125155	98253	55409	48399
2	1334	1152	1717	24494	47984	67117	98929	135643	123932	97757	54382	48399
3	1316	1106	1772	26013	49402	70651	100936	135643	123001	97050	53590	48422
4	1282	1048	1802	29979	50655	80932	102785	135686	122274	95718	52340	48446
5	1248	1019	1818	37384	56600	81916	104653	135515	121510	94360	51325	48261
6	1215	1006	1836	41460	62410	79358	107624	135301	120708	93013	50394	47753
7	1183	1019	1841	43554	72445	75505	110452	135045	119870	91712	49472	47226
8	1167	1033	1864	45870	77094	77710	112861	134662	118916	90388	48655	46658
9	1152	1048	1887	46516	77834	79264	114639	134194	117927	88909	48353	46365
10	1152	1032	1911	63226	73397	78516	116433	133982	117022	87476	48330	46342
11	1144	1076	1935	54283	68913	76297	118243	133854	116159	86057	48261	46297
12	1091	1076	1984	48284	69779	73816	119950	133897	115340	84653	48168	46365
13	1062	1091	2058	49661	67485	71295	121590	134109	114407	83262	48145	46365
14	1048	1091	2972	68397	64296	69924	123081	134237	113556	81916	48238	45982
15	1048	1121	5170	72090	60639	70885	125154	134449	112593	80584	48376	45490
16	1048	1136	6164	85436	57343	73128	126834	134577	111635	79077	48469	44890
17	1076	1136	7599	84816	54383	75111	128362	134832	110604	77679	48562	44143
18	1091	1152	8549	75505	52316	76480	129775	135045	109619	76266	48608	43359
19	1106	1152	9031	63938	51229	77587	131197	135259	108675	74778	48538	42670
20	1121	1183	9365	52146	51253	78392	132754	135387	107812	73247	48515	41988
21	1136	1215	9708	43859	51976	79640	134109	135472	106877	71648	48422	41313
22	1152	1387	11212	39532	53319	80995	135429	135429	105984	70098	48168	40706
23	1152	1443	15886	40230	55208	82364	136585	135515	104986	68655	47914	40188
24	1167	1481	17270	41355	57061	83810	137230	135515	104066	67173	47868	39777
25	1183	1494	18046	41355	58768	85142	137963	135173	103077	65711	47984	39491
26	1199	1491	18518	41397	60453	86485	137704	134322	102058	64268	48006	39206
27	1199	1491	19499	41776	62086	87775	137230	132965	101081	62790	48029	38922
28	1215	1530	20540	42435	63444	89210	136843	131490	100253	61306	48099	38599
29	1231	1570	21424	43946	---	90693	136371	130025	99572	59870	48214	38198
30	1231	1611	22290	45023	---	92122	136071	128321	98857	58455	48353	37740
31	1248	---	22991	45758	---	94290	---	126752	---	56906	48446	---
MAX	1334	1611	22991	85436	77834	94290	137963	135771	125155	98253	55409	48446
MIN	1048	1006	1653	23558	46523	64932	96874	126752	98857	56906	47868	37740
†	398.80	400.75	429.84	442.27	449.39	459.35	470.14	467.92	460.65	446.92	443.45	438.47
‡	-103	+363	+21380	+22767	+17686	+30846	+41781	-9319	-27895	-41951	-8460	-10706
††	83	46	74	166	281	518	1209	3045	2836	2955	2161	1543

CAL YR 1977 ‡ +11716
WTR YR 1978 ‡ +36389

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

‡ Change in contents, in acre-feet.

†† Evaporation, in acre-feet.

SACRAMENTO RIVER BASIN

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

LOCATION.--Lat 39°49'07", long 122°19'26", in NW¼SW¼ sec.28, T.23 N., R.4 W., Tehama County, on left bank 200 ft (61 m) downstream from road bridge, 0.6 mi (1.0 km) downstream from Black Butte Dam, 8.1 mi (13.0 km) north-west of Orland.

DRAINAGE AREA.--738 mi² (1,911 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1955 to current year. Prior to October 1962, published as Stony Creek at Black Butte damsite, near Orland.

REVISED RECORDS.--WDR CA-77-4: Drainage area.

GAGE.--Water-stage recorder and grouted rock control. Datum of gage is 366.02 ft (111.563 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Dec. 12, 1960, water-stage recorder at site 0.6 mi (1.0 km) upstream at different datum. Dec. 12, 1960, to Nov. 30, 1963, nonrecording gage at bridge 200 ft (61 m) upstream at datum 4.04 ft (1.231 m) higher.

REMARKS.--Records good. Many diversions above station for irrigation. Flow regulated by Black Butte Lake (station 11387995), East Park Reservoir (station 11385100), usable capacity, 50,900 acre-ft (62.8 hm³), and Stony Gorge Reservoir (station 11386100), usable capacity, 50,400 acre-ft (62.1 hm³). Prior to October 1956, figures of daily discharge included water diverted to South Diversion Canal, which diverts 0.6 mi (1.0 km) above station.

AVERAGE DISCHARGE (adjusted for diversion to South Diversion Canal since 1956 and for change in contents in and evaporation from Black Butte Lake since 1964).--23 years, 633 ft³/s (17.93 m³/s), 458,600 acre-ft/yr (565 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,300 ft³/s (1,030 m³/s) Feb. 24, 1958, gage height, 11.82 ft (3.603 m) site and datum then in use, from rating curve extended above 7,500 ft³/s (212 m³/s) on basis of slope-area measurement of maximum flow; no flow many days in 1956, 1957, 1962. Maximum discharge since construction of Black Butte Dam in 1964, 19,400 ft³/s (549 m³/s) Dec. 25, 1964, gage height, 10.41 ft (3.174 m); no flow at times in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,200 ft³/s (402 m³/s) Jan. 17, gage height, 9.88 ft (3.011 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	13	0		0	482	355	50	821	858	121	494	144
2	12	14		0	487	507	50	824	667	100	358	129
3	9.2	35		0	487	512	50	820	493	214	351	132
4	15	34		0	487	2370	50	809	372	494	365	128
5	11	22		0	2520	4970	51	819	366	514	375	122
6	8.3	5.5		18	5650	4960	52	817	380	502	374	136
7	11	0		47	8230	4820	51	813	381	494	363	140
8	10	0		53	9150	5170	52	839	381	502	358	134
9	9.9	0		784	8220	5750	52	883	379	516	358	121
10	9.4	0		4900	6840	5120	52	897	363	521	380	71
11	8.1	0		6580	5580	4720	52	894	349	514	382	48
12	11	0		4730	5460	4170	52	906	346	525	372	48
13	14	0		4750	5340	3490	50	921	331	527	360	49
14	.30	0		8020	4730	2500	49	883	331	500	332	86
15	0	0		11700	4150	1330	50	872	352	491	323	108
16	0	0		12500	3670	513	49	887	371	513	281	111
17	0	0		12900	3210	506	48	886	374	505	136	124
18	0	0		13100	2740	503	49	880	358	494	139	151
19	0	0		11900	2300	503	22	878	342	512	151	174
20	0	0		10100	1780	503	32	888	325	540	155	175
21	0	0		7300	1320	193	48	903	311	544	156	166
22	0	0		4400	776	7.0	48	906	315	536	174	145
23	0	0		1640	533	4.4	110	903	320	507	176	136
24	0	0		916	533	44	365	901	324	489	158	126
25	0	0		957	533	105	626	903	335	498	139	105
26	0	0		818	487	105	809	876	360	509	116	91
27	0	0		525	456	106	788	867	336	513	111	84
28	0	0		376	456	78	799	850	200	510	121	84
29	0	0		79	---	1.6	809	840	141	505	133	97
30	0	0		307	---	25	809	864	143	506	142	93
31	0	---		501	---	49	---	883	---	520	148	---
TOTAL	142.20	110.5	0	119901	86607	53990.0	6174	26933	10904	14736	7981	3458
MEAN	4.59	3.68	0	3868	3093	1742	206	869	363	475	257	115
MAX	15	35	0	13100	9150	5750	809	921	858	544	494	175
MIN	0	0	0	0	456	1.6	22	809	141	100	111	48
AC-FT	282	219	0	237800	171800	107100	12250	53420	21630	29230	15830	6860

CAL YR 1977 TOTAL 5658.80 MEAN 15.5 MAX 103 MIN 0 AC-FT 11220 MEAN ‡ 58.6 AC-FT ‡ 42420
WTR YR 1978 TOTAL 330936.70 MEAN 907 MAX 13100 MIN 0 AC-FT 656400 MEAN ‡ 1057 AC-FT ‡ 765200

‡ Adjusted for diversion to South Diversion Canal near Orland and for change in contents in and evaporation from Black Butte Lake.

WATER-QUALITY RECORDS

SEDIMENT RECORDS: Water years 1958-59, 1961-62.

WATER TEMPERATURES: Maximum recorded, 26.5°C July 12, Aug. 9-11, 13; minimum recorded, 7.0°C Nov. 2.

[illegible]

11388000 STONY CREEK BELOW BLACK BUTTE DAM, NEAR ORLAND, 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	21.5	15.5	---	---	---	---	---	---	8.5	8.5	13.0	10.5
2	22.5	16.0	15.5	7.0	---	---	---	---	9.0	8.5	11.0	10.5
3	21.5	16.0	16.0	12.5	---	---	---	---	9.0	9.0	12.0	11.0
4	23.0	16.0	13.5	12.0	---	---	---	---	9.0	9.0	13.0	12.0
5	22.5	16.0	14.5	12.0	---	---	---	---	9.5	9.0	13.0	13.0
6	20.5	16.5	13.0	10.5	---	---	---	---	9.5	9.5	13.0	13.0
7	19.5	15.0	14.0	10.5	---	---	10.0	8.5	10.0	9.5	13.0	13.0
8	21.5	15.0	---	---	---	---	9.5	9.0	10.5	10.0	13.0	13.0
9	20.5	15.0	---	---	---	---	10.0	9.5	10.0	10.0	13.0	13.0
10	19.0	15.0	---	---	---	---	10.0	10.0	10.0	9.5	13.0	13.0
11	21.5	15.5	---	---	---	---	10.0	10.0	9.5	9.5	13.0	13.0
12	20.0	15.5	---	---	---	---	10.0	10.0	9.5	9.5	13.0	12.5
13	21.5	15.0	---	---	---	---	10.0	10.0	9.5	9.0	13.0	13.0
14	21.0	17.0	---	---	---	---	10.0	10.0	9.0	9.0	13.0	12.5
15	---	---	---	---	---	---	10.5	10.0	9.0	9.0	13.5	12.5
16	---	---	---	---	---	---	10.5	10.0	9.5	9.5	12.5	12.5
17	---	---	---	---	---	---	10.0	10.0	9.5	9.5	13.0	12.5
18	---	---	---	---	---	---	10.0	10.0	10.0	9.5	13.0	12.5
19	---	---	---	---	---	---	10.0	10.0	10.0	10.0	12.5	12.5
20	---	---	---	---	---	---	10.0	10.0	10.5	10.0	13.0	12.5
21	---	---	---	---	---	---	10.0	10.0	10.5	10.5	15.5	12.5
22	---	---	---	---	---	---	10.0	9.5	11.0	10.0	15.5	15.5
23	---	---	---	---	---	---	9.5	9.5	11.0	10.0	16.5	14.5
24	---	---	---	---	---	---	9.5	9.0	10.5	10.0	16.5	11.5
25	---	---	---	---	---	---	9.0	8.5	10.5	10.5	13.5	11.5
26	---	---	---	---	---	---	9.0	8.5	10.5	10.5	13.5	11.5
27	---	---	---	---	---	---	8.5	8.0	11.0	10.5	14.0	11.5
28	---	---	---	---	---	---	9.0	8.0	11.0	10.5	14.0	11.5
29	---	---	---	---	---	---	9.5	8.0	---	---	15.0	13.0
30	---	---	---	---	---	---	8.5	8.0	---	---	16.0	12.5
31	---	---	---	---	---	---	8.5	8.5	---	---	12.5	12.0
MONTH	---	---	---	---	---	---	10.5	8.0	11.0	8.5	16.5	10.5

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	12.5	11.5	15.0	14.5	19.0	19.0	19.5	19.0	25.0	24.5	23.5	22.0
2	15.0	11.5	15.0	14.5	19.5	18.5	20.0	19.0	25.5	24.5	24.0	22.0
3	13.5	11.5	15.0	14.5	19.5	19.0	21.0	19.0	25.5	24.5	24.0	22.0
4	13.5	11.5	15.0	14.5	20.0	19.0	20.5	20.0	25.5	24.5	24.0	22.0
5	13.5	13.5	15.5	15.0	20.0	19.0	21.0	20.0	25.5	24.5	22.5	22.0
6	13.5	12.5	16.0	15.5	20.0	19.0	21.5	20.5	26.0	25.0	23.5	21.5
7	12.5	12.5	16.0	16.0	20.0	19.0	21.5	20.5	26.0	25.0	23.5	21.5
8	13.0	12.5	16.5	16.0	19.5	19.0	21.5	20.5	26.0	25.0	23.5	21.5
9	15.5	12.5	16.0	15.5	19.5	19.0	22.0	21.0	26.5	25.0	21.5	21.0
10	17.0	13.0	16.0	15.5	20.0	19.0	22.0	21.0	26.5	25.0	23.0	20.5
11	---	---	16.0	15.5	20.0	19.0	22.5	21.5	26.5	25.5	22.0	19.5
12	---	---	16.5	16.0	20.0	19.0	26.5	21.5	26.0	25.5	22.5	18.5
13	---	---	16.5	16.0	19.5	19.0	22.5	21.5	26.5	25.0	22.5	19.5
14	---	---	16.5	16.0	20.5	19.0	22.5	21.5	26.0	25.0	21.5	18.5
15	---	---	16.5	16.0	20.0	19.0	22.5	21.5	26.0	25.0	22.0	19.5
16	---	---	16.5	16.0	20.0	19.0	22.5	22.0	26.0	24.5	21.0	19.5
17	---	---	16.5	16.0	20.5	19.0	23.0	22.0	26.0	23.5	20.5	18.5
18	---	---	17.0	16.5	20.5	19.5	23.0	22.0	26.0	23.5	20.0	18.5
19	17.0	13.0	17.0	16.5	20.5	19.5	23.0	22.5	25.0	23.5	19.5	18.5
20	16.5	13.0	17.0	16.5	20.5	19.5	23.5	22.5	25.0	23.0	19.5	18.0
21	16.5	13.0	17.5	17.0	20.5	19.5	23.5	22.5	24.5	23.0	19.0	18.0
22	17.5	13.0	17.5	17.0	20.5	19.5	24.0	23.5	24.5	23.0	19.5	17.5
23	14.5	13.5	18.0	17.0	20.0	19.5	24.0	23.0	24.5	22.5	19.5	18.0
24	14.5	14.0	18.0	17.5	20.0	19.5	24.5	23.0	24.5	22.5	19.5	18.0
25	14.5	14.5	18.0	17.5	20.5	19.5	24.0	23.5	24.5	22.5	20.0	18.0
26	14.5	14.5	18.0	17.5	20.5	19.5	24.5	23.5	24.0	22.0	19.5	18.0
27	14.5	14.5	18.0	18.0	20.0	19.5	24.5	24.0	24.0	21.5	20.5	17.5
28	14.5	14.0	18.0	18.0	19.5	19.5	25.0	24.0	24.0	22.0	20.5	18.0
29	14.5	14.0	18.5	18.0	19.5	19.5	25.0	24.0	24.0	22.0	20.0	18.0
30	14.5	14.5	18.5	18.0	19.5	19.0	25.0	24.0	24.0	22.0	20.5	18.0
31	---	---	19.0	18.5	---	---	25.0	24.0	24.0	22.0	---	---
MONTH	---	---	19.0	14.5	20.5	18.5	26.5	19.0	26.5	21.5	24.0	17.5

11389000 SACRAMENTO RIVER AT BUTTE CITY, CA

LOCATION.--Lat 39°27'28", long 121°59'35", in SE¼NE¼ sec.32, T.19 N., R.1 W., Glenn County, on left bank 100 ft (30 m) upstream from highway bridge, 0.5 mi (0.8 km) south of Butte City, and at mile 115.8 (186.3 km) upstream from Sacramento.

DRAINAGE AREA.--12,075 mi² (31,274 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1921 to September 1938 (low-water periods only), October 1938 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WDR CA-77-4: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2.92 ft (0.890 m) below National Geodetic Vertical Datum of 1929. Prior to December 1930, at site 0.5 mi (0.8 km) upstream at same datum.

REMARKS.--Records good. Natural flow affected by storage reservoirs, power developments, diversions for irrigation and return flow from irrigated areas. During floods, overbank flow into Butte basin occurs upstream from left (east) bank levee. The combined overbank flow and tributary runoff then flows south on the east bank floodplain into the Butte Sink and Sutter Bypass. Maximum overbank flood flows at the latitude of Butte City are as follows: CURRENT YEAR (Butte Creek at State Highway 162): Maximum discharge, 11,900 ft³/s (337 m³/s) Jan. 17, gage height, 80.81 ft (24.631 m). PERIOD OF RECORD (water years 1970-78): Maximum discharge, 17,200 ft³/s (487 m³/s) Jan. 24, 1970, gage height, 82.0 ft (24.99 m). CURRENT YEAR (combined overbank flow): Maximum discharge, 31,200 ft³/s (884 m³/s) Jan. 17. PERIOD OF RECORD (water years 1970-78): Maximum discharge, 74,300 ft³/s (2,100 m³/s) Jan. 25, 1970. Records do not include overbank flow into the Butte basin.

AVERAGE DISCHARGE.--40 years (water years 1939-78), 13,270 ft³/s (375.8 m³/s), 9,614,000 acre-ft/yr (11.9 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1940-78), 170,000 ft³/s (4,810 m³/s) Feb. 7, 1942, gage height, 96.87 ft (29.526 m); minimum recorded, 1,050 ft³/s (29.7 m³/s) July 15, 25, 26, 1931, gage height, 67.49 ft (20.571 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 121,000 ft³/s (3,430 m³/s) Jan. 17, gage height, 92.84 ft (28.298 m); minimum daily, 2,720 ft³/s (77.0 m³/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	3930	4570	4520	7850	10100	11800	15500	16600	7850	7810	8120	7050
2	3780	4780	4320	6990	9350	12500	23800	15800	7600	7820	8120	6810
3	3640	5030	4230	7810	10600	31400	19800	15200	7240	7830	8010	6730
4	3430	5090	4110	10300	10300	41600	17900	14700	7020	7900	7780	6750
5	3250	5200	4100	17000	10300	77700	22000	14100	6950	8110	7800	6730
6	3140	5280	4120	30700	33000	85600	20500	13900	6700	8070	7950	6860
7	3080	5300	4080	20800	52500	66400	36800	13700	6890	7830	7980	6740
8	3080	5310	4040	14000	73500	54600	28700	13400	6990	7620	7970	6550
9	3020	5260	3980	25100	73100	80900	24300	12500	7030	7550	7850	6760
10	2990	5290	4000	69300	62100	89200	22800	12300	7050	7600	7720	6930
11	2900	5110	4070	66300	44300	72100	21600	11800	7200	7560	7750	7230
12	2790	4930	4220	33200	37500	72800	20800	11400	7050	7420	7690	7240
13	2800	4950	4680	28100	50700	62700	19400	11200	7030	7340	8640	6760
14	2770	4910	4680	45700	45700	56400	18700	11200	7020	7400	9010	6440
15	2720	4890	17700	85000	39200	50800	19100	11400	7190	7900	9040	6370
16	2750	4840	22500	112000	36200	43000	23200	11200	7280	8210	9150	6270
17	2770	4780	16200	116000	31400	35100	21700	10500	7410	8390	9100	6100
18	2910	4680	24700	96400	27700	28600	20100	10100	7500	8280	9080	6060
19	3040	4560	12600	65400	23400	24100	18600	9940	7480	8280	8820	6070
20	3090	4530	8860	64800	21000	21700	18000	9740	7440	8200	8200	6090
21	3110	4710	7200	43500	19500	19600	18600	9620	7350	8190	7900	6010
22	3080	6110	6650	33400	18500	18000	15800	9450	7210	8140	8060	5990
23	3120	7540	16100	27700	16400	17500	14400	9210	7220	8160	7920	6030
24	3150	8060	25500	23300	15100	17300	13400	8870	7250	8190	7380	5990
25	3280	6530	13100	20700	14500	16600	12400	8740	7530	8130	7300	6020
26	3730	6130	9540	18000	13200	15600	21600	8640	7700	8110	7400	6040
27	4110	5750	8160	14800	12900	15100	21500	8480	7680	8040	7580	6110
28	4200	5570	9750	13000	12800	14700	15300	8230	7700	8050	7600	6150
29	4290	5310	9850	12100	---	14500	16200	8180	7820	8040	7730	6170
30	4490	4980	8830	11200	---	14300	16900	8070	7810	8070	7580	6230
31	4560	---	9220	10800	---	14200	---	8000	---	8180	7320	---
TOTAL	103000	159980	285610	1151250	824850	1196400	599400	346170	219190	246420	249550	193280
MEAN	3323	5333	9213	37140	29460	38590	19980	11170	7306	7949	8050	6443
MAX	4560	8060	25500	116000	73500	89200	36800	16600	7850	8390	9150	7240
MIN	2720	4530	3980	6990	9350	11800	12400	8000	6700	7340	7300	5990
AC-FT	204300	317300	566500	2284000	1636000	2373000	1189000	686600	434800	488800	495000	383400
CAL YR 1977 TOTAL	2273050	MEAN	6228	MAX	25500	MIN	2720	AC-FT	4509000			
WTR YR 1978 TOTAL	5575100	MEAN	15270	MAX	116000	MIN	2720	AC-FT	11060000			

11389000 SACRAMENTO RIVER AT BUTTE CITY, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955-67, 1969 to current year.

CHEMICAL ANALYSES: Water years 1955-66.

WATER TEMPERATURES: Water years 1955-58, 1960-67, 1969 to current year.

SEDIMENT RECORDS: Water year 1978.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1955 to June 1963.

WATER TEMPERATURES: May 1955 to September 1958, October 1959 to September 1967, July 1969 to current year.

SEDIMENT RECORDS: November 1977 to July 1978 (storm season only).

INSTRUMENTATION.--Temperature recorder May 1955 to September 1958, October 1959 to September 1967, and since July 1969.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 24.5°C Sept. 6-8, 1977; minimum recorded, 0.0°C Jan. 2-5, 1960.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 21.0°C June 5-8; minimum recorded, 7.0°C Dec. 19-21.

SEDIMENT CONCENTRATIONS (storm season only): Maximum daily mean, 1,630 mg/L Jan. 10; minimum daily mean, 9 mg/L Dec. 9.

SEDIMENT DISCHARGE (storm season only): Maximum daily, 490,000 tons (445,000 metric tons) Jan. 16; minimum daily, 97 tons (88 metric tons) Dec. 9.

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	18.5	17.5	15.0	14.5	11.5	11.5	10.0	9.5	9.5	9.5	12.0	12.0
2	19.0	17.5	14.5	14.5	11.5	11.0	9.5	9.0	9.5	9.5	12.0	11.5
3	19.0	18.0	15.0	14.5	11.0	11.0	9.0	9.0	9.5	9.5	11.5	11.5
4	19.5	18.0	14.5	14.0	11.0	11.0	9.0	9.0	9.5	9.5	11.5	11.5
5	19.0	17.5	14.0	13.5	11.5	11.0	9.0	9.0	10.0	9.5	11.5	11.5
6	18.5	17.5	13.5	13.0	11.5	11.5	9.0	9.0	10.0	10.0	11.5	11.0
7	18.5	17.0	13.0	12.5	11.5	11.5	9.0	9.0	10.0	10.0	11.0	11.0
8	18.5	17.0	12.5	11.5	11.5	10.5	9.5	9.0	10.0	10.0	11.0	11.0
9	18.5	17.0	12.0	11.5	11.0	10.5	10.0	9.5	10.0	9.5	11.5	11.0
10	18.5	17.5	12.0	12.0	10.5	10.5	10.0	10.0	9.5	9.0	11.5	11.5
11	18.5	17.0	12.0	12.0	10.5	10.0	10.0	10.0	9.0	8.5	11.5	11.0
12	18.5	17.5	13.0	12.0	10.0	10.0	10.0	10.0	8.5	8.5	11.0	10.5
13	19.0	18.0	13.0	13.0	10.0	10.0	10.0	10.0	8.5	7.5	10.5	10.0
14	19.0	18.0	13.0	13.0	10.5	10.0	10.0	10.0	8.0	7.5	10.0	10.0
15	18.5	18.0	13.5	13.0	10.5	10.5	10.0	10.0	8.5	8.0	10.0	10.0
16	18.5	17.0	13.5	13.5	10.5	10.0	10.0	10.0	8.5	8.5	---	---
17	18.5	16.5	13.5	13.0	10.0	8.5	10.0	10.0	8.5	8.5	---	---
18	18.5	17.0	13.0	11.5	8.5	7.5	10.0	10.0	9.0	8.5	---	---
19	18.0	17.0	11.5	10.5	7.5	7.0	10.0	10.0	10.0	9.0	---	---
20	17.5	16.5	10.5	9.5	7.0	7.0	10.0	10.0	11.0	10.0	---	---
21	16.5	15.5	9.5	9.0	7.5	7.0	10.0	10.0	11.0	11.0	---	---
22	16.5	15.5	9.0	9.0	8.5	7.5	10.0	9.5	11.5	11.0	---	---
23	16.5	16.0	9.0	9.0	9.5	8.5	9.5	9.0	12.0	11.5	---	---
24	17.0	16.0	9.0	9.0	9.5	9.5	8.5	8.5	12.0	12.0	---	---
25	17.0	16.5	9.0	9.0	9.5	9.5	8.5	8.5	12.0	11.5	---	---
26	17.0	16.5	10.0	9.0	9.5	9.5	8.5	8.5	11.5	11.5	---	---
27	16.5	16.5	10.5	10.0	9.5	9.5	9.0	8.5	11.5	11.5	---	---
28	16.5	16.0	11.0	10.5	9.5	9.5	9.5	9.0	12.0	11.5	---	---
29	16.0	15.5	11.0	11.0	10.0	9.0	9.5	9.5	---	---	---	---
30	15.0	15.0	11.5	11.0	10.0	10.0	9.5	9.5	---	---	---	---
31	15.0	15.0	---	---	10.0	10.0	9.5	9.5	---	---	---	---
MONTH	19.5	15.0	15.0	9.0	11.5	7.0	10.0	8.5	12.0	7.5	---	---

11389000 SACRAMENTO RIVER AT BUTTE CITY, 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	---	---	15.0	14.5	18.5	18.0	18.5	17.5	19.0	18.0	19.0	18.5
2	---	---	15.0	14.5	19.0	18.5	18.5	18.0	19.0	18.5	19.0	19.0
3	---	---	16.0	15.0	19.5	19.0	19.0	18.0	19.0	18.0	19.0	19.0
4	---	---	15.5	14.5	20.0	19.5	19.0	18.5	19.0	18.5	19.0	19.0
5	13.0	12.0	14.5	14.0	21.0	20.0	19.5	18.5	19.0	18.0	19.0	19.0
6	12.0	11.5	14.5	13.0	21.0	21.0	19.5	18.5	19.5	18.5	19.0	18.5
7	11.5	10.0	15.0	13.5	21.0	21.0	19.5	19.0	19.5	19.0	18.5	18.0
8	11.5	10.0	16.0	14.5	21.0	20.5	19.5	19.0	19.5	19.0	18.0	17.5
9	13.0	11.5	16.5	15.0	20.5	20.5	20.0	19.5	20.0	19.0	17.5	17.0
10	14.0	13.0	17.0	15.5	20.5	19.5	20.0	19.5	20.0	18.5	17.0	16.5
11	14.5	14.0	16.5	15.5	19.5	19.0	20.0	19.0	19.0	18.0	16.5	16.5
12	15.0	14.5	17.0	15.5	19.0	18.5	19.5	19.0	19.0	18.0	16.5	16.5
13	15.0	14.0	17.5	16.0	18.5	17.5	19.5	19.0	18.0	17.5	17.0	16.5
14	14.0	13.5	17.5	16.0	18.5	18.0	19.5	19.0	18.0	17.0	17.5	17.0
15	13.5	12.0	16.5	15.5	18.5	18.0	19.5	19.0	17.5	16.5	18.0	17.5
16	12.0	11.0	15.5	14.5	18.5	17.5	19.5	18.5	17.5	17.0	18.5	18.0
17	11.5	11.0	15.5	14.5	18.5	17.5	19.5	18.5	17.5	17.0	18.5	18.0
18	12.5	11.5	16.5	15.5	18.5	17.5	19.5	18.5	17.5	16.5	18.0	16.5
19	12.5	12.5	17.0	16.0	18.5	18.0	19.5	18.5	17.5	16.5	16.5	15.5
20	12.5	12.5	---	---	18.5	18.0	19.5	18.5	17.5	17.0	16.0	15.5
21	12.5	12.5	---	---	18.5	18.0	19.5	18.5	17.5	17.0	16.0	16.0
22	13.5	12.5	---	---	18.5	18.5	19.5	18.5	17.5	16.5	16.5	16.0
23	14.0	13.0	17.0	17.0	18.5	18.0	19.5	18.5	16.5	15.5	17.0	16.0
24	14.0	14.0	17.0	16.5	18.5	18.0	19.5	18.5	16.5	16.0	17.5	17.0
25	14.0	14.0	16.5	15.5	18.5	18.0	19.5	18.5	17.0	16.5	17.5	17.5
26	14.0	14.0	16.5	16.0	18.5	18.0	19.0	18.0	17.5	17.5	17.5	17.5
27	15.0	14.0	17.0	16.0	18.0	16.5	19.5	18.0	18.0	17.5	17.5	17.0
28	16.5	15.0	18.0	17.0	17.5	16.5	19.5	18.5	18.5	18.0	17.0	17.0
29	17.0	16.0	19.0	18.0	18.5	17.5	19.0	18.0	18.5	18.0	17.0	17.0
30	16.5	15.5	19.0	18.0	18.5	18.0	19.0	18.0	18.5	18.5	17.0	16.5
31	---	---	18.5	17.5	---	---	19.0	18.0	18.5	18.5	---	---
MONTH	17.0	10.0	19.0	13.0	21.0	16.5	20.0	17.5	20.0	15.5	19.0	15.5

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

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1				4570	25	308	4520	15	183
2				4780	25	323	4320	14	163
3				5030	25	340	4230	12	137
4				5090	28	385	4110	11	122
5				5200	26	365	4100	10	111
6				5280	30	428	4120	13	145
7				5300	30	429	4080	12	132
8				5310	29	416	4040	12	131
9				5260	28	398	3980	9	97
10				5290	27	386	4000	10	108
11				5110	26	359	4070	10	110
12				4930	26	346	4220	15	171
13				4950	25	334	4680	18	227
14				4910	25	331	4680	21	265
15				4890	25	330	17700	756	47400
16				4840	25	327	22500	1120	68000
17				4780	25	323	16200	980	42900
18				4680	25	316	24700	835	63100
19				4560	25	308	12600	190	6460
20				4530	25	306	8860	108	2580
21				4710	26	331	7200	74	1440
22				6110	70	1150	6650	50	898
23				7540	110	2240	16100	495	34500
24				8060	105	2290	25500	1400	104000
25				6530	50	882	13100	460	16300
26				6130	45	745	9540	160	4120
27				5750	35	543	8160	85	1870
28				5570	30	451	9750	77	2030
29				5310	25	358	9850	86	2290
30				4980	22	296	8830	90	2150
31				---	---	---	9220	90	2240
TOTAL				159980	---	16344	285610	---	404380

11389000 SACRAMENTO RIVER AT BUTTE 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	7850	74	1570	10100	75	2050	11800	115	3660
2	6990	41	774	9350	70	1770	12500	185	6240
3	7810	50	1050	10600	95	2720	31400	510	43200
4	10300	90	2500	10300	85	2360	41600	890	100000
5	17000	254	14800	10300	80	2220	77700	970	203000
6	30700	990	82100	33000	1040	95500	85600	490	113000
7	20800	410	23000	52500	1070	152000	66400	360	64500
8	14000	220	8320	73500	920	183000	54600	370	54500
9	25100	720	67000	73100	780	154000	80900	840	183000
10	69300	1630	305000	62100	640	107000	89200	560	135000
11	66300	710	127000	44300	420	50200	72100	370	72000
12	33200	535	48000	37500	370	37500	72800	420	82600
13	28100	362	27500	50700	540	73900	62700	370	62600
14	45700	840	104000	45700	295	36400	56400	305	46400
15	85000	1330	305000	39200	230	24300	50800	250	34300
16	112000	1620	490000	36200	200	19500	43000	305	35400
17	116000	960	301000	31400	200	17000	35100	340	32200
18	96400	640	167000	27700	190	14200	28600	305	23600
19	65400	505	89200	23400	170	10700	24100	220	14300
20	64800	630	110000	21000	147	8330	21700	160	9370
21	43500	525	61700	19500	136	7160	19600	142	7510
22	33400	400	36100	18500	106	5290	18000	116	5640
23	27700	315	23600	16400	111	4920	17500	105	4960
24	23300	220	13800	15100	112	4570	17300	108	5040
25	20700	190	10600	14500	110	4310	16600	105	4710
26	18000	170	8260	13200	110	3920	15600	104	4380
27	14800	140	5590	12900	125	4350	15100	105	4280
28	13000	130	4560	12800	120	4150	14700	100	3970
29	12100	130	4250	---	---	---	14500	100	3920
30	11200	120	3630	---	---	---	14300	100	3860
31	10800	90	2620	---	---	---	14200	86	3300
TOTAL	1151250	---	2449524	824850	---	1033320	1196400	---	1370440

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	15500	95	3980	16600	68	3050	7850	36	763
2	23800	274	17600	15800	52	2220	7600	30	616
3	19800	180	9620	15200	52	2130	7240	30	586
4	17900	116	5610	14700	55	2180	7020	30	569
5	22000	265	15700	14100	55	2090	6950	28	525
6	20500	165	9550	13900	45	1690	6700	26	470
7	36800	386	38900	13700	38	1410	6890	34	633
8	28700	339	26900	13400	38	1370	6990	35	661
9	24300	190	12500	12500	37	1250	7030	35	664
10	22800	105	6460	12300	38	1260	7050	33	628
11	21600	89	5190	11800	38	1210	7200	33	642
12	20800	86	4830	11400	36	1110	7050	33	628
13	19400	80	4190	11200	37	1120	7030	34	645
14	18700	76	3840	11200	41	1240	7020	32	607
15	19100	78	4020	11400	34	1050	7190	32	621
16	23200	190	11900	11200	36	1090	7280	32	629
17	21700	136	7970	10500	38	1080	7410	30	600
18	20100	94	5100	10100	36	982	7500	32	648
19	18600	74	3720	9940	34	912	7480	30	606
20	18000	116	5640	9740	36	947	7440	34	683
21	18600	158	7930	9620	38	987	7350	29	576
22	15800	63	2690	9450	36	919	7210	26	506
23	14400	44	1710	9210	35	870	7220	25	487
24	13400	35	1270	8870	33	790	7250	25	489
25	12400	50	1670	8740	31	732	7530	25	508
26	21600	194	11300	8640	28	653	7700	24	499
27	21500	205	11900	8480	30	687	7680	27	560
28	15300	84	3470	8230	30	667	7700	27	561
29	16200	79	3460	8180	30	663	7820	26	549
30	16900	76	3470	8070	32	697	7810	26	548
31	---	---	---	8000	35	756	---	---	---
TOTAL	599400	---	252090	346170	---	37812	219190	---	17707

11389000 SACRAMENTO RIVER AT BUTTE CITY, CA--Continued

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

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	7810	25	527						
2	7820	24	507						
3	7830	24	507						
4	7900	25	533						
5	8110	26	569						
6	8070	25	545						
7	7830	24	507						
8	7620	23	473						
9	7550	22	448						
10	7600	22	451						
11	7560	21	429						
12	7420	21	421						
13	7340	20	396						
14	7400	23	460						
15	7900	26	555						
16	8210	27	599						
17	8390	28	634						
18	8280	25	559						
19	8280	23	514						
20	8200	21	465						
21	8190	23	509						
22	8140	25	549						
23	8160	24	529						
24	8190	24	531						
25	8130	23	505						
26	8110	23	504						
27	8040	23	499						
28	8050	23	500						
29	8040	22	478						
30	8070	22	479						
31	8180	22	486						
TOTAL	246420	---	15668						
PERIOD	5029270	---	5597285						

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- 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
NOV								
03...	1154	5120	15.0	24	332	--	--	--
DEC								
16...	1255	21000	10.0	933	52900	33	51	68
JAN								
04...	1230	10400	9.0	92	2580	--	--	--
11...	1205	69700	10.0	648	122000	33	44	56
12...	1230	31700	10.0	532	45500	23	29	37
17...	1400	119000	10.0	906	291000	34	49	64
APR								
20...	1105	16900	13.0	53	2420	--	--	--
JUN								
01...	1200	7870	18.5	36	765	--	--	--
JUL								
05...	1330	8090	19.0	26	568	--	--	--
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
NOV								
03...		--	--	81	94	100	--	--
DEC								
16...		80	87	91	94	99	100	--
JAN								
04...		--	--	83	88	97	100	--
11...		67	79	88	94	98	100	--
12...		48	59	68	84	98	99	100
17...		76	85	89	92	97	100	--
APR								
20...		--	--	63	75	96	100	--
JUN								
01...		--	--	89	97	100	--	--
JUL								
05...		--	--	83	100	--	--	--

11389000 SACRAMENTO RIVER AT BUTTE CITY, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM
NOV								
03...	1330	15.0	5	5120	0	0	6	64
03...	1331	--	--	--	0	2	16	42
03...	1332	--	--	--	0	0	8	60
03...	1333	--	--	--	0	0	11	74
03...	1334	--	--	--	1	6	22	41
DEC								
01...	1140	12.0	5	4540	0	2	9	60
01...	1145	--	--	--	0	2	15	30
01...	1150	--	--	--	0	0	7	52
01...	1155	--	--	--	0	1	8	24
01...	1200	--	--	--	4	20	44	53
16...	1315	10.0	5	21000	0	0	4	57
16...	1316	--	--	--	0	0	1	2
16...	1317	--	--	--	0	0	10	52
16...	1318	--	--	--	0	5	72	92
16...	1319	--	--	--	0	3	40	58
JAN								
04...	1330	9.0	5	10300	0	0	1	31
04...	1331	--	--	--	0	0	1	3
04...	1332	--	--	--	0	0	12	88
04...	1333	--	--	--	0	0	13	92
04...	1334	--	--	--	0	0	14	85
APR								
20...	1205	13.0	5	16800	0	1	9	12
20...	1206	--	--	--	0	0	10	44
20...	1207	--	--	--	0	0	10	31
20...	1208	--	--	--	0	0	11	70
20...	1209	--	--	--	0	0	10	29
JUN								
01...	1305	18.5	5	7850	0	1	16	50
01...	1306	--	--	--	0	1	2	4
01...	1307	--	--	--	0	0	8	57
01...	1308	--	--	--	0	1	12	30
01...	1309	--	--	--	0	1	7	22
JUL								
05...	1435	19.0	5	8110	0	1	16	49
05...	1436	--	--	--	0	2	11	19
05...	1437	--	--	--	0	1	10	36
05...	1438	--	--	--	0	2	12	22
05...	1439	--	--	--	0	2	8	19

DATE	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
NOV							
03...	82	94	100	--	--	--	--
03...	46	49	55	67	90	100	--
03...	83	86	88	92	96	100	--
03...	90	97	100	--	--	--	--
03...	47	53	67	87	100	--	--
DEC							
01...	88	91	93	95	96	100	--
01...	33	35	42	59	74	100	--
01...	62	64	68	83	97	100	--
01...	26	30	38	58	96	100	--
01...	54	57	62	71	89	100	--
16...	80	89	94	98	100	--	--
16...	3	3	4	9	21	100	--
16...	78	85	90	96	100	--	--
16...	94	95	96	98	100	--	--
16...	60	62	67	78	92	100	--
JAN							
04...	52	58	65	80	100	--	--
04...	3	3	4	11	21	41	100
04...	95	97	98	100	--	--	--
04...	97	98	99	100	--	--	--
04...	91	93	94	95	96	100	--
APR							
20...	12	16	36	69	100	--	--
20...	47	49	53	61	85	100	--
20...	32	34	40	57	91	100	--
20...	76	77	79	84	97	100	--
20...	31	34	47	75	100	--	--
JUN							
01...	52	55	66	86	100	--	--
01...	4	5	8	11	84	100	--
01...	64	66	69	79	100	--	--
01...	32	34	40	55	85	100	--
01...	24	28	39	64	100	--	--
JUL							
05...	50	53	65	88	100	--	--
05...	20	22	30	47	86	100	--
05...	39	41	48	63	88	100	--
05...	24	26	34	56	94	100	--
05...	21	24	36	64	92	100	--

11389000 SACRAMENTO RIVER AT BUTTE CITY, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM
AUG							
02...	1225	18.5	5	8230	0	1	13
02...	1226	--	--	--	0	1	10
02...	1227	--	--	--	0	1	10
02...	1228	--	--	--	0	1	9
02...	1229	--	--	--	1	2	6

DATE	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM
AUG							
02...	21	22	25	37	63	95	100
02...	16	16	18	22	40	56	100
02...	20	22	24	35	56	94	100
02...	16	17	19	25	39	70	100
02...	8	8	9	10	19	33	100

PARTICLE-SIZE DISTRIBUTION OF SEDIMENT IN TRANSIT WITHIN 0.25 FOOT OF BED SURFACE,
WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

					SEDIMENT DISCHARGE, BEDLOAD (TONS/DAY)	SED. BEDLOAD SIEVE DIAM. % FINER THAN .062 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN .125 MM
DATE	TIME	TEMPERATURE (DEG C)	NUMBER OF SAMPLING POINTS	STREAM FLOW, INSTANTANEOUS (CFS)	STREAM WIDTH (FT)		
DEC 01...	1200	12.0	23	4520	468	12	0
16...	1145	10.0	19	22400	490	158	0
		SED. BEDLOAD SIEVE DIAM. % FINER THAN .250 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN .500 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 1.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 2.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 4.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 8.00 MM
DATE							
DEC 01...	13	87	98	100	--	--	--
16...	25	76	94	97	98	99	100

11389500 SACRAMENTO RIVER AT COLUSA, CA

LOCATION.--Lat 39°12'51", long 121°59'57", at north end of Jimeno Grant, Colusa County, on right bank just downstream from highway bridge at Colusa, and at mile 89.4 (143.8 km) upstream from Sacramento.

DRAINAGE AREA.--12,090 mi² (31,313 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1921 to October 1939 (low-water periods only), June 1940 to current year.

REVISED RECORDS.--WSP 1345: 1952. WDR CA-77-4; Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2.95 ft (0.899 m) National Geodetic Vertical Datum of 1929. Prior to December 1930, water-stage recorder in center fender pier 50 ft (15 m) upstream from bridge at same datum.

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, power development, bypassing for flood control, diversions for irrigation, and return flow from irrigated areas.

AVERAGE DISCHARGE.--38 years (water years 1941-78), 11,490 ft³/s (325.4 m³/s), 8,325,000 acre-ft/yr (10.3 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1941-78), 49,000 ft³/s (1,390 m³/s) Feb. 8, 1942, gage height, 69.20 ft (21.092 m); minimum discharge recorded, 820 ft³/s (23.2 m³/s) July 25, 26, 1931, gage height, 34.79 ft (10.604 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 45,200 ft³/s (1280 m³/s) Jan. 18, gage height 66.36 ft (20.227 m); minimum daily, 2,620 ft³/s (74.2 m³/s) Oct. 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	3920	4390	4640	8950	12300	13700	14400	16200	7410	7660	8090	7050
2	3760	4460	4430	7910	11500	13200	19500	15700	7190	7650	8200	6790
3	3680	4790	4310	7650	11600	23200	22000	14900	6860	7750	7930	6870
4	3450	4870	4220	10100	12400	33000	18300	14400	6530	7730	7740	6910
5	3280	4960	4150	12400	11600	38400	20800	13900	6380	7950	7720	6960
6	3160	5060	4160	25100	21200	41500	19500	13500	6270	7990	7810	7240
7	3050	5110	4130	26600	34600	39800	27800	13200	6540	7790	7830	7240
8	3010	5120	4070	18300	38500	37300	30900	12900	6720	7470	7820	6960
9	2980	5060	4050	17000	40000	39000	25700	12200	6710	7410	7830	7110
10	2970	5080	4000	36100	39100	41700	23500	11700	6740	7460	7770	7370
11	2890	5060	4060	40700	36000	40200	22000	11300	6930	7460	7750	7520
12	2770	4760	4180	34200	33900	39600	21000	10800	6730	7300	7640	7800
13	2730	4750	4520	29500	35200	38700	20000	10500	6700	7160	8450	7540
14	2700	4750	4690	32700	35900	37400	18800	10400	6750	7180	8950	7030
15	2650	4710	8760	39300	34300	36400	18900	10500	6920	7760	9020	6890
16	2620	4690	23200	43900	33300	34900	20200	10600	7180	8120	9080	6760
17	2640	4610	15600	44400	32000	32900	23000	9960	7250	8220	9090	6650
18	2750	4550	23300	44200	29500	30200	20800	9390	7250	8200	9050	6510
19	2860	4430	18300	39900	26000	25500	19300	9090	7830	8160	8710	6410
20	3000	4330	11300	39100	22700	22500	17800	8960	7250	8100	8040	6360
21	2970	4450	8540	36600	21100	20400	18800	8810	7160	8090	7980	6380
22	2950	5190	7360	33200	20000	18600	16700	8710	7140	8040	8020	6310
23	2980	7050	10300	30500	18700	17600	14700	8580	7100	8040	7970	6290
24	3010	7610	24500	26000	16900	17100	13700	8270	7080	8120	7360	6300
25	3050	6840	18400	22700	16200	17100	12300	8140	7270	8020	7270	6280
26	3380	6110	11800	20500	15300	16000	16800	8050	7530	8010	7360	6330
27	3850	5740	9310	17800	14200	15400	21800	7950	7530	7980	7470	6370
28	4010	5560	9560	15400	14600	15000	17500	7740	7570	7960	7550	6430
29	4100	5330	10600	14200	---	14700	15200	7690	7590	7900	7700	6460
30	4250	5080	9550	13300	---	14500	16500	7580	7650	7960	7570	6490
31	4380	---	9850	12700	---	14200	---	7460	---	8060	7260	---
TOTAL	99800	154500	289840	800910	688600	839700	588200	329080	211140	242700	248030	203610
MEAN	3219	5150	9350	25840	24590	27090	19610	10620	7038	7829	8001	6787
MAX	4380	7610	24500	44400	40000	41700	30900	16200	7650	8220	9090	7800
MIN	2620	4330	4000	7650	11500	13200	12300	7460	6270	7160	7260	6280
AC-FT	198000	306500	574900	1589000	1366000	1666000	1167000	652700	418800	481400	492000	403900
CAL YR 1977 TOTAL	2230670			MEAN 6111	MAX 24500	MIN 2620	AC-FT 4425000					
WTR YR 1978 TOTAL	4696110			MEAN 12870	MAX 44400	MIN 2620	AC-FT 9315000					

11389500 SACRAMENTO RIVER AT COLUSA, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1959-66, 1972 to current year.

CHEMICAL ANALYSES: Water years 1959-66, 1972.

WATER TEMPERATURES: Water years 1977 to current year.

SEDIMENT RECORDS: Water years 1973 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1976 to current year (storm season only).

SEDIMENT RECORDS: December 1972 to September 1976, (flood periods only), January 1977 to current year (storm season only).

REMARKS.--Prior to September 1976 total sediment discharge tabulated only on days of spill over Colusa Wier.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATIONS (water years 1973, 1975-78): Maximum daily mean, 1,040 mg/L Mar. 8, 1975, minimum daily mean recorded, 10 mg/L Mar. 5, May 29-31, 1977.

SEDIMENT DISCHARGE (water years 1973, 1975-78): Maximum daily, 103,000 tons (93,400 metric tons) Feb. 14, 1975, minimum daily recorded 138 tons (125 metric tons) Mar. 5, 1977.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATIONS (storm season only): Maximum daily mean, 2,000 mg/L Dec. 24; minimum daily mean, 26 mg/L Dec. 6, 7.

SEDIMENT DISCHARGE (storm season only): Maximum daily, 171,000 tons (155,000 metric tons); minimum daily, 290 tons (263 metric tons) Dec. 7.

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	---	---	14.0	---	---	---	---	15.5	18.0	17.5	---	---
2	---	---	11.0	---	---	---	---	16.0	---	18.0	---	---
3	---	---	---	10.0	---	---	---	---	---	19.5	20.0	---
4	18.5	14.5	11.5	---	---	---	---	---	19.5	---	---	---
5	---	13.5	---	---	---	11.0	11.0	---	21.5	20.5	---	---
6	---	---	---	10.0	11.0	---	---	---	22.0	---	---	---
7	---	15.0	12.0	11.0	12.0	11.5	---	---	---	22.0	---	---
8	---	---	---	11.0	---	---	---	---	---	---	---	---
9	---	14.0	---	12.0	---	11.0	---	16.0	19.5	22.5	---	---
10	---	---	---	11.0	12.0	---	---	16.0	20.5	---	---	---
11	---	14.0	---	12.0	---	---	14.0	16.5	---	22.0	---	---
12	---	15.0	---	12.0	---	12.0	---	19.0	17.0	---	---	---
13	---	---	---	12.0	---	11.0	12.0	17.0	17.5	23.5	---	---
14	---	---	11.0	---	---	---	---	18.0	18.0	---	---	---
15	---	15.0	12.0	---	---	---	---	17.0	19.0	22.0	---	---
16	---	15.0	10.0	12.0	---	---	---	16.0	17.0	---	---	---
17	---	15.0	9.5	11.0	---	---	---	17.0	---	21.5	---	---
18	---	14.0	8.0	12.0	---	---	---	17.0	18.0	---	---	---
19	---	---	7.0	10.5	---	---	13.5	19.0	18.0	22.0	---	---
20	---	---	8.0	12.0	---	---	---	17.0	17.5	---	---	---
21	---	---	---	---	---	---	---	18.0	---	22.0	---	---
22	---	11.0	8.0	---	---	---	---	17.0	23.5	---	---	---
23	---	11.0	10.0	11.0	---	---	---	18.0	20.0	22.0	---	---
24	---	11.0	10.0	---	---	---	---	18.0	---	---	---	---
25	---	12.0	---	---	---	---	---	17.5	---	21.5	---	---
26	---	---	---	---	---	---	---	16.0	23.0	---	---	---
27	---	12.0	10.0	---	---	---	---	17.0	---	22.0	---	---
28	---	13.5	11.0	---	---	---	---	18.5	---	---	---	---
29	---	13.5	11.0	11.0	---	---	---	18.0	19.0	21.0	---	---
30	---	---	11.0	11.0	---	---	---	19.0	21.0	---	---	---
31	---	---	12.0	11.0	---	---	---	18.5	---	22.0	---	---
MONTH	---	---	---	---	---	---	---	17.5	---	---	---	---

SACRAMENTO RIVER BASIN

11389500 SACRAMENTO RIVER AT COLUSA, 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				4390	46	545	4640	32	401
2				4460	47	566	4430	30	359
3				4790	48	621	4310	28	326
4				4870	49	644	4220	28	319
5				4960	52	696	4150	27	303
6				5060	56	765	4160	26	292
7				5110	60	828	4130	26	290
8				5120	54	746	4070	43	473
9				5060	42	574	4050	39	426
10				5080	42	576	4000	37	400
11				5060	41	560	4060	36	395
12				4760	38	488	4180	36	406
13				4750	39	500	4520	36	439
14				4750	40	513	4690	36	456
15				4710	40	509	8760	325	12100
16				4690	40	507	23200	1120	70200
17				4610	35	436	15600	670	28200
18				4550	34	418	23300	800	50300
19				4430	34	407	18300	320	15800
20				4330	34	397	11300	200	6100
21				4450	36	433	8540	150	3460
22				5190	43	603	7360	110	2190
23				7050	120	2280	10300	258	8850
24				7610	158	3250	24500	2000	132000
25				6840	105	1940	18400	1070	53200
26				6110	98	1620	11800	500	15900
27				5740	99	1530	9310	170	4270
28				5560	60	901	9560	94	2430
29				5330	38	547	10600	112	3210
30				5080	34	466	9550	94	2420
31				---	---	---	9850	120	3190
TOTAL				154500	---	24866	289840	---	419105

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	8950	110	2660	12300	96	3190	13700	89	3290
2	7910	84	1790	11500	87	2700	13200	80	2850
3	7650	67	1380	11600	96	3010	23200	500	31300
4	10100	63	1720	12400	115	3850	33000	990	88200
5	12400	102	3820	11600	87	2720	38400	820	85000
6	25100	1050	71200	21200	764	52100	41500	490	54900
7	26600	620	44500	34600	1150	107000	39800	330	35500
8	18300	280	13800	38500	1060	110000	37300	330	33200
9	17000	300	13800	40000	920	99400	39000	640	67400
10	36100	1750	171000	39100	660	69700	41700	540	60800
11	40700	760	83500	36000	550	53500	40200	480	52100
12	34200	440	40600	33900	530	48500	39600	410	43800
13	29500	320	25500	35200	640	60800	38700	225	23500
14	32700	460	40600	35900	590	57200	37400	180	18200
15	39300	930	98700	34300	460	42600	36400	160	15700
16	43900	850	101000	33300	400	36000	34900	150	14100
17	44400	640	76700	32000	360	31100	32900	145	12900
18	44200	590	70400	29500	330	26300	30200	130	10600
19	39900	580	62500	26000	300	21100	25500	130	8950
20	39100	600	63300	22700	280	17200	22500	120	7290
21	36600	490	48400	21100	250	14200	20400	120	6610
22	33200	390	35000	20000	220	11900	18600	110	5520
23	30500	320	26400	18700	200	10100	17600	110	5230
24	26000	270	19000	16900	170	7760	17100	100	4620
25	22700	240	14700	16200	150	6560	17100	97	4480
26	20500	200	11100	15300	136	5620	16000	91	3930
27	17800	185	8890	14200	108	4140	15400	85	3530
28	15400	160	6650	14600	99	3900	15000	85	3440
29	14200	145	5560	---	---	---	14700	80	3180
30	13300	130	4670	---	---	---	14500	76	2980
31	12700	105	3600	---	---	---	14200	76	2910
TOTAL	800910	---	1172440	688600	---	912150	839700	---	716010

11389500 SACRAMENTO RIVER AT COLUSA, CA--Continued

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	14400	76	2950	16200	117	5120	7410	125	2500
2	19500	210	11100	15700	99	4200	7190	123	2390
3	22000	190	11300	14900	99	3980	6860	122	2260
4	18300	93	4600	14400	103	4000	6530	121	2130
5	20800	170	9550	13900	103	3870	6380	123	2120
6	19500	200	10500	13500	103	3750	6270	126	2130
7	27800	460	34500	13200	103	3670	6540	127	2240
8	30900	360	30000	12900	102	3550	6720	128	2320
9	25700	240	16700	12200	104	3430	6710	128	2320
10	23500	200	12700	11700	113	3570	6740	129	2350
11	22000	170	10100	11300	152	4640	6930	144	2690
12	21000	140	7940	10800	173	5040	6730	157	2850
13	20000	120	6480	10500	162	4590	6700	148	2680
14	18800	110	5580	10400	152	4270	6750	146	2660
15	18900	130	6630	10500	132	3740	6920	147	2750
16	20200	170	9270	10600	138	3950	7160	144	2780
17	23000	190	11800	9960	168	4520	7250	136	2660
18	20800	110	6180	9390	209	5300	7250	121	2370
19	19300	93	4850	9090	194	4760	7230	109	2130
20	17800	87	4180	8960	135	3270	7250	109	2130
21	18800	120	6090	8810	135	3210	7160	109	2110
22	16700	91	4100	8710	150	3530	7140	109	2100
23	14700	85	3370	8580	162	3750	7100	109	2090
24	13700	80	2960	8270	168	3750	7080	106	2030
25	12300	83	2760	8140	159	3490	7270	96	1880
26	16800	280	12700	8050	135	2930	7530	83	1690
27	21800	320	18800	7950	124	2660	7530	83	1690
28	17500	190	8980	7740	127	2650	7570	90	1840
29	15200	180	7390	7690	127	2640	7590	107	2190
30	16500	170	7570	7580	127	2600	7650	125	2580
31	---	---	---	7460	126	2540	---	---	---
TOTAL	588200	---	291630	329080	---	116970	211140	---	68660
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	7660	113	2340						
2	7650	103	2130						
3	7750	103	2160						
4	7730	110	2300						
5	7950	114	2450						
6	7990	109	2350						
7	7790	104	2190						
8	7470	99	2000						
9	7410	90	1800						
10	7460	90	1810						
11	7460	89	1790						
12	7300	88	1730						
13	7160	88	1700						
14	7180	106	2050						
15	7760	116	2430						
16	8120	112	2460						
17	8220	105	2330						
18	8200	102	2260						
19	8160	99	2180						
20	8100	90	1970						
21	8090	87	1900						
22	8040	93	2020						
23	8040	96	2080						
24	8120	88	1930						
25	8020	79	1710						
26	8010	77	1670						
27	7980	87	1870						
28	7960	95	2040						
29	7900	95	2030						
30	7960	93	2000						
31	8060	91	1980						
TOTAL	242700	---	63660						
PERIOD	4144670	---	3785491						

SACRAMENTO RIVER BASIN

11389500 SACRAMENTO RIVER AT COLUSA, 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
NOV								
04...	1035	14.5	4890	52	687	--	--	--
DEC								
17...	1732	10.0	14300	636	24600	36	52	68
JAN								
03...	1257	10.0	7460	65	1310	--	--	--
11...	1735	12.0	40500	601	65700	36	49	60
19...	0855	10.5	40100	572	61900	40	51	64
FEB								
08...	1242	10.0	38600	1010	105000	27	38	51
MAR								
07...	1120	11.5	39900	319	34400	23	33	44
APR								
19...	1300	13.5	19200	95	4930	--	--	--
MAY								
17...	1900	17.0	9730	194	5100	--	--	--

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
NOV							
04...	--	--	60	74	90	96	100
DEC							
17...	79	84	89	93	97	100	--
JAN							
03...	--	--	70	83	95	100	--
11...	69	74	82	91	98	100	--
19...	75	82	89	94	98	100	--
FEB							
08...	64	75	86	93	99	100	--
MAR							
07...	56	67	76	86	97	100	--
APR							
19...	--	--	60	80	98	100	--
MAY							
17...	--	--	62	86	100	--	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM
NOV							
04...	0958	14.5	5	4890	3	13	30
04...	0959	--	--	--	--	--	0
04...	1000	--	--	--	0	1	26
04...	1001	--	--	--	0	2	43
04...	1002	--	--	--	--	0	4
DEC							
02...	0910	11.0	5	4460	6	20	38
02...	0911	--	--	--	--	0	1
02...	0912	--	--	--	--	0	6
02...	0913	--	--	--	--	0	27
02...	0914	--	--	--	0	1	27
02...	1730	10.0	5	14300	0	4	40
17...	1731	--	--	--	--	0	2
17...	1732	--	--	--	--	0	4
17...	1733	--	--	--	0	1	23
17...	1734	--	--	--	--	0	18
JAN							
03...	1300	10.0	5	7460	0	2	10
03...	1301	--	--	--	--	0	3
03...	1302	--	--	--	--	0	6
03...	1303	--	--	--	--	0	12
03...	1304	--	--	--	0	2	20
19...	0855	10.5	5	40100	--	0	12
19...	0856	--	--	--	--	0	3
19...	0857	--	--	--	--	0	1
19...	0858	--	--	--	0	1	1
19...	0859	--	--	--	--	--	0
FEB							
08...	1243	10.0	5	38600	1	3	28
08...	1244	--	--	--	0	1	8
08...	1245	--	--	--	--	0	2
08...	1246	--	--	--	--	0	3
08...	1247	--	--	--	--	0	47

11389500 SACRAMENTO RIVER AT COLUSA, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM
MAR							
07...	1120	11.5	4	39900	--	0	9
07...	1122	--	--	--	--	0	3
07...	1123	--	--	--	--	0	1
07...	1124	--	--	--	--	0	4
APR							
11...	1228	14.0	4	22000	0	2	23
11...	1230	--	--	--	0	0	6
11...	1231	--	--	--	0	0	6
11...	1232	--	--	--	0	1	7
MAY							
31...	1412	19.0	5	7510	0	5	55
31...	1413	--	--	--	0	2	52
31...	1415	--	--	--	0	1	6
31...	1416	--	--	--	0	1	6
31...	1417	--	--	--	2	7	17
JUN							
29...	1227	19.0	5	7670	0	4	92
29...	1228	--	--	--	0	3	71
29...	1229	--	--	--	0	1	30
29...	1230	--	--	--	0	0	6
29...	1231	--	--	--	0	3	9
AUG							
03...	0938	20.0	5	7930	0	16	94
03...	0939	--	--	--	0	3	66
03...	0940	--	--	--	0	1	34
03...	0941	--	--	--	--	0	15
03...	0942	--	--	--	2	3	38
DATE	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM
NOV							
04...	48	53	58	73	97	100	--
04...	21	66	89	96	99	100	--
04...	98	100	--	--	--	--	--
04...	98	100	--	--	--	--	--
04...	87	98	99	100	--	--	--
DEC							
02...	51	54	58	71	97	100	--
02...	37	72	85	96	100	--	--
02...	86	99	100	--	--	--	--
02...	99	99	100	--	--	--	--
02...	99	99	100	--	--	--	--
17...	80	96	100	--	--	--	--
17...	34	77	88	92	96	100	--
17...	76	96	97	98	99	100	--
17...	67	72	76	84	92	100	--
17...	90	97	98	99	100	--	--
JAN							
03...	29	32	35	46	79	96	100
03...	21	33	44	60	80	98	100
03...	83	97	98	98	99	100	--
03...	56	62	66	72	80	100	--
03...	92	96	98	99	100	--	--
19...	92	96	96	97	99	100	--
19...	63	85	86	89	91	93	100
19...	28	60	70	78	87	90	100
19...	16	48	69	82	94	100	--
19...	6	44	89	100	--	--	--
FEB							
08...	69	73	77	84	90	100	--
08...	56	69	73	78	85	93	100
08...	10	20	29	49	82	100	--
08...	14	17	20	32	55	75	100
08...	89	95	100	--	--	--	--
MAR							
07...	86	92	94	96	100	--	--
07...	36	71	81	88	95	100	--
07...	4	9	15	33	70	96	100
07...	26	31	38	52	75	88	100
APR							
11...	50	52	55	64	80	100	--

SACRAMENTO RIVER BASIN

11389500 SACRAMENTO RIVER AT COLUSA, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM
APR							
11...	39	52	58	67	78	100	--
11...	29	51	63	78	94	100	--
11...	14	18	24	38	68	100	--
MAY							
31...	97	99	100	--	--	--	--
31...	96	99	99	100	--	--	--
31...	77	95	97	99	100	--	--
31...	28	32	38	53	81	100	--
31...	25	25	25	28	56	100	--
JUN							
29...	100	--	--	--	--	--	--
29...	94	98	99	100	--	--	--
29...	82	95	97	99	100	--	--
29...	46	65	77	88	97	100	--
29...	13	14	15	17	28	74	100
AUG							
03...	100	--	--	--	--	--	--
03...	99	100	--	--	--	--	--
03...	98	99	99	99	100	--	--
03...	89	93	96	98	99	100	--
03...	98	100	--	--	--	--	--

11389950 LITTLE BUTTE CREEK AT MAGALIA, CA

LOCATION.--Lat 39°48'38", long 121°35'00", in NW¼NE¼ sec.36, T.23 N., R.3 E., Butte County, on left bank 1,000 ft (305 m) downstream from Magalia Dam, and 0.4 mi (0.6 km) northwest of Magalia.

DRAINAGE AREA.--11.4 mi² (29.5 km²).

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,160 ft (658 m), from topographic map.

REMARKS.--Records fair. Flow regulated by Paradise Reservoir, usable capacity, 11,500 acre-ft (14.180 hm³), and Magalia Reservoir, usable capacity, 2,640 acre-ft (3.26 hm³). Diversion occurs above Magalia Reservoir through a pipeline into Pacific Gas and Electric Co.'s Toadtown Canal when Paradise and Magalia Reservoirs are spilling. Diversion is made from Magalia Reservoir for the municipal supply of Paradise.

AVERAGE DISCHARGE (unadjusted).--10 years, 15.5 ft³/s (0.439 m³/s), 11,230 acre-ft/yr (13.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,180 ft³/s (33.4 m³/s) Jan. 24, 1970, gage height, 6.47 ft (1.972 m); minimum daily, 0.01 ft³/s (<0.001 m³/s) Sept. 25, 1974, and many days in 1976-77.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 438 ft³/s (12.4 m³/s) Mar. 5, gage height, 4.88 ft (1.488 m); minimum daily, 0.19 ft³/s (0.005 m³/s) Oct. 28, Nov. 16, 17, Dec. 9.

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	.33	.23	.23	.32	2.9	5.7	83	56	.80	.76	.54	.51
2	.33	.24	.24	.58	4.8	41	75	50	.76	.76	.53	.51
3	.33	.24	.24	.75	4.0	52	50	37	.76	.78	.52	.51
4	.31	.40	.23	2.3	3.0	111	78	16	.76	.76	.52	.51
5	.28	.67	.23	7.0	9.2	356	70	27	.76	.76	.52	.51
6	.28	.25	.21	1.2	35	286	145	29	.71	.76	.52	.53
7	.28	.24	.21	.65	58	168	109	28	.71	.72	.52	.51
8	.25	.23	.21	1.2	40	136	75	27	.71	.63	.53	.53
9	.25	.22	.19	5.8	42	137	59	26	.71	.62	.53	.80
10	.23	.22	.20	1.1	27	111	52	24	.71	.60	.52	.57
11	.22	.22	.39	.85	21	92	48	23	.71	.60	.53	.55
12	.23	.24	.25	.77	26	81	44	21	.71	.60	.56	.53
13	.24	.25	.25	1.8	41	69	41	19	.71	.60	.56	.51
14	.24	.29	5.0	6.5	27	62	38	18	.70	.56	.56	.51
15	.23	.38	.89	7.5	24	52	53	21	.70	.56	.56	.51
16	.23	.19	.58	12	21	24	78	20	.71	.56	.56	.51
17	.22	.19	3.0	49	19	31	60	16	.71	.56	.56	.51
18	.22	.23	.47	38	17	34	48	13	.71	.56	.56	.51
19	.20	.28	.35	46	13	37	44	11	.71	.56	.56	.51
20	.21	.29	.29	28	13	37	54	9.8	.71	.56	.56	.50
21	.21	3.5	.53	21	11	41	60	9.0	.71	.57	.56	.49
22	.21	.75	2.2	18	9.3	40	50	9.1	.65	.56	.56	.47
23	.21	.45	1.4	12	7.4	38	48	12	.65	.56	.56	.43
24	.21	.37	.47	8.8	6.9	34	45	14	.67	.58	.56	.41
25	.21	.39	.36	7.8	6.5	31	91	14	.71	.58	.56	.41
26	.21	.41	.44	6.4	9.4	28	112	11	.73	.56	.56	.41
27	.20	.32	1.5	5.2	7.6	27	76	7.3	.77	.56	.56	.38
28	.19	.21	.55	4.7	5.8	25	66	5.6	.76	.56	.56	.38
29	.22	.24	.79	4.2	---	24	68	3.5	.76	.56	.51	.37
30	.23	.24	.44	3.7	---	23	60	2.1	.76	.56	.51	.37
31	.22	---	.36	3.1	---	33	---	1.4	---	.56	.51	---
TOTAL	7.43	12.38	22.70	306.22	511.8	2266.7	1980	580.8	21.64	19.08	16.83	14.76
MEAN	.24	.41	.73	9.88	18.3	73.1	66.0	18.7	.72	.62	.54	.49
MAX	.33	3.5	5.0	49	58	356	145	56	.80	.78	.56	.80
MIN	.19	.19	.19	.32	2.9	5.7	38	1.4	.65	.56	.51	.37
AC-FT	15	25	45	607	1020	4500	3930	1150	43	38	33	29
‡	140	102	89	116	87	110	124	425	717	888	932	447
CAL YR 1977	TOTAL	140.75	MEAN	.39	MAX	5.0	MIN	.18	AC-FT	279		
WTR YR 1978	TOTAL	5760.34	MEAN	15.8	MAX	356	MIN	.19	AC-FT	11430		

‡ Diversion, in acre-feet, from Magalia Reservoir, furnished by Paradise Irrigation District.

11390000 BUTTE CREEK NEAR CHICO, CA

LOCATION.--Lat 39°43'34", long 121°42'28", in NW¼NW¼ sec.36, T.22 N., R.2 E., Butte County, on right bank 0.7 mi (1.1 km) downstream from Little Butte Creek, and 7.5 mi (12.1 km) east of Chico.

DRAINAGE AREA.--147 mi² (381 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

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

GAGE.--Water-stage recorder. Altitude of gage is 320 ft (98 m), from topographic map. Prior to Aug. 13, 1944, water-stage recorder at site 0.4 mi (0.6 km) upstream at different datum.

REMARKS.--Records good. Flow slightly regulated by storage in Magalia Reservoir, capacity, 3,540 acre-ft (4.36 hm³) and since 1957 by Paradise Reservoir, capacity, 6,430 acre-ft (7.93 hm³). Diversions above station for irrigation and domestic use of about 7,000 acre-ft (8.63 hm³) annually. Butte Creek receives water above station from West Branch Feather River by way of Toadtown Canal.

AVERAGE DISCHARGE (unadjusted).--48 years, 405 ft³/s (11.47 m³/s), 293,400 acre-ft/yr (362 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,200 ft³/s (600 m³/s) Dec. 22, 1964, gage height, 14.12 ft (3.304 m), from rating curve extended above 8,900 ft³/s (252 m³/s) on basis of slope-area measurement at gage height 13.35 ft (4.069 m); minimum, 10 ft³/s (0.28 m³/s) Nov. 29, 1952.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,700 ft³/s (76.5 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 5	2100	3280 92.9	4.92 1.500	Jan. 16	1900	6780 192	7.75 2.362
Jan. 9	1400	3830 108	5.38 1.640	Feb. 7	1530	4170 118	5.68 1.731
Jan. 14	2200	5560 157	6.81 2.076	Mar. 4	1200	*7840 222	8.56 2.609

Minimum daily, 61 ft³/s (1.73 m³/s) Oct. 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	113	124	105	335	372	501	1130	894	529	282	157	69
2	94	122	105	313	408	1430	1040	833	508	278	164	67
3	76	120	126	402	439	2290	839	803	498	284	160	66
4	81	123	130	486	401	5000	1050	757	478	281	161	67
5	85	192	119	2340	731	5670	962	730	495	271	162	67
6	79	171	110	1560	1740	3840	1710	705	495	266	167	85
7	72	141	105	749	3100	2370	1300	677	499	263	170	83
8	71	133	100	606	2200	1840	1040	666	490	262	170	81
9	70	126	94	2600	2060	1810	944	671	480	253	170	85
10	69	124	92	1640	1420	1500	911	680	469	246	174	154
11	67	121	97	943	1060	1290	886	660	442	246	177	101
12	67	122	133	828	1070	1150	844	651	422	242	174	127
13	66	109	107	731	1370	1000	802	647	414	239	174	119
14	66	95	363	2740	1000	902	770	652	403	229	177	119
15	67	92	997	3860	852	829	864	726	386	221	174	116
16	66	89	377	6050	729	745	900	658	381	218	174	114
17	66	88	712	3650	649	710	804	613	365	212	174	111
18	67	86	475	1880	608	695	747	608	353	208	174	101
19	69	85	328	1930	587	673	731	604	345	202	174	90
20	61	87	268	1390	578	656	817	589	336	195	174	90
21	87	172	231	1040	569	681	782	592	326	187	177	85
22	106	407	382	845	558	687	730	596	314	181	181	94
23	106	223	798	705	545	702	694	628	321	179	188	166
24	107	162	459	619	532	709	695	588	303	172	184	152
25	107	147	352	579	500	654	1580	577	299	167	181	168
26	108	131	306	555	566	630	1470	559	298	161	177	167
27	109	127	401	500	571	620	1150	535	297	170	170	166
28	114	121	451	466	522	618	1010	541	302	169	127	163
29	122	112	393	439	---	617	962	548	311	158	71	164
30	150	106	449	414	---	617	936	550	291	152	69	169
31	133	---	382	395	---	696	---	543	---	149	69	---
TOTAL	2721	4058	9547	41590	25737	42132	29100	20081	11850	6743	4995	3406
MEAN	87.8	135	308	1342	919	1359	970	648	395	218	161	114
MAX	150	407	997	6050	3100	5670	1710	894	529	284	188	169
MIN	61	85	92	313	372	501	694	535	291	149	69	66
AC-FT	5400	8050	18940	82490	51050	83570	57720	39830	23500	13370	9910	6760
†	1940	2860	4710	6820	6300	7810	6950	7190	6830	5560	4640	2200
CAL YR 1977 TOTAL	42187											
MEAN 116												
MAX 997												
MIN 44												
AC-FT 83680												
WTR YR 1978 TOTAL	201960											
MEAN 553												
MAX 6050												
MIN 61												
AC-FT 400600												

† Diversion, in acre-feet, to Toadtown Canal from West Branch Feather River, furnished by Pacific Gas and Electric Co.

11390000 BUTTE CREEK NEAR CHICO, 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 1962 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: November 1961 to current year.

INSTRUMENTATION.--Temperature recorder since November 1961.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 26.0°C July 21, 22, 1966 and on several days in 1977; minimum recorded, 1.0°C Dec. 14, 15, 1967.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 24.0°C Aug. 6, 8, 9; minimum recorded, 3.5°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)
NOV 08...	1345	133	126	7.7	9.0	2.0	11.5
JAN 11...	1245	886	69	7.2	9.0	5.0	11.1
MAR 14...	1400	899	69	7.1	10.0	3.0	11.3
MAY 17...	1245	616	66	7.3	14.5	2.0	10.1
JUL 19...	1225	198	98	7.9	21.0	2.0	9.2
SEP 21...	1305	85	118	8.0	15.0	.00	10.8

DATE	HARD- NESS (MG/L AS CAC03)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	ALKA- LITY (MG/L AS CAC03)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	BORON, DIS- SOLVED (UG/L AS B)
NOV 08...	--	--	--	--	--	--
JAN 11...	--	--	--	--	--	--
MAR 14...	--	--	--	--	--	--
MAY 17...	--	--	--	--	--	--
JUL 19...	--	--	--	--	--	--
SEP 21...	50	4.7	.3	56	.0	100

11390000 BUTTE CREEK NEAR CHICO, 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	16.0	12.5	11.0	9.0	8.0	6.5	6.5	6.0	6.5	6.0	11.0	8.0
2	16.0	12.0	11.0	8.5	8.0	6.0	7.5	6.5	7.5	6.0	9.5	8.0
3	16.5	12.0	12.0	8.5	7.5	6.0	8.5	7.5	8.5	7.0	9.0	8.5
4	16.5	14.0	10.0	8.5	8.5	6.5	8.5	8.0	8.5	7.0	9.5	8.5
5	16.0	13.5	10.0	9.0	9.0	7.0	9.0	8.5	8.5	8.0	9.0	8.5
6	15.5	13.5	9.5	7.5	8.0	7.0	9.5	8.5	8.5	8.0	9.5	8.5
7	15.5	12.5	9.0	7.0	7.5	7.0	8.5	7.5	9.0	8.0	10.0	8.5
8	15.5	12.5	9.0	6.5	7.0	5.5	9.0	8.0	8.5	8.0	9.5	9.0
9	16.5	12.5	8.5	6.5	6.0	4.5	10.0	9.0	8.5	8.0	10.0	8.5
10	15.5	12.5	8.5	6.5	6.0	4.5	9.5	8.5	8.0	7.0	10.0	8.0
11	16.0	12.5	9.0	7.0	6.0	5.0	9.0	8.5	8.0	7.0	9.0	8.5
12	16.0	13.0	10.0	8.0	7.0	5.5	9.0	8.5	7.0	6.5	9.0	7.0
13	16.0	13.0	10.5	8.5	7.0	6.5	9.5	9.0	7.5	7.0	8.5	7.0
14	15.5	13.0	10.0	8.0	10.5	7.0	10.0	9.5	11.0	6.5	9.0	7.0
15	15.5	13.0	10.0	7.5	10.5	7.5	9.5	8.5	12.5	7.0	9.5	7.0
16	15.5	12.5	9.5	7.5	7.5	7.0	9.5	9.0	9.0	6.0	10.5	7.5
17	15.0	12.5	9.5	7.5	8.0	7.0	9.5	9.0	9.0	5.0	11.0	8.5
18	15.0	12.5	8.5	6.5	7.5	6.0	9.0	8.5	16.0	7.0	10.5	8.5
19	15.0	12.5	6.5	4.5	6.0	4.5	9.0	8.5	16.0	6.5	11.5	9.0
20	14.0	12.0	5.5	3.5	5.5	4.0	8.5	7.5	16.5	7.0	11.0	9.5
21	14.0	11.5	6.5	4.5	6.0	5.0	8.5	7.5	17.0	7.0	10.5	10.0
22	13.5	10.5	7.5	6.0	8.5	6.0	8.5	7.5	17.5	7.5	10.5	9.5
23	12.5	11.0	6.5	5.5	9.5	8.5	7.0	6.0	17.5	8.0	10.5	9.5
24	14.0	11.5	8.0	6.5	8.5	7.5	6.0	5.0	12.5	9.0	10.5	8.0
25	14.0	12.0	8.5	6.5	7.5	6.5	6.5	5.5	12.0	10.0	11.0	8.5
26	15.0	12.5	9.0	7.0	7.0	6.5	7.5	6.0	14.0	9.0	11.5	9.0
27	14.0	12.5	9.0	7.5	8.5	7.0	7.5	6.0	14.5	7.0	12.0	9.5
28	12.5	11.5	8.5	6.5	9.0	8.5	8.0	6.5	15.0	6.0	12.5	9.5
29	12.0	11.0	8.5	7.0	9.5	8.5	7.5	6.0	---	---	12.0	10.5
30	11.5	10.5	8.5	7.0	9.0	8.0	7.0	6.5	---	---	13.0	10.5
31	11.5	9.5	---	---	8.0	6.0	6.5	6.5	---	---	11.5	10.0
MONTH	16.5	9.5	12.0	3.5	10.5	4.0	10.0	5.0	17.5	5.0	13.0	7.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.0	9.0	12.5	9.0	16.0	12.0	18.0	14.0	23.0	18.5	21.5	17.0
2	10.0	8.5	13.5	11.0	15.5	12.0	18.0	14.0	23.0	18.5	21.5	17.0
3	9.5	8.5	14.0	11.5	16.0	12.5	18.0	14.5	23.0	18.5	21.0	16.5
4	10.0	8.5	13.0	11.0	17.0	13.0	18.0	14.0	23.0	19.0	20.0	16.0
5	9.0	8.5	12.0	10.0	17.5	13.5	18.5	14.0	23.5	19.0	19.0	17.0
6	9.0	8.0	12.5	9.0	18.0	14.0	19.5	15.0	24.0	19.5	19.0	16.0
7	9.5	7.5	13.0	10.0	18.0	14.5	19.0	16.5	23.5	19.5	18.5	14.5
8	10.5	7.5	14.0	11.0	18.0	14.0	20.0	16.0	24.0	20.0	18.0	14.0
9	12.0	9.0	14.5	11.5	18.0	14.5	21.0	16.5	24.0	20.0	15.5	14.0
10	12.5	10.0	14.0	11.5	17.5	14.0	20.5	17.0	23.0	19.0	15.5	13.5
11	13.0	10.5	14.0	11.5	16.5	13.0	20.0	16.0	22.0	18.5	17.0	12.5
12	12.5	10.5	14.0	11.0	15.0	13.0	19.5	16.0	21.0	17.5	16.5	12.0
13	12.5	10.5	14.5	11.5	16.5	12.5	20.0	16.0	20.5	16.5	16.0	12.5
14	11.0	9.5	14.0	12.0	16.5	13.0	21.0	16.5	20.0	16.0	17.0	12.5
15	9.5	8.5	12.5	9.5	16.5	12.5	21.5	17.0	20.0	15.5	17.5	13.0
16	8.5	7.5	11.5	8.5	16.0	12.5	21.5	17.0	20.0	16.0	18.0	14.0
17	10.5	8.0	13.5	9.5	17.0	13.0	21.5	17.0	19.5	15.5	17.0	14.0
18	11.0	8.0	14.5	11.0	17.5	14.0	21.5	17.5	19.5	15.0	16.0	12.0
19	11.0	9.0	15.0	11.5	17.0	13.5	22.0	17.5	19.0	15.0	15.5	11.5
20	9.5	8.0	15.0	12.0	17.5	13.5	22.0	18.0	19.0	15.0	15.0	11.0
21	10.0	7.0	15.5	12.0	17.5	13.5	22.0	17.5	18.5	15.0	15.0	11.5
22	10.5	8.0	14.5	11.5	18.0	14.0	22.0	18.0	17.0	14.5	16.0	12.0
23	11.0	8.5	13.0	10.5	17.5	13.5	22.5	18.0	17.0	13.0	16.5	12.5
24	10.5	10.0	12.0	9.5	17.5	14.0	22.5	18.0	17.0	13.0	17.0	13.5
25	11.0	10.5	12.0	9.0	17.0	13.5	22.5	18.5	18.0	13.5	17.0	14.0
26	11.5	10.0	13.0	9.5	16.0	14.0	23.0	19.0	18.5	14.0	16.5	14.5
27	12.5	10.0	15.0	10.5	16.5	13.5	23.5	19.0	18.5	14.5	16.0	13.5
28	13.0	11.0	16.5	12.0	18.0	14.0	23.0	19.0	20.0	15.0	16.0	13.0
29	12.5	10.0	16.5	13.0	17.0	14.0	22.5	18.0	21.0	16.0	16.5	13.0
30	12.0	10.0	16.0	12.5	18.0	14.0	22.5	17.5	21.0	17.0	17.0	14.0
31	---	---	15.5	12.0	---	---	23.0	18.0	21.5	17.0	---	---
MONTH	13.0	7.0	16.5	8.5	18.0	12.0	23.5	14.0	24.0	13.0	21.5	11.0

11390500 SACRAMENTO RIVER BELOW WILKINS SLOUGH, NEAR GRIMES, CA

LOCATION.--Lat 39°00'36", long 121°49'25", in NW¼NE¼ sec.2, T.13 N., R.1 E., Colusa County, on right bank 1,200 ft (366 m) downstream from Wilkins Slough, 5.8 mi (9.3 km) southeast of Grimes, and at mile 62.9 (101.2 km) upstream from Sacramento.

DRAINAGE AREA.--12,926 mi² (33,478 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1931 to September 1938 (low-water periods only), October 1938 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1965, published as "below Wilkins Slough."

GAGE.--Water-stage recorder. Datum of gage is 3.00 ft (0.914 m) below National Geodetic Vertical Datum of 1929.

REMARKS.--Records excellent. Natural flow of stream affected by storage reservoirs, power development, bypassing for flood control, diversions for irrigation, and return flow from irrigated areas.

AVERAGE DISCHARGE.--40 years (water years 1939-78), 10,130 ft³/s (286.9 m³/s), 7,339,000 acre-ft/yr (9.05 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1939-78), 29,400 ft³/s (833 m³/s) Jan. 19, 1974, gage height, 50.08 ft (15.264 m); maximum gage height, 52.75 ft (16.078 m) Mar. 1, 1940; minimum discharge, 100 ft³/s (2.83 m³/s) Aug. 1, 1931, gage height, 14.20 ft (4.328 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28,600 ft³/s (810 m³/s) Jan. 18, gage height, 49.15 ft (14.981 m); minimum daily, 2,810 ft³/s (79.6 m³/s) Oct. 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	4030	4320	4750	9460	12600	13800	14400	15700	7270	6580	6910	7010
2	3950	4340	4450	8450	11900	13100	16800	15300	6970	6620	6960	6820
3	3820	4560	4290	7730	11500	17000	21200	14400	6580	6750	6910	6840
4	3650	4750	4190	8860	12300	24900	19100	13800	6170	6740	6740	6950
5	3460	4860	4110	10600	12000	26200	19200	13400	5850	6840	6670	7050
6	3320	4920	4070	18700	15500	27200	19800	13000	5590	6850	6760	7340
7	3220	5010	4090	23900	25100	27400	22400	12500	5510	6730	6840	7540
8	3190	5010	4040	19900	26300	26800	25200	12000	5680	6460	6780	7470
9	3150	4990	4010	16000	26800	26800	24000	11400	5680	6270	6830	7490
10	3120	4980	4010	24100	27000	27300	23200	10700	5630	6220	6720	7840
11	3060	4990	4050	27100	26600	27200	22200	10300	5850	6210	6690	8040
12	2940	4820	4120	26200	26100	27100	21200	9820	5810	6110	6630	8370
13	2900	4700	4270	25000	26100	27000	20300	9500	5690	5980	6980	8380
14	2880	4700	4600	25300	26400	26700	19200	9430	5600	5890	7770	7980
15	2840	4660	5700	26700	26100	26600	18800	9610	5650	6190	7950	7730
16	2810	4640	17000	27900	25900	26300	19300	9840	5880	6790	8090	7640
17	2830	4570	17400	28300	25600	25900	22100	9660	6020	6940	8150	7530
18	2930	4510	18900	28500	25100	25400	21100	8960	6150	6960	8160	7330
19	3030	4430	19400	27800	24100	24300	19800	8320	6090	6870	8010	7070
20	3150	4330	13300	27200	22500	22900	18400	8160	6040	6850	7380	6890
21	3130	4400	9810	26700	20700	21100	18300	8070	5890	6820	7180	6840
22	3110	4740	7990	25900	19500	19200	17600	8010	5870	6780	7100	6780
23	3090	6100	8070	25400	18500	17900	15600	8060	5790	6740	7220	6690
24	3120	7080	18200	24300	16900	17100	14300	7950	5700	6810	6870	6690
25	3150	7190	19600	22900	15900	16900	13100	7780	5750	6740	6600	6640
26	3280	6230	13800	20800	15300	16300	14400	7620	6070	6750	6670	6640
27	3680	5800	10400	18500	14200	15700	19900	7500	6100	6800	6930	6660
28	3940	5520	9320	16300	14100	15200	18900	7400	6100	6760	7010	6760
29	4040	5350	10300	14800	---	14900	15500	7340	6180	6720	7170	6820
30	4130	5100	10100	13800	---	14700	15700	7330	6400	6730	7300	6840
31	4270	---	9730	13100	---	14500	---	7390	---	6800	7070	---
TOTAL	103220	151600	278070	640200	570600	673400	571000	310250	179560	205300	221050	216670
MEAN	3330	5053	8970	20650	20380	21720	19030	10010	5985	6623	7131	7222
MAX	4270	7190	19600	28500	27000	27400	25200	15700	7270	6960	8160	8380
MIN	2810	4320	4010	7730	11500	13100	13100	7330	5510	5890	6600	6640
AC-FT	204700	300700	551600	1270000	1132000	1336000	1133000	615400	356200	407200	438500	429800
CAL YR 1977 TOTAL	2004250	MEAN	5491	MAX	19600	MIN	2810	AC-FT	3975000			
WTR YR 1978 TOTAL	4120920	MEAN	11290	MAX	28500	MIN	2810	AC-FT	8174000			

SACRAMENTO RIVER BASIN

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

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1966 to current year.

INSTRUMENTATION.--Temperature recorder since October 1966.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 25.5°C Sept. 6-8, 1977; minimum recorded, 4.0°C Dec. 26, 1968.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 23.5°C June 6-8; minimum recorded, 7.0°C 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	19.5	19.0	15.5	15.0	12.0	11.5	10.5	10.5	10.0	9.5	13.0	13.0
2	19.5	18.5	16.0	15.0	12.0	11.5	10.5	10.0	10.0	9.5	13.0	12.5
3	19.5	18.0	15.5	15.0	11.5	11.0	10.0	10.0	10.0	10.0	13.0	12.5
4	19.5	18.0	15.5	15.0	11.5	11.0	10.0	10.0	10.5	10.0	12.5	12.0
5	19.5	17.0	15.0	14.5	11.5	11.0	10.0	10.0	10.5	10.0	12.5	12.5
6	---	---	14.0	13.5	11.5	11.5	10.5	10.0	11.0	10.5	12.5	12.0
7	---	---	14.0	13.5	11.5	11.5	10.5	10.0	10.5	10.5	12.5	12.0
8	---	---	13.5	12.5	11.5	11.0	10.0	10.0	10.5	10.5	12.0	12.0
9	---	---	12.5	12.0	11.0	10.5	11.0	10.0	10.5	9.5	12.0	11.5
10	---	---	12.5	12.0	10.5	10.5	11.5	11.0	10.0	9.5	12.5	12.0
11	---	---	13.0	12.5	10.5	10.0	11.5	11.0	9.5	9.0	12.5	12.0
12	---	---	13.5	12.5	10.5	10.0	11.0	11.0	9.0	8.5	12.0	11.5
13	---	---	14.0	13.0	10.5	10.5	11.0	11.0	8.5	8.5	11.5	11.0
14	---	---	14.0	13.5	10.5	10.5	11.0	11.0	8.5	8.0	11.0	11.0
15	---	---	14.0	13.5	11.0	10.5	11.0	11.0	9.0	8.0	11.5	11.0
16	---	---	14.5	13.5	11.0	10.0	11.0	10.5	9.5	9.0	11.5	11.0
17	---	---	14.0	13.5	10.0	9.5	10.5	10.5	9.5	9.0	12.0	11.5
18	---	---	14.0	13.0	9.5	8.5	10.5	10.5	9.5	9.0	12.5	12.0
19	---	---	12.5	11.0	8.0	7.0	10.5	10.5	10.5	9.5	13.0	12.5
20	---	---	11.0	10.5	7.5	7.0	10.5	10.5	11.0	10.5	14.0	13.0
21	---	---	10.0	9.5	7.5	7.5	10.5	10.5	12.0	11.0	14.0	13.5
22	17.0	16.5	10.0	9.5	8.5	7.5	10.5	10.0	12.5	11.5	14.5	13.5
23	17.0	16.5	10.0	9.5	9.5	8.5	10.0	9.5	12.5	12.0	14.5	13.5
24	17.5	16.5	10.5	10.0	10.0	9.5	9.5	8.5	13.0	12.0	14.5	14.0
25	18.0	17.0	10.0	10.0	10.0	10.0	9.0	8.5	12.5	12.0	14.5	14.0
26	18.0	17.5	10.5	10.0	10.0	10.0	9.0	8.5	12.5	12.0	15.0	14.0
27	18.0	17.0	10.5	10.5	10.0	9.5	9.5	8.5	13.0	12.0	15.5	14.0
28	17.0	16.5	11.5	10.5	10.0	9.5	9.5	9.0	13.0	12.5	16.0	15.0
29	16.5	16.0	12.0	11.5	10.5	10.0	10.0	9.5	---	---	16.5	15.5
30	16.0	15.5	12.0	11.5	11.0	10.5	10.0	10.0	---	---	16.5	15.5
31	16.0	15.5	---	---	11.0	10.5	10.0	9.5	---	---	16.5	16.0
MONTH	---	---	16.0	9.5	12.0	7.0	11.5	8.5	13.0	8.0	16.5	11.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.0	15.5	15.5	15.0	20.0	19.0	20.0	19.5	21.5	20.5	20.5	20.0
2	15.5	14.0	15.5	14.5	20.5	19.5	20.0	19.0	21.5	20.5	21.0	20.0
3	13.5	12.5	16.0	15.0	21.0	20.0	20.0	19.5	21.5	21.0	21.0	20.5
4	13.5	12.5	16.0	15.0	21.5	20.5	20.5	20.0	21.5	21.0	20.5	20.0
5	13.5	12.5	15.0	14.0	22.5	21.0	21.0	20.0	21.5	21.0	20.5	20.0
6	12.5	12.0	14.5	13.5	23.5	22.0	21.0	20.5	22.0	21.5	20.0	19.5
7	12.5	11.5	15.0	13.5	23.5	22.5	21.0	20.5	22.0	21.5	19.5	19.0
8	11.5	10.5	16.0	14.5	23.5	22.5	21.5	21.0	22.5	22.0	19.0	18.5
9	---	---	17.0	15.0	23.0	22.0	22.0	21.5	22.5	22.0	18.5	17.5
10	---	---	17.5	16.0	22.0	21.5	21.5	21.0	22.5	21.5	17.5	17.0
11	---	---	17.5	16.0	21.5	21.0	21.0	21.0	22.0	21.0	18.0	17.0
12	16.0	15.0	18.0	16.5	20.5	20.0	21.0	20.5	21.0	20.5	18.0	17.0
13	16.0	15.0	18.5	17.0	20.0	19.5	21.5	20.5	20.5	20.0	18.0	17.0
14	15.0	14.0	18.5	17.0	19.5	19.0	22.0	21.0	20.0	19.0	19.0	18.0
15	14.0	12.5	18.0	17.0	20.5	19.0	21.5	21.5	19.5	18.5	19.5	18.5
16	12.5	12.0	17.0	16.0	20.0	19.5	21.5	21.0	19.5	18.5	20.0	19.0
17	11.5	11.0	17.0	15.5	20.0	19.0	21.5	20.5	19.5	18.5	20.0	19.0
18	12.5	11.5	17.5	16.0	19.5	19.0	21.5	20.5	19.0	18.0	19.0	17.5
19	13.0	12.5	18.0	16.5	20.0	19.5	21.5	20.5	19.0	18.0	17.5	16.5
20	13.5	13.0	19.0	18.0	20.0	19.5	21.5	21.0	19.5	18.0	17.0	16.5
21	13.0	12.5	19.0	18.5	20.5	19.5	22.0	21.0	19.5	18.5	17.5	16.5
22	13.5	12.5	19.0	18.5	20.5	20.0	21.5	21.0	19.0	18.5	18.0	17.0
23	14.0	13.0	19.0	18.5	20.0	19.5	21.5	21.0	18.5	17.5	18.5	17.5
24	14.5	13.5	18.5	18.0	20.0	19.5	21.5	21.0	18.0	17.0	19.0	18.0
25	14.5	13.5	18.0	17.5	20.5	19.5	21.5	20.5	18.5	17.5	19.5	19.0
26	14.5	13.5	18.0	17.5	20.0	19.5	21.0	20.0	19.0	18.5	20.0	19.0
27	15.0	14.0	19.0	18.0	19.5	18.5	21.0	20.5	19.5	19.0	19.5	19.0
28	16.0	15.0	19.5	18.5	18.5	18.0	21.0	20.5	20.0	19.5	19.5	18.5
29	17.5	15.5	20.5	19.5	19.5	18.5	21.5	20.5	20.5	19.5	19.0	18.5
30	17.0	16.0	21.0	20.5	20.0	19.0	21.0	20.5	20.0	20.0	19.5	18.5
31	---	---	20.5	19.0	---	---	21.5	20.5	20.5	20.0	---	---
MONTH	17.5	10.5	21.0	13.5	23.5	18.0	22.0	19.0	22.5	17.0	21.0	16.5

11390650 SACRAMENTO RIVER ABOVE COLUSA TROUGH, AT KNIGHTS LANDING, CA

LOCATION.--Lat 38°48'18", long 121°43'22", in NW¼ sec.14, T.11 N., R.2 E., Yolo County, on right bank, 0.25 mi (0.40 km) upstream from Colusa Drain, 0.35 mi (0.56 km) upstream from State Highway 24 bridge at Knights Landing, and approximately 0.3 mi (0.5 km) upstream from gaging station.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: July 1960 to current year.

REMARKS.--Records of discharge given for Sacramento River at Knights Landing (station 11391000).

COOPERATION.--Chemical-quality records furnished by 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)
OCT							
19...	1300	3090	174	8.1	19.0	3.0	9.8
NOV							
29...	1450	5940	204	7.5	12.0	15	10.4
DEC							
20...	1305	16000	118	7.2	7.5	140	11.4
JAN							
18...	1000	29000	110	7.1	10.5	240	9.8
FEB							
22...	1230	18000	173	7.4	13.0	29	10.1
APR							
25...	1240	14700	153	7.5	15.0	23	9.5
MAY							
24...	1145	8650	159	8.0	19.0	20	8.6
JUN							
27...	1000	5860	135	7.6	20.0	12	8.6
JUL							
27...	1050	6590	142	7.7	22.0	6.0	8.7
AUG							
30...	1000	8630	183	7.6	20.0	10	8.6
SEP							
27...	1035	7010	148	7.7	19.0	6.0	8.8

DATE	HARD- NESS (MG/L AS CAC03)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	ALKA- LINITY (MG/L AS CAC03)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	BORON, DIS- SOLVED (UG/L AS B)
OCT							
19...	67	9.8	.5	73	6.7	16	100
NOV							
29...	63	12	.7	63	8.2	42	100
DEC							
20...	--	--	--	--	--	299	--
JAN							
18...	44	6.0	.4	40	4.1	509	0
FEB							
22...	75	8.8	.4	67	5.2	95	100
APR							
25...	--	--	--	--	--	--	--
MAY							
24...	--	--	--	--	--	--	--
JUN							
27...	--	--	--	--	--	--	--
JUL							
27...	--	--	--	--	--	--	--
AUG							
30...	--	--	--	--	--	--	--
SEP							
27...	--	--	--	--	--	--	--

SACRAMENTO RIVER BASIN

11390655 SOUTH FORK WILLOW CREEK NEAR FRUTO, CA

LOCATION.--Lat 39°32'28", long 122°23'19", in SW¼SE¼ sec.35, T.20 N., R.5 W., Glenn County, on right bank 150 ft (46 m) downstream from county road bridge, and 4.5 mi (7.2 km) southeast of Fruto.

DRAINAGE AREA.--38.9 mi² (100.8 km²).

PERIOD OF RECORD.--July 1963 to September 1978 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder. Altitude of gage is 375 ft (114 m), from topographic map.

REMARKS.--No known regulation or diversion above station.

AVERAGE DISCHARGE.--15 years, 5.95 ft³/s (0.169 m³/s), 4,310 acre-ft/yr (5.31 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,620 ft³/s (103 m³/s) Feb. 7, 1973, gage height, 12.58 ft (3.834 m), from rating curve extended above 1,000 ft³/s (28.3 m³/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 250 ft³/s (7.08 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 9	0600	759 21.5	7.12 2.170	Feb. 7	1015	2210 62.6	10.47 3.191
Jan. 14	1945	*2550 72.2	11.03 3.362	Feb. 8	2000	1940 54.9	9.97 3.039
Jan. 16	0715	1900 53.8	9.89 3.014	Feb. 12	1245	1040 29.5	7.91 2.411
Jan. 18	2130	1940 54.9	9.99 3.045	Mar. 4	0215	394 11.2	5.92 1.804
Feb. 5	1445	380 10.8	5.86 1.786	Mar. 8	2345	986 27.9	7.76 2.365
Feb. 6	1230	380 10.8	5.86 1.786				

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	6.3	15	18	4.1	.59			
2				0	9.1	28	12	3.6	.57			
3				0	5.7	43	12	3.3	.53			
4				0	5.0	177	13	3.0	.46			
5				0	139	53	10	2.7	.40			
6				0	147	36	16	2.4	.33			
7				0	466	33	10	2.4	.28			
8				0	378	202	8.6	2.3	.24			
9				99	173	220	7.7	2.3	.19			
10				13	95	101	7.3	2.1	.18			
11				1.9	64	79	7.1	1.8	.16			
12				1.1	327	63	6.8	1.6	.17			
13				101	117	53	6.6	1.6	.13			
14				673	83	45	6.4	1.6	.11			
15				216	64	40	10	1.4	.09			
16				887	52	36	8.3	1.2	.06			
17				147	44	32	6.3	1.1	.05			
18				315	38	30	6.0	1.0	.04			
19				161	33	27	5.8	1.0	.04			
20				57	29	25	5.5	.96	.02			
21				36	26	25	5.3	.86	.01			
22				26	23	23	5.0	.84	.01			
23				19	21	20	4.9	.85	.01			
24				15	20	18	5.1	.84	0			
25				13	19	17	8.1	.83	0			
26				11	17	16	6.1	.80	0			
27				9.4	16	15	4.9	.79	0			
28				8.1	15	14	4.6	.78	0			
29				7.1	---	14	4.6	.74	0			
30				6.5	---	13	4.2	.63	0			
31		---		5.8	---	20	---	.57	---			---
TOTAL	0	0	0	2828.9	2432.1	1533	236.2	49.99	4.67	0	0	0
MEAN	0	0	0	91.3	86.9	49.5	7.87	1.61	.16	0	0	0
MAX	0	0	0	887	466	220	18	4.1	.59	0	0	0
MIN	0	0	0	0	5.0	13	4.2	.57	0	0	0	0
AC-FT	0	0	0	5610	4820	3040	469	99	9.3	0	0	0
CAL YR 1977	TOTAL	0.00	MEAN	.000	MAX	.00	MIN	0	AC-FT	0		
WTR YR 1978	TOTAL	7084.86	MEAN	19.4	MAX	887	MIN	0	AC-FT	14050		

11390660 WALKER CREEK AT ARTOIS, CA

LOCATION.--Lat 39°37'32", long 122°11'45", in SW¼SW¼ sec.34, T.21 N., R.3 W., Glenn County, on left bank 500 ft (152 m) upstream from county road bridge, and 0.3 mi (0.5 km) north of Artois.

DRAINAGE AREA.--60.4 mi² (156.4 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 156.4 ft (47.67 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good. Several small storage ponds above station for irrigation.

AVERAGE DISCHARGE.--13 years, 21.3 ft³/s (0.603 m³/s), 15,430 acre-ft/yr (19.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,660 ft³/s (160 m³/s) Feb. 7, 1973, gage height, 11.69 ft (3.563 m), from rating curve extended above 1,800 ft³/s (51.0 m³/s) on basis of contracted-opening measurement at gage height 11.69 ft (3.563 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft³/s (16.9 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 9	1200	3430 97.1	10.11 3.082	Feb. 7	1500	2090 59.2	9.17 2.795
Jan. 14	2400	*4230 120	11.02 3.359	Feb. 9	0130	1970 55.8	9.03 2.752
Jan. 16	1630	4100 116	10.93 3.332	Feb. 12	1900	2240 63.4	9.33 2.844
Jan. 19	0330	978 27.7	7.46 2.274	Mar. 4	1930	4070 115	10.90 3.322
Feb. 5	1930	910 25.8	7.33 2.234	Mar. 8	1500	2780 78.7	9.86 3.005
Feb. 6	1800	1010 28.6	7.52 2.292				

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	16	8.5	7.5	6.6	.64	.30	4.4	0	3.0
2			0	15	9.7	18	6.1	.27	.96	4.7	0	2.0
3			0	51	14	74	5.3	.08	.43	4.5	0	2.2
4			0	62	11	1220	4.7	0	.01	6.0	0	3.2
5			0	247	289	278	7.0	0	.03	3.2	0	2.3
6			0	147	384	43	11	0	.02	.71	.02	3.5
7			0	80	638	27	41	0	.96	1.1	0	3.6
8			0	59	206	970	24	0	.02	2.5	1.0	3.9
9			0	1240	533	490	14	0	0	1.1	2.4	7.8
10			0	259	88	85	11	0	.12	.18	.57	7.8
11			0	104	58	47	6.6	0	.04	0	.49	7.7
12			0	77	643	37	3.4	0	1.2	0	4.0	4.3
13			0	403	225	30	2.7	0	16	0	4.7	2.2
14			0	1960	81	26	2.5	0	6.7	0	2.0	1.1
15			0	1070	59	19	2.4	0	3.2	0	2.2	.46
16			0	1430	49	17	2.3	.09	1.6	0	3.1	.03
17			0	387	38	16	2.2	.93	.35	0	1.9	0
18			0	124	29	12	2.1	3.2	.07	0	1.6	.63
19			0	410	21	8.7	1.8	2.8	2.0	.16	4.8	4.0
20			0	107	16	7.5	1.3	1.6	2.2	1.9	3.8	4.7
21			0	66	12	7.2	1.1	.62	1.0	.75	3.6	4.0
22			0	70	13	12	.90	.26	1.6	.03	1.7	3.3
23			112	57	14	13	.91	.11	2.9	.21	2.3	3.9
24			86	33	15	13	1.5	0	9.8	2.6	8.8	2.0
25			46	22	12	13	2.9	.19	3.8	3.4	8.7	2.3
26			27	18	9.0	12	3.3	.18	3.1	2.2	5.0	2.5
27			19	12	8.1	12	2.7	.60	1.5	.15	8.1	2.9
28			24	15	7.5	12	2.1	.81	.94	0	8.2	2.1
29			35	11	---	7.4	1.2	.37	.16	0	5.5	2.7
30			31	9.4	---	4.7	.86	.31	.31	0	4.1	1.3
31		---	23	8.6	---	5.1	---	.01	---	0	2.5	---
TOTAL	0	0	403	8570.0	3490.8	3544.1	175.47	13.07	61.32	39.79	91.08	91.42
MEAN	0	0	13.0	276	125	114	5.85	.42	2.04	1.28	2.94	3.05
MAX	0	0	112	1960	643	1220	41	3.2	16	6.0	8.8	7.8
MIN	0	0	0	8.6	7.5	4.7	.86	0	0	0	0	0
AC-FT	0	0	799	17000	6920	7030	348	26	122	79	181	181
CAL YR 1977	TOTAL	456.03	MEAN	1.25	MAX	112	MIN	0	AC-FT	905		
WTR YR 1978	TOTAL	16480.05	MEAN	45.2	MAX	1960	MIN	0	AC-FT	32690		

SACRAMENTO RIVER BASIN

11390672 STONE CORRAL CREEK NEAR SITES, CA

LOCATION.--Lat 39°17'18", long 122°18'00", in NW¼NW¼ sec.34, T.17 N., R.4 W., Colusa County, on left bank at road bridge, 2.4 mi (3.9 km) southeast of Sites.

DRAINAGE AREA.--38.2 mi² (98.9 km²).

PERIOD OF RECORD.--March 1958 to September 1964, October 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 180 ft (55 m), from topographic map.

REMARKS.--No known diversion or regulation above station.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

AVERAGE DISCHARGE.--19 years (water years 1959-64, 1966-78), 6.44 ft³/s (0.182 m³/s), 4,670 acre-ft/yr (5.76 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,430 ft³/s (154 m³/s) Feb. 6, 1973, gage height, 16.45 ft (5.014 m), from rating curve extended above 1,200 ft³/s (34.0 m³/s) on basis of slope-conveyance study at gage height 13.0 ft (3.96 m) and a slope-area measurement at 16.45 ft (5.014 m); no flow for several months in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 13.0 ft (3.96 m) from floodmarks, discharge, 1,940 ft³/s (54.9 m³/s) from slope-conveyance study.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,520 ft³/s (99.7 m³/s) Feb. 7, gage height, 14.87 ft (4.532 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	3.3	16	14	1.3				
2				0	3.2	19	10	1.2				
3				0	2.8	42	8.8	1.1				
4				0	2.4	282	7.9	1.0				
5				0	98	50	7.5	.90				
6				0	202	26	7.5	.80				
7				0	620	22	7.5	.70				
8				0	501	173	6.7	.60				
9				96	196	73	6.0	.50				
10				8.5	73	38	4.8	.60				
11				.80	50	34	4.2	.60				
12				3.0	474	29	3.9	.60				
13				60	95	25	3.8	.60				
14				724	58	23	3.6	.60				
15				388	46	21	3.4	.50				
16				1300	37	19	3.2	.50				
17				114	32	18	3.1	.50				
18				282	27	18	2.9	.40				
19				89	23	18	2.8	.40				
20				35	21	17	2.6	.40				
21				20	19	17	2.5	.40				
22				13	18	17	2.4	.40				
23				9.6	18	16	2.3	.40				
24				9.1	18	15	2.1	.40				
25				9.1	18	13	2.0	.40				
26				8.7	17	12	1.9	.40				
27				8.1	17	11	1.8	.30				
28				6.6	17	10	1.6	.20				
29				5.4	---	8.8	1.5	.10				
30				4.7	---	7.9	1.4	0				
31		---		3.8	---	11	---	0	---			---
TOTAL	0	0	0	3198.40	2706.7	1101.7	133.7	16.80	0	0	0	0
MEAN	0	0	0	103	96.7	35.5	4.46	.54	0	0	0	0
MAX	0	0	0	1300	620	282	14	1.3	0	0	0	0
MIN	0	0	0	0	2.4	7.9	1.4	0	0	0	0	0
AC-FT	0	0	0	6340	5370	2190	265	33	0	0	0	0
CAL YR 1977	TOTAL	0.00	MEAN	.000	MAX	.00	MIN	0	AC-FT	0		
WTR YR 1978	TOTAL	7157.30	MEAN	19.6	MAX	1300	MIN	0	AC-FT	14200		

11390700 COLUSA TROUGH NEAR COLUSA, CA

LOCATION.--Lat 39°11'43", long 122°03'34", in SE¼NE¼ sec.34, T.15 N., R.2 W., Colusa County, at gaging station 3 mi (5 km) west of Colusa, on State Highway 20, and 6 mi (10 km) northeast of Williams.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1953 to current year.

COOPERATION.--Records furnished by California Department of Water Resources.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	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)
OCT							
19...	0745	772	7.8	16.0	28	7.6	--
NOV							
29...	0900	678	7.9	12.0	50	10.0	--
DEC							
20...	0815	898	7.9	7.0	25	11.4	--
JAN							
17...	1410	402	7.6	12.0	500	9.5	94
FEB							
22...	0800	634	7.8	14.0	85	8.6	--
MAR							
23...	0910	847	8.1	16.0	--	8.7	--
APR							
25...	0900	468	7.8	15.0	--	8.5	--
MAY							
23...	1315	494	7.8	20.0	50	7.8	--
JUN							
26...	1300	542	7.8	24.0	11	7.6	--
JUL							
26...	1245	515	7.5	26.0	9.0	6.9	--
AUG							
29...	1245	443	7.4	23.0	9.0	7.1	--
SEP							
26...	1530	608	7.8	22.0	38	7.8	--

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	ALKA- LINITY (MG/L AS CAC03)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	BORON, DIS- SOLVED (UG/L AS B)
OCT						
19...	--	--	--	--	64	--
NOV						
29...	--	--	--	--	174	--
DEC						
20...	--	--	--	--	54	--
JAN						
17...	54	2.4	67	27	633	200
FEB						
22...	--	--	--	--	151	--
MAR						
23...	--	--	--	--	112	--
APR						
25...	--	--	--	--	119	--
MAY						
23...	--	--	--	--	144	--
JUN						
26...	--	--	--	--	36	--
JUL						
26...	--	--	--	--	41	--
AUG						
29...	--	--	--	--	42	--
SEP						
26...	--	--	--	--	96	--

11391000 SACRAMENTO RIVER AT KNIGHTS LANDING, CA

LOCATION.--Lat 38°48'11", long 121°42'55", in NW¼NE¼ sec.14, T.11 N., R.2 E., Sutter County, on left bank 1,000 ft (305 m) downstream from State Highway 24 bridge at Knights Landing, 13.1 mi (21.1 km) upstream from Feather River, and at mile 34.0 (54.7 km) upstream from Sacramento.

DRAINAGE AREA.--14,535 mi² (37,646 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1921 to October 1939 (low-water periods only), June 1940 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

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

GAGE.--Water-stage recorder. Datum of gage is 2.93 ft (0.893 m) below National Geodetic Vertical Datum of 1929. April 1921 to Dec. 9, 1930, in fender pier of railroad bridge at same datum. Water-stage recorder for station at Verona was used as auxiliary gage for this station January 1941 to June 1945. Since Aug. 16, 1945, auxiliary water-stage recorder 6.0 mi (9.7 km) downstream from base gage.

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, power developments, bypassing for flood control, diversions for irrigation, and considerable return flow from irrigated areas.

AVERAGE DISCHARGE.--38 years (water years 1941-78), 10,830 ft³/s (306.7 m³/s), 7,846,000 acre-ft/yr (9.67 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1940-78), 30,800 ft³/s (872 m³/s) Jan. 26, 1970, gage height, 40.86 ft (12.454 m); maximum gage height, 41.83 ft (12.750 m) Feb. 8, 1942, backwater from Feather River and Sutter Bypass; minimum discharge recorded, 250 ft³/s (7.08 m³/s) July 23, 1931, gage height, 7.80 ft (2.377 m).

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 29,700 ft³/s (841 m³/s) Feb. 8; minimum daily, 2,980 ft³/s (84.4 m³/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	4450	4730	5300	10300	16000	15300	13700	15900	7480	6630	6870	8720
2	4400	4750	5000	9280	15300	14600	14600	15800	6890	6750	6800	8570
3	4130	4850	4700	8420	14700	15800	22200	15000	6380	6960	6850	8590
4	3930	5070	4600	8780	15100	26300	20200	14300	6030	7070	6840	8600
5	3700	5290	4570	10800	15300	27100	19100	13800	6150	7070	6720	8610
6	3490	5480	4540	14800	16700	26800	21000	13500	5630	6750	6890	8730
7	3470	5530	4520	25300	28000	27200	20000	13000	5440	6710	7000	9130
8	3310	5540	4470	22400	29700	26900	26600	12400	5480	6390	6890	9300
9	3280	5540	4440	16800	28800	26800	29500	11800	5440	6090	6960	9270
10	3300	5510	4410	23600	27700	27500	29300	11200	5160	6130	6800	9650
11	3340	5490	4440	29600	27400	27400	28500	10600	5120	5970	6710	9840
12	3200	5400	4530	27500	27300	27400	27100	9950	5190	5810	6830	10300
13	3060	5220	4630	25000	26900	27100	25600	9800	4970	5690	6980	10400
14	3000	5160	4880	25000	27500	26800	23900	9680	4840	5670	7900	10100
15	2980	5140	5290	26200	27200	26600	22500	9800	4640	5800	8250	9590
16	2990	5100	13200	27800	26900	26400	21400	10200	4910	6390	8360	9160
17	2990	5060	19200	28400	26700	26000	23100	9980	5210	6690	8470	8790
18	2990	4990	18300	29000	26500	25500	24700	9400	5520	6730	8530	8310
19	3050	4950	21600	28500	21000	24300	23500	8750	5800	6540	8510	8090
20	3160	5000	16400	27900	19900	22900	21900	8420	5860	6460	8150	7750
21	3270	5020	12200	27300	18600	22300	20200	8240	5610	6630	7830	7540
22	3280	5510	9270	26900	18000	20000	19700	8200	5290	6490	7560	7470
23	3280	6450	8070	26600	17600	18100	18300	8400	5580	6270	8100	7320
24	3310	7630	14200	25900	16800	17300	16600	8650	5510	6360	7850	7330
25	3340	7940	22200	24800	16100	17000	14700	8840	5500	6420	7590	7270
26	3400	7070	16800	23100	15800	16300	15200	8660	5750	6390	7680	7150
27	3720	6580	12600	20900	15400	15500	17900	8340	5920	6570	8150	7070
28	4080	6140	10100	17900	15200	14900	21900	8180	6040	6590	8320	7130
29	4310	5910	10600	17900	---	14900	19500	7980	6160	6590	8510	7150
30	4340	5600	11000	17100	---	14600	17300	7800	6480	6680	8630	7220
31	4550	---	10200	16500	---	14000	---	7710	---	6860	8700	---
TOTAL	109100	167650	296260	670280	598100	679600	639700	324280	169960	200150	236230	254150
MEAN	3519	5588	9557	21620	21360	21920	21320	10460	5665	6456	7620	8472
MAX	4550	7940	22200	29600	29700	27500	29500	15900	7480	7070	8700	10400
MIN	2980	4730	4410	8420	14700	14000	13700	7710	4840	5670	6710	7070
AC-FT	216400	332500	587600	1330000	1186000	1348000	1269000	643200	337100	397000	468600	504100
CAL YR 1977 TOTAL	2130610	MEAN	5837	MAX	22200	MIN	2980	AC-FT	4226000			
WTR YR 1978 TOTAL	4345460	MEAN	11910	MAX	29700	MIN	2980	AC-FT	8619000			

11391000 SACRAMENTO RIVER AT KNIGHTS LANDING, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-60, 1978.

CHEMICAL ANALYSES: Water years 1951-60.

WATER TEMPERATURES: Water years 1951-60, 1978.

SEDIMENT RECORDS: Water year 1978.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: March 1951 to May 1957, December 1958 to May 1960, November 1977 to July 1978 (storm season only).

SEDIMENT RECORDS: November 1977 to July 1978 (storm season only).

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: (1951-57, 1959, 1978) Maximum recorded, 26.0°C July 23, 1952; minimum recorded, 4.0°C Jan. 24, Apr. 29, May 2, 1958.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATIONS (storm season only): Maximum daily mean, 990 mg/L Jan. 13; minimum daily mean, 22 mg/L Dec. 10, 12, 13.

SEDIMENT DISCHARGE (storm season only): Maximum daily, 66,800 tons (60,600 metric tons); minimum daily, 262 tons (238 metric tons) Dec. 10.

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		15.5	---	---	---	12.0	13.0	16.0	19.5	---	---	
2		15.0	11.0	11.0	---	13.0	---	16.0	20.0	---	---	
3		15.0	12.0	10.0	---	---	13.0	15.0	20.0	20.0	---	
4		14.5	11.5	10.0	---	---	13.0	---	21.0	---	---	
5		15.0	11.0	10.0	---	12.0	13.0	15.0	22.0	20.0	---	
6		14.0	12.0	10.0	---	13.0	---	15.0	23.0	---	---	
7		14.0	12.0	11.0	---	13.0	11.5	---	23.0	21.0	---	
8		---	---	11.0	---	12.0	13.0	16.0	24.0	---	---	
9		13.5	10.5	11.0	10.5	11.5	11.0	16.0	---	---	---	
10		---	10.0	11.0	11.0	12.0	14.0	17.0	---	---	---	
11		13.5	10.5	11.5	10.0	12.0	14.0	16.0	---	---	23.0	
12		14.0	10.5	11.5	9.5	12.0	15.0	16.0	21.0	---	---	
13		14.5	11.0	12.0	8.0	11.0	15.0	16.0	---	22.5	---	
14		14.0	11.0	12.0	9.5	11.0	15.0	17.0	20.0	22.0	---	
15		15.0	11.0	11.5	9.0	10.0	14.0	17.0	---	---	---	
16		15.0	10.5	12.5	---	10.0	12.0	16.0	---	---	---	
17		---	10.0	---	10.0	11.0	12.0	16.0	---	22.0	---	
18		12.0	10.0	---	10.0	12.0	11.0	16.0	---	---	---	
19		12.5	8.5	11.5	10.0	12.0	11.0	16.0	---	23.0	---	
20		11.0	8.0	10.5	10.5	13.0	12.0	---	---	---	---	
21		10.0	8.0	11.0	11.0	13.0	---	16.0	21.0	---	---	
22		10.5	8.0	12.0	10.5	14.0	13.0	19.0	20.0	24.0	---	
23		10.0	11.5	10.0	10.5	13.0	13.0	19.0	---	---	---	
24		---	12.5	10.0	10.0	13.0	15.0	18.0	---	24.0	---	
25		10.0	---	10.5	10.5	13.0	15.0	18.0	---	---	---	
26		11.0	11.0	---	10.5	14.0	14.0	18.0	20.0	23.0	---	
27		11.0	11.0	---	10.5	14.0	15.0	19.0	---	---	---	
28		11.0	10.0	---	12.0	12.0	15.0	18.0	20.0	---	---	
29		11.5	---	---	---	13.0	17.0	18.0	---	---	---	
30		13.0	10.5	---	---	13.0	17.0	18.0	19.0	---	---	
31		---	10.0	---	---	13.0	---	18.0	---	---	---	
MONTH		13.0	10.5	---	---	12.5	13.5	17.0	---	---	---	

11391000 SACRAMENTO RIVER AT KNIGHTS LANDING, 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				4730	47	600	5300	52	744
2				4750	56	718	5000	45	607
3				4850	58	760	4700	34	431
4				5070	52	712	4600	30	373
5				5290	52	743	4570	26	321
6				5480	57	843	4540	26	319
7				5530	54	806	4520	25	305
8				5540	56	838	4470	24	290
9				5540	55	823	4440	23	276
10				5510	46	684	4410	22	262
11				5490	43	637	4440	24	288
12				5400	48	700	4530	22	269
13				5220	49	691	4630	22	275
14				5160	47	655	4880	25	329
15				5140	46	638	5290	68	971
16				5100	44	606	13200	596	25200
17				5060	40	546	19200	910	47200
18				4990	37	499	18300	710	35100
19				4950	37	495	21600	620	36600
20				5000	32	432	16400	288	12800
21				5020	28	380	12200	180	5930
22				5510	30	446	9270	196	4910
23				6450	48	836	8070	240	5230
24				7630	82	1690	14200	280	10700
25				7940	116	2490	22200	370	22200
26				7070	89	1700	16800	646	28500
27				6580	98	1740	12600	560	19800
28				6140	115	1910	10100	156	4250
29				5910	62	989	10600	170	4870
30				5600	57	862	11000	172	5110
31				---	---	---	10200	172	4740
TOTAL				167650	---	26469	296260	---	279200
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	10300	172	4780	16000	244	10500	15300	95	3920
2	9280	170	4260	15300	240	9910	14600	93	3670
3	8420	170	3860	14700	236	9370	15800	92	3920
4	8780	170	4030	15100	233	9500	26300	205	14600
5	10800	170	4960	15300	230	9500	27100	430	31500
6	14800	180	7190	16700	245	11000	26800	570	41200
7	25300	760	51900	28000	340	25700	27200	380	27900
8	22400	300	18100	29700	505	40500	26900	222	16100
9	16800	100	4540	28800	710	55200	26800	210	15200
10	23600	104	6630	27700	500	37400	27500	212	15700
11	29600	500	40000	27400	425	31400	27400	225	16600
12	27500	704	52300	27300	310	22900	27400	258	19100
13	25000	990	66800	26900	270	19600	27100	282	20600
14	25000	500	33800	27500	305	22600	26800	231	16700
15	26200	410	29000	27200	270	19800	26600	196	14100
16	27800	724	54300	26900	200	14500	26400	184	13100
17	28400	695	53300	26700	186	13400	26000	182	12800
18	29000	560	43800	26500	160	11400	25500	184	12700
19	28500	520	40080	21000	180	10200	24300	192	12600
20	27900	500	37700	19900	170	9130	22900	192	11900
21	27300	500	36900	18600	160	8040	22300	168	10100
22	26900	430	31200	18000	140	6800	20000	142	7670
23	26600	350	25100	17600	130	6180	18180	129	6300
24	25900	305	21300	16800	120	5440	17300	120	5610
25	24800	270	18100	16100	122	5300	17000	111	5090
26	23100	262	16300	15800	120	5120	16300	114	5020
27	20900	259	14600	15400	105	4370	15500	118	4940
28	17900	256	12400	15200	100	4100	14900	108	4340
29	17900	253	12200	---	---	---	14900	87	3500
30	17100	250	11500	---	---	---	14600	102	4020
31	16500	247	11000	---	---	---	14000	122	4610
TOTAL	670280	---	771850	598100	---	438860	679600	---	385110

11391000 SACRAMENTO RIVER AT KNIGHTS LANDING, CA--Continued

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	13700	84	3110	15900	119	5110	7480	109	2200
2	14600	111	4380	15800	113	4820	6890	105	1950
3	22200	240	14400	15000	110	4450	6380	84	1450
4	20200	300	16400	14300	111	4290	6030	83	1350
5	19100	165	8510	13800	125	4660	6150	90	1490
6	21000	159	9020	13500	168	6120	5630	98	1490
7	20000	230	12400	13000	155	5440	5440	93	1370
8	26600	400	28700	12400	112	3750	5480	88	1300
9	29500	380	30300	11800	95	3030	5440	86	1260
10	29300	210	16600	11200	91	2750	5160	84	1170
11	28500	142	10900	10600	98	2800	5120	74	1020
12	27100	122	8930	9950	107	2870	5190	70	981
13	25600	118	8160	9800	112	2960	4970	65	872
14	23900	112	7230	9680	112	2930	4840	65	849
15	22500	108	6560	9800	108	2860	4640	68	852
16	21400	129	7450	10200	101	2780	4910	70	928
17	23100	176	11000	9980	96	2590	5210	67	942
18	24700	150	10000	9400	95	2410	5520	65	969
19	23500	110	6980	8750	102	2410	5800	67	1050
20	21900	101	5970	8420	106	2410	5860	66	1040
21	20200	107	5840	8240	103	2290	5610	59	894
22	19700	103	5480	8200	107	2370	5290	50	714
23	18300	97	4790	8400	103	2340	5580	51	768
24	16600	91	4080	8650	109	2550	5510	55	818
25	14700	92	3650	8840	117	2790	5500	58	861
26	15200	133	5460	8660	118	2760	5750	60	931
27	17900	199	9620	8340	112	2520	5920	59	943
28	21900	211	12500	8180	110	2430	6040	58	946
29	19500	165	8690	7980	115	2480	6160	57	948
30	17300	121	5850	7800	115	2420	6460	60	1050
31	---	---	---	7710	106	2210	---	---	---
TOTAL	639700	---	292760	324280	---	98600	169960	---	33406
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	6630	64	1150						
2	6750	68	1240						
3	6960	72	1350						
4	7070	72	1370						
5	7070	66	1260						
6	6750	62	1130						
7	6710	54	978						
8	6390	54	932						
9	6090	54	888						
10	6130	54	894						
11	5970	50	806						
12	5810	46	722						
13	5690	46	707						
14	5670	54	827						
15	5800	53	830						
16	6390	53	914						
17	6690	52	939						
18	6730	54	981						
19	6540	57	1010						
20	6460	52	907						
21	6630	48	859						
22	6490	44	771						
23	6270	40	677						
24	6360	37	635						
25	6420	41	711						
26	6390	46	794						
27	6570	45	798						
28	6590	45	801						
29	6590	42	747						
30	6680	40	721						
31	6860	37	685						
TOTAL	200150	---	28034						
PERIOD	3745980	---	2354289						

SACRAMENTO RIVER BASIN

11391000 SACRAMENTO RIVER AT KNIGHTS LANDING, 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	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
NOV								
01...	1410	15.5	4660	49	617	--	--	--
DEC								
02...	1400	11.0	5100	43	592	--	--	--
19...	1320	8.5	22100	627	37400	25	35	46
JAN								
05...	1403	10.0	11000	170	5050	--	--	--
12...	1600	11.5	27400	622	46000	35	44	53
20...	1400	10.5	28700	493	38200	43	57	67
20...	1600	10.5	28700	485	37600	--	--	--
FEB								
09...	1330	10.5	28000	782	59100	31	41	55
MAR								
09...	1130	11.5	26600	213	15300	31	41	52
24...	0700	13.0	17300	146	6820	--	--	--
APR								
07...	1145	11.5	20800	214	12000	20	27	34
MAY								
15...	1135	18.5	9250	115	2870	--	--	--
JUN								
08...	1058	24.0	5340	126	1820	--	--	--
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
NOV								
01...	--	--	67	95	100	--	--	--
DEC								
02...	--	--	66	88	97	100	--	--
19...	56	63	68	81	97	100	--	--
JAN								
05...	--	--	71	80	95	100	--	--
12...	62	70	75	80	90	93	95	98
20...	77	83	87	90	96	100	--	--
20...	--	--	91	94	98	100	--	--
FEB								
09...	68	80	86	92	99	100	--	--
MAR								
09...	65	76	84	91	98	100	--	--
24...	--	--	81	94	100	--	--	--
APR								
07...	42	51	62	80	96	100	--	--
MAY								
15...	--	--	81	94	99	100	--	--
JUN								
08...	--	--	94	99	100	--	--	--

11391000 SACRAMENTO RIVER AT KNIGHTS LANDING, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM
NOV							
01...	1430	15.5	5	4660	4	35	74
01...	1431	--	--	--	0	2	34
01...	1432	--	--	--	0	1	8
01...	1433	--	--	--	0	2	4
01...	1434	--	--	--	0	1	7
DEC							
02...	1430	11.0	5	5100	0	2	5
02...	1431	--	--	--	0	1	5
02...	1432	--	--	--	0	1	7
02...	1433	--	--	--	0	1	34
02...	1434	--	--	--	22	69	94
19...	1410	8.0	5	22100	0	4	18
19...	1411	--	--	--	0	1	26
19...	1412	--	--	--	0	2	45
19...	1413	--	--	--	0	5	85
19...	1414	--	--	--	0	7	85
JAN							
05...	1430	10.0	5	11000	0	0	18
05...	1431	--	--	--	0	3	13
05...	1432	--	--	--	0	0	38
05...	1433	--	--	--	0	0	2
05...	1434	--	--	--	0	0	1
20...	1440	10.5	5	28700	0	1	7
20...	1441	--	--	--	0	1	5
20...	1442	--	--	--	0	0	2
20...	1443	--	--	--	0	0	10
20...	1444	--	--	--	0	1	54
20...	1628	10.5	5	28700	3	4	26
20...	1629	--	--	--	0	1	15
20...	1630	--	--	--	0	0	8
20...	1631	--	--	--	0	0	23
20...	1632	--	--	--	0	1	30
FEB							
09...	1400	10.5	5	28000	0	0	43
09...	1401	--	--	--	0	6	17
09...	1402	--	--	--	0	0	4
09...	1403	--	--	--	0	0	20
09...	1404	--	--	--	0	2	51
MAR							
09...	1200	11.5	5	26600	0	5	83
09...	1202	--	--	--	0	2	57
09...	1204	--	--	--	0	1	38
09...	1206	--	--	--	0	0	4
09...	1208	--	--	--	0	3	15
APR							
07...	1215	11.5	5	20800	2	15	81
07...	1217	--	--	--	0	2	40
07...	1219	--	--	--	0	2	35
07...	1221	--	--	--	0	0	6
07...	1223	--	--	--	0	1	6
MAY							
15...	1200	18.5	5	9250	0	0	0
15...	1202	--	--	--	0	2	49
15...	1204	--	--	--	0	1	35
15...	1206	--	--	--	0	0	3
15...	1208	--	--	--	0	1	4
JUN							
08...	1130	24.0	5	5340	4	18	42
08...	1132	--	--	--	0	1	50
08...	1134	--	--	--	0	0	14
08...	1136	--	--	--	0	0	3
08...	1138	--	--	--	0	2	8
JUL							
13...	1115	22.5	5	5780	0	7	41
13...	1117	--	--	--	0	1	41
13...	1119	--	--	--	0	1	13
13...	1121	--	--	--	0	0	4
13...	1123	--	--	--	0	3	9
AUG							
11...	0900	23.0	5	6600	0	2	29
11...	0902	--	--	--	0	1	39
11...	0904	--	--	--	0	2	11
11...	0906	--	--	--	0	1	7
11...	0908	--	--	--	1	3	10

SACRAMENTO RIVER BASIN

11391000 SACRAMENTO RIVER AT KNIGHTS LANDING, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM
NOV							
01...	76	76	76	79	88	100	--
01...	100	--	--	--	--	--	--
01...	40	45	45	51	65	100	--
01...	8	9	11	21	43	71	100
01...	15	20	24	35	56	83	100
DEC							
02...	12	14	18	28	50	82	100
02...	8	9	10	18	32	67	100
02...	22	23	25	31	51	86	100
02...	100	--	--	--	--	--	--
02...	98	99	99	99	100	--	--
19...	32	35	37	41	53	77	100
19...	99	100	--	--	--	--	--
19...	100	--	--	--	--	--	--
19...	100	--	--	--	--	--	--
19...	100	--	--	--	--	--	--
JAN							
05...	99	99	99	99	100	--	--
05...	15	15	16	21	47	72	100
05...	100	--	--	--	--	--	--
05...	16	18	19	23	39	91	100
05...	6	6	7	10	25	63	100
20...	20	32	49	79	100	--	--
20...	9	11	17	28	44	56	100
20...	16	79	91	94	97	100	--
20...	99	100	--	--	--	--	--
20...	100	--	--	--	--	--	--
20...	95	97	100	--	--	--	--
20...	98	100	--	--	--	--	--
20...	95	99	99	99	100	--	--
20...	100	--	--	--	--	--	--
20...	100	--	--	--	--	--	--
FEB							
09...	86	100	--	--	--	--	--
09...	78	89	94	100	--	--	--
09...	81	100	--	--	--	--	--
09...	98	99	99	99	99	100	--
09...	100	--	--	--	--	--	--
MAR							
09...	100	--	--	--	--	--	--
09...	100	--	--	--	--	--	--
09...	100	--	--	--	--	--	--
09...	79	99	99	100	--	--	--
09...	74	94	97	97	100	--	--
APR							
07...	100	--	--	--	--	--	--
07...	100	--	--	--	--	--	--
07...	100	--	--	--	--	--	--
07...	89	98	98	98	100	--	--
07...	10	11	14	24	41	79	100
MAY							
15...	0	0	0	0	--	--	--
15...	100	--	--	--	--	--	--
15...	100	--	--	--	--	--	--
15...	56	64	65	67	71	84	100
15...	8	9	11	19	32	84	100
JUN							
08...	80	82	84	84	100	--	--
08...	100	--	--	--	--	--	--
08...	98	100	--	--	--	--	--
08...	83	100	--	--	--	--	--
08...	14	16	17	24	38	80	100
JUL							
13...	99	100	--	--	--	--	--
13...	100	--	--	--	--	--	--
13...	48	48	48	50	56	91	100
13...	58	67	68	71	75	89	100
13...	13	15	18	27	51	78	100
AUG							
11...	100	--	--	--	--	--	--
11...	99	100	--	--	--	--	--
11...	26	26	27	32	50	94	100
11...	24	25	26	31	39	88	100
11...	16	18	20	29	50	86	100

RESERVOIRS IN FEATHER RIVER BASIN, CA

11391370 FRENCHMAN LAKE.--Lat 39°53'36", long 120°11'17", in NW¼NE¼ sec.33, T.24 N., R.16 E., Plumas County, on left bank 200 ft (61 m) upstream from Frenchman Dam (revised) on Little Last Chance Creek, 5.4 mi (8.7 km) upstream from the confluence with Middle Fork Feather River, and 7.1 mi (11.4 km) north of Chilcoot. DRAINAGE AREA, 81.1 mi² (210.0 km²). PERIOD OF RECORD, October 1966 to current year in reports of Geological Survey. November 1961 to September 1966 published in reports of California Department of Water Resources. GAGE, water-stage recorder in visitor center structure upstream from Frenchman Dam. Datum of gage is National Geodetic Vertical Datum of 1929.

Reservoir is formed by rockfill dam completed in 1961. Capacity, 53,626 acre-ft (66.1 hm³), between elevations 5,517 ft (1,681.6 m), invert of intake and 5,588 ft (1,703.2 m), crest of spillway. Dead storage, 1,840 acre-ft (2.27 hm³). Records, including extremes, represent total contents at 2400 hours. Records of contents furnished by California Department of Water Resources.

EXTREMES FOR PERIOD 1966 TO CURRENT YEAR.--Maximum contents, 59,093 acre-ft (72.9 hm³) May 22, 1967, elevation, 5,590.28 ft (1,703.917 m); minimum, 7,715 acre-ft (9.51 hm³) Sept. 29, 30, 1977, elevation, 5,538.87 ft (1,688.248 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 28,404 acre-ft (35.0 hm³) May 22, elevation, 5,567.23 ft (1,696.892 m); minimum, 7,680 acre-ft (9.47 hm³) Nov. 5, 6, 19, elevation, 5,538.79 ft (1,688.223 m).

11391490 LAKE DAVIS.--Lat 39°53'03", long 120°28'31", in NW¼SW¼ sec.1, T.23 N., R.13 E., Plumas County, in control house on left abutment of Grizzly Valley Dam on Big Grizzly Creek, 5.3 mi (8.5 km) north of Portola. DRAINAGE AREA, 44.0 mi² (114.0 km²). PERIOD OF RECORD, November 1966 to current year. GAGE, water-stage recorder in control house on Grizzly Valley Dam. Datum of gage is National Geodetic Vertical Datum of 1929.

Reservoir is formed by earth- and rockfill dam completed in 1967. Capacity, 84,040 acre-ft (104 hm³) between elevations, 5,700 ft (1,737.4 m), top of low-level intake and 5,775 ft (1,760.2 m), crest of spillway. Dead storage, 108 acre-ft (133,000 m³). Records, including extremes, represent total contents at 2400 hours. Records of contents furnished by California Department of Water Resources.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 92,818 acre-ft (114 hm³) May 13, 14, 1969, elevation, 5,777.05 ft (1,760.845 m); minimum since reservoir first filled, 33,267 acre-ft (41.0 hm³) Nov. 19, 20, 1977, elevation, 5,759.00 ft (1,755.343 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 64,893 acre-ft (80.0 hm³) June 3, elevation, 5,769.82 ft (1,758.641 m); minimum, 33,267 acre-ft (41.0 hm³) Nov. 19, 20, elevation, 5,759.00 ft (1,755.343 m).

11401120 ANTELOPE LAKE.--Lat 40°10'48", long 120°36'25", in SE¼SE¼ sec.22, T.27 N., R.12 E., Plumas County, on right bank at spillway of Antelope Dam on Indian Creek, 1.3 mi (2.1 km) south of Boulder Creek Guard Station, 12.3 mi (19.8 km) northeast of Genesee, and 14.3 mi (23.0 km) northeast of Taylorsville. DRAINAGE AREA, 68.6 mi² (177.7 km²). PERIOD OF RECORD, October 1966 to current year in reports of Geological Survey, November 1963 to September 1966 published in reports of California Department of Water Resources. GAGE, water-stage recorder in control house at top of Antelope Dam. Datum of gage is National Geodetic Vertical Datum of 1929.

Reservoir is formed by a rockfill dam. Storage began November 1963. Capacity, 22,566 acre-ft (27.8 hm³) between elevations 4,950 ft (1,508.8 m), lip of intake tower and 5,002 ft (1,524.6 m), crest of spillway. Records, including extremes, represent contents at 2400 hours. Records of contents furnished by California Department of Water Resources.

EXTREMES FOR PERIOD 1966 TO CURRENT YEAR.--Maximum contents, 25,010 acre-ft (30.8 hm³) Jan. 23, 1970, elevation, 5,004.55 ft (1,525.387 m); minimum since reservoir first filled, 372 acre-ft (0.46 hm³) Oct. 12, 13, 1976, elevation, 4,951.10 ft (1,509.095 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 23,498 acre-ft (29.0 hm³) May 16, elevation, 5,002.98 ft (1,524.908 m); minimum, 3,022 acre-ft (3.73 hm³) Oct. 6-14, elevation, 4,968.20 ft (1,514.307 m).

MONTHEND ELEVATION NGVD 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)	Elevation (feet)	Contents (acre- feet)	Change in contents (acre- feet)
	11391370	FRENCHMAN LAKE		11391490	LAKE DAVIS		11401120	ANTELOPE LAKE	
Sept. 30.....	a5538.87	7715	--	5759.56	34603	--	a4968.23	3030	--
Oct. 31.....	a5538.85	7706	-9	5759.18	33693	-910	a4968.21	3024	-6
Nov. 30.....	5538.99	7768	+62	5759.13	33574	-119	a4968.73	3167	+143
Dec. 31.....	5539.90	8178	+410	5759.92	35479	+1905	4971.26	3927	+760
CAL YR 1977....	--	--	-6094	--	--	-22835	--	--	+2865
Jan. 31.....	5542.35	9352	+1174	5761.48	39432	+3953	4976.08	5662	+1735
Feb. 28.....	5544.93	10699	+1347	5762.34	41720	+2288	4979.07	6923	+1261
Mar. 31.....	5559.80	21296	+10597	5766.04	52443	+10723	4990.03	12992	+6069
Apr. 30.....	5566.40	27550	+6254	5768.71	61080	+8637	4998.10	19098	+6106
May 31.....	5567.09	28259	+709	5769.76	64683	+3603	5002.71	23232	+4134
June 30.....	5563.76	24936	-3323	5769.35	63262	-1421	5001.97	22538	-694
July 31.....	5561.11	22463	-2473	5768.67	60945	-2317	5000.64	21319	-1219
Aug. 31.....	5558.39	20082	-2381	5767.82	58117	-2828	4998.74	19644	-1675
Sept. 30.....	a5557.51	19346	-736	5767.48	57007	-1110	4997.40	18511	-1133
WTR YR 1978....	--	--	+11631	--	--	+22404	--	--	+15481

a Estimated.

11391400 LITTLE LAST CHANCE CREEK BELOW FRENCHMAN DAM, NEAR CHILCOOT, CA

LOCATION.--Lat 39°53'36", long 120°11'17", in SW¼NE¼ sec.33, T.24 N., R.16 E., Plumas County, Plumas National Forest, in valve house at toe of Frenchman Dam, 7.1 mi (11.4 km) northwest of Chilcoot.

DRAINAGE AREA.--81.1 mi² (210.0 km²).

PERIOD OF RECORD.--October 1958 to current year. Prior to October 1969, published as Little Last Chance Creek near Chilcoot.

GAGE.--Water-stage recorder and steel-lipped Cipolletti weir. Datum of release gage is 5,480.00 ft (1,670.304 m) National Geodetic Vertical Datum of 1929. October 1958 to September 1967, at site 1.9 mi (3.1 km) downstream at different datum.

REMARKS.--Flow regulated by Frenchman Reservoir beginning Nov. 7, 1961, usable capacity, 53,580 acre-ft (66.1 hm³). Records since October 1967 are combined flow of release from Frenchman Dam and flow over spillway.

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

AVERAGE DISCHARGE (unadjusted).--20 years, 27.5 ft³/s (0.779 m³/s), 19,920 acre-ft/yr (24.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 784 ft³/s (22.2 m³/s) Feb. 8, 1960, gage height, 5.56 ft (1.695 m), previous site and datum, from rating curve extended above 310 ft³/s (8.78 m³/s); no flow Oct. 23, 1959, July 24-27, 29, Aug. 4, 1961. Maximum discharge since construction of Frenchman Dam in 1961, 544 ft³/s (15.4 m³/s) May 23, 1967; no flow at times in 1973, 1976-77.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 129 ft³/s (3.65 m³/s) June 12-14, gage height, 3.56 ft (1.085 m); no flow Nov. 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	.40	.30	2.0	2.3	2.3	2.3	2.3	4.8	35	32	84	38
2	.40	.30	2.0	2.3	2.3	2.3	2.3	4.8	35	39	84	38
3	.40	.30	2.0	2.3	2.3	2.3	2.3	36	36	24	93	38
4	.40	.30	2.0	2.3	2.3	2.3	2.3	53	36	15	96	38
5	.40	.30	2.0	2.3	2.3	2.3	2.3	72	77	15	75	25
6	.30	.30	2.0	2.3	2.3	2.3	2.3	79	77	19	47	3.2
7	.30	.30	2.0	2.3	2.3	2.3	2.3	79	91	20	47	3.2
8	.30	.30	2.0	2.3	2.3	2.3	2.3	62	96	20	47	3.2
9	.30	.30	2.0	2.3	2.3	2.3	2.3	53	96	20	35	3.2
10	.30	.30	2.0	2.3	2.3	2.3	2.3	74	96	20	32	3.2
11	.30	.30	2.0	2.3	2.3	2.3	2.3	81	96	26	18	3.2
12	.30	.30	2.0	2.3	2.3	2.3	2.3	81	121	28	11	3.2
13	.30	.30	2.0	2.3	2.3	2.3	2.3	81	129	28	11	3.2
14	.30	.30	2.2	2.3	2.3	2.3	2.3	77	118	45	11	3.2
15	.30	.10	2.2	2.3	2.3	2.3	2.4	66	107	61	18	3.2
16	.30	0	2.3	2.3	2.3	2.3	2.4	52	106	39	21	3.2
17	.30	.20	2.3	2.3	2.3	2.3	2.4	30	106	34	21	3.2
18	.30	.40	2.3	2.3	2.3	2.3	2.4	30	83	34	21	3.2
19	.30	.40	2.3	2.3	2.3	2.3	2.4	26	47	34	16	3.2
20	.30	.40	2.3	2.3	2.3	2.3	2.4	24	29	34	14	3.2
21	.30	.40	2.3	2.3	2.3	2.3	2.4	24	29	34	14	3.2
22	.30	1.2	2.3	2.3	2.3	2.3	2.4	32	29	34	14	3.4
23	.30	1.8	2.3	2.3	2.3	2.3	2.4	70	29	34	14	3.8
24	.30	1.8	2.3	2.3	2.3	2.3	2.4	77	29	34	14	3.8
25	.30	1.8	2.3	2.3	2.3	2.3	2.4	60	29	34	7.0	3.8
26	.30	1.8	2.3	2.3	2.3	2.3	2.4	39	22	34	4.6	3.8
27	.40	1.8	2.3	2.3	2.3	2.3	27	35	14	34	4.6	3.8
28	.30	1.8	2.3	2.3	2.3	2.3	40	35	14	55	3.9	3.8
29	.30	1.9	2.3	2.3	---	2.3	29	35	14	54	3.2	3.8
30	.30	2.0	2.3	2.3	---	2.3	11	35	14	50	21	3.8
31	.30	---	2.3	2.3	---	2.3	---	35	---	74	34	---
TOTAL	9.90	22.00	67.2	71.3	64.4	71.3	168.0	1542.6	1840	1058	936.3	262.0
MEAN	.32	.73	2.17	2.30	2.30	2.30	5.60	49.8	61.3	34.1	30.2	8.73
MAX	.40	2.0	2.3	2.3	2.3	2.3	40	81	129	74	96	38
MIN	.30	0	2.0	2.3	2.3	2.3	2.3	4.8	14	15	3.2	3.2
AC-FT	20	44	133	141	128	141	333	3060	3650	2100	1860	520
CAL YR 1977 TOTAL	3723.80		MEAN 10.2	MAX 139	MIN 0	AC-FT 7390						
WTR YR 1978 TOTAL	6113.00		MEAN 16.7	MAX 129	MIN 0	AC-FT 12130						

CAL YR 1977	TOTAL	1207.8	MEAN	3.31	MAX	13	MIN	1.4	AC-FT	2400
WTR YR 1978	TOTAL	4222.8	MEAN	11.6	MAX	55	MIN	1.4	AC-FT	8380

11391500 BIG GRIZZLY CREEK AT GRIZZLY VALLEY DAM, NEAR PORTOLA, CA

LOCATION.--Lat 39°53'00", long 120°28'29", in NW¼SW¼ sec.1, T.23 N., R.13 E., Plumas County, at Grizzly Valley Dam on Big Grizzly Creek, 5.3 mi (8.5 km) north of Portola.

DRAINAGE AREA.--44.0 mi² (114.0 km²).

PERIOD OF RECORD.--October 1925 to September 1932, October 1950 to September 1953, June 1954 to September 1967, October 1968 to current year. Prior to October 1952, published as Grizzly Creek near Portola, October 1952 to September 1953, June 1954 to September 1967, published as Big Grizzly Creek near Portola.

REVISED RECORDS.--WSP 1315-A: 1930(M). WSP 1931: Drainage area at former site.

GAGE.--Water-stage recorder and Cipolletti weir. Altitude of gage is 5,700 ft (1,740 m), from topographic map. Supplementary water-stage recorder in control house on Grizzly Valley Dam and concrete spillway. Prior to October 1968 at site 1.4 mi (2.3 km) downstream at different datum.

REMARKS.--Flow regulated by Lake Davis (station 11391490) completed in December 1966. Diversions for irrigation of about 400 acres (162 hm²) above station and domestic water supply via Grizzly Valley pipeline.

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

AVERAGE DISCHARGE (prior to regulation by Lake Davis).--22 years (water years 1926-32, 1951-53, 1955-66), 38.2 ft³/s (1.082 m³/s), 27,680 acre-ft/yr (34.1 hm³/yr); 11 years (water years 1967, 1969-78), 29.6 ft³/s (0.838 m³/s) 21,450 acre-ft/yr (26.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,080 ft³/s (116 m³/s) Feb. 1, 1963, gage height, 8.03 ft (2.448 m) site and datum then in use, from rating curve extended above 600 ft³/s (17 m³/s) on basis of slope-area measurement of peak flow; maximum gage height, 9.54 ft (2.908 m) former site and datum, Mar. 26, 1928; no flow Jan. 22 or 23, 1962. Maximum discharge since construction of Grizzly Valley Dam in 1966, 253 ft³/s (7.16 m³/s) May 13, 1969 (includes flow through spillway); no flow many days in September and October 1969.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 14 ft³/s (0.396 m³/s) Mar. 17 to June 14; minimum daily, 3.5 ft³/s (0.099 m³/s) Sept. 20-30.

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	5.0	4.7	4.1	4.3	4.5	4.5	14	14	14	10	10	10
2	4.7	4.0	4.1	4.3	4.5	4.5	14	14	14	10	10	10
3	4.7	4.1	4.1	4.3	4.5	4.5	14	14	14	10	10	10
4	4.7	4.1	4.1	4.3	4.5	4.5	14	14	14	10	10	10
5	4.7	4.1	4.1	4.3	4.5	4.5	14	14	14	10	10	10
6	4.7	4.1	4.1	4.5	4.5	4.5	14	14	14	10	10	9.6
7	4.7	4.1	4.1	4.5	4.5	4.5	14	14	14	10	10	9.6
8	4.5	4.1	4.1	4.5	4.5	4.5	14	14	14	10	10	9.6
9	4.5	4.1	4.1	4.5	4.5	4.5	14	14	14	10	10	10
10	4.5	4.1	4.1	4.5	4.5	4.5	14	14	14	10	10	10
11	4.5	4.1	4.1	4.5	4.5	4.5	14	14	14	10	10	10
12	4.5	4.1	4.1	4.5	4.5	4.5	14	14	14	10	10	7.5
13	4.5	4.1	4.1	4.5	4.5	4.5	14	14	14	10	10	3.9
14	4.5	4.1	4.1	4.5	4.5	4.5	14	14	14	10	10	3.9
15	4.7	4.1	4.1	4.5	4.5	4.5	14	14	13	10	10	3.9
16	4.7	4.1	4.1	4.5	4.5	8.0	14	14	10	10	10	3.9
17	5.0	4.1	4.1	4.5	4.5	14	14	14	10	10	10	3.9
18	5.0	4.1	4.1	4.5	4.5	14	14	14	10	10	10	3.7
19	5.0	4.1	4.1	4.5	4.5	14	14	14	10	10	10	3.7
20	5.0	4.1	4.1	4.5	4.5	14	14	14	10	10	10	3.5
21	5.0	4.1	4.1	4.5	4.5	14	14	14	10	10	10	3.5
22	5.0	4.1	4.1	4.5	4.5	14	14	14	10	10	10	3.5
23	5.0	4.1	4.1	4.5	4.5	14	14	14	10	10	10	3.5
24	5.0	4.1	4.1	4.5	4.5	14	14	14	10	10	10	3.5
25	5.0	4.1	4.1	4.5	4.5	14	14	14	10	10	10	3.5
26	5.0	4.1	4.1	4.5	4.5	14	14	14	10	10	10	3.5
27	5.0	4.1	4.1	4.5	4.5	14	14	14	10	10	10	3.5
28	5.0	4.1	4.1	4.5	4.5	14	14	14	10	10	10	3.5
29	5.0	4.0	4.1	4.5	---	14	14	14	10	10	10	3.5
30	5.0	4.1	4.1	4.5	---	14	14	14	10	10	10	3.5
31	5.0	---	4.1	4.5	---	14	---	14	---	10	10	---
TOTAL	149.1	123.4	127.1	138.5	126.0	285.5	420	434	359	310	310	181.7
MEAN	4.81	4.11	4.10	4.47	4.50	9.21	14.0	14.0	12.0	10.0	10.0	6.06
MAX	5.0	4.7	4.1	4.5	4.5	14	14	14	14	10	10	10
MIN	4.5	4.0	4.1	4.3	4.5	4.5	14	14	10	10	10	3.5
AC-FT	296	245	252	275	250	566	833	861	712	615	615	360
‡	22	5	5	4	0	0	0	19	76	80	47	12

CAL YR 1977 TOTAL 10466.0 MEAN 28.7 MAX 119 MIN 4.0 AC-FT 20760
WTR YR 1978 TOTAL 2964.3 MEAN 8.12 MAX 14 MIN 3.5 AC-FT 5880

‡ Diversions, in acre-feet, to Grizzly Valley pipeline.

11392100 MIDDLE FORK FEATHER RIVER NEAR PORTOLA, CA

LOCATION (REVISED).--Lat 39°49'13", long 120°26'26", in SW¼NW¼ sec.29, T.23 N., R.14 E., Plumas County, on right bank 0.8 mi (1.3 km) downstream from Big Grizzly Creek and 1.5 mi (2.4 km) northeast of Portola.

DRAINAGE AREA.--586 mi² (1,518 km²).

PERIOD OF RECORD.--October 1968 September 1976, October 1977 to September 1978. November 1955 to September 1968 in bulletins of California Department of Water Resources.

GAGE.--Water-stage recorder. Altitude of gage is 4,860 ft (1,481 m), from topographic map.

REMARKS.--Flow partly regulated by Frenchman Lake (station 11391370) and Lake Davis (station 11391490).

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

AVERAGE DISCHARGE.--9 years (1969-76, 1978), 243 ft³/s (6.882 m³/s), 176,100 acre-ft/yr (217 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,640 ft³/s (216 m³/s) Jan. 21, 1969, gage height, 10.18 ft (3.103 m); minimum daily, 3.1 ft³/s (0.088 m³/s) Sept. 11, 12, 1969, Oct. 1-4, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,110 ft³/s (88.1 m³/s) Jan. 17, gage height, 7.43 ft (2.265 m); minimum daily, 3.1 ft³/s (0.088 m³/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	3.1	5.4	18	268	136	227	454	175	71	38	10	7.6
2	3.1	5.1	18	182	134	227	483	134	64	34	9.2	8.4
3	3.1	4.8	18	134	141	230	483	103	57	34	8.0	7.2
4	3.1	6.5	18	116	156	256	418	103	51	34	7.2	6.9
5	3.9	8.0	18	136	180	450	358	114	48	33	7.2	9.2
6	4.5	8.0	18	105	262	1050	327	110	45	32	7.2	9.2
7	6.1	8.4	18	147	526	1310	310	97	43	32	8.0	8.4
8	5.4	8.4	18	294	781	831	294	85	45	31	7.2	8.4
9	5.4	8.0	18	632	1350	622	268	36	46	32	6.9	8.4
10	5.4	8.0	17	781	1510	543	236	34	47	33	6.5	9.7
11	5.4	8.8	18	979	1020	508	203	61	48	32	5.4	8.8
12	6.1	10	23	723	647	466	175	74	48	30	5.4	8.4
13	6.1	13	23	491	500	430	166	77	46	30	5.4	5.1
14	6.5	14	26	521	430	384	163	77	47	28	5.4	3.6
15	6.5	14	41	912	365	320	166	74	47	26	6.5	3.3
16	8.0	14	41	1360	317	307	168	74	47	25	6.9	3.3
17	10	14	65	2140	256	290	168	73	46	24	6.9	3.9
18	11	13	80	2350	245	284	159	68	46	22	6.9	4.2
19	11	12	84	1340	227	287	152	68	45	20	6.9	4.5
20	11	12	120	860	242	297	159	76	45	18	6.9	7.6
21	4.2	15	94	598	256	317	163	87	45	16	7.2	16
22	4.5	22	74	426	259	380	166	89	45	15	7.6	16
23	4.5	25	96	323	256	450	166	84	45	15	8.0	14
24	4.5	27	168	216	250	454	159	87	54	12	8.4	14
25	4.8	24	287	173	245	438	149	90	76	12	8.0	13
26	4.8	20	287	180	245	410	145	92	61	12	8.0	14
27	5.8	19	187	182	242	387	145	99	51	12	8.0	14
28	5.8	18	175	173	233	347	149	110	45	12	8.4	12
29	5.4	18	272	159	---	323	156	106	40	11	8.4	11
30	5.4	18	317	149	---	327	168	96	41	11	8.4	11
31	5.4	---	313	141	---	369	---	82	---	11	8.4	---
TOTAL	179.8	401.4	2970	17191	11411	13521	6876	2735	1485	727	228.8	271.1
MEAN	5.80	13.4	95.8	555	408	436	229	88.2	49.5	23.5	7.38	9.04
MAX	11	27	317	2350	1510	1310	483	175	76	38	10	16
MIN	3.1	4.8	17	105	134	227	145	34	40	11	5.4	3.3
AC-FT	357	796	5890	34100	22630	26820	13640	5420	2950	1440	454	538

CAL YR 1977 TOTAL -- MEAN -- MAX -- MIN -- AC-FT --
WTR YR 1978 TOTAL 57997.1 MEAN 159 MAX 2350 MIN 3.1 AC-FT 115000

11392500 MIDDLE FORK FEATHER RIVER NEAR CLIO, CA

LOCATION.--Lat 39°45'14", long 120°35'42", in NW¼SE¼ sec.23, T.22 N., R.12 E., Plumas County, on left bank 0.6 mi (1.0 km) upstream from Frazier Creek, 1.0 mi (1.6 km) northwest of Clio, and 2.2 mi (3.5 km) southeast of Blairsden.

DRAINAGE AREA.--686 mi² (1,777 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1925 to current year.

REVISED RECORDS.--WSP 1445: 1928, 1930, 1932. WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,380 ft (1,335 m), from topographic map. Prior to July 29, 1953, at site 0.5 mi (0.8 km) downstream at different datum.

REMARKS.--Records good. Diversions for irrigation of about 40,000 acres (162 km²) above station, of which 14,500 acres (58.7 km²) receive supplemental water of about 7,000 acre-ft (8.63 hm³) annually from Little Truckee River. Flow partly regulated by Lake Davis (station 11391490) beginning in November 1966, and by Frenchman Lake (station 11391370) beginning in November 1961.

AVERAGE DISCHARGE.--53 years, 286 ft³/s (8,100 m³/s), 207,200 acre-ft/yr (255 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,500 ft³/s (411 m³/s) Feb. 1, 1963, gage height, 16.19 ft (4.935 m); minimum, 4.3 ft³/s (0.12 m³/s) Sept. 5, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,260 ft³/s (92.3 m³/s) Jan. 18, gage height, 10.44 ft (3.182 m); minimum daily, 12 ft³/s (0.34 m³/s) Oct. 2-6.

REVISIONS.--The maximum discharges for the water years 1976 and 1977 have been revised to 554 ft³/s (15.7 m³/s) Feb. 29, 1976, gage height, 5.68 ft (1.731 m), and 375 ft³/s (10.6 m³/s) Feb. 21, 1977, gage height, 5.30 ft (1.616 m), superseding figures published.

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	13	18	36	336	300	354	659	301	197	89	30	24
2	12	18	36	267	301	431	689	279	185	85	28	24
3	12	19	35	227	301	542	643	244	179	81	27	25
4	12	19	36	258	301	1230	570	238	179	79	26	25
5	12	25	36	833	376	2280	482	241	182	76	24	51
6	12	22	36	505	527	2830	462	231	186	73	25	53
7	13	21	36	344	901	1810	437	214	189	72	25	40
8	15	21	36	425	1020	1110	402	207	187	69	25	36
9	15	21	35	1030	1750	882	369	184	188	68	24	53
10	14	22	34	1040	1700	797	343	165	176	66	23	57
11	14	22	41	1130	1220	736	324	176	162	63	22	44
12	13	22	48	935	852	670	314	194	156	62	21	40
13	13	24	46	730	657	604	306	205	152	59	21	38
14	13	27	192	1240	563	539	304	217	148	56	21	37
15	13	27	285	1520	529	477	309	246	139	54	21	32
16	13	27	101	2340	460	438	307	219	133	53	21	31
17	13	27	276	2550	400	429	296	197	123	52	22	31
18	15	26	159	2760	360	433	278	186	122	50	23	31
19	15	25	136	1700	325	445	264	182	116	48	23	31
20	16	24	159	1040	335	472	292	189	112	46	23	30
21	16	113	147	814	354	536	289	207	110	43	23	31
22	16	107	174	609	363	585	275	221	105	39	25	42
23	17	52	382	469	377	681	265	243	104	39	25	41
24	16	52	222	363	379	680	255	244	98	38	26	40
25	17	49	296	306	369	622	266	218	122	35	26	39
26	18	43	335	303	375	584	258	200	118	34	25	39
27	20	40	334	303	363	554	257	198	125	34	24	39
28	19	37	275	300	350	531	281	216	121	31	24	39
29	18	36	422	283	---	508	287	233	100	31	24	38
30	18	36	451	299	---	523	295	234	93	31	24	36
31	18	---	376	299	---	598	---	214	---	31	24	---
TOTAL	461	1022	5213	25558	16108	23911	10778	6743	4307	1687	745	1117
MEAN	14.9	34.1	168	824	575	771	359	218	144	54.4	24.0	37.2
MAX	20	113	451	2760	1750	2830	689	301	197	89	30	57
MIN	12	18	34	227	300	354	255	165	93	31	21	24
AC-FT	914	2030	10340	50690	31950	47430	21380	13370	8540	3350	1480	2220

CAL YR 1977 TOTAL 26703.5 MEAN 73.2 MAX 451 MIN 7.1 AC-FT 52970
WTR YR 1978 TOTAL 97650.0 MEAN 268 MAX 2830 MIN 12 AC-FT 193700

11392500 MIDDLE FORK FEATHER RIVER NEAR CLIO, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1963 to current year.

INSTRUMENTATION.--Temperature recorder since October 1963.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 28.5°C July 26, 1976; minimum recorded, 0.0°C on many days in most years.

EXTREMES FOR CURRENT YEAR.--

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

11394500 MIDDLE FORK FEATHER RIVER NEAR MERRIMAC, CA

LOCATION.--Lat 39°42'30", long 121°16'10", in NW¼NE¼ sec.2, T.21 N., R.6 E., Butte County, Plumas National Forest, on left bank 400 ft (122 m) downstream from bridge on Milsap Bar Road, 500 ft (152 m) downstream from Little North Fork, 4.5 mi (7.2 km) southeast of Merrimac, and 20 mi (32 km) northeast of Oroville.

DRAINAGE AREA.--1,062 mi² (2,751 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 1931: 1960, drainage area. WDR CA-68-2: 1956(M), 1963(M).

GAGE.--Water-stage recorder. Altitude of gage is 1,560 ft (475 m), from topographic map. Prior to Jan. 21, 1965, on right bank at same site and datum.

REMARKS.--Records good. Diversions above station for irrigation of about 1,000 acres (4.05 km²) between stations near Clio and near Merrimac. Flow partly regulated by Antelope Lake (station 11401120) beginning in 1963, Lake Davis (station 11391490) beginning in 1966, and Frenchman Lake (station 11391370) beginning in 1961.

AVERAGE DISCHARGE.--27 years, 1,400 ft³/s (39.65 m³/s), 1,014,000 acre-ft/yr (1.25 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 86,200 ft³/s (2,440 m³/s) Dec. 22, 1964, gage height, 26.5 ft (8.08 m) from floodmarks, present site, from rating curve extended above 19,000 ft³/s (538 m³/s) on basis of slope-area measurement of maximum flow; minimum daily, 51 ft³/s (1.44 m³/s) Sept. 14, 15, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 10, 1937, reached a stage of 19.4 ft (5.91 m) from floodmarks, discharge, 46,100 ft³/s (1,310 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 7,000 ft³/s (198 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 5	1800	8790 249	11.55 3.520	Jan. 17	0130	*11700 331	12.52 3.816
Jan. 9	1530	7500 212	11.11 3.386	Mar. 5	2200	11600 329	12.48 3.804

Minimum daily, 92 ft³/s (2.61 m³/s) Oct. 17-21.

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	127	115	178	1540	1200	1590	4770	3380	2610	902	302	198
2	113	110	173	1330	1500	2940	4060	3450	2440	858	290	193
3	107	109	170	1900	1440	3920	3550	3530	2460	872	284	190
4	102	109	170	2220	1360	6750	3340	3470	2540	795	278	186
5	98	191	171	6290	2160	10900	2930	3250	2690	751	270	222
6	97	161	173	4570	3840	9390	2900	2970	2740	728	261	377
7	95	137	173	2860	5640	6820	2660	2860	2770	721	257	314
8	95	127	170	2410	5390	5470	2490	2920	2670	703	250	265
9	95	125	165	5780	5610	4890	2460	3150	2590	672	249	279
10	95	124	161	5290	4870	4190	2560	3300	2500	653	243	539
11	95	122	174	3880	4070	3770	2720	3350	2170	626	233	435
12	95	122	208	3660	3210	3400	2820	3350	2010	593	228	314
13	95	122	191	3220	2770	3030	2790	3370	1970	564	226	274
14	95	122	1110	7360	2380	2760	2780	3620	1910	539	224	261
15	95	122	4110	8340	2220	2530	2730	4250	1760	520	223	251
16	95	123	1180	8830	1970	2390	2580	3420	1590	506	220	240
17	92	124	2100	9540	1800	2390	2370	2970	1490	487	217	232
18	92	124	1660	7360	1660	2450	2260	2870	1470	468	216	226
19	92	124	880	5810	1590	2500	2270	2900	1400	452	216	226
20	92	119	655	4360	1550	2680	2590	2950	1320	434	212	223
21	92	239	586	3460	1550	2930	2420	3060	1270	420	210	220
22	93	651	924	2880	1570	3250	2300	3170	1220	403	213	219
23	95	382	2880	2420	1620	3730	2210	3090	1160	387	223	218
24	95	249	1560	2070	1660	3840	2310	2720	1110	377	220	219
25	95	228	1080	1800	1630	3350	3870	2410	1060	362	217	219
26	99	218	988	1640	1700	3220	3600	2190	1030	352	216	214
27	100	213	1700	1540	1660	3190	3250	2140	996	341	213	210
28	101	205	1780	1450	1580	3230	3300	2340	1130	336	208	209
29	113	191	2710	1360	---	3320	3230	2690	1020	325	204	206
30	150	183	3080	1290	---	3520	3440	2900	944	318	201	204
31	129	---	2000	1230	---	4080	---	2780	---	312	200	---
TOTAL	3124	5291	33260	117690	69200	122420	87560	94820	54040	16777	7224	7583
MEAN	101	176	1073	3796	2471	3949	2919	3059	1801	541	233	253
MAX	150	651	4110	9540	5640	10900	4770	4250	2770	902	302	539
MIN	92	109	161	1230	1200	1590	2210	2140	944	312	200	186
AC-FT	6200	10490	65970	233400	137300	242800	173700	188100	107200	33280	14330	15040
CAL YR 1977 TOTAL	103425			283	4110	51	AC-FT	205100				
WTR YR 1978 TOTAL	618989			1696	10900	92	AC-FT	1228000				

11394500 MIDDLE FORK FEATHER RIVER NEAR MERRIMAC, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.

CHEMICAL ANALYSES: Water years 1963-66, 1970-72, 1977.

WATER TEMPERATURES: Water years 1963 to current year.

SEDIMENT RECORDS: Water years 1970-72.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1962 to current year.

INSTRUMENTATION.--Temperature recorder since October 1962.

REMARKS.--Clock stopped Oct. 1-4, Aug. 23 to Sept. 30; range in temperature, 12.5°C to 17.0°C, and 13.0°C to 17.0°C, respectively.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 24.0°C Aug. 3, 1966, July 17, 18, 1972, July 26, 27, 1976, Aug. 3, 4, 1977; minimum recorded, 0.0°C Jan. 31, Feb. 1, 1975.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 23.0°C Aug. 6-8; minimum recorded, 3.5°C 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	---	---	10.5	9.0	7.0	6.5	5.0	5.0	5.5	5.5	7.0	6.5
2	---	---	10.0	9.0	6.5	5.5	5.5	5.0	6.0	5.5	7.0	6.5
3	---	---	9.5	8.5	6.5	5.5	5.5	5.0	7.0	6.0	7.0	6.5
4	---	---	9.0	8.5	6.5	6.0	6.0	5.5	7.0	6.5	7.0	6.5
5	---	---	9.0	8.5	7.0	6.0	6.5	5.0	7.0	6.5	7.5	7.0
6	14.0	13.0	8.5	8.0	7.0	6.5	6.0	5.0	7.0	6.5	8.5	7.5
7	14.0	13.0	8.5	7.5	7.0	6.5	6.5	6.0	7.0	6.5	9.0	8.5
8	14.0	12.5	8.0	7.0	6.5	5.5	6.0	6.0	6.5	6.5	9.5	9.0
9	14.0	12.5	8.5	7.0	6.0	5.0	6.0	6.0	6.5	6.0	9.0	9.0
10	14.0	12.5	8.5	7.5	5.5	5.0	6.0	6.0	6.0	6.0	9.0	8.5
11	14.0	12.5	8.0	7.5	5.0	4.5	6.0	6.0	6.0	5.0	9.0	8.5
12	14.0	12.5	9.0	8.0	5.0	4.5	6.5	6.0	5.0	4.0	8.5	8.0
13	14.0	12.0	9.0	8.0	5.0	4.5	7.0	6.5	5.0	4.0	8.0	7.5
14	13.5	11.5	8.5	7.5	6.5	5.0	7.0	6.5	5.5	5.0	8.0	7.0
15	13.5	11.5	8.5	7.5	6.5	6.0	6.5	6.0	5.5	5.0	8.0	7.5
16	13.0	11.5	8.5	7.5	6.0	5.5	6.5	6.0	5.5	5.0	8.5	8.0
17	13.5	11.5	8.0	7.0	6.0	5.5	7.0	6.5	5.5	5.0	9.0	8.5
18	13.0	11.5	7.5	6.0	5.5	5.0	7.0	6.5	6.0	5.5	9.0	8.5
19	13.0	11.5	6.5	5.0	5.0	4.0	7.0	6.5	6.5	6.0	9.5	9.0
20	13.0	11.5	5.5	4.5	4.0	3.5	7.0	7.0	7.0	6.5	9.5	9.0
21	12.5	11.5	5.0	4.0	4.5	4.0	7.5	7.0	7.0	6.5	9.5	9.0
22	12.5	11.5	5.0	4.5	6.0	4.5	7.5	7.5	7.5	7.0	9.0	9.0
23	12.0	11.0	6.0	5.0	6.5	6.0	7.5	5.5	7.5	7.0	9.0	8.5
24	12.5	11.5	7.0	6.0	6.5	6.0	5.5	5.0	7.5	7.0	8.5	8.0
25	12.5	12.0	7.5	6.5	6.0	6.0	5.5	5.0	7.5	7.0	9.0	8.5
26	13.0	12.5	7.5	6.5	6.0	5.5	5.5	5.0	7.5	7.5	9.5	9.0
27	12.5	12.0	7.5	6.5	6.5	6.0	6.0	5.5	7.5	7.0	10.0	9.0
28	12.0	11.5	7.5	6.5	6.5	6.0	6.0	5.5	7.0	6.5	10.0	9.5
29	11.5	11.0	7.5	6.5	6.5	6.0	6.0	5.5	---	---	10.0	9.5
30	11.5	11.0	7.5	6.5	6.0	5.5	5.5	5.5	---	---	10.0	9.5
31	11.0	10.5	---	---	5.5	5.0	5.5	5.5	---	---	10.0	9.0
MONTH	14.0	10.5	10.5	4.0	7.0	3.5	7.5	5.0	7.5	4.0	10.0	6.5

11394500 MIDDLE FORK FEATHER RIVER NEAR MERRIMAC, 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	9.5	8.0	11.0	11.0	16.0	15.5	21.0	19.5		
2	7.5	7.0	10.0	9.0	11.5	10.5	16.0	15.0	21.0	20.0		
3	8.0	7.5	10.0	9.5	11.5	11.5	15.5	15.0	21.5	20.0		
4	8.0	7.5	9.5	9.0	12.0	11.5	16.5	15.0	22.0	21.0		
5	7.5	7.5	9.0	8.0	12.5	12.0	17.0	16.0	22.5	21.0		
6	7.5	6.0	8.5	7.5	13.0	12.5	17.5	16.5	23.0	21.0		
7	7.0	6.0	9.5	8.5	13.5	12.5	18.0	17.5	23.0	21.0		
8	8.0	7.0	10.5	9.5	13.5	12.5	18.0	17.0	23.0	21.5		
9	9.0	8.0	10.5	10.0	13.5	12.5	18.5	17.5	22.5	21.5		
10	9.5	8.5	10.0	9.0	13.5	12.5	19.0	18.0	22.0	20.5		
11	9.5	8.5	10.0	9.5	12.5	12.0	18.5	18.0	21.0	20.0		
12	9.5	9.5	10.0	9.5	13.0	12.5	18.0	16.5	20.5	19.0		
13	9.5	9.0	10.0	9.5	13.0	12.5	18.0	17.0	19.5	18.0		
14	9.0	8.0	10.0	9.5	13.0	13.0	19.0	17.0	19.0	18.0		
15	8.0	6.5	10.0	8.0	13.0	12.5	19.0	18.0	19.0	17.0		
16	6.5	6.5	8.5	6.5	13.0	12.0	19.0	18.0	19.0	17.5		
17	7.5	6.5	9.5	8.5	14.0	13.0	19.0	18.0	18.5	17.0		
18	8.5	7.5	10.0	9.0	14.5	13.5	19.5	18.0	18.0	16.0		
19	8.5	8.5	10.5	9.5	14.5	13.5	19.0	18.0	18.5	16.5		
20	8.5	7.5	10.5	9.5	14.5	13.5	19.0	18.0	18.0	16.5		
21	8.0	7.0	10.5	10.0	15.0	13.5	19.5	18.5	18.0	16.5		
22	8.5	7.5	10.5	9.5	15.0	14.0	20.0	19.0	17.0	16.0		
23	9.0	8.5	10.0	8.0	15.0	13.5	20.0	19.0	---	---		
24	9.5	9.0	8.0	7.0	15.5	14.0	20.5	19.5	---	---		
25	9.0	8.5	9.0	7.5	15.0	14.0	21.0	19.5	---	---		
26	8.5	8.0	10.5	9.0	15.0	14.5	21.0	20.0	---	---		
27	9.5	8.0	11.5	10.5	15.0	14.5	21.0	20.0	---	---		
28	9.5	8.5	12.5	11.5	15.0	14.5	21.0	20.0	---	---		
29	9.0	8.0	12.5	12.0	16.0	14.5	21.0	20.0	---	---		
30	9.0	8.0	12.5	11.0	16.5	15.5	20.0	19.5	---	---		
31	---	---	11.0	10.0	---	---	21.5	19.0	---	---		
MONTH	9.5	6.0	12.5	6.5	16.5	10.5	21.5	15.0	---	---		

11394620 FALL RIVER NEAR FEATHER FALLS, CA

LOCATION.--Lat 39°40'00", long 121°08'01", in SW¼NW¼ sec.19, T.21 N., R.8 E., Plumas County, on right bank 0.5 mi (0.8 km) downstream from Coyote Creek, and 8 mi (13 km) northeast of Feather Falls.

DRAINAGE AREA.--9.89 mi² (25.62 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 4,000 ft (1,219 m), from topographic map.

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

AVERAGE DISCHARGE.--15 years, 42.6 ft³/s (1.206 m³/s), 30,860 acre-ft/yr (38.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,770 ft³/s (107 m³/s) Dec. 22, 1964, gage height, 10.00 ft (3.048 m), from rating curve extended above 200 ft³/s (5.66 m³/s) on basis of slope-area measurement of maximum flow; minimum daily, 0.76 ft³/s (0.022 m³/s) Aug. 23, Sept. 8-10, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharges above base of 180 ft³/s (5.10 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 15	0100	286 8.10	3.71 1.131	Jan. 14	1800	*618 17.50	4.83 1.472
Dec. 23	0200	247 7.00	3.54 1.079	Feb. 7	1500	315 8.92	3.87 1.180
Dec. 29	1800	200 5.66	3.31 1.009	Mar. 5	1400	604 17.11	4.79 1.460
Jan. 5	0800	379 10.73	4.07 1.240	Apr. 1	0400	202 5.72	3.38 1.030
Jan. 9	1330	433 12.26	4.26 1.298	Apr. 25	1730	195 5.52	3.34 1.018

Minimum daily, 1.4 ft³/s (0.040 m³/s) Oct. 6-24.

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	2.0	1.8	3.1	82	42	58	194	135	53	10	4.2	2.7
2	1.8	1.7	2.9	75	54	141	161	137	50	9.8	4.1	2.6
3	1.6	1.7	2.9	116	51	187	139	137	48	11	4.0	2.6
4	1.6	1.8	2.9	135	50	387	126	133	47	9.6	3.9	2.6
5	1.5	4.5	3.2	291	108	559	109	122	46	9.2	3.8	4.7
6	1.4	2.8	3.0	207	176	399	102	111	44	8.8	3.7	5.1
7	1.4	2.2	3.1	148	259	273	88	106	42	8.4	3.6	3.7
8	1.4	2.0	3.0	136	218	229	83	107	39	8.0	3.4	3.4
9	1.4	1.9	2.8	338	214	209	84	111	37	7.6	3.4	5.4
10	1.4	1.8	2.8	270	163	176	88	112	34	7.3	3.3	9.9
11	1.4	1.7	3.6	209	134	155	94	111	31	7.2	3.3	5.8
12	1.4	1.7	3.7	175	115	134	100	107	28	7.0	3.3	4.4
13	1.4	1.7	3.5	181	99	117	102	106	26	6.9	3.3	3.9
14	1.4	1.6	53	381	84	104	102	109	24	6.6	3.3	3.7
15	1.4	1.6	128	344	76	93	102	125	22	6.4	3.2	3.5
16	1.4	1.6	39	303	68	87	91	105	21	6.2	3.1	3.3
17	1.4	1.6	93	346	60	85	85	94	19	6.0	3.1	3.3
18	1.4	1.6	58	246	56	83	82	88	18	5.9	3.1	3.3
19	1.4	1.5	37	192	54	83	83	86	17	5.6	3.1	3.2
20	1.4	1.5	27	150	51	86	91	83	16	5.4	3.0	3.1
21	1.4	5.2	23	124	50	97	82	82	15	5.3	2.9	3.1
22	1.4	14	58	106	50	115	79	79	15	5.1	3.1	3.1
23	1.4	6.5	149	90	50	152	76	79	14	5.0	3.1	3.0
24	1.4	4.7	82	78	50	149	87	71	13	5.0	3.0	2.9
25	1.5	4.1	60	69	50	133	169	64	13	4.9	3.0	2.9
26	1.6	3.7	51	62	57	123	168	58	12	4.8	3.0	2.9
27	1.7	3.7	104	56	55	118	151	56	12	4.8	3.0	2.8
28	1.7	3.4	99	52	53	116	142	58	12	4.7	2.9	2.7
29	2.2	3.2	162	49	---	118	131	60	12	4.5	2.8	2.7
30	3.1	3.1	148	46	---	124	138	60	11	4.4	2.8	2.7
31	2.2	---	107	43	---	159	---	57	---	4.3	2.8	---
TOTAL	49.1	89.9	1518.5	5100	2547	5049	3329	2949	791	205.7	101.6	109.0
MEAN	1.58	3.00	49.0	165	91.0	163	111	95.1	26.4	6.64	3.28	3.63
MAX	3.1	14	162	381	259	559	194	137	53	11	4.2	9.9
MIN	1.4	1.5	2.8	43	42	58	76	56	11	4.3	2.8	2.6
AC-FT	97	178	3010	10120	5050	10010	6600	5850	1570	408	202	216
CAL YR 1977 TOTAL	2787.88			MEAN 7.64	MAX 162	MIN .76	AC-FT 5530					
WTR YR 1978 TOTAL	21838.80			MEAN 59.8	MAX 559	MIN 1.4	AC-FT 43320					

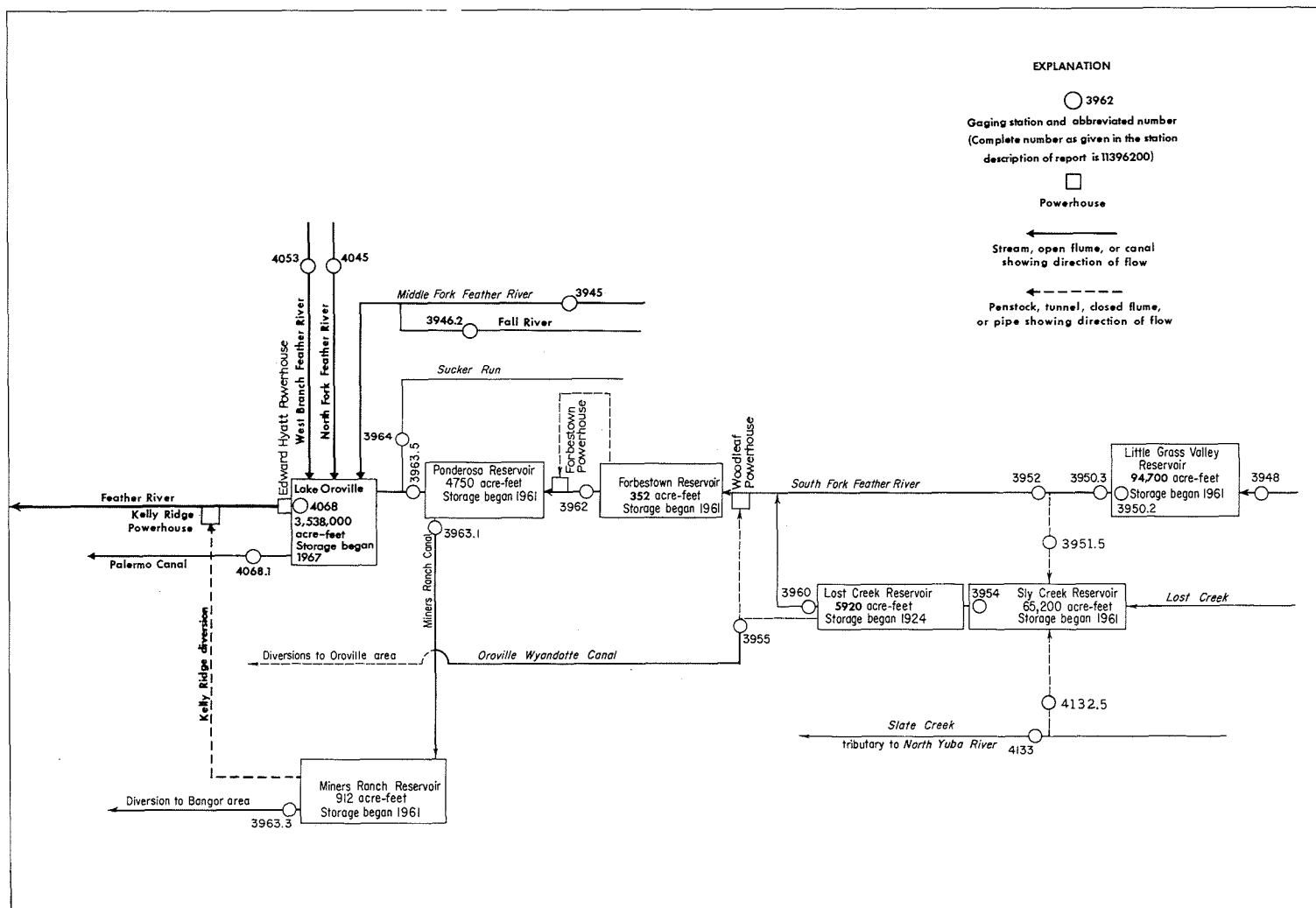


FIGURE 5.--Schematic diagram showing diversions and storage in South Fork Feather River basin.

11394800 SOUTH FORK FEATHER RIVER ABOVE LITTLE GRASS VALLEY RESERVOIR, CA

LOCATION.--Lat 39°45'07", long 120°57'26", in NW¼SE¼ sec.22, T.22 N., R.9 E., Plumas County, Plumas National Forest, on right bank 0.5 mi (0.8 km) downstream from unnamed tributary, 4.5 mi (7.2 km) upstream from Little Grass Valley Dam, and 5 mi (8 km) north of La Porte.

DRAINAGE AREA.--8.09 mi² (20.95 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 5,080 ft (1,548 m), from topographic map.

REMARKS.--Records good. No storage or diversion above station. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE.--18 years, 29.9 ft³/s (0.847 m³/s), 21,660 acre-ft/yr (26.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,160 ft³/s (118 m³/s) Jan. 31, 1963, gage height, 7.12 ft (2.170 m), from rating curve extended above 140 ft³/s (3.96 m³/s) on basis of slope-area measurement at gage height 5.47 ft (1.667 m); no flow Dec. 29, 1976, to Jan. 1, 1977, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 140 ft³/s (3.96 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 15	0400	245 6.94	3.27 0.997	Mar. 23	1700	156 4.45	3.02 0.920
Dec. 29	1400	180 5.10	3.09 0.942	Mar. 31	1830	203 5.75	3.16 0.963
Jan. 9	0700	193 5.47	3.13 0.954	May 15	0530	265 7.50	3.31 1.009
Jan. 14	1600	*345 9.77	3.48 1.061	June 6	1900	226 6.40	3.22 0.982
Mar. 4	1130	183 5.18	3.10 0.945				

Minimum daily, 0.19 ft³/s (0.005 m³/s) Sept. 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	.99	.50	1.5	41	19	23	172	124	150	26	1.5	.22
2	.63	.42	1.3	40	20	50	132	137	144	23	1.6	.21
3	.50	.39	1.3	53	21	50	105	149	148	22	1.8	.19
4	.42	.36	1.4	49	20	142	87	152	162	19	1.2	.19
5	.37	.61	1.8	51	44	174	70	138	174	17	1.0	4.3
6	.33	.64	1.7	40	49	140	62	124	183	16	.89	2.3
7	.33	.60	1.8	32	56	113	51	122	182	16	.71	1.0
8	.31	.60	1.6	49	49	104	46	133	172	14	.77	7.2
9	.32	.55	1.4	147	44	96	47	153	168	13	.93	3.4
10	.41	.49	1.2	95	38	85	52	167	145	12	.63	2.2
11	.39	.53	1.1	81	33	75	61	175	124	11	.49	1.9
12	.33	.56	1.3	75	31	65	71	174	116	9.5	.42	1.9
13	.33	.54	1.3	81	28	55	76	183	116	8.4	.38	1.8
14	.33	.53	38	210	24	48	80	208	108	7.6	.36	1.6
15	.31	.50	88	161	22	45	74	232	90	7.1	.38	1.4
16	.26	.46	16	116	21	44	64	171	79	6.4	.36	1.3
17	.24	.46	28	105	20	45	56	150	77	5.7	.33	1.1
18	.24	.39	17	83	19	49	53	148	77	5.1	.32	1.0
19	.24	.39	11	64	19	53	52	157	68	4.5	.31	.92
20	.24	.33	9.6	52	19	64	51	167	65	4.2	.29	.87
21	.24	1.0	8.5	45	19	83	45	183	58	3.8	.33	.77
22	.24	5.1	13	39	19	102	44	181	56	3.8	.34	.70
23	.24	2.0	40	34	21	132	44	161	51	3.4	.37	.80
24	.20	1.5	19	31	22	129	54	127	46	3.1	.33	.99
25	.20	1.8	14	28	22	111	129	108	40	2.8	.28	.85
26	.20	1.7	13	26	22	106	120	97	35	2.5	.27	.76
27	.24	2.0	46	23	22	107	115	103	36	2.3	.31	.70
28	.24	1.8	46	22	22	112	119	129	35	2.1	.30	.67
29	.29	1.7	141	21	---	124	116	162	31	1.8	.26	.63
30	.41	1.5	95	20	---	140	121	173	29	1.6	.26	.60
31	.52	---	54	19	---	177	---	162	---	1.5	.23	---
TOTAL	10.54	29.95	715.8	1933	765	2843	2369	4750	2965	276.2	17.95	42.47
MEAN	.34	1.00	23.1	62.4	27.3	91.7	79.0	153	98.8	8.91	.58	1.42
MAX	.99	5.1	141	210	56	177	172	232	183	26	1.8	7.2
MIN	.20	.33	1.1	19	19	23	44	97	29	1.5	.23	.19
AC-FT	21	59	1420	3830	1520	5640	4700	9420	5880	548	36	84
CAL YR 1977	TOTAL	1587.36	MEAN	4.35	MAX	141	MIN	0	AC-FT	3150		
WTR YR 1978	TOTAL	16717.91	MEAN	45.8	MAX	232	MIN	.19	AC-FT	33160		

11395020 LITTLE GRASS VALLEY RESERVOIR NEAR LA PORTE, CA

LOCATION.--Lat 39°43'25", long 121°01'10", in SE¼NW¼ sec.31, T.22 N., R.9 E., Plumas County, Plumas National Forest, on right bank 300 ft (91 m) upstream from dam on South Fork Feather River, 3.3 mi (5.3 km) northwest of La Porte.

DRAINAGE AREA.--25.8 mi² (66.8 km²).

PERIOD OF RECORD.--October 1961 to current year. Monthend elevation and contents only October 1961 to October 1962.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Oroville-Wyandotte Irrigation District). Prior to Nov. 1, 1962, in valve chamber in dam at same datum.

REMARKS.--Reservoir is formed by rockfill dam. Storage began in October 1961. Total capacity, 93,000 acre-ft (115 hm³) between elevations, 4,876 ft (1,486.2 m) invert of release valve, and 5,047 ft (1,538.3 m) top of spillway gates, all of which is available for release. Water is released down South Fork Feather River for power development and irrigation downstream. Records, including extremes, represent contents at 2400 hours. See schematic diagram of South Fork Feather River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 96,100 acre-ft (118 hm³) Apr. 29, 1965, elevation, 5,047.9 ft (1,538.60 m); minimum since reservoir first filled, 30,300 acre-ft (37.4 hm³) on many days in 1977, elevation, 4,994.8 ft (1,522.42 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 94,700 acre-ft (117 hm³) June 27 to July 2, elevation, 5,047.0 ft (1,538.33 m); minimum, 30,300 acre-ft (37.4 hm³) on many days during October and November, elevation, 4,994.8 ft (1,522.42 m).

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

4990	26260
5000	34600
5010	44400
5020	55900
5030	68900
5040	83500
5048	96300

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	31300	30300	30900	40400	59500	66300	76500	82300	87900	94700	87600	73900
2	31100	30300	30900	40900	59800	66200	76500	82800	88200	94700	87300	73100
3	30800	30300	30900	41500	60000	66800	76200	83200	88400	94500	86800	72200
4	30700	30300	30900	42100	60000	66900	76500	83800	88700	94500	86500	71500
5	30500	30300	30900	43400	60300	68200	76600	84400	89000	94500	86000	70900
6	30400	30300	30900	43800	61000	69900	76800	84700	89500	94500	85700	70200
7	30300	30300	30900	44100	62100	70900	77100	85100	90100	94500	85200	69500
8	30300	30300	30900	44400	62900	71500	77500	85400	90400	94300	85100	68600
9	30300	30300	30900	45700	63400	72100	77600	85800	90900	94300	84600	68100
10	30300	30300	30900	46600	64100	72500	77800	86200	91400	94200	84300	67500
11	30300	30300	31100	47400	64500	73000	77600	86500	91700	94200	83800	66800
12	30300	30300	31100	48100	64900	73100	77800	86600	92000	94000	83200	66000
13	30300	30300	31100	49000	65200	73300	77900	86800	92200	94000	82800	65200
14	30300	30300	31800	51000	65900	73400	77900	87100	92500	93800	82300	64600
15	30300	30300	32500	52400	66200	73600	78100	87300	92700	93700	82000	63800
16	30300	30300	32800	53800	66300	73600	78500	87600	93000	93700	81600	63000
17	30300	30300	33300	54800	66400	73700	79000	88700	93200	93500	81100	62300
18	30300	30300	33600	56000	66700	73900	79100	88700	93300	93300	80900	61500
19	30300	30300	33700	56900	66800	74000	79100	88700	93700	92800	80400	60600
20	30300	30300	33800	57400	66900	73700	79200	88700	93700	92500	80000	59700
21	30300	30700	34000	57800	67100	73900	79400	88700	94000	92000	79500	58700
22	30300	30800	35100	58000	66900	74000	79500	88500	94200	91700	79100	57800
23	30300	30800	35800	57700	66700	74700	79500	88700	94200	91200	78700	57100
24	30300	30800	36100	58000	66300	75200	79700	88500	94300	90900	78400	56100
25	30300	30800	36400	58200	65900	75300	80300	88400	94300	90400	77900	55200
26	30300	30800	36600	58500	65600	75600	80700	88100	94500	90100	77500	54500
27	30300	30800	37100	58700	65800	75600	81100	87700	94700	89600	77200	53800
28	30300	30800	37700	59000	66200	75700	81600	87600	94700	89300	76800	53000
29	30300	30800	38800	59100	---	75700	82000	87400	94700	88900	76200	52300
30	30300	30900	39500	59300	---	75700	82500	87400	94700	88500	75500	51400
31	30300	---	40000	59400	---	76000	---	87700	---	88100	74700	---
MAX	31300	30900	40000	59400	67100	76000	82500	88700	94700	94700	87600	73900
MIN	30300	30300	30900	40400	59500	66200	76200	82300	87900	88100	74700	51400
†	4994.8	4995.6	5005.5	5022.7	5027.9	5034.9	5039.3	5042.7	5047.0	5042.9	5034.0	5016.1
‡	-1100	+600	+9100	+19400	+6800	+9800	+6500	+5200	+7000	-6600	-13400	-23300
CAL YR 1977	†	-4200										
WTR YR 1978	†	+20000										

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

‡ Change in contents, in acre-feet.

11395030 SOUTH FORK FEATHER RIVER BELOW LITTLE GRASS VALLEY DAM, CA

LOCATION.--Lat 39°43'26", long 121°01'16", in SW¼NW¼ sec.31, T.22 N., R.9 E., Plumas County, Plumas National Forest, on left bank 0.1 mi (0.2 km) downstream from Little Grass Valley Dam, 0.7 mi (1.1 km) downstream from Ice Creek, and 3.5 mi (5.6 km) northwest of La Porte.

DRAINAGE AREA.--25.9 mi² (67.1 km²).

PERIOD OF RECORD.--October 1927 to September 1933 (published as "near La Porte"), October 1960 to current year.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,809.0 ft (1,465.78 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1960, at site 0.4 mi (0.6 km) upstream at different datum. Oct. 1, 1960, to Oct. 30, 1962, at present site and datum. Nov. 1, 1962, to May 31, 1966, at site on outlet works at base of Little Grass Valley Dam 0.1 mi (0.2 km) upstream at datum 4,850.00 ft (1,478.280 m) National Geodetic Vertical Datum of 1929.

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

AVERAGE DISCHARGE (adjusted for change in contents in Little Grass Valley Reservoir).--24 years, 94.9 ft³/s (2.690 m³/s), 68,760 acre-ft/yr (84.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,250 ft³/s (120 m³/s) Feb. 1, 1963; minimum, 0.2 ft³/s (0.006 m³/s) Oct. 28-31, Nov. 2, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 523 ft³/s (14.8 m³/s) Apr. 2, gage height, 10.21 ft (3.112 m); minimum daily, 4.2 ft³/s (0.12 m³/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	144	4.2	4.3	6.3	5.5	156	510	156	167	59	193	345
2	144	4.2	4.3	6.3	5.7	158	490	156	167	58	193	345
3	74	4.2	4.3	7.6	5.9	156	282	158	167	58	193	345
4	4.2	4.2	4.3	7.3	5.7	164	152	158	167	58	193	345
5	4.2	4.3	4.3	8.5	7.8	166	152	158	108	58	193	345
6	4.2	4.2	4.3	6.7	7.3	162	152	156	9.4	58	193	342
7	4.2	4.2	4.3	6.1	8.0	160	152	156	9.1	58	193	342
8	4.2	4.2	4.3	6.9	7.1	160	152	156	8.7	58	193	352
9	4.2	4.2	4.3	12	6.9	160	152	223	8.3	58	193	362
10	4.2	4.2	4.3	8.5	6.5	160	152	288	7.6	58	193	362
11	4.2	4.2	4.3	7.6	6.3	160	154	288	7.3	58	193	362
12	4.2	4.2	4.3	7.6	6.1	160	154	288	7.0	58	193	362
13	4.2	4.2	4.3	7.6	6.1	160	154	288	7.0	58	193	358
14	4.2	4.2	9.5	16	5.9	160	154	288	6.7	58	193	358
15	4.2	4.2	7.4	9.5	5.9	160	154	288	6.7	58	191	358
16	4.2	4.2	6.3	7.8	5.9	160	154	288	6.4	58	191	358
17	4.2	4.2	8.8	8.5	5.9	160	154	327	6.4	58	191	358
18	4.2	4.2	6.5	7.6	5.9	162	154	355	6.4	126	191	355
19	4.2	4.2	5.9	6.7	5.9	162	154	355	6.1	193	191	388
20	4.2	4.2	5.7	6.5	5.9	162	154	355	6.1	193	191	417
21	4.2	4.5	5.5	6.3	5.9	162	154	355	6.1	193	191	399
22	4.2	4.7	6.3	6.1	80	164	154	355	5.8	193	191	382
23	4.2	4.3	11	6.1	156	178	154	355	5.8	193	191	385
24	4.2	4.3	6.7	6.1	156	239	154	355	5.8	193	191	382
25	4.2	4.3	6.1	5.9	156	297	156	355	5.8	193	189	385
26	4.2	4.3	6.1	5.9	156	327	156	355	5.8	193	189	382
27	4.2	4.3	6.9	5.7	156	340	156	355	5.5	193	189	378
28	4.2	4.3	7.8	5.7	156	344	154	355	6.4	193	189	382
29	4.2	4.3	11	5.7	---	340	154	355	37	193	268	378
30	4.2	4.3	8.3	5.7	---	351	156	277	60	193	348	378
31	4.2	---	6.7	5.5	---	418	---	167	---	193	348	---
TOTAL	479.6	127.7	188.4	226.3	1148.1	6368	5434	8524	1029.2	3622	6332	10990
MEAN	15.5	4.26	6.08	7.30	41.0	205	181	275	34.3	117	204	366
MAX	144	4.7	11	16	156	418	510	355	167	193	348	417
MIN	4.2	4.2	4.3	5.5	5.5	156	152	156	5.5	58	189	342
AC-FT	951	253	374	449	2280	12630	10780	16910	2040	7180	12560	21800

CAL YR 1977 TOTAL 10345.7 MEAN 28.3 MAX 152 MIN 3.2 AC-FT 20520 MEAN ‡ 22.5 AC-FT ‡ 16320
WTR YR 1978 TOTAL 44469.3 MEAN 122 MAX 510 MIN 4.2 AC-FT 88200 MEAN ‡ 149 AC-FT ‡ 108200

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

11395200 SOUTH FORK FEATHER RIVER BELOW DIVERSION DAM, NEAR STRAWBERRY VALLEY, CA

LOCATION.--Lat 39°38'51", long 121°07'04", in NE¼SE¼ sec.30, T.21 N., R.8 E., Plumas County, Plumas National Forest, on right bank 0.1 mi (0.2 km) downstream from diversion dam, 3.1 mi (5.0 km) upstream from Rock Creek, and 5.8 mi (9.3 km) north of Strawberry Valley.

DRAINAGE AREA.--37.7 mi² (97.6 km²).

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

GAGE.--Water-stage recorder and since Nov. 7, 1962, concrete control. Datum of gage is 3,535.02 ft (1,077.474 m) National Geodetic Vertical Datum of 1929 (levels by Oroville-Wyandotte Irrigation District).

REMARKS.--Records good. Flow regulated by Little Grass Valley Reservoir (station 11395020). South Fork diversion tunnel, maximum capacity, about 600 ft³/s (17.0 m³/s) 500 ft (152 m) upstream, diverts to Sly Creek Reservoir (station 11395400); diversion began in November 1961. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE (adjusted for diversion to South Fork tunnel).--18 years, 150 ft³/s (4.248 m³/s), 108,700 acre-ft/yr (134 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,330 ft³/s (179 m³/s) Jan. 31, 1963, gage height, 13.21 ft (4.026 m), from rating curve extended above 700 ft³/s (19.8 m³/s) on basis of computation of peak flow over diversion dam; minimum daily, 0.3 ft³/s (0.008 m³/s) Dec. 25, 1962, to Jan. 2, 1963, Mar. 1-3, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 385 ft³/s (10.90 m³/s) Mar. 5, gage height, 4.83 ft (1.472 m); minimum daily, 2.2 ft³/s (0.062 m³/s) Nov. 30 to 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	3.4	2.5	2.2	2.8	2.4	2.8	183	6.2	9.0	7.8	7.6	7.8
2	3.4	2.5	2.2	2.9	2.4	3.1	173	8.5	9.0	7.8	7.6	7.8
3	3.4	2.5	2.2	2.9	2.4	3.2	49	8.5	9.0	7.8	7.6	8.3
4	3.2	2.6	2.2	3.8	2.5	101	2.9	8.5	9.0	7.8	7.6	8.3
5	2.9	2.8	2.2	4.5	2.8	315	2.8	8.5	9.0	7.8	7.6	8.5
6	2.9	2.7	2.3	4.1	3.1	68	2.8	8.5	8.1	7.6	7.6	8.5
7	2.9	2.7	2.3	3.8	3.1	2.9	2.8	8.5	8.1	7.6	7.6	8.5
8	2.9	2.7	2.3	3.6	3.1	2.8	2.7	8.5	7.8	7.6	7.6	8.5
9	2.9	2.7	2.3	4.3	2.9	2.8	2.7	8.8	7.8	7.6	7.6	8.5
10	2.9	2.7	2.3	4.0	2.8	2.7	2.7	8.8	7.8	7.6	7.6	8.5
11	2.9	2.7	2.4	3.4	2.7	2.7	2.8	8.8	7.8	7.6	7.6	8.5
12	2.9	2.7	2.3	3.2	2.7	2.7	2.8	8.8	7.8	7.6	7.6	8.5
13	2.9	2.8	2.3	3.8	2.7	2.6	2.8	8.5	7.8	7.4	7.6	8.5
14	3.1	2.8	2.8	52	2.7	2.6	2.9	8.5	7.6	7.4	7.8	8.5
15	3.1	2.8	2.6	2.7	2.7	2.6	3.1	8.8	7.6	7.4	7.8	8.5
16	3.1	2.8	2.6	3.1	2.7	2.5	2.9	8.8	7.6	7.4	7.8	8.5
17	3.1	2.8	2.9	2.9	2.7	2.5	2.9	8.8	7.6	7.4	7.8	8.5
18	3.1	2.8	2.8	2.8	2.7	2.5	2.9	8.5	7.6	7.4	7.8	8.5
19	3.2	2.8	2.6	2.7	2.7	2.5	2.9	8.5	7.6	7.6	7.8	8.5
20	3.2	2.8	2.5	2.6	2.7	2.5	3.1	8.5	7.6	7.6	7.8	8.5
21	3.2	3.7	2.7	2.5	2.7	2.5	2.9	8.5	7.6	7.6	7.8	8.3
22	3.2	2.4	3.1	2.5	2.7	2.6	2.9	8.5	7.6	7.6	7.8	8.3
23	2.8	2.4	3.2	2.5	2.7	2.6	2.8	8.8	7.6	7.6	7.8	8.3
24	2.5	2.3	2.9	2.4	2.8	2.6	2.8	8.5	7.6	7.6	7.8	8.3
25	2.5	2.3	2.9	2.4	2.7	2.6	2.9	8.5	7.6	7.6	7.8	8.3
26	2.5	2.3	2.8	2.4	2.8	2.6	2.9	8.5	7.6	7.6	7.8	8.3
27	2.5	2.3	2.9	2.4	2.8	2.6	2.9	8.5	7.6	7.6	7.8	8.5
28	2.5	2.3	2.9	2.4	2.7	2.6	2.9	8.8	7.8	7.6	7.8	8.5
29	2.5	2.3	2.9	2.3	---	2.7	2.9	13	7.8	7.6	7.8	8.5
30	2.5	2.2	2.9	2.3	---	2.7	2.9	15	7.8	7.6	7.8	8.5
31	2.5	---	2.8	2.3	---	23	---	9.0	---	7.6	7.8	---
TOTAL	90.6	78.7	80.3	142.3	76.4	579.1	482.3	275.4	237.8	235.4	239.2	252.0
MEAN	2.92	2.62	2.59	4.59	2.73	18.7	16.1	8.88	7.93	7.59	7.72	8.40
MAX	3.4	3.7	3.2	52	3.1	315	183	15	9.0	7.8	7.8	8.5
MIN	2.5	2.2	2.2	2.3	2.4	2.5	2.7	6.2	7.6	7.4	7.6	7.8
AC-FT	180	156	159	282	152	1150	957	546	472	467	474	500
MEAN ‡	20.3	12.5	74.5	224	168	386	314	367	60.2	140	223	398
AC-FT †	1250	741	4580	13760	9340	23720	18680	22580	3580	8610	13710	23710
†	1070	585	4420	13480	9190	22570	17720	22030	3110	8140	13240	23210
CAL YR 1977 TOTAL	1216.8											
WTR YR 1978 TOTAL	2769.5											
MEAN 3.33												
MEAN 7.59												
MAX 4.5												
MIN 1.6												
AC-FT 2410												
MEAN ‡ 41.6												
AC-FT † 30150												
MEAN ‡ 199												
AC-FT † 144300												

‡ Adjusted for diversion to South Fork tunnel.

† Diversion, in acre-feet, from South Fork Feather River to South Fork diversion tunnel.

11395400 SLY CREEK RESERVOIR NEAR STRAWBERRY VALLEY, CA

LOCATION.--Lat 39°35'01", long 121°06'45", in NW¼NW¼ sec.20, T.20 N., R.8 E., Butte County, Plumas National Forest, on right bank 100 ft (30 m) upstream from dam on Lost Creek, 1.4 mi (2.3 km) northwest of Strawberry Valley.

DRAINAGE AREA.--24.0 mi² (62.2 km²).

PERIOD OF RECORD.--November 1961 to current year (fragmentary prior to Mar. 14, 1962).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Oroville-Wyandotte Irrigation District). Prior to Sept. 30, 1966, water-stage recorder in valve chamber inside dam at same datum. Oct. 1, 1966, to December 1974, nonrecording gage read once day.

REMARKS.--Reservoir is formed by earthfill dam. Storage began in November 1961. Total capacity, 65,000 acre-ft (80.1 hm³) between elevations 3,285 ft (1,001.3 m), invert of outlet and 3,531 ft (1,076.2 m), top of spillway gate, all of which is available for release. Water is diverted into reservoir from South Fork Feather River through South Fork diversion tunnel and from North Yuba River basin through Slate Creek tunnel (station 11413250). Records, including extremes, show contents at 2400 hours. See schematic diagram of South Fork Feather River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 65,600 acre-ft (80.9 hm³) June 22, 1978, elevation, 3,530.9 ft (1,076.22 m); minimum, 860 acre-ft (1.06 hm³) Feb. 11, 1976, elevation, 3,320.0 ft (1,011.94 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 65,600 acre-ft (80.9 hm³) June 22, elevation, 3,530.9 ft (1,076.22 m); minimum, 11,600 acre-ft (14.3 hm³), Oct. 22, 23, 26, 28, elevation, 3,400.5 ft (1,036.47 m).

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

3320	860	3420	16600
3340	2150	3450	26300
3360	4300	3480	38500
3380	7360	3510	53400
3400	11500	3532	66200

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	13700	11700	12900	31100	50600	43900	57300	55400	64400	65200	55600	36900
2	13900	11700	13000	31900	50400	44600	57600	55300	64500	65000	54900	36600
3	14200	11800	13000	32700	50100	45700	57900	55200	64500	65100	54200	36400
4	14100	11800	13000	33000	49600	48000	58000	55100	64600	65300	53600	36100
5	14100	11900	13100	37500	49800	51100	57900	54800	64700	65400	53000	35900
6	14100	11900	13100	40100	50400	52800	57900	54600	64700	64700	52400	35700
7	14100	12000	13100	41200	51900	53800	57800	54200	64500	64900	51800	35400
8	14000	12000	13200	41800	53000	54600	57600	54000	64300	64800	51200	35200
9	14000	12000	13200	44600	53100	55200	57400	53800	64000	64900	50600	34900
10	14000	12000	13200	46400	53100	55700	57300	53700	63900	64800	50000	35100
11	14000	12000	13300	47000	52500	55900	57200	53600	63800	64700	49400	36000
12	13600	12000	13300	48500	52000	56100	57100	53400	63700	64600	48700	36800
13	13100	12000	13400	49300	51200	56100	56900	53300	63700	64400	48200	37500
14	12600	12000	13800	51000	51000	56000	56700	53200	63800	64200	47500	38000
15	12600	12000	15300	53600	50400	55800	56700	53700	63700	64400	46900	38100
16	12600	12000	15800	54800	49800	55700	56600	54400	64000	64600	46200	38000
17	12200	12000	17500	57400	49300	55400	56400	55200	64300	64300	45500	37900
18	12200	12000	18400	57800	48700	55200	56200	56100	64500	63600	44900	37800
19	12200	12000	18800	57600	48000	55000	56000	56800	64700	63100	44200	37600
20	12200	12100	19000	57400	47400	54800	55900	57700	64900	62500	43500	37800
21	11900	12200	19300	57200	46800	54700	55800	58500	65500	62000	42800	37700
22	11600	12500	20300	57000	46200	54700	55600	59300	65600	61400	42000	37600
23	11600	12500	21900	56500	45900	54800	55400	60200	65000	60900	41500	37500
24	11700	12600	23100	55900	45500	55100	55300	60900	65000	60300	40800	37300
25	11700	12700	23700	55400	45200	55200	55400	61500	65000	59700	40200	37100
26	11600	12700	24400	54800	44900	55400	55400	61900	65200	59100	39600	37100
27	11700	12800	25300	54100	44600	55500	55600	62400	65400	58500	38900	36900
28	11600	12800	26300	53400	44200	55700	55600	63000	65500	57900	38300	36700
29	11700	12900	27800	52800	---	55800	55500	63600	65600	57300	37800	36500
30	11700	12900	29200	52100	---	56100	55500	64100	65500	56800	37500	36400
31	11700	---	30300	51300	---	56600	---	64300	---	56100	37200	---
MAX	14200	12900	30300	57800	53100	56600	58000	64300	65600	65400	55600	38100
MIN	11600	11700	12900	31100	44200	43900	55300	53200	63700	56100	37200	34900
†	3400.9	3405.7	3460.5	3506.0	3492.1	3515.6	3513.7	3528.7	3530.8	3514.8	3477.0	3475.1
‡	-1740	+1200	+17400	+21000	-7100	+12400	-1100	+8800	+1200	-9400	-18900	-800

CAL YR 1977 † +21020
WTR YR 1978 † +22900

† Elevation, in feet NGVD, at end of month.
‡ Change in contents, in acre-feet.

11395500 OROVILLE-WYANDOTTE CANAL NEAR CLIPPER MILLS, CA

LOCATION.--Lat 39°33'15", long 121°11'31", in NW¼NE¼ sec.33, T.20 N., R.7 E., Butte County, in concrete valve house at head of canal, 2.5 mi (4.0 km) north of Clipper Mills.

PERIOD OF RECORD.--October 1927 to September 1941 (published as Forbestown ditch), October 1953 to current year. Monthly discharge only for October 1953 to September 1961, published with records for Lost Creek near Clipper Mills.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 3,166.0 ft (965.00 m) National Geodetic Vertical Datum of 1929 (levels by Oroville-Wyandotte Irrigation District). Prior to Sept. 30, 1941, nonrecording gages and Oct. 1, 1941, to Nov. 16, 1962, water-stage recorder at sites at different datums 4 mi (6 km) upstream in abandoned portion of canal, 0.3 mi (0.5 km) downstream from Lost Creek Dam.

REMARKS.--Records good. Water is discharged to canal through valve in Woodleaf penstock. Prior to Nov. 16, 1962, canal diverted from Lost Creek Dam. Water is used for irrigation and domestic supply. Demand for water reduced when a large lumber mill closed at Woodleaf in 1962. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE.--23 years (water years 1928-41, 1954-62, prior to closure of lumber mill), 21.0 ft³/s (0.595 m³/s), 15,200 acre-ft/yr (18.7 hm³/yr); 16 years (water years 1963-78), 8.80 ft³/s (0.249 m³/s), 6,380 acre-ft/yr (7.87 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 43 ft³/s (1.22 m³/s) Aug. 9 to Sept. 9, 1937, Aug. 13-15, 1977; no flow at times in many years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	12	2.7	0	3.0			0	5.5	14	22	21
2	20	12	2.7	0	0			0	7.4	14	22	21
3	20	12	2.7	0	0			0	7.5	14	22	21
4	20	12	2.7	0	0			0	8.3	14	23	21
5	20	12	2.7	0	0			0	6.5	13	23	21
6	20	12	1.1	0	0			0	6.4	13	22	21
7	20	12	0	0	0			0	8.7	16	22	20
8	20	12	0	0	0			0	9.6	15	22	19
9	20	12	5.4	0	0			0	8.6	16	21	19
10	20	12	13	0	0			0	6.6	15	21	19
11	20	12	14	0	0			0	8.7	16	20	23
12	19	12	14	0	0			0	11	15	21	20
13	19	12	11	0	0			0	12	16	21	18
14	19	12	9.0	0	0			0	11	17	21	17
15	20	12	5.4	0	0			0	9.5	16	20	16
16	16	12	2.3	0	0			0	10	13	20	16
17	12	8.1	2.2	0	0			0	10	14	20	16
18	12	1.5	2.2	0	0			0	10	14	22	16
19	12	1.5	2.2	0	0			0	10	16	21	15
20	12	1.5	1.9	0	0			0	10	19	21	18
21	12	1.5	1.7	0	0			0	10	19	21	17
22	12	1.5	1.6	0	0			0	10	19	21	18
23	12	.96	1.6	0	0			0	10	19	21	18
24	12	.27	.98	0	0			0	9.5	20	22	18
25	12	.25	.55	0	0			0	12	21	22	18
26	12	.22	.55	0	0			0	11	22	21	15
27	12	.20	.55	0	0			0	11	23	21	15
28	12	.96	.29	0	0			0	11	23	21	15
29	12	1.5	0	0	---			1.6	13	23	21	15
30	12	2.3	0	9.4	---			4.3	14	23	21	16
31	12	---	0	15	---		---	4.6	---	22	21	---
TOTAL	494	214.26	105.02	24.4	3.0	0	0	10.5	288.8	534	660	543
MEAN	15.9	7.14	3.39	.79	.11	0	0	.34	9.63	17.2	21.3	18.1
MAX	21	12	14	15	3.0	0	0	4.6	14	23	23	23
MIN	12	.20	0	0	0	0	0	0	5.5	13	20	15
AC-FT	980	425	208	48	6.0	0	0	21	573	1060	1310	1080
CAL YR 1977	TOTAL	5974.78	MEAN 16.4	MAX 43	MIN 0	AC-FT 11850						
WTR YR 1978	TOTAL	2876.98	MEAN 7.88	MAX 23	MIN 0	AC-FT 5710						

11396000 LOST CREEK NEAR CLIPPER MILLS, CA

LOCATION.--Lat 39°34'25", long 121°08'26", in SE¼SW¼ sec.24, T.20 N., R.7 E., Butte County, Flumas National Forest, on left bank 0.3 mi (0.5 km) downstream from Lost Creek Reservoir, and 2.8 mi (4.5 km) north of Clipper Mills.

DRAINAGE AREA.--30.0 mi² (77.7 km²).

PERIOD OF RECORD.--October 1927 to September 1941, October 1948 to current year. Records for Woodleaf powerplant from February 1963 to September 1966 in files of Geological Survey.

REVISED RECORDS.--WSP 1395: 1954. WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,170 ft (966 m), from topographic map.

REMARKS.--Records fair. Flow regulated by Sly Creek Reservoir 1.5 mi (2.4 km) upstream (station 11395400) and Lost Creek Reservoir 0.3 mi (0.5 km) upstream, usable capacity, 5,920 acre-ft (7.30 hm³) with flashboards. Water is diverted into Sly Creek Reservoir through South Fork diversion tunnel from South Fork Feather River and through Slate Creek tunnel from North Yuba River basin. Woodleaf tunnel diverts from Lost Creek Reservoir to Woodleaf powerhouse. Oroville-Wyandotte Canal (station 11395500) diverts from Woodleaf penstock for irrigation and domestic use. Records represent seepage, release, or spill from Lost Creek Dam to Lost Creek. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE.--27 years (water years 1928-41, 1949-61, prior to regulation by Sly Creek Reservoir), 73.0 ft³/s (2.07 m³/s), 52,850 acre-ft/yr (65.2 hm³/yr); 17 years (water years 1962-78), 20.8 ft³/s (0.589 m³/s), 15,070 acre-ft/yr (18.6 hm³/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft³/s (142 m³/s) Dec. 22, 1955, gage height, 6.90 ft (2.103 m); no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 728 ft³/s (20.6 m³/s) Jan. 19, gage height, 3.58 ft (1.091 m); minimum daily, 0.58 ft³/s (0.016 m³/s) Jan. 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	1.0	.98	.74	.74	.98	.66	.94	2.3	1.3	1.2	2.1	1.0
2	1.0	.98	.74	.74	.98	1.4	10	2.2	1.3	1.2	1.3	1.0
3	1.0	.98	.74	.90	.94	2.7	190	2.1	1.2	1.2	1.3	1.0
4	1.0	.98	.74	1.5	.94	4.5	1.3	2.0	1.2	1.2	1.3	1.0
5	1.0	.98	.74	9.6	1.2	7.0	1.1	1.8	1.2	1.2	1.3	1.2
6	.98	.90	.74	1.7	2.4	3.8	1.2	1.7	1.2	1.2	1.3	1.2
7	1.0	.90	.74	.74	3.7	2.2	1.2	1.7	1.2	1.2	1.2	1.1
8	.98	.90	.74	.58	3.0	1.5	1.1	1.6	1.2	1.1	1.2	1.1
9	.98	.90	.78	2.6	3.3	1.3	1.0	1.6	1.2	1.1	1.2	1.3
10	.98	.90	.78	1.5	2.3	1.1	1.0	1.6	1.2	1.1	1.2	1.2
11	.98	.94	.86	.98	1.8	.98	.98	1.6	1.2	1.1	1.2	1.2
12	.98	.94	.78	.74	1.7	.90	.94	1.6	1.2	1.1	1.2	1.1
13	.94	.94	.78	.90	1.9	.82	.94	1.6	1.1	1.1	1.3	1.1
14	.98	.94	1.3	3.7	8.7	.78	.94	1.5	1.1	1.1	1.4	1.1
15	1.0	.94	1.1	5.5	.98	.78	1.0	1.6	1.1	1.1	1.4	1.1
16	.98	.94	.70	10	.90	.74	.98	1.5	1.1	1.0	1.2	1.1
17	1.0	.94	1.2	61	.86	.70	.98	1.5	36	1.0	.98	1.1
18	1.0	.94	.78	629	.82	.70	.94	1.4	183	1.0	.98	1.1
19	.98	.94	.70	533	.78	.70	.94	1.4	160	1.0	.98	1.1
20	.98	.98	.66	166	.78	.70	.94	1.4	121	1.0	.98	1.1
21	1.0	1.4	.66	8.0	.74	.70	.90	1.4	1.2	1.0	.98	1.0
22	1.0	.86	1.1	1.5	.74	.70	.90	1.4	1.2	1.0	.98	1.0
23	1.0	.78	1.6	1.3	.70	.74	.86	1.5	1.2	.98	.98	1.1
24	1.0	.74	.78	1.2	.70	.70	.90	1.4	1.2	.98	.98	1.1
25	1.0	.74	.70	1.1	.70	.66	3.9	1.4	1.2	.98	.98	1.2
26	1.0	.74	.70	1.0	.66	.66	27	1.5	1.2	1.0	1.0	1.2
27	1.0	.74	.86	1.0	.66	.66	16	1.5	1.2	1.0	1.0	1.2
28	1.0	.74	.90	.98	.66	.62	2.6	1.4	1.2	1.0	1.0	1.2
29	1.0	.74	1.1	.98	---	.62	2.5	1.4	1.2	1.3	1.0	1.2
30	1.0	.74	.94	.98	---	.62	2.4	1.3	1.2	2.1	1.0	1.2
31	1.0	---	.78	.98	---	.74	---	1.3	---	2.3	1.0	---
TOTAL	30.74	27.06	26.46	1450.44	44.52	41.38	276.38	49.2	531.0	35.84	35.92	33.6
MEAN	.99	.90	.85	46.8	1.59	1.33	9.21	1.59	17.7	1.16	1.16	1.12
MAX	1.0	1.4	1.6	629	8.7	7.0	190	2.3	183	2.3	2.1	1.3
MIN	.94	.74	.66	.58	.66	.62	.86	1.3	1.1	.98	.98	1.0
AC-FT	61	54	52	2880	88	82	548	98	1050	71	71	67
†	2440	538	1690	26510	29600	32560	30950	33550	17320	19390	33070	26190
CAL YR 1977 TOTAL	650.46											
WTR YR 1978 TOTAL	2582.54											
MEAN	1.78											
MAX	170											
MIN	.66											
AC-FT	1290											
	5120											

† Diversion, in acre-feet, to Woodleaf powerplant, furnished by Oroville-Wyandotte Irrigation District.

SACRAMENTO RIVER BASIN

11396200 SOUTH FORK FEATHER RIVER BELOW FORBESTOWN DAM, CA

LOCATION.--Lat 39°33'05", long 121°12'30", in SE¼NE¼ sec.32, T.20 N., R.7 E., Butte County, Plumas National Forest, on right bank 500 ft (152 m) downstream from Forbestown Dam, 0.4 mi (0.6 km) upstream from Oroleve Creek, and 4.0 mi (6.4 km) northeast of Forbestown.

DRAINAGE AREA.--87.5 mi² (226.6 km²).

PERIOD OF RECORD.--July 1962 to current year. Records for Forbestown powerplant from February 1963 to September 1966 in files of Geological Survey.

GAGE.--Water-stage recorder. Altitude of gage is 1,690 ft (515 m), from topographic map.

REMARKS.--Records good. Flow regulated by Little Grass Valley Reservoir (station 11395020), Sly Creek Reservoir, (station 11395400), and smaller reservoirs. Water from North Yuba River basin is imported through Slate Creek tunnel (station 11413250) to Sly Creek Reservoir. Oroville-Wyandotte Canal (station 11395500) diverts above station. Tunnel 600 ft (183 m) above station diverts most flow through Forbestown powerplant except fish-water releases and uncontrolled spill over Forbestown Dam. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE.--16 years, 55.9 ft³/s (1.583 m³/s), 40,500 acre-ft/yr (49.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,510 ft³/s (213 m³/s) Jan. 31, 1963, gage height, 13.85 ft (4.221 m) in gage well, 15.3 ft (4.66 m) from floodmarks; minimum daily, 0.6 ft³/s (0.017 m³/s) Apr. 4, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,275 ft³/s (36.1 m³/s) Mar. 5, gage height, 9.01 ft (2.746 m); minimum daily, 4.0 ft³/s (0.11 m³/s) several days during October, December and January.

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	4.2	4.3	4.0	5.2	73	206	60	14	15	13	9.3
2	4.3	4.2	4.3	4.0	37	242	249	56	15	14	13	9.3
3	4.3	4.2	4.3	4.2	4.9	323	243	51	15	15	13	9.3
4	4.2	4.1	4.3	4.3	4.9	606	100	47	15	15	13	9.3
5	4.2	4.2	4.3	109	45	662	83	42	15	15	13	9.5
6	4.1	4.2	4.3	33	178	160	114	39	15	14	13	9.5
7	4.3	4.2	4.4	4.2	228	388	99	35	15	14	13	9.5
8	4.3	4.2	4.2	4.2	475	155	86	32	15	14	13	9.5
9	4.3	4.3	4.2	48	251	134	78	29	15	14	13	9.6
10	4.3	4.2	4.3	117	250	99	70	26	15	14	13	9.8
11	4.2	4.2	4.4	48	213	81	63	23	15	14	13	9.5
12	4.3	4.2	4.3	4.7	192	64	56	21	15	14	13	9.5
13	4.3	4.3	4.3	13	206	82	50	19	15	14	13	9.3
14	4.3	4.3	4.5	342	185	75	46	16	15	14	13	9.4
15	4.3	4.2	4.3	437	166	66	67	23	15	14	8.9	9.8
16	4.3	4.3	4.2	742	141	57	66	15	15	14	6.5	9.8
17	4.3	4.3	4.4	569	121	51	59	14	15	14	8.0	9.8
18	4.2	4.3	4.2	595	106	46	53	14	15	14	9.3	9.8
19	4.1	4.3	4.2	410	95	42	50	14	15	14	9.3	9.8
20	4.2	4.5	4.2	20	87	38	65	14	15	14	9.3	9.7
21	4.2	4.7	4.2	119	80	41	55	14	15	14	9.3	9.8
22	4.1	4.5	4.3	14	81	42	49	14	15	14	9.3	9.8
23	4.2	4.5	4.2	69	80	50	45	14	15	14	9.3	9.8
24	4.2	4.4	4.0	18	80	45	50	14	15	14	9.3	10
25	4.1	4.5	4.0	39	80	38	127	14	15	14	9.3	10
26	4.0	4.5	4.1	31	80	33	132	14	15	14	9.3	10
27	4.0	4.4	4.1	23	80	28	106	14	15	13	9.3	10
28	4.1	4.5	4.2	17	73	25	83	14	15	13	9.3	10
29	4.2	4.3	4.2	11	---	22	71	14	15	13	9.3	10
30	4.2	4.3	4.1	7.0	---	20	67	14	15	13	9.3	10
31	4.2	---	4.0	5.2	---	36	---	14	---	13	9.3	---
TOTAL	130.6	129.5	131.3	3865.8	3625.0	3824	2688	744	449	433	335.6	290.4
MEAN	4.21	4.32	4.24	125	129	123	89.6	24.0	15.0	14.0	10.8	9.68
MAX	4.3	4.7	4.5	742	475	662	249	60	15	15	13	10
MIN	4.0	4.1	4.0	4.0	4.9	20	45	14	14	13	6.5	9.3
AC-FT	259	257	260	7670	7190	7580	5330	1480	891	859	666	576
†	2640	647	2760	33080	33250	37630	36570	37420	18410	19380	33720	26520
CAL YR 1977 TOTAL	1539.3											
WTR YR 1978 TOTAL	16646.2											
MEAN	4.22											
MAX	742											
MIN	4.0											
AC-FT	3050											
AC-FT	33020											

† Diversion, in acre-feet, to Forbestown powerplant, furnished by Oroville-Wyandotte Irrigation District.

11396310 MINERS RANCH CANAL BELOW PONDEROSA DAM, NEAR FORBESTOWN, CA

LOCATION.--Lat 39°33'00", long 121°18'20", in SE¼NW¼ sec.33, T.20 N., R.6 E., Butte County, on right bank 800 ft (244 m) downstream from Ponderosa Dam, and 3 mi (5 km) northwest of Forbestown.

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

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 975 ft (297 m), from topographic map.

REMARKS.--Records good. Canal diverts from South Fork Feather River at Ponderosa Dam. Water is used for power development and irrigation. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE.--16 years, 203 ft³/s (5.749 m³/s), 147,100 acre-ft/yr (181 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 289 ft³/s (8.184 m³/s) Sept. 10, 1976; 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	109	0	175	242	244	0	182	178	179	181	178
2	0	0	25	175	243	244	0	182	178	180	181	178
3	0	24	0	175	243	244	0	182	178	179	181	178
4	0	0	57	214	245	244	0	182	178	180	181	178
5	0	0	22	243	244	245	0	181	178	180	181	178
6	0	35	0	243	244	244	0	181	178	180	181	178
7	143	79	0	243	245	243	0	181	178	180	180	178
8	157	0	0	243	245	244	0	181	178	180	165	178
9	.54	0	86	243	244	244	0	181	178	180	181	178
10	0	0	0	243	244	244	0	176	178	180	181	176
11	0	85	0	243	243	241	0	180	178	169	182	176
12	95	1.0	0	243	244	241	0	180	178	181	182	41
13	114	0	57	243	244	243	0	180	178	181	181	25
14	104	0	109	238	230	243	0	180	178	180	181	74
15	0	0	187	222	243	243	0	180	178	180	180	181
16	0	0	186	212	243	242	0	180	178	180	179	181
17	109	0	186	202	243	242	23	180	177	179	178	181
18	0	0	186	217	244	242	37	180	177	180	178	181
19	0	0	155	244	244	242	37	180	177	181	178	181
20	0	0	87	243	244	224	55	144	177	181	178	181
21	58	139	102	243	244	240	108	178	125	181	178	181
22	51	0	81	243	244	240	142	178	29	181	177	181
23	0	59	152	243	244	240	142	178	57	181	178	181
24	148	0	234	243	244	240	116	178	178	181	178	181
25	.77	0	140	240	244	237	143	178	178	181	178	181
26	0	0	100	243	244	240	151	178	179	181	178	181
27	0	0	153	243	244	162	167	178	180	181	178	181
28	0	0	175	240	244	0	182	178	179	181	178	181
29	0	96	177	243	---	0	182	178	180	181	178	181
30	0	0	177	243	---	0	182	178	179	181	178	181
31	62	---	175	243	---	0	---	178	---	181	178	---
TOTAL	1042.31	627.0	3009	7171	6813	6442	1667	5531	5020	5581	5547	4990
MEAN	33.6	20.9	97.1	231	243	208	55.6	178	167	180	179	166
MAX	157	139	234	244	245	245	182	182	180	181	182	181
MIN	0	0	0	175	230	0	0	144	29	169	165	25
AC-FT	2070	1240	5970	14220	13510	12780	3310	10970	9960	11070	11000	9900
‡	331	209	5230	13230	5510	0	2360	9990	7970	8710	8160	7590
CAL YR 1977 TOTAL	12822.73			MEAN 35.1	MAX 234	MIN 0	AC-FT 25430					
WTR YR 1978 TOTAL	53440.31			MEAN 146	MAX 245	MIN 0	AC-FT 106000					

‡ Diversion, in acre-feet, to Kelly Ridge powerplant, furnished by Oroville-Wyandotte Irrigation District.

11396330 BANGOR CANAL BELOW MINERS RANCH RESERVOIR, NEAR OROVILLE, CA

LOCATION.--Lat 39°30'15", long 121°27'16", in NE¼SW¼ sec.18, T.19 N., R.5 E., Butte County, on left bank 400 ft (122 m) downstream from outlet at Miners Ranch Dam, and 5 mi (8 km) east of Oroville.

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

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 815 ft (248 m), from topographic map.

REMARKS.--Records excellent. Flow regulated by Miners Ranch Reservoir, capacity, 912 acre-ft (1.12 hm³). Canal completed in November 1962. Water is used for irrigation. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE.--15 years, 15.8 ft³/s (0.447 m³/s), 11,450 acre-ft/yr (14.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 65 ft³/s (1.84 m³/s) Aug. 17-20, 1963; no flow for several days in 1965, 1969.

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	21	14	9.2	8.1	6.4	7.2	6.7	6.7	20	25	23	22
2	20	14	9.0	6.2	6.4	7.2	6.4	6.7	20	25	24	21
3	20	11	9.1	6.4	6.4	7.2	6.4	6.7	20	25	24	22
4	20	12	9.0	6.4	6.4	7.2	6.3	6.7	20	25	25	23
5	22	13	9.4	6.6	6.4	7.2	6.2	6.7	21	25	24	23
6	23	12	9.3	6.6	6.4	7.2	6.2	6.7	21	25	25	23
7	23	12	8.3	6.6	6.4	7.2	6.2	6.7	21	25	25	23
8	25	13	7.6	6.6	6.4	7.1	6.2	6.7	21	25	25	22
9	24	13	7.5	6.6	6.4	7.0	6.1	8.3	21	25	26	23
10	23	13	7.0	6.6	6.7	7.2	6.4	10	21	25	26	23
11	24	13	6.2	6.5	6.7	7.8	6.4	12	21	25	26	23
12	23	13	6.2	6.5	6.7	7.2	6.2	13	21	24	25	23
13	24	12	6.1	6.5	6.7	7.2	6.1	11	21	24	24	23
14	24	11	6.0	6.5	6.7	7.2	5.9	11	22	24	25	23
15	25	12	5.7	6.5	6.7	6.7	7.2	11	25	24	24	23
16	24	12	5.5	6.5	6.7	6.7	7.0	11	30	24	24	23
17	24	12	5.4	6.5	6.7	6.7	6.6	13	28	24	26	23
18	25	12	5.4	6.5	7.0	6.6	6.1	14	26	23	26	22
19	24	12	6.1	6.5	7.0	6.5	6.7	14	25	23	25	21
20	22	12	6.2	6.5	7.0	6.7	6.8	14	27	23	25	21
21	19	12	6.4	6.5	7.0	6.7	6.7	16	28	25	26	22
22	20	11	6.5	6.5	7.0	6.6	6.6	18	26	27	25	22
23	20	9.3	6.1	6.5	7.0	6.9	6.1	18	25	25	26	21
24	20	9.1	5.9	6.5	7.0	7.2	5.3	17	25	26	25	21
25	20	8.0	6.0	6.5	7.0	7.2	5.7	17	26	24	25	21
26	16	8.3	6.1	6.4	7.0	7.2	6.0	18	26	23	25	21
27	16	8.8	5.8	6.4	7.2	7.2	6.2	23	25	24	25	22
28	16	9.1	5.8	6.4	7.2	7.1	6.6	21	26	24	26	22
29	16	9.3	6.2	6.4	---	6.7	6.7	19	25	23	24	22
30	16	9.3	6.2	6.4	---	6.7	6.7	20	25	23	23	21
31	13	---	6.2	6.4	---	6.7	---	21	---	24	23	---
TOTAL	652	342.2	211.4	200.6	188.6	217.2	190.7	403.9	709	756	770	665
MEAN	21.0	11.4	6.82	6.47	6.74	7.01	6.36	13.0	23.6	24.4	24.8	22.2
MAX	25	14	9.4	6.6	7.2	7.8	7.2	23	30	27	26	23
MIN	13	8.0	5.4	6.1	6.4	6.5	5.3	6.7	20	23	23	21
AC-FT	1290	679	419	398	374	431	378	801	1410	1500	1530	1320
CAL YR 1977	TOTAL	6743.7	MEAN 18.5	MAX 45	MIN 3.7	AC-FT 13380						
WTR YR 1978	TOTAL	5306.6	MEAN 14.5	MAX 30	MIN 5.3	AC-FT 10530						

11396350 SOUTH FORK FEATHER RIVER AT PONDEROSA DAM, CA

LOCATION.--Lat 39°32'52", long 121°18'11", in NW¼SE¼ sec.33, T.20 N., R.6 E., Butte County, at entrance to Miners Ranch Canal on the left end of Ponderosa Dam, 2,800 ft (853 m) upstream from Sucker Run, and 2.6 mi (4.2 km) northwest of Forbestown.

DRAINAGE AREA.--108 mi² (280 km²).

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

GAGE.--Water-stage recorder, high level sluice gate, and concrete spillway of Ponderosa Dam. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Oroville-Wyandotte Irrigation District). Prior to Oct. 1, 1967, at site 1,800 ft (550 m) downstream at different datum.

REMARKS.--Records good. Records are combined flow through sluice gate and flow over spillway. Flow regulated by several reservoirs and diversions. Water is imported from North Yuba River basin through Slate Creek tunnel (station 11413250). Miners Ranch Canal (station 11396310) diverts at Ponderosa Dam for power development and irrigation; diversion began in October 1962. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE (adjusted for diversion to Miners Ranch Canal).--16 years, 445 ft³/s (12.60 m³/s), 322,400 acre-ft/yr (398 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft³/s (312 m³/s) Dec. 22, 1964, gage height, 11.52 ft (3.511 m) in gage well, 12.7 ft (3.87 m) outside from floodmarks, site and datum then in use; no flow for several months most years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2,320 ft³/s (65.7 m³/s) Mar. 5; 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	14	15		0	449	427	955	586	438	0	418	420
2	14	15		0	449	632	1110	574	432	0	417	418
3	14	15		0	454	925	1060	562	432	0	424	407
4	14	15		149	422	1400	932	556	432	0	422	407
5	14	15		925	460	2320	880	544	432	0	416	420
6	14	15		580	745	1260	978	532	340	0	413	418
7	14	15		400	1130	948	955	526	394	0	421	412
8	11	15		394	992	773	888	520	427	0	430	415
9	9.3	15		593	1050	745	850	508	422	0	432	421
10	9.7	15		710	752	664	829	502	223	0	390	437
11	10	15		532	684	619	808	496	223	0	363	204
12	10	14		444	638	568	801	490	160	0	397	0
13	12	14		422	704	556	780	484	118	0	415	0
14	14	14		970	697	562	773	484	25	0	424	0
15	15	14		1700	632	520	801	478	77	0	431	182
16	15	14		2240	586	502	829	472	33	0	434	253
17	15	14		1570	544	490	773	460	0	0	435	280
18	16	14		1260	520	484	738	454	0	252	428	296
19	16	7.5		1270	496	466	724	454	0	417	427	342
20	16	0		902	484	478	731	496	0	418	434	313
21	17	0		638	472	466	657	454	0	418	438	306
22	17	0		556	466	449	600	449	0	424	439	339
23	18	0		502	454	454	586	444	0	420	434	355
24	17	0		427	449	478	626	444	0	418	431	358
25	16	0		472	438	466	745	444	0	421	429	359
26	16	0		520	432	438	752	438	0	424	428	359
27	16	0		490	432	514	690	416	0	424	427	359
28	16	0		532	432	710	626	427	0	418	426	365
29	16	0		472	---	710	619	432	0	416	424	368
30	16	0		466	---	717	600	438	0	415	422	371
31	16	---		454	---	738	---	438	---	414	421	---
TOTAL	448.0	270.5	0	20590	16463	21479	23696	15002	4608	5699	13090	9584
MEAN	14.5	9.02	0	664	588	693	790	484	154	184	422	319
MAX	18	15	0	2240	1130	2320	1110	586	438	424	439	437
MIN	9.3	0	0	0	422	427	586	416	0	0	363	0
AC-FT	889	537	0	40840	32650	42600	47000	29760	9140	11300	25960	19010
MEAN ‡	48.1	29.9	97.1	895	831	901	845	662	321	364	601	486
AC-FT ‡	2960	1780	5970	55060	46160	55380	50310	40730	19100	22370	36960	28910
CAL YR 1977 TOTAL		3384.30	MEAN 9.27	MAX 33	MIN 0	AC-FT 6710	MEAN ‡ 44.4	AC-FT ‡ 32150				
WTR YR 1978 TOTAL		130929.50	MEAN 359	MAX 2320	MIN 0	AC-FT 259700	MEAN ‡ 505	AC-FT ‡ 365700				

‡ Adjusted for diversion to Miners Ranch Canal.

11396400 SUCKER RUN NEAR FORBESTOWN, CA

LOCATION.--Lat 39°33'12", long 121°18'04", in NW¼NE¼ sec.33, T.20 N., R.6 E., Butte County, on left bank at upstream side of road bridge, 0.7 mi (1.1 km) upstream from confluence with South Fork Feather River, and 2.8 mi (4.5 km) northwest of Forbestown.

DRAINAGE AREA.--18.7 mi² (48.4 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 960 ft (292 m), from topographic map.

REMARKS.--Records good. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE.--13 years, 24.8 ft³/s (0.702 m³/s), 17,970 acre-ft/yr (22.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,320 ft³/s (37.4 m³/s) Jan. 21, 1967, gage height, 6.03 ft (1.838 m), from rating curve extended as explained below; minimum daily, 0.40 ft³/s (0.011 m³/s) Oct. 7, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 7.4 ft (2.26 m) from floodmarks, discharge, 2,190 ft³/s (62 m³/s) from rating curve extended above 600 ft³/s (17.0 m³/s) on basis of computation of maximum flow over rock control.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s (8.50 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 5	0830	564 16.0	4.41 1.344	Feb. 7	1230	360 10.2	3.80 1.158
Jan. 14	2200	620 17.6	4.56 1.390	Mar. 4	0930	529 15.0	4.31 1.314
Jan. 16	1230	*867 24.6	5.15 1.570				

Minimum daily, 1.8 ft³/s (0.051 m³/s) Oct. 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	2.2	2.8	3.3	9.9	17	24	51	36	13	7.1	4.3	3.1
2	2.1	2.7	3.2	9.0	21	100	52	33	13	7.0	4.4	2.9
3	2.0	2.7	3.2	16	18	155	36	31	13	7.2	4.4	2.8
4	1.9	2.8	3.2	41	16	318	69	29	13	7.2	4.4	2.6
5	1.9	5.0	3.4	304	38	376	50	28	10	6.9	4.3	4.3
6	1.9	3.0	3.4	117	107	190	107	27	9.9	6.6	4.2	5.0
7	1.9	2.6	3.4	43	210	116	80	26	9.8	6.5	3.9	4.3
8	1.9	2.5	3.3	29	127	89	65	25	9.8	6.3	3.8	4.1
9	1.9	2.4	3.3	147	153	90	56	24	9.8	6.1	3.8	5.5
10	1.8	2.5	3.3	85	91	71	49	23	9.8	5.7	3.6	7.5
11	1.8	2.4	4.2	44	69	61	43	22	9.6	5.7	3.6	4.9
12	2.0	2.4	6.1	32	69	55	39	21	9.3	5.7	3.5	4.2
13	2.1	2.5	4.1	38	91	47	36	21	9.4	5.5	3.6	3.9
14	2.0	2.5	23	263	75	44	34	20	9.2	5.3	3.6	4.0
15	2.0	2.6	47	360	66	39	51	24	9.2	5.2	3.3	3.8
16	2.0	2.6	9.5	513	56	36	51	22	9.2	5.2	3.5	3.7
17	2.0	2.5	39	211	48	34	43	20	9.0	5.1	3.5	3.8
18	2.0	2.5	16	105	43	32	38	19	8.6	5.1	3.5	3.7
19	2.1	2.5	8.5	109	39	30	36	18	7.8	5.2	3.4	3.7
20	2.1	2.6	6.7	71	36	29	42	18	7.7	5.2	3.3	3.6
21	2.0	11	6.1	53	33	32	37	17	7.6	5.0	3.2	3.5
22	2.1	17	27	44	31	33	34	17	7.5	5.0	3.3	3.4
23	2.1	5.3	56	36	29	34	32	20	7.3	5.1	3.4	3.4
24	2.3	4.3	15	31	27	31	34	21	7.1	5.0	3.4	3.3
25	2.2	3.9	9.7	28	26	27	84	19	7.1	4.9	3.4	3.3
26	2.3	3.7	8.4	25	28	26	60	18	7.2	4.7	3.5	3.3
27	2.3	3.6	19	23	25	25	48	16	7.4	4.7	3.5	3.1
28	2.3	3.5	18	21	24	24	42	15	7.8	4.7	3.4	3.2
29	2.6	3.4	28	20	---	22	39	15	7.7	4.7	3.2	3.1
30	3.1	3.4	21	19	---	22	39	14	7.2	4.5	3.1	3.2
31	3.0	---	13	17	---	30	---	13	---	4.3	3.2	---
TOTAL	65.9	113.2	418.3	2863.9	1613	2242	1477	672	274.0	172.4	112.5	114.2
MEAN	2.13	3.77	13.5	92.4	57.6	72.3	49.2	21.7	9.13	5.56	3.63	3.81
MAX	3.1	17	56	513	210	376	107	36	13	7.2	4.4	7.5
MIN	1.8	2.4	3.2	9.0	16	22	32	13	7.1	4.3	3.1	2.6
AC-FT	131	225	830	5680	3200	4450	2930	1330	543	342	223	227
CAL YR 1977 TOTAL	1481.56		MEAN 4.06	MAX 56	MIN .56	AC-FT 2940						
WTR YR 1978 TOTAL	10138.40		MEAN 27.8	MAX 513	MIN 1.8	AC-FT 20110						

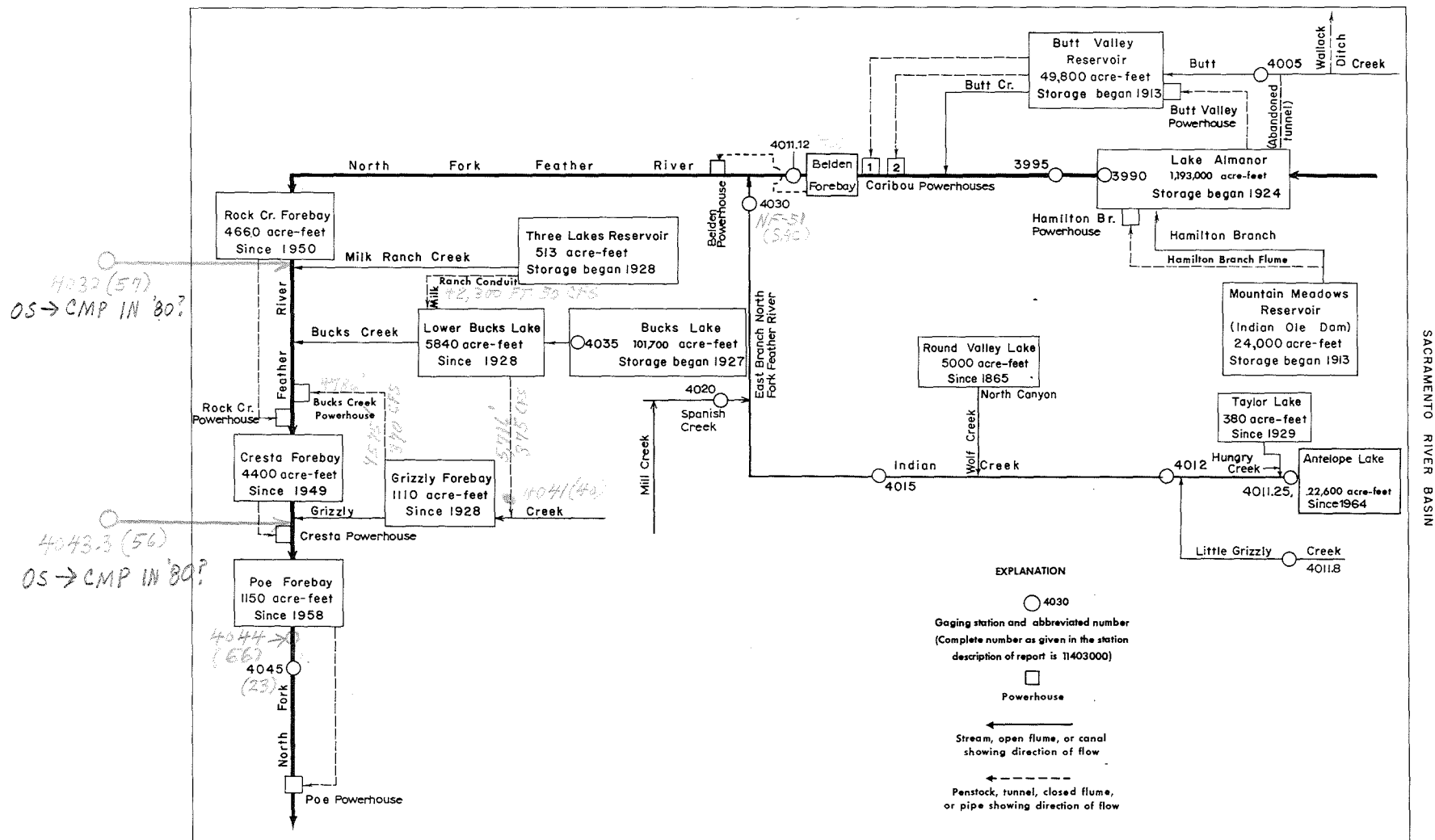


FIGURE 6.--Schematic diagram showing diversions and storage in North Fork Feather River basin.

SACRAMENTO RIVER BASIN

11399000 LAKE ALMANOR AT PRATTVILLE, CA

LOCATION.--Lat 40°12'50", long 121°09'40", in SW¼NE¼ sec.11, T.27 N., R.7 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, at outlet tower to No. 2 tunnel on North Fork Feather River at Prattville, 4.7 mi (7.6 km) northwest of Lake Almanor Dam, and 5.6 mi (9.0 km) northwest of Canyon Dam.

DRAINAGE AREA.--491 mi² (1,272 km²).

PERIOD OF RECORD.--July 1913 to current year. Monthly contents only for some periods, published in WSP 1315-A. Published as "near Prattville" 1937-60. Prior to October 1964, records published as usable contents.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Nonrecording gage monitored once daily. Datum of gage is 10.23 ft (3.118 m) below National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.). Prior to June 1, 1965, nonrecording gage at site 4.7 mi (7.6 km) southeast at same datum.

REMARKS.--Lake is formed by earthfill dam; storage began in July 1913; dam raised to gage height 4,455 ft (1,357.9 m) in 1917 and 4,515 ft (1,376.2 m) in 1927. Capacity, 1,184,000 acre-ft (1.46 km³) between gage heights 4,495.5 ft (1,370.23 m), upper storage limit and 4,422 ft (1,347.8 m), bottom of lowest outlet, of which 8,950 acre-ft (11.0 hm³) is not available for release. Water is diverted by tunnel and penstock to Butt Valley Reservoir and powerhouse for use in Caribou powerplants; some water also released down North Fork Feather River (station 11399500). Figures given herein represent total contents at 2400 hours. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co., in connection with a Federal Energy Regulatory Commission Project.

EXTREMES (AT 2400) FOR PERIOD OF RECORD.--Maximum contents, 1,142,000 acre-ft (1.41 km³) June 4, 5, 10, 11, 1974, gage height, 4,493.96 ft (1,369.759 m); minimum, 5,230 acre-ft (6.45 hm³) Feb. 5, 1918, gage height, 4,416.1 ft (1,346.03 m).

EXTREMES (AT 2400) FOR CURRENT YEAR.--Maximum contents observed, 1,030,000 acre-ft (1.27 km³) July 30, gage height, 4,489.77 ft (1,368.482 m); minimum observed, 516,100 acre-ft (636 hm³) Dec. 9, gage height, 4,467.55 ft (1,361.709 m).

Capacity table (gage height, in feet, and contents, in acre-feet)

4422	8950	4432	34200	4450	220800	4475	672700
4424	10100	4434	49500	4455	294500	4480	787300
4426	11300	4437	74200	4460	376700	4485	908500
4428	13500	4440	101900	4465	467000	4490	1036000
4430	21200	4445	156400	4470	565500	4495.5	1184000

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	542080	526050	519110	544810	627890	677560	761730	835000	938260	1005740	1027090	954430
2	542490	525450	518320	546330	628540	679790	764060	838140	940780	1007300	1025260	951900
3	542080	524260	518910	546940	630270	683150	767100	841030	943810	1008850	1023170	949120
4	541480	523270	519700	550790	631360	690100	769430	844420	947090	1010670	1021090	945830
5	540270	525060	518710	556910	634830	695050	772010	846840	949880	1011190	1019520	943810
6	539660	525250	518710	558950	638740	698660	776230	849020	953420	1013270	1017180	942550
7	539060	524260	517920	560790	643320	701370	779290	851690	955960	1014310	1014570	942290
8	539660	523470	517130	563670	645950	704310	780230	854840	959260	1014830	1012490	940780
9	540470	522670	516140	569430	648140	707710	782350	857760	962310	1015090	1009630	939020
10	539870	521880	516930	571910	649890	709750	784700	861410	965110	1016140	1007560	936500
11	539260	521090	518910	574800	650990	712250	787060	864830	967400	1017180	1004440	934730
12	538460	521480	518320	577080	653850	713840	789430	868250	969700	1018220	1001340	932970
13	537850	522280	517130	581440	655170	715430	791550	871920	971230	1019260	999270	932970
14	537250	521880	522280	588120	656930	717250	794160	875840	974040	1019520	997200	932220
15	536450	521090	526650	594410	658030	719080	797240	880750	976600	1020300	994350	929960
16	537050	520100	529040	600950	659140	720450	798900	883950	978650	1021870	991520	927200
17	536650	519300	530840	604970	660900	722040	801270	886900	980960	1021350	988940	924190
18	535630	518510	532240	608160	661570	724330	802940	890360	982760	1021610	986620	921180
19	535040	518710	531840	611140	663330	726160	805790	893820	984820	1022650	984300	919680
20	534440	519700	531040	613280	664660	728220	808410	897530	986880	1023700	981730	918430
21	532440	520690	530840	615420	665770	730970	810320	901250	988940	1024480	979170	919930
22	533040	519900	533640	617130	667100	733270	811990	905470	990230	1025530	977370	913190
23	533840	519300	534840	618630	668430	736490	814130	909700	991770	1026050	975070	910950
24	532240	520290	535840	619060	669990	739020	816050	913190	993580	1026310	972760	908210
25	530040	519900	536850	620560	671320	741320	818920	916430	995130	1027090	969950	905470
26	529040	520690	538260	621420	672880	743630	821310	919430	996680	1027880	967660	902990
27	527640	521880	540070	622280	674440	745940	823470	922690	999520	1028660	965110	900260
28	526050	520690	540070	623360	675770	748490	826110	925940	1001340	1028660	962810	898520
29	526650	520290	540870	624220	---	751270	828510	929710	1003150	1029450	960530	896040
30	527250	519900	542080	625520	---	754050	832840	932720	1004440	1030230	959510	893320
31	526050	---	543090	626380	---	757770	---	935490	---	1029450	956970	---
MAX	542490	526050	543090	626380	675770	757770	832840	935490	1004440	1030230	1027090	954430
MIN	526050	518510	516140	544810	627890	677560	761730	835000	938260	1005740	956970	893320
(+)	4468.05	4467.74	4468.90	4472.89	4475.14	4478.74	4481.91	4486.08	4488.78	4489.74	4486.93	4484.39
(+)	-15600	-6150	+23200	+83300	+49400	+82000	+75100	+102700	+69000	+25000	-72500	-63700

CAL YR 1977 ‡ -39800

WTR YR 1978 ‡ +351600

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet, rounded to Geological Survey standards.

11399500 NORTH FORK FEATHER RIVER NEAR PRATTVILLE, CA

LOCATION.--Lat 40°10'10", long 121°05'29", in NE&SW¼ sec.28, T.27 N., R.8 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, on left bank 0.5 mi (0.8 km) downstream from Almanor Dam, 4.5 mi (7.2 km) southeast of Prattville, and 9 mi (14 km) upstream from Butt Creek.

DRAINAGE AREA.--493 mi² (1,277 km²).

PERIOD OF RECORD.--June 1905 to current year (daily discharges for July 1921 to September 1936 include water diverted through Almanor-Butt Creek tunnel). Records for water year 1911 incomplete, yearly estimate published in WSP 1315-A. Published as "below Prattville" prior to 1911. Supplemental records for Almanor-Butt Creek tunnel diversion computed November 1924 to Dec. 30, 1958, as difference of flow between Butt Creek above Almanor-Butt Creek tunnel (unpublished prior to 1936 and since 1964), and Butt Creek below Almanor-Butt Creek tunnel (unpublished prior to 1936 and 1960-64).

REVISED RECORDS.--WSP 1245: 1951 (yearly summaries). WSP 1285: 1952 (yearly summaries).

GAGE.--Water-stage recorder and broad-crested weir. Datum of gage is 4,390.09 ft (1,338.099 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1936, nonrecording gages or water-stage recorders at several sites within 0.5 mi (0.8 km) of present site at various datums.

REMARKS.--Flow regulated by Lake Almanor (station 11399000) 0.5 mi (0.8 km) upstream and Mountain Meadows Reservoir since 1924, capacity, 24,000 acre-ft (29.6 hm³). Water diverted for power from Lake Almanor through old Almanor-Butt Creek tunnel to Butt Creek until Dec. 30, 1958. Diversion through new tunnel and Butt Valley powerhouse began Dec. 31, 1958. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records 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 diversion and leakage).--73 years, 906 ft³/s (25.66 m³/s), 656,400 acre-ft/yr (809 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,000 ft³/s (283 m³/s) Mar. 19, 1907, before construction of dam, gage height, 16.2 ft (4.94 m) at former site, from rating curve extended above 3,700 ft³/s (105 m³/s); no flow Apr. 15, 16, 1914, at times January to April 1919, Apr. 21, 1923.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 78 ft³/s (2.21 m³/s) Mar. 16,; minimum daily, 13 ft³/s (0.37 m³/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	13	17	16	20	58	69	37	34	42	43	43	39
2	13	17	16	20	59	69	37	34	42	43	43	38
3	13	17	16	20	59	70	35	35	42	43	43	38
4	13	17	16	21	59	73	33	35	42	43	43	38
5	14	17	16	22	60	72	33	35	42	43	42	38
6	16	16	16	22	61	72	33	35	42	43	42	38
7	17	15	16	22	64	72	33	35	41	43	42	38
8	17	15	16	23	65	72	32	35	40	43	42	38
9	17	15	15	24	65	73	32	35	40	43	42	38
10	17	15	15	24	65	73	32	36	40	42	42	38
11	17	15	16	24	65	73	32	36	40	42	42	38
12	17	15	16	24	65	73	33	36	41	42	41	38
13	18	15	16	25	65	73	33	36	41	42	41	38
14	19	15	16	27	65	73	33	37	41	42	41	38
15	19	15	17	27	65	73	32	37	41	42	40	37
16	19	15	17	28	66	78	32	37	41	42	40	37
17	19	15	18	29	66	30	32	37	41	44	40	37
18	19	15	18	29	66	30	32	37	41	46	40	37
19	19	15	18	29	66	30	32	37	41	46	40	37
20	19	15	18	29	66	30	33	38	41	45	40	37
21	19	15	18	29	66	30	33	40	42	43	40	37
22	18	15	18	29	67	32	33	40	42	43	40	37
23	19	15	18	29	67	34	33	41	43	42	39	36
24	19	15	18	45	67	35	33	41	43	42	39	36
25	18	15	18	57	67	35	33	41	42	43	39	36
26	18	15	19	57	67	35	33	41	42	43	39	36
27	18	15	19	57	68	37	33	41	42	43	39	36
28	18	15	19	57	69	37	33	41	42	43	39	36
29	17	15	19	57	---	37	34	41	42	43	39	36
30	18	15	19	57	---	37	34	42	43	43	39	36
31	18	---	19	58	---	38	---	42	---	43	39	---
TOTAL	535	461	532	1021	1808	1665	993	1168	1245	1333	1260	1117
MEAN	17.3	15.4	17.2	32.9	64.6	53.7	33.1	37.7	41.5	43.0	40.6	37.2
MAX	19	17	19	58	69	78	37	42	43	46	43	39
MIN	13	15	15	20	58	30	32	34	40	42	39	36
AC-FT	1060	914	1060	2030	3590	3300	1970	2320	2470	2640	2500	2220
MEAN †	616	562	420	73.8	74.0	63.1	43.3	47.3	52.9	213	1731	1477
AC-FT †	37870	33470	25820	4540	4110	3880	2580	2910	3150	13100	106500	87920
CAL YR 1977 TOTAL	8652											
MEAN 23.7												
MAX 47												
MIN 13												
AC-FT 17160												
MEAN † 473												
WTR YR 1978 TOTAL	13138											
MEAN 36.0												
MAX 78												
MIN 13												
AC-FT 26060												
MEAN † 450												
AC-FT † 325800												

† Adjusted for diversion through Butt Valley powerhouse and leakage from Almanor-Butt Creek tunnel No. 1.

11400500 BUTT CREEK BELOW ALMANOR-BUTT CREEK TUNNEL, NEAR PRATTVILLE, CA

LOCATION.--Lat 40°11'12", long 121°11'11", in NW¼NW¼ sec.22, T.27 N., R.7 E., Plumas County, Hydrologic Unit 18020121, on right bank 400 ft (122 m) downstream from outlet of old tunnel from Lake Almanor to Butt Creek, and 2.2 mi (3.5 km) southwest of Prattville.

DRAINAGE AREA.--69.3 mi² (179.5 km²).

PERIOD OF RECORD.--October 1936 to September 1959, October 1964 to current year. Published as "below tunnel No. 1" 1938-40. Records for water years 1937-38 published in WSP 1515.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,400 ft (1,341 m), from topographic map. Prior to Oct. 5, 1937, at site 200 ft (61 m) downstream at datum 4 ft (1.2 m) lower.

REMARKS.--No regulation above station. Howell-Bunger valve in conduit from Lake Almanor to Butt Valley power-house is opened for short periods several times a year causing sharp peaks. Wallack ditch, above station, diverts several cubic feet per second during each irrigation season into Yellow Creek basin. Leakage from Almanor-Butt Creek tunnel No. 1 was 6,540 acre-ft (8.06 hm³) during the current year. See schematic diagram of North Fork Feather 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 (natural flow of Butt Creek, adjusted for leakage from Almanor-Butt Creek tunnel No. 1).--42 years (including records for station 11400000 Butt Creek above Almanor-Butt Creek tunnel, near Prattville for water years 1960-64), 82.7 ft³/s (2.342 m³/s), 59,920 acre-ft/yr (73.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,830 ft³/s (108 m³/s) Dec. 23, 1964, gage height, 5.87 ft (1.789 m), from rating curve extended above 1,400 ft³/s (39.6 m³/s); minimum daily, 26 ft³/s (0.74 m³/s) May 26-28, June 1-5, 13-15, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 502 ft³/s (14.2 m³/s) Dec. 15, gage height, 2.10 ft (0.640 m); minimum daily, 35 ft³/s (0.99 m³/s) Oct. 6, 10, 11, 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	37	37	41	61	68	101	368	254	197	85	55	55
2	36	37	41	66	73	147	303	269	190	83	54	55
3	36	37	41	88	79	164	259	280	187	87	54	55
4	36	38	42	85	75	189	250	278	191	83	55	55
5	36	44	43	166	138	241	212	257	196	81	55	55
6	35	41	42	119	167	236	202	240	200	79	55	55
7	36	40	42	86	194	201	190	240	199	78	55	55
8	36	39	40	93	168	202	184	252	192	76	55	55
9	36	38	40	222	143	208	196	274	186	74	55	55
10	35	38	40	141	120	189	218	284	173	70	55	55
11	35	38	41	111	106	176	249	287	159	69	55	55
12	36	39	45	107	99	158	264	282	151	68	55	55
13	36	39	49	133	93	144	267	290	143	66	55	55
14	36	38	155	288	85	136	259	305	135	65	55	55
15	36	38	259	226	81	134	252	342	127	65	55	55
16	36	37	78	184	78	140	220	279	138	65	55	55
17	36	37	83	201	76	155	194	254	123	63	55	55
18	36	37	69	163	75	163	187	250	119	63	55	55
19	36	35	57	138	77	172	201	245	113	63	55	55
20	36	37	58	120	78	196	220	243	108	62	55	55
21	36	40	54	107	79	223	191	251	104	62	55	55
22	36	56	58	98	81	249	180	246	100	60	55	55
23	36	49	77	87	87	290	179	262	96	60	55	55
24	36	53	65	85	92	283	193	221	94	60	55	55
25	36	50	56	80	94	266	239	212	92	59	55	55
26	37	47	53	77	107	273	227	188	91	58	55	55
27	37	48	72	74	106	278	232	185	94	59	55	55
28	36	45	72	72	100	293	240	197	105	58	55	55
29	37	43	87	70	---	305	232	210	92	58	55	55
30	43	42	90	70	---	330	267	211	88	56	55	55
31	39	---	68	69	---	365	---	204	---	55	55	---
TOTAL	1127	1237	2058	3687	2819	6607	6875	7792	4183	2090	1703	1650
MEAN	36.4	41.2	66.4	119	101	213	229	251	139	67.4	54.9	55.0
MAX	43	56	259	288	194	365	368	342	200	87	55	55
MIN	35	35	40	61	68	101	179	185	88	55	54	55
AC-FT	2240	2450	4080	7310	5590	13100	13640	15460	8300	4150	3380	3270

CAL YR 1977 TOTAL 15191 MEAN 41.6 MAX 259 MIN 27 AC-FT 30130
WTR YR 1978 TOTAL 41828 MEAN 115 MAX 368 MIN 35 AC-FT 82970

NOTE.--No gage-height record Aug. 4 to Sept. 30.

11401112 NORTH FORK FEATHER RIVER BELOW BELDEN DAM, CA

LOCATION.--Lat 40°04'18", long 121°09'46", in SE¼SW¼ sec.26, T.26 N., R.7 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, on left bank 0.2 mi (0.3 km) downstream from Belden Dam, 0.4 mi (0.6 km) upstream from Deadwood Canyon, and 6.2 mi (10.0 km) northeast of Belden.

DRAINAGE AREA.--612 mi² (1,585 km²).

PERIOD OF RECORD.--October 1969 to current year. July 1959 to September 1969 in files of Pacific Gas and Electric Co.

GAGE.--Water-stage recorder. Datum of gage is 2,811.00 ft (856.793 m) National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.).

REMARKS.--Flow regulated by Belden Reservoir 0.2 mi (0.3 km) upstream, Lake Almanor (station 11399000), Butt Valley Reservoir, and Mountain Meadows Reservoir, combined capacity, 1,267,000 acre-ft (1.56 km³). Diversion through tunnel to Belden powerhouse began on Aug. 27, 1969. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were 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 (including diversion to Belden powerhouse).--9 years, 1,156 ft³/s (32.74 m³/s), 837,500 acre-ft/yr (1.03 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,040 ft³/s (86.1 m³/s) Nov. 18, 1974, gage height, 8.89 ft (2.710 m); minimum daily, 11 ft³/s (0.31 m³/s) Dec. 4-9, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,910 ft³/s (54.1 m³/s) Mar. 16, gage height 7.51 ft (2.289 m); minimum daily, 56 ft³/s (1.59 m³/s) Sept. 13.

CORRECTION.--Corrected figures of adjusted mean and acre-feet for water year 1977, superseding those published in the report for 1977, are given herewith:

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	535	526	384	425	341	357	329	151	311	499	1282	1223
AC-FT	32910	31300	23620	26160	18910	21920	19590	9300	18530	30700	78830	72790
CAL YR 1976	MEAN 894		AC-FT 648900									
WTR YR 1977	MEAN 531		AC-FT 384600									

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	67	65	67	68	67	69	63	136	137	136	140	128
2	67	66	65	68	66	68	63	143	136	136	141	134
3	68	66	66	69	66	68	66	146	137	135	141	133
4	68	67	65	69	64	68	64	145	137	135	140	135
5	68	67	66	68	67	70	63	145	134	137	139	82
6	68	67	66	70	68	70	60	145	137	138	139	59
7	69	67	66	74	69	71	60	155	139	135	142	59
8	68	67	67	74	71	70	61	153	135	134	142	57
9	68	66	70	75	72	70	63	153	138	131	140	59
10	67	64	69	73	73	69	62	157	138	133	140	59
11	68	66	68	74	74	66	63	161	138	132	142	58
12	69	67	68	73	73	66	63	156	136	132	141	57
13	68	65	69	71	71	65	62	160	138	132	140	56
14	67	66	68	69	71	65	61	159	134	133	139	57
15	69	67	67	68	70	65	62	155	133	135	139	58
16	69	66	67	72	70	141	63	159	133	137	139	59
17	68	67	67	72	68	73	63	160	134	138	139	59
18	69	66	68	75	70	69	62	160	135	136	141	59
19	70	67	68	76	71	68	61	161	136	134	137	59
20	69	67	67	71	70	68	61	161	135	138	140	59
21	68	66	67	69	67	68	62	160	133	137	139	58
22	67	64	68	68	69	67	62	158	135	136	139	58
23	65	64	69	67	69	65	63	147	137	141	137	59
24	66	67	69	66	69	66	63	137	137	141	137	60
25	68	66	70	66	68	66	64	139	136	141	139	58
26	68	65	68	67	66	65	64	139	136	141	137	58
27	68	66	67	67	67	66	65	138	136	139	137	59
28	66	65	67	66	68	66	119	138	135	138	141	59
29	66	66	67	67	---	67	134	138	133	137	135	59
30	67	66	68	67	---	66	138	137	134	140	134	58
31	66	---	68	67	---	66	---	139	---	141	128	---
TOTAL	2099	1981	2092	2166	1934	2167	2080	4640	4072	4229	4304	2072
MEAN	67.7	66.0	67.5	69.9	69.1	69.9	69.3	150	136	136	139	69.1
MAX	70	67	70	76	74	141	138	161	139	141	142	135
MIN	65	64	65	66	64	65	60	136	133	131	128	56
AC-FT	4160	3930	4150	4300	3840	4300	4130	9200	8080	8390	8540	4110
MEAN†	707	703	679	467	435	582	518	351	236	325	1689	1582
AC-FT†	43470	41830	41730	28720	24130	35780	30820	21590	14070	19990	103900	94130
CAL YR 1977	TOTAL	28550	MEAN	78.2	MAX	107	MIN	58	AC-FT	56630	MEAN†	585
WTR YR 1978	TOTAL	33836	MEAN	92.7	MAX	161	MIN	56	AC-FT	67110	MEAN†	691
										AC-FT†	423800	
										AC-FT†	500100	

† Adjusted for diversion through Belden powerhouse.

SACRAMENTO RIVER BASIN

11401125 INDIAN CREEK NEAR BOULDER CREEK GUARD STATION, NEAR TAYLORSVILLE, CA

LOCATION.--Lat 40°10'47", long 120°36'27", in SE¼SE¼ sec.22, T.27 N., R.12 E., Plumas County, on left bank 150 ft (46 m) downstream from Antelope Dam, 1.8 mi (2.9 km) upstream from Cold Stream, 1.3 mi (2.1 km) south of Boulder Creek Guard Station, 12.3 mi (19.8 km) northeast of Genesee, and 14.3 mi (23.0 km) northeast of Taylorsville.

DRAINAGE AREA.--68.6 mi² (177.7 km²).

PERIOD OF RECORD.--October 1965 to current year. June 1961 to September 1965 in reports of California Department of Water Resources.

GAGE.--Water-stage recorder and steel-lipped concrete control. Supplementary water-stage recorder on dam and concrete spillway. Altitude of gage is 4,930 ft (1,502 m), from topographic map. October 1965 to September 1968, at site 0.9 mi (1.4 km) downstream at different datum.

REMARKS.--Flow regulated since Nov. 25, 1963 by Antelope Lake, capacity, 22,500 acre-ft (27.7 hm³). See schematic diagram of North Fork Feather River basin. Records since October 1968 are combined flow of release from Antelope Dam and flow over spillway.

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

AVERAGE DISCHARGE.--13 years, 50.2 ft³/s (1.422 m³/s), 36,400 acre-ft/yr (44.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 828 ft³/s (23.4 m³/s) May 24, 1967, gage height, 6.31 ft (1.923 m) previous site and datum, and Jan. 24, 1970 (includes flow over spillway); no flow for several months in 1971-72, 1977 (caused by draining of Antelope Lake).

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 170 ft³/s (4.81 m³/s) May 16; 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	1.0	1.0	1.0	1.0	10	20	20	103	20	20	20
2	0	1.0	1.0	1.0	1.0	10	20	20	99	20	20	20
3	0	1.0	1.0	1.0	1.0	10	20	20	93	20	20	20
4	0	1.0	1.0	1.0	1.0	10	20	20	88	20	20	20
5	0	1.0	1.0	1.0	1.0	10	20	20	85	20	20	20
6	0	1.0	1.0	1.0	1.0	10	20	20	78	20	20	20
7	0	1.0	1.0	1.0	1.0	10	20	20	74	20	20	20
8	0	1.0	1.0	1.0	1.0	10	20	20	68	20	20	20
9	0	1.0	1.0	1.0	1.0	10	20	20	62	20	20	20
10	0	1.0	1.0	1.0	1.0	10	20	20	60	20	20	14
11	0	1.0	1.0	1.0	1.0	10	20	20	56	20	20	5.0
12	0	1.0	1.0	1.0	1.0	10	20	31	52	20	20	5.0
13	0	1.0	1.0	1.0	1.0	10	20	72	48	20	20	5.0
14	0	1.0	1.0	1.0	5.7	15	20	122	43	20	20	5.0
15	0	1.0	1.0	1.0	10	20	20	163	41	20	20	14
16	0	1.0	1.0	1.0	10	20	20	170	39	20	20	20
17	0	1.0	1.0	1.0	10	20	20	162	37	20	20	20
18	0	1.0	1.0	1.0	10	20	20	152	34	20	20	20
19	.50	1.0	1.0	1.0	10	20	20	146	32	20	20	20
20	1.0	1.0	1.0	1.0	10	20	20	141	30	20	20	20
21	1.0	1.0	1.0	1.0	10	20	20	140	28	20	20	20
22	1.0	1.0	1.0	1.0	10	20	20	141	26	20	20	20
23	1.0	1.0	1.0	1.0	10	20	20	141	23	20	20	20
24	1.0	1.0	1.0	1.0	10	20	20	141	21	20	20	20
25	1.0	1.0	1.0	1.0	10	20	20	138	20	20	20	20
26	1.0	1.0	1.0	1.0	10	21	20	129	20	20	20	20
27	1.0	1.0	1.0	1.0	10	21	20	118	20	20	20	20
28	1.0	1.0	1.0	1.0	10	21	20	113	20	20	20	20
29	1.0	1.0	1.0	1.0	---	21	20	113	20	20	20	20
30	1.0	1.0	1.0	1.0	---	21	20	111	20	20	20	20
31	1.0	---	1.0	1.0	---	21	---	108	---	20	20	---
TOTAL	12.50	30.0	31.0	31.0	158.7	491	600	2772	1440	620	620	528.0
MEAN	.40	1.00	1.00	1.00	5.67	15.8	20.0	89.4	48.0	20.0	20.0	17.6
MAX	1.0	1.0	1.0	1.0	10	21	20	170	103	20	20	20
MIN	0	1.0	1.0	1.0	1.0	10	20	20	20	20	20	5.0
AC-FT	25	60	61	61	315	974	1190	5500	2860	1230	1230	1050
CAL YR 1977	TOTAL	673.50	MEAN	1.85	MAX	10	MIN	0	AC-FT	1340		
WTR YR 1978	TOTAL	7334.20	MEAN	20.1	MAX	170	MIN	0	AC-FT	14550		

11401180 LITTLE GRIZZLY CREEK NEAR GENESEE, CA

LOCATION.--Lat 40°00'50", long 120°45'11", in NE¼SW¼ sec.21, T.25 N., R.11 E., Plumas County, Plumas National Forest, on right bank 2 mi (3 km) south of Genesee, and 2.5 mi (4.0 km) upstream from Indian Creek.

DRAINAGE AREA.--29.6 mi² (76.7 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 4,180 ft (1,274 m), from topographic map.

REMARKS.--Records good except those for December and January, which are fair. No known diversion or regulation above station. See schematic diagram of North Fork Feather River basin.

AVERAGE DISCHARGE.--14 years, 49.9 ft³/s (1.413 m³/s), 36,150 acre-ft/yr (44.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,800 ft³/s (51.0 m³/s) Jan. 24, 1970, gage height, 6.15 ft (1.875 m), from rating curve extended above 500 ft³/s (14.2 m³/s) on basis of slope-area measurement at gage height, 5.90 ft (1.798 m); minimum daily, 1.6 ft³/s (0.045 m³/s) Aug. 12, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 444 ft³/s (12.6 m³/s) May 14, gage height, 3.97 ft (1.210 m), no other peak above base of 300 ft³/s (8.50 m³/s); minimum daily, 2.7 ft³/s (0.076 m³/s) Oct. 6, 18-25.

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	3.4	3.1	3.8	26	17	28	180	147	170	37	10	7.0
2	3.1	3.1	3.7	22	17	35	140	163	163	35	10	6.6
3	2.9	3.1	3.6	24	17	44	112	180	165	36	9.9	6.6
4	2.9	3.1	4.0	29	17	107	97	184	175	33	9.5	6.5
5	2.9	6.0	4.8	120	27	188	84	167	188	31	9.3	13
6	2.7	4.3	4.0	77	53	137	77	151	198	29	9.2	14
7	2.9	3.6	4.0	48	102	102	68	150	196	28	9.2	9.4
8	2.9	3.5	3.5	36	92	82	64	161	188	26	9.3	8.6
9	2.9	3.3	3.1	56	79	70	66	189	182	24	8.9	9.3
10	2.9	3.3	3.1	62	62	62	73	210	167	22	8.5	12
11	2.9	3.4	4.2	41	46	59	82	223	147	21	8.4	10
12	2.8	3.3	4.2	35	37	52	89	225	136	20	8.3	8.7
13	2.9	3.3	4.5	35	31	47	91	240	128	19	8.4	8.2
14	2.8	3.3	32	115	27	43	91	276	117	18	8.5	8.2
15	2.8	3.3	48	145	25	41	88	275	106	18	8.3	7.8
16	2.8	3.2	16	147	22	41	83	216	96	17	8.2	7.5
17	2.8	3.3	34	143	21	46	77	183	88	16	8.3	7.4
18	2.7	3.2	24	81	20	52	76	174	84	16	8.0	7.4
19	2.7	2.9	14	54	20	60	82	177	78	15	7.7	7.5
20	2.7	3.1	11	42	20	71	82	189	73	15	7.6	7.4
21	2.7	7.9	9.9	36	21	89	77	206	67	14	7.6	7.2
22	2.7	11	12	31	23	103	75	211	62	13	8.7	7.1
23	2.7	6.2	41	27	26	119	75	198	57	13	8.3	6.9
24	2.7	5.7	26	24	28	109	81	168	54	12	7.9	6.7
25	2.7	5.9	18	23	29	99	103	145	50	12	7.8	6.6
26	2.9	5.6	15	21	29	100	106	128	48	12	7.8	6.5
27	3.7	5.9	22	20	29	108	118	127	47	12	7.7	6.4
28	3.5	5.0	27	19	27	121	126	146	47	11	7.5	6.3
29	3.1	4.4	45	18	---	132	128	177	42	11	7.2	6.3
30	3.3	4.0	49	18	---	153	144	190	39	10	7.3	6.2
31	3.3	---	34	17	---	192	---	181	---	10	7.6	---
TOTAL	90.7	130.3	528.4	1592	964	2692	2835	5757	3358	606	260.9	239.3
MEAN	2.93	4.34	17.0	51.4	34.4	86.8	94.5	186	112	19.5	8.42	7.98
MAX	3.7	11	49	147	102	192	180	276	198	37	10	14
MIN	2.7	2.9	3.1	17	17	28	64	127	39	10	7.2	6.2
AC-FT	180	258	1050	3160	1910	5340	5620	11420	6660	1200	517	475
CAL YR 1977	TOTAL	2479.9	MEAN	6.79	MAX	49	MIN	1.6	AC-FT	4920		
WTR YR 1978	TOTAL	19053.6	MEAN	52.2	MAX	276	MIN	2.7	AC-FT	37790		

11401180 LITTLE GRIZZLY CREEK NEAR GENESEE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD. --

WATER TEMPERATURES: August 1964 to current year.

INSTRUMENTATION.--Temperature recorder since August 1964.

EXTREMES FOR PERIOD OF DAILY RECORD. --

WATER TEMPERATURES: Maximum recorded, 22.0°C June 25, 27-29, July 21, 1977; minimum recorded, 0.0°C on many days during winter period of most years.

EXTREMES FOR CURRENT YEAR. --

WATER TEMPERATURES: Maximum recorded, 16.0°C Aug. 29; minimum recorded, 0.0°C Nov. 19, 20.

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	10.5	6.5	6.5	4.0	3.5	2.0	---	---	3.0	1.5	5.0	3.0
2	10.5	7.0	6.5	4.0	3.0	2.0	---	---	4.5	3.0	5.0	4.0
3	10.0	6.5	6.5	4.0	4.0	2.0	---	---	4.0	3.0	5.0	3.5
4	10.5	7.0	7.0	5.0	5.5	3.0	---	---	5.0	3.0	5.0	4.0
5	10.0	6.0	6.5	5.0	5.0	3.0	---	---	4.5	3.5	5.5	4.5
6	8.5	6.0	5.5	3.5	5.0	2.5	---	---	4.0	3.0	6.0	4.5
7	9.0	5.5	5.0	3.0	4.0	2.5	---	---	4.5	4.0	6.0	4.0
8	9.0	6.0	4.0	2.5	2.0	0.5	---	---	5.5	3.5	5.5	4.5
9	9.5	6.0	3.5	1.5	1.5	0.5	---	---	5.0	4.0	6.0	4.5
10	9.5	6.0	3.5	1.5	1.5	1.0	---	---	4.5	4.0	6.0	3.5
11	9.5	6.0	4.5	3.0	3.0	1.5	---	---	4.0	2.5	5.0	3.5
12	10.0	6.5	4.5	3.0	3.0	2.0	5.5	4.5	3.0	2.0	5.0	3.0
13	9.5	6.0	4.5	3.0	4.5	3.0	5.5	5.0	4.5	3.0	5.5	2.5
14	9.0	6.0	4.5	2.0	5.5	4.5	5.5	5.0	3.5	2.0	5.5	3.0
15	10.0	6.5	4.0	2.5	5.5	3.5	5.0	4.5	3.5	2.5	5.5	2.5
16	10.5	7.5	4.0	2.0	3.5	2.0	5.5	4.0	3.5	2.0	6.5	3.0
17	9.5	6.5	4.0	2.5	4.0	2.0	6.0	5.0	3.5	2.0	6.5	3.5
18	10.0	6.0	3.5	1.0	3.5	3.0	6.0	5.0	4.5	3.0	6.5	3.5
19	10.0	6.5	1.0	0.0	3.0	1.0	6.0	5.0	4.0	2.5	6.5	4.0
20	9.5	6.0	1.0	0.0	2.5	1.0	5.0	4.0	4.0	2.5	7.0	3.5
21	8.5	6.0	2.5	0.5	3.0	2.0	4.5	3.5	4.5	2.5	5.0	4.0
22	8.5	5.5	3.5	2.5	3.0	0.5	4.5	3.0	4.5	2.5	6.5	4.0
23	9.5	6.5	4.0	2.5	4.5	2.5	3.0	1.5	4.5	2.5	5.0	3.5
24	10.5	7.5	5.0	3.5	4.0	3.5	2.0	1.0	5.0	3.0	6.5	3.0
25	10.5	7.5	4.0	3.0	4.0	3.0	3.5	1.5	5.0	3.0	7.0	3.0
26	11.0	9.5	5.0	3.5	3.5	3.0	4.0	3.0	5.0	3.5	7.0	3.5
27	10.0	7.0	5.5	3.5	4.0	3.5	3.0	2.0	4.0	2.5	7.5	3.5
28	8.5	6.5	4.0	3.0	4.5	3.5	3.5	2.0	4.0	2.0	7.5	3.5
29	7.5	6.0	4.0	2.5	7.0	4.0	3.0	2.0	---	---	7.0	4.0
30	7.5	5.5	3.5	2.5	---	---	2.5	2.0	---	---	7.5	4.5
31	6.5	5.0	---	---	---	---	3.0	1.5	---	---	5.5	4.0
MONTH	11.0	5.0	7.0	0.0	7.0	0.5	---	---	5.5	1.5	7.5	2.5

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

11401500 INDIAN CREEK NEAR CRESCENT MILLS, CA

LOCATION.--Lat 40°04'42", long 120°55'36", in SW¼SW¼ sec.25, T.26 N., R.9 E., Plumas County, on left bank 0.8 mi (1.3 km) upstream from Dixie Creek, and 1.5 mi (2.4 km) south of Crescent Mills.

DRAINAGE AREA.--739 mi² (1,914 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1906 to December 1909, September 1911 to March 1918, October 1930 to current year.

REVISED RECORDS.--WSP 1445: 1906-9. WSP 1931: 1956, 1958(M).

GAGE.--Water-stage recorder. Altitude of gage is 3,500 ft (1,070 m), from topographic map. Prior to March 1918, nonrecording gage at site 800 ft (240 m) upstream at different datum.

REMARKS.--Records good except those for Oct. 1 to Jan. 5, which are fair. Natural flow affected by storage in Round Valley Reservoir since 1865, capacity 5,000 acre-ft (6.2 hm³), Taylor Lake since 1929, capacity, 380 acre-ft (469,000 m³), and Antelope Lake (station 11401120) since November 1963. Diversions above station for irrigation of about 11,800 acres (47.8 km²) of which 9,700 acres (39.2 km²) are in Indian and Genesee Valleys. See schematic diagram of North Fork Feather River basin.

AVERAGE DISCHARGE.--57 years (water years 1907-9, 1912-17, 1931-78), 545 ft³/s (15.43 m³/s), 394,900 acre-ft/yr (487 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 25,000 ft³/s (708 m³/s) Mar. 19, 1907, gage height, 20.2 ft (6.16 m) site and datum then in use; minimum daily, 0.90 ft³/s (0.025 m³/s) July 28, 29, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 5	1730	3180 90.1	7.76 2.365	Mar. 5	1930	*4860 138	9.12 2.780
Jan. 9	1930	1770 50.1	6.25 1.905	Mar. 24	0230	2810 79.6	7.39 2.252
Jan. 17	0130	4560 129	8.89 2.710	Apr. 1	0600	2620 74.2	7.20 2.195
Feb. 7	2100	2650 75.0	7.23 2.204				

Minimum daily, 6.9 ft³/s (0.20 m³/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	6.9	18	60	232	328	755	2440	1150	680	130	22	24
2	7.6	19	57	217	347	939	1960	1080	646	118	21	24
3	7.1	20	56	282	339	1360	1650	1060	631	124	26	24
4	8.0	20	57	458	348	2360	1430	1060	616	131	26	27
5	8.5	24	56	2210	519	4530	1240	1000	622	122	27	37
6	9.9	21	55	1850	1190	4470	1230	921	621	92	28	55
7	9.5	19	54	1000	1990	3230	1190	858	613	87	26	51
8	11	20	54	742	2000	2590	1030	844	587	87	29	49
9	11	20	52	1340	1830	2300	978	884	551	82	26	50
10	12	20	52	1440	1370	2020	1000	935	509	81	27	73
11	12	21	55	979	1050	2000	1090	940	449	76	24	75
12	13	22	61	770	860	1680	1180	927	405	76	26	60
13	13	24	59	706	811	1370	1180	960	372	79	29	57
14	12	24	135	1910	703	1260	1180	1060	342	61	25	55
15	12	24	460	3610	655	1190	1140	1240	325	59	24	53
16	13	25	248	3750	562	1230	1090	1190	286	56	33	51
17	15	23	301	4020	521	1410	961	1050	265	57	36	52
18	15	24	314	2390	495	1550	865	943	248	58	32	54
19	16	25	184	1600	460	1670	841	904	233	48	34	55
20	16	26	138	1190	463	1880	971	876	209	33	33	59
21	16	65	133	944	495	2120	997	888	199	30	30	74
22	16	126	195	827	541	2490	924	897	192	32	33	69
23	15	88	501	673	620	2510	850	938	180	35	26	66
24	16	76	309	565	715	2440	829	896	160	31	26	63
25	17	70	217	531	737	2000	929	886	144	27	27	68
26	16	67	184	506	775	1940	972	815	138	33	27	69
27	17	66	235	431	790	1820	949	743	143	31	24	64
28	16	65	243	396	748	1860	982	732	167	30	28	53
29	17	62	271	369	---	1910	972	763	146	27	26	55
30	17	61	410	349	---	1940	1070	770	133	31	29	53
31	18	---	319	338	---	2140	---	728	---	27	28	---
TOTAL	409.5	1185	5525	36625	22262	62964	34120	28938	10812	1991	858	1619
MEAN	13.2	39.5	178	1181	795	2031	1137	933	360	64.2	27.7	54.0
MAX	18	126	501	4020	2000	4530	2440	1240	680	131	36	75
MIN	6.9	18	52	217	328	755	829	728	133	27	21	24
AC-FT	812	2350	10960	72650	44160	124900	67680	57400	21450	3950	1700	3210
CAL YR 1977 TOTAL	18143.42			MEAN 49.7	MAX 501	MIN .90	AC-FT 35990					
WTR YR 1978 TOTAL	207308.50			MEAN 568	MAX 4530	MIN 6.9	AC-FT 411200					

11401500 INDIAN CREEK NEAR CRESCENT MILLS, GA--Continued

WATER-QUALITY RECORDS

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

CHEMICAL ANALYSES: Water years 1951-66, 1972.

WATER TEMPERATURES: Water years 1963 to current year.

SEDIMENT RECORDS.--Water years 1957-66.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1962 to current year.

INSTRUMENTATION.--Temperature recorder since October 1962.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 28.5°C June 30, 1977, Aug. 6, 1978; minimum recorded, 0.0°C on many days during most years.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 28.5°C Aug. 6; minimum recorded, 1.5°C 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	15.5	11.0	10.5	9.5	6.5	5.0	4.5	3.5	5.5	3.5	7.0	5.0
2	15.0	12.0	11.0	9.5	6.5	4.5	5.5	4.0	7.0	5.0	7.5	6.5
3	16.0	11.5	11.0	9.5	6.5	5.0	6.5	5.5	8.5	6.0	7.5	6.0
4	15.5	11.5	9.5	8.5	8.0	6.0	6.5	5.5	7.5	6.0	7.0	6.0
5	15.0	11.5	8.5	8.0	8.5	7.5	5.5	3.0	6.5	6.0	7.5	5.5
6	13.0	11.5	9.0	8.0	8.0	7.5	6.0	3.0	6.0	5.5	8.5	6.5
7	13.0	10.5	9.0	8.0	8.0	6.5	6.5	5.0	5.5	5.0	8.5	6.5
8	13.5	10.5	8.0	7.5	7.5	5.0	6.5	5.5	6.0	4.5	8.0	7.0
9	14.0	11.0	7.5	7.0	5.5	3.5	6.5	6.0	7.0	4.5	8.0	7.0
10	14.0	11.5	7.0	7.0	5.5	3.5	7.0	6.0	6.0	5.0	8.5	6.5
11	14.5	11.5	7.5	7.0	5.5	4.0	7.0	6.0	6.5	4.0	7.5	6.5
12	14.0	11.0	8.5	7.5	5.5	4.0	7.0	6.0	5.0	3.5	8.0	5.5
13	14.0	11.0	9.0	8.5	7.0	5.5	8.0	6.5	6.5	3.5	7.0	5.0
14	14.5	11.0	9.0	7.5	7.5	7.0	7.5	6.0	7.0	4.5	8.5	5.5
15	13.5	11.5	8.0	6.5	7.5	4.5	6.0	5.0	7.5	5.0	9.0	5.5
16	12.5	11.0	8.0	7.0	4.5	3.0	5.5	4.5	6.0	4.0	10.0	6.5
17	12.5	10.0	8.0	7.5	4.0	3.0	7.0	5.5	6.5	4.5	9.5	7.5
18	13.5	10.5	8.0	5.5	4.0	3.0	6.5	5.5	8.5	5.0	8.5	7.5
19	13.5	11.0	5.5	3.5	4.5	2.5	7.5	6.0	8.5	5.5	10.0	8.0
20	13.5	11.0	3.5	2.5	3.5	1.5	7.5	6.0	9.0	6.0	9.5	8.5
21	12.5	11.0	4.0	2.0	4.5	2.0	6.5	5.5	8.5	5.5	9.0	7.5
22	12.0	10.0	6.0	4.0	4.5	3.0	7.0	5.5	9.0	5.5	7.5	7.0
23	12.0	10.5	7.5	5.5	6.5	3.5	6.0	4.0	8.5	5.5	8.5	7.5
24	13.5	11.5	9.0	7.0	6.5	4.5	5.0	2.5	7.5	5.5	8.5	6.5
25	14.0	13.0	9.0	8.0	5.5	4.0	5.5	3.0	7.5	5.0	9.5	7.5
26	14.0	13.0	10.0	8.0	4.5	3.5	6.5	4.5	7.5	6.5	9.5	8.5
27	14.0	11.5	9.5	8.0	6.5	4.0	6.5	4.5	7.5	5.5	10.5	8.0
28	11.5	10.0	8.5	7.0	6.5	5.5	6.5	4.5	7.5	4.0	10.5	8.5
29	10.0	9.0	8.0	6.0	7.5	6.5	6.5	4.5	---	---	10.0	9.0
30	11.0	9.0	7.5	6.5	6.5	5.0	6.5	4.0	---	---	10.5	9.5
31	11.0	10.0	---	---	5.5	4.0	6.5	4.0	---	---	9.5	7.5
MONTH	16.0	9.0	11.0	2.0	8.5	1.5	8.0	2.5	9.0	3.5	10.5	5.0

11401500 INDIAN CREEK NEAR CRESCENT MILLS, 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	7.5	7.0	13.5	8.5	15.0	12.0	22.5	16.5	27.0	18.0	21.5	14.5
2	8.5	6.5	14.0	9.5	16.5	11.5	21.5	14.5	27.5	18.0	21.5	14.5
3	8.5	7.0	14.0	10.0	16.5	13.0	22.0	15.0	27.5	18.5	21.0	15.0
4	9.0	7.0	13.0	9.5	17.5	13.0	23.5	15.5	28.0	19.5	18.5	14.5
5	8.0	6.5	11.5	8.5	18.0	13.5	24.5	16.5	28.0	20.0	16.5	15.0
6	7.5	5.0	12.5	8.0	18.0	14.5	25.0	17.0	28.5	19.5	18.0	14.5
7	8.5	5.5	14.0	9.0	18.5	14.5	23.0	18.5	28.0	19.5	17.5	13.5
8	10.0	5.5	14.5	10.0	18.5	14.5	24.5	16.0	27.0	19.0	19.5	12.5
9	12.0	6.5	14.0	11.5	18.5	14.5	25.0	17.5	26.5	18.5	16.0	12.5
10	13.0	8.5	14.0	10.0	16.5	13.5	22.5	17.0	25.5	17.5	17.0	12.5
11	13.5	9.5	14.5	10.5	17.5	12.5	22.5	15.5	24.5	16.5	19.0	12.5
12	12.0	9.0	14.5	10.0	18.0	14.5	23.0	15.0	22.5	15.5	19.0	12.5
13	12.0	8.5	14.5	10.5	18.0	13.5	25.0	16.5	23.5	14.5	17.0	12.0
14	10.0	8.0	14.5	11.0	---	---	26.0	18.0	24.5	14.5	19.0	13.0
15	9.0	7.5	11.5	9.0	---	---	24.5	18.0	23.0	15.5	20.0	12.5
16	8.0	6.5	12.5	7.5	---	---	25.5	17.0	22.0	14.5	20.0	14.0
17	10.5	6.0	14.0	9.5	---	---	26.0	17.5	23.5	15.0	18.0	14.0
18	11.5	7.0	15.0	10.5	---	---	26.0	18.0	23.0	14.0	16.0	10.5
19	11.0	8.5	14.0	11.0	---	---	26.0	18.0	22.5	14.5	15.5	9.5
20	9.5	7.0	15.5	11.5	23.5	17.0	26.0	17.5	21.5	14.0	16.5	9.5
21	11.5	6.0	15.5	12.0	23.5	16.5	27.0	17.5	20.5	14.5	16.0	11.0
22	11.5	7.5	14.5	11.5	23.0	17.0	27.0	18.0	19.0	14.0	17.5	11.0
23	11.5	8.0	14.0	10.5	22.5	16.5	26.5	18.0	19.5	12.0	19.0	12.5
24	11.0	9.5	10.5	9.0	22.5	16.5	27.0	17.5	19.5	12.5	19.5	13.5
25	11.0	9.5	12.5	9.0	23.0	16.0	27.5	18.5	20.5	12.5	18.5	13.5
26	10.5	9.0	14.0	10.0	20.0	17.0	26.0	20.0	21.5	13.5	17.0	13.5
27	13.5	9.0	15.5	11.5	20.0	15.5	27.0	18.5	22.5	13.5	17.5	12.5
28	10.5	9.5	17.0	13.0	22.5	16.5	26.0	18.0	23.5	15.0	18.5	12.0
29	13.5	8.5	17.0	13.5	23.5	16.5	26.0	17.0	23.5	16.0	19.0	12.5
30	12.0	9.5	16.5	12.5	24.0	16.5	26.5	17.0	21.0	16.5	18.5	13.0
31	---	---	15.5	11.0	---	---	26.5	17.5	22.5	15.0	---	---
MONTH	13.5	5.0	17.0	7.5	24.0	11.5	27.5	14.5	28.5	12.0	21.5	9.5

SACRAMENTO RIVER BASIN

11402000 SPANISH CREEK ABOVE BLACKHAWK CREEK, AT KEDDIE, CA

LOCATION.--Lat 40°00'11", long 120°57'12", in SE¼NE¼ sec.27, T.25 N., R.9 E., Plumas County, on right bank 200 ft (61 m) upstream from Blackhawk Creek, and 0.9 mi (1.4 km) southeast of Keddle.

DRAINAGE AREA.--184 mi² (477 km²).

PERIOD OF RECORD.--October 1933 to current year. Prior to October 1953, published as "at Keddle." Records for October 1911 to September 1933 at site 1.2 mi (1.9 km) downstream not equivalent owing to inflow.

REVISED RECORDS.--WSP 1041: 1938(M).

GAGE.--Water-stage recorder. Datum of gage is 3,129.86 ft (953.981 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by five small reservoirs having a combined capacity of 800 acre-ft (986,000 m³). Approximately 4,600 acres (18.6 km²) irrigated above station (from information furnished by U.S. Forest Service). City of Quincy diverts about 450 acre-ft (555,000 m³) annually for municipal supply. See schematic diagram of North Fork Feather River basin.

AVERAGE DISCHARGE.--45 years, 267 ft³/s (7.561 m³/s), 193,400 acre-ft/yr (238 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,400 ft³/s (436 m³/s) Dec. 22, 1964, gage height, 13.53 ft (4.124 m), from rating curve extended above 5,200 ft³/s (147 m³/s) on basis of slope-area measurement at gage height 12.47 ft (3.801 m); minimum, 3.8 ft³/s (0.11 m³/s) Aug. 12, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,700 ft³/s (48.1 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 5	1430	4930 140	8.01 2.441	Feb. 7	1600	3680 104	7.02 2.140
Jan. 9	1200	3070 86.9	6.51 1.984	Feb. 9	0430	2120 60.0	5.63 1.716
Jan. 14	2330	5270 149	8.25 2.515	Mar. 5	1100	4730 134	7.86 2.396
Jan. 16	1500	*5280 150	8.26 2.518				

Minimum daily, 15 ft³/s (0.42 m³/s) Oct. 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	21	24	39	211	195	264	782	664	364	121	49	30
2	22	24	38	184	220	626	679	645	344	116	46	29
3	21	24	38	350	240	1110	532	639	347	128	46	33
4	21	25	38	665	232	2700	517	617	350	120	45	31
5	21	36	37	3470	526	4210	438	558	354	115	44	41
6	19	37	37	1660	1320	2390	502	496	347	107	43	62
7	19	30	37	731	2480	1410	443	476	360	98	41	48
8	20	28	36	529	1710	1110	413	491	349	97	40	45
9	22	27	35	2030	1670	1010	439	541	331	93	47	50
10	21	28	35	1340	1030	816	472	562	314	87	43	83
11	20	27	38	736	709	718	506	560	276	81	41	64
12	18	27	49	606	564	619	526	545	256	82	39	56
13	16	27	44	619	501	511	505	557	241	81	39	52
14	18	27	145	2940	416	447	493	595	231	76	40	51
15	18	27	834	3080	388	405	482	665	214	71	40	49
16	19	28	201	3910	333	383	462	532	199	63	38	48
17	17	29	410	3140	295	400	398	455	190	62	36	46
18	18	28	291	1490	268	430	373	434	186	58	34	45
19	15	27	154	1140	253	442	371	441	177	57	30	45
20	19	27	115	794	249	495	530	449	164	56	30	44
21	20	44	98	590	252	580	513	463	156	52	30	43
22	20	112	212	490	257	624	475	476	152	46	34	41
23	21	67	989	398	271	688	441	493	138	49	37	41
24	20	55	344	335	281	661	438	418	135	53	34	42
25	19	49	206	293	276	539	697	379	135	53	33	41
26	21	47	162	266	285	520	631	338	132	52	33	42
27	23	45	287	243	288	525	564	321	128	53	31	41
28	30	43	313	227	265	536	585	352	156	51	31	40
29	26	41	403	216	---	561	559	392	133	49	31	39
30	25	40	522	207	---	594	672	416	127	48	34	38
31	25	---	288	201	---	683	---	387	---	50	33	---
TOTAL	635	1100	6475	33091	15774	27007	15438	15357	6986	2325	1172	1360
MEAN	20.5	36.7	209	1067	563	871	515	495	233	75.0	37.8	45.3
MAX	30	112	989	3910	2480	4210	782	665	364	128	49	83
MIN	15	24	35	184	195	264	371	321	127	46	30	29
AC-FT	1260	2180	12840	65640	31290	53570	30620	30460	13860	4610	2320	2700
CAL YR 1977 TOTAL	17535.0		MEAN 48.0	MAX 989	MIN 5.3	AC-FT 34780						
WTR YR 1978 TOTAL	126720.0		MEAN 347	MAX 4210	MIN 15	AC-FT 251300						

11403000 EAST BRANCH OF NORTH FORK FEATHER RIVER NEAR RICH BAR, CA

LOCATION.--Lat 40°00'38", long 121°13'03", in SW¼NE¼ sec.20, T.25 N., R.7 E., Plumas County, Plumas National Forest, on left bank 0.5 mi (0.8 km) upstream from mouth, and 1.3 mi (2.1 km) west of Rich Bar.

DRAINAGE AREA.--1,025 mi² (2,655 km²).

PERIOD OF RECORD.--October 1950 to September 1961, 1965-67 (annual maximum), December 1967 to current year.

REVISED RECORDS.--WSP 1245: 1951(M).

GAGE.--Water-stage recorder. Altitude of gage is 2,300 ft (701 m), from topographic map. Prior to Nov. 29, 1950, at site 30 ft (9 m) downstream at same datum.

REMARKS.--No storage or diversion between stations on Indian and Spanish Creeks and station near Rich Bar.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

AVERAGE DISCHARGE.--21 years (water years 1951-61, 1969-78), 1,046 ft³/s (29.62 m³/s), 757,800 acre-ft/yr (934 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,300 ft³/s (1,370 m³/s) Dec. 22, 1964, gage height, 16.56 ft (5.048 m), from rating curve extended above 15,000 ft³/s (425 m³/s) on basis of study of upstream and downstream peak discharges; minimum daily, 23 ft³/s (0.65 m³/s) Aug. 29-31, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,700 ft³/s (303 m³/s) Jan. 16, gage height, 10.54 ft (3.213 m); minimum daily, 35 ft³/s (0.99 m³/s) Oct. 18-22.

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	46	50	122	648	664	1200	3060	1940	1290	324	94	74
2	49	49	119	566	699	1650	3610	2120	1210	311	90	71
3	53	49	116	785	747	2740	3030	2030	1150	291	81	64
4	48	50	117	1360	734	5480	2500	1990	1140	303	80	63
5	47	86	122	6520	1050	9910	2230	1950	1150	308	84	66
6	46	79	116	4490	2700	7840	1960	1830	1160	295	81	76
7	45	68	115	2240	5040	5430	1970	1660	1140	264	81	118
8	45	61	112	1630	4810	4290	1940	1580	1150	240	81	129
9	45	58	110	4070	4130	3840	1710	1550	1120	233	78	114
10	44	58	107	3510	2910	3270	1680	1630	1060	224	82	124
11	45	57	115	2160	2200	3060	1730	1710	984	216	81	171
12	45	57	140	1750	1790	2660	1860	1710	884	204	77	179
13	43	59	145	1610	1630	2210	1970	1690	814	195	72	153
14	40	60	342	5620	1450	2000	1960	1710	768	201	72	131
15	38	60	1560	8050	1320	1860	1930	1830	706	185	76	126
16	40	61	738	8910	1170	1840	1860	2060	663	167	73	121
17	37	64	762	8250	1060	1860	1840	1950	610	156	72	116
18	35	62	950	4780	976	2109	1620	1730	575	145	79	112
19	35	61	513	3380	919	2190	1480	1580	552	146	79	111
20	35	64	365	2470	894	2320	1430	1540	520	138	75	113
21	35	110	310	1960	918	2600	1690	1520	480	123	73	114
22	35	259	465	1670	970	2900	1780	1540	449	106	72	125
23	38	255	1750	1410	1060	3440	1690	1560	437	100	73	131
24	36	189	1030	1180	1180	3460	1560	1580	405	97	78	125
25	40	161	631	1070	1220	3570	1510	1500	381	102	72	122
26	41	149	488	994	1250	2870	1860	1430	355	101	72	121
27	43	144	624	892	1300	2720	1920	1330	342	97	72	126
28	46	140	784	810	1240	2610	1810	1240	342	101	71	125
29	52	131	832	756	---	2650	1820	1260	381	98	67	116
30	53	127	1220	714	---	2720	1820	1330	362	94	69	106
31	49	---	907	687	---	2780	---	1350	---	90	68	---
TOTAL	1329	2878	15827	84942	46031	100070	58830	51430	22580	5655	2375	3443
MEAN	42.9	95.9	511	2740	1644	3228	1961	1659	753	182	76.6	115
MAX	53	259	1750	8910	5040	9910	3610	2120	1290	324	94	179
MIN	35	49	107	566	664	1200	1430	1240	342	90	67	63
AC-FT	2640	5710	31390	168500	91300	198500	116700	102000	44790	11220	4710	6830
CAL YR 1977	TOTAL	46568	MEAN	128	MAX	1750	MIN	23	AC-FT	92370		
WTR YR 1978	TOTAL	395390	MEAN	1083	MAX	9910	MIN	35	AC-FT	784300		

11403500 BUCKS LAKE NEAR BUCKS LODGE, CA

LOCATION.--Lat 39°53'45", long 121°12'10", in NW¼ sec.33, T.24 N., R.7 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, in intake tower No. 2 upstream from dam on Bucks Creek, 2 mi (3 km) northwest of Bucks Lodge, and 15 mi (24 km) west of Quincy.

DRAINAGE AREA.--28.6 mi² (74.1 km²).

PERIOD OF RECORD.--1927-28 (year-end contents only, published in WSP 1315-A), October 1928 to current year. Prior to October 1954, published as Bucks Creek Reservoir near Bucks Ranch.

GAGE.--Water-stage recorder and nonrecording gage monitored once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Feather River Power Co.).

REMARKS.--Reservoir is formed by concrete-faced, rockfill dam completed in 1927; storage began in May 1927. Capacity, 101,400 acre-ft (125 hm³) between elevations 5,064.75 ft (1,543.736 m), sill of outlet gate and 5,154.85 ft (1,571.198 m), spillway crest, NGVD. Released water flows down Bucks Creek to Lower Bucks Lake, where it enters tunnel that discharges into Grizzly Creek, then to Bucks Creek powerhouse. Figures given herein represent total contents, of which 274 acre-ft (338,000 m³) is not available for release. See schematic diagram of North Fork Feather 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, 105,800 acre-ft (130 hm³) June 23, 1938, elevation, 5,157.1 ft (1,571.88 m); minimum, 12,330 acre-ft (15.2 hm³) Feb. 27, 1929, elevation, 5,090.7 ft (1,551.65 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 99,800 acre-ft (123 hm³) July 13, elevation, 5,153.85 ft (1,570.893 m); minimum, 36,200 acre-ft (44.6 hm³) Nov. 4, elevation, 5,113.0 ft (1,558.44 m).

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

5064.75	274	5075	2400	5100	21200	5125	52500
5066	388	5080	4740	5105	26600	5130	60000
5068	635	5085	7920	5110	32500	5140	75900
5070	977	5090	11700	5115	38800	5150	93000
5072	1440	5095	16200	5120	45500	5160	111200

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	36617	36744	37380	44512	54893	50814	56824	60304	77052	95967	91017	79716
2	36617	36617	37380	44787	54745	51100	57274	60610	77715	96143	90494	79381
3	36617	36490	37380	45198	54597	51100	57274	61377	78547	96324	90494	79213
4	36617	36363	37507	45749	54155	51967	57575	61839	79548	96682	90319	79047
5	36744	36363	37507	46859	54155	52691	57575	62458	80554	96861	90144	78880
6	36872	36490	37507	46999	55040	52837	57726	62613	81564	97220	89795	77548
7	36744	36490	37636	47139	55781	53130	57575	62768	82408	99020	89621	77217
8	36744	36490	37636	47698	55228	53714	57575	63077	83427	99201	89273	76721
9	36744	36490	37636	49105	56228	54007	57425	63389	84448	99382	89099	76556
10	36744	36490	37636	49388	56079	54302	57274	63857	85133	99563	88926	76225
11	36744	36490	37764	49814	55781	54302	57124	64637	85989	99563	88752	75894
12	36744	36490	37893	50243	55632	54302	57274	65266	86678	99743	88579	75401
13	36744	36490	37893	50814	55483	54155	57575	65895	87195	99743	88406	75073
14	36744	36490	38924	52545	55188	53714	57575	66844	87885	99382	88059	74416
15	36744	36490	39707	53568	54893	53714	58027	67955	88579	99020	87540	74089
16	36744	36490	40098	54450	54450	53276	58027	68594	89099	98659	87195	73438
17	36744	36490	40626	55040	54302	53276	57876	69073	89795	98297	86678	73110
18	36744	36490	40758	55483	53714	53276	57726	69553	90494	97938	85989	72621
19	36744	36490	40889	55632	53568	52984	57726	70197	91017	97579	85647	72135
20	36744	36490	40889	55781	53276	52837	57726	70840	91368	96861	85304	71649
21	36744	36872	41021	56079	53130	52837	57575	71487	91815	96324	84962	71487
22	36744	36999	41550	56229	52837	53130	57575	72297	92247	95967	84619	71487
23	36744	36999	42084	56526	52401	53714	57274	72784	92774	95611	84277	71487
24	36744	36999	42296	56675	52112	54155	57425	73273	93304	95076	83767	71649
25	36744	37126	42217	56824	51967	54007	58328	73763	93658	94720	83257	71487
26	36744	37253	42484	56675	51823	54155	58630	73763	94012	94189	82577	71649
27	36744	37253	42886	56377	51389	54155	59086	74252	94366	93658	82071	71649
28	36872	37253	43561	56079	50957	54155	59283	74747	94720	93127	81733	71649
29	36872	37253	43831	55781	---	54302	59389	75401	95076	92598	81227	71649
30	36872	37380	44101	55483	---	55040	59997	76225	95611	92071	80721	71649
31	36872	---	44238	55188	---	55930	---	76721	---	91544	80218	---
MAX	36872	37380	44238	56824	56228	55930	59997	76721	95611	99743	91017	79716
MIN	36617	36363	37380	44512	50957	50814	56824	60304	77052	91544	80218	71487
(†)	5113.5	5113.9	5119.1	5126.8	5123.9	5127.3	5130.0	5140.5	5151.5	5149.2	5142.6	5137.4
(‡)	+255	+508	+6860	+11000	-4230	+4970	+4070	+16700	+18900	-4070	-11300	-8560

CAL YR 1977 † +1220

WTR YR 1978 ‡ +35000

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet, rounded to Geological Survey standards.

11404500 NORTH FORK FEATHER RIVER AT PULGA, CA

LOCATION.--Lat 39°47'39", long 121°27'03", in SW¼NE¼ sec.6, T.22 N., R.5 E., Butte County, Hydrologic Unit 18020121, Plumas National Forest, on left bank between railroad and highway bridges, 0.5 mi (0.8 km) downstream from Flea Valley Creek and Pulga, and 1.5 mi (2.4 km) downstream from Poe Dam.

DRAINAGE AREA.--1,953 mi² (5,058 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1910 to current year. Monthly discharge only for some periods and yearly estimates for water years 1911 and 1938, published in WSP 1315A. Prior to October 1960, published as "at Big Bar."

REVISED RECORDS.--WSP 931: 1938(M), 1940. WSP 1515: 1935. WDR CA-77-4: 1976 (yearly summaries).

GAGE.--Water-stage recorder. Datum of gage is 1,305.62 ft (397.953 m), revised, National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1937, at site 1.1 mi (1.8 km) upstream at different datum. Oct. 1, 1937, to Sept. 30, 1958, at present site at datum 5.00 ft (1.524 m) higher.

REMARKS.--Records fair to poor. Flow regulated by Lake Almanor (station 11399000), Bucks Lake (station 11403500), Mountain Meadows Reservoir, Butt Valley Reservoir, and five forebays, combined capacity, 1,386,000 acre-ft (1.71 km³). Diversion through Poe powerhouse began on May 29, 1958. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Gage-height record and eight discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE (including diversion through Poe powerhouse).--68 years, 2,964 ft³/s (83.94 m³/s), 2,147,000 acre-ft/yr (2.65 km³/yr).

EXTREMES FOR PERIOD OF RECORD (prior to diversion to Poe powerhouse).--Maximum discharge, 72,400 ft³/s (2,050 m³/s) Dec. 23, 1955, gage height, 35.60 ft (10.851 m) present datum, from rating curve extended above 34,000 ft³/s (963 m³/s); minimum daily, 235 ft³/s (6.66 m³/s) Oct. 31, 1932.
1958 to current year: Maximum discharge, 73,000 ft³/s (2,070 m³/s) Dec. 22, 1964, gage height, 35.80 ft (10.912 m), from rating curve extended above 34,000 ft³/s (963 m³/s); minimum daily, 5.4 ft³/s (0.15 m³/s) Sept. 18, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17,900 ft³/s (507 m³/s) Jan. 15, gage height, 19.38 ft (5.907 m); minimum daily, 14 ft³/s (0.40 m³/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	16	18	25	61	90	74	3080	593	51	47	69	52
2	16	18	25	58	108	862	1960	418	50	45	47	53
3	16	17	25	81	143	2130	1150	294	50	46	46	52
4	16	20	25	123	96	6930	872	184	49	46	47	53
5	15	34	25	1960	127	14100	678	127	49	46	49	54
6	14	26	26	3570	1850	10300	790	84	279	46	45	53
7	15	25	26	937	6350	6290	605	81	64	47	45	53
8	15	25	25	124	5310	4550	169	81	54	46	44	51
9	15	24	25	2240	4440	4270	123	77	49	46	47	57
10	16	24	25	3740	2260	2920	120	73	48	48	46	58
11	15	24	30	1340	1030	2210	403	70	46	45	44	54
12	15	23	29	671	612	1580	339	69	46	46	45	54
13	15	23	27	247	446	958	1060	69	46	46	44	55
14	17	24	511	7170	139	592	645	66	46	46	44	54
15	17	25	2380	15100	131	358	150	501	42	48	46	53
16	16	25	124	14600	116	109	206	426	43	53	44	55
17	17	25	230	11700	104	102	105	148	44	51	46	53
18	16	25	149	6200	97	96	99	61	44	46	46	53
19	16	25	118	4070	92	92	101	61	44	45	47	53
20	17	25	108	1730	87	305	111	59	44	46	46	56
21	16	48	105	905	84	1230	103	56	46	46	45	56
22	17	50	177	167	80	2400	97	57	49	65	45	54
23	17	31	211	141	77	2800	94	59	49	46	44	53
24	17	29	135	129	74	2860	100	58	48	46	46	54
25	16	28	121	121	72	1030	778	57	48	46	44	52
26	16	27	115	110	81	770	947	56	48	47	44	53
27	17	27	148	104	76	838	672	54	48	46	45	52
28	17	26	138	99	71	1110	532	53	48	46	43	52
29	20	26	150	94	---	1470	438	53	47	46	47	54
30	21	25	149	90	---	2240	676	60	46	43	52	54
31	18	---	133	88	---	2040	---	58	---	44	50	---
TOTAL	507	792	5540	77770	24243	77616	17203	4163	1663	1456	1442	1610
MEAN	16.4	26.4	179	2509	866	2504	573	134	55.4	47.0	46.5	53.7
MAX	21	50	2380	15100	6350	14100	3080	593	279	65	69	58
MIN	14	17	25	58	71	74	94	53	42	43	43	51
AC-FT	1010	1570	10990	154300	48090	154000	34120	8260	3300	2890	2860	3190
MEAN †	873	987	2048	5936	4069	6565	4418	3768	2289	1144	2197	2072
AC-FT †	53660	58720	125900	365000	226000	403700	262900	231700	136200	70370	135100	123300

CAL YR 1977 TOTAL 17711.4 MEAN 48.5 MAX 2380 MIN 5.4 AC-FT 35130 MEAN † 975 AC-FT † 706200
WTR YR 1978 TOTAL 214005.0 MEAN 586 MAX 15100 MIN 14 AC-FT 424500 MEAN † 3028 AC-FT † 2192000

† Adjusted for diversion through Poe powerhouse.

11404500 NORTH FORK FEATHER RIVER AT PULGA, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.

CHEMICAL ANALYSES: Water years 1963-66, 1972, 1977.

WATER TEMPERATURES: Water years 1963 to current year.

PERIOD OF DAILY RECORD:

WATER TEMPERATURES: October 1962 to current year.

INSTRUMENTATION.--Temperature recorder since October 1962.

REMARKS.--Clock stopped Dec. 10 to Jan. 12, Sept. 18-28; range in temperature, 5.0°C to 9.0°C and 17.0°C to 18.5°C, respectively.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 25.0°C Aug. 4-9, 1978; minimum recorded, 0.5°C Jan. 4, 1972.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 25.0°C Aug. 4-9; minimum recorded, 4.5°C Feb. 13.

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	18.0	16.5	13.0	12.0	8.0	7.5	---	---	7.0	6.5	9.0	8.0
2	17.5	16.5	12.5	11.5	7.5	7.5	---	---	7.5	7.0	8.5	7.0
3	17.5	16.5	12.0	11.0	8.0	8.0	---	---	8.0	6.5	7.5	7.0
4	17.5	16.0	11.5	11.0	8.0	8.0	---	---	8.0	6.5	7.5	7.0
5	17.5	16.0	11.5	11.0	8.5	8.0	---	---	8.5	8.0	7.5	7.0
6	17.0	16.0	11.0	10.0	8.0	8.0	---	---	8.0	6.0	8.5	7.5
7	17.0	15.5	10.5	10.0	8.0	7.5	---	---	6.5	6.0	9.0	8.5
8	17.0	15.5	10.5	10.0	8.0	7.0	---	---	6.0	6.0	9.0	8.5
9	17.0	16.0	10.5	9.5	7.5	6.5	---	---	6.0	6.0	9.0	8.0
10	16.5	15.0	10.0	10.0	---	---	---	---	6.0	6.0	8.5	8.0
11	16.0	15.0	10.0	10.0	---	---	---	---	6.0	6.0	8.5	8.0
12	16.0	15.0	10.5	10.0	---	---	---	---	6.0	5.5	8.0	7.0
13	16.0	14.5	10.5	10.0	---	---	8.5	7.0	6.5	4.5	7.0	7.0
14	16.0	14.5	10.5	9.5	---	---	7.0	6.0	7.0	6.0	7.5	7.0
15	15.5	14.5	10.0	9.5	---	---	6.0	5.5	7.5	7.0	8.5	7.0
16	15.0	14.5	10.0	9.0	---	---	6.0	5.5	7.5	7.0	10.0	8.0
17	15.0	14.0	10.0	10.0	---	---	6.5	6.0	7.5	6.5	10.5	8.5
18	15.0	14.0	10.0	9.0	---	---	6.5	6.0	8.5	7.5	10.5	8.5
19	15.0	14.5	9.0	8.0	---	---	6.5	6.5	9.0	7.5	11.0	9.0
20	15.0	14.5	8.0	8.0	---	---	7.0	6.5	9.0	8.0	11.0	9.5
21	15.0	14.0	8.0	8.0	---	---	7.5	7.0	9.5	8.0	10.0	9.0
22	14.5	13.5	8.5	8.0	---	---	8.0	7.5	9.5	8.0	9.5	8.5
23	14.5	14.0	8.0	7.5	---	---	8.5	7.0	9.5	8.0	9.0	8.5
24	14.5	14.0	8.5	8.0	---	---	7.0	6.0	9.5	8.0	8.5	8.0
25	15.0	14.5	8.5	8.5	---	---	7.5	6.5	9.0	8.5	8.5	8.0
26	15.0	14.5	8.5	8.0	---	---	7.5	7.0	9.0	8.5	9.5	8.5
27	15.0	14.5	8.5	8.0	---	---	7.5	6.5	8.5	7.5	10.5	10.0
28	14.5	13.0	8.5	8.0	---	---	8.0	7.0	8.5	7.0	10.5	10.0
29	13.5	13.0	8.5	8.0	---	---	7.5	6.5	---	---	10.5	10.5
30	13.0	13.0	8.5	8.0	---	---	7.5	6.5	---	---	10.5	10.5
31	13.0	12.0	---	---	---	---	7.0	6.5	---	---	10.5	10.5
MONTH	18.0	12.0	13.0	7.5	---	---	---	---	9.5	4.5	11.0	7.0

11404500 NORTH FORK FEATHER RIVER AT PULGA, 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	10.5	8.5	11.0	9.5	16.0	12.5	19.5	16.5	24.5	21.5	23.0	20.5
2	9.0	8.5	12.0	9.5	16.5	13.0	19.5	16.5	24.5	21.0	23.0	20.5
3	9.0	8.5	12.5	9.5	16.5	14.0	19.5	16.5	24.5	21.5	22.5	20.5
4	9.0	8.5	12.0	9.5	17.5	14.0	20.0	16.5	25.0	22.5	22.5	20.0
5	9.0	8.5	11.5	9.0	18.0	14.0	20.0	16.5	25.0	22.0	22.0	21.0
6	8.5	7.5	11.5	8.5	17.5	14.0	20.5	17.0	25.0	22.0	21.5	20.5
7	8.5	7.5	12.5	9.5	18.0	15.0	20.5	19.0	25.0	22.5	21.0	19.5
8	11.0	8.0	13.0	10.0	19.0	15.0	21.5	18.5	25.0	23.0	21.5	19.0
9	11.5	9.0	13.5	11.0	18.5	16.0	22.0	19.0	25.0	23.0	20.0	19.0
10	12.0	9.5	13.5	10.5	17.5	16.0	22.0	19.5	24.5	22.0	19.5	18.5
11	11.5	10.0	13.0	10.5	17.5	14.5	22.0	19.0	24.0	22.0	20.0	18.0
12	11.5	10.0	13.5	10.5	17.0	15.0	22.0	18.5	23.5	21.0	20.0	18.0
13	11.5	10.5	14.0	11.5	18.0	15.0	22.0	19.5	23.0	20.5	19.5	18.5
14	10.5	10.0	14.0	11.5	17.5	15.0	22.0	19.0	23.0	20.0	19.5	17.5
15	10.0	8.5	12.5	10.0	17.0	14.5	22.0	19.0	23.0	20.0	19.5	17.5
16	8.5	8.0	11.0	9.5	17.5	14.5	22.0	19.0	23.0	20.0	20.0	18.0
17	10.0	8.0	13.0	9.5	18.0	14.5	22.0	19.0	22.5	20.0	19.5	17.5
18	10.5	8.0	14.0	10.5	18.5	15.0	22.5	19.5	22.5	19.0	18.5	16.5
19	10.5	9.0	14.5	11.5	18.0	14.5	23.0	20.0	22.5	19.5	18.0	16.0
20	10.0	9.0	14.5	12.0	18.5	15.0	23.0	20.0	22.5	19.5	18.0	16.0
21	9.5	8.5	15.0	12.0	18.5	15.0	23.0	20.0	22.5	20.5	17.5	16.0
22	10.5	8.0	14.5	11.5	18.5	15.0	23.0	20.0	21.5	20.0	17.5	15.5
23	11.0	8.5	14.0	12.5	19.0	16.0	23.5	20.0	22.0	19.5	17.5	15.5
24	10.5	9.5	12.5	11.5	19.0	16.0	23.5	20.5	22.0	19.5	---	---
25	10.0	9.0	13.5	11.0	19.0	15.5	23.5	20.5	22.5	19.5	---	---
26	9.5	9.0	14.0	11.0	18.0	16.5	23.5	21.5	22.5	20.0	---	---
27	10.0	9.0	15.0	11.5	18.0	16.5	24.0	21.0	22.5	20.0	---	---
28	11.0	10.0	16.0	12.5	19.0	16.0	23.5	21.0	23.0	20.5	---	---
29	11.5	9.5	16.5	13.0	19.0	16.0	24.0	21.0	23.0	20.5	19.0	17.0
30	10.5	9.5	16.0	13.0	19.5	16.0	24.0	21.0	23.0	21.0	19.0	17.0
31	---	---	15.5	12.5	---	---	24.0	21.0	23.5	21.0	---	---
MONTH	12.0	7.5	16.5	8.5	19.5	12.5	24.0	16.5	25.0	19.0	23.0	15.5

Rob - As requested: Gen Info
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SACRAMENTO RIVER BASIN

11405300 WEST BRANCH FEATHER RIVER NEAR PARADISE, CA

LOCATION.--Lat 39°47'12", long 121°33'42", in SE¼ sec.6, T.22 N., R.4 E., Butte County, on right bank 0.6 mi (1.0 km) upstream from Griffin Gulch, and 4.0 mi (6.4 km) northeast of Paradise.

DRAINAGE AREA.--110 mi² (285 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1957 to current year.

REVISED RECORDS.--WSP 2131: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,370 ft (418 m), from topographic map. Prior to June 1, 1970, on left bank at same datum.

REMARKS.--Records good. Dewey, Miners, and Hendricks Canals divert from headwaters of West Branch Feather River into Butte Creek basin for power development at DeSabra and Centerville plants of Pacific Gas and Electric Co. Upper Miocene Canal diverts about 50 ft³/s (1.42 m³/s) to Lime Saddle powerplant. Flow regulated by Round Valley Reservoir, usable capacity, 5,000 acre-ft (6.16 hm³) and Philbrook Reservoir, capacity, 5,010 acre-ft (6.18 hm³).

AVERAGE DISCHARGE.--21 years, 304 ft³/s (8.609 m³/s), 220,200 acre-ft/yr (272 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,300 ft³/s (745 m³/s) Dec. 22, 1964, gage height, 26.2 ft (7.99 m) from floodmarks, from rating curve extended above 14,000 ft³/s (396 m³/s); minimum daily, 0.29 ft³/s (0.008 m³/s) Aug. 24, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s (56.6 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 14	2400	3460 98.0	10.17 3.100	Jan. 16	2030	5260 149	11.99 3.655
Jan. 5	0900	4270 121	10.99 3.350	Feb. 7	1400	3770 107	10.50 3.200
Jan. 9	1230	5540 157	12.27 3.740	Mar. 5	2030	5740 163	12.46 3.798
Jan. 14	2100	*6060 172	12.77 3.892				

Minimum daily, 0.44 ft³/s (0.012 m³/s) Oct. 7-11.

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	1.0	1.2	1.6	225	205	350	1290	838	483	124	1.7	15
2	.74	1.1	1.5	191	322	1410	936	839	405	111	1.7	15
3	.58	.94	1.3	457	365	2090	712	870	447	154	2.9	16
4	.52	.91	1.3	681	291	3900	865	825	495	122	3.2	15
5	.50	19	2.4	3010	930	5070	730	737	552	95	2.1	15
6	.46	3.8	1.9	1540	1740	3140	1140	648	571	72	5.4	31
7	.44	1.5	1.4	798	2760	1870	779	630	535	67	8.3	25
8	.44	1.2	1.4	778	1730	1600	648	666	512	62	1.7	22
9	.44	1.1	1.4	3720	1640	1690	608	736	507	53	1.4	47
10	.44	1.1	1.3	1770	1110	1320	667	778	469	46	1.4	107
11	.44	1.0	1.7	1030	842	1120	721	748	407	37	1.4	58
12	.46	1.0	12	912	774	960	713	710	392	28	1.3	4.9
13	.50	1.0	2.9	927	889	833	655	724	372	21	1.9	1.3
14	.51	1.0	759	3730	684	749	642	780	368	18	1.3	1.1
15	.51	1.0	1640	3350	635	672	656	1000	319	15	1.2	1.1
16	.51	.95	268	4550	524	618	620	691	222	14	1.1	1.0
17	.51	.91	841	3220	455	583	539	598	220	13	.93	.97
18	.51	.90	394	1710	409	592	496	601	262	12	.87	1.2
19	.51	.85	154	1700	395	569	503	565	257	10	.83	2.3
20	.51	.85	76	1210	388	586	678	564	254	8.7	.83	2.2
21	.51	54	55	890	377	652	562	571	264	7.4	.83	1.9
22	.51	188	215	729	375	694	516	619	236	5.4	.83	6.0
23	.51	46	1060	586	371	792	478	647	199	4.8	.83	2.9
24	.51	14	365	481	363	737	530	511	194	4.1	.83	3.3
25	.51	11	196	413	345	615	1630	439	172	3.2	.83	1.2
26	.53	6.3	126	365	458	601	1290	387	156	2.7	.83	.85
27	.65	11	548	324	438	588	995	394	145	2.4	.83	.83
28	.65	4.1	422	292	372	584	930	494	188	2.3	.83	.83
29	.65	1.9	647	268	---	614	841	548	160	2.1	14	.78
30	2.1	1.6	609	246	---	657	919	569	141	1.9	16	.78
31	2.9	---	323	225	---	806	---	554	---	1.9	17	---
TOTAL	20.56	379.21	8730.1	40328	20187	37062	23289	20281	9904	1120.9	95.10	401.44
MEAN	.66	12.6	282	1301	721	1196	776	654	330	36.2	3.07	13.4
MAX	2.9	188	1640	4550	2760	5070	1630	1000	571	154	17	107
MIN	.44	.85	1.3	191	205	350	478	387	141	1.9	.83	.78
AC-FT	41	752	17320	79990	40040	73510	46190	40230	19640	2220	189	796

CAL YR 1977 TOTAL 10910.02 MEAN 29.9 MAX 1640 MIN .29 AC-FT 21640
WTR YR 1978 TOTAL 161798.31 MEAN 443 MAX 5070 MIN .44 AC-FT 320900

11405300 WEST BRANCH FEATHER RIVER NEAR PARADISE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1962 to current year.

INSTRUMENTATION.--Temperature recorder since October 1962.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 36.0°C June 21, 1977; minimum recorded, 0.0°C Dec. 24, 26-29, 1976.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 33.0°C Aug. 9; minimum recorded, 2.5°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	10.0	14.5	9.0	9.0	5.5	5.0	4.0	5.5	5.0	8.0	6.5
2	20.0	9.5	14.5	8.5	8.5	5.0	6.0	5.0	6.5	5.5	8.0	6.0
3	20.5	9.0	13.5	8.5	8.5	5.0	6.0	6.0	7.0	6.0	6.5	6.5
4	14.5	9.0	11.5	7.5	10.0	6.5	6.5	6.0	7.0	6.5	7.0	6.0
5	19.0	9.0	11.5	9.5	10.0	6.5	6.5	6.0	7.5	5.5	6.5	6.0
6	17.0	10.0	11.5	8.0	8.5	6.5	6.5	6.0	6.5	5.5	7.5	6.0
7	20.0	8.0	12.5	7.0	9.0	6.0	6.5	5.0	6.5	6.0	8.0	6.0
8	19.0	9.0	11.5	6.0	7.0	4.0	6.0	6.0	6.5	6.0	7.5	6.5
9	19.5	9.0	10.0	5.0	7.0	4.0	6.0	5.5	6.5	6.0	7.5	6.0
10	20.5	9.0	10.0	5.0	7.0	4.0	6.0	5.0	6.5	5.5	7.5	5.5
11	20.0	10.0	11.0	6.5	6.5	4.5	6.5	5.5	6.0	5.5	7.5	6.5
12	19.5	10.0	13.5	9.5	7.0	6.0	6.5	6.0	5.5	5.0	6.5	5.0
13	19.0	10.0	12.5	8.0	7.5	6.5	7.5	6.5	6.0	5.0	6.5	5.0
14	19.5	9.5	11.0	6.0	8.5	7.0	6.5	5.0	6.0	5.0	6.5	5.0
15	19.5	11.0	11.5	6.5	7.0	5.5	6.0	5.0	6.5	5.5	7.0	5.0
16	19.0	10.0	11.5	6.5	5.5	5.0	6.5	6.0	6.0	5.0	8.0	6.0
17	19.0	9.5	11.0	7.0	6.5	5.0	6.5	6.0	6.0	5.0	8.5	7.0
18	18.5	10.0	9.0	4.5	5.0	4.5	6.5	5.5	7.0	6.0	8.5	7.0
19	18.5	10.5	5.5	3.0	4.0	3.5	6.5	5.5	7.5	6.0	9.0	7.5
20	17.5	10.5	5.5	2.5	4.5	3.0	6.0	5.0	7.5	6.5	9.0	7.5
21	18.0	9.5	7.0	4.0	5.5	4.0	6.5	5.0	7.5	6.5	9.0	7.5
22	17.0	9.0	6.0	5.0	6.5	5.5	6.5	5.0	8.0	7.0	7.5	7.0
23	16.0	10.5	6.0	5.0	6.5	6.0	5.0	4.0	8.0	7.0	7.5	6.5
24	17.0	13.0	7.5	6.0	6.0	5.5	4.0	3.0	7.5	7.0	7.5	5.5
25	17.0	13.0	8.0	6.5	6.0	5.5	5.0	4.0	8.0	7.0	8.5	6.0
26	18.0	13.5	9.0	7.0	6.0	5.5	6.0	5.0	8.0	7.0	8.5	7.5
27	16.5	11.5	8.5	7.5	6.5	6.0	5.5	5.0	7.0	6.0	9.0	7.0
28	14.0	11.0	8.5	6.0	6.5	6.0	6.5	5.5	6.5	5.5	9.5	7.5
29	13.5	11.0	9.5	6.5	7.0	6.5	6.0	5.0	---	---	9.5	8.0
30	16.0	12.0	9.5	6.0	6.5	5.5	6.0	5.0	---	---	9.5	8.0
31	15.5	11.5	---	---	5.5	4.5	5.5	5.0	---	---	9.0	7.5
MONTH	20.5	8.0	14.5	2.5	10.0	3.0	7.5	3.0	8.0	5.0	9.5	5.0

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.5	6.0	10.0	6.5	12.5	10.0	16.5	13.5	31.5	23.0	21.5	19.0
2	7.0	5.5	11.0	8.0	12.5	10.0	16.5	13.0	31.5	23.0	21.0	19.0
3	7.0	6.0	11.0	8.0	13.0	11.0	15.5	13.0	30.0	23.5	21.0	19.0
4	7.0	6.5	10.5	7.5	13.5	11.0	16.0	12.0	29.5	24.5	20.5	18.0
5	6.5	6.5	9.5	7.0	13.5	11.0	17.5	13.5	31.0	24.0	19.0	18.0
6	6.5	5.5	9.5	7.0	14.0	11.5	18.5	14.5	29.5	24.5	18.5	17.0
7	7.0	5.5	10.5	8.0	14.0	11.5	18.0	16.0	28.5	24.5	17.0	15.5
8	8.5	5.5	11.0	8.5	14.0	11.5	19.5	15.5	32.0	24.5	17.5	15.0
9	9.5	6.5	11.0	9.0	14.0	12.0	20.0	16.5	33.0	24.5	16.5	13.5
10	10.0	7.5	11.0	8.5	13.0	12.0	19.5	17.0	31.5	23.0	14.0	13.0
11	10.0	8.0	10.5	8.5	13.0	10.5	19.0	16.5	30.0	23.0	15.0	12.5
12	10.0	7.5	10.5	8.0	12.5	11.5	19.5	16.0	28.5	21.0	19.5	14.0
13	9.5	8.0	11.0	9.0	13.5	11.0	22.0	17.0	28.5	21.5	19.5	14.5
14	9.5	7.5	11.0	9.0	13.0	11.0	23.0	19.5	29.0	20.0	22.5	15.0
15	7.0	5.5	10.5	7.0	13.0	11.0	23.5	20.0	28.0	20.0	23.0	15.5
16	6.0	5.0	9.0	5.5	14.0	11.0	24.0	20.0	28.0	20.0	23.5	16.5
17	8.0	5.5	10.5	8.0	15.0	12.0	24.5	20.5	28.0	19.0	21.5	15.5
18	8.5	6.0	11.5	9.0	15.0	12.5	24.5	20.5	28.0	17.5	21.0	13.5
19	8.5	7.5	11.5	9.5	14.0	11.5	25.0	20.5	27.5	18.5	20.0	14.5
20	8.0	6.0	11.5	9.5	15.0	12.0	25.5	21.0	27.5	18.5	20.0	14.5
21	7.0	5.0	12.0	10.0	15.0	12.0	26.5	21.0	25.5	19.0	19.0	15.0
22	8.5	5.5	11.5	9.0	15.5	12.5	27.5	22.0	22.5	18.0	18.5	15.0
23	9.0	7.0	11.0	8.5	15.5	12.0	28.5	22.5	25.0	16.0	21.5	15.5
24	9.0	8.5	8.5	7.5	15.0	12.5	29.5	22.5	25.0	16.0	20.0	16.0
25	8.5	7.5	9.5	7.5	15.0	12.0	30.0	23.0	25.5	17.0	22.5	16.5
26	8.0	7.0	10.5	8.0	14.5	13.0	30.5	24.5	26.5	18.0	21.5	17.0
27	10.0	7.5	12.0	9.5	15.0	12.5	31.0	23.5	26.5	17.5	21.5	15.5
28	9.5	8.0	13.0	11.0	15.5	13.0	30.5	23.0	27.5	18.5	23.0	15.5
29	10.0	7.0	12.5	10.5	15.5	12.5	30.0	22.0	23.0	21.0	22.5	16.0
30	9.5	7.5	12.5	10.0	16.5	13.0	30.0	22.0	22.0	20.5	24.0	16.5
31	---	---	12.0	9.5	---	---	30.5	22.5	22.0	19.5	---	---
MONTH	10.0	5.0	13.0	5.5	16.5	10.0	31.0	12.0	33.0	16.0	24.0	12.5

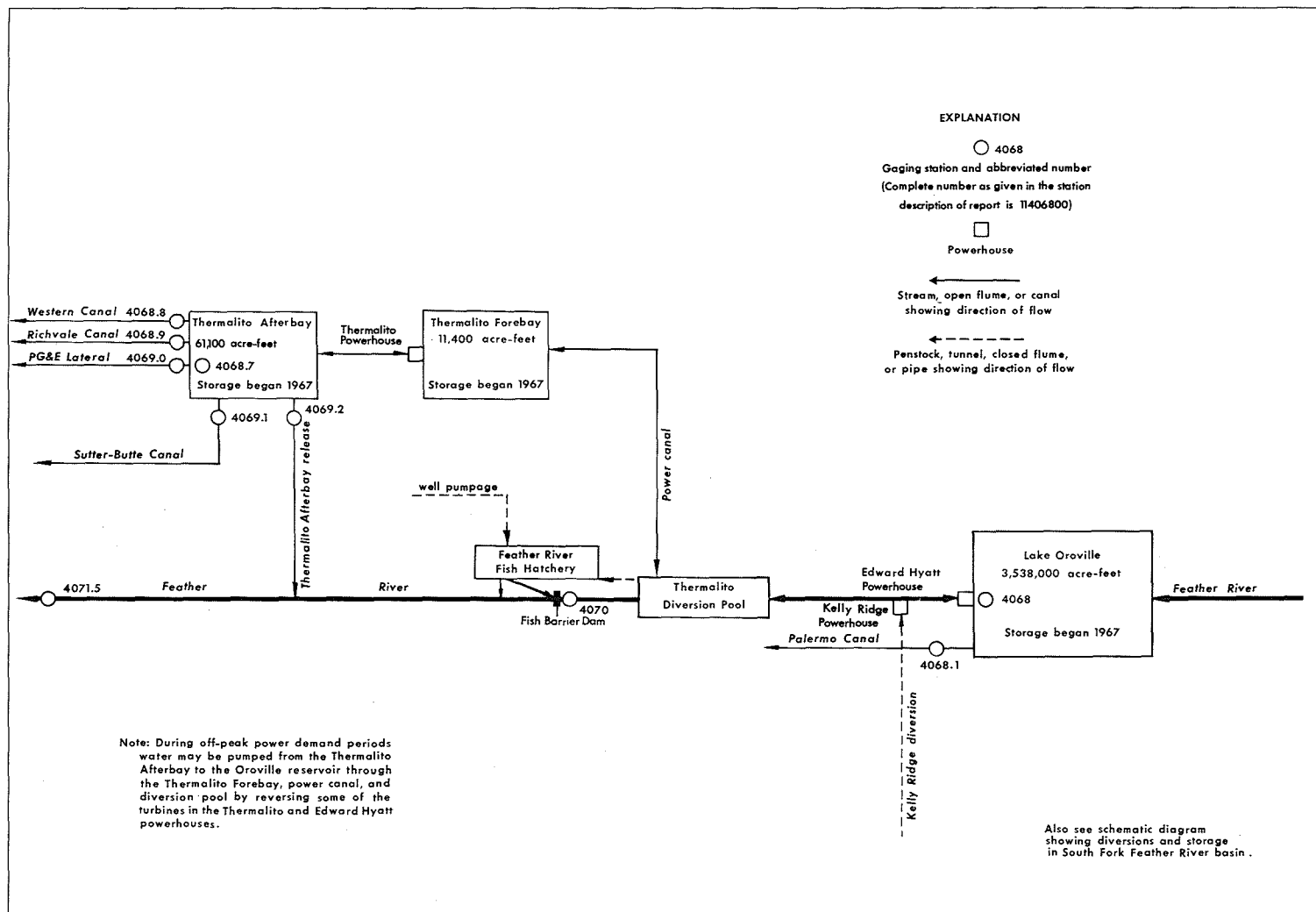


FIGURE 7.--Schematic diagram showing diversions and storage from Feather River at Lake Oroville.

11406800 LAKE OROVILLE NEAR OROVILLE, CA

LOCATION.--Lat 39°32'06", long 121°28'25", in NE¼SW¼ sec.1, T.19 N., R.4 E., Butte County, near intake structure at left end of Oroville Dam on Feather River, 1.0 mi (1.6 km) downstream from North Fork Feather River, and 4.2 mi (6.8 km) east of Oroville.

DRAINAGE AREA.--3,607 mi² (9,342 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 0.47 ft (0.143 m) National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources).

REMARKS.--Reservoir is formed by an earthfill dam with concrete chute-type sidehill spillway completed May 13, 1968; storage began Nov. 14, 1967. Usable capacity, 2,685,385 acre-ft (3.31 km³) between elevations 640.0 ft (195.07 m) minimum power pool, and 900.0 ft (274.32 m) normal maximum pool. Dead storage, 852,192 acre-ft (1.05 km³). Total capacity at normal maximum pool, 3,537,577 acre-ft (4.36 km³); temporary detention storage occurred at times during construction; maximum was 155,200 acre-ft (191 hm³) Dec. 23, 1964. Water is released to Edward Hyatt powerhouse through penstock in left abutment of dam and to Palermo Canal (station 11406810) through concrete tunnel also in left abutment of dam. Three of the total of six turbines in the Edward Hyatt powerplant are reversible and during periods of low power demand water is pumped at times from the river back into Lake Oroville. Records, including extremes, represent total contents at 2400 hours. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records collected by California Department of Water Resources, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project. Contents not rounded to Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 3,536,000 acre-ft (4.36 km³) June 4, 1973, gage height, 899.88 ft (274.283 m); minimum since initial storage began, 882,395 acre-ft (1.09 km³) Sept. 7, 1977, gage height, 645.11 ft (196.630 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,407,512 acre-ft (4.20 km³) June 11, gage height, 891.66 ft (271.778 m); minimum, 901,070 acre-ft (1.11 km³) Oct. 23, gage height, 648.21 ft (197.574 m).

Capacity table (gage height, in feet, and contents, in acre-feet)

640	852192	730	1498175	820	2425571
650	911975	740	1586086	830	2548850
660	974560	750	1677554	840	2676446
670	1040003	760	1772690	850	2808349
680	1108406	770	1871511	860	2944741
690	1179915	780	1974240	870	3085747
700	1254634	790	2080969	880	3231454
710	1332547	800	2191742	890	3382038
720	1413685	810	2306597	900	3537577

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	915221	904594	917246	1126977	2037797	2533206	2872026	3174064	3351223	3324993	3010997	2788013
2	914363	904350	916141	1132435	2050466	2555127	2897311	3176404	3349855	3322121	3000866	2792820
3	912036	905933	917554	1140621	2062110	2592887	2906918	3178463	3362488	3319251	2987395	2796697
4	912036	906786	918598	1153950	2071850	2657029	2916273	3176550	3372864	3323632	2972151	2801648
5	912281	904837	917738	1202953	2087828	2738019	2923579	3176258	3373322	3312762	2969221	2796964
6	910997	905446	919521	1246255	2117073	2787212	2935737	3176404	3375767	3301616	2966711	2793622
7	909408	904959	921368	1268654	2166237	2803256	2942661	3191939	3382956	3291849	2953765	2787879
8	908920	904776	921922	1287746	2209505	2810496	2959885	3192379	3386019	3283750	2943493	2782945
9	908005	904594	922477	1338600	2252337	2816809	2976062	3191351	3394144	3278957	2932832	2786545
10	903135	904898	923032	1378071	2281211	2815599	2982634	3191792	3402283	3271329	2926477	2789748
11	903682	904776	923649	1404188	2306130	2811033	2987675	3196492	3407512	3259389	2919028	2787613
12	903803	903742	924019	1427060	2327001	2803791	2993704	3204581	3405204	3247035	2909117	2782279
13	904837	902466	924945	1449096	2353926	2794156	2998899	3215341	3403667	3235010	2911043	2775624
14	905567	902284	937292	1509928	2372591	2782678	3001850	3225682	3403205	3220065	2906369	2766054
15	905324	902466	965818	1589226	2390401	2769373	3022142	3237976	3402898	3212243	2895392	2757305
16	904533	902446	975392	1681756	2402886	2755054	3039267	3247481	3400593	3208411	2887178	2757437
17	902892	902770	991100	1760691	2415900	2739996	3043524	3253729	3400285	3196639	2874615	2762207
18	903925	903013	999735	1812345	2424361	2733278	3050627	3256260	3402898	3185777	2861004	2768178
19	905020	903195	1004170	1856140	2432726	2738414	3055464	3258346	3396753	3173040	2862363	2766452
20	901859	903135	1006785	1887784	2442087	2740391	3059594	3263863	3392303	3160194	2866307	2755054
21	901191	906542	1012160	1911311	2452937	2742238	3063586	3279556	3384793	3147530	2860460	2757040
22	901313	913750	1019996	1932571	2460883	2750425	3075868	3283000	3379590	3133886	2848792	2756510
23	901070	913260	1039535	1948602	2473019	2754260	3089476	3284949	3372558	3130844	2842700	2757172
24	903682	914915	1050410	1962329	2483965	2769905	3092777	3291548	3370726	3116097	2836887	2755451
25	903925	917001	1057907	1974973	2495563	2790149	3114943	3291398	3375920	3100249	2830947	2747650
26	905811	918783	1061567	1986206	2508439	2810496	3129831	3289297	3369352	3084028	2829329	2745537
27	905141	917738	1071507	1995478	2515889	2818153	3139397	3298609	3358222	3067153	2831352	2747518
28	904533	915283	1081991	2006157	2525098	2828250	3147384	3312611	3346208	3050201	2820036	2743161
29	904715	916632	1095040	2016346	---	2831757	3160923	3325749	3339227	3043382	2811570	2740391
30	905324	917738	1110155	2023265	---	2831757	3168365	3334528	3330742	3036715	2799908	2744217
31	905324	---	1119917	2030415	---	2841617	---	3344538	---	3021859	2795226	---
MAX	915221	918783	1119917	2030415	2525098	2841617	3168365	3344538	3407512	3324993	3010997	2801648
MIN	901070	902284	916141	1126977	2037797	2533206	2872026	3174064	3330742	3021859	2795226	2740391
†	648.91	650.94	681.64	785.31	828.10	852.47	875.71	887.54	886.63	865.51	849.02	845.18
‡	-9836	+12414	+202179	+910498	+494683	+316519	+326748	+176173	-13796	-308883	-226633	-51009
††	2557	1262	652	556	1065	2491	3116	7416	9157	11120	10315	7184

CAL YR 1977 ‡ -507337
WTR YR 1978 ‡ +1829057

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Evaporation, in acre-feet.

11406810 PALERMO CANAL NEAR OROVILLE, CA

LOCATION.--Lat 39°31'59", long 121°28'54", in SW¼SW¼ sec.1, T.19 N., R.4 E., Butte County, on right bank 50 ft (15 m) downstream from Oroville Dam, and 4.4 mi (7.1 km) east of Oroville.

PERIOD OF RECORD.--April 1965 to current year. Daily discharge of diversion from Kelly Ridge penstock for period April 1965 to October 1968 when Kelly Ridge penstock supplied the entire flow of Palermo Canal are in files of California district office of Geological Survey.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 547.67 ft (166.930 m) National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources). April 1965 to October 1968, water-stage recorder and Parshall flume at site of diversion from Kelly Ridge penstock, 0.4 mi (0.6 km) downstream at different datum.

REMARKS.--Canal diverts from left end of Oroville Dam. Water is used for irrigation near Oroville. During period of construction of Oroville Dam, water was released from Kelly Ridge penstock to meet irrigation requirements.

COOPERATION.--Records collected by California Department of Water Resources, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--13 years, 12.0 ft³/s (0.340 m³/s) 8,690 acre-ft/yr (10.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 28 ft³/s (0.79 m³/s) several days in July to September 1967; no flow at times in 1967, 1970, 1974-75.

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	9.9	6.4	3.0	1.9	1.1	1.0	2.1	2.0	17	20	23	24
2	9.9	6.6	3.0	1.9	1.5	1.0	2.2	2.0	18	20	23	24
3	9.9	6.7	3.0	1.9	1.9	1.0	2.2	2.6	17	20	23	24
4	9.9	6.7	3.0	1.9	1.9	1.1	2.2	3.7	17	20	23	24
5	11	6.7	3.0	1.9	1.9	1.1	2.2	4.9	17	20	23	24
6	12	6.7	3.0	2.0	1.9	1.1	2.2	4.9	17	20	23	24
7	12	6.0	3.0	1.8	1.9	1.1	2.2	4.9	17	20	23	24
8	12	4.8	3.0	1.2	1.9	1.1	2.2	4.9	19	20	24	24
9	12	4.8	3.0	1.1	2.0	1.1	2.2	4.9	20	20	25	24
10	11	4.8	3.0	1.0	2.0	1.0	2.2	6.3	20	20	25	24
11	11	4.8	3.0	1.0	2.0	1.0	2.2	8.0	20	20	25	23
12	11	4.9	3.0	1.0	1.7	1.0	2.2	8.0	20	20	25	22
13	11	4.9	2.9	1.0	1.1	1.0	2.2	9.1	20	20	25	21
14	11	4.9	2.7	1.1	1.0	1.0	2.2	10	20	21	25	21
15	11	4.9	3.0	1.1	1.0	1.0	2.3	10	20	20	25	21
16	11	4.9	3.2	1.1	1.0	1.0	2.3	10	20	20	25	21
17	11	4.9	2.2	1.1	1.0	1.1	2.3	12	20	20	25	23
18	11	4.9	1.7	1.1	1.0	1.1	2.3	13	20	20	25	24
19	11	4.9	1.7	1.1	1.0	1.1	2.1	13	20	20	25	24
20	11	4.9	1.7	1.1	1.0	1.1	2.1	13	20	20	25	23
21	11	4.2	1.7	1.0	1.0	1.1	2.1	14	20	20	25	22
22	11	3.0	1.7	1.1	1.0	1.1	2.1	14	20	20	25	22
23	11	3.0	1.8	1.0	1.0	1.1	2.1	14	20	20	25	22
24	11	3.1	1.8	1.0	.99	1.1	2.0	14	20	20	25	22
25	11	3.0	1.8	1.0	.90	1.6	2.1	14	20	20	25	22
26	11	3.0	1.8	1.0	.86	2.1	2.1	14	20	20	25	22
27	9.4	3.0	1.8	1.0	.85	2.1	2.1	14	20	21	25	21
28	9.4	3.0	1.8	1.0	1.0	2.1	2.0	14	20	24	25	20
29	9.4	3.0	1.8	1.0	---	2.1	2.0	14	20	24	25	20
30	8.4	3.0	1.8	1.0	---	2.1	2.0	16	20	24	25	20
31	6.5	---	1.8	1.1	---	2.1	---	18	---	24	25	---
TOTAL	328.7	140.4	74.7	38.5	37.40	39.6	64.7	307.2	579	638	760	676
MEAN	10.6	4.68	2.41	1.24	1.34	1.28	2.16	9.91	19.3	20.6	24.5	22.5
MAX	12	6.7	3.2	2.0	2.0	2.1	2.3	18	20	24	25	24
MIN	6.5	3.0	1.7	1.0	.85	1.0	2.0	2.0	17	20	23	20
AC-FT	652	278	148	76	74	79	128	609	1150	1270	1510	1340
CAL YR 1977	TOTAL	4060.30	MEAN	11.1	MAX	23	MIN	1.3	AC-FT	8050		
WTR YR 1978	TOTAL	3684.20	MEAN	10.1	MAX	25	MIN	.85	AC-FT	7310		

11406870 THERMALITO AFTERBAY NEAR OROVILLE, CA

LOCATION.--Lat 39°27'30", long 121°38'17", in NE¼SE¼ sec.33, T.19 N., R.3 E., Butte County, at dam 195 ft (59 m) northeast of centerline of outlet structure, and 5.7 mi (9.2 km) southwest of Oroville.

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

GAGE.--Water-stage recorder. Datum of gage is 100.47 ft (30.623 m) National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources). Auxiliary water-stage recorder 90 ft (27 m) southwest of centerline of Western Canal outlet, and 7.2 mi (11.6 km) west of Oroville.

REMARKS.--Reservoir is formed by an earthfill dam completed in 1967; diversion from the reservoir began Oct. 12, 1967. Usable capacity, 61,144 acre-ft (75.4 hm³) between gage heights 120.0 ft (36.58 m) and 139.0 ft (42.37 m) extreme operating levels. Normal operating range is 123 ft (37.5 m) to 136.5 ft (41.61 m). Water is released to four canals (stations 11406880, 11406890, 11406900, and 11406910), and to the Feather River (station 11406920) from the reservoir. Total maximum release to the four canals is approximately 4,000 ft³/s (113 m³/s). Water is pumped, at times, from Thermalito Afterbay back into Thermalito Forebay during off-peak periods to be re-released through Thermalito powerplant for power generation during peak demand periods. Records, including extremes, represent total contents at 2400 hours. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records collected by California Department of Water Resources, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 57,300 acre-ft (70.7 hm³) May 24, 1969, gage height, 136.56 ft (41.623 m); minimum since initial operation began, 5,590 acre-ft (6.89 hm³) Mar. 1, 1968, gage height, 119.09 ft (36.299 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 53,266 acre-ft (65.7 hm³) May 26, gage height, 135.61 ft (41.334 m); minimum, 13,373 acre-ft (16.5 hm³) Nov. 27, gage height, 123.22 ft (37.558 m).

Capacity table (gage height, in feet, and contents, in acre-feet)

120	7054	128	25832
122	10792	130	32150
124	15157	134	46719
126	20171	139	68198

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	15345	15582	17210	16643	24882	24794	38938	39779	34003	45932	32684	48712
2	14969	15964	18548	16521	22469	31984	29928	41337	38757	42465	32517	39522
3	16012	15964	17734	19221	21635	30089	33697	43149	30476	39669	37104	31456
4	16302	16399	16864	22807	20627	28908	36361	46285	25712	29639	44492	22751
5	15677	16012	18012	32383	20198	34003	39926	47392	30606	32986	38070	24123
6	16399	15844	17309	31918	19693	30769	45463	48150	36010	34654	32986	23261
7	15463	18139	16864	30932	20870	30509	49357	34345	34003	34827	36856	25000
8	15133	18548	17210	30314	21884	29928	39669	36010	34965	34106	37175	27906
9	14969	18676	17259	30769	20573	30769	30153	40111	31160	30250	38575	23204
10	17484	18857	16012	30834	21142	30606	30997	44841	26253	27906	35625	18676
11	16643	18496	15157	30509	20951	30932	33324	45463	22218	29416	33391	20198
12	17259	17911	15677	29703	22610	31160	35381	44686	25088	31588	36608	21333
13	16643	17086	15416	29352	20439	31292	39596	41150	28751	34586	28972	22807
14	16229	17484	16594	30932	21580	31456	43953	38684	29289	39084	27906	29799
15	15797	17609	15345	30541	21773	31819	35138	35555	28845	35451	32986	37425
16	15345	17259	17785	32684	23921	32450	28530	35625	29928	28625	35381	34345
17	14923	17484	16815	29799	23005	37818	33629	36010	27751	31292	42465	28311
18	14483	17309	17086	28311	27043	38070	32852	39413	23005	31819	50496	21967
19	14003	16181	18780	25148	28311	29130	34586	43264	26404	35451	43493	21829
20	15749	15511	20439	23204	27751	30024	39011	43340	27968	39011	34242	31588
21	17659	16741	19772	22273	26192	33867	43684	33391	31456	40629	33935	27319
22	17160	15630	20118	20951	27043	34896	38503	34586	32919	42465	41075	26890
23	16692	16913	19091	20681	25207	45658	31687	39596	35695	30606	40369	25088
24	16351	15749	18266	21060	23604	45463	36185	40369	33324	32818	39926	26253
25	16012	14644	17434	20816	21635	36255	35207	45854	23604	34414	39522	33087
26	15630	13530	16643	20870	19641	25503	37246	53266	24794	37568	35207	33629
27	15251	13373	17259	22610	22666	26042	41411	47750	32852	39596	27906	30089
28	15086	15511	17584	21967	22948	25207	44222	40295	40591	42997	36998	34345
29	14644	16302	18190	20951	---	31160	38250	35555	43340	36749	41749	35207
30	14162	16229	18012	22273	---	43684	38431	34896	46207	29352	45932	29928
31	13957	---	17210	23863	---	47313	---	33867	---	32684	46758	---
MAX	17659	18857	20439	32684	28311	47313	49357	53266	46207	45932	50496	48712
MIN	13957	13373	15157	16521	19641	24794	28530	33391	22218	27906	27906	18676
†	123.48	124.45	124.85	127.33	127.01	134.15	131.81	130.51	133.87	130.16	134.01	129.32
‡	-2055	+2272	+981	+6653	-914	+24365	-8882	-4564	+12340	-13523	+14074	-16830
††	962	522	284	188	299	529	895	2282	2102	2584	2631	2251

CAL YR 1977 ‡ +2030
WTR YR 1978 ‡ +13916

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Evaporation, in acre-feet.

11406880 WESTERN CANAL AT INTAKE, NEAR OROVILLE, CA

LOCATION.--Lat 39°30'19", long 121°41'06", in SW¼NW¼ sec.18, T.19 N., R.3 E., Butte County, on left bank 500 ft (152 m) downstream from Thermalito Afterbay Dam, and 7.3 mi (11.7 km) west of Oroville.

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

GAGE.--Water-stage recorder. Datum of gage is 100.47 ft (30.623 m) National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources).

REMARKS.--Water is diverted from Thermalito Afterbay and is used for irrigation. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records collected by California Department of Water Resources, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--10 years, 297 ft³/s (8.411 m³/s), 215,200 acre-ft/yr (265 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,170 ft³/s (33.1 m³/s) Apr. 24, 27, 28, 1977; no flow for several months 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	11	121	119				0	26	642	780	784	501
2	11	119	118				0	28	642	770	784	501
3	11	119	119				0	28	640	760	784	483
4	11	119	119				0	75	642	759	784	428
5	11	120	118				0	98	644	760	772	392
6	96	119	117				0	96	633	760	770	351
7	150	119	117				0	160	621	759	770	282
8	146	118	117				0	268	624	759	770	239
9	144	116	116				0	402	622	759	777	206
10	147	115	116				0	548	622	760	780	164
11	153	116	115				0	731	621	760	780	148
12	153	115	113				0	840	621	760	780	141
13	153	115	117				0	855	622	758	774	98
14	153	116	67				0	856	621	770	759	44
15	151	115	0				0	834	622	780	752	28
16	149	116	0				0	831	651	782	750	28
17	151	116	0				0	956	662	782	748	28
18	151	116	0				0	1040	662	786	752	28
19	148	116	0				0	1080	681	798	750	28
20	149	118	0				0	1110	726	800	740	28
21	150	118	0				0	1100	746	806	728	100
22	149	117	0				0	1060	760	820	705	158
23	148	117	0				0	984	789	820	687	154
24	149	117	0				37	926	804	820	668	153
25	149	116	0				50	904	830	810	658	154
26	147	117	0				32	872	837	800	658	151
27	147	117	0				27	825	819	804	657	152
28	146	117	0				23	780	813	822	640	152
29	147	118	0			---	22	754	800	819	600	152
30	148	119	0			---	22	722	788	807	578	152
31	148	---	0			---	---	644	---	789	540	---
TOTAL	3877	3517	1588	0	0	0	213	20433	20807	24319	22479	5624
MEAN	125	117	51.2	0	0	0	7.10	659	694	784	725	187
MAX	153	121	119	0	0	0	50	1110	837	822	784	501
MIN	11	115	0	0	0	0	0	26	621	758	540	28
AC-FT	7690	6980	3150	0	0	0	422	40530	41270	48240	44590	11160
CAL YR 1977 TOTAL	107845.00			MEAN 295	MAX 1170	MIN 0	AC-FT 213900					
WTR YR 1978 TOTAL	102857.00			MEAN 282	MAX 1110	MIN 0	AC-FT 204000					

11406890 RICHVALE CANAL AT INTAKE, NEAR OROVILLE, CA

LOCATION.--Lat 39°30'19", long 121°41'06", in SW¼NW¼ sec.18, T.19 N., R.3 E., Butte County, on right bank 500 ft (152 m) downstream from axis of Thermalito Afterbay Dam, and 7.3 mi (11.7 km) west of Oroville.

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 100.47 ft (30.623 m) National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources).

REMARKS.--Canal diverts from Thermalito Afterbay; water is used for irrigation. The canal is part of the Oroville project. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records collected by California Department of Water Resources, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--10 years, 116 ft³/s (3.285 m³/s) 84,040 acre-ft/yr (104 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 511 ft³/s (14.5 m³/s) May 16, 1974; 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	172	238	362	365	239
2							0	230	257	359	365	243
3							0	266	268	361	365	246
4							0	266	266	361	365	244
5							0	247	266	363	366	244
6							0	274	271	385	367	187
7							0	306	274	400	367	163
8							0	378	273	403	348	131
9							0	457	273	403	341	118
10							0	472	273	402	341	120
11							0	473	272	409	341	102
12							0	465	274	400	342	97
13							0	457	279	391	342	84
14							0	476	286	387	342	79
15							0	486	295	388	336	77
16							0	486	316	384	336	78
17							0	477	335	389	339	79
18							0	453	342	390	340	49
19							0	453	344	391	339	32
20							0	450	362	391	338	35
21							0	412	368	390	338	35
22							0	388	369	391	344	35
23							0	366	369	389	334	38
24							56	370	378	387	316	35
25							119	351	383	381	312	38
26							138	325	384	380	310	38
27							172	298	387	370	310	33
28							166	284	386	364	279	38
29					---		151	285	374	364	241	13
30					---		152	257	363	365	240	0
31		---			---		---	240	---	366	239	---
TOTAL	0	0	0	0	0	0	954	11320	9525	11866	10248	2950
MEAN	0	0	0	0	0	0	31.8	365	318	383	331	98.3
MAX	0	0	0	0	0	0	172	486	387	409	367	246
MIN	0	0	0	0	0	0	0	172	238	359	239	0
AC-FT	0	0	0	0	0	0	1890	22450	18890	23540	20330	5850
CAL YR 1977	TOTAL	29137.30	MEAN	79.8	MAX	394	MIN	0	AC-FT	57790		
WTR YR 1978	TOTAL	46863.00	MEAN	128	MAX	486	MIN	0	AC-FT	92950		

11406900 PACIFIC GAS AND ELECTRIC CO. LATERAL AT INTAKE, NEAR OROVILLE, CA

LOCATION.--Lat 39°29'22", long 121°41'12", in SE¼NW¼ sec.19, T.19 N., R.3 E., Butte County, on right bank 82 ft (25 m) downstream from axis of Thermalito Afterbay Dam, and 7.2 mi (11.6 km) west of Oroville.

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 113.47 ft (34.586 m) National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources).

REMARKS.--Flow regulated at outlet works from Thermalito Afterbay; water is used for irrigation. Records for some years include diversions from Thermalito Afterbay into Pacific Gas and Electric Co. lateral via Duncan lateral siphon. No diversion was made during the current year to Duncan lateral siphon.

COOPERATION.--Records collected by California Department of Water Resources, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--10 years, 4.76 ft³/s (0.135 m³/s), 3,450 acre-ft/yr (4.25 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 46 ft³/s (1.30 m³/s) Apr. 24, 1977, May 16, 1978; 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						0	9.4	11	14	15	10
2	0						0	9.4	13	14	15	10
3	0						0	9.7	14	14	14	7.0
4	0						0	9.7	14	15	14	4.5
5	0						0	9.7	14	15	14	3.8
6	0						0	6.1	14	15	15	3.8
7	0						0	6.1	14	15	14	3.9
8	0						0	7.9	13	15	14	3.8
9	0						0	8.5	13	15	15	2.6
10	0						0	6.2	13	15	15	1.9
11	1.0						0	4.8	14	16	14	1.8
12	1.4						0	18	14	16	14	1.9
13	.50						0	34	14	16	14	1.3
14	0						0	35	14	17	14	.90
15	0						0	41	14	15	13	.90
16	0						0	46	13	16	13	1.0
17	0						0	42	13	16	13	1.0
18	0						0	32	13	16	12	1.0
19	0						0	29	13	16	11	.90
20	0						0	30	15	17	11	.90
21	0						0	25	15	16	11	.30
22	0						0	16	15	16	11	0
23	0						0	13	14	15	12	0
24	0						0	11	14	15	12	0
25	0						0	9.7	14	15	11	0
26	0						0	9.7	15	16	11	0
27	0						0	8.3	15	16	11	0
28	0						0	7.2	15	15	10	0
29	0						5.5	6.8	15	14	10	0
30	0						9.9	9.0	14	14	10	0
31	0	---					---	11	---	14	10	---
TOTAL	2.90	0	0	0	0	0	15.4	521.2	416	474	393	63.20
MEAN	.094	0	0	0	0	0	.51	16.8	13.9	15.3	12.7	2.11
MAX	1.4	0	0	0	0	0	9.9	46	15	17	15	10
MIN	0	0	0	0	0	0	0	4.8	11	14	10	0
AC-FT	5.8	0	0	0	0	0	31	1030	825	940	780	125
CAL YR 1977	TOTAL	1879.10	MEAN 5.15	MAX 46	MIN 0	AC-FT 3730						
WTR YR 1978	TOTAL	1885.70	MEAN 5.17	MAX 46	MIN 0	AC-FT 3740						

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

LOCATION.--Lat 39°27'01", long 121°39'27", in NW corner of Boga Fernandez Grant, T.18 N., R.3 E., Butte County, on left bank 675 ft (206 m) downstream from Thermalito Afterbay Dam, and 6.8 mi (10.9 km) southwest of Oroville.

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

GAGE.--Water-stage recorder. Datum of gage is 109.97 ft (33.519 m) National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources). Prior to May 1, 1970, at datum 109.50 ft (33.376 m) lower.

REMARKS.--Water is diverted from Thermalito Afterbay and is used for irrigation. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records collected by California Department of Water Resources, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--10 years, 648 ft³/s (18.35 m³/s), 469,500 acre-ft/yr (5.79 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,110 ft³/s (59.8 m³/s) Apr. 22-24, 1968; 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	170						0	655	1500	1450	1580	1420
2	177						0	753	1520	1430	1570	1330
3	197						0	946	1520	1420	1570	1300
4	216						0	1120	1520	1420	1570	1300
5	228						0	1220	1520	1440	1550	1310
6	226						0	1260	1520	1480	1540	1250
7	217						0	1360	1520	1510	1540	1170
8	207						0	1490	1500	1520	1560	1140
9	190						0	1600	1470	1520	1580	1100
10	179						0	1700	1450	1520	1600	1040
11	158						0	1740	1450	1530	1610	944
12	143						0	1750	1450	1530	1620	829
13	73						0	1800	1450	1550	1610	736
14	.08						0	1840	1460	1550	1610	685
15	0						0	1840	1460	1550	1600	672
16	0						0	1850	1460	1550	1590	669
17	0						0	1840	1450	1560	1600	666
18	0						0	1860	1450	1560	1600	640
19	0						0	1870	1450	1580	1600	598
20	0						32	1870	1460	1580	1600	584
21	.67						129	1860	1470	1590	1590	546
22	1.2						149	1780	1470	1610	1590	529
23	1.2						149	1690	1460	1610	1580	530
24	1.2						226	1600	1450	1630	1580	528
25	1.2						271	1570	1450	1650	1560	530
26	1.2						300	1540	1430	1660	1540	507
27	1.2						391	1500	1430	1640	1540	481
28	1.2						509	1490	1430	1610	1550	471
29	1.2					---	548	1490	1420	1600	1560	469
30	1.2					---	590	1490	1450	1600	1510	466
31	1.2	---				---	---	1490	---	1590	1480	---
TOTAL	2393.75	0	0	0	0	0	3294	47864	44040	48040	48780	24440
MEAN	77.2	0	0	0	0	0	110	1544	1468	1550	1574	815
MAX	228	0	0	0	0	0	590	1870	1520	1660	1620	1420
MIN	0	0	0	0	0	0	0	655	1420	1420	1480	466
AC-FT	4750	0	0	0	0	0	6530	94940	87350	95290	96760	48480
CAL YR 1977 TOTAL	139992.43						MEAN 384	MAX 1400	MIN 0	AC-FT 277700		
WTR YR 1978 TOTAL	218851.75						MEAN 600	MAX 1870	MIN 0	AC-FT 434100		

SACRAMENTO RIVER BASIN

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

LOCATION.--Lat 39°27'23", long 121°38'10", in NW¼SE¼ sec.33, T.19 N., R.3 E., Butte County, on left bank of outlet channel 955 ft (291 m) downstream from centerline of Thermalito Afterbay Dam, and 5.7 mi (9.2 km) southwest of Oroville.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 113.47 ft (34.586 m) National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources). Prior to May 1, 1970, at datum 13.00 ft (3.962 m) lower.

REMARKS.--Flow regulated by gates of Thermalito Afterbay outlet 955 ft (291 m) upstream. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records collected by California Department of Water Resources, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--10 years, 4,089 ft³/s (115.8 m³/s), 2,962,000 acre-ft/yr (3.65 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,600 ft³/s (612 m³/s) Jan. 28, 1970, gage height, 23.30 ft (7.102 m) previous datum; no flow for many days in 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,200 ft³/s (459 m³/s) Mar. 6, gage height, 8.41 ft (2.563 m); minimum daily, 95 ft³/s (2.69 m³/s) Oct. 28, 30.

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	491	98	499	486	493	1280	5500	6730	1100	2210	5150	2620
2	483	101	504	494	498	1290	5500	7450	1600	2220	5010	2580
3	492	101	497	501	502	1280	5560	7450	1630	2600	4220	2580
4	404	101	492	502	503	1280	5550	7460	1620	2590	4090	2580
5	99	101	497	514	506	4870	5550	7450	1660	3120	4040	2610
6	99	100	500	511	500	13700	5540	6790	1670	3660	4040	2600
7	100	100	495	509	508	16000	5540	5750	2110	3710	4340	2610
8	99	99	497	503	509	16000	5490	5480	2140	3710	4590	2620
9	98	101	502	503	491	16000	5510	4810	2130	3700	4650	2600
10	98	153	500	505	506	16000	5560	4020	2110	3700	4670	2600
11	98	300	493	503	519	16000	5570	3290	2110	3710	4040	2630
12	98	296	492	499	512	16000	5550	2550	2140	3710	3550	2630
13	98	293	493	503	500	16000	5560	2530	2160	3720	3030	2640
14	97	291	494	504	509	16000	5560	2550	2150	3730	2620	2650
15	97	400	499	510	519	16000	4730	2550	2140	3690	2660	2640
16	96	494	497	510	521	16000	4410	2040	2140	3670	2640	2620
17	96	491	499	499	601	13800	4470	2080	2140	3710	2650	2610
18	98	493	503	498	801	11600	4450	2100	2170	3710	2670	2600
19	100	491	504	503	1030	9480	4450	2100	2220	3720	2620	2620
20	100	493	496	501	1230	7520	4480	2090	2220	3720	2580	2650
21	100	497	504	502	1330	7490	4520	2060	2220	3930	2610	2610
22	97	502	497	505	1310	6810	4510	2090	2220	4790	2620	2630
23	96	503	497	504	1280	5550	4510	1840	2220	5030	2620	2630
24	96	499	493	517	1280	5540	4560	1650	2210	5110	2610	2630
25	97	490	486	538	1270	5520	4540	1470	2190	5150	2620	2640
26	96	493	492	485	1280	5490	4550	1240	2220	5170	2590	2640
27	100	498	499	499	1290	5540	4560	1030	2220	5160	2580	2600
28	95	500	503	511	1280	5540	5010	845	2220	5150	2620	2420
29	97	497	498	504	---	5570	5940	752	2220	5130	2620	2650
30	95	491	499	491	---	5590	6450	801	2220	5110	2610	2110
31	100	---	488	502	---	5570	---	814	---	5150	2620	---
TOTAL	4510	10067	15409	15616	22078	290310	153680	101862	61520	123190	102580	77850
MEAN	145	336	497	504	789	9365	5123	3286	2051	3974	3309	2595
MAX	492	503	504	538	1330	16000	6450	7460	2220	5170	5150	2650
MIN	95	98	486	485	491	1280	4410	752	1100	2210	2580	2110
AC-FT	8950	19970	30560	30970	43790	575800	304800	202000	122000	244300	203500	154400
CAL YR 1977	TOTAL	310990		852	MAX	2990	MIN 95	AC-FT	616800			
WTR YR 1978	TOTAL	978672	MEAN	2681	MAX	16000	MIN 95	AC-FT	1941000			

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

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: May 1968 to current year.

INSTRUMENTATION.--Temperature recorder since May 1968.

REMARKS.--Temperature is listed only when water is released from Thermalito Afterbay. Because of the complete regulation of the Feather River below Oroville Dam, the temperature of the water released from Thermalito Afterbay affects the temperature of the Feather River downstream from the Oroville project.

COOPERATION.--Records furnished by California Department of Water Resources.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 28.5°C June 23, 1977; minimum recorded, 1.5°C Dec. 13, 1972.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 25.5°C June 4, 6, Aug. 6, 8; minimum recorded, 8.0°C 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	21.0	19.0	16.0	15.5	11.0	10.5	10.0	9.5	9.0	8.5	13.5	12.0
2	21.5	19.5	15.5	15.0	11.0	10.5	9.5	9.5	9.0	9.0	13.0	12.0
3	21.5	20.0	16.0	15.5	11.5	10.5	9.5	9.5	9.5	9.0	12.0	12.0
4	21.5	19.5	15.5	14.5	11.5	10.5	9.5	9.5	10.0	9.5	12.0	12.0
5	20.5	19.5	14.5	14.5	11.0	11.0	9.5	9.5	10.0	9.5	12.0	12.0
6	19.5	19.5	14.5	13.5	11.0	11.0	10.0	9.5	10.0	10.0	12.0	10.0
7	19.5	19.0	13.5	13.0	11.0	11.0	10.0	10.0	10.5	10.0	10.0	9.0
8	19.5	19.0	13.0	11.5	11.0	10.5	10.0	10.0	10.5	10.0	9.0	9.0
9	20.0	19.0	11.5	11.0	10.5	10.0	10.5	10.0	10.0	10.0	9.5	9.0
10	20.5	20.0	11.5	11.5	10.0	10.0	10.5	10.5	10.0	9.5	9.5	9.0
11	20.5	19.5	11.5	11.5	10.0	9.5	10.5	10.5	10.0	9.5	9.5	9.0
12	19.5	19.5	12.0	11.5	10.0	9.5	10.5	10.5	9.5	9.0	9.0	8.5
13	20.0	19.5	14.0	12.0	10.0	10.0	10.5	10.5	9.0	8.5	9.0	8.5
14	20.0	19.5	13.5	13.0	10.0	10.0	11.0	10.5	10.0	8.5	9.5	9.0
15	20.0	20.0	13.5	13.0	10.5	10.0	11.0	10.5	10.0	9.0	10.5	9.0
16	20.0	19.5	13.5	13.0	10.0	9.5	10.5	10.5	10.0	9.5	10.5	9.5
17	19.5	19.5	13.5	13.0	9.5	9.5	10.5	10.5	10.0	9.5	10.5	9.5
18	19.5	19.0	13.0	11.5	9.5	9.0	10.5	10.5	10.5	9.5	10.0	10.0
19	19.0	18.5	11.5	10.0	9.0	8.5	10.5	10.5	10.5	10.0	11.0	10.0
20	18.5	18.0	10.0	9.0	8.5	8.0	10.5	10.5	12.0	10.5	11.5	10.5
21	18.5	17.0	9.5	8.5	8.5	8.5	10.5	10.5	13.0	10.5	11.0	10.5
22	18.0	17.0	9.0	8.5	9.0	8.5	10.5	10.0	14.0	11.0	11.0	10.5
23	17.0	17.0	9.5	9.0	9.5	9.0	10.5	9.0	14.0	11.0	11.5	10.5
24	17.0	17.0	10.5	9.5	10.0	9.5	9.0	8.5	12.0	11.5	13.0	11.0
25	18.0	17.0	10.5	10.0	10.0	9.5	9.5	8.5	12.0	11.5	13.0	11.5
26	18.0	18.0	11.5	10.5	10.0	9.5	9.5	9.0	13.0	12.0	14.0	11.5
27	18.5	18.0	11.0	10.5	9.5	9.5	9.5	9.0	13.0	11.5	14.5	13.5
28	18.0	16.5	11.0	10.5	10.0	9.5	10.0	9.5	14.0	12.0	14.0	13.0
29	16.5	16.0	11.0	10.5	10.0	10.0	10.0	9.5	---	---	14.0	13.0
30	16.0	15.5	11.0	10.5	10.5	10.0	9.5	9.5	---	---	13.5	13.0
31	16.0	16.0	---	---	10.0	9.5	9.5	9.0	---	---	13.5	12.0
MONTH	21.5	15.5	16.0	8.5	11.5	8.0	11.0	8.5	14.0	8.5	14.5	8.5

SACRAMENTO RIVER BASIN

11406920 THERMALITO AFTERBAY RELEASE TO FEATHER RIVER NEAR OROVILLE, 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	13.0	12.0	15.0	14.5	23.0	21.0	19.0	19.0	22.0	20.5	20.5	20.0
2	13.5	11.5	15.5	14.5	23.5	20.5	20.5	19.0	23.0	20.5	20.5	19.5
3	13.0	12.0	15.5	14.5	23.0	20.5	22.0	20.5	23.0	20.5	20.5	19.0
4	13.5	12.0	15.0	15.0	25.5	20.5	24.5	20.5	22.0	21.0	22.0	20.0
5	13.0	11.5	15.0	14.0	25.0	22.0	24.5	22.0	23.5	20.5	21.5	21.0
6	11.5	11.0	14.5	13.5	25.5	22.0	23.0	21.5	25.5	21.0	21.0	20.0
7	11.5	10.5	16.0	14.5	24.0	21.0	24.0	21.0	24.5	23.0	20.0	19.0
8	12.0	11.0	17.0	15.0	22.0	20.0	24.0	21.0	25.5	22.0	19.0	18.0
9	13.5	12.0	16.5	15.5	23.0	20.0	23.0	20.5	25.5	22.0	18.0	15.5
10	14.5	13.5	16.5	16.0	24.5	20.0	21.5	21.0	23.5	21.5	16.5	15.5
11	16.0	14.0	16.0	15.0	24.0	22.0	21.5	21.0	23.0	22.0	16.5	15.5
12	16.0	14.5	17.0	15.5	22.0	20.5	23.0	20.5	22.0	21.0	16.0	15.5
13	15.0	14.5	16.5	15.5	21.0	20.5	23.5	20.5	21.5	21.0	16.0	15.5
14	14.5	13.5	18.0	15.0	20.5	19.5	23.0	20.0	22.0	21.0	16.0	15.5
15	13.5	13.0	18.5	17.0	21.0	19.5	21.0	20.0	21.0	20.5	16.5	15.5
16	13.0	13.0	18.5	17.0	21.5	19.5	24.5	21.0	20.5	20.5	18.0	15.5
17	13.5	12.0	18.5	17.0	23.0	19.0	24.5	23.0	20.5	20.5	18.5	15.5
18	14.5	12.0	19.0	18.0	20.5	19.0	24.5	22.0	20.5	20.5	15.5	15.0
19	13.5	13.0	18.5	18.0	21.5	20.0	24.0	22.0	20.5	20.5	15.0	14.5
20	13.5	13.0	19.0	17.0	21.0	19.5	24.0	21.5	21.0	20.5	15.5	14.5
21	14.5	13.0	19.0	16.0	21.5	20.0	24.0	21.5	20.5	19.5	15.5	15.0
22	14.5	13.0	20.0	19.0	20.0	19.0	23.5	21.0	20.5	19.5	17.0	15.5
23	15.0	13.5	20.0	18.5	20.0	19.5	23.5	20.0	20.5	19.5	18.5	15.5
24	14.5	13.5	19.5	18.5	21.0	19.0	23.5	21.0	20.0	19.0	18.5	16.0
25	14.0	13.5	20.0	18.0	22.0	20.0	21.5	20.0	20.0	19.0	18.0	16.0
26	14.5	13.5	19.5	17.0	21.5	20.0	20.5	20.0	20.5	20.0	16.5	15.5
27	16.0	14.0	20.5	17.0	20.5	20.0	22.0	19.5	21.0	20.5	17.0	15.0
28	15.0	14.0	19.5	18.0	20.0	19.5	21.0	20.0	20.5	20.5	17.0	15.5
29	16.0	14.5	20.0	19.0	19.5	19.0	22.0	20.0	20.5	19.5	16.5	15.5
30	15.0	15.0	24.5	19.5	19.5	18.5	23.0	20.0	20.5	19.5	16.5	15.5
31	---	---	23.5	21.5	---	---	23.0	20.5	22.0	19.5	---	---
MONTH	16.0	10.5	24.5	13.5	25.5	18.5	24.5	19.0	25.5	19.0	22.0	14.5

11407000 FEATHER RIVER AT OROVILLE, CA

LOCATION.--Lat 39°31'18", long 121°32'48", in Boga Fernandez Grant, T.19 N., R.4 E., Butte County, on right bank 300 ft (91 m) upstream from fish barrier dam on Feather River, and 0.8 mi (1.3 km) northeast of Oroville Post Office.

DRAINAGE AREA.--3,624 mi² (9,386 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1901 to current year. Monthly discharge only for some periods, published in WSP 1315-A. October 1934 to September 1961 published as "near Oroville." Records since October 1967 . equivalent to earlier records if diversions out of Thermalito Afterbay are added to flow past station.

REVISED RECORDS.--WSP 843: 1907(M), 1909(M), 1914-15(M), 1919(M), 1927-28(M). WSP 881: 1913-28 (yearly summaries only). WSP 1515: 1906-8. WSP 1931: Drainage area. WDR CA-74-2: 1968-70, adjusted monthly discharge.

GAGE.--Water-stage recorder. Datum of gage is 148.97 ft (45.406 m) National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources). See WSP 1931 for history of changes prior to Oct. 1, 1964.

REMARKS.--Flow regulated by Lake Oroville (station 11406800) and other powerplants and reservoirs above station. Several diversions above station for power and irrigation. Feather River Fish Hatchery diverts up to 120 ft³/s (3.40 m³/s) at Thermalito diversion dam 0.4 mi (0.6 km) upstream from gage. Diverted flow returns to Feather River approximately 0.3 mi (0.5 km) downstream from gage. Daily figures shown are combined figures of river flow and diversion to fish hatchery. See REMARKS for upstream stations and schematic diagrams showing diversions from Feather River at Lake Oroville and for South Fork Feather River basin.

COOPERATION.--Records collected by California Department of Water Resources under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE (adjusted for diversions into and out of, change in contents in, and evaporation from Lake Oroville, Thermalito diversion pool, Thermalito Forebay, and Thermalito Afterbay).--77 years, 5,884 ft³/s (166.6 m³/s), 4,263,000 acre-ft/yr (5.26 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge observed, 230,000 ft³/s (6,510 m³/s) Mar. 19, 1907, elevation, 167.5 ft (51.05 m) above mean sea level; minimum daily, 89 ft³/s (2.52 m³/s) Sept. 19, 1972.

Combined flow (since construction of Oroville Dam), maximum discharge, 56,400 ft³/s (1,600 m³/s) Jan. 25, 1970; minimum daily, 222 ft³/s (6.29 m³/s) Sept. 19, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of February 1881 reached a stage of 25 ft (7.6 m) from floodmarks, site and datum in use from Dec. 16, 1912, to Sept. 30, 1934.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 819 ft³/s (23.2 m³/s) Oct. 4, gage height, 0.99 ft (0.302 m); minimum daily, 270 ft³/s (7.65 m³/s) Jan. 22.

Combined flow, maximum discharge, 943 ft³/s (26.7 m³/s) Oct. 4; minimum daily, 378 ft³/s (10.7 m³/s) Mar. 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	391	798	396	392	398	407	399	403	416	408	413	404
2	392	793	397	394	396	432	399	401	415	407	411	407
3	395	787	396	405	392	413	400	404	419	407	408	405
4	581	790	395	410	392	428	401	403	417	406	406	402
5	815	821	398	432	393	417	400	401	416	407	406	405
6	805	823	400	415	395	413	402	405	416	408	407	411
7	816	802	394	404	406	408	399	403	412	410	406	403
8	827	791	394	404	403	412	398	403	407	411	406	403
9	810	793	399	429	397	415	399	408	402	413	406	399
10	805	698	398	409	400	411	400	409	402	407	408	404
11	832	585	402	405	401	415	399	405	400	410	408	404
12	822	601	402	397	405	412	401	408	402	408	403	396
13	810	609	404	399	403	410	399	409	403	410	404	397
14	804	599	417	439	400	411	400	407	397	410	404	401
15	794	465	413	421	397	413	399	406	401	412	407	403
16	781	397	408	456	398	385	397	404	402	409	407	400
17	803	400	402	403	397	378	398	407	405	411	421	394
18	822	397	401	396	402	386	400	412	408	411	413	392
19	807	391	398	396	398	388	398	409	400	412	408	387
20	813	392	398	395	396	393	401	409	410	412	409	398
21	819	395	396	392	397	400	401	410	409	411	409	397
22	809	396	402	385	398	400	399	413	410	413	400	409
23	797	398	397	385	403	402	402	410	408	413	398	410
24	781	404	393	389	398	397	406	399	409	415	402	409
25	790	394	390	392	402	394	416	409	408	414	407	405
26	802	392	391	394	402	394	409	406	408	415	403	404
27	796	388	404	395	405	398	410	410	411	410	404	402
28	824	398	404	397	404	400	408	414	414	412	409	406
29	836	398	401	395	---	399	404	416	406	409	405	404
30	807	395	395	394	---	403	409	411	407	412	407	403
31	785	---	392	399	---	401	---	415	---	415	401	---
TOTAL	23571	16689	12377	12518	11178	12535	12053	12629	12240	12728	12606	12064
MEAN	760	556	399	404	399	404	402	407	408	411	407	402
MAX	836	823	417	456	406	432	416	416	419	415	421	411
MIN	391	388	390	385	392	378	397	399	397	406	398	387
AC-FT	46750	33100	24550	24830	22170	24860	23910	25050	24280	25250	25000	23930
MEAN ‡	998	1311	4272	15860	10120	15380	11090	9259	5163	2145	3178	3186
AC-FT ‡	61360	78030	262700	974900	561800	945800	660100	569300	307200	131900	195400	189600
CAL YR 1977 TOTAL	163014						323300					
MEAN 447												
MAX 836												
MIN 372												
AC-FT 323300												
MEAN ‡ 1464												
AC-FT ‡ 1060000												
WTR YR 1978 TOTAL	163188						323700					
MEAN ‡ 6821												
AC-FT ‡ 4938000												

‡ Adjusted for diversion in and out of, change in contents in, and evaporation from Lake Oroville, Thermalito diversion pool, Thermalito Forebay, and Thermalito Afterbay.

11407000 FEATHER RIVER AT OROVILLE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1906-7, 1951 to current year.

CHEMICAL ANALYSES: Water years 1906-7, 1951-77.

SPECIFIC CONDUCTANCE: Water years 1972-78 (discontinued).

WATER TEMPERATURES: Water years 1954, 1957 to current year.

SEDIMENT RECORDS: Water years 1957 to current year.

PERIOD OF DAILY RECORD.--

CHEMICAL ANALYSES: January to December 1906.

SPECIFIC CONDUCTANCE: March 1972 to September 1978 (discontinued).

WATER TEMPERATURES: October 1953 to September 1954, November 1956 to current year.

SEDIMENT DISCHARGE: November 1956 to current year.

REVISED RECORDS.--WDR CA-74-2: 1966, sediment.

INSTRUMENTATION.--Specific conductance recorder June 1976 to September 1978. Temperature recorder October 1953 to September 1954, and since November 1956.

REMARKS.--Water-temperature and specific conductance data for the gaging station are obtained at a site downstream from the fish barrier dam. Sediment sampling point ranges from 0.2 to 1.5 mi (0.3 to 2.4 km) downstream from gaging station. Extremes affected by construction of Oroville Dam in 1967, and are given for two separate periods--Water years 1954, 1957-67, and 1968 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD (water years 1954, 1957-67).--

WATER TEMPERATURES: Maximum, 27.0°C Sept. 10, 12, 1959; minimum, 1.5°C Dec. 27, 1959, Jan. 23-25, 1962.

SEDIMENT CONCENTRATIONS (water years 1957-67): Maximum daily mean, 4,100 mg/L Feb. 1, 1963; minimum daily mean, 1 mg/L on many days in 1961-62, 1964.

SEDIMENT DISCHARGE (water years 1957-67): Maximum daily, 1,500,000 tons (1,360,000 metric tons) Feb. 1, 1963; minimum daily, 3 tons (2.7 metric tons) Jan. 16, 17, 1962.

Water years 1968-78.--

SPECIFIC CONDUCTANCE (water years 1973-78): Maximum daily recorded, 133 micromhos Nov. 21-23, 1977, minimum daily recorded, 65 micromhos Aug. 29, 1978.

WATER TEMPERATURES (water years 1969-78): Maximum recorded, 20.0°C on several days in 1977; minimum recorded, 6.5°C on many days in 1971-73, 1974-75.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 310 mg/L Jan. 22, 1969; minimum daily mean, 1 mg/L on many days most years.

SEDIMENT DISCHARGE: Maximum daily, 42,100 tons (38,200 metric tons) Jan. 22, 1969; minimum daily, 0.60 ton (0.54 metric ton) Sept. 19, 1972.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 133 micromhos Nov. 21-23; minimum daily, 65 micromhos Aug. 29.

WATER TEMPERATURES: Maximum recorded, 18.5°C Aug. 7-11; minimum recorded, 8.0°C on many days in January and February.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 42 mg/L Jan. 16; minimum daily mean, 2 mg/L on many days.

SEDIMENT DISCHARGE: Maximum daily 39 tons (35 metric tons) Jan. 16; minimum daily 1.5 tons (1.4 metric tons) on many days during October to December and September.

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	122	120	132	111	98	106	85	---	94	92	68	66
2	122	122	131	110	98	105	84	---	94	92	69	67
3	120	124	132	112	96	105	89	---	95	92	68	68
4	121	124	130	110	98	100	89	---	95	91	69	67
5	118	123	131	109	98	105	87	---	95	91	70	67
6	121	126	132	110	98	98	83	---	94	91	69	67
7	118	123	131	108	100	99	82	---	94	92	68	68
8	119	126	131	109	98	103	86	---	94	91	69	69
9	117	128	130	108	96	101	85	---	93	91	68	71
10	117	128	128	105	95	101	83	---	94	91	70	70
11	119	127	127	105	92	98	83	100	93	92	68	68
12	121	127	127	101	93	95	94	100	93	92	70	68
13	121	128	127	104	93	97	98	98	93	84	69	68
14	123	129	126	102	93	95	99	98	92	73	69	68
15	121	130	123	99	94	95	100	98	92	73	68	68
16	121	130	124	98	95	95	98	99	92	73	68	68
17	119	131	121	104	96	99	99	98	92	73	68	67
18	119	131	120	101	98	97	97	97	91	72	66	68
19	120	130	131	102	101	92	---	97	92	72	67	69
20	120	129	118	102	98	93	---	97	92	72	67	69
21	121	133	117	103	102	93	---	98	91	73	66	69
22	121	133	119	100	100	91	---	98	92	72	67	70
23	121	133	118	98	100	92	---	98	92	71	67	70
24	122	132	119	99	101	91	---	98	93	70	67	69
25	119	131	118	99	100	90	---	98	92	70	67	69
26	119	130	117	94	103	92	---	97	92	70	68	69
27	123	128	117	95	102	89	---	97	91	70	69	70
28	121	131	116	96	102	90	---	97	91	71	66	70
29	123	130	112	94	---	89	---	96	91	69	65	71
30	121	132	113	96	---	88	---	95	92	69	66	70
31	121	---	112	96	---	82	---	95	---	69	67	---
MONTH	120	128	124	103	98	96	---	---	93	79	68	69
YEAR	MAX	133	MIN	65	MEAN	97						

11407000 FEATHER RIVER AT OROVILLE, 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	14.0	13.0	14.0	13.0	12.0	12.0	9.5	9.5	8.5	8.0	9.0	9.0
2	15.0	13.5	14.0	13.5	12.0	11.5	9.5	9.5	8.0	8.0	9.5	9.0
3	15.5	14.5	14.0	13.5	12.0	11.5	9.5	9.5	8.5	8.0	9.5	9.5
4	15.5	14.0	13.5	13.0	11.5	11.5	9.5	9.0	8.5	8.5	---	---
5	14.0	13.0	13.0	13.0	11.5	11.5	9.0	9.0	8.5	8.5	---	---
6	13.0	11.5	13.0	12.0	11.5	11.5	9.0	8.0	8.5	8.0	---	---
7	14.0	11.5	13.5	13.0	11.5	11.5	8.0	8.0	8.5	8.0	---	---
8	14.5	13.5	13.5	13.0	11.5	11.5	8.5	8.0	8.5	8.5	---	---
9	14.0	13.5	13.5	13.0	11.5	11.5	8.5	8.5	8.5	8.5	---	---
10	15.0	14.0	14.0	13.5	11.5	11.0	8.5	8.5	8.5	8.5	---	---
11	16.0	14.5	14.0	14.0	11.0	11.0	9.0	8.5	8.5	8.5	---	---
12	16.0	14.5	14.0	14.0	11.0	11.0	9.0	8.5	8.5	8.0	---	---
13	14.5	13.0	14.0	14.0	11.0	11.0	9.0	9.0	8.0	8.0	---	---
14	13.5	13.0	14.0	14.0	11.0	11.0	9.0	9.0	8.5	8.0	---	---
15	13.0	12.0	14.0	14.0	11.0	11.0	9.0	9.0	8.5	8.5	---	---
16	13.0	12.0	14.0	14.0	11.0	10.5	9.0	9.0	8.5	8.5	---	---
17	12.0	11.5	14.0	14.0	10.5	10.5	9.0	9.0	8.5	8.5	---	---
18	14.5	12.0	14.0	13.5	10.5	10.0	9.0	9.0	9.0	8.5	---	---
19	13.5	12.0	13.5	13.5	10.0	10.0	9.5	9.0	9.0	8.5	---	---
20	13.0	11.5	13.5	13.0	10.0	9.5	9.5	9.5	8.5	8.5	---	---
21	14.5	12.0	13.0	13.0	9.5	9.5	9.5	9.5	9.0	8.5	---	---
22	14.5	13.0	13.0	13.0	9.5	9.5	9.5	9.5	9.0	8.5	---	---
23	14.0	13.5	13.0	13.0	9.5	9.5	9.5	9.5	9.5	9.0	---	---
24	13.5	13.5	13.0	12.0	9.5	9.5	9.5	9.5	9.5	9.0	---	---
25	14.0	13.5	12.0	12.0	9.5	9.5	9.5	9.0	9.5	9.0	---	---
26	15.0	14.0	12.0	12.0	9.5	9.5	9.0	9.0	9.5	9.0	---	---
27	14.0	12.0	12.0	12.0	9.5	9.5	9.0	9.0	10.0	9.0	---	---
28	13.5	12.0	12.0	12.0	9.5	9.5	9.0	8.5	9.5	9.0	---	---
29	13.5	13.0	12.0	12.0	9.5	9.5	9.0	8.5	---	---	---	---
30	13.5	13.0	12.0	12.0	9.5	9.5	8.5	8.5	---	---	---	---
31	13.5	13.0	---	---	9.5	9.5	8.5	8.5	---	---	---	---
MONTH	16.0	11.5	14.0	12.0	12.0	9.5	9.5	8.0	10.0	8.0	---	---

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	12.0	11.0	15.0	14.5	15.5	15.5	17.0	16.5	15.5	14.0
2	---	---	13.5	11.5	15.0	14.5	16.0	15.0	18.0	17.0	15.0	14.0
3	---	---	13.0	12.0	14.5	14.0	15.5	15.0	18.0	16.5	14.0	13.0
4	---	---	13.0	11.5	15.5	14.0	16.5	15.5	18.0	17.0	14.5	13.5
5	9.5	9.5	13.5	11.5	15.5	14.0	16.5	15.5	18.0	17.0	14.0	13.5
6	9.5	9.5	14.0	13.0	15.5	14.5	16.5	16.0	18.0	17.0	14.0	12.0
7	10.5	9.5	13.5	12.0	15.5	14.5	16.5	16.0	18.5	17.0	13.5	11.5
8	11.0	10.0	14.0	12.0	15.0	14.5	16.5	16.0	18.5	18.0	13.0	11.5
9	11.5	10.0	13.5	12.0	15.0	14.5	16.5	16.0	18.5	15.5	12.0	11.5
10	11.5	10.5	13.0	12.0	14.5	14.5	17.0	16.0	15.5	15.0	12.0	11.5
11	12.0	10.5	13.0	12.0	15.0	14.0	16.5	16.5	15.5	15.0	14.0	11.5
12	11.5	11.0	13.5	12.0	14.5	14.0	16.5	16.0	15.0	14.5	14.0	12.0
13	11.5	11.0	13.5	13.0	14.5	14.0	17.0	16.0	15.0	14.5	13.5	12.0
14	11.0	10.0	14.0	13.5	14.5	14.0	17.0	16.5	15.5	15.0	14.0	11.5
15	10.0	9.5	13.5	13.0	14.5	14.0	17.0	16.5	15.5	15.0	14.0	12.0
16	9.5	9.5	13.0	11.5	15.0	14.5	17.0	17.0	15.5	15.0	14.5	13.0
17	10.0	9.5	14.5	11.5	15.0	14.0	18.0	16.5	16.5	15.5	14.5	13.0
18	11.0	10.0	15.0	13.5	15.0	14.5	18.0	16.5	18.0	15.5	14.5	13.0
19	11.0	10.5	14.5	13.5	15.0	14.5	18.0	16.5	18.0	16.0	14.0	12.0
20	11.0	10.5	14.5	13.5	15.0	14.5	18.0	16.0	17.0	15.5	13.5	11.5
21	10.5	10.0	14.0	13.5	15.5	14.5	16.0	15.5	18.5	15.5	12.0	11.0
22	11.0	10.0	14.5	13.5	15.5	14.5	16.0	15.5	16.5	15.5	13.0	10.5
23	11.5	10.5	14.0	13.5	15.0	15.0	16.5	15.5	16.5	15.0	13.0	11.0
24	11.5	11.0	13.5	13.0	15.0	14.5	16.5	16.0	17.0	15.5	12.0	10.5
25	11.0	10.5	13.5	13.0	15.0	14.5	16.5	16.0	16.5	15.0	12.0	10.5
26	11.0	10.5	14.0	13.0	15.0	14.5	16.5	16.0	16.5	15.0	11.5	10.5
27	11.5	10.5	14.5	13.5	15.5	15.0	16.5	16.0	16.0	15.0	11.5	10.0
28	12.0	11.0	14.5	13.5	15.5	15.0	16.5	16.0	16.5	15.0	12.0	10.5
29	11.5	11.0	15.0	14.0	15.5	15.0	17.0	16.0	16.5	15.0	11.5	10.5
30	11.5	11.5	16.0	14.5	16.0	15.0	17.0	16.0	16.0	15.0	11.5	10.0
31	---	---	15.0	14.5	---	---	17.0	16.0	15.0	14.0	---	---
MONTH	12.0	9.5	16.0	11.0	16.0	14.0	18.0	15.0	18.5	14.0	15.5	10.0

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	272	2	1.5	681	2	3.7	279	2	1.5
2	271	2	1.5	676	2	3.7	280	2	1.5
3	272	2	1.5	672	2	3.6	279	2	1.5
4	457	4	4.9	675	2	3.6	279	2	1.5
5	693	10	19	704	2	3.8	283	2	1.5
6	684	6	11	706	2	3.8	285	2	1.5
7	694	3	5.6	685	2	3.7	279	2	1.5
8	705	3	5.7	676	2	3.7	283	2	1.5
9	688	3	5.6	678	2	3.7	287	2	1.5
10	684	3	5.5	585	2	3.2	287	3	2.3
11	708	4	7.6	469	2	2.5	289	3	2.3
12	697	4	7.5	483	2	2.6	287	3	2.3
13	685	4	7.4	491	2	2.7	289	6	4.7
14	681	4	7.4	482	2	2.6	300	9	7.3
15	670	4	7.2	347	2	1.9	297	5	4.0
16	659	4	7.1	279	2	1.5	292	3	2.4
17	682	4	7.4	281	2	1.5	286	3	2.3
18	699	3	5.7	282	2	1.5	287	4	3.1
19	684	3	5.5	283	2	1.5	287	5	3.9
20	691	3	5.6	282	2	1.5	287	5	3.9
21	697	3	5.6	282	2	1.5	281	6	4.6
22	686	3	5.6	279	2	1.5	286	6	4.6
23	674	3	5.5	282	2	1.5	282	7	5.3
24	659	3	5.3	286	2	1.5	279	7	5.3
25	669	3	5.4	279	2	1.5	279	8	6.0
26	681	3	5.5	276	2	1.5	279	8	6.0
27	677	3	5.5	273	2	1.5	288	9	7.0
28	702	3	5.7	281	2	1.5	287	10	7.7
29	713	3	5.8	279	2	1.5	284	11	8.4
30	687	3	5.6	278	2	1.5	280	11	8.3
31	668	3	5.4	---	---	---	279	12	9.0
TOTAL	19789	---	191.1	13212	---	71.3	8826	---	124.2

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	279	13	9.8	284	13	10	289	7	5.5
2	280	14	11	282	12	9.1	314	7	5.9
3	288	14	11	279	10	7.5	296	7	5.6
4	293	16	13	279	10	7.5	310	7	5.9
5	314	23	19	279	10	7.5	298	7	5.6
6	298	17	14	280	10	7.6	295	7	5.6
7	289	16	12	291	9	7.1	290	7	5.5
8	287	17	13	287	8	6.2	294	7	5.6
9	311	25	21	282	8	6.1	297	7	5.6
10	292	27	21	286	8	6.2	294	7	5.6
11	287	25	19	286	8	6.2	296	7	5.6
12	280	23	17	289	9	7.0	295	7	5.6
13	282	23	18	287	10	7.7	292	6	4.7
14	321	34	30	286	11	8.5	293	6	4.7
15	304	34	28	282	12	9.1	294	6	4.8
16	338	42	39	284	12	9.2	292	6	4.7
17	286	23	18	285	12	9.2	299	6	4.8
18	280	20	15	287	12	9.3	309	6	5.0
19	279	18	14	284	12	9.2	311	6	5.0
20	279	16	12	281	11	8.3	314	5	4.2
21	276	15	11	282	8	6.1	321	5	4.3
22	270	14	10	283	7	5.3	322	5	4.3
23	274	13	9.6	287	10	7.7	323	5	4.4
24	276	11	8.2	282	12	9.1	321	5	4.3
25	278	8	6.0	286	10	7.7	319	5	4.3
26	279	9	6.8	286	8	6.2	318	5	4.3
27	281	10	7.6	288	7	5.4	321	5	4.3
28	283	8	6.1	287	7	5.4	322	5	4.3
29	282	8	6.1	---	---	---	321	4	3.5
30	281	10	7.6	---	---	---	323	4	3.5
31	285	13	10	---	---	---	322	4	3.5
TOTAL	8932	---	443.8	7961	---	211.4	9505	---	150.5

11407000 FEATHER RIVER AT OROVILLE, CA--Continued

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	323	4	3.5	326	6	5.3	326	7	6.2
2	323	4	3.5	322	6	5.2	326	7	6.2
3	323	4	3.5	324	6	5.2	327	6	5.3
4	325	4	3.5	323	6	5.2	326	6	5.3
5	324	4	3.5	322	6	5.2	324	6	5.2
6	329	4	3.6	325	6	5.3	323	6	5.2
7	325	4	3.5	322	6	5.2	320	5	4.3
8	323	4	3.5	321	6	5.2	313	5	4.2
9	321	3	2.6	323	6	5.2	310	5	4.2
10	320	3	2.6	326	6	5.3	312	5	4.2
11	319	3	2.6	323	6	5.2	309	4	3.3
12	320	3	2.6	324	5	4.4	310	4	3.3
13	320	3	2.6	323	5	4.4	311	4	3.4
14	322	3	2.6	323	5	4.4	309	4	3.3
15	324	3	2.6	325	5	4.4	310	4	3.3
16	324	3	2.6	326	5	4.4	315	4	3.4
17	324	3	2.6	323	5	4.4	313	4	3.4
18	324	4	3.5	325	5	4.4	315	4	3.4
19	322	4	3.5	323	5	4.4	314	4	3.4
20	324	4	3.5	322	5	4.3	320	4	3.5
21	326	4	3.5	325	6	5.3	318	4	3.4
22	323	4	3.5	327	7	6.2	317	3	2.6
23	323	5	4.4	328	7	6.2	317	3	2.6
24	326	5	4.4	326	7	6.2	318	3	2.6
25	336	5	4.5	327	7	6.2	317	3	2.6
26	329	5	4.4	324	7	6.1	316	3	2.6
27	329	5	4.4	324	7	6.1	318	3	2.6
28	327	5	4.4	325	7	6.1	322	3	2.6
29	326	5	4.4	326	7	6.2	318	3	2.6
30	329	6	5.3	322	7	6.1	317	3	2.6
31	---	---	---	324	7	6.1	---	---	---
TOTAL	9733	---	105.2	10049	---	163.8	9511	---	110.8
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	318	3	2.6	319	3	2.6	311	2	1.7
2	318	3	2.6	318	3	2.6	313	2	1.7
3	318	3	2.6	315	3	2.6	313	2	1.7
4	315	3	2.6	314	3	2.5	311	2	1.7
5	315	3	2.6	313	3	2.5	313	2	1.7
6	316	3	2.6	313	3	2.5	306	2	1.7
7	317	3	2.6	312	3	2.5	293	2	1.6
8	318	3	2.6	312	3	2.5	292	2	1.6
9	319	3	2.6	313	3	2.5	289	2	1.6
10	315	3	2.6	315	3	2.6	293	2	1.6
11	321	3	2.6	316	3	2.6	293	2	1.6
12	319	3	2.6	314	3	2.5	285	2	1.5
13	318	3	2.6	316	3	2.6	286	2	1.5
14	317	3	2.6	314	3	2.5	289	2	1.6
15	318	3	2.6	314	3	2.5	289	2	1.6
16	319	3	2.6	316	3	2.6	286	2	1.5
17	318	3	2.6	332	3	2.7	285	2	1.5
18	317	3	2.6	320	3	2.6	285	2	1.5
19	318	3	2.6	316	3	2.6	283	2	1.5
20	318	3	2.6	316	3	2.6	288	2	1.6
21	318	3	2.6	316	3	2.6	288	2	1.6
22	318	3	2.6	316	3	2.6	296	2	1.6
23	319	3	2.6	310	3	2.5	297	2	1.6
24	321	3	2.6	315	3	2.6	294	2	1.6
25	321	3	2.6	316	3	2.6	289	2	1.6
26	321	3	2.6	314	2	1.7	289	2	1.6
27	320	3	2.6	314	2	1.7	295	2	1.6
28	321	3	2.6	316	2	1.7	295	2	1.6
29	319	3	2.6	312	2	1.7	290	2	1.6
30	320	3	2.6	314	2	1.7	289	2	1.6
31	321	3	2.6	311	2	1.7	---	---	---
TOTAL	9871	---	80.6	9772	---	74.3	8825	---	48.0
YEAR	125986		1775.0						

SACRAMENTO RIVER BASIN

11407150 FEATHER RIVER NEAR GRIDLEY, CA

LOCATION.--Lat 39°22'00", long 121°38'46", in Boga Fernandez Grant, T.18 N., R.3 E., Butte County, on right bank 300 ft (91 m) upstream from highway bridge, and 2.7 mi (4.3 km) east of Gridley.

DRAINAGE AREA.--3,676 mi² (9,521 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to current year. January 1944 to September 1964 are published in reports by California Department of Water Resources.

GAGE.--Water-stage recorder. Datum of gage is 2.91 ft (0.887 m) below National Geodetic Vertical Datum of 1929. Prior to Mar. 13, 1966, water-stage recorder on left bank. Mar. 14, 1966, to Sept. 30, 1973, on right bank, at datum 47.09 ft (14.353 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Flow regulated by Lake Oroville since November 1967 (station 11406800) and Thermalito Afterbay release to the Feather River since December 1968 (station 11406920). See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

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

AVERAGE DISCHARGE.--14 years, 4,951 ft³/s (140.2 m³/s), 3,587,000 acre-ft/yr (4.42 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 151,000 ft³/s (4,280 m³/s) Dec. 23, 1964, gage height, 50.43 ft (15.371 m), present datum; minimum daily, 117 ft³/s (3.31 m³/s) June 27, 1966. Maximum discharge since construction of Oroville Dam in 1967, 72,900 ft³/s (2,060 m³/s) Jan. 27, 1970, gage height, 42.81 ft (13.048 m); minimum daily, 366 ft³/s (10.4 m³/s) July 26, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a stage of 52.25 ft (15.926 m) present datum, discharge unknown.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17,400 ft³/s (493 m³/s) Mar. 6, 7, gage height, 81.25 ft (24.765 m); minimum daily, 797 ft³/s (22.6 m³/s) Dec. 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	812	837	828	808	921	1650	6020	6900	1330	2500	5640	2930
2	834	832	851	813	933	1770	5950	7700	1780	2510	5490	2900
3	834	840	846	842	945	1780	6020	7770	1890	2880	4660	2890
4	843	839	827	903	957	1870	6040	7770	1880	2910	4430	2890
5	841	857	822	1030	981	4640	6030	7740	1910	3460	4380	2890
6	846	854	840	999	1040	14300	6090	7120	1920	4110	4380	2920
7	843	833	836	914	1060	17100	6020	6120	2280	4260	4640	2880
8	875	813	815	901	1020	16900	5950	5760	2370	4250	4940	2880
9	859	833	824	1050	993	16800	5950	5230	2380	4250	4980	2910
10	849	840	828	1020	981	16800	6040	4460	2340	4230	5000	2870
11	884	865	847	969	985	16700	6040	3740	2330	4190	4420	2880
12	892	874	830	934	994	16500	6040	2960	2370	4210	3910	2850
13	862	880	817	957	998	16500	6040	2920	2400	4210	3400	2870
14	857	866	892	1130	979	16500	6020	2950	2380	4230	2950	2860
15	849	880	902	1300	974	16500	5350	2940	2380	4170	2960	2890
16	842	865	828	1400	957	16500	4810	2470	2360	4120	2940	2870
17	839	855	842	1310	993	14700	4830	2450	2370	4150	2930	2810
18	871	851	812	1160	1170	12600	4810	2480	2420	4150	2950	2780
19	863	851	806	1130	1390	10400	4810	2500	2470	4150	2920	2790
20	863	845	797	1060	1600	8340	4810	2500	2470	4130	2880	2850
21	869	921	812	1020	1710	8080	4830	2510	2460	4300	2900	2840
22	862	904	845	985	1720	7580	4850	2510	2480	5210	2910	2830
23	850	865	869	945	1680	6090	4790	2300	2490	5620	2910	2850
24	844	863	805	964	1680	6030	4830	2080	2470	5690	2890	2850
25	836	854	799	954	1670	6000	4900	1870	2450	5750	2910	2860
26	840	850	799	926	1680	5960	4880	1630	2470	5720	2910	2880
27	841	845	835	933	1670	6000	4870	1420	2510	5680	2910	2860
28	850	843	835	942	1670	6020	5170	1220	2510	5660	2950	2650
29	880	858	835	945	---	6050	6020	1090	2510	5640	2960	2870
30	863	832	839	919	---	6070	6640	1080	2500	5600	2960	2420
31	837	---	819	924	---	6080	---	1100	---	5630	2950	---
TOTAL	26430	25645	25782	31087	34351	308810	165450	113290	68880	137570	112960	85320
MEAN	853	855	832	1003	1227	9962	5515	3655	2296	4438	3644	2844
MAX	892	921	902	1400	1720	17100	6640	7770	2510	5750	5640	2930
MIN	812	813	797	808	921	1650	4790	1080	1330	2500	2880	2420
AC-FT	52420	50870	51140	61660	68140	612500	328200	224700	136600	272900	224100	169200
CAL YR 1977 TOTAL		434261	MEAN	1190	MAX	3170	MIN	602	AC-FT	861400		
WTR YR 1978 TOTAL		1135575	MEAN	3111	MAX	17100	MIN	797	AC-FT	2252000		

11407150 FEATHER RIVER NEAR GRIDLEY, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1964 to current year.

SEDIMENT RECORDS: October 1964 to current year.

REVISED RECORDS.--WDR-CA-73-2: 1966, sediment. WDR CA-74-2: 1965, 1970, 1971, 1973, sediment.

INSTRUMENTATION.--Temperature recorder October 1971 to June 1978.

COOPERATION.--Temperature records for October to June furnished by California Department of Water Resources.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES (water years 1965-69, 1971-78): Maximum recorded, 29.5°C June 25, 1977; minimum recorded, 4.0°C on several days in December and January of most years.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,340 mg/L Dec. 25, 1964; minimum daily mean, 1 mg/L Dec. 12, 1968, Dec. 4, 1969, Sept. 1, 1970, Dec. 14, 1971.

SEDIMENT DISCHARGE: Maximum, 527,000 tons (478,000 metric tons) Dec. 23, 1964; minimum daily, 1.4 tons (1.3 metric tons) Oct. 27, 1966.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 25.0°C July 17, 19; minimum recorded, 10.0°C on many days.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 72 mg/L Mar. 6; minimum daily mean, 5 mg/L Dec. 9, 10.

SEDIMENT DISCHARGE: Maximum daily, 2,900 tons (2,630 metric tons) Mar. 6; minimum daily, 11 tons (10 metric tons) Dec. 5, 6.

TEMPERATURE (DEG. 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	21.5	-- 18.5	15.0	-- 13.5	12.0	-- 11.0	11.0	-- 10.0	-- 11.0	--	14.0	-- 13.5
2	19.5	-- 18.0	15.0	-- 13.5	12.0	-- 11.5	10.5	-- 10.0	-- --	--	13.5	-- 13.0
3	19.5	-- 18.5	14.5	-- 13.5	12.0	-- 11.5	10.5	-- 10.0	-- 11.0	--	13.5	-- 12.5
4	20.0	-- 18.5	14.5	-- 13.5	12.5	-- 11.5	10.5	-- 10.5	-- --	--	13.5	-- 13.0
5	19.5	-- 18.5	14.0	-- 13.0	12.5	-- 12.0	10.5	-- 10.5	-- --	--	13.5	-- 12.5
6	18.5	-- 17.0	14.0	-- 13.0	12.5	-- 12.0	11.0	-- 10.5	-- 12.0	--	12.5	-- 11.5
7	17.5	-- 16.0	13.5	-- 12.5	12.0	-- 12.0	11.5	-- 10.5	-- 10.5	--	11.5	-- 10.0
8	17.5	-- 15.5	13.0	-- 12.0	12.0	-- 11.5	11.0	-- 10.5	-- 10.0	--	10.0	-- 10.0
9	18.5	-- 16.0	13.5	-- 12.0	11.5	-- 10.5	11.0	-- 10.5	-- --	--	10.5	-- 10.0
10	18.0	-- 16.5	13.5	-- 12.5	11.5	-- 10.5	11.5	-- 10.5	-- 10.0	--	10.5	-- 10.0
11	18.5	-- 16.5	13.5	-- 12.5	11.0	-- 10.5	11.5	-- 11.0	-- --	--	10.5	-- 10.0
12	18.5	-- 17.0	14.0	-- 13.5	11.5	-- 10.5	11.5	-- 11.0	-- --	--	10.0	-- 9.5
13	18.5	-- 17.5	14.0	-- 13.0	11.5	-- 11.0	11.5	-- 11.0	-- 10.0	--	10.5	-- 9.5
14	18.5	-- 16.5	14.0	-- 13.0	11.5	-- 11.0	11.5	-- 11.0	-- --	--	11.0	-- 10.0
15	17.0	-- 16.0	14.0	-- 13.0	11.5	-- 11.0	11.5	-- 10.5	-- 12.0	--	11.0	-- 10.0
16	16.5	-- 15.0	14.0	-- 13.0	11.5	-- 10.5	11.0	-- 10.5	-- --	--	11.0	-- 10.0
17	16.5	-- 15.0	14.0	-- 13.0	11.0	-- 10.5	11.5	-- 11.0	-- 11.0	--	11.0	-- 10.0
18	16.0	-- 15.0	13.5	-- 12.5	10.5	-- 10.0	11.5	-- 11.0	-- --	--	10.5	-- 10.0
19	16.5	-- 15.0	12.5	-- 11.0	10.0	-- 9.5	11.5	-- 11.0	-- --	--	11.5	-- 10.0
20	16.0	-- 15.0	11.0	-- 10.0	10.0	-- 9.0	11.5	-- 11.0	-- 14.0	--	12.0	-- 11.0
21	15.0	-- 14.0	11.0	-- 10.0	10.0	-- 9.5	11.5	-- 11.0	-- --	--	11.5	-- 11.0
22	16.0	-- 14.0	11.0	-- 10.0	10.0	-- 9.5	11.5	-- 11.0	-- 15.0	--	12.0	-- 11.0
23	16.0	-- 15.0	11.0	-- 10.5	11.0	-- 10.0	11.5	-- 10.0	-- --	--	12.5	-- 11.0
24	16.5	-- 15.5	12.0	-- 11.0	11.0	-- 10.5	10.5	-- 9.0	-- 14.0	--	13.0	-- 11.5
25	16.5	-- 15.5	12.0	-- 11.0	11.0	-- 10.5	10.5	-- 9.0	-- --	--	13.5	-- 11.5
26	16.0	-- 15.0	12.5	-- 11.5	10.5	-- 10.0	-- --	--	-- --	--	13.5	-- 12.5
27	16.0	-- 15.0	12.5	-- 12.0	10.5	-- 10.5	-- 12.0	--	-- 15.0	--	14.5	-- 13.0
28	15.5	-- 14.5	12.5	-- 11.5	11.0	-- 10.5	-- --	--	-- --	--	14.5	-- 13.0
29	15.0	-- 14.0	12.5	-- 11.5	11.5	-- 11.0	-- --	--	-- --	--	14.0	-- 13.0
30	15.0	-- 14.0	12.0	-- 11.5	11.5	-- 11.0	-- 10.0	--	-- --	--	14.0	-- 13.0
31	15.0	-- 14.0	--	--	11.0	-- 10.5	-- --	--	-- --	--	13.5	-- 12.5
MONTH	21.5	-- 14.0	15.0	-- 10.0	12.5	-- 9.0	-- --	--	-- --	--	14.5	-- 9.5

11407150 FEATHER RIVER NEAR GRIDLEY, CA--Continued

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

DAY	MAX	APR DAILY	MIN	MAX	MAY DAILY	MIN	MAX	JUN DAILY	MIN	MAX	JUL DAILY	MIN	MAX	AUG DAILY	MIN	MAX	SEP DAILY	MIN
1	13.0	--	12.0	15.5	--	14.0	21.5	--	19.0	--	--	--	--	--	--	--	--	--
2	13.5	--	12.0	16.0	--	14.5	20.5	--	18.0	--	--	--	--	22.0	--	--	22.0	--
3	13.0	--	12.5	16.0	--	15.0	20.5	--	18.5	--	22.0	--	--	--	--	--	--	--
4	13.5	--	12.5	15.5	--	15.0	22.5	--	18.5	--	--	--	--	--	--	--	20.0	--
5	12.5	--	12.0	15.0	--	14.0	21.5	--	19.5	--	23.0	--	--	--	--	--	--	--
6	12.0	--	11.5	15.5	--	14.0	21.5	--	19.5	--	--	--	--	--	--	--	19.0	--
7	12.5	--	11.0	16.5	--	14.5	21.5	--	19.5	--	23.0	--	--	--	--	--	--	--
8	13.0	--	11.5	17.5	--	15.5	21.0	--	19.5	--	--	--	--	--	--	--	20.0	--
9	13.5	--	12.0	17.5	--	17.0	21.5	--	19.0	--	--	--	--	--	--	--	--	--
10	14.5	--	13.0	18.0	--	16.5	22.5	--	19.0	--	--	--	--	--	--	--	18.0	--
11	15.5	--	14.0	18.0	--	16.0	22.0	--	20.0	--	22.0	--	--	--	--	--	--	--
12	16.0	--	14.5	19.0	--	16.5	21.0	--	19.5	--	23.0	--	--	--	--	--	19.0	--
13	15.5	--	14.5	19.0	--	17.0	20.0	--	--	--	--	--	--	--	--	--	--	--
14	14.5	--	13.5	19.0	--	17.0	20.0	--	19.0	--	23.0	--	--	--	--	--	20.0	--
15	13.5	--	13.0	19.0	--	18.0	20.5	--	19.0	--	--	--	--	--	--	--	--	--
16	13.0	--	12.0	20.0	--	17.5	20.5	--	19.5	--	--	--	--	--	--	--	19.0	--
17	13.5	--	12.0	20.0	--	18.0	21.0	--	19.0	--	25.0	--	--	--	--	--	--	--
18	14.0	--	12.5	20.5	--	18.0	20.0	--	19.0	--	--	--	--	--	--	--	19.0	--
19	13.5	--	13.0	20.5	--	19.0	20.5	--	19.5	--	25.0	--	--	--	--	--	--	--
20	14.0	--	13.0	20.5	--	18.5	20.0	--	19.0	--	--	--	--	--	--	--	16.0	--
21	14.5	--	12.5	20.5	--	18.5	20.5	--	19.0	--	23.0	--	--	--	--	--	--	--
22	15.0	--	13.0	21.0	--	18.5	20.0	--	19.0	--	--	--	--	--	--	--	18.0	--
23	14.5	--	13.5	20.5	--	19.5	21.0	--	18.5	--	--	--	--	--	--	--	--	--
24	14.5	--	14.0	20.0	--	19.0	20.5	--	18.5	--	22.0	--	--	19.0	--	--	19.0	--
25	14.0	--	13.5	20.5	--	19.0	21.5	--	19.5	--	--	--	--	--	--	--	--	--
26	14.5	--	13.5	20.5	--	19.0	20.5	--	19.5	--	22.0	--	--	--	--	--	20.0	--
27	15.5	--	14.0	21.0	--	19.0	21.0	--	19.5	--	--	--	--	--	--	--	--	--
28	15.5	--	14.5	21.0	--	19.5	20.0	--	19.5	--	20.0	--	--	--	--	--	20.0	--
29	16.5	--	14.5	21.5	--	19.5	20.0	--	19.0	--	--	--	--	--	--	--	--	--
30	15.5	--	14.5	22.5	--	20.0	20.5	--	19.0	--	--	--	--	--	--	--	20.0	--
31	--	--	--	22.0	--	20.5	--	--	--	--	20.0	--	--	19.0	--	--	--	--
MONTH	16.5	--	11.0	22.5	--	14.0	22.5	--	18.0	--	--	--	--	--	--	--	--	--

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	812	10	22	837	6	14	828	7	16
2	834	12	27	832	7	16	851	6	14
3	834	12	27	840	7	16	846	6	14
4	843	10	23	839	7	16	827	6	13
5	841	9	20	857	7	16	822	6	13
6	846	8	18	854	7	16	840	6	14
7	843	7	16	833	7	16	836	7	16
8	875	7	17	813	7	15	815	6	13
9	859	7	16	833	6	13	824	5	11
10	849	7	16	840	6	14	828	5	11
11	884	7	17	865	8	19	847	7	16
12	892	8	19	874	8	19	830	8	18
13	862	8	19	880	8	19	817	9	20
14	857	7	16	866	8	19	892	11	26
15	849	7	16	880	9	21	902	9	22
16	842	7	16	865	10	23	828	7	16
17	839	7	16	855	11	25	842	7	16
18	871	6	14	851	12	28	812	7	15
19	863	6	14	851	11	25	806	7	15
20	863	7	16	845	9	21	797	9	19
21	869	8	19	921	10	25	812	10	22
22	862	8	19	904	14	34	845	11	25
23	850	7	16	865	13	30	869	12	28
24	844	7	16	863	11	26	805	12	26
25	836	7	16	854	9	21	799	11	24
26	840	7	16	850	9	21	799	11	24
27	841	7	16	845	8	18	835	10	23
28	850	8	18	843	8	18	835	10	23
29	880	7	17	858	8	19	835	10	23
30	863	7	16	832	8	18	839	11	25
31	837	6	14	---	---	---	819	11	24
TOTAL	26430	---	548	25645	---	601	25782	---	585

11407150 FEATHER RIVER NEAR GRIDLEY, 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	808	10	22	921	9	22	1650	15	67
2	813	10	22	933	10	25	1770	21	100
3	842	9	20	945	10	26	1780	17	82
4	903	12	29	957	10	26	1870	22	111
5	1030	15	42	981	12	32	4640	32	542
6	999	15	40	1040	13	37	14300	72	2900
7	914	10	25	1060	18	52	17100	52	2400
8	901	8	19	1020	16	44	16900	39	1780
9	1050	10	28	993	15	40	16800	32	1450
10	1020	14	39	981	12	32	16800	26	1180
11	969	14	37	985	12	32	16700	24	1080
12	934	14	35	994	13	35	16500	22	980
13	957	15	39	998	14	38	16500	21	936
14	1130	21	64	979	14	37	16500	20	891
15	1300	28	98	974	14	37	16500	19	846
16	1400	32	121	957	15	39	16500	14	624
17	1310	28	99	993	17	46	14700	10	397
18	1160	25	78	1170	16	51	12600	8	272
19	1130	22	67	1390	17	64	10400	8	225
20	1060	18	52	1600	17	73	8340	8	180
21	1020	17	47	1710	16	74	8080	10	218
22	985	15	40	1720	14	65	7580	12	246
23	945	13	33	1680	15	68	6090	11	181
24	964	13	34	1680	16	73	6030	9	147
25	954	13	33	1670	17	77	6000	10	162
26	926	14	35	1680	19	86	5960	10	161
27	933	16	40	1670	21	95	6000	11	178
28	942	15	38	1670	17	77	6020	11	179
29	945	13	33	---	---	---	6050	12	196
30	919	12	30	---	---	---	6070	12	197
31	924	10	25	---	---	---	6080	12	197
TOTAL	31087	---	1364	34351	---	1403	308810	---	19105

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	6020	12	195	6900	20	373	1330	8	29
2	5950	11	177	7700	19	395	1780	10	48
3	6020	10	163	7770	16	336	1890	10	51
4	6040	10	163	7770	16	336	1880	10	51
5	6030	9	147	7740	17	355	1910	10	52
6	6090	9	148	7120	16	308	1920	11	57
7	6020	8	130	6120	12	198	2280	12	74
8	5950	8	129	5760	10	156	2370	18	115
9	5950	8	129	5230	11	155	2380	24	154
10	6040	8	130	4460	13	157	2340	26	164
11	6040	8	130	3740	11	111	2330	26	164
12	6040	7	114	2960	9	72	2370	26	166
13	6040	9	147	2920	10	79	2400	26	168
14	6020	14	228	2950	11	88	2380	24	154
15	5350	12	173	2940	12	95	2380	22	141
16	4810	12	156	2470	13	87	2360	22	140
17	4830	12	156	2450	13	86	2370	21	134
18	4810	12	156	2480	11	74	2420	21	137
19	4810	12	156	2500	8	54	2470	21	140
20	4810	11	143	2500	7	47	2470	20	133
21	4830	11	143	2510	7	47	2460	20	133
22	4850	11	144	2510	8	54	2480	20	134
23	4790	11	142	2300	8	50	2490	20	134
24	4830	11	143	2080	7	39	2470	20	133
25	4900	12	159	1870	6	30	2450	20	132
26	4880	13	171	1630	6	26	2470	21	140
27	4870	12	158	1420	6	23	2510	18	122
28	5170	14	195	1220	6	20	2510	16	108
29	6020	18	293	1090	6	18	2510	16	108
30	6640	18	323	1080	6	17	2500	16	108
31	---	---	---	1100	6	18	---	---	---
TOTAL	165450	---	4941	113290	---	3904	68880	---	3524

SACRAMENTO RIVER BASIN

11407150 FEATHER RIVER NEAR GRIDLEY, CA--Continued

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

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	2500	16	108	5640	10	152	2930	7	55
2	2510	16	108	5490	10	148	2900	7	55
3	2880	17	132	4660	10	126	2890	6	47
4	2910	16	126	4430	9	108	2890	6	47
5	3460	17	159	4380	9	106	2890	6	47
6	4110	17	189	4380	8	95	2920	7	55
7	4260	17	196	4640	8	100	2880	7	54
8	4250	17	195	4940	7	93	2880	8	62
9	4250	17	195	4980	7	94	2910	8	63
10	4230	16	183	5000	6	81	2870	9	70
11	4190	16	181	4420	6	72	2880	12	93
12	4210	18	205	3910	6	63	2850	13	100
13	4210	17	193	3400	6	55	2870	15	116
14	4230	16	183	2950	6	48	2860	16	124
15	4170	16	180	2960	6	48	2890	11	86
16	4120	17	189	2940	6	48	2870	9	70
17	4150	17	190	2930	6	47	2810	9	68
18	4150	16	179	2950	6	48	2780	9	68
19	4150	16	179	2920	6	47	2790	10	75
20	4130	13	145	2880	7	54	2850	11	85
21	4300	13	151	2900	7	55	2840	8	61
22	5210	15	211	2910	7	55	2830	7	53
23	5620	14	212	2910	7	55	2850	9	69
24	5690	13	200	2890	7	55	2850	9	69
25	5750	13	202	2910	7	55	2860	7	54
26	5720	13	201	2910	7	55	2880	6	47
27	5680	12	184	2910	7	55	2860	6	46
28	5660	11	168	2950	6	48	2650	7	50
29	5640	11	168	2960	6	48	2870	7	54
30	5600	10	151	2960	6	48	2420	6	39
31	5630	10	152	2950	6	48	---	---	---
TOTAL	137570	---	5415	112960	---	2210	85320	---	1982
YEAR	1135575		45582.0						

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- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM.	SED. SUSP. SIEVE DIAM.	SED. SUSP. SIEVE DIAM.	SED. SUSP. SIEVE DIAM.
						% FINER THAN .062 MM	% FINER THAN .125 MM	% FINER THAN .250 MM	% FINER THAN .500 MM
MAR									
22...	0910	10.5	7980	15	323	76	90	97	100
APR									
19...	1412	15.0	4820	10	130	95	100	--	--
JUN									
28...	1312	19.5	2400	13	84	88	95	100	--

11407300 NORTH HONCUT CREEK NEAR BANGOR, CA

LOCATION.--Lat 39°20'32", long 121°29'25", in NW¼SE¼ sec.11, T.17 N., R.4 E., Butte County, on left bank 0.2 mi (0.3 km) upstream from unnamed tributary, and 5.7 mi (9.2 km) southwest of Bangor.

DRAINAGE AREA.--47.1 mi² (122.0 km²).

PERIOD OF RECORD.--October 1960 to September 1962, July 1963 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 125 ft (38 m), from topographic map. Prior to September 1962, at site 50 ft (15 m) upstream at same datum.

REMARKS.--Small diversions above station for irrigation. Slight regulation occurs from Lake Wyandotte, capacity, 1,460 acre-ft (1.80 hm³).

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

AVERAGE DISCHARGE.--17 years, 49.6 ft³/s (1.405 m³/s), 35,940 acre-ft/yr (44.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft³/s (303 m³/s) Dec. 26, 1964, gage height, 11.57 ft (3.527 m), from rating curve extended above 4,600 ft³/s (130 m³/s); maximum gage height, 12.03 ft (3.667 m) Feb. 27, 1973; no flow many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,450 ft³/s (183 m³/s) Jan. 14, gage height, 10.89 ft (3.319 m); 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	3.5	9.6	6.3	82	100	72	115	56	7.7	3.3		
2	2.7	8.3	7.1	83	113	663	149	49	6.9	3.6		
3	2.3	7.1	6.7	98	110	712	85	42	6.5	3.7		
4	2.0	5.7	6.0	301	103	1190	114	38	6.4	4.4		
5	1.9	6.2	5.8	2030	141	859	94	34	6.0	7.0		
6	2.2	6.7	6.2	779	496	272	469	31	5.2	8.5		
7	4.0	5.0	6.1	231	759	165	228	28	4.6	6.7		
8	4.7	3.9	6.2	177	394	140	135	26	3.4	5.9		
9	12	3.5	6.3	1120	483	217	100	24	2.9	5.7		
10	16	3.9	9.8	554	258	139	82	23	2.4	5.8		
11	16	3.8	16	192	221	108	70	23	2.9	6.2		
12	15	3.7	24	160	298	100	62	25	3.2	6.5		
13	15	3.5	30	321	543	79	56	25	2.5	6.6		
14	17	3.6	125	2290	374	69	51	24	2.0	4.8		
15	18	4.3	322	1660	252	60	77	24	2.9	2.9		
16	18	4.8	63	1880	196	53	218	24	3.1	1.5		
17	20	4.9	88	607	162	47	99	24	3.1	.60		
18	20	5.1	80	311	140	42	74	22	4.6	.10		
19	19	4.9	50	388	124	39	63	20	7.2	0		
20	18	4.9	42	256	113	35	60	19	7.5	0		
21	18	6.7	40	209	103	37	54	17	7.4	0		
22	16	16	132	186	95	43	48	14	6.9	0		
23	15	7.8	299	165	87	38	44	13	4.8	0		
24	15	4.8	89	146	80	40	41	14	2.8	0		
25	13	4.2	63	135	75	35	480	15	1.9	0		
26	14	4.3	55	127	94	34	247	15	1.3	0		
27	13	3.7	162	120	96	33	122	15	.90	0		
28	13	4.9	144	114	79	33	89	14	1.3	0		
29	12	5.2	148	111	---	33	72	12	2.3	0		
30	11	6.6	97	106	---	33	60	11	3.1	0		
31	10	---	85	103	---	46	---	9.1	---	0		---
TOTAL	377.3	167.6	2220.5	15042	6089	5466	3658	730.1	123.70	83.80	0	0
MEAN	12.2	5.59	71.6	485	217	176	122	23.6	4.12	2.70	0	0
MAX	20	16	322	2290	759	1190	480	56	7.7	8.5	0	0
MIN	1.9	3.5	5.8	82	75	33	41	9.1	.90	0	0	0
AC-FT	748	332	.400	29840	12080	10840	7260	1450	245	166	0	0
CAL YR 1977	TOTAL	4441.80	MEAN	12.2	MAX	322	MIN	0	AC-FT	8810		
WTR YR 1978	TOTAL	33958.00	MEAN	93.0	MAX	2290	MIN	0	AC-FT	67360		

11407500 SOUTH HONCUT CREEK NEAR BANGOR, CA

LOCATION.--Lat 39°22'04", long 121°22'16", in SE¼SE¼ sec.35, T.18 N., R.5 E., Butte County, on right bank 2.3 mi (3.7 km) southeast of Bangor, 3.3 mi (5.3 km) upstream from Tennessee Creek, and 16.3 mi (26.2 km) southeast of Oroville.

DRAINAGE AREA.--30.6 mi² (79.3 km²).

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

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 620 ft (189 m), from topographic map.

REMARKS.--Records good. Some small diversions upstream for irrigation.

AVERAGE DISCHARGE.--28 years, 35.5 ft³/s (1.005 m³/s), 25,720 acre-ft/yr (31.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,600 ft³/s (498 m³/s) Dec. 26, 1964, gage height, 19.25 ft (5.867 m), from rating curve extended above 2,200 ft³/s (62.3 m³/s) on basis of slope-area measurements at gage heights 11.15 ft (3.399 m) and 19.25 ft (5.867 m); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,400 ft³/s (39.6 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 5	0900	3160 89.5	8.84 2.694	Jan. 16	1230	*3300 93.5	8.96 2.731
Jan. 14	2200	3040 86.1	8.73 2.661	Mar. 4	0930	3250 92.0	8.92 2.719

Minimum daily, 0.25 ft³/s (0.007 m³/s) Aug. 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	2.3	1.9	.91	12	13	19	76	42	10	4.3	.50	1.1
2	1.5	1.9	.90	9.6	23	398	72	34	8.9	4.1	.45	.92
3	.93	1.8	.88	31	19	402	38	29	8.1	3.9	.40	.84
4	.65	1.8	.81	151	13	1220	104	25	6.6	3.8	.32	.63
5	.53	4.0	.80	1180	44	624	56	23	5.9	3.6	.32	1.0
6	.51	2.1	.82	278	262	218	337	21	5.4	3.5	.25	1.3
7	.54	2.0	.85	70	432	130	132	18	5.1	3.4	.26	1.3
8	.52	1.6	.85	40	184	108	85	17	5.4	3.2	.27	1.5
9	.58	1.4	.85	361	274	137	64	16	5.5	3.0	.28	2.3
10	.75	1.2	.90	144	109	92	52	16	5.2	2.9	.31	3.4
11	.86	1.3	1.6	70	90	77	43	17	5.1	2.8	.35	2.9
12	.92	1.6	4.2	49	153	74	37	17	5.1	2.6	.34	2.6
13	.90	1.7	4.7	134	235	58	33	15	5.5	2.5	.38	2.1
14	.91	1.8	231	1040	153	50	29	14	5.1	2.4	.42	1.7
15	.96	1.8	209	868	145	43	109	14	4.5	2.3	.46	1.8
16	1.5	1.5	16	1180	93	37	109	13	4.3	2.2	.46	1.7
17	1.4	1.6	76	322	72	34	55	13	4.1	2.1	.43	1.4
18	1.9	1.5	27	140	57	30	44	12	4.3	2.0	.44	1.1
19	1.9	1.6	10	178	48	27	39	11	4.2	1.8	.43	1.1
20	1.8	1.2	6.5	93	41	27	38	11	4.4	1.7	.37	1.1
21	1.7	11	5.6	65	37	42	32	11	4.4	1.6	.38	1.2
22	1.6	24	43	50	30	41	28	10	4.4	1.4	.61	.96
23	2.4	4.0	162	38	26	41	26	10	4.3	1.3	.71	.80
24	2.8	2.4	22	29	23	41	28	13	4.1	1.2	.52	.74
25	2.2	1.9	12	24	21	31	275	11	4.1	1.1	.75	.71
26	2.0	1.6	8.7	20	30	27	136	11	4.2	1.0	.75	.98
27	1.9	1.3	82	18	26	22	83	9.6	4.6	.90	.90	1.2
28	1.9	1.2	70	16	22	20	64	9.6	4.9	.80	.82	1.1
29	2.0	1.1	84	16	---	19	53	9.6	4.8	.70	.83	1.1
30	2.1	1.0	31	13	---	18	46	9.8	4.7	.60	.99	1.3
31	2.0	---	17	12	---	35	---	9.6	---	.55	1.0	---
TOTAL	44.46	84.8	1131.87	6651.6	2675	4142	2323	492.2	157.2	69.25	15.70	41.88
MEAN	1.43	2.83	36.5	215	95.5	134	77.4	15.9	5.24	2.23	.51	1.40
MAX	2.8	24	231	1180	432	1220	337	42	10	4.3	1.0	3.4
MIN	.51	1.0	.80	9.6	13	18	26	9.6	4.1	.55	.25	.63
AC-FT	88	168	2250	13190	5310	8220	4610	976	312	137	31	83
CAL YR 1977	TOTAL	2430.34	MEAN	6.66	MAX	231	MIN	0	AC-FT	4820		
WTR YR 1978	TOTAL	17828.96	MEAN	48.8	MAX	1220	MIN	.25	AC-FT	35360		

11407800 JACKSON MEADOWS RESERVOIR NEAR SIERRA CITY, CA

LOCATION.--Lat 39°30'40", long 120°33'15", in NW¼SE¼ sec.18, T.19 N., R.13 E., Sierra County, Tahoe National Forest, on right bank at Jackson Meadows Dam on Middle Yuba River, 0.7 mi (1.1 km) downstream from Pass Creek, and 5.7 mi (9.2 km) southeast of Sierra City.

DRAINAGE AREA.--37.6 mi² (97.4 km²).

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Nevada Irrigation District).

REMARKS.--Reservoir is formed by an earthfill dam. Storage began Nov. 9, 1964. Usable capacity, 66,700 acre-ft (82.2 hm³) between elevations 5,933.0 ft (1,808.38 m), bottom of intake tower, and 6,036.0 ft (1,839.77 m), top of spillway Tainter gates. Dead storage, 2,500 acre-ft (3.08 hm³). Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Yuba River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 71,000 acre-ft (87.5 hm³) on several days in 1969-71, elevation, 6,037.7 ft (1,840.29 m); minimum since reservoir first filled, 2,500 acre-ft (3.08 hm³) Sept. 27-29, 1976, elevation, 5,933.1 ft (1,808.41 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 70,300 acre-ft (86.7 hm³) June 21-23, elevation, 6,037.0 ft (1,840.08 m); minimum, 2,930 acre-ft (3.61 hm³) Nov. 19, 20, elevation, 5,935.4 ft (1,809.11 m).

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

5930	2000	5990	27600
5940	3920	6000	35300
5950	6760	6010	43900
5960	10600	6020	53200
5970	15400	6030	63000
5980	21000	6040	73500

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	4530	2950	3130	5800	9940	12300	21900	34100	64400	69700	69400	68800
2	4530	2950	3130	5920	10000	12500	22400	34900	65700	69700	69400	68800
3	4530	2950	3130	6020	10100	12600	22800	35800	66500	69600	69400	68800
4	4380	2950	3150	6140	10200	12900	23200	36800	67400	69600	69400	68700
5	4130	2970	3150	6330	10300	13200	23500	37500	68400	69600	69400	68900
6	3870	2970	3170	6400	10500	13400	23800	38300	69100	69500	69400	68700
7	3620	2970	3170	6490	10600	13600	24100	39000	69500	69500	69300	68300
8	3380	2970	3170	6590	10700	13800	24400	40000	69600	69500	69300	67700
9	3210	2970	3170	6820	10800	14000	24700	41100	69700	69500	69300	67200
10	3070	2950	3190	6990	10900	14200	25000	42300	69600	69400	69300	66800
11	3010	2950	3190	7100	10900	14300	25400	43600	69600	69400	69300	66300
12	3010	2950	3210	7200	11000	14500	25900	44800	69600	69400	69200	65900
13	3010	2950	3210	7380	11100	14600	26400	46400	69700	69400	69200	65400
14	2990	2950	3320	7700	11200	14800	26900	47900	69700	69500	69200	64800
15	2990	2950	3640	7990	11300	14900	27300	49400	69500	69500	69100	64300
16	2990	2950	3730	8330	11300	15000	27800	50400	69400	69500	69100	63800
17	2990	2950	3890	8560	11400	15200	28100	51300	69200	69500	69100	63200
18	2990	2950	3990	8720	11500	15500	28400	52300	69300	69500	69100	62600
19	2990	2930	4060	8870	11500	15700	28700	53500	69800	69500	69000	62100
20	2970	2930	4080	8990	11600	16000	29100	54700	70200	69500	69000	61700
21	2970	3010	4130	9070	11700	16300	29300	55700	70300	69500	69000	61200
22	2970	3050	4200	9190	11800	16700	29600	56000	70300	69500	68900	60700
23	2970	3070	4300	9270	11800	17100	29800	55900	70300	69500	68900	60200
24	2970	3070	4380	9360	11900	17500	30200	55900	70200	69500	68900	59700
25	2970	3090	4400	9440	12000	17800	30700	56400	70000	69400	68900	59200
26	2950	3090	4460	9520	12000	18200	31300	57200	69900	69400	68900	58600
27	2970	3110	4640	9560	12100	18600	31800	58100	69900	69400	68900	58100
28	2950	3110	4850	9640	12200	19100	32400	59200	69900	69400	68900	57600
29	2950	3130	5270	9730	---	19800	33000	60700	69800	69400	68900	57100
30	2970	3130	5530	9770	---	20400	33600	61900	69800	69400	68900	56600
31	2970	---	5680	9850	---	21300	---	63200	---	69400	68900	---
MAX	4530	3130	5680	9850	12200	21300	33600	63200	70300	69700	69400	68900
MIN	2950	2930	3130	5800	9940	12300	21900	34100	64400	69400	68900	56600
†	5935.6	5936.4	5946.6	5958.2	5963.5	5980.5	5997.8	6030.2	6036.6	6036.2	6035.7	6023.6
‡	-1560	+160	+2550	+4170	+2350	+9100	+12300	+29600	+6600	-400	-500	-12300

CAL YR 1977 ‡ +2710
WTR YR 1978 ‡ +52070

† Elevation, in feet NGVD, at end of month.
‡ Change in contents, in acre-feet.

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

LOCATION.--Lat 39°30'58", long 120°33'40", in SE¼NW¼ sec.18, T.19 N., R.13 E., Sierra County, Tahoe National Forest, on right bank 0.6 mi (1.0 km) downstream from Jackson Meadows Dam, and 5.2 mi (8.4 km) southeast of Sierra City.

DRAINAGE AREA.--38.3 mi² (99.2 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 5,717.20 ft (1,742.603 m) National Geodetic Vertical Datum of 1929 (levels by Nevada Irrigation District).

REMARKS.--Records fair. Flow regulated by Jackson Meadows Reservoir since November 1964 (station 11407800). See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE (adjusted for change in contents in Jackson Meadows Reservoir).--14 years, 110 ft³/s (3.115 m³/s), 79,700 acre-ft/yr (98.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,300 ft³/s (65.1 m³/s) Sept. 1, 1965, gage height, 6.60 ft (2.012 m), from rating curve extended above 1,100 ft³/s (31.2 m³/s) on basis of computation of flow over Milton Dam at gage height, 10.57 ft (3.222 m); no flow many days in 1976-77.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1925, 10.57 ft (3.222 m) Jan. 31, 1963, from floodmarks, discharge, 10,000 ft³/s (283 m³/s) by computation of flow over Milton Dam, adjusted for diversion and inflow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 621 ft³/s (17.6 m³/s) June 9, gage height, 5.64 ft (1.719 m); minimum daily, 2.1 ft³/s (0.060 m³/s) Dec. 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	2.4	2.2	2.2	7.2	5.8	6.2	18	16	11	193	13	5.4
2	2.4	2.2	2.2	6.4	5.8	8.4	15	17	11	177	12	5.4
3	2.4	2.2	2.2	6.4	5.8	8.7	12	18	117	161	11	5.4
4	62	2.2	2.2	6.2	5.8	12	11	17	173	140	11	5.0
5	117	2.4	2.2	12	7.2	13	11	16	173	139	9.5	5.8
6	117	2.2	2.2	9.9	7.2	12	11	15	288	144	9.0	129
7	114	2.2	2.2	5.4	6.3	11	9.1	15	419	138	8.0	274
8	114	2.2	2.2	5.6	5.9	11	8.8	16	481	133	8.0	270
9	94	2.2	2.2	9.4	6.2	11	9.3	17	578	127	7.5	270
10	63	2.2	2.2	8.4	5.9	10	11	17	559	111	6.6	266
11	38	2.2	2.1	7.9	5.8	9.1	12	17	509	95	5.8	263
12	2.4	2.2	2.2	6.8	5.6	8.4	14	16	482	86	6.6	266
13	2.4	2.2	2.3	7.3	5.4	8.0	14	16	487	56	5.8	267
14	2.4	2.2	5.2	15	5.0	7.7	14	17	477	26	5.8	267
15	2.4	2.2	12	14	5.0	7.5	12	19	472	38	5.8	263
16	2.4	2.2	4.1	13	5.0	7.8	11	15	446	45	5.8	263
17	2.7	2.2	9.2	12	5.0	8.6	11	15	431	47	5.8	262
18	2.4	2.2	5.7	9.5	5.0	9.0	11	14	281	44	5.8	260
19	2.4	2.2	4.4	8.5	5.0	9.8	11	14	31	42	5.8	256
20	2.2	2.2	3.8	8.0	5.1	11	11	16	117	38	5.4	256
21	2.2	3.1	3.6	7.6	5.4	12	11	153	204	35	5.4	257
22	2.2	3.3	4.0	6.8	5.4	13	10	347	242	33	5.4	254
23	2.2	2.2	6.9	6.3	5.4	16	11	459	249	30	5.4	254
24	2.2	2.3	5.4	6.2	5.5	15	12	248	296	25	5.4	254
25	2.2	2.2	4.5	5.8	5.8	14	17	12	288	23	5.4	253
26	2.2	2.2	4.7	5.8	5.8	14	15	12	246	23	5.4	253
27	2.2	2.2	11	5.8	5.8	15	16	12	226	20	5.4	253
28	2.2	2.2	8.6	5.8	5.8	16	16	12	239	19	5.4	253
29	2.2	2.2	17	5.8	---	17	15	11	219	18	5.4	249
30	2.2	2.2	13	5.8	---	18	15	11	208	16	5.4	249
31	2.2	---	8.4	5.8	---	20	---	11	---	14	5.4	---
TOTAL	772.1	68.3	160.1	246.4	158.7	360.2	375.2	1611	8960	2236	213.4	6388.0
MEAN	24.9	2.28	5.16	7.95	5.67	11.6	12.5	52.0	299	72.1	6.88	213
MAX	117	3.3	17	15	7.2	20	18	459	578	193	13	274
MIN	2.2	2.2	2.1	5.4	5.0	6.2	8.8	11	11	14	5.4	5.0
AC-FT	1530	135	318	489	315	714	744	3200	17770	4440	423	12670

CAL YR 1977 TOTAL 5167.19 MEAN 14.2 MAX 170 MIN 0 AC-FT 10250 MEAN ‡ 17.9 AC-FT ‡ 12960
WTR YR 1978 TOTAL 21549.40 MEAN 59.0 MAX 578 MIN 2.1 AC-FT 42740 MEAN ‡ 131 AC-FT ‡ 94810

‡ Adjusted for change in contents in Jackson Meadows Reservoir.

SACRAMENTO RIVER BASIN

11408000 MILTON-BOWMAN TUNNEL OUTLET NEAR GRANITEVILLE, CA

LOCATION.--Lat 39°27'36", long 120°36'40", in NW¼NE¼ sec.3, T.18 N., R.12 E., Nevada County, on right bank 100 ft (30 m) downstream from tunnel outlet near upper end of Bowman Lake, and 6.9 mi (11.1 km) east of Graniteville.

PERIOD OF RECORD.--May 1928 to September 1930, February 1931 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1962, published as "Milton-Bowman tunnel at outlet."

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 5,592.51 ft (1,704.597 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 22, 1964, at datum 0.56 ft (0.171 m) higher.

REMARKS.--Records excellent. Tunnel diverts from Middle Yuba River at Milton, in sec.12, T.19 N., R.12 E., and discharges into Bowman Lake. Practically the entire flow of Middle Yuba River is diverted during low and medium flows. Middle Yuba River flow is regulated by Jackson Meadows Reservoir (station 11407800) since November 1964. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--50 years, 72.5 ft³/s (2.053 m³/s), 52,530 acre-ft/yr (64.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 492 ft³/s (13.9 m³/s) Feb. 11, 1941; minimum daily, 0.4 ft³/s (0.011 m³/s) Oct. 7, 1944.

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	2.9	3.5	36	14	15	49	35	27	13	13	5.2
2	4.5	2.8	3.5	33	14	21	38	40	26	12	12	4.8
3	4.5	2.6	3.4	36	14	22	32	44	120	12	11	4.5
4	32	2.6	3.3	36	14	30	29	45	247	11	10	4.8
5	121	3.7	3.5	40	16	36	25	39	257	119	9.4	7.9
6	124	3.4	3.5	35	19	32	25	34	234	170	8.6	58
7	124	3.1	3.4	30	18	29	22	34	200	147	8.0	263
8	122	2.9	3.3	30	17	28	21	38	166	141	7.3	267
9	107	2.9	3.3	46	17	27	21	43	129	135	6.8	271
10	67	2.9	3.3	47	16	25	23	44	128	123	6.0	274
11	57	2.9	3.4	42	15	24	27	44	127	107	5.4	269
12	11	2.9	3.8	39	15	22	30	43	126	98	4.9	267
13	5.8	2.9	3.5	39	14	21	31	44	126	78	5.3	266
14	4.9	2.9	6.1	65	13	20	32	47	124	31	4.9	266
15	4.6	2.9	50	74	13	20	29	55	123	43	4.7	265
16	4.2	2.9	21	61	13	19	27	39	123	51	4.7	264
17	4.1	2.9	37	50	12	20	24	34	122	53	4.6	261
18	4.1	2.8	29	38	12	21	23	34	152	52	4.7	261
19	4.0	2.7	19	30	12	22	23	36	53	50	4.6	259
20	3.9	2.7	16	25	12	24	25	37	114	46	4.5	258
21	3.9	5.0	15	22	13	27	22	158	199	42	4.5	257
22	3.9	12	17	19	13	31	21	265	240	38	4.5	256
23	3.8	6.0	31	18	13	37	21	267	253	34	4.5	255
24	3.0	4.7	25	17	14	37	22	254	269	30	4.3	254
25	2.6	4.5	21	16	14	33	39	47	302	26	4.5	252
26	2.5	4.3	20	15	14	33	35	24	146	24	4.5	252
27	3.1	4.3	43	15	14	35	35	25	16	22	4.5	250
28	3.0	4.1	41	15	14	37	38	28	15	21	4.5	250
29	2.9	3.9	64	14	---	39	33	31	14	19	4.5	249
30	3.0	3.7	63	14	---	42	36	31	14	17	4.9	249
31	3.0	---	42	14	---	52	---	29	---	15	5.1	---
TOTAL	849.1	110.8	604.8	1011	399	881	858	1968	4192	1780	190.7	6320.2
MEAN	27.4	3.69	19.5	32.6	14.3	28.4	28.6	63.5	140	57.4	6.15	211
MAX	124	12	64	74	19	52	49	267	302	170	13	274
MIN	2.5	2.6	3.3	14	12	15	21	24	14	11	4.3	4.5
AC-FT	1680	220	1200	2010	791	1750	1700	3900	8310	3530	378	12540
CAL YR 1977	TOTAL	6743.2	MEAN	18.5	MAX	188	MIN	1.1	AC-FT	13380		
WTR YR 1978	TOTAL	19164.6	MEAN	52.5	MAX	302	MIN	2.5	AC-FT	38010		

11408850 MIDDLE YUBA RIVER NEAR CAMPTONVILLE, CA

LOCATION.--Lat 39°25'01", long 120°57'06", in SW¼SE¼ sec.15, T.18 N., R.9 E., Sierra County, Tahoe National Forest, on right bank 0.6 mi (1.0 km) downstream from Kanaka Creek, and 5.8 mi (9.3 km) southeast of Camptonville.

DRAINAGE AREA.--136 mi² (352 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 2,170 ft (661 m), from topographic map.

REMARKS.--Records excellent. Natural flow of stream affected by Jackson Meadows Reservoir since November 1964 (station 11407800), Milton-Bowman tunnel (station 11408000) which diverts above station to Bowman Lake (station 11415500), and other small diversions above station. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--11 years, 310 ft³/s (8.779 m³/s), 224,600 acre-ft/yr (277 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,300 ft³/s (348 m³/s) Jan. 21, 1970, gage height, 14.80 ft (4.511 m); minimum daily, 11 ft³/s (0.31 m³/s) July 29, Aug. 17, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,350 ft³/s (94.9 m³/s) Jan. 16, gage height, 10.19 ft (3.106 m); minimum daily, 14 ft³/s (0.40 m³/s) Oct. 19-25.

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	21	20	29	371	242	294	924	683	507	326	51	33
2	18	19	28	290	282	703	801	690	480	310	50	32
3	17	18	27	329	273	980	670	723	476	291	49	32
4	17	18	26	460	257	1750	656	731	491	266	48	32
5	17	43	26	2050	360	2590	567	687	544	246	47	77
6	16	32	26	1260	681	1800	584	608	594	137	46	116
7	16	26	26	695	1200	1200	537	579	884	114	44	62
8	16	23	26	536	1040	966	517	595	882	110	42	48
9	15	22	25	1120	1110	859	533	651	1010	106	42	50
10	15	21	25	964	825	753	572	679	890	103	40	128
11	15	21	30	697	650	697	600	688	814	92	39	75
12	15	20	39	576	572	621	601	678	720	95	39	57
13	15	20	32	570	550	541	585	686	705	90	39	48
14	15	20	99	1730	479	480	580	746	691	86	39	45
15	15	20	686	2000	454	438	600	884	663	82	38	42
16	15	20	183	2470	402	417	576	682	609	80	38	41
17	15	20	387	2310	360	431	518	574	570	78	38	40
18	15	19	308	1350	329	445	502	551	555	75	37	39
19	14	19	161	1090	315	442	501	564	257	72	37	38
20	14	19	118	860	319	475	651	586	219	68	37	37
21	14	144	101	687	318	554	575	610	208	66	37	38
22	14	251	217	573	321	624	536	808	198	64	36	38
23	14	74	895	479	330	788	504	964	189	63	37	37
24	14	50	323	409	336	777	520	811	181	60	37	37
25	14	44	201	365	323	654	947	431	171	59	37	36
26	15	41	160	330	317	622	876	373	162	57	37	36
27	15	38	442	303	300	612	790	369	326	57	37	35
28	17	37	482	283	283	623	780	420	395	56	36	34
29	18	33	1020	267	---	640	713	502	368	54	35	34
30	21	31	989	257	---	671	733	559	345	53	34	33
31	21	---	543	248	---	830	---	542	---	52	34	---
TOTAL	493	1183	7680	25929	13228	24277	19049	19654	15104	3468	1237	1430
MEAN	15.9	39.4	248	836	472	783	635	634	503	112	39.9	47.7
MAX	21	251	1020	2470	1200	2590	947	964	1010	326	51	128
MIN	14	18	25	248	242	294	501	369	162	52	34	32
AC-FT	978	2350	15230	51430	26240	48150	37780	38980	29960	6880	2450	2840
CAL YR 1977	TOTAL	20495	MEAN	56.2	MAX	1020	MIN	11	AC-FT	40650		
WTR YR 1978	TOTAL	132732	MEAN	364	MAX	2590	MIN	14	AC-FT	263300		

11408880 MIDDLE YUBA RIVER BELOW OUR HOUSE DAM, NEAR CAMPTONVILLE, CA

LOCATION.--Lat 39°24'42", long 120°59'49", in SW¼NW¼ sec.20, T.18 N., R.9 E., Sierra County, Tahoe National Forest, on right bank 400 ft (122 m) downstream from Our House Dam, and 4.0 mi (6.4 km) southeast of Camptonville.

DRAINAGE AREA.--145 mi² (376 km²).

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,957.51 ft (596.649 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 4, 1970, at datum 10.0 ft (3.05 m) higher.

REMARKS.--Records excellent. Natural flow of stream affected by Jackson Meadows Reservoir since November 1964 (station 11407800), Milton-Bowman tunnel (station 11408000) which diverts above station to Bowman Lake (station 11415500), Lohman Ridge tunnel since October 1968 which diverts up to 400 ft (122 m) upstream to Oregon Creek and then to Bullards Bar Reservoir via Camptonville tunnel. Other small diversions above station. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--10 years, 129 ft³/s (3.653 m³/s), 93,460 acre-ft/yr (115 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,500 ft³/s (354 m³/s) Jan. 21, 1970, gage height, 20.70 ft (6.309 m) present datum; minimum daily, 3.2 ft³/s (0.091 m³/s) Oct. 21 to Nov. 4, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,930 ft³/s (83.0 m³/s) Jan. 5, gage height, 15.96 ft (4.865 m); minimum daily, 15 ft³/s (0.42 m³/s) Oct. 23-26.

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	20	19	21	22	26	28	132	66	47	34	34	33
2	20	19	21	22	26	73	51	67	47	34	34	33
3	19	19	21	22	26	246	35	67	48	34	34	33
4	19	19	21	22	26	946	34	67	48	34	34	33
5	18	20	21	1350	26	1770	34	66	50	34	34	34
6	17	21	21	591	29	989	34	66	50	34	34	35
7	17	21	21	48	402	455	34	65	56	33	34	35
8	16	21	21	26	266	205	34	65	63	34	34	34
9	16	20	21	422	340	78	34	65	199	34	33	34
10	16	20	21	271	52	30	34	67	71	34	33	35
11	16	20	21	30	29	30	34	63	50	34	33	35
12	16	20	21	24	28	31	34	57	48	34	33	34
13	16	20	21	23	28	31	34	56	47	34	34	34
14	16	20	22	878	28	30	42	54	48	34	34	34
15	16	20	97	1170	27	30	53	78	41	34	34	34
16	16	20	24	1680	27	30	57	54	35	34	34	34
17	16	19	23	1480	27	28	56	52	34	34	34	34
18	16	19	23	566	28	28	56	51	34	34	34	34
19	16	19	21	329	28	28	56	51	32	34	34	34
20	16	19	21	77	28	28	58	52	32	34	34	34
21	16	21	21	28	28	28	57	52	32	34	34	34
22	16	24	21	26	28	29	57	54	32	34	33	34
23	15	22	212	26	28	49	56	159	32	34	33	34
24	15	22	25	25	28	40	55	63	32	34	33	33
25	15	22	23	25	28	30	201	48	32	34	33	32
26	15	21	21	26	28	30	131	47	32	34	33	32
27	16	21	23	25	28	31	64	46	33	34	33	32
28	16	21	24	26	28	32	62	46	33	34	33	32
29	16	21	260	26	---	33	64	46	33	34	33	32
30	18	21	258	26	---	33	66	47	34	34	33	31
31	19	---	24	26	---	55	---	47	---	34	33	---
TOTAL	515	611	1416	9338	1721	5504	1749	1884	1405	1053	1040	1006
MEAN	16.6	20.4	45.7	301	61.5	178	58.3	60.8	46.8	34.0	33.5	33.5
MAX	20	24	260	1680	402	1770	201	159	199	34	34	35
MIN	15	19	21	22	26	28	34	46	32	33	33	31
AC-FT	1020	1210	2810	18520	3410	10920	3470	3740	2790	2090	2060	2000
†	50	1360	13850	37740	25300	41760	37860	38900	29990	5440	620	1110
CAL YR 1977 TOTAL	9883		MEAN 27.1	MAX 260	MIN 12	AC-FT 19600						
WTR YR 1978 TOTAL	27242		MEAN 74.6	MAX 1770	MIN 15	AC-FT 54030						

† Diversion, in acre-feet, to Lohman Ridge tunnel.

11409300 OREGON CREEK AT CAMPTONVILLE, CA

LOCATION.--Lat 39°26'46", long 121°02'43", in SE¼NE¼ sec.11, T.18 N., R.8 E., Yuba County, Tahoe National Forest, on right bank 25 ft (8 m) downstream from county bridge, 0.5 mi (0.8 km) southeast of Camptonville, and 5.5 mi (8.8 km) upstream from mouth.

DRAINAGE AREA.--23.0 mi² (59.6 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 2,230 ft (680 m), from topographic map.

REMARKS.--Records good. No regulation or diversion above station. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--11 years, 68.0 ft³/s (1.926 m³/s), 49,270 acre-ft/yr (60.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,130 ft³/s (88.6 m³/s) Jan. 21, 1970, gage height, 10.07 ft (3.069 m); minimum daily, 0.53 ft³/s (0.015 m³/s) Aug. 14-16, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 5	1630	*1280 36.2	7.42 2.262	Jan. 16	2130	1110 31.4	7.08 2.158
Jan. 14	2200	755 21.4	6.31 1.923	Mar. 5	1300	932 26.4	6.71 2.045

Minimum daily, 1.0 ft³/s (0.028 m³/s) Oct. 6-8, 13, 16-19.

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	2.2	2.2	3.4	106	68	79	206	158	23	8.1	2.6	1.6
2	1.6	1.8	3.2	84	86	212	249	144	22	7.8	2.5	1.6
3	1.3	1.6	3.0	98	79	424	193	135	21	7.6	2.4	1.6
4	1.2	1.7	2.8	125	75	602	209	126	19	7.4	2.4	1.7
5	1.1	1.1	2.7	817	102	848	181	115	18	7.2	2.2	8.0
6	1.0	6.5	2.6	584	215	611	179	104	17	6.9	2.1	14
7	1.0	3.5	2.5	295	390	419	164	95	17	6.6	2.0	4.6
8	1.0	2.6	2.4	207	357	332	167	89	16	6.3	2.0	3.2
9	1.1	2.3	2.3	338	394	282	168	85	15	6.0	1.8	4.5
10	1.3	2.1	2.3	328	302	236	162	82	15	5.8	1.8	16
11	1.2	2.1	5.3	236	232	206	153	77	15	5.6	1.8	7.8
12	1.2	2.1	9.5	186	198	180	143	72	14	5.4	1.8	5.1
13	1.0	2.1	5.3	184	186	155	134	67	13	5.3	1.8	4.1
14	1.1	2.2	4.1	437	163	137	127	64	13	5.1	2.0	4.1
15	1.1	2.2	159	529	166	123	143	70	13	4.8	2.0	3.7
16	1.0	2.2	40	797	147	111	140	61	12	4.7	1.9	3.5
17	1.0	2.2	151	747	128	101	133	55	12	4.3	1.8	3.3
18	1.0	2.4	87	484	115	96	134	51	12	4.1	2.0	3.2
19	1.0	2.5	50	428	109	91	132	47	12	4.1	1.9	3.1
20	1.1	2.7	38	336	106	88	210	44	11	3.9	1.9	3.1
21	1.1	4.1	32	256	102	96	182	41	11	3.7	1.9	3.0
22	1.2	85	58	206	100	107	161	39	11	3.4	1.9	3.0
23	1.2	19	195	168	98	153	145	39	10	3.4	2.1	3.0
24	1.2	12	94	142	96	161	149	41	10	3.2	1.9	3.0
25	1.2	8.9	65	123	91	138	313	36	10	3.1	1.9	2.9
26	1.3	7.4	53	109	89	122	321	33	9.6	3.1	1.8	2.9
27	1.3	6.3	126	97	84	110	259	30	9.3	3.0	1.8	2.9
28	1.4	5.5	142	88	79	103	222	28	9.0	2.9	1.8	2.8
29	1.9	4.6	280	81	---	98	192	27	8.7	2.9	1.7	2.8
30	3.6	4.0	229	75	---	98	176	25	8.4	2.8	1.7	2.7
31	3.2	---	147	70	---	133	---	24	---	2.7	1.7	---
TOTAL	42.1	251.7	2034.3	8761	4357	6652	5447	2104	407.0	151.2	60.9	126.8
MEAN	1.36	8.39	65.6	283	156	215	182	67.9	13.6	4.88	1.96	4.23
MAX	3.6	85	280	817	394	848	321	158	23	8.1	2.6	16
MIN	1.0	1.6	2.3	70	68	79	127	24	8.4	2.7	1.7	1.6
AC-FT	84	499	4040	17380	8640	13190	10800	4170	807	300	121	252
CAL YR 1977 TOTAL	4059.94			MEAN 11.1	MAX 280	MIN .53	AC-FT 8050					
WTR YR 1978 TOTAL	30395.00			MEAN 83.3	MAX 848	MIN 1.0	AC-FT 60290					

11409400 OREGON CREEK BELOW LOG CABIN DAM, NEAR CAMPTONVILLE, CA

LOCATION.--Lat 39°26'22", long 121°03'29", in SW¼SW¼ sec.11, T.18 N., R.8 E., Yuba County, Tahoe National Forest, on right bank 500 ft (152 m) downstream from Log Cabin Dam, 670 ft (204 m) upstream from High Point Ravine, and 1.1 mi (1.8 km) southwest of Camptonville.

DRAINAGE AREA.--29.1 mi² (75.4 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,919.96 ft (585.204 m) National Geodetic Vertical Datum of 1929 (levels by Yuba County Water Agency). Prior to July 24, 1973, at site 470 ft (143 m) downstream at datum 8.40 ft (2.560 m) lower.

REMARKS.--Records good. Camptonville tunnel, maximum capacity, about 830 ft³/s (23.5 m³/s), 520 ft (158 m) upstream, diverts to New Bullards Bar Reservoir (station 11413515); diversion began October 1968. See schematic diagram showing diversions and storage in Yuba River basin.

AVERAGE DISCHARGE.--10 years, 36.6 ft³/s (1.037 m³/s), 26,520 acre-ft/yr (32.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,180 ft³/s (118 m³/s) Jan. 21, 1970, gage height, 7.02 ft (2.140 m) previous site and datum; maximum gage height, 7.51 ft (2.289 m) Jan. 16, 1970; minimum daily discharge, 0.34 ft³/s (0.010 m³/s) Sept. 18, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,300 ft³/s (36.8 m³/s) Jan. 5, gage height, 6.72 ft (2.048 m); minimum daily, 1.9 ft³/s (0.054 m³/s) Oct. 19, 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	4.1	3.1	4.5	5.7	5.5	6.3	8.4	11	10	8.1	6.5	5.0
2	2.6	2.8	4.5	5.4	5.6	8.3	8.4	11	10	7.5	6.5	4.0
3	2.4	2.6	4.4	5.5	5.5	50	7.7	11	11	6.8	6.5	4.0
4	2.2	2.6	4.4	5.8	5.5	321	7.7	11	13	7.0	6.5	4.0
5	2.1	9.8	4.4	583	5.8	657	7.4	11	13	6.8	6.5	6.0
6	2.1	8.5	4.4	267	6.9	348	7.7	11	13	6.1	6.5	9.7
7	2.0	5.5	4.4	7.7	35	51	7.2	10	13	5.9	6.5	8.5
8	2.1	5.0	4.4	6.9	10	7.2	7.2	10	12	6.1	6.5	8.1
9	2.1	3.7	4.4	15	21	6.8	7.2	10	12	6.6	6.5	8.2
10	2.1	3.0	4.4	7.8	6.6	6.4	7.2	10	10	7.0	6.5	7.2
11	2.1	2.9	4.6	7.2	6.0	6.8	7.0	10	8.4	7.0	6.5	7.0
12	2.0	2.8	4.7	6.8	5.8	7.2	7.0	10	8.1	6.9	6.5	6.3
13	2.0	2.8	4.5	6.8	5.7	7.0	7.0	10	8.2	6.8	6.5	5.8
14	2.0	2.8	5.7	116	5.5	6.8	9.7	10	8.1	6.8	6.5	5.2
15	2.0	2.8	8.5	233	5.5	6.5	13	11	6.3	6.7	6.5	4.9
16	2.0	2.8	5.2	594	5.3	6.5	12	10	5.6	6.6	6.5	6.5
17	2.0	2.7	6.1	517	5.1	6.5	12	9.4	5.4	6.6	6.5	7.2
18	2.0	2.7	5.7	105	5.0	6.5	12	9.2	5.6	6.5	6.5	4.9
19	1.9	2.7	4.8	32	4.9	7.2	12	9.0	4.7	6.5	6.5	5.1
20	1.9	2.7	4.4	5.8	4.9	8.4	13	9.3	4.4	6.5	6.5	5.1
21	2.0	8.0	4.4	5.1	4.9	8.6	13	10	5.8	6.5	6.5	5.1
22	2.0	9.9	5.0	4.5	4.9	9.4	12	11	7.2	6.5	6.5	5.1
23	2.1	5.8	7.1	4.2	4.9	8.9	11	12	7.0	6.5	6.5	5.3
24	2.1	5.1	5.6	3.9	4.9	7.9	12	12	7.1	6.5	6.5	5.7
25	2.2	5.1	5.0	3.8	4.9	7.7	14	10	7.0	6.5	6.5	5.5
26	2.2	5.0	4.8	3.7	4.9	7.4	14	9.7	7.0	6.5	6.5	5.5
27	2.3	4.7	5.9	3.6	4.8	7.2	13	9.7	7.7	6.5	6.5	5.7
28	2.3	4.7	6.1	4.6	5.4	7.2	13	9.9	8.4	6.5	6.5	5.7
29	2.8	4.7	7.8	5.7	---	7.2	12	10	8.3	6.5	6.5	5.7
30	4.0	4.6	7.6	5.7	---	7.4	11	11	8.1	6.5	6.0	6.3
31	3.9	---	6.4	5.6	---	7.9	---	10	---	6.5	6.0	---
TOTAL	71.6	131.9	164.1	2583.8	200.7	1618.2	305.8	319.2	255.4	206.3	200.5	178.3
MEAN	2.31	4.40	5.29	83.3	7.17	52.2	10.2	10.3	8.51	6.65	6.47	5.94
MAX	4.1	9.9	8.5	594	35	657	14	12	13	8.1	6.5	9.7
MIN	1.9	2.6	4.4	3.6	4.8	6.3	7.0	9.0	4.4	5.9	6.0	4.0
AC-FT	142	262	325	5120	398	3210	607	633	507	409	398	354
†	14	1730	18640	54610	35830	55240	50910	43550	30500	5410	375	1080
CAL YR 1977 TOTAL	1677.1											
WTR YR 1978 TOTAL	6235.8											
MEAN	4.59											
MAX	11											
MIN	1.9											
AC-FT	3330											
WTR	12370											

† Camptonville tunnel diversion, in acre-feet, to New Bullards Bar Reservoir.

NOTE.--No gage-height record Aug. 1 to Sept. 6.

11409400 OREGON CREEK BELOW LOG CABIN DAM, NEAR CAMPTONVILLE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: August 1971 to current year.

INSTRUMENTATION.--Temperature recorder since Aug. 17, 1971.

REMARKS.--Prior to July 24, 1973, at site 470 ft (143 m) downstream.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 25.0°C July 16-18, 1972, Aug. 8, 1978; minimum recorded, 0.5°C Dec. 11-14, 1972, Feb. 1, 1975.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 25.0°C Aug. 8; minimum recorded, 3.5°C Dec. 20.

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	13.5	11.0	10.0	8.0	7.5	6.5	5.5	6.0	5.0	8.5	7.0
2	15.5	13.0	11.0	10.5	8.0	7.5	7.5	6.5	7.0	6.0	8.5	7.5
3	15.5	13.0	11.5	9.5	7.5	7.0	8.0	7.5	7.0	6.5	8.0	7.0
4	15.5	13.0	11.0	10.0	8.0	7.5	8.0	7.5	7.5	6.5	7.5	7.5
5	15.5	13.0	11.5	9.5	8.5	7.5	7.5	7.0	7.5	7.5	7.5	7.5
6	---	---	10.0	9.5	8.5	8.0	7.5	6.5	7.5	7.0	8.5	7.0
7	---	---	10.0	9.0	8.5	8.0	7.0	6.5	7.5	7.0	9.5	7.5
8	15.5	13.0	9.5	9.0	8.0	7.0	7.5	7.0	7.5	7.0	9.5	8.5
9	15.0	13.0	9.0	8.0	7.0	6.0	7.5	7.5	7.5	7.5	8.5	8.5
10	15.5	13.0	9.0	8.0	6.5	6.0	7.5	6.5	7.5	6.5	8.5	7.5
11	15.5	13.0	9.5	8.5	6.5	6.0	7.5	7.0	7.0	6.0	8.5	7.5
12	15.0	13.0	9.5	8.5	6.0	5.5	7.5	7.0	6.0	5.5	7.5	6.5
13	15.0	13.0	9.5	8.5	7.0	6.0	8.0	7.5	6.0	5.5	7.5	6.0
14	15.0	12.5	9.5	8.0	8.0	7.0	8.0	7.0	6.5	5.5	8.0	6.5
15	14.5	12.5	9.0	8.0	8.5	7.0	7.0	6.0	6.5	6.0	8.5	6.5
16	14.5	12.5	9.0	8.0	7.0	6.5	7.0	6.0	6.5	5.5	9.0	7.5
17	14.5	12.0	9.5	8.0	7.5	6.5	7.5	7.0	6.5	5.5	9.5	8.0
18	14.5	12.5	9.0	7.0	7.0	5.0	7.5	6.5	7.0	6.5	9.5	8.0
19	14.0	12.5	7.0	6.0	5.0	4.0	7.5	7.0	7.5	6.5	10.0	8.5
20	14.0	12.5	7.0	5.5	4.5	3.5	7.0	6.5	7.5	7.0	10.0	8.5
21	14.0	12.0	6.5	4.5	5.5	4.5	7.0	6.5	8.0	7.0	10.0	8.5
22	13.5	12.0	7.0	5.0	7.0	5.5	7.5	7.0	8.0	7.0	9.0	8.0
23	13.5	12.0	7.5	7.0	7.5	7.0	7.5	5.5	8.0	7.5	9.0	8.0
24	14.0	12.5	8.0	7.5	7.5	6.5	5.5	5.0	8.0	7.0	8.5	7.0
25	14.5	12.5	8.5	8.0	6.5	6.0	6.0	5.0	8.0	7.0	9.5	7.5
26	15.0	13.5	8.0	7.5	6.5	6.0	6.0	6.0	8.0	8.0	10.0	9.0
27	13.5	12.5	8.5	8.0	8.0	6.5	6.0	5.5	8.0	7.0	11.0	9.0
28	13.0	12.0	8.0	7.5	8.0	7.5	6.5	6.0	7.0	6.5	11.0	9.0
29	12.5	11.5	8.0	7.5	8.5	8.0	6.5	5.5	---	---	10.5	9.0
30	12.0	11.5	8.0	7.5	8.0	6.5	6.0	5.0	---	---	10.5	9.5
31	11.5	10.5	---	---	6.5	5.5	5.5	5.0	---	---	10.0	8.5
MONTH	15.5	10.5	11.5	4.5	8.5	3.5	8.0	5.0	8.0	5.0	11.0	6.0

11409400 OREGON CREEK BELOW LOG CABIN DAM, NEAR CAMPTONVILLE, 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	8.5	7.5	11.5	7.5	14.5	12.0	18.0	15.5	23.5	22.5	20.0	17.5
2	8.5	7.0	12.5	9.0	15.0	12.0	17.5	15.5	23.5	22.5	20.0	17.5
3	8.5	7.5	12.0	9.5	15.0	12.5	18.0	15.5	23.5	23.0	20.0	17.5
4	8.5	8.0	12.0	9.5	15.5	12.5	18.0	16.0	24.0	23.0	19.0	17.0
5	8.0	7.0	11.5	8.5	15.5	13.0	19.0	16.5	24.5	23.5	18.5	17.5
6	8.0	6.0	11.0	8.0	16.0	13.0	20.0	17.5	24.5	23.5	18.0	17.5
7	8.5	6.0	12.0	8.5	15.5	13.0	20.5	19.0	24.5	23.5	18.0	17.0
8	10.0	6.5	12.5	9.5	15.5	13.0	21.5	19.0	25.0	24.0	17.5	16.5
9	11.0	7.5	12.5	10.5	15.5	13.5	21.5	20.0	24.5	23.5	17.5	16.0
10	11.5	8.5	12.5	10.0	15.5	13.5	21.5	20.0	24.0	23.0	16.0	15.5
11	11.5	9.5	12.5	10.5	16.0	13.5	21.5	19.5	23.5	22.5	16.5	15.0
12	11.0	9.5	12.5	9.5	15.5	14.0	21.0	19.0	23.5	21.5	17.0	16.0
13	10.5	9.0	12.5	10.0	16.0	13.5	21.5	19.5	22.5	21.0	17.0	16.5
14	10.0	8.5	13.0	10.5	16.0	13.5	22.0	20.5	22.0	20.5	17.0	16.5
15	8.5	7.0	13.0	9.0	15.5	13.0	22.0	21.0	22.0	20.0	17.5	16.5
16	7.0	6.0	11.0	8.0	16.0	13.5	22.5	20.5	22.0	20.0	18.5	17.5
17	9.5	6.5	12.0	9.0	16.5	14.0	22.0	20.5	21.0	19.5	18.5	16.5
18	10.5	7.5	13.0	10.0	16.5	14.5	22.5	21.0	21.0	19.0	17.0	15.5
19	10.0	8.5	13.5	11.0	17.0	14.5	22.5	21.5	21.0	19.0	15.5	14.5
20	10.0	8.0	13.0	10.5	17.5	15.5	22.5	21.0	21.0	18.5	15.5	14.5
21	10.0	7.0	13.5	11.0	18.0	15.5	22.5	21.5	20.5	19.0	15.5	14.5
22	10.5	7.0	13.5	10.5	18.0	15.5	23.0	22.0	20.0	18.5	16.0	15.0
23	10.5	8.0	12.0	10.0	18.0	15.5	23.0	22.5	19.5	18.0	17.0	15.5
24	10.5	9.5	10.0	8.5	18.0	16.0	23.5	22.5	19.0	17.5	17.5	16.5
25	10.0	9.0	11.5	9.0	17.5	15.5	23.5	23.0	19.0	17.5	18.0	17.0
26	9.5	8.5	13.0	10.0	17.5	16.0	23.5	23.0	19.0	18.0	18.0	17.0
27	11.5	8.5	14.0	11.0	17.5	15.5	24.0	23.0	19.0	18.0	17.5	16.5
28	10.5	9.0	14.0	12.0	16.0	14.5	24.0	23.0	19.5	18.0	17.5	16.5
29	11.5	8.0	15.5	12.5	17.5	14.5	23.5	22.5	20.0	18.5	17.5	16.5
30	11.0	8.5	15.0	12.0	18.0	15.5	23.0	22.5	20.0	18.5	17.5	16.5
31	---	---	14.0	11.5	---	---	23.0	22.0	20.0	18.0	---	---
MONTH	11.5	6.0	15.5	7.5	18.0	12.0	24.0	15.5	25.0	17.5	20.0	14.5

11413000 NORTH YUBA RIVER BELOW GOODYEARS BAR, CA

LOCATION.--Lat 39°31'30", long 120°56'13", in NE¼SW¼ sec.11, T.19 N., R.9 E., Sierra County, Tahoe National Forest, on right bank 200 ft (61 m) downstream from St. Catherine Creek, 3.1 mi (5.0 km) southwest of Goodyears Bar, and 6.4 mi (10.3 km) southwest of Downieville.
DRAINAGE AREA.--250 mi² (648 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1930 to current year. Prior to October 1949, published as North Fork Yuba River below Goodyears Bar. Monthly and yearly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1041: 1944. WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,453 ft (747.7 m) National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--Records excellent. Several small diversions above station for irrigation and mining. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--48 years, 746 ft³/s (21.13 m³/s), 540,500 acre-ft/yr (666 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft³/s (1,130 m³/s) Feb. 1, 1963, gage height, 25.8 ft (7.25 m) from floodmarks, from rating curve extended above 8,500 ft³/s (241 m³/s) on basis of one float measurement at 17,900 ft³/s (507 m³/s) and slope-area measurements at gage heights 19.15 ft (5.837 m) and 23.8 ft (7.25 m); minimum daily, 60 ft³/s (1.70 m³/s) Sept. 7-14, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,200 ft³/s (90.6 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 15	0630	3580 101	8.14 2.481	Mar. 5	2130	3960 112	8.49 2.588
Jan. 5	1400	4070 115	8.58 2.615	May 14	2300	3620 103	8.18 2.493
Jan. 14	2200	4280 121	8.76 2.670	June 6	2300	3340 94.6	7.91 2.411
Jan. 16	2130	*4570 129	9.00 2.743				

Minimum daily, 67 ft³/s (1.90 m³/s) Oct. 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	83	78	104	764	556	674	2280	1790	2310	900	270	178
2	77	76	100	657	616	1290	1970	1960	2220	852	262	175
3	74	75	98	781	594	1650	1690	2140	2320	800	256	173
4	73	75	98	888	577	2740	1590	2190	2540	749	251	171
5	72	119	107	2700	771	3840	1410	2060	2700	721	245	304
6	70	95	106	1900	1280	3030	1410	1820	2770	705	240	418
7	70	84	102	1240	2050	2190	1270	1820	2810	699	235	254
8	71	82	100	1020	1860	1870	1210	1970	2700	667	236	222
9	71	80	95	2040	2130	1700	1220	2230	2670	648	232	252
10	70	79	93	1790	1580	1510	1320	2400	2470	628	223	498
11	69	79	103	1290	1260	1420	1470	2490	2180	594	218	299
12	68	79	119	1090	1110	1280	1550	2460	2100	559	215	237
13	68	78	104	1110	1020	1140	1560	2590	2050	528	214	218
14	68	78	259	2760	916	1050	1560	2910	2000	508	214	213
15	68	77	1830	3040	894	981	1500	3250	1810	492	212	208
16	68	77	462	3510	812	955	1380	2320	1630	472	208	201
17	68	76	1180	3480	758	1010	1240	2040	1530	448	206	197
18	68	76	717	2240	717	1070	1200	2080	1520	429	205	195
19	68	75	385	1870	693	1090	1220	2220	1420	409	202	193
20	67	72	286	1520	688	1230	1420	2340	1370	392	199	190
21	68	189	254	1250	687	1440	1290	2510	1330	378	196	187
22	68	407	478	1070	691	1570	1220	2630	1280	363	197	185
23	68	163	1410	932	711	1870	1180	2420	1220	349	199	182
24	69	129	636	821	724	1790	1260	1950	1170	334	197	181
25	69	127	425	755	709	1560	2240	1670	1090	323	195	178
26	70	125	354	705	705	1550	2080	1540	1030	318	195	175
27	76	126	1000	663	680	1590	1890	1630	1040	310	193	173
28	79	119	1030	631	656	1670	1990	1940	1190	302	189	171
29	79	110	2090	605	---	1760	1830	2340	1000	294	184	169
30	87	108	1810	588	---	1890	1890	2540	951	285	182	168
31	83	---	1060	569	---	2230	---	2430	---	276	182	---
TOTAL	2227	3213	16995	44279	26445	50640	46340	68680	54421	15732	6652	6565
MEAN	71.8	107	548	1428	944	1634	1545	2215	1814	507	215	219
MAX	87	407	2090	3510	2130	3840	2280	3250	2810	900	270	498
MIN	67	72	93	569	556	674	1180	1540	951	276	182	168
AC-FT	4420	6370	33710	87830	52450	100400	91920	136200	107900	31200	13190	13020
CAL YR 1977 TOTAL		64523		MEAN 177	2090	MIN 60	AC-FT 128000					
WTR YR 1978 TOTAL		342189		MEAN 938	3840	MIN 67	AC-FT 678700					

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL ANALYSES: Water years 1972, 1977-1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	ALKA- LITY (MG/L AS CAC03)
DEC 21...	1100	249	118	8.1	4.0	12.2	56

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

LOCATION.--Lat 39°31'29", long 121°05'26", in NE¼SW¼ sec.9, T.19 N., R.8 E., Yuba County, Tahoe National Forest, on left bank 500 ft (152 m) upstream from Slate Creek, and 2.8 mi (4.5 km) southeast of Strawberry Valley.

DRAINAGE AREA.--351 mi² (909 km²).

PERIOD OF RECORD.--June 1968 to current year.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,953.44 ft (595.409 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several small diversions above station for irrigation and mining. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--10 years, 1,176 ft³/s (33.30 m³/s), 852,000 acre-ft/yr (1.05 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,800 ft³/s (1,010 m³/s) Jan. 22, 1970, gage height, 19.91 ft (6.069 m), recorded; 20.7 ft (6.31 m), from floodmarks; minimum daily, 71 ft³/s (2.01 m³/s) Sept. 7-15, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 29.8 ft (9.08 m) from floodmarks, discharge, 63,400 ft³/s (1,800 m³/s) from slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,500 ft³/s (127 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 15	0700	6740 191	11.27 3.435	Feb. 7	1900	5140 146	10.50 3.200
Dec. 29	2100	5040 143	10.45 3.185	Mar. 5	2130	8160 231	11.87 3.618
Jan. 5	1530	8020 227	11.81 3.600	Apr. 25	Unknown	Unknown	Unknown
Jan. 9	1630	5830 165	10.85 3.307	May 15	Unknown	Unknown	Unknown
Jan. 16	2200	*8470 240	11.99 3.655				

Minimum daily, 82 ft³/s (2.32 m³/s) Oct. 13-26.

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	112	99	144	1350	915	1150	3560	2700	2910	1040	309	201
2	100	95	137	1110	1070	2390	3210	3000	2820	987	301	198
3	94	93	133	1470	1070	3430	2700	3200	2920	936	294	196
4	91	91	130	1680	1010	5260	2580	3250	3080	880	287	190
5	90	162	133	5600	1390	7450	2280	3100	3290	833	279	328
6	88	140	141	3980	2600	5980	2270	2900	3360	800	273	540
7	86	113	135	2400	4080	4090	2060	2850	3450	794	267	314
8	86	106	132	1880	3660	3380	1950	2950	3300	756	269	258
9	86	103	125	4180	4140	3060	1980	3300	3340	731	269	273
10	86	101	118	3610	3010	2700	2150	3500	3020	707	257	650
11	86	100	133	2500	2360	2490	2330	3550	2670	647	248	404
12	84	100	169	2080	2040	2230	2400	3520	2510	624	243	299
13	82	99	142	2040	1890	1980	2370	3800	2430	598	243	262
14	82	98	482	5270	1680	1800	2350	4200	2380	570	243	252
15	82	97	3660	5610	1620	1680	2300	4800	2160	553	240	242
16	82	96	862	6390	1460	1620	2160	3500	1950	528	235	234
17	82	96	2230	6500	1330	1670	1950	2650	1830	502	234	227
18	82	95	1450	4070	1230	1750	1900	2700	1810	481	233	221
19	82	94	710	3490	1190	1770	1920	2900	1700	462	231	220
20	82	91	511	2800	1190	1930	2230	3000	1580	444	225	215
21	82	244	428	2250	1190	2180	2000	3150	1570	428	222	212
22	82	837	749	1920	1210	2400	1890	3300	1500	415	221	212
23	82	283	2860	1650	1250	2860	1820	3150	1430	402	221	210
24	82	203	1250	1440	1280	2870	1950	2700	1360	390	221	207
25	82	188	787	1310	1240	2440	3560	2250	1280	376	219	204
26	82	184	623	1210	1240	2360	3190	2000	1200	369	218	201
27	84	182	1690	1120	1190	2370	2900	2150	1160	359	218	198
28	90	174	1890	1050	1130	2450	3040	2450	1420	347	213	195
29	93	156	3840	1010	---	2550	2800	2800	1160	338	207	193
30	107	148	3260	976	---	2710	2880	3150	1090	327	204	190
31	107	---	1890	940	---	3190	---	3040	---	319	204	---
TOTAL	2718	4668	30944	82886	48665	86190	72680	95510	65680	17943	7548	7746
MEAN	87.7	156	998	2674	1738	2780	2423	3081	2189	579	243	258
MAX	112	837	3840	6500	4140	7450	3560	4800	3450	1040	309	650
MIN	82	91	118	940	915	1150	1820	2000	1090	319	204	190
AC-FT	5390	9260	61380	164400	96530	171000	144200	189400	130300	35590	14970	15360
CAL YR 1977 TOTAL	91532	MEAN	251	MAX	3840	MIN	71	AC-FT	181600			
WTR YR 1978 TOTAL	523178	MEAN	1433	MAX	7450	MIN	82	AC-FT	1038000			

11413250 SLATE CREEK TUNNEL NEAR STRAWBERRY VALLEY, CA

LOCATION.--Lat 39°36'57", long 121°03'03", in SE¼SW¼ sec.2, T.20 N., R.8 E., Plumas County, Plumas National Forest, on right bank 30 ft (9 m) upstream from diversion dam on Slate Creek, 0.3 mi (0.5 km) upstream from Feny Ravine, and 4.5 mi (7.2 km) northeast of town of Strawberry Valley.

PERIOD OF RECORD.--October 1966 to current year. Records of daily discharge for December 1961 to September 1966 are in files of Geological Survey. Monthly diversion used to adjust Slate Creek below diversion dam near Strawberry Valley since February 1962.

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

REMARKS.--Records good. Tunnel diverts water from Slate Creek to Sly Creek Reservoir (station 11395400) for power development. See schematic diagrams of South Fork Feather and Yuba River basins.

AVERAGE DISCHARGE.--12 years, 96.9 ft³/s (2.744 m³/s), 70,200 acre-ft/yr (86.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 863 ft³/s (24.4 m³/s) Apr. 6, 1963; 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	353				0	454	74	12	.28
2			0	308				0	391	70	11	.18
3			0	444				0	416	69	11	.09
4			0	503				0	476	61	10	.08
5			0	772				0	529	58	10	34
6			0	690				0	535	56	8.9	35
7			0	572				0	514	56	7.8	14
8			0	477				0	419	50	7.2	9.2
9			0	611				0	364	47	13	24
10			0	691				0	307	46	8.2	77
11			0	759				0	269	42	6.6	30
12			0	633				0	251	38	5.4	17
13			0	630				0	241	36	5.4	13
14			0	458				0	230	34	5.1	11
15			305	0				375	201	33	4.5	9.6
16			183	0				557	175	31	4.5	8.6
17			553	0				473	165	28	4.2	7.5
18			328	0				465	164	27	3.6	6.9
19			148	0				477	148	25	3.1	6.6
20			97	0				487	139	24	2.6	5.7
21			78	0				524	132	23	2.4	5.7
22			221	0				527	124	22	2.8	5.4
23			553	0				485	116	21	3.1	4.8
24			383	0				402	108	20	2.8	4.5
25			252	0				347	101	19	2.6	3.9
26			197	0				313	94	17	2.6	3.4
27			456	0				316	91	17	2.1	2.8
28			482	0				379	101	15	1.6	2.6
29			564	0	---			504	84	15	.70	2.6
30			479	0	---			604	77	13	.50	2.4
31		---	446	0	---		---	554	---	13	.50	---
TOTAL	0	0	5725	7901	0	0	0	7789	7416	1100	165.80	347.83
MEAN	0	0	185	255	0	0	0	251	247	35.5	5.35	11.6
MAX	0	0	564	772	0	0	0	604	535	74	13	77
MIN	0	0	0	0	0	0	0	0	77	13	.50	.08
AC-FT	0	0	11360	15670	0	0	0	15450	14710	2180	329	690
CAL YR 1977	TOTAL	5725.85	MEAN 15.7	MAX 564	MIN 0	AC-FT 11360						
WTR YR 1978	TOTAL	30444.63	MEAN 83.4	MAX 772	MIN 0	AC-FT 60390						

11413300 SLATE CREEK BELOW DIVERSION DAM, NEAR STRAWBERRY VALLEY, CA

LOCATION.--Lat 39°36'52", long 121°03'04", in SE&SW¼ sec.2, T.20 N., R.8 E., Plumas County, Plumas National Forest, on right bank 300 ft (91 m) downstream from diversion dam, 0.2 mi (0.3 km) upstream from Feney Ravine, and 4.5 mi (7.2 km) northeast of town of Strawberry Valley.

DRAINAGE AREA.--49.4 mi² (127.9 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 3,570 ft (1,088 m), from topographic map.

REMARKS.--Records good. Slate Creek tunnel (station 11413250) diverts at diversion dam, 300 ft (91 m) upstream, up to 900 ft³/s (25.5 m³/s) from Slate Creek Reservoir, capacity, 223 acre-ft (275,000 m³) to Sly Creek Reservoir (station 11395400). Diversion began in February 1962. See schematic diagrams of South Fork Feather and Yuba River basins. Daily records represent flow in Slate Creek below the diversion dam.

AVERAGE DISCHARGE (adjusted for diversion to Slate Creek tunnel).--18 years, 205 ft³/s (5.806 m³/s), 148,500 acre-ft/yr (183 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Creek only, maximum discharge, 13,100 ft³/s (371 m³/s) Dec. 22, 1964, gage height, 16.42 ft (5.005 m), from rating curve extended above 5,500 ft³/s (156 m³/s) on basis of computed flow over dam at gage heights 12.75 ft (3.886 m) and 15.90 ft (4.846 m); minimum, 0.3 ft³/s (0.008 m³/s) Mar. 4, 5, 1962.

Combined flow, maximum discharge, 13,900 ft³/s (394 m³/s) Dec. 22, 1964; minimum daily, 2.3 ft³/s (0.065 m³/s) Nov. 23, 1961.

EXTREMES FOR CURRENT YEAR.--Creek only, maximum discharge, 3,000 ft³/s (85.0 m³/s) Jan. 14, gage height, 9.12 ft (2.780 m); minimum daily, 5.7 ft³/s (0.161 m³/s) Oct. 16-21.

Combined flow, maximum discharge, 3,000 ft³/s (85.0 m³/s) Jan. 14; minimum daily, 5.7 ft³/s (0.161 m³/s) Oct. 16-21.

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	9.8	7.9	12	11	180	260	952	605	9.1	10	10	9.8
2	8.0	7.2	16	11	247	716	778	619	9.1	10	10	9.8
3	7.1	6.9	16	76	251	964	634	627	9.1	10	10	9.8
4	6.8	6.9	16	9.9	236	1780	576	603	9.1	10	10	9.8
5	6.5	26	18	845	520	2460	487	548	9.1	10	10	9.9
6	6.3	18	17	237	956	1690	454	482	9.1	10	10	9.8
7	6.2	13	16	12	1360	1050	388	465	9.1	10	10	9.8
8	6.2	12	15	11	970	851	371	486	9.1	10	10	9.8
9	6.2	10	13	883	1090	799	407	532	9.1	10	10	9.9
10	6.2	9.2	13	429	701	668	471	555	9.1	10	10	9.8
11	6.0	8.8	15	15	517	601	519	554	9.1	10	10	9.8
12	6.0	8.6	17	12	427	513	526	537	9.1	10	10	9.8
13	6.0	8.3	17	36	361	438	501	544	9.1	10	10	9.8
14	6.0	8.0	267	1290	300	388	485	587	9.1	10	10	9.8
15	5.8	7.7	594	1440	271	356	474	409	9.1	10	10	9.8
16	5.7	7.5	11	1510	236	347	419	9.1	9.1	10	10	9.8
17	5.7	7.4	163	1730	211	367	380	9.1	9.1	10	10	9.8
18	5.7	7.3	11	1040	197	384	377	9.1	9.1	10	9.8	9.8
19	5.7	6.7	11	754	197	400	389	9.1	9.1	10	9.8	9.4
20	5.7	6.1	11	586	205	437	472	9.1	9.1	10	9.8	9.4
21	5.7	21	11	469	211	516	418	9.1	9.1	10	9.8	9.4
22	5.9	124	11	396	222	595	390	9.1	9.1	10	9.8	9.4
23	6.0	63	364	332	243	859	367	9.5	9.1	10	9.8	9.4
24	6.0	35	11	283	254	801	416	9.4	9.1	10	9.8	9.4
25	6.0	34	11	251	247	635	988	9.4	9.1	10	9.8	9.4
26	6.0	32	11	228	263	583	854	9.2	9.2	10	9.8	9.4
27	6.3	33	50	210	252	566	700	9.1	9.7	10	9.8	9.4
28	6.4	28	26	196	239	567	664	9.4	9.8	10	9.8	9.4
29	8.7	23	530	185	---	590	600	9.4	9.8	10	9.8	9.4
30	14	16	359	178	---	629	625	9.4	9.8	10	9.8	9.4
31	10	---	49	171	---	826	---	9.2	---	10	9.8	---
TOTAL	208.6	602.5	2702	13836.9	11364	22636	16082	8200.7	275.8	310	307.2	289.4
MEAN	6.73	20.1	87.2	446	406	730	536	268	9.19	10.0	9.91	9.65
MAX	14	124	594	1730	1360	2460	988	627	9.8	10	10	9.9
MIN	5.7	6.1	11	9.9	180	260	367	9.1	9.1	10	9.8	9.4
AC-FT	414	1200	5360	27450	22540	44900	31900	16460	547	615	609	574
MEAN ‡	6.73	20.2	272	701	406	730	536	512	256	45.5	15.3	21.2
AC-FT ‡	414	1200	16720	43120	22540	44900	31900	31510	15260	2800	938	1260
CAL YR 1977 TOTAL	9286.2			25.4	MAX 594	MIN 3.3	AC-FT 18420	MEAN ‡ 41.1	AC-FT ‡ 29780			
WTR YR 1978 TOTAL	76915.1			MEAN 211	MAX 2460	MIN 5.7	AC-FT 152600	MEAN ‡ 294	AC-FT ‡ 212600			

‡ Adjusted for diversions to Slate Creek tunnel.

11413510 NEW COLGATE POWERPLANT NEAR FRENCH CORRAL, CA

LOCATION.--Lat 39°19'51", long 121°11'23", in NE¼SE¼ sec.16, T.17 N., R.7 E., Yuba County, at powerplant on right bank of Yuba River, 0.3 mi (0.5 km) upstream from Dobbins Creek, and 2.3 mi (3.7 km) northwest of French Corral.

PERIOD OF RECORD.--October 1966 to current year. Records of daily discharge for October 1960 to September 1966 are available in files of Geological Survey. Prior to October 1969, published as "Colgate powerplant."

GAGE.--Recorded output from powerplant turbines.

REMARKS.--Water is diverted from North Yuba River at New Bullards Bar Dam (station 11413515). Colgate powerplant was rebuilt during the 1970 water year with an increased capacity. Browns Valley ditch diverted up to 10 ft³/s (0.28 m³/s) at times from the head of the penstock for use in irrigation. This diversion discontinued Oct. 31, 1973. See schematic diagram of Yuba River basin.

COOPERATION.--Records collected by Yuba County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--12 years, 1,222 ft³/s (34.61 m³/s) 885,300 acre-ft/yr (1.09 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,200 ft³/s (119 m³/s) June 2, 1971; no flow for several 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	130	129	392	0	2080	3310	3440	2700	1310	1260	2750	2730
2	302	355	527	0	2420	2730	3410	3480	299	1170	3200	2940
3	559	799	141	0	2630	1240	3440	3480	354	673	3080	3000
4	388	756	28	59	2870	481	3440	3210	157	982	2540	2470
5	227	409	742	291	2420	0	3430	3460	317	828	2680	2210
6	498	119	240	0	943	1370	3440	3490	1190	796	2730	3030
7	494	179	433	0	1290	2260	3430	3480	738	719	2540	2510
8	177	15	146	5.0	568	2450	3440	3490	346	1280	2960	2830
9	74	147	75	0	1490	3700	3450	3440	49	1160	3220	2300
10	482	217	22	27	1800	3420	3430	3490	0	1240	2510	2690
11	518	304	0	0	1490	3400	3450	3310	10	2360	2750	2820
12	141	435	25	20	3160	3400	3440	3500	5.0	2380	3180	2770
13	455	174	137	0	2290	3390	3180	3490	589	2050	2900	2660
14	313	201	65	0	2320	3420	3470	3500	624	2200	2430	3050
15	584	312	0	0	2910	3420	3440	3480	70	2440	2920	2990
16	157	526	0	27	2910	3410	3440	3500	0	2290	2900	2610
17	585	812	0	0	2790	3430	3440	3500	574	2420	3180	2280
18	521	85	0	0	2920	3400	3410	3500	467	2000	2920	2680
19	440	414	2.0	1.0	3350	3410	3390	3460	470	2390	2510	2730
20	272	804	19	0	3310	3420	3410	2800	356	2260	2980	2840
21	295	462	0	672	3350	3410	3450	2950	270	2030	2960	2760
22	585	88	0	255	3040	3410	3440	2970	244	1960	2850	2860
23	41	12	0	1060	2850	3430	3440	2160	335	2620	2900	2710
24	364	0	0	3380	2530	3370	3360	2230	283	2040	2570	2850
25	638	73	0	3360	2360	3420	3040	2200	1450	2340	2690	2650
26	804	83	0	3390	2440	3430	2770	2340	715	2410	2590	2190
27	340	61	0	3360	2630	3400	3110	2380	1060	2480	2930	2500
28	191	105	0	2510	3310	3430	2400	1860	822	1930	2800	2690
29	155	534	0	1150	---	3410	2340	1600	968	1710	2900	2740
30	433	451	0	2980	---	3460	2550	1680	786	2320	2460	3030
31	573	---	0	2580	---	3420	---	1040	---	2270	2680	---
TOTAL	11736	9061	2994.0	25127.0	68471	92651	98320	91170	14858.0	57008	87210	81120
MEAN	379	302	96.6	811	2445	2989	3277	2941	495	1839	2813	2704
MAX	804	812	742	3390	3350	3700	3470	3500	1450	2620	3220	3050
MIN	41	0	0	0	568	0	2340	1040	0	673	2430	2190
AC-FT	23280	17970	5940	49840	135800	183800	195000	180800	29470	113100	173000	160900
CAL YR 1977 TOTAL	89377.00			MEAN 245	MAX 2040	MIN 0	AC-FT 177300					
WTR YR 1978 TOTAL	639726.00			MEAN 1753	MAX 3700	MIN 0	AC-FT 1269000					

11413515 NEW BULLARDS BAR RESERVOIR NEAR NORTH SAN JUAN, CA

LOCATION.--Lat 39°23'34", long 121°08'25", in SE¼NW¼ sec.25, T.18 N., R.7 E., Yuba County, Plumas National Forest, in center of dam on North Yuba River, 2.2 mi (3.5 km) upstream from Middle Yuba River, and 2.4 mi (3.9 km) northwest of North San Juan.

DRAINAGE AREA.--489 mi² (1,267 km²).

PERIOD OF RECORD.--January 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Yuba County Water Agency).

REMARKS.--Reservoir is formed by concrete-arch dam with a concrete-sidehill spillway. Spill controlled by three 30-ft (9.1 m) by 53-ft (16.2-m) radial gates. Storage began in January 1969. Usable capacity, 727,380 acre-ft (897 hm³) between elevations 1,732.0 ft (527.91 m) minimum power pool, and 1,955.0 ft (595.88 m) normal gross pool. Dead storage, 233,920 acre-ft (288 hm³). Total capacity at normal gross pool, 961,300 acre-ft (1.19 km³), elevation, 1,955.0 ft (595.88 m). Water is released to Colgate powerplant through a tunnel at the dam. Water is diverted into the reservoir from Middle Yuba River via Lohman Ridge tunnel to Oregon Creek then via Camptonville tunnel. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Yuba River basin.

COOPERATION.--Records collected by Yuba County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 964,757 acre-ft (1.19 km³) June 30, 1975, elevation, 1,955.72 ft (596.103 m); minimum since reservoir first filled, 228,289 acre-ft (281 hm³) Nov. 20, 1977, elevation, 1,729.03 ft (527.008 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 934,952 acre-ft (1.15 km³) July 7, elevation, 1,949.45 ft (594.192 m); minimum, 228,289 acre-ft (281 hm³) Nov. 20, elevation, 1,729.03 ft (527.008 m).

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

1600	64900	1750	270110
1630	90570	1800	389980
1660	122990	1850	539750
1690	162980	1900	721130
1720	211770	1960	985471

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	258163	238695	232775	319938	545049	577810	700602	749185	810936	931665	862879	713739
2	257632	238153	231823	322070	543721	580986	704598	751260	816506	931993	857810	708277
3	256632	236704	231710	327563	542627	592466	706671	753705	822016	932838	852673	703036
4	255899	235261	231937	329970	540740	611559	708708	756769	828591	933542	848260	699064
5	255492	235069	230685	352166	540244	638341	709689	758201	835113	933871	843863	695842
6	254641	235184	230685	363885	548712	657963	711103	759359	840356	934247	838606	691394
7	253992	235107	230024	369321	561924	668483	711103	760784	847380	934952	835157	687695
8	253729	235319	230061	375598	574269	676065	710946	760661	854442	934153	830327	682936
9	253709	235165	230156	386054	586187	680449	710710	762099	861543	933777	824697	679647
10	252881	234973	230496	399754	592116	683319	710946	764155	869578	933448	820378	676065
11	251895	234667	231064	408021	592116	685390	711614	766709	876311	930492	815690	671888
12	251774	233844	231785	414713	594218	686004	712479	768814	882310	927683	810252	667276
13	250970	233595	231634	419636	596325	686465	713198	770965	886793	924880	805178	662640
14	250368	233404	235453	434626	598084	686004	714212	773037	891244	922082	800887	657327
15	249328	232965	244997	461541	598682	684469	715277	773867	896257	918826	795976	652259
16	249168	232014	250970	481270	597838	683319	715632	779690	901290	915578	791000	647550
17	248072	230439	253588	507520	597591	682170	715198	779482	904962	912569	785333	643633
18	247077	230307	257856	520260	596149	680832	714567	779148	908461	909567	780107	639075
19	246243	229683	259598	536452	594218	679724	714015	778857	911414	906342	776151	634238
20	245866	228289	260935	544053	595411	678884	714882	781359	913766	903400	771587	629577
21	245333	230118	262277	551151	592466	679113	715040	782195	916969	900373	766008	624490
22	244405	231444	264351	557431	590368	680258	714645	784704	919756	897628	761564	619807
23	244385	232204	270954	560300	588972	682936	714015	788898	921617	893795	756238	614778
24	243775	232870	276123	559793	586187	685620	713700	791505	924320	891062	751871	609775
25	242635	233252	279066	557431	585491	686772	721526	792263	924506	887382	747399	604720
26	241168	233920	281011	555008	584797	687734	728288	792685	926047	883757	742895	601859
27	240621	234207	284927	552725	583756	688310	732285	792769	926748	879465	737783	597310
28	240504	234494	291756	550382	580640	689081	737582	794625	928619	876762	732765	592466
29	240328	233786	300725	550382	---	690044	741814	798175	930024	874962	727809	587578
30	239861	233156	308267	548879	---	691587	745775	800293	930961	870922	723670	582128
31	238831	---	316875	546379	---	695261	---	806881	---	867341	718832	---
MAX	258163	238695	316875	560300	598682	695261	745775	806881	930961	934952	862879	713739
MIN	238831	228289	230024	319938	540244	577810	700602	749185	810936	867341	718832	582128
†	1734.55	1731.60	1771.00	1852.00	1862.10	1893.40	1906.15	1920.85	1948.60	1934.70	1899.42	1862.53
‡	-19291	-5675	+83719	+229504	+34261	+114621	+50514	+61106	+124080	-63620	-148509	-136704

CAL YR 1977 † +50545
WTR YR 1978 † +324006

† Elevation, in feet NGVD, at end of month.
‡ Change in contents, in acre-feet.

DRAINAGE AREA. --490 mi² (1,269 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gages. Altitude of gage is 1,280 ft (390 m), from topographic map.

REMARKS.--Records good. Flow regulated by New Bullards Bar Reservoir since 1969 (station 11413515). Colgate powerplant (station 11413510) diverts from New Bullards Bar Dam 1.1 mi (1.8 km) upstream. Water is diverted out of basin through Slate Creek tunnel (station 11413250). See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE (since construction of Bullards Bar Dam, unadjusted).--9 years (water years 1970-78), 169 ft³/s (4.79 m³/s), 122,400 acre-ft/yr (151 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,200 ft³/s (1,590 m³/s) Jan. 22, 1970, gage height, 35.29 ft (10.756 m), from rating curve extended above 40,000 ft³/s (1,130 m³/s) on basis of computation of flow over old Colgate Dam; minimum daily, 0.42 ft³/s (0.012 m³/s) Nov. 5, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 49.8 ft (15.18 m) from floodmarks, discharge, 91,000 ft³/s (2,580 m³/s), from computation of flow over old Colgate Dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25 ft³/s (0.71 m³/s) Dec. 15, gage height, 5.97 ft (1.820 m); minimum daily, 3.0 ft³/s (0.085 m³/s) Oct. 12-19.

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	3.4	3.7	3.6	5.1	7.4	5.7	6.6	5.8	5.3	6.9	6.9	5.7
2	3.4	3.5	3.6	5.0	7.6	8.2	6.4	5.7	5.3	6.9	6.9	5.7
3	3.4	3.5	3.6	5.3	7.4	11	6.0	5.6	5.3	7.1	6.8	5.7
4	3.4	3.5	3.6	5.8	7.6	13	6.2	5.6	5.4	7.1	6.8	5.7
5	3.2	4.3	3.6	14	8.8	13	6.0	5.6	5.6	7.1	6.6	6.1
6	3.3	4.0	3.5	11	9.0	9.6	8.2	5.6	5.6	7.1	6.6	6.0
7	3.1	3.8	3.5	6.7	9.2	8.1	7.5	5.6	5.7	6.9	6.7	5.8
8	3.1	3.8	3.7	6.1	8.8	7.4	6.4	5.6	5.7	6.9	6.7	5.6
9	3.1	3.8	3.7	6.9	8.7	7.3	6.0	5.6	5.7	6.9	6.6	5.9
10	3.1	3.5	3.7	6.5	8.4	6.8	5.7	5.6	5.7	7.1	6.6	6.4
11	3.1	3.4	4.4	6.0	8.0	6.6	5.6	5.6	6.0	7.1	6.6	6.1
12	3.0	3.4	4.6	5.4	7.8	6.2	5.2	5.6	6.0	7.1	6.4	5.9
13	3.0	3.4	4.1	6.5	7.6	6.2	5.1	5.6	6.0	7.2	6.4	5.7
14	3.0	3.2	8.9	9.0	7.6	6.1	5.0	5.4	6.0	7.3	6.4	5.7
15	3.0	3.2	9.5	11	7.7	6.0	5.9	5.4	6.0	7.1	6.4	5.5
16	3.0	3.2	5.4	9.2	7.1	5.9	6.1	5.4	6.1	7.1	6.4	5.1
17	3.0	3.2	6.4	8.7	6.7	5.9	5.7	5.4	6.2	7.1	6.4	5.1
18	3.0	3.2	5.4	8.3	6.5	5.5	5.5	5.4	6.4	7.1	6.1	5.1
19	3.0	3.2	4.7	7.9	6.3	5.4	5.4	5.4	6.5	7.1	5.9	5.1
20	3.4	3.2	4.5	7.8	6.0	5.5	5.5	5.4	6.4	7.1	5.8	5.1
21	3.6	6.8	4.4	7.5	5.9	6.1	5.4	5.4	6.4	7.1	5.7	5.1
22	3.7	7.4	4.8	7.3	5.9	6.3	5.3	5.4	6.4	7.1	5.7	5.1
23	3.7	5.0	5.6	7.2	5.8	6.1	5.3	5.5	6.4	6.9	5.7	5.0
24	3.7	3.6	5.0	7.0	5.7	5.9	5.6	5.6	6.4	6.9	5.7	5.0
25	3.7	3.9	4.7	6.8	5.7	5.8	9.0	5.3	6.6	7.1	5.7	5.0
26	3.5	3.9	4.8	6.8	5.7	5.7	8.4	5.3	6.6	7.0	5.7	4.9
27	3.5	3.9	6.0	6.5	5.7	5.7	7.1	5.3	6.8	7.0	5.8	4.8
28	3.5	3.7	6.3	6.1	5.7	5.6	6.4	5.3	6.9	7.0	5.7	4.8
29	3.6	3.7	6.9	5.8	---	5.4	6.1	5.3	6.9	6.9	5.7	4.8
30	3.7	3.6	6.1	6.3	---	5.4	6.0	5.3	6.9	6.9	5.7	4.8
31	3.7	---	5.4	6.9	---	61.5	---	5.3	---	6.9	5.7	---
TOTAL	102.9	115.5	154.0	226.4	200.3	213.5	184.6	169.9	183.2	218.1	192.8	162.3
MEAN	3.32	3.85	4.97	7.30	7.15	6.89	6.15	5.48	6.11	7.04	6.22	5.41
MAX	3.7	7.4	9.5	14	9.2	13	9.0	5.8	6.9	7.3	6.9	6.4
MIN	3.0	3.2	3.5	5.0	5.7	5.4	5.0	5.3	5.3	6.9	5.7	4.8
AC-FT	204	229	305	449	397	423	366	337	363	433	382	322
CAL YR 1977	TOTAL	1568.9	MEAN 4.30	MAX	9.5	MIN 2.9	AC-FT	3110				
WTR YR 1978	TOTAL	2123.5	MEAN 5.82	MAX	14	MIN 3.0	AC-FT	4210				

11413520 NORTH YUBA RIVER BELOW NEW BULLARDS BAR DAM, NEAR NORTH SAN JUAN, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1966 to September 1969, July 1971 to current year.

INSTRUMENTATION.--Temperature recorder October 1966 to September 1969, and since July 1971.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 25.0°C July 7, 9, 21, 1968; minimum recorded, 2.0°C on many days in 1967 and 1968.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 20.5°C Aug. 8, 9; minimum recorded, 7.0°C on many days during November to February.

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	16.0	13.0	12.5	10.5	9.0	8.0	8.5	8.0	8.0	7.5	10.0	9.0
2	16.0	13.0	12.0	10.0	9.5	8.0	9.0	8.5	9.0	8.0	9.5	9.0
3	16.0	13.0	12.0	10.0	9.0	8.0	9.0	8.5	9.5	8.0	10.0	9.0
4	16.0	13.0	11.0	10.5	9.5	8.0	9.0	8.5	9.0	8.0	9.5	9.5
5	15.5	13.0	11.0	10.0	9.0	8.0	9.0	8.5	8.5	8.5	10.0	9.5
6	15.0	13.0	11.0	9.5	9.0	8.0	9.5	9.0	8.5	8.5	11.0	9.5
7	15.0	12.5	11.0	9.0	9.0	8.5	9.5	8.5	8.5	8.5	11.5	9.5
8	15.0	12.5	11.0	9.0	9.0	7.5	9.5	9.0	9.0	8.0	10.5	10.0
9	15.0	12.5	10.5	8.5	8.5	7.0	9.5	9.5	9.0	8.5	11.0	10.0
10	15.0	12.5	10.0	9.0	8.5	7.0	10.0	9.0	8.5	8.0	12.0	9.5
11	15.0	12.5	10.0	9.0	8.0	7.5	9.5	9.5	9.5	8.0	10.5	9.5
12	15.0	12.5	10.5	9.0	8.5	7.5	9.5	9.0	8.0	8.0	11.5	9.0
13	15.0	12.5	10.5	9.0	8.5	8.0	10.0	9.5	8.0	7.5	10.5	9.0
14	15.0	12.0	10.0	8.5	9.5	8.0	10.0	9.5	9.0	7.0	11.5	8.5
15	14.5	12.5	10.5	8.5	9.5	8.5	9.5	9.5	9.0	7.5	11.5	8.5
16	14.5	12.5	10.5	8.5	8.5	8.0	9.5	9.5	8.0	7.5	12.0	9.0
17	15.0	12.0	9.5	8.5	9.0	8.5	10.0	9.5	8.0	7.0	12.0	9.0
18	14.5	12.0	10.0	8.0	8.5	8.0	10.0	9.5	9.5	7.5	11.0	9.5
19	14.5	12.0	8.5	7.0	8.5	7.5	10.0	9.5	9.5	7.5	12.5	9.5
20	14.0	12.0	8.0	7.0	8.0	7.0	10.0	9.0	10.0	7.5	11.5	9.5
21	13.5	11.5	8.0	7.0	8.0	7.5	10.0	9.0	10.0	7.5	10.5	10.0
22	13.5	11.5	8.5	8.0	8.5	8.0	10.0	9.0	10.5	8.0	11.0	10.0
23	12.5	11.5	9.0	8.0	9.0	8.5	9.5	8.0	10.5	8.0	10.5	10.0
24	14.0	12.0	9.0	8.5	9.0	8.0	9.0	7.5	10.0	8.0	12.5	9.5
25	13.5	12.0	9.5	8.0	8.5	7.5	9.0	7.5	10.0	8.5	12.5	9.5
26	13.5	12.0	9.5	8.5	8.5	8.0	9.0	7.5	9.5	9.0	12.5	10.0
27	13.0	11.5	9.5	8.5	8.5	8.5	9.0	7.5	10.0	8.0	13.5	10.0
28	12.0	11.5	9.5	8.0	9.0	8.5	9.0	7.5	10.5	8.0	13.5	10.0
29	12.0	11.0	9.0	8.0	9.5	9.0	9.0	7.0	---	---	13.5	10.5
30	13.0	11.0	9.5	8.0	9.0	8.5	8.5	7.0	---	---	13.0	11.0
31	12.5	11.0	---	---	9.0	8.0	8.5	7.0	---	---	11.5	11.0
MONTH	16.0	11.0	12.5	7.0	9.5	7.0	10.0	7.0	10.5	7.0	13.5	8.5

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.0	10.0	14.5	10.5	17.5	13.5	17.0	13.5	19.5	15.5	17.5	14.0
2	12.5	10.0	15.0	11.0	17.5	13.5	17.0	13.0	19.5	15.5	17.5	14.5
3	11.0	10.0	15.0	11.0	16.5	14.0	17.0	13.5	19.5	16.0	17.5	14.5
4	12.0	10.0	14.5	11.5	18.0	13.5	17.5	13.5	20.0	16.0	16.5	14.0
5	10.5	9.5	14.5	11.0	18.5	14.0	17.5	13.5	20.0	16.0	15.5	15.0
6	10.0	8.5	15.0	11.0	18.5	14.5	18.0	14.0	20.0	16.5	---	---
7	10.5	8.5	15.0	11.0	18.5	14.5	18.0	14.0	20.0	16.5	---	---
8	12.0	8.5	15.5	11.0	18.5	14.5	18.5	14.0	20.5	16.5	---	---
9	13.0	9.0	16.0	12.0	18.5	15.0	18.5	14.5	20.5	17.0	---	---
10	13.5	9.5	15.5	12.0	18.0	15.0	18.5	14.5	20.0	16.5	---	---
11	13.5	10.0	16.0	12.0	18.5	14.0	18.0	14.5	20.0	16.5	---	---
12	14.0	10.5	16.0	12.0	17.0	14.5	18.0	14.0	19.5	16.0	---	---
13	13.0	10.5	16.5	12.5	18.0	14.0	18.5	14.5	19.0	15.5	---	---
14	11.5	10.5	16.5	12.5	17.5	14.0	18.5	14.5	19.0	15.5	---	---
15	10.5	9.5	14.5	12.5	17.0	13.5	18.5	14.5	19.0	15.0	---	---
16	10.5	9.5	15.5	11.5	17.5	13.5	18.5	14.5	18.5	15.0	---	---
17	12.5	9.5	16.0	12.0	17.5	13.5	18.5	14.5	18.0	14.5	---	---
18	13.0	9.5	16.5	12.0	17.5	13.5	19.0	15.0	18.0	14.5	---	---
19	12.5	9.5	16.5	12.5	17.5	13.0	19.0	15.0	18.0	14.0	---	---
20	12.0	10.0	16.5	12.5	17.5	13.5	19.0	15.0	18.0	14.0	---	---
21	13.0	9.0	16.5	13.0	17.5	13.0	19.0	15.0	17.5	14.5	---	---
22	13.0	9.5	16.5	12.5	17.5	13.5	19.0	15.0	17.0	14.0	---	---
23	12.5	10.0	14.5	12.5	17.0	13.0	19.0	15.5	17.0	13.5	---	---
24	11.5	10.5	15.0	12.0	17.0	13.0	19.5	15.5	17.0	13.5	---	---
25	11.0	10.5	15.5	12.0	17.0	13.0	19.5	15.5	17.0	13.5	---	---
26	11.5	10.5	15.5	12.0	16.5	13.5	19.5	16.5	17.0	13.5	---	---
27	13.0	10.5	16.5	12.0	16.0	13.5	19.5	16.0	17.0	13.5	---	---
28	13.0	10.5	17.0	12.5	16.0	13.5	19.5	16.0	17.5	13.5	---	---
29	14.0	10.5	17.5	13.0	17.0	13.0	19.5	15.5	17.5	14.0	---	---
30	12.0	11.0	17.5	13.0	17.0	13.0	19.5	15.5	17.0	14.0	---	---
31	---	---	17.5	13.0	---	---	19.5	15.5	17.5	14.0	---	---
MONTH	14.0	8.5	17.5	10.5	18.5	13.0	19.5	13.0	20.5	13.5	---	---

11413700 YUBA RIVER BELOW COLGATE POWERHOUSE, NEAR FRENCH CORRAL, CA

LOCATION.--Lat 39°19'38", long 121°11'48", in SE&SW¼ sec.16, T.17 N., R.7 E., Yuba County, on right bank 1,000 ft (300 m) downstream from Dobbins Creek, 0.5 mi (0.8 km) downstream from Colgate powerhouse, and 2.4 mi (3.9 km) northwest of French Corral.

DRAINAGE AREA.--729 mi² (1,888 km²).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1974 to September 1978 (discontinued).

REVISED RECORDS.--WDR CA-77-4: Drainage area.

INSTRUMENTATION.--Temperature recorder since Oct. 9, 1974.

REMARKS.--Stream temperatures are affected by operation of Colgate powerplant. Prior to June 29, thermograph located 1,300 ft (396 m) upstream.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 27.0°C July 25, 1976; minimum recorded, 1.0°C Jan. 9, 1977.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 22.5°C July 24; minimum recorded, 6.5°C on several days during December, February, and March.

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	17.5	10.5	14.0	11.0	11.0	9.0	---	---	7.5	7.5	7.0	7.0
2	15.0	10.5	13.5	11.0	11.0	8.5	---	---	7.5	7.5	10.5	7.0
3	15.0	10.0	11.5	11.0	11.0	8.5	---	---	7.5	7.5	10.5	7.5
4	14.5	10.0	12.0	11.5	10.5	8.0	---	---	7.5	7.0	10.5	8.5
5	17.0	10.0	12.5	11.5	11.0	8.5	10.0	9.0	7.5	7.5	10.0	9.5
6	13.5	10.0	12.0	10.5	10.5	8.5	9.0	8.5	8.5	7.5	9.5	8.0
7	13.5	10.0	11.5	10.0	10.5	9.0	8.5	8.0	9.5	7.5	9.5	7.5
8	16.0	10.0	11.5	9.5	10.5	8.0	9.5	8.5	8.5	7.5	7.5	7.5
9	16.0	10.5	11.5	9.0	10.5	7.0	10.0	9.5	9.0	7.5	7.5	7.0
10	13.0	10.0	11.5	8.5	10.0	6.5	9.0	8.5	8.5	7.0	7.5	7.0
11	13.5	10.0	11.5	9.5	7.0	6.5	9.5	9.0	7.5	7.0	7.5	7.0
12	16.5	10.5	12.0	10.0	10.0	6.5	10.0	9.0	7.5	7.0	7.5	7.0
13	14.5	10.5	12.0	10.0	10.5	7.5	11.0	10.0	7.5	7.0	7.5	7.0
14	13.0	10.5	11.5	10.0	10.5	8.0	10.5	9.5	7.0	7.0	7.5	7.0
15	13.0	10.5	11.5	9.5	10.5	9.0	9.0	8.0	7.5	7.0	7.5	7.0
16	16.5	10.5	11.5	9.5	9.0	8.5	9.0	8.5	7.0	7.0	7.5	6.5
17	12.5	10.5	11.5	9.5	9.5	8.5	9.5	9.0	7.0	7.0	7.5	7.0
18	12.0	10.5	11.5	8.5	---	---	9.0	8.5	7.0	7.0	7.5	7.0
19	14.0	10.5	11.5	7.5	---	---	9.0	9.0	7.0	7.0	7.5	7.0
20	15.5	10.5	11.5	7.0	---	---	9.0	8.0	7.0	7.0	7.5	7.0
21	13.0	10.5	11.5	7.5	---	---	9.0	8.0	7.0	7.0	8.0	6.5
22	12.0	10.5	11.0	7.0	---	---	9.5	8.0	7.0	7.0	8.0	7.5
23	15.0	11.0	11.0	8.5	---	---	8.5	7.5	7.0	6.5	7.5	7.5
24	14.0	11.0	10.5	9.5	---	---	8.0	7.5	7.0	7.0	8.0	7.5
25	14.0	10.5	11.5	9.5	---	---	7.5	7.5	7.0	7.0	7.5	7.5
26	13.0	11.0	11.5	9.5	---	---	7.5	7.5	7.5	7.0	8.0	7.5
27	14.0	11.0	11.0	10.0	---	---	7.5	7.5	7.5	6.5	8.0	7.5
28	14.5	11.0	11.0	9.5	---	---	8.0	7.5	7.0	7.0	8.0	7.5
29	15.0	11.0	11.0	9.0	---	---	7.5	7.5	---	---	8.0	7.5
30	15.5	11.0	11.0	9.5	---	---	7.5	7.5	---	---	8.0	7.0
31	14.5	11.0	---	---	---	---	7.5	7.5	---	---	8.0	7.5
MONTH	17.5	10.0	14.0	7.0	---	---	11.0	7.5	9.5	6.5	10.5	6.5

SACRAMENTO RIVER BASIN

11413700 YUBA RIVER BELOW COLGATE POWERHOUSE, NEAR FRENCH CORRAL, 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	8.0	8.0	9.5	8.0			---	---	11.5	11.0	14.0	13.0
2	8.0	8.0	8.5	8.5			---	---	11.5	11.0	14.5	13.0
3	8.0	7.5	8.5	8.5			---	---	11.5	11.0	14.0	13.5
4	8.0	8.0	14.0	8.5			---	---	13.0	10.5	18.0	12.5
5	8.0	7.5	8.5	8.5			---	---	13.0	10.5	20.0	13.5
6	8.0	8.0	8.5	8.5			---	---	13.5	10.5	14.5	14.0
7	8.0	8.0	8.5	8.5			---	---	12.0	11.0	15.5	14.0
8	8.0	7.5	8.5	8.5			---	---	13.0	11.0	14.5	14.0
9	8.0	8.0	8.5	8.5			---	---	12.0	11.5	14.5	14.0
10	8.0	8.0	8.5	8.5			---	---	13.0	11.0	---	---
11	8.0	8.0	8.5	8.5			---	---	12.0	11.0	---	---
12	8.0	8.0	8.5	8.5			---	---	12.0	11.5	---	---
13	8.0	8.0	8.5	8.5			---	---	13.0	11.0	---	---
14	8.5	7.5	8.5	8.5			11.5	10.5	13.0	11.0	---	---
15	8.0	7.5	8.5	8.5			12.0	10.5	12.0	11.5	---	---
16	8.0	8.0	8.5	8.5			13.0	10.5	12.5	11.5	---	---
17	8.0	8.0	8.5	8.5			12.5	10.5	12.5	11.5	---	---
18	8.5	7.5	8.5	8.5			12.5	10.5	12.5	11.5	---	---
19	8.0	8.0	8.5	8.5			12.0	10.5	12.5	11.5	---	---
20	8.0	8.0	9.5	8.5			12.5	10.5	12.5	11.5	---	---
21	8.0	7.5	10.5	8.5			18.5	10.5	12.5	12.0	---	---
22	8.0	7.5	16.0	8.5			22.0	10.5	13.0	12.0	---	---
23	8.0	8.0	15.0	8.5			12.5	10.5	13.0	12.0	---	---
24	8.5	8.0	14.0	8.5			22.5	11.0	13.5	11.5	---	---
25	10.5	8.5	10.0	9.0			13.0	10.5	13.0	12.0	---	---
26	11.0	8.5	14.0	9.0			11.5	10.5	13.5	12.0	---	---
27	10.0	8.5	15.0	9.0			11.5	10.5	13.5	12.0	---	---
28	13.5	8.5	16.5	10.5			12.0	11.0	13.5	12.0	---	---
29	13.0	8.0	14.0	10.0			13.0	10.5	13.5	12.0	---	---
30	13.5	8.5	11.5	10.0			12.5	10.5	14.5	11.5	---	---
31	---	---	---	---			12.5	10.5	14.0	12.5	---	---
MONTH	13.5	7.5	16.5	8.0			---	---	14.5	10.5	---	---

11414000 SOUTH YUBA RIVER NEAR CISCO, CA

LOCATION.--Lat 39°19'12", long 120°33'38", in SE&SW¼ sec.19, T.17 N., R.13 E., Nevada County, on right bank 0.7 mi (1.1 km) downstream from Rattlesnake Creek, 1.3 mi (2.1 km) west of Cisco Grove, and 1.5 mi (2.4 km) northwest of Cisco.

DRAINAGE AREA.--51.8 mi² (134.2 km²).

PERIOD OF RECORD.--April 1942 to current year. Prior to October 1949, published as South Fork Yuba River near Cisco.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,520 ft (1,682 m), from river-profile map. Prior to October 1945, water-stage recorder at site 200 ft (61 m) upstream at same datum.

REMARKS.--Records excellent. Low flow regulated by several small lakes operated by Pacific Gas and Electric Co.

AVERAGE DISCHARGE.--36 years, 196 ft³/s (5,551 m³/s), 142,000 acre-ft/yr (175 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,400 ft³/s (521 m³/s) Jan. 31, 1963, gage height, 19.6 ft (5.97 m) from floodmarks in gage house, 20.6 ft (6.28 m) from outside floodmarks, from rating curve extended above 4,600 ft³/s (130 m³/s) on basis of slope-area measurement at gage height 15.8 ft (4.81 m); minimum daily, 0.1 ft³/s (0.003 m³/s) Nov. 5-7, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
May 14	2230	*2080 58.9	7.33 2.234	May 29	2100	2010 56.9	7.23 2.204
May 21	2200	1920 54.4	7.11 2.167	June 5	2130	1940 54.9	7.13 2.173

Minimum daily, 1.6 ft³/s (0.045 m³/s) Nov. 14, 15, 19, 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	3.9	2.9	8.0	127	80	136	591	471	1090	304	15	3.6
2	3.6	2.8	7.2	116	73	236	364	750	1060	279	13	3.5
3	3.3	2.9	6.8	127	69	175	279	968	1050	235	12	3.4
4	3.2	3.0	7.0	117	71	282	242	978	1240	203	11	3.5
5	3.1	5.0	9.2	100	109	248	204	814	1370	205	9.6	7.7
6	2.9	4.4	9.8	98	142	183	191	609	1350	208	8.3	15
7	2.5	3.6	9.7	93	122	182	169	729	1340	230	7.8	11
8	2.2	3.5	8.5	105	106	194	162	950	1240	194	7.9	21
9	2.4	3.2	7.6	228	105	179	204	1150	1820	180	7.0	28
10	2.4	3.0	6.7	170	90	159	351	1200	1030	168	5.9	58
11	2.4	2.2	6.7	133	78	158	529	1170	921	146	5.0	42
12	2.2	1.9	7.1	112	71	140	606	1120	973	124	5.0	29
13	2.1	1.7	6.9	133	70	126	614	1280	1010	104	5.9	26
14	1.9	1.6	33	339	64	119	560	1460	981	98	5.5	25
15	1.8	1.6	126	271	64	126	386	1440	755	92	5.5	31
16	1.7	1.7	90	213	61	157	294	707	631	80	5.0	30
17	1.7	1.7	223	180	59	232	232	684	637	66	4.8	30
18	1.9	1.7	109	141	61	263	225	903	656	61	4.7	30
19	2.1	1.6	59	120	68	274	260	1060	577	53	4.5	29
20	2.2	1.6	49	104	85	379	268	1160	579	47	4.9	29
21	1.9	6.8	44	97	105	450	221	1300	565	42	4.8	28
22	2.1	23	52	90	120	403	204	1280	529	38	4.8	29
23	2.5	9.2	132	81	128	438	212	959	505	34	4.9	62
24	2.8	7.9	71	79	138	349	305	530	462	30	4.9	64
25	3.0	8.4	54	77	133	332	864	386	387	28	4.8	63
26	3.0	8.9	57	76	132	438	547	462	335	25	4.5	62
27	4.3	9.2	378	77	121	537	557	835	354	24	4.4	60
28	4.1	8.6	346	79	112	623	657	1160	369	21	4.2	58
29	3.2	8.3	762	79	---	687	518	1360	306	19	4.0	56
30	3.5	8.1	382	82	---	768	591	1320	314	17	3.6	53
31	3.3	---	168	84	---	942	---	1160	---	16	3.6	---
TOTAL	83.2	150.0	3236.2	3928	2637	9915	11407	30355	23836	3371	196.8	990.7
MEAN	2.68	5.00	104	127	94.2	320	380	979	795	109	6.35	33.0
MAX	4.3	23	762	339	142	942	864	1460	1370	304	15	64
MIN	1.7	1.6	6.7	76	59	119	162	386	306	16	3.6	3.4
AC-FT	165	298	6420	7790	5230	19670	22630	60210	47280	6690	390	1970
CAL YR 1977 TOTAL	17840.9			MEAN 48.9	MAX 762	MIN 1.6	AC-FT 35390					
WTR YR 1978 TOTAL	90105.9			MEAN 247	MAX 1460	MIN 1.6	AC-FT 178700					

SACRAMENTO RIVER BASIN

11414090 FORDYCE LAKE NEAR CISCO, CA

LOCATION.--Lat 39°22'43", long 120°29'39", in NE¼SE¼ sec.34, T.18 N., R.12 E., Nevada County, near left abutment of Fordyce Dam on Fordyce Creek, 5.3 mi (8.5 km) northeast of Cisco.

DRAINAGE AREA.--31.7 mi² (82.1 km²).

PERIOD OF RECORD.--October 1977 to September 1978. Periodic elevations only for October 1965 to September 1976 and daily contents for water year 1977 are in the files of the Geological Survey.

GAGE.--Water-stage recorder. Datum of gage is 6,290.5 ft (1,917.34 m) National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.). Prior to November 29, 1976, nonrecording gage on upstream side of dam at same datum.

REMARKS.--Lake is formed by a rockfill dam; storage began in 1926. Capacity, 46,662 acre-ft (57.5 hm³) between gage heights 0.85 ft (0.259 m), bottom of outlet valve and 111.6 ft (34.02 m), top of flashboards in spillway. Released water flows down Fordyce Creek (station 11414100) to Lake Spaulding (station 11414140) for use in a power and irrigation system. See schematic diagram of Yuba River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project. Contents not rounded to Geological Survey standards.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 46,762 acre-ft (57.7 hm³) July 1, 2, gage height, 111.76 ft (34.064 m); minimum, 4,076 acre-ft (5.03 hm³) Sept. 18, gage height, 27.12 ft (8.266 m).

Capacity table (gage height, in feet, and contents, in acre-feet)

25	3563	70	21298
30	4862	80	26863
40	8001	100	39106
50	11836	113	47529
60	16196		

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	4844	4568	4469	6872	5168	6669	11367	20436	35142	46762	29933	12471
2	4840	4552	4463	6950	5232	6218	11705	21217	35736	46762	29080	11783
3	4845	4547	4463	7012	5264	5737	11948	21627	36239	46618	28259	11065
4	4831	4525	4453	7097	5310	5389	12168	21898	37274	46499	27864	10311
5	4826	4541	4448	7272	5418	4989	12332	22050	38410	46499	27802	9732
6	4820	4533	4442	7319	5528	4782	12534	22039	39539	46606	27746	9020
7	4801	4536	4437	7355	5632	4876	12661	22142	40448	46637	27245	8372
8	4793	4528	4447	7376	5704	4994	12754	22486	41531	46581	26449	7429
9	4779	4504	4423	7426	5785	5102	12912	23092	43054	46581	25607	7071
10	4771	4504	4426	7649	5843	5188	13199	23740	44210	46537	25146	6717
11	4762	4488	4455	7800	5897	5296	13583	24353	44694	46285	25146	6394
12	4748	4479	4442	7952	5968	5380	14114	24880	45291	45931	25146	6008
13	4740	4474	4450	8104	6029	5451	14422	25658	45855	45516	25146	5608
14	4729	4463	4458	8178	6067	5528	14905	26656	46074	44941	24920	5272
15	4721	4458	5028	8336	6119	5578	15158	27503	46014	44249	23987	4901
16	4702	4450	5108	8538	6159	5665	15468	27605	45785	43478	23465	4536
17	4699	4439	5275	8738	6197	5821	15626	27712	45829	42708	22649	4171
18	4683	4429	5345	8938	6231	6008	15800	28090	46474	41800	21887	4076
19	4680	4463	5377	9939	6275	6181	15974	28572	46499	41892	21056	4260
20	4661	4410	5401	10232	6322	6425	16205	29252	45982	40271	20150	4421
21	4655	4501	5445	10525	6378	6730	16333	30052	46083	39267	19310	4585
22	4642	4493	5525	10818	6438	7008	16491	30830	46323	38628	17633	4754
23	4639	4493	5572	11111	6501	7279	16625	31199	46536	37812	16871	4907
24	4623	4493	5599	8556	6561	7470	16871	31156	46656	36941	16122	5074
25	4609	4493	5623	7904	6628	7694	17558	30878	46599	36099	15780	5223
26	4609	4485	5668	7252	6698	8033	17983	30733	46530	35232	15708	5363
27	4609	4482	5916	6618	6756	8436	18572	30914	46593	34290	15676	5501
28	4604	4482	6116	6617	6804	8931	19144	31582	46593	33456	15328	5626
29	4598	4482	6495	5380	---	9499	19545	32648	46556	32555	14571	5692
30	4587	4471	6660	5062	---	10047	20033	33620	46668	31692	13866	5861
31	4574	---	6781	5108	---	10798	---	34366	---	30805	13190	---
MAX	4845	4568	6781	11111	6804	10798	20033	34366	46668	46762	29933	12471
MIN	4574	4410	4423	5062	5168	4782	11367	20436	35142	30805	13190	4076
†	28.96	28.58	36.34	30.87	36.41	47.44	67.61	92.58	111.61	86.85	53.18	33.46
‡	-276	-103	+2310	-1673	+1696	+3994	+9235	+14333	+12302	-15863	-17615	-7329

CAL YR 1977 ‡ +1650
WTR YR 1978 ‡ +1011

† Gage height, in feet, at end of month.
‡ Change in contents, in acre-feet.

LOCATION.--Lat 39°22'45", long 120°29'52", in NW¼SE¼ sec.34, T.18 N., R.13 E., Nevada County, Tahoe National Forest, on right bank 850 ft (259 m) downstream from Fordyce Dam, and 5.3 mi (8.5 km) northeast of Cisco.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 953 ft³/s (27.0 m³/s) June 14, gage height, 4.48 ft (1.366 m); minimum daily, 3.8 ft³/s (0.11 m³/s) Dec. 9, 10.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	4.3	4.1	8.8	5.3	140	16	32	413	322	524	386
2	4.7	4.1	4.0	8.8	5.3	289	16	34	415	337	519	380
3	4.6	4.1	4.0	8.8	5.3	288	17	203	419	359	511	373
4	4.5	4.1	4.0	8.9	5.3	285	17	342	425	341	248	367
5	4.4	4.1	4.0	9.7	6.0	283	17	344	431	281	51	360
6	4.3	4.1	4.0	9.7	6.0	139	18	344	442	234	51	354
7	4.3	4.1	4.0	9.7	5.9	5.0	18	345	453	293	286	348
8	4.3	4.1	3.9	9.9	6.0	5.2	18	346	460	314	499	340
9	4.3	4.1	3.8	11	6.0	5.1	19	349	465	294	495	336
10	4.3	4.0	3.8	11	6.0	5.2	20	354	475	280	490	332
11	4.3	4.0	3.9	11	6.0	5.5	21	356	479	384	236	328
12	4.3	4.0	4.0	11	6.0	5.3	21	361	509	400	45	325
13	4.3	4.0	4.1	11	6.0	5.3	22	365	619	418	45	320
14	4.3	4.0	7.6	12	6.0	5.4	22	371	823	554	281	315
15	4.3	4.0	10	12	6.1	5.7	22	376	830	622	476	309
16	4.3	4.0	5.4	12	6.3	6.4	23	378	685	618	470	307
17	4.3	4.0	7.8	12	6.3	6.9	23	378	604	608	464	302
18	4.3	4.0	6.3	12	6.4	6.9	23	380	640	602	458	160
19	4.3	4.0	5.9	12	6.6	7.3	24	382	552	593	453	6.1
20	4.3	4.0	5.8	12	6.8	8.1	24	385	490	587	447	6.0
21	4.3	4.0	5.6	12	7.1	8.6	24	389	450	582	441	6.2
22	4.3	4.3	5.8	12	7.3	9.0	24	393	416	578	434	6.3
23	4.3	4.1	6.2	12	7.6	9.9	25	396	390	570	427	6.6
24	4.3	4.1	6.0	229	7.5	10	26	397	436	564	420	6.9
25	4.3	4.1	6.0	406	7.4	11	28	397	432	560	213	7.1
26	4.3	4.1	6.2	379	7.6	11	28	395	402	556	27	7.3
27	4.4	4.1	9.7	371	7.6	12	29	394	390	549	27	7.5
28	4.3	4.1	7.7	361	7.6	13	29	397	423	547	234	7.6
29	4.3	4.1	12	349	---	14	30	402	341	538	402	7.9
30	4.3	4.1	9.2	221	---	15	31	405	303	538	397	8.2
31	4.3	---	8.8	5.4	---	16	---	411	---	530	392	---
TOTAL	134.8	122.2	183.6	2570.7	179.3	1636.8	675	10801	14612	14553	10463	6025.7
MEAN	4.35	4.07	5.92	82.9	6.40	52.8	22.5	348	487	469	338	201
MAX	4.7	4.3	12	406	7.6	289	31	411	830	622	524	386
MIN	4.3	4.0	3.8	5.4	5.3	5.0	16	32	303	234	27	6.0
AC-FT	267	242	364	5100	356	3250	1340	21420	28980	28870	20750	11950
CAL YR 1977	TOTAL	10804.9	MEAN	29.6	MAX	181	MIN	3.8	AC-FT	21430		
WTR YR 1978	TOTAL	61957.1	MEAN	170	MAX	830	AC-FT	122900				

11414140 LAKE SPAULDING NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°19'35", long 120°38'32", in SE¼NE¼ sec.20, T.17 N., R.12 E., Nevada County, near center (revised) of Spaulding Dam on South Yuba River, 2.5 mi (4.0 km) northeast of Emigrant Gap.

DRAINAGE AREA.--118 mi² (306 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 4,809.6 ft (1,465.97 m) National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.). Prior to July 1968, nonrecording gage at same site and datum.

REMARKS.--Lake is formed by three concrete-arch dams with spillway on the middle arch. Storage began in 1913. Capacity, 74,773 acre-ft (92.20 hm³) between gage heights 0.6 ft (0.18 m), bottom of outlet and 205.0 ft (62.48 m), top of radial gates. Released water flows through Spaulding powerhouses Nos. 1 and 2. Flow through powerhouse No. 1 is transported out of Yuba River basin by Drum Canal to Bear River basin. See schematic diagrams of Yuba River and Bear River basins.

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. Contents not rounded to Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 75,100 acre-ft (92.6 hm³) July 13, 1967, gage height, 205.5 ft (62.64 m); minimum, 914 acre-ft (1.13 hm³) Feb. 28, 1976, gage height, 25.5 ft (7.77 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 74,773 acre-ft (92.2 hm³) June 6-11, 13-25, gage height, 205.0 ft (62.48 m); minimum, 6,951 acre-ft (8.57 hm³) Mar. 1, gage height, 60.3 ft (18.38 m).

Capacity table (gage height, in feet, and contents, in acre-feet)

11	329	50	4578
15	427	70	9632
20	566	100	19541
25	874	150	41545
30	1352	200	71329
40	2742	206	75473

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	56390	47643	37848	35554	25705	6951	18416	12383	70181	74216	68710	48419
2	56510	47367	37601	25582	24486	8201	18344	13439	71532	74286	68644	47864
3	56510	46709	37010	33471	23927	8904	18094	14719	73107	74286	67981	47257
4	56330	46163	37108	32687	22944	10679	18058	16825	74425	74046	67783	46599
5	56330	46109	36668	32913	23414	12162	17140	18452	74699	73868	66536	47588
6	56151	46109	36425	33052	23022	12732	16205	19212	74773	73591	65495	48754
7	55911	45567	36037	32728	22944	12320	15523	20429	74773	73552	64270	50102
8	55554	44974	35267	31902	23139	12257	14486	22171	74773	73552	64142	50839
9	55494	44759	34600	32867	23100	11974	13992	24728	74773	73522	64077	52214
10	54724	44011	34552	32959	21979	11818	13666	27247	74773	72970	63375	53433
11	54606	43428	34552	21104	20878	11755	13862	29663	74773	72625	62930	54547
12	54488	43428	34647	31313	20504	10892	14058	31811	74634	72215	61856	55613
13	54370	43322	34127	30683	20728	10107	14255	34742	74773	71736	60730	56630
14	53491	44011	34033	32913	20766	9899	14486	37749	74773	72146	59491	57596
15	52909	43587	36815	33751	20766	9309	14025	42064	74773	72009	58815	58753
16	52909	42691	36668	35313	20803	8704	13471	43428	74773	71872	58326	59861
17	52735	42325	37453	35410	15965	8732	13342	43481	74773	71600	57656	60232
18	51812	41856	38894	35219	14752	8818	12131	45189	74773	71736	57293	59861
19	51468	41804	38694	34790	13731	8818	11755	47367	74773	70990	56991	59060
20	51239	41856	37699	33892	13020	9544	11291	50158	74773	71804	56510	58815
21	50555	41390	36473	33377	12131	10137	10437	52909	74773	71600	56031	58082
22	50555	41235	35603	31902	11260	10558	9544	55732	74773	71464	55494	57112
23	50555	40362	35554	30952	10377	11352	8761	57233	74773	71532	54960	56450
24	50102	40362	34932	29883	10710	11880	8367	57960	74773	70787	54429	55613
25	49707	40107	33052	29487	9632	11755	10679	58692	74773	70787	53608	54429
26	49313	40107	31720	29312	8818	11818	11291	58448	74355	70719	52677	53374
27	48586	40056	32590	28963	8201	12446	11229	60295	74007	70450	51296	51927
28	48419	39701	32867	28484	7209	13342	12194	62677	74007	70450	50215	50498
29	48308	39297	36717	28013	---	14453	11943	65559	74046	70181	49820	49369
30	48364	38394	37502	27714	---	15086	12288	67651	74046	69778	49313	48419
31	47864	---	36619	26784	---	17632	---	68644	---	69110	48754	---
MAX	56510	47643	38894	35554	25705	17632	18416	68644	74773	74286	68710	60232
MIN	47864	38394	31720	21104	7209	6951	8367	12383	70181	69110	48754	46599
†	161.8	143.8	140.2	118.5	61.3	94.7	78.7	196.0	204.0	196.7	163.4	162.8
‡	-8406	-9470	-1775	-9835	-19575	+10423	-5344	+56356	+5432	-4966	-20356	-335

CAL YR 1977 ‡ +17261

WTR YR 1978 ‡ -7851

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

11414170 DRUM CANAL AT TUNNEL OUTLET, NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°19'03", long 120°39'08", in SE¼SW¼ sec.20, T.17 N., R.12 E., Nevada County, Tahoe National Forest, 100 ft (30 m) downstream from tunnel outlet, 1.0 mi (1.6 km) downstream from Spaulding No. 1 powerhouse, and 1.7 mi (2.7 km) northeast of Emigrant Gap.

PERIOD OF RECORD.--October 1964 to current year. Prior to October 1972, published as "Drum Canal at intake."

GAGE.--Water-stage recorder. Altitude of gage is 4,880 ft (1,487 m), from topographic map. Prior to Oct. 1, 1968, in powerhouse 0.7 mi (1.1 km) upstream at different datum.

REMARKS.--Canal diverts from Spaulding No. 1 powerhouse at Lake Spaulding Dam. Water is used for irrigation and power in the Bear River basin. See schematic diagrams of Yuba River and Bear River basins.

COOPERATION.--Records 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.--14 years, 512 ft³/s (14.50 m³/s), 370,900 acre-ft/yr (457 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 858 ft³/s (24.3 m³/s) July 4, 1978; no flow for several 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	9.1	328	246	793	777	778	815	842	826	849	790	776
2	9.1	272	230	785	772	752	829	833	838	852	796	782
3	138	267	132	781	775	762	844	839	840	855	811	789
4	131	261	10	771	726	682	836	844	843	858	809	783
5	36	7.9	251	372	301	724	832	840	840	856	807	58
6	210	7.7	268	430	765	768	829	845	839	813	802	7.4
7	8.2	270	270	673	682	765	835	846	843	804	800	7.7
8	233	263	269	766	747	768	848	838	844	811	801	7.7
9	10	269	269	685	765	766	846	835	844	814	795	6.2
10	10	259	11	621	773	755	847	843	843	805	802	5.8
11	10	265	11	778	770	768	849	839	844	801	804	5.8
12	11	9.1	269	785	783	775	850	846	836	801	808	5.8
13	11	8.8	385	717	778	776	848	846	842	807	804	6.6
14	245	262	240	273	771	768	844	844	846	793	805	6.4
15	233	278	256	487	771	775	841	843	844	792	809	9.6
16	11	263	255	707	768	773	839	846	844	792	810	11
17	260	174	7.9	740	760	780	841	842	843	794	814	11
18	256	258	6.5	755	770	783	836	845	842	805	815	397
19	260	14	396	770	773	785	826	844	844	785	811	619
20	277	8.0	771	781	773	790	819	840	847	784	809	626
21	290	276	793	775	773	800	808	844	847	767	803	648
22	8.2	364	800	781	776	813	791	840	848	790	804	648
23	8.2	249	542	781	786	828	774	845	848	791	802	649
24	255	8.0	808	776	790	833	757	845	850	790	792	657
25	277	223	805	781	781	837	777	846	851	791	791	653
26	272	8.0	801	795	785	844	812	847	851	792	783	650
27	250	8.0	775	791	785	838	821	848	849	787	778	656
28	122	264	765	783	778	837	836	844	851	790	781	663
29	185	251	545	771	---	842	842	842	848	790	784	658
30	8.2	257	687	785	---	825	847	839	848	791	783	653
31	301	---	780	803	---	815	---	834	---	790	777	---
TOTAL	4345.0	5652.5	12654.4	22092	21054	24405	24819	26114	25323	24940	24780	11456.0
MEAN	140	188	408	713	752	787	827	842	844	805	799	382
MAX	301	364	808	803	790	844	850	848	851	858	815	789
MIN	8.2	7.7	6.5	273	301	682	757	833	826	767	777	5.8
AC-FT	8620	11210	25100	43820	41760	48410	49230	51800	50230	49470	49150	22720
CAL YR 1977 TOTAL	49028.3			MEAN 134	MAX 808	MIN 1.0	AC-FT 97250					
WTR YR 1978 TOTAL	227634.9			MEAN 624	MAX 858	MIN 5.8	AC-FT 451500					

SACRAMENTO RIVER BASIN

11414190 DRUM CANAL ABOVE DRUM FOREBAY, NEAR BLUE CANYON, CA

LOCATION.--Lat 39°15'50", long 120°43'47", in NE¼SW¼ sec.10, T.16 N., R.11 E., Placer County, on right bank 1.2 mi (1.9 km) west of Blue Canyon, and 1.5 mi (2.4 km) upstream from Drum Forebay.

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

GAGE.--Water-stage recorder. Altitude of gage is 4,800 ft (1,463 m), from topographic map.

REMARKS.--Flow represents water diverted from South Yuba River through Spaulding No. 1 powerplant plus diversion from North Fork American River basin by way of Lake Valley Canal (station 11426190). Water from Drum Canal enters the Bear River at Drum Forebay. See schematic diagrams of Yuba River and Bear River basins.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission Project.

AVERAGE DISCHARGE.--14 years, 516 ft³/s (14.61 m³/s), 373,800 acre-ft/yr (461 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 818 ft³/s (23.2 m³/s) Jan. 12, 1978; 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	11	311	260	785	802	795	762	795	795	792	780	786
2	11	263	226	814	808	790	769	795	795	796	771	784
3	157	258	145	811	786	797	790	795	795	786	796	787
4	150	252	8.9	801	786	721	795	795	795	789	791	783
5	44	12	244	407	715	762	795	795	795	787	785	110
6	245	11	260	465	506	795	795	795	796	784	788	5.1
7	11	270	261	703	729	795	795	795	793	795	785	2.5
8	239	268	261	799	774	795	795	795	796	800	785	2.8
9	12	268	260	716	786	795	795	795	795	800	778	5.6
10	11	261	7.9	649	804	795	795	795	795	789	785	5.6
11	11	265	8.7	813	799	795	795	795	793	788	788	5.6
12	11	6.9	259	818	810	795	795	795	790	792	788	4.8
13	11	7.6	263	753	809	795	795	795	791	798	788	4.0
14	242	260	252	311	801	795	795	795	796	790	786	3.9
15	237	273	266	514	799	795	795	795	797	796	793	8.6
16	13	273	258	738	796	795	795	795	796	779	795	17
17	259	224	26	770	790	795	795	795	790	796	786	17
18	259	24	11	784	801	795	795	795	790	801	786	344
19	264	11	351	805	805	795	795	795	793	787	788	618
20	280	5.3	745	812	805	795	795	795	793	784	785	641
21	294	282	764	802	806	795	795	795	789	786	783	657
22	12	309	779	804	801	795	795	795	787	789	785	653
23	12	261	542	804	800	795	795	795	790	788	787	654
24	260	6.6	778	801	804	795	795	795	795	789	779	657
25	283	235	773	807	804	795	795	795	790	788	787	653
26	277	8.0	778	812	804	795	795	795	793	787	788	652
27	253	8.3	771	812	804	795	795	795	798	785	785	660
28	148	265	776	814	801	792	795	795	800	783	785	668
29	200	263	579	804	---	786	795	795	798	783	788	665
30	12	257	757	812	---	766	795	795	796	782	788	662
31	277	---	785	814	---	767	---	795	---	781	788	---
TOTAL	4506	5418.7	12455.5	22954	21935	24466	23786	24645	23815	24470	24370	11516.5
MEAN	145	181	402	740	783	789	793	795	794	789	786	384
MAX	294	311	785	818	810	797	795	795	800	801	796	787
MIN	11	5.3	7.9	311	506	721	762	795	787	779	771	2.5
AC-FT	8940	10750	24710	45530	43510	48530	47180	48880	47240	48540	48340	22840

CAL YR 1977 TOTAL 48124.1 MEAN 132 MAX 785 MIN 2.0 AC-FT 95450
WTR YR 1978 TOTAL 224337.7 MEAN 615 MAX 818 MIN 2.5 AC-FT 445000

11414200 SOUTH YUBA CANAL NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°18'45", long 120°39'45", in SE¼NE¼ sec.30, T.17 N., R.12 E., Nevada County, on left bank of concrete flume 400 ft (122 m) downstream from Bowman Lake Road, and 2.5 mi (4.0 km) northeast of Emigrant Gap.

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

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,640 ft (1,414 m), from topographic map.

REMARKS.--Canal diverts from Spaulding No. 2 powerhouse at Lake Spaulding Dam. Water is diverted to Deer Creek powerhouse where it enters Deer Creek and about 30 ft³/s (0.85 m³/s) to Boardman Canal (station 11421720) via the Bear River. See schematic diagrams of Yuba River and Bear River basins.

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.--14 years, 96.8 ft³/s (2.741 m³/s), 70,130 acre-ft/yr (86.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 165 ft³/s (4.67 m³/s) Aug. 3, 1965; no flow Apr. 20-22, 1966 and Apr. 6-11, 1971.

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	30	26	74	64	65	138	136	132	135	112	131
2	38	29	26	76	61	65	138	136	134	135	114	130
3	36	27	26	83	62	65	28	137	135	133	132	131
4	36	27	26	93	62	58	3.0	140	133	135	133	132
5	35	26	27	65	63	42	29	111	124	137	133	129
6	36	25	27	67	62	48	130	115	137	135	133	128
7	37	27	27	77	61	60	136	116	136	134	132	132
8	37	27	27	85	59	67	134	118	136	133	132	133
9	37	27	27	80	57	67	133	127	136	133	131	130
10	37	26	27	79	58	66	132	134	137	132	134	123
11	35	28	27	92	65	66	132	135	137	132	134	119
12	35	29	27	94	69	67	133	136	137	132	134	123
13	35	27	27	88	81	66	133	136	136	132	134	124
14	36	27	29	69	80	69	133	135	137	130	133	125
15	37	27	28	70	75	68	135	136	137	129	132	125
16	36	26	29	63	70	68	136	110	137	129	132	125
17	36	27	30	43	65	65	135	136	137	130	132	125
18	36	26	27	65	65	63	133	137	137	131	132	113
19	36	27	27	77	65	64	133	137	138	132	134	75
20	37	27	35	95	65	77	132	135	137	132	136	58
21	35	31	40	100	64	105	130	115	137	131	136	57
22	35	28	42	101	64	107	129	137	137	129	136	58
23	35	27	32	102	63	109	128	129	137	130	136	58
24	36	26	36	102	62	109	129	134	137	130	135	60
25	35	26	35	103	62	109	131	133	137	132	134	59
26	35	25	38	103	61	109	132	133	137	135	133	59
27	36	25	32	104	65	109	132	135	137	133	133	59
28	36	27	40	105	68	123	133	136	134	133	132	58
29	35	27	52	105	---	130	133	132	134	133	132	70
30	34	34	67	81	---	132	135	131	136	133	132	76
31	36	---	69	65	---	136	---	132	---	133	132	---
TOTAL	1113	818	1035	2606	1818	2554	3648.0	4050	4073	4103	4090	3025
MEAN	35.9	27.3	33.4	84.1	64.9	82.4	122	131	136	132	132	101
MAX	38	34	69	105	81	136	138	140	138	137	136	133
MIN	34	25	26	43	57	42	3.0	110	124	129	112	57
AC-FT	2210	1620	2050	5170	3610	5070	7240	8030	8080	8140	8110	6000
CAL YR 1977	TOTAL	13783.0	MEAN	37.8	MAX	69	MIN	11	AC-FT	27340		
WTR YR 1978	TOTAL	32933.0	MEAN	90.2	MAX	140	MIN	3.0	AC-FT	65320		

11414250 SOUTH YUBA RIVER AT LANGS CROSSING, NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°19'07", long 120°39'27", in SW¼SW¼ sec.20, T.17 N., R.12 E., Nevada County, on right bank 150 ft (46 m) downstream from road bridge, 0.8 mi (1.3 km) downstream from Spaulding Nos. 1 and 2 powerplants, and 1.6 mi (2.6 km) northeast of Emigrant Gap.

DRAINAGE AREA.--120 mi² (311 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 4,432.44 ft (1,351.008 m) National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.).

REMARKS.--Flow regulation by Lake Spaulding (station 11414140). See schematic diagrams of Yuba River and Bear River basins.

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.--12 years (water years 1967-78), 72.3 ft³/s (2.048 m³/s), 52,380 acre-ft/yr (64.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,700 ft³/s (275 m³/s) Jan. 22, 1970, gage height, 14.45 ft (4.404 m); minimum daily, 2.1 ft³/s (0.060 m³/s) on several days during July and September 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,500 ft³/s (70.8 m³/s) June 6, gage height, 8.74 ft (2.664 m); minimum daily, 2.3 ft³/s (0.065 m³/s) Oct. 2, Dec. 9, 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	2.4	2.7	3.0	18	16	11	31	17	432	9.7	5.1	5.9
2	2.3	2.6	4.6	16	14	11	24	16	253	9.7	4.6	5.4
3	2.4	2.6	6.8	20	19	11	17	22	348	9.8	5.9	6.5
4	2.6	2.6	6.8	25	23	11	16	23	533	9.6	5.1	6.5
5	2.6	4.0	7.0	94	21	11	15	22	1150	9.5	5.0	11
6	2.6	2.9	6.7	54	39	20	17	28	1600	9.3	4.7	8.6
7	2.6	2.8	6.2	31	65	34	17	28	1560	8.0	4.7	7.5
8	2.6	2.8	4.6	30	39	26	20	28	1420	6.3	6.2	6.8
9	2.6	2.7	2.3	83	38	22	20	25	1370	5.9	5.5	8.6
10	2.6	2.7	2.3	44	28	19	19	25	1290	5.6	5.2	9.4
11	2.6	2.6	2.6	31	20	18	16	26	845	5.4	6.0	6.6
12	2.5	2.6	2.9	25	17	16	13	25	1020	5.2	6.3	5.9
13	2.6	2.6	2.7	39	14	14	14	30	1040	5.2	6.2	5.6
14	2.6	2.6	15	103	13	12	41	41	1240	5.0	6.0	5.0
15	2.6	2.6	50	62	13	11	16	46	1130	4.9	5.9	4.7
16	2.6	2.6	12	104	11	11	18	30	695	4.8	5.7	4.7
17	2.6	2.6	57	88	9.5	11	18	31	524	4.8	5.4	4.7
18	2.8	2.6	21	46	10	10	19	34	628	4.8	5.4	6.6
19	4.0	2.6	12	37	12	10	19	36	552	4.8	5.9	6.9
20	3.2	2.6	9.9	27	14	10	26	38	253	4.7	6.2	6.8
21	2.9	21	10	20	15	10	21	44	333	4.8	6.0	6.8
22	2.7	24	40	17	15	13	19	52	202	5.7	6.0	6.6
23	2.7	7.7	82	14	14	27	17	40	174	5.0	5.9	6.5
24	2.6	6.0	24	13	14	20	20	41	136	5.0	5.7	6.5
25	2.7	4.9	15	12	13	15	51	35	117	4.9	5.8	6.5
26	2.6	4.0	14	11	12	14	27	44	62	4.9	6.8	6.3
27	2.8	3.6	39	10	11	12	22	39	59	4.8	6.6	6.3
28	2.7	3.3	29	10	10	11	18	43	39	5.1	6.5	6.2
29	2.7	3.2	70	10	---	12	16	12	10	5.1	6.0	6.3
30	2.7	3.2	48	9.4	---	14	19	83	10	5.0	5.9	6.3
31	2.7	---	25	8.6	---	22	---	750	---	5.1	5.6	---
TOTAL	83.2	135.3	631.4	1112.0	539.5	469	597	1754	19025	188.4	177.8	198.0
MEAN	2.68	4.51	20.4	35.9	19.3	15.1	19.9	56.6	634	6.08	5.74	6.60
MAX	4.0	24	82	104	65	34	51	750	1600	9.8	6.8	11
MIN	2.3	2.6	2.3	8.6	9.5	10	12	12	10	4.7	4.6	4.7
AC-FT	165	268	1250	2210	1070	930	1180	3480	37740	374	353	393
CAL YR 1977 TOTAL	1912.7			MEAN 5.24	MAX 82	MIN 2.1	AC-FT 3790					
WTR YR 1978 TOTAL	24910.6			MEAN 68.2	MAX 1600	MIN 2.3	AC-FT 49410					

11415500 BOWMAN LAKE NEAR GRANITEVILLE, CA

LOCATION.--Lat 39°27'01", long 120°39'10", in SE¼SW¼ sec.5, T.18 N., R.12 E., Nevada County, on right bank near rockfill portion of Bowman Dam on Canyon Creek, 4.5 mi (7.2 km) east of Graniteville, and 8 mi (13 km) south of Sierra City.

DRAINAGE AREA.--27.1 mi² (70.2 km²).

PERIOD OF RECORD.--December 1926 to current year.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Nevada Irrigation District). Prior to Oct. 8, 1964, nonrecording gage at same site and datum.

REMARKS.--Lake is formed by one rockfill and one concrete-arch dam; storage began in November 1926. Total capacity, 68,200 acre-ft (84.1 hm³) between elevations, 5,400 ft (1,645.9 m), bottom of outlet tunnel and 5,563 ft (1,695.6 m), crest of concrete-arch dam. Flashboards are occasionally added, increasing elevation to 5,565.8 ft (1,696.46 m) and capacity to 70,400 acre-ft (86.8 hm³), all of which is available for release. Lake receives water from Middle Yuba River through Milton-Bowman tunnel (station 11408000), and releases it through Bowman-Spaulding Canal (station 11416000) which conveys it to reservoirs of Pacific Gas and Electric Co. Water is eventually used for irrigation by Nevada Irrigation District. See schematic diagram of Yuba River basin. Lake completely drained for inspection and repair Nov. 25 to Dec. 9, 1949, Oct. 1-20, 1966, Oct. 4-29, 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 71,000 acre-ft (87.5 hm³) May 30, 1965, elevation, 5,566.5 ft (1,696.67 m); minimum observed under normal operating conditions since reservoir first filled, 1,000 acre-ft (1.23 hm³) Mar. 4, 1931, elevation, 5,430.1 ft (1,655.09 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 68,400 acre-ft (84.3 hm³) June 28, 29, elevation, 5,563.2 ft (1,695.66 m); minimum, 13,600 acre-ft (16.8 hm³) Nov. 20, elevation, 5,478.6 ft (1,669.88 m).

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

5419.6	0	5460	6900
5425	500	5470	10200
5430	900	5480	14200
5435	1400	5510	30000
5440	2100	5540	49800
5450	4100	5570	73800

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	15700	14600	13900	18200	19000	16000	19800	29800	49900	68000	61000	44100
2	15400	14600	13900	18400	19000	16200	20200	30500	50400	67900	60500	43500
3	15300	14500	13900	18600	19000	16200	20600	31200	51200	67700	60100	43000
4	15300	14400	13900	18800	19000	16600	21000	31900	52400	67500	59600	42400
5	15600	14400	13900	19300	19000	17000	21200	32500	53800	67400	59200	42000
6	15800	14300	13900	19400	19200	17200	21400	32900	55100	67600	58800	41600
7	16100	14300	13900	19200	19200	17200	21400	33500	56200	67600	58300	41600
8	16400	14200	13900	19000	19000	17200	21400	34100	57200	67600	57700	41600
9	16600	14200	13900	19100	19000	17200	21600	34700	58100	67600	57200	41700
10	16700	14100	13900	19200	18800	17000	21600	35300	58800	67500	56700	41800
11	16800	14000	13900	19300	18600	16900	22000	35900	59400	67300	56200	41800
12	16800	14000	14000	19400	18500	16600	22400	36500	60000	67200	55600	41800
13	16800	13900	14000	19500	18300	16400	22800	37200	60600	67000	55100	41800
14	16800	13900	14100	20100	18000	16100	23100	38000	61200	66700	54400	41800
15	16800	13800	14500	20400	17800	15800	23400	39200	61600	66400	53900	41800
16	16800	13800	14600	20800	17600	15600	23700	39700	62000	66000	53300	41800
17	16800	13800	15000	20800	17400	15400	24000	40200	62200	65700	52800	41800
18	16800	13700	15100	20800	17200	15400	24200	40700	62600	65500	52100	41700
19	16600	13700	15100	20800	17000	15300	24500	41300	62800	65200	51500	41600
20	16400	13600	15200	20700	16800	15300	24800	42100	63300	64900	50800	41600
21	16200	13900	15300	20600	16700	15600	25100	43200	64000	64700	50200	41500
22	16000	13900	15400	20500	16600	15800	25300	44500	64800	64400	49700	41500
23	15900	13900	15700	20400	16600	16100	25500	45600	65600	64100	49100	41500
24	15700	13900	15800	20300	16500	16200	25900	46300	66400	63800	48500	41400
25	15600	13900	15900	20000	16400	16400	26800	46400	67200	63500	48000	41800
26	15400	14000	16000	19800	16400	16600	27300	46500	67700	63200	47400	42300
27	15200	14000	16400	19600	16200	16800	27800	46800	68000	62800	46900	42900
28	15100	14000	16800	19400	16200	17000	28300	47300	68400	62400	46300	43400
29	15000	13900	17600	19200	---	17400	28800	48000	68400	62100	45700	43600
30	14800	13900	18000	19000	---	18000	29300	48700	68200	61700	45200	43600
31	14700	---	18200	19000	---	19000	---	49300	---	61300	44600	---
MAX	16800	14600	18200	20800	19200	19000	29300	49300	68400	68000	61000	44100
MIN	14700	13600	13900	18200	16200	15300	19800	29800	49900	61300	44600	41400
†	5481.3	5479.3	5488.5	5490.1	5484.6	5490.2	5508.9	5539.3	5563.0	5554.4	5532.6	5531.1
‡	-1300	-800	+4300	+800	-2800	+2800	+10300	+20000	+18900	-6900	-16700	-1000
CAL YR 1977	† -8600											
WTR YR 1978	‡ +27600											

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

‡ Change in contents, in acre-feet.

11416000 BOWMAN-SPAULDING CANAL INTAKE NEAR GRANITEVILLE, CA

LOCATION.--Lat 39°26'26", long 120°39'30", in NW¼SW¼ sec.8, T.18 N., R.12 E., Nevada County, Tahoe National Forest, on left bank 0.6 mi (1.0 km) downstream from Bowman Dam, 4.5 mi (7.2 km) east of Graniteville, and 8.5 mi (13.7 km) south of Sierra City.

PERIOD OF RECORD.--October 1927 to current year. Prior to October 1970, published as Bowman-Spaulling Canal at intake or Bowman-Spaulling Canal intake, near Sierra City.

REVISED RECORDS.--WSP 1395: 1935-36, 1940.

GAGE.--Water-stage recorder. Datum of gage is 5,390.39 ft (1,642.991 m) National Geodetic Vertical Datum of 1929. Prior to July 1965 at site 0.3 mi (0.5 km) upstream at different datum.

REMARKS.--Records good except those below 5 ft³/s (0.14 m³/s), which are poor. Canal diverts from left bank of Canyon Creek at diversion dam 500 ft (152 m) downstream from Bowman Dam. Water is diverted to Lake Spaulding and after passing through several powerhouses is used for irrigation by Nevada Irrigation District. See diagram of Yuba River basin.

AVERAGE DISCHARGE.--51 years, 156 ft³/s (4.418 m³/s), 113,000 acre-ft/yr (139 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 339 ft³/s (9.60 m³/s) July 24, 1973; 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	145	54	12	44	92	204	2.0	32	123	268	291	283
2	145	35	12	44	92	209	.50	45	126	266	288	278
3	57	40	12	46	92	180	.50	17	126	266	286	274
4	5.7	38	12	47	92	168	.50	.50	127	265	286	272
5	3.7	31	12	49	95	130	84	.50	128	274	284	274
6	1.5	32	12	92	104	129	113	.50	127	273	289	257
7	1.9	32	12	196	147	167	141	.50	128	283	293	252
8	1.5	32	12	196	165	196	142	.50	129	290	291	256
9	1.5	32	12	166	166	195	142	64	130	289	289	265
10	1.5	32	12	123	163	195	142	102	132	288	286	271
11	1.5	32	12	100	162	220	49	87	151	287	284	269
12	3.8	32	12	100	176	240	.50	74	170	286	283	269
13	1.5	32	12	100	184	238	.50	74	172	271	286	270
14	1.5	32	12	100	184	238	.50	75	173	262	288	269
15	1.5	28	13	116	183	237	.50	60	174	260	244	268
16	1.5	26	8.9	156	183	237	13	45	183	258	262	268
17	3.7	22	21	160	182	237	22	76	194	257	286	267
18	54	18	34	159	182	236	24	95	194	255	287	267
19	84	18	25	158	182	211	24	96	125	260	285	268
20	82	17	13	158	181	199	25	96	53	271	283	267
21	81	25	13	158	181	148	24	85	53	276	284	268
22	80	26	14	157	181	158	24	77	54	274	290	268
23	80	12	14	157	176	155	24	79	54	273	288	268
24	80	13	14	158	173	165	25	105	56	273	285	268
25	80	12	14	175	173	181	22	149	56	282	282	66
26	79	13	20	186	173	158	25	165	73	278	288	1.9
27	77	12	25	185	172	149	44	165	29	276	293	1.9
28	79	12	20	185	172	143	44	153	83	274	291	1.9
29	78	12	26	185	---	139	44	146	231	284	289	106
30	78	12	25	184	---	52	33	128	273	294	287	266
31	78	---	36	121	---	7.5	---	116	---	292	285	---
TOTAL	1469.3	764	503.9	4161	4408	5521.5	1290.00	2408.50	3827	8505	8833	6879.7
MEAN	47.4	25.5	16.3	134	157	178	43.0	77.7	128	274	285	229
MAX	145	54	36	196	184	240	142	165	273	294	293	283
MIN	1.5	12	8.9	44	92	7.5	.50	.50	29	255	244	1.9
AC-FT	2910	1520	999	8250	8740	10950	2560	4780	7590	16870	17520	13650
CAL YR 1977	TOTAL	22333.70	MEAN	61.2	MAX	152	MIN	1.5	AC-FT	44300		
WTR YR 1978	TOTAL	48570.90	MEAN	133	MAX	294	MIN	.50	AC-FT	96340		

11416100 BOWMAN-SPAULDING CANAL AT JORDAN CREEK SIPHON VENTURI, NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°20'32", long 120°38'26", in SW¼NW¼ sec.16, T.17 N., R.12 E., Nevada County, at outlet of Jordan Creek siphon 0.6 mi (1.0 km) downstream from Fuller Lake, and 3.5 mi (5.6 km) northeast of Emigrant Gap.

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

GAGE.--Water-stage recorder. Altitude of gage is 5,440 ft (1,658 m), from topographic map.

REMARKS.--Records show water diverted from Bowman Lake (station 11415500) plus numerous small tributaries before it enters Lake Spaulding (station 11414140). See schematic diagram of Yuba 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.--14 years, 219 ft³/s (6.202 m³/s), 158,700 acre-ft/yr (196 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 330 ft³/s (9.35 m³/s) Dec. 22, 1964; 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	147	54	24	91	121	229	270	204	303	300	292	298
2	147	33	23	89	124	212	200	216	303	301	291	299
3	66	35	22	88	126	244	153	231	294	299	292	297
4	0	39	22	91	126	301	144	229	289	295	291	295
5	0	39	22	117	131	318	183	206	297	293	291	301
6	0	39	22	142	180	305	199	193	302	294	291	307
7	0	39	22	189	232	274	226	183	305	294	292	298
8	0	35	22	225	243	290	228	188	302	297	294	292
9	0	34	22	247	239	296	225	225	295	299	296	291
10	0	34	22	180	220	289	237	293	291	299	293	303
11	0	34	22	146	210	290	195	303	275	299	286	303
12	0	36	22	148	207	302	134	296	286	301	298	299
13	0	36	22	144	220	305	142	291	292	305	294	296
14	0	36	22	211	217	302	146	298	291	306	292	297
15	0	32	45	257	215	299	143	312	286	305	293	297
16	0	26	60	258	213	298	141	293	275	304	265	296
17	0	27	53	259	209	303	136	258	273	303	274	295
18	51	27	66	259	208	310	133	273	272	300	290	294
19	87	27	38	227	209	309	132	281	209	298	293	293
20	82	27	18	215	210	301	135	290	126	294	293	291
21	82	56	18	213	212	304	133	300	123	294	292	290
22	82	55	18	207	214	287	127	300	125	294	289	289
23	81	26	19	200	217	311	123	276	125	293	294	287
24	79	26	30	195	214	313	123	286	124	292	294	281
25	79	23	30	203	212	315	241	285	123	291	292	98
26	79	26	28	217	210	311	250	296	120	291	291	0
27	79	21	28	217	210	303	209	302	97	291	290	0
28	79	21	80	216	208	307	203	306	112	291	291	0
29	79	23	215	216	---	310	214	309	247	287	292	127
30	79	24	152	214	---	258	218	311	301	291	292	283
31	79	---	91	175	---	287	---	308	---	293	302	---
TOTAL	1457	990	1300	5856	5557	9083	5343	8342	7063	9194	9020	7597
MEAN	47.0	33.0	41.9	189	198	293	178	269	235	297	291	253
MAX	147	56	215	259	243	318	270	312	305	306	302	307
MIN	0	21	18	88	121	212	123	183	97	287	265	0
AC-FT	2890	1960	2580	11620	11020	18020	10600	16550	14010	18240	17890	15070
CAL YR 1977 TOTAL	24698.30			MEAN 67.7	MAX 215	MIN 0	AC-FT 48990					
WTR YR 1978 TOTAL	70802.00			MEAN 194	MAX 318	MIN 0	AC-FT 140400					

11416500 CANYON CREEK BELOW BOWMAN LAKE, CA

LOCATION.--Lat 39°26'23", long 120°39'39", in NE¼SE¼ sec.7, T.18 N., R.12 E., Nevada County, on left bank 1 mi (2 km) downstream from Bowman Dam, 3 mi (5 km) upstream from Texas Creek, and 9 mi (14 km) south of Sierra City.

DRAINAGE AREA.--28.3 mi² (73.3 km²).

PERIOD OF RECORD.--January 1927 to current year.

REVISED RECORDS.--WSP 1315-A: 1930(M). WSP 1931: Drainage area.

GAGE.--Water-stage recorder and concrete control. Concrete control covered with rocks Jan. 22, 1970. Altitude of gage is 5,100 ft (1,554 m), from topographic map.

REMARKS.--Records good. Flow regulated by French Lake, usable capacity, 13,840 acre-ft (17.1 hm³), Bowman Lake (station 11415500), several smaller reservoirs, and diversion into Bowman-Spaulding Canal (station 11416000). See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--51 years, 36.3 ft³/s (1.028 m³/s), 26,300 acre-ft/yr (32.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,740 ft³/s (106 m³/s) Jan. 22, 1970, gage height, 9.42 ft (2.871 m) in gage well, 10.32 ft (3.146 m) from floodmarks, from rating curve extended above 1,500 ft³/s (42.5 m³/s) on basis of slope-area measurement of maximum flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 44 ft³/s (1.25 m³/s) Dec. 17, gage height, 3.98 ft (1.213 m); no flow Oct. 5-23.

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	.27	.73	.78	2.5	2.0	4.7	6.3	4.7	2.1	2.7	1.8	2.3
2	.22	1.1	.72	2.7	3.4	10	4.3	4.2	2.8	2.6	1.8	2.3
3	.14	1.1	.69	4.6	3.3	5.7	3.5	3.8	3.4	2.5	1.8	2.1
4	.02	1.1	.68	4.8	2.9	11	3.3	3.5	3.4	2.4	1.5	2.1
5	0	1.5	.66	7.5	6.2	11	2.9	2.9	3.4	2.4	1.6	3.4
6	0	1.1	.64	4.3	5.3	7.4	2.9	2.6	3.3	2.4	1.7	2.6
7	0	1.1	.62	3.1	5.6	5.5	2.7	2.5	3.3	2.4	1.7	2.0
8	0	1.1	.59	3.4	4.2	5.8	3.1	2.5	3.3	2.4	1.7	1.8
9	0	1.0	.57	12	5.5	5.6	4.9	2.6	3.3	2.4	1.6	2.5
10	0	1.0	.55	4.8	3.5	4.5	4.9	2.5	3.3	2.4	1.6	3.5
11	0	.79	.61	4.1	2.9	4.5	4.7	2.8	3.3	2.4	1.5	2.4
12	0	.75	.68	3.9	2.8	3.6	4.3	3.7	3.3	2.4	1.5	2.0
13	0	.75	.78	5.5	2.6	3.1	4.0	3.3	3.3	2.3	1.7	1.9
14	0	.75	5.8	16	2.5	3.0	3.9	2.9	3.3	2.3	1.7	2.2
15	0	.75	13	6.5	2.4	3.1	3.8	4.1	3.0	2.3	1.6	3.0
16	0	.75	2.6	8.7	2.3	3.6	3.6	3.3	2.6	2.3	1.6	3.0
17	0	.75	18	7.0	2.2	4.3	5.4	2.8	2.8	2.3	1.7	3.0
18	0	.75	4.0	4.2	2.3	4.2	4.6	2.7	2.2	2.1	1.7	3.0
19	0	.75	2.3	3.2	2.8	4.6	4.0	2.6	2.2	2.1	1.7	3.0
20	0	.75	1.8	2.7	3.1	5.2	4.6	2.5	2.4	1.9	1.7	3.0
21	0	2.2	1.6	2.4	3.2	6.4	3.7	2.5	1.9	1.7	1.7	2.7
22	0	4.0	4.1	2.2	3.3	6.9	3.7	2.4	2.0	1.7	1.7	2.3
23	0	1.3	15	1.9	3.4	9.8	3.7	2.5	2.2	1.8	1.7	2.3
24	.07	1.3	3.8	1.8	3.4	5.7	6.2	2.7	2.2	1.7	1.8	2.2
25	.14	1.6	2.5	1.7	3.2	4.9	11	2.6	2.3	1.8	2.6	1.8
26	.20	1.4	3.0	1.7	3.1	5.2	5.9	2.5	2.4	1.8	2.5	1.5
27	.31	1.4	12	1.7	2.9	5.3	5.2	2.4	11	1.8	2.5	1.5
28	.48	1.2	6.9	1.7	2.9	5.3	4.5	2.4	12	1.8	2.5	1.4
29	.73	1.0	15	1.7	---	5.6	4.0	2.2	2.7	1.8	2.4	1.5
30	.78	.87	6.3	1.8	---	5.9	4.7	2.1	2.8	1.8	2.4	1.8
31	.69	---	3.3	1.7	---	9.1	---	2.1	---	1.8	2.4	---
TOTAL	4.05	34.64	129.57	131.8	93.2	180.5	134.3	88.9	101.5	66.5	57.4	70.1
MEAN	.13	1.15	4.18	4.25	3.33	5.82	4.48	2.87	3.38	2.15	1.85	2.34
MAX	.78	4.0	18	16	6.2	11	11	4.7	12	2.7	2.6	3.5
MIN	0	.73	.55	1.7	2.0	3.0	2.7	2.1	1.9	1.7	1.5	1.4
AC-FT	8.0	69	257	261	185	358	266	176	201	132	114	139

CAL YR 1977 TOTAL 386.94 MEAN 1.06 MAX 18 MIN 0 AC-FT 767
WTR YR 1978 TOTAL 1092.46 MEAN 2.99 MAX 18 MIN 0 AC-FT 2170

LOCATION.--Lat 39°17'32", long 121°06'13", in NW¼SE¼ sec.32, T.17 N., R.8 E., Nevada County, on left bank at Jones Bar, 100 ft (30 m) upstream from Rush Creek, 0.9 mi (1.4 km) downstream from bridge on State Highway 49, and 5 mi (8 km) northwest of Grass Valley.

WATER-DISCHARGE RECORDS

REMARKS.--Records excellent. Flow regulated by Lake Spaulding (station 11414040), Fordyce Lake, capacity, 46,700 acre-ft (57.6 km³), Bowman Lake (station 11415500), and many smaller reservoirs. Diversions into and out of basin for several powerhouses and for irrigation of about 20,000 acres (81 km²) by the Nevada Irrigation District. See schematic diagram of Yuba River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,600 ft³/s (1,520 m³/s) Dec. 22, 1964, gage height, 25.0 ft (7.62 m) from floodmarks, from rating curve extended above 23,000 ft³/s (651 m³/s) on basis of slope-area measurement of maximum flow; minimum, 1.0 ft³/s (0.028 m³/s) Sept. 10-13, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a stage of 30.7 ft (9.36 m) from floodmarks, present datum, at site 100 ft (30 m) upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,240 ft³/s (233 m³/s) Jan. 5, gage height, 12.70 ft (3.871 m); minimum daily, 17 ft³/s (0.48 m³/s) Oct. 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	23	36	393	281	345	917	692	792	107	57	49
2	21	22	34	308	311	1010	813	632	508	105	66	48
3	20	22	34	356	315	1730	638	619	581	104	62	47
4	20	21	33	599	286	2950	707	601	727	104	58	47
5	19	40	32	4700	369	3850	608	569	1290	102	56	80
6	19	42	32	2250	904	2540	824	536	1880	100	54	183
7	18	33	32	1030	2200	1620	726	495	1780	97	52	104
8	18	27	32	659	1760	1260	653	488	1640	94	51	75
9	19	25	30	1860	1910	1110	643	501	1530	90	52	71
10	18	24	30	1370	1210	935	635	504	1490	86	58	138
11	18	23	38	795	916	848	606	499	1070	84	52	123
12	18	23	57	622	899	787	577	484	1180	83	50	86
13	18	23	46	703	1030	668	543	474	1150	83	50	72
14	18	23	106	3180	820	598	528	498	1330	84	52	68
15	18	23	817	3700	767	548	615	637	1330	79	52	65
16	18	23	245	4750	655	514	734	522	882	76	51	64
17	18	23	498	3870	571	503	607	446	682	74	49	63
18	18	23	498	1890	516	500	584	427	756	72	49	60
19	17	23	224	1700	481	482	572	422	713	71	49	60
20	18	22	148	1200	466	478	799	419	389	69	49	62
21	18	62	121	895	447	554	721	405	445	68	49	61
22	19	431	355	728	435	623	640	405	319	67	49	61
23	19	119	1670	606	425	786	593	398	280	67	51	60
24	19	66	487	519	413	808	586	384	233	64	52	59
25	19	52	273	460	392	612	1360	332	202	63	52	58
26	19	49	205	419	377	553	1080	302	182	62	52	57
27	19	44	496	384	362	523	866	298	145	62	53	55
28	20	42	547	356	344	509	786	309	174	60	52	58
29	21	40	1200	334	---	504	722	320	151	60	51	58
30	23	38	1190	315	---	513	688	318	112	59	50	55
31	23	---	581	296	---	646	---	942	---	58	49	---
TOTAL	596	1451	10127	41247	19862	29907	21371	14878	23943	2454	1629	2147
MEAN	19.2	48.4	327	1331	709	965	712	480	798	79.2	52.5	71.6
MAX	26	431	1670	4750	2200	3850	1360	942	1880	107	66	183
MIN	17	21	30	296	281	345	528	298	112	58	49	47
AC-FT	1180	2880	20090	81810	39400	59320	42390	29510	47490	4870	3230	4260
CAL YR 1977	TOTAL	24180	MEAN	66.2	MAX	1670	MIN 13	AC-FT	47960			
WTR YR 1978	TOTAL	169612	MEAN	465	MAX	4750	MIN 17	AC-FT	336400			

11417500 SOUTH YUBA RIVER AT JONES BAR, NEAR GRASS VALLEY, CA--Continued

WATER-QUALITY RECORDS

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

WATER TEMPERATURES: Water years 1965 to current year.

SEDIMENT RECORDS: Water years 1967-74.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: February 1965 to current year.

INSTRUMENTATION.--Temperature recorder since February 1965.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 28.5°C Aug. 7, 8, 1978; minimum recorded, 0.0°C on several days in most years.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 28.5°C Aug. 7, 8; minimum recorded, 3.5°C Nov. 20, 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	17.5	15.0	12.0	10.5	7.5	7.0	6.5	6.0	6.5	5.5	9.5	8.5
2	17.5	14.5	11.0	9.5	7.0	6.5	8.0	6.5	8.0	6.5	9.5	8.5
3	17.0	14.5	11.5	9.5	7.0	6.0	8.5	8.0	8.5	7.5	9.0	8.0
4	17.0	14.5	11.0	10.5	7.5	6.5	8.5	8.5	8.5	7.5	9.0	8.5
5	16.5	14.5	11.0	10.0	7.5	7.0	8.5	7.5	9.0	8.5	9.0	8.5
6	16.0	14.5	10.0	8.5	8.0	7.0	8.5	7.5	8.5	8.0	9.5	8.0
7	15.5	13.0	9.5	8.5	8.0	7.0	8.0	7.0	8.5	7.5	10.5	9.0
8	15.5	13.0	9.0	8.0	7.5	5.5	8.5	7.5	8.5	7.5	10.5	10.0
9	15.5	13.0	8.5	7.0	5.5	4.5	9.5	8.0	8.5	8.0	10.0	9.5
10	15.5	13.0	8.5	7.0	4.5	4.0	8.5	8.0	8.0	7.5	10.0	8.5
11	15.5	13.5	9.0	7.5	5.5	4.5	9.0	8.5	8.0	7.0	9.5	8.5
12	15.0	13.5	9.0	8.0	6.0	5.5	9.0	8.5	7.0	6.5	9.0	8.0
13	15.0	13.5	9.0	8.0	7.0	6.0	9.5	8.5	7.0	6.5	8.5	7.5
14	15.0	13.0	8.5	7.5	9.0	7.0	9.0	8.5	7.5	6.5	9.5	7.5
15	14.5	13.0	8.0	7.0	9.5	8.0	8.5	7.5	7.5	6.5	9.5	7.5
16	14.5	13.0	8.0	7.0	8.0	7.5	8.5	8.0	7.0	6.5	10.5	8.5
17	14.5	12.5	8.5	7.0	8.5	7.5	9.0	8.0	7.0	6.0	11.5	9.5
18	14.5	13.0	8.0	6.5	7.5	6.0	8.5	8.0	8.5	7.0	11.0	10.0
19	14.5	13.0	6.5	4.5	6.0	4.0	9.0	8.5	8.5	7.0	12.0	10.0
20	14.5	13.0	4.5	3.5	4.5	3.5	8.5	7.5	9.0	7.5	12.0	10.5
21	14.0	12.5	7.0	4.5	5.5	4.5	8.0	7.5	9.5	8.0	11.5	10.5
22	13.5	12.0	7.5	6.5	7.5	5.5	9.0	8.0	10.0	8.0	10.5	10.0
23	13.5	12.5	8.5	7.5	8.5	7.5	8.0	6.0	10.0	8.5	10.5	9.0
24	14.5	13.0	9.5	8.5	8.0	7.0	6.0	5.0	9.5	8.5	10.0	8.0
25	15.5	13.5	9.0	8.0	7.5	7.0	6.5	5.0	9.5	8.5	11.0	9.0
26	15.5	14.5	9.0	8.5	7.0	6.5	7.0	6.0	10.0	9.0	11.5	9.5
27	15.5	13.5	9.0	8.5	8.5	7.0	7.0	6.0	9.5	8.5	13.0	10.5
28	13.5	13.0	8.5	7.5	9.0	8.5	7.5	6.0	9.0	7.5	13.0	11.0
29	13.5	12.5	8.0	7.5	9.0	8.5	7.5	6.0	---	---	13.0	11.5
30	13.5	12.5	8.0	7.5	8.5	7.5	7.0	5.5	---	---	13.0	12.0
31	13.0	11.5	---	---	7.5	6.0	6.5	5.5	---	---	12.0	10.0
MONTH	17.5	11.5	12.0	3.5	9.5	3.5	9.5	5.0	10.0	5.5	13.0	7.5

11417500 SOUTH YUBA RIVER AT JONES BAR, NEAR GRASS VALLEY, 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	9.0	12.5	9.0	15.5	14.0	21.5	18.0	26.5	25.0	23.0	19.5
2	10.0	8.0	14.0	11.0	17.0	14.0	21.0	18.0	26.5	23.0	23.0	20.0
3	9.5	9.0	14.5	11.5	16.0	14.5	21.5	18.0	27.0	23.5	22.5	19.5
4	10.0	9.0	14.0	12.0	16.5	14.0	21.5	18.5	27.5	24.0	21.0	19.5
5	9.0	8.5	13.0	11.0	16.5	14.0	22.5	19.0	27.5	24.0	20.5	19.0
6	8.5	6.5	13.0	10.0	16.0	13.5	23.0	19.5	28.0	24.5	20.0	18.5
7	8.5	6.5	13.5	11.0	16.5	13.0	24.0	21.0	28.5	25.0	19.0	17.0
8	10.0	7.5	15.0	12.0	16.0	12.0	24.5	21.0	28.5	25.5	19.0	16.5
9	11.5	9.0	15.5	13.0	16.0	13.0	25.5	22.0	28.0	25.0	17.5	16.0
10	12.5	10.5	15.0	13.0	15.5	12.0	24.5	21.5	27.0	24.0	17.0	15.5
11	13.5	11.5	15.0	13.0	15.5	13.0	24.0	21.0	26.0	23.0	17.5	14.5
12	13.5	11.5	15.0	12.0	15.5	14.0	24.0	22.0	25.0	22.0	18.0	15.0
13	12.5	11.5	15.5	12.5	15.5	13.5	25.5	23.5	25.5	23.5	17.5	15.5
14	11.5	10.0	15.5	13.5	15.5	12.5	26.5	24.0	25.5	22.5	18.0	15.5
15	10.0	8.5	14.5	11.0	15.0	11.5	26.0	23.5	24.5	22.5	19.0	16.0
16	8.5	7.5	12.5	9.5	15.0	13.5	25.5	23.5	24.5	22.5	20.0	17.0
17	10.0	7.0	14.0	10.5	16.0	14.0	25.5	22.5	24.0	21.5	19.0	16.5
18	11.0	8.5	15.5	12.0	16.0	15.0	25.5	21.5	22.5	18.5	16.5	14.5
19	11.5	10.0	16.0	13.0	16.0	14.5	25.5	22.0	22.5	19.0	16.0	13.5
20	11.0	9.0	16.5	13.0	18.5	14.5	26.0	22.0	22.5	19.0	16.0	13.5
21	10.5	7.5	16.5	14.0	18.0	15.0	26.5	24.5	22.0	19.5	15.5	13.5
22	11.0	8.5	16.0	13.5	19.5	15.5	26.5	24.0	21.5	19.0	16.5	14.0
23	11.0	9.5	14.5	12.0	19.5	15.5	26.5	23.0	21.0	18.0	18.0	15.0
24	11.0	10.5	12.5	11.0	19.5	16.0	27.0	23.0	21.0	17.5	19.0	16.5
25	11.0	10.0	13.5	10.5	19.5	15.5	27.0	23.5	21.5	18.0	19.5	17.0
26	10.5	9.5	15.0	11.0	19.0	16.5	27.5	25.0	21.5	18.5	19.0	17.5
27	12.5	10.0	17.0	12.5	18.5	16.5	27.5	24.0	21.5	18.0	18.5	17.0
28	12.0	11.0	18.0	14.5	18.5	16.0	27.0	24.0	22.5	19.0	18.5	16.5
29	12.5	10.0	19.0	15.5	20.0	16.0	26.5	23.0	23.0	20.0	18.5	16.5
30	12.0	10.0	18.5	15.5	21.0	17.5	26.5	25.0	23.0	20.5	19.0	17.0
31	---	---	16.5	14.5	---	---	26.5	24.5	23.0	20.0	---	---
MONTH	13.5	6.5	19.0	9.0	21.0	11.5	27.5	18.0	28.5	17.5	23.0	13.5

11418000 YUBA RIVER BELOW ENGLEBRIGHT DAM, NEAR SMARTVILLE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1972 to current year.

INSTRUMENTATION.--Temperature recorder since October 1972.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 20.0°C Oct. 1, 3, 5, 7, 11, 1974; minimum recorded, 3.0°C Dec. 19, 20, 1973.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 16.5°C June 25, Sept. 28-30; minimum recorded, 8.0°C on several days during February to April.

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

11418500 DEER CREEK NEAR SMARTVILLE, CA

LOCATION.--Lat 39°13'28", long 121°16'03", in SW¼SE¼ sec.23, T.16 N., R.6 E., Nevada County, on left bank 400 ft (122 m) upstream from county road bridge, 0.9 mi (1.4 km) upstream from mouth, and 2 mi (3 km) northeast of Smartville.

DRAINAGE AREA.--84.6 mi² (219.1 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1935 to current year.

REVISED RECORDS.--WSP 1395: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 630 ft (192 m), from river-profile map. June 21, 1935, to Nov. 30, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good. Natural flow of stream is affected by Scotts Flat Reservoir beginning in 1949, usable capacity, 26,300 acre-ft (32.4 hm³), increased to 49,000 acre-ft (60.4 hm³) in July 1964, Deer Creek Reservoir, capacity, 1,400 acre-ft (1.73 hm³), Lake Wildwood, capacity, 3,840 acre-ft (4.73 hm³) beginning in 1970, power developments, and diversion for irrigation. At times water from South Yuba River is diverted to Deer Creek and water from Deer Creek is diverted to Bear River. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--43 years, 128 ft³/s (3.625 m³/s), 92,740 acre-ft/yr (114 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft³/s (329 m³/s) Oct. 13, 1962, gage height, 13.77 ft (4.197 m), from rating curve extended above 5,200 ft³/s (147 m³/s); minimum daily, 0.06 ft³/s (0.002 m³/s) Aug. 5, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1928 reached a stage of 14.5 ft (4.42 m) from floodmarks, discharge, 14,000 ft³/s (396 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,770 ft³/s (107 m³/s) Jan. 5, gage height, 8.60 ft (2.621 m); minimum daily, 0.40 ft³/s (0.011 m³/s) Oct. 13, 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	.98	24	2.6	48	93	61	278	251	14	5.2	4.9	3.1
2	.74	3.0	2.7	39	59	576	275	220	15	4.2	4.2	2.8
3	.53	2.0	3.8	95	48	900	229	198	15	3.5	4.6	3.1
4	.46	26	4.0	301	43	1680	341	178	15	2.9	5.7	3.6
5	.46	5.9	3.6	3100	90	1320	255	168	16	2.5	7.4	5.7
6	.46	2.9	3.6	1240	350	503	749	156	16	2.2	5.6	15
7	.53	21	3.8	243	1060	304	405	140	13	1.5	5.3	18
8	.60	3.0	3.8	147	536	250	272	132	12	1.4	7.8	12
9	.53	23	3.8	677	503	292	231	127	9.1	1.7	3.7	14
10	.53	2.6	3.8	297	252	226	204	118	7.5	4.0	2.9	39
11	.46	1.7	4.8	158	247	189	191	96	6.8	1.5	3.1	18
12	.46	1.6	8.8	106	327	199	178	75	4.8	1.4	3.6	10
13	.40	1.7	5.6	417	538	157	168	73	3.4	1.3	4.1	5.8
14	.40	1.7	82	2230	371	134	156	68	3.6	1.2	3.9	4.5
15	.46	1.6	294	1860	290	120	261	62	4.0	1.5	4.5	4.0
16	.46	1.6	67	2120	211	110	502	60	3.3	3.3	4.9	3.6
17	.46	1.7	120	939	164	102	323	53	4.2	3.6	4.6	3.3
18	.53	1.8	123	380	137	93	247	52	4.5	6.4	6.2	3.0
19	.46	1.8	54	281	122	83	220	47	3.1	7.9	6.7	2.5
20	.46	13	28	340	109	80	245	37	2.5	8.1	6.1	2.6
21	.53	11	21	600	98	137	233	34	2.7	7.7	3.6	2.4
22	.60	82	61	1300	90	230	212	32	2.3	8.5	8.0	2.3
23	.60	6.4	1040	1390	82	243	203	31	2.2	8.0	3.6	2.3
24	.60	4.1	116	744	78	252	198	36	2.0	6.5	3.5	2.2
25	.67	3.8	52	31	72	223	1080	32	2.7	6.6	3.7	2.2
26	.74	3.2	38	246	68	193	794	28	2.4	6.4	3.7	1.9
27	3.3	3.0	208	5.4	66	182	396	24	2.0	6.6	4.0	2.0
28	6.5	2.9	330	55	60	155	312	21	4.1	5.0	3.9	1.9
29	4.6	2.7	517	108	---	148	272	19	5.9	6.1	3.5	2.2
30	1.8	2.7	174	195	---	145	249	17	6.1	5.4	3.4	2.4
31	9.9	---	84	159	---	211	---	15	---	4.8	3.3	---
TOTAL	40.21	263.4	3463.7	19851.4	6164	9498	9679	2600	205.2	136.9	144.0	195.4
MEAN	1.30	8.78	112	640	220	306	323	83.9	6.84	4.42	4.65	6.51
MAX	9.9	82	1040	3100	1060	1680	1080	251	16	8.5	8.0	39
MIN	.40	1.6	2.6	5.4	43	61	156	15	2.0	1.2	2.9	1.9
AC-FT	80	522	6870	39380	12230	18840	19200	5160	407	272	286	388
‡	1807	2723	6789	26388	36760	48475	48475	48402	48112	46818	44656	43861

CAL YR 1977 TOTAL 5491.65 MEAN 15.0 MAX 1040 MIN .06 AC-FT 10890
WTR YR 1978 TOTAL 52241.21 MEAN 143 MAX 3100 MIN .40 AC-FT 103600

‡ Contents, in acre-feet, at end of month for Scotts Flat Reservoir, furnished by Nevada Irrigation District.

11418500 DEER CREEK NEAR SMARTVILLE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1959, 1974 to current year.

CHEMICAL ANALYSES: Water year 1959.

WATER TEMPERATURES: Water years 1974 to current year.

SEDIMENT RECORDS: Water years 1974 to current year.

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, 638 mg/L Jan. 5, 1978; minimum daily mean, 1 mg/L on many days each year.

SEDIMENT DISCHARGE: Maximum daily, 5,860 tons (5,320 metric tons) Jan. 5, 1978; minimum daily, 0 ton (0 metric ton) on many days in 1976-77.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATIONS: Maximum daily mean, 638 mg/L Jan. 5; minimum daily mean, 1 mg/L Oct. 3-5, 24-26.

SEDIMENT DISCHARGE: Maximum daily, 5,860 tons (5,320 metric tons) Jan. 5; minimum daily, 0 ton (0 metric ton) on many days during October.

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	---	12.0	---	---	9.0	11.5	14.0	14.0	---	24.0	---	---
2	---	13.5	---	10.0	10.5	11.0	12.5	---	---	---	30.0	20.0
3	19.0	---	---	10.0	11.0	12.0	13.0	---	---	25.0	---	---
4	---	12.0	---	10.0	10.5	12.5	12.5	---	---	---	30.5	20.0
5	21.0	11.0	11.5	10.0	10.5	12.0	13.0	---	20.0	27.0	---	---
6	---	12.0	11.0	10.5	10.5	12.5	12.0	---	---	27.5	---	---
7	---	13.0	10.0	10.5	10.0	12.5	11.0	---	---	27.0	---	19.5
8	---	12.0	9.5	11.0	10.0	13.0	11.5	---	20.0	---	---	---
9	---	13.0	10.0	11.0	9.5	12.5	13.0	18.0	---	---	---	---
10	20.0	13.5	---	10.0	8.5	13.0	13.0	---	20.0	27.0	29.0	---
11	---	12.5	8.0	11.0	8.5	---	13.0	15.5	---	---	---	28.5
12	---	12.0	11.0	11.0	9.0	10.5	13.0	---	20.0	---	26.0	---
13	---	13.5	13.0	11.5	9.0	12.5	13.0	22.0	---	27.5	---	27.5
14	---	13.0	12.0	11.0	9.0	13.0	14.0	---	23.5	---	---	---
15	20.0	13.0	11.0	10.0	9.0	12.0	13.0	21.0	---	28.0	---	26.0
16	---	12.5	11.0	10.5	9.0	13.0	12.0	---	24.0	---	28.0	---
17	---	12.5	10.0	10.5	9.0	12.0	11.5	22.0	---	---	---	---
18	---	11.0	10.0	10.5	11.0	---	12.0	---	---	---	27.0	---
19	18.0	7.5	8.0	10.5	8.0	12.0	12.0	22.0	---	---	---	---
20	---	7.0	9.0	9.5	10.0	12.0	11.0	---	24.0	---	---	---
21	---	10.0	9.5	8.5	12.0	15.0	12.0	---	---	---	---	---
22	16.5	11.0	11.0	10.0	12.0	15.0	15.0	21.0	---	---	22.5	---
23	---	11.5	10.0	8.0	12.5	14.0	13.5	---	24.0	---	---	---
24	14.0	11.5	10.0	8.0	12.0	13.0	14.5	---	---	29.5	---	---
25	---	11.5	10.0	9.0	12.0	13.5	13.0	20.0	24.0	---	24.0	---
26	18.0	13.0	10.0	8.5	11.5	15.0	14.0	---	---	---	---	---
27	---	12.5	11.5	10.0	11.5	15.0	14.0	20.0	---	---	---	---
28	15.5	12.0	12.0	9.5	12.0	17.0	15.0	---	---	---	---	23.0
29	---	11.5	11.0	9.5	---	15.0	---	20.0	25.0	---	---	---
30	---	11.0	11.5	9.0	---	15.0	---	20.5	---	---	---	---
31	17.0	---	---	9.0	---	15.0	---	20.5	---	30.5	---	---
MONTH	---	12.0	10.5	10.0	10.5	13.0	13.0	---	---	---	---	---

11418500 DEER CREEK NEAR SMARTVILLE, 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	.98	2	.01	24	19	1.8	2.6	4	.03
2	.74	2	0	3.0	11	.09	2.7	4	.03
3	.53	1	0	2.0	7	.04	3.8	5	.05
4	.46	1	0	26	17	1.9	4.0	3	.03
5	.46	1	0	5.9	10	.16	3.6	2	.02
6	.46	3	0	2.9	7	.05	3.6	3	.03
7	.53	3	0	21	14	1.3	3.8	2	.02
8	.60	4	.01	3.0	9	.07	3.8	2	.02
9	.53	4	.01	23	13	1.2	3.8	2	.02
10	.53	4	.01	2.6	5	.04	3.8	2	.02
11	.46	4	0	1.7	4	.02	4.8	7	.09
12	.46	4	0	1.6	4	.02	8.8	6	.14
13	.40	4	0	1.7	3	.01	5.6	3	.05
14	.40	3	0	1.7	3	.01	82	66	75
15	.46	3	0	1.6	3	.01	294	108	142
16	.46	3	0	1.6	3	.01	67	24	4.3
17	.46	3	0	1.7	3	.01	120	28	12
18	.53	3	0	1.8	3	.01	123	14	4.6
19	.46	3	0	1.8	3	.01	54	9	1.3
20	.46	3	0	13	8	.50	28	9	.68
21	.53	4	.01	11	10	.46	21	10	.57
22	.60	4	.01	82	23	5.8	61	14	3.6
23	.60	3	0	6.4	12	.21	1040	73	356
24	.60	1	0	4.1	11	.12	116	10	3.1
25	.67	1	0	3.8	4	.04	52	5	.70
26	.74	1	0	3.2	3	.03	38	5	.51
27	3.3	5	.11	3.0	2	.02	208	19	12
28	6.5	12	.27	2.9	3	.02	330	26	34
29	4.6	9	.13	2.7	3	.02	517	33	57
30	1.8	5	.02	2.7	4	.03	174	8	3.8
31	9.9	13	.59	---	---	---	84	9	2.0
TOTAL	40.21	---	1.18	263.4	---	14.01	3463.7	---	713.71

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	48	10	1.3	93	9	2.3	61	11	1.8
2	39	10	1.1	59	10	1.6	576	56	128
3	95	9	2.3	48	11	1.4	900	25	54
4	301	29	59	43	12	1.4	1680	112	588
5	3100	638	5860	90	21	6.6	1340	72	281
6	866	63	177	350	56	66	503	24	33
7	243	40	26	1060	71	216	304	17	14
8	147	34	13	536	25	41	250	15	10
9	677	66	153	503	32	48	292	29	23
10	297	32	26	252	18	12	226	26	16
11	158	27	12	247	18	12	189	23	12
12	106	30	8.6	302	27	28	199	23	12
13	417	95	469	538	43	64	157	15	6.4
14	2230	270	1970	371	30	33	134	12	4.3
15	1860	96	555	290	21	16	120	12	3.9
16	2120	93	625	211	14	8.0	110	13	3.9
17	939	39	105	164	13	5.8	102	12	3.3
18	494	29	30	137	13	4.8	93	10	2.5
19	281	34	48	122	14	4.6	83	8	1.8
20	340	25	25	109	14	4.1	80	6	1.3
21	600	30	52	98	12	3.2	137	13	4.8
22	1300	35	131	90	14	3.4	230	14	8.7
23	1390	21	89	82	19	4.2	243	12	7.9
24	744	30	78	78	19	4.0	252	11	7.5
25	31	12	1.2	72	14	2.7	223	10	6.0
26	246	25	21	68	11	2.0	193	10	5.2
27	5.4	9	.16	66	10	1.8	182	10	4.9
28	55	17	2.9	60	10	1.6	155	8	3.3
29	108	13	4.0	---	---	---	148	8	3.2
30	195	16	9.8	---	---	---	145	11	4.3
31	159	12	6.0	---	---	---	211	15	8.5
TOTAL	19591.4	---	10561.36	6139	---	599.5	9518	---	1264.5

11418500 DEER CREEK NEAR SMARTVILLE, CA--Continued

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	278	12	9.0	251	11	7.5	14	4	.15
2	275	13	9.7	220	11	6.5	15	4	.16
3	229	13	8.0	198	10	5.3	15	3	.12
4	341	26	25	178	10	4.8	15	3	.12
5	255	12	8.6	168	10	4.5	16	2	.09
6	749	28	67	156	9	3.8	16	2	.09
7	405	14	15	140	9	3.4	13	3	.11
8	272	14	10	132	9	3.2	12	4	.13
9	231	11	6.9	127	8	2.7	9.1	3	.07
10	204	12	6.6	118	8	2.5	7.5	2	.04
11	191	10	5.2	96	8	2.7	6.8	3	.06
12	178	9	4.3	75	10	2.0	4.8	4	.05
13	168	8	3.6	73	11	2.2	3.4	5	.05
14	156	9	3.8	68	9	1.7	3.6	6	.06
15	261	20	21	62	5	.84	4.0	6	.06
16	502	21	30	60	4	.65	3.3	6	.05
17	323	11	9.6	53	3	.43	4.2	6	.07
18	247	10	6.7	52	7	.98	4.5	5	.06
19	220	9	5.3	47	7	.89	3.1	3	.03
20	245	9	6.0	37	7	.70	2.5	3	.02
21	233	8	5.0	34	6	.55	2.7	2	.01
22	212	8	4.6	32	6	.52	2.3	2	.01
23	203	7	3.8	31	6	.50	2.2	2	.01
24	198	7	3.7	36	6	.58	2.0	3	.02
25	1080	43	147	32	6	.52	2.7	4	.03
26	794	22	55	28	5	.38	2.4	4	.03
27	396	14	15	24	3	.19	2.0	4	.02
28	312	11	9.3	21	3	.17	4.1	5	.06
29	272	10	7.3	19	4	.21	5.9	9	.14
30	249	11	7.4	17	4	.18	6.1	7	.12
31	---	---	---	15	5	.20	---	---	---
TOTAL	9679	---	519.4	2600	---	61.29	205.2	---	2.04

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	5.2	5	.07	4.9	3	.04	3.1	3	.03
2	4.2	4	.05	4.2	2	.02	2.8	2	.02
3	3.5	4	.04	4.6	2	.02	3.1	2	.02
4	2.9	3	.02	5.7	4	.06	3.6	2	.02
5	2.5	3	.02	7.4	5	.10	5.7	3	.05
6	2.2	3	.02	5.6	6	.09	15	6	.24
7	1.5	3	.01	5.3	7	.10	18	4	.19
8	1.4	3	.01	7.8	6	.13	12	5	.16
9	1.7	3	.01	3.7	6	.06	14	7	.26
10	4.0	8	.12	2.9	5	.04	39	12	1.3
11	1.5	6	.02	3.1	6	.05	18	8	.39
12	1.4	5	.02	3.6	8	.08	10	6	.16
13	1.3	5	.02	4.1	8	.09	5.8	5	.08
14	1.2	4	.01	3.9	8	.08	4.5	4	.05
15	1.5	3	.01	4.5	8	.10	4.8	3	.03
16	3.3	4	.04	4.9	8	.11	3.6	3	.03
17	3.6	4	.04	4.6	6	.07	3.3	3	.03
18	6.4	5	.09	6.2	4	.07	3.0	3	.02
19	7.9	7	.15	6.7	3	.05	2.5	3	.02
20	8.1	6	.13	6.1	3	.05	2.6	3	.02
21	7.7	7	.15	3.6	3	.03	2.4	3	.02
22	8.5	7	.16	8.0	5	.11	2.3	2	.01
23	8.0	7	.15	3.6	3	.03	2.3	2	.01
24	6.5	6	.11	3.5	3	.03	2.2	2	.01
25	6.6	4	.07	3.7	3	.03	2.2	2	.01
26	6.4	3	.05	3.7	3	.03	1.9	2	.01
27	6.6	4	.07	4.0	3	.03	2.0	2	.01
28	5.0	2	.03	3.9	2	.02	1.9	2	.01
29	6.1	4	.07	3.5	2	.02	2.2	2	.01
30	5.4	3	.04	3.4	3	.03	2.4	2	.01
31	4.8	2	.03	3.3	5	.04	---	---	---
TOTAL	136.9	---	1.83	144.0	---	1.81	195.4	---	3.23

YEAR 51976.21

13743.86

SACRAMENTO RIVER BASIN

11418500 DEER CREEK NEAR SMARTVILLE, 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
DEC								
14...	2145	11.0	427	348	401	55	68	81
28...	1820	12.0	676	86	157	--	--	--
JAN								
04...	2345	10.0	1320	123	438	--	--	--
05...	1610	11.0	4860	833	10900	14	17	22
14...	2205	10.0	3620	393	3840	--	--	--
FEB								
12...	1835	9.0	4270	48	553	--	--	--
MAR								
02...	2250	11.0	1200	45	146	--	--	--
04...	1415	12.5	1990	108	580	--	--	--
09...	2025	12.5	278	29	22	--	--	--
10...	1835	13.0	205	96	53	--	--	--

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
DEC								
14...	91	96	99	99	100	--	--	--
28...	--	--	95	98	100	--	--	--
JAN								
04...	--	--	84	91	97	98	100	--
05...	27	33	39	49	68	89	99	100
14...	--	--	52	65	80	95	100	--
FEB								
12...	--	--	64	69	75	80	100	--
MAR								
02...	--	--	78	84	94	100	--	--
04...	--	--	63	73	84	93	100	--
09...	--	--	59	78	100	--	--	--
10...	--	--	29	46	88	100	--	--

11420700 DRY CREEK NEAR BROWNS VALLEY, CA

LOCATION.--Lat 39°15'23", long 121°20'34", in NE¼SW¼ sec.7, T.16 N., R.6 E., Yuba County, on left bank 500 ft (150 m) upstream from diversion dam, and 3.6 mi (5.8 km) east of Browns Valley.

DRAINAGE AREA.--87.1 mi² (225.6 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 265 ft (80.8 m), from topographic map.

REMARKS.--Records good except those for the summer months, which are fair. Flow regulated by Lake Mildred, capacity, 1,500 acre-ft (1.85 hm³) and Merle Collins Reservoir since 1963, capacity, 57,000 acre-ft (70.3 hm³), 6.5 mi (10.5 km) upstream. Some diversion above station for irrigation. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE (unadjusted).--14 years, 76.9 ft³/s (2.178 m³/s), 55,710 acre-ft/yr (68.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,950 ft³/s (169 m³/s) Jan. 21, 1969, gage height, 10.38 ft (3.164 m); minimum daily, 0.84 ft³/s (0.024 m³/s) Oct. 25, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,330 ft³/s (94.3 m³/s) Mar. 4, gage height, 8.57 ft (2.612 m); minimum daily, 0.84 ft³/s (0.024 m³/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	1.0	.85	1.3	4.0	6.8	70	126	107	18	14	12	13
2	.99	.85	1.3	3.4	7.1	460	278	83	18	14	12	14
3	.85	.89	1.4	4.7	5.9	1710	201	86	17	14	15	13
4	.90	.97	1.4	38	5.4	2670	302	87	17	14	15	14
5	.89	2.1	1.4	511	8.4	2570	286	84	16	13	14	15
6	.89	1.4	1.4	156	56	1140	898	76	16	13	12	15
7	.89	1.1	1.3	43	119	537	843	72	16	13	11	15
8	.88	1.0	1.2	23	78	373	405	59	16	12	11	14
9	.90	1.0	1.2	70	81	438	253	47	14	12	11	15
10	.90	.99	1.1	55	47	355	185	34	15	12	11	14
11	.89	1.0	1.3	35	39	262	153	32	15	12	11	11
12	.88	1.0	1.6	21	51	245	130	31	15	14	12	9.2
13	.89	1.0	1.4	79	96	196	112	21	15	14	12	8.6
14	.92	.99	9.5	423	85	170	94	21	16	13	12	9.2
15	.94	.95	32	307	68	151	141	21	16	12	11	8.4
16	1.0	.95	3.3	439	76	112	426	21	16	12	11	8.7
17	.96	.95	3.2	164	211	121	264	20	14	12	11	8.1
18	.94	.95	3.2	81	207	110	174	21	15	13	11	8.1
19	.90	.95	2.3	83	166	103	134	20	15	12	11	7.9
20	.89	.96	2.0	52	142	98	123	19	14	12	11	8.0
21	.88	2.5	1.9	34	124	110	118	19	15	13	12	8.2
22	.87	4.1	2.5	26	122	138	104	20	15	12	12	8.3
23	.86	1.8	19	20	120	138	93	23	15	12	13	8.3
24	.87	1.6	5.6	15	113	136	87	23	15	12	13	8.2
25	.84	1.5	2.9	13	99	122	738	21	15	12	13	8.1
26	.86	1.5	2.7	12	100	108	1020	20	15	12	12	7.8
27	.91	1.5	33	10	95	100	429	19	15	12	13	8.1
28	.89	1.5	37	9.2	79	93	259	18	15	12	13	8.1
29	.90	1.4	36	8.3	---	75	188	18	15	12	13	8.2
30	.96	1.3	11	7.7	---	74	151	18	15	12	13	8.4
31	.91	---	5.7	7.1	---	79	---	18	---	12	13	---
TOTAL	28.05	39.55	230.1	2754.4	2407.6	13064	8715	1179	464	390	377	310.9
MEAN	.90	1.32	7.42	88.9	86.0	421	291	38.0	15.5	12.6	12.2	10.4
MAX	1.0	4.1	37	511	211	2670	1020	107	18	14	15	15
MIN	.84	.85	1.1	3.4	5.4	70	87	18	14	12	11	7.8
AC-FT	56	78	456	5460	4780	25910	17290	2340	920	774	748	617
CAL YR 1977 TOTAL	869.46			MEAN 2.38	MAX 37	MIN .84	AC-FT 1720					
WTR YR 1978 TOTAL	29959.60			MEAN 82.1	MAX 2670	MIN .84	AC-FT 59420					

11421000 YUBA RIVER NEAR MARYSVILLE, CA

LOCATION.--Lat 39°10'33", long 121°31'26", in New Helvetia Grant, Yuba County, on left bank 4.2 mi (6.8 km) northeast of Marysville, and 5 mi (8 km) downstream from Dry Creek.

DRAINAGE AREA.--1,339 mi² (3,468 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1940 to September 1943 (low-water periods only), October 1943 to current year.
Published as "at Marysville" October 1940 to September 1957. Records published for two sites August 1954 to September 1955. Yearly discharge for the 1945 water year published in WSP 1315-A.

REVISED RECORDS.--WSP 1715: 1956(M). WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2.95 ft (0.899 m) National Geodetic Vertical Datum of 1929.
Prior to August 1954 and Oct. 1, 1956, to Sept. 30, 1957, at Simpson Lane Bridge in Marysville 4.2 mi (6.8 km) downstream at same datum. Sept. 3, 1963, to Sept. 23, 1968, auxiliary water-stage recorder at Simpson Lane Bridge in Marysville 4.2 mi (6.8 km) downstream at same datum.

REMARKS.--Records good. Flow regulated by several reservoirs above station. Many diversions above station for power. Diversions for irrigation of about 13,000 acres (53 km²) between stations at Englebright Dam and near Marysville. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--35 years (water years 1944-78), 2,486 ft³/s (70.40 m³/s), 1,801,000 acre-ft/yr (2.22 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1944, 1947-78), 180,000 ft³/s (5,100 m³/s) Dec. 22, 1964, gage height, 90.15 ft (27.478 m) from floodmarks, from rating curve extended above 91,000 ft³/s (2,580 m³/s) on basis of Corps of Engineers flood routing study; minimum recorded, 10 ft³/s (0.28 m³/s) July 2, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,700 ft³/s (530 m³/s) Jan. 6, gage height, 69.83 ft (21.284 m); minimum daily, 84 ft³/s (2.38 m³/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	84	276	294	678	3020	3820	4650	4580	1260	472	2180	2340
2	177	282	276	544	2990	4350	4840	4450	819	474	2200	2350
3	208	259	255	677	2990	6880	4740	3950	575	477	2210	2340
4	209	249	254	720	2980	8400	4760	4230	538	482	2190	2340
5	250	293	252	7220	3080	8830	4860	4150	787	467	2190	2320
6	251	255	261	9660	4560	8110	6010	4070	1560	451	2200	2360
7	266	253	240	4670	5550	6540	6240	4120	1610	432	2200	2400
8	287	298	237	3100	5170	5500	5290	4080	1260	429	2230	2420
9	294	280	258	3040	5000	6020	4920	3950	1160	407	2230	2440
10	292	272	256	4020	4600	5630	4700	3870	1340	566	2200	2500
11	285	257	247	1990	4540	5250	4600	2090	1340	1520	2220	2550
12	280	261	252	1620	4640	5180	4600	3260	1280	1600	2200	2560
13	282	262	250	1350	4990	4930	4590	3760	1120	1630	2200	2560
14	294	261	278	6010	4920	4760	4530	3730	1030	1640	2230	2550
15	287	260	666	7420	4670	4570	4550	3670	1150	1660	2220	2560
16	288	261	421	10500	4270	4620	5210	3660	1090	1700	2210	2570
17	289	303	630	10800	4350	4600	4950	3660	1000	1700	2210	2560
18	285	310	737	5780	4350	4570	4720	3640	954	1670	2230	2550
19	282	268	679	5280	4410	4540	4620	3630	619	1640	2200	2550
20	272	263	661	4440	4400	4510	4590	3250	437	1660	2220	2550
21	271	301	611	4270	4380	4550	4600	2830	418	1660	2220	2540
22	281	356	390	1380	4040	4690	4600	2850	404	1660	2220	2550
23	294	270	1880	1470	3990	4670	4560	2850	447	1690	2230	2560
24	293	248	1420	5080	4160	4710	4510	2720	528	1690	2230	2500
25	280	243	648	4360	3410	4660	6220	1330	528	1690	2240	2500
26	264	245	385	4580	3340	4610	7500	1980	554	1700	2260	2530
27	242	245	554	3450	3530	4570	5590	2210	570	1710	2250	2530
28	236	247	1320	3020	4300	4550	4980	1460	502	1700	2310	2540
29	236	270	1880	3130	---	4500	4730	1820	477	1030	2330	2520
30	235	274	1860	3130	---	4510	4620	2250	462	1670	2330	2510
31	247	---	1220	3090	---	4570	---	1450	---	1780	2340	---
TOTAL	8041	8122	19572	126479	116630	162200	149880	99550	25819	39057	69130	74650
MEAN	259	271	631	4080	4165	5232	4996	3211	861	1260	2230	2488
MAX	294	356	1880	10800	5550	8830	7500	4580	1610	1780	2340	2570
MIN	84	243	237	544	2980	3820	4510	1330	404	407	2180	2320
AC-FT	15950	16110	38820	250900	231300	321700	297300	197500	51210	77470	137100	148100
CAL YR 1977	TOTAL	77112	MEAN	211	MAX	1880	MIN	62	AC-FT	153000		
WTR YR 1978	TOTAL	899130	MEAN	2463	MAX	10800	MIN	84	AC-FT	1783000		

11421000 YUBA RIVER NEAR MARYSVILLE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-52, 1954-66, 1973 to current year.

CHEMICAL ANALYSES: Water years 1951-52, 1954-66, 1973 to current year. Published as Yuba River at Marysville (sta 11421500) during water years 1966 and 1973-76.

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: November 1972 to September 1978.

INSTRUMENTATION.--Temperature recorder November 1972 to September 1978.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 28.5°C July 16, 30, 1977; minimum recorded, 5.5°C Jan. 4-8, 1973, Feb. 5-7, 1976.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 23.5°C July 9; minimum recorded, 7.5°C Feb. 3, 14, 17, 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)	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)
OCT									
27...	1215	245	112	7.5	17.0	10.3	51	0	14
NOV									
28...	1015	245	118	7.4	13.0	10.8	53	5	13
DEC									
30...	1115	1840	121	7.5	11.0	11.0	47	5	12
JAN									
26...	1145	4320	81	7.2	9.0	11.5	30	4	7.3
FEB									
23...	1200	3820	94	7.4	9.0	12.4	33	2	8.5
MAR									
23...	1040	4640	90	7.5	10.0	12.0	34	3	8.4
APR									
20...	0850	4590	73	7.4	13.0	11.5	31	0	8.0
MAY									
26...	1000	2280	76	7.3	12.0	10.6	31	1	8.4
JUN									
28...	0940	502	77	7.3	17.0	--	30	--	7.8
JUL									
27...	1000	1700	71	7.4	16.0	10.1	30	--	8.1
SEP									
26...	0830	2530	80	7.3	16.0	9.8	31	--	7.9

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY (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)
OCT									
27...	3.9	4.0	13	.2	5.0	51	8.6	1.2	85
NOV									
28...	4.6	3.5	13	.2	1.0	48	8.4	2.4	81
DEC									
30...	4.1	3.8	15	.2	.5	42	7.7	1.0	75
JAN									
26...	2.9	2.1	13	.2	.5	26	4.8	.0	58
FEB									
23...	2.9	2.0	11	.2	.3	31	4.3	.0	59
MAR									
23...	3.0	2.2	12	.2	.4	31	4.1	.3	53
APR									
20...	2.7	2.0	12	.2	.4	32	3.8	.6	45
MAY									
26...	2.4	1.9	12	.1	.5	30	2.3	1.5	44
JUN									
28...	2.6	2.3	14	.2	.6	29	4.4	2.4	60
JUL									
27...	2.4	2.1	13	.2	.3	30	3.0	.6	59
SEP									
26...	2.8	2.1	13	.2	.5	31	3.3	1.1	52

11421000 YUBA RIVER NEAR MARYSVILLE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, 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)
OCT 27...	.12	.00	.00	.03	--	.00	.00	0
NOV 28...	.11	.00	.00	.04	.10	.01	.01	0
DEC 30...	.10	.15	.00	.01	.10	.03	.00	0
JAN 26...	.08	.14	.01	.00	1.0	.02	.01	--
FEB 23...	.08	.04	.00	.03	.10	.01	.00	0
MAR 23...	.07	.02	.01	.01	.10	.01	.00	0
APR 20...	.06	.01	.00	.00	.10	.01	.00	0
MAY 26...	.06	.01	.01	.00	.10	.02	.02	0
JUN 28...	.08	.03	.01	.01	.20	.01	.01	0
JUL 27...	.08	.00	.01	.01	.10	.00	.00	0
SEP 26...	.07	.01	.00	.02	.10	.01	.01	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	22.0	17.5	17.0	14.0	14.0	12.0	11.0	9.5	8.5	8.0	9.5	8.5
2	21.5	18.0	---	---	14.0	12.0	10.5	10.5	9.5	8.0	9.5	9.0
3	21.5	17.5	---	---	13.5	12.0	11.0	10.5	9.5	7.5	10.5	9.0
4	21.5	17.5	---	---	14.0	12.0	10.5	10.5	9.0	8.0	11.0	9.0
5	20.5	17.0	16.5	14.0	14.0	12.5	10.5	10.0	9.0	8.0	11.0	10.0
6	19.0	16.0	16.0	13.0	13.0	12.5	10.5	9.5	9.0	8.0	11.5	9.5
7	20.0	16.0	16.0	13.5	13.5	12.5	10.5	9.0	9.5	8.5	11.5	10.0
8	19.5	16.0	15.5	12.5	13.5	12.0	10.5	9.5	9.0	8.5	10.5	10.0
9	20.0	16.5	16.0	12.5	13.0	11.0	11.0	9.5	9.5	8.5	11.5	10.0
10	20.0	16.5	15.5	13.0	13.0	11.0	11.0	9.5	9.0	8.0	11.5	9.5
11	19.0	16.0	15.5	13.5	12.0	11.0	11.0	10.0	9.5	8.0	10.0	9.0
12	20.0	16.0	16.5	14.0	13.5	12.0	10.5	10.0	8.5	8.0	11.0	9.0
13	19.5	16.0	16.0	14.0	12.5	12.0	11.0	10.5	9.0	8.0	11.0	9.0
14	19.0	15.5	15.0	13.0	12.5	12.0	10.5	10.0	9.5	7.5	11.0	8.5
15	19.0	15.5	15.5	13.0	12.5	11.5	10.0	9.5	9.5	8.0	11.5	8.5
16	19.0	15.5	15.5	13.0	11.5	11.0	10.0	9.5	9.0	8.0	11.5	8.5
17	19.0	15.5	15.0	13.0	12.0	11.0	10.0	9.5	9.0	7.5	11.5	8.5
18	18.5	15.5	14.5	12.0	11.5	10.5	10.0	9.5	9.5	8.0	11.0	9.0
19	17.5	15.0	13.5	11.0	11.5	9.5	10.0	9.5	10.0	7.5	11.5	9.0
20	18.0	15.0	12.5	11.0	11.0	9.5	10.5	9.0	10.0	7.5	10.5	9.0
21	18.0	15.5	12.5	12.0	11.0	10.5	10.0	9.0	10.5	8.0	10.0	9.5
22	17.5	15.5	14.0	12.0	12.0	11.0	11.0	9.5	10.5	8.0	11.5	9.5
23	18.5	16.0	13.5	12.0	11.5	10.5	10.5	8.5	10.5	8.0	10.5	9.0
24	19.0	16.0	15.5	13.0	12.0	10.5	10.0	8.0	9.5	8.5	11.5	8.5
25	18.0	15.5	15.0	12.5	11.0	10.0	9.5	8.0	10.0	8.5	12.0	9.0
26	17.5	15.0	15.5	13.0	11.0	10.5	9.5	8.0	10.0	8.0	11.5	9.0
27	16.5	14.5	14.5	13.0	11.0	10.5	9.5	8.0	10.5	8.0	12.0	9.5
28	17.5	15.0	14.5	12.5	11.0	10.5	9.5	8.0	10.5	8.0	12.5	9.0
29	18.0	14.5	14.5	12.5	11.5	10.5	8.5	8.0	---	---	11.0	9.5
30	17.0	14.0	14.0	12.5	11.0	10.0	8.5	8.0	---	---	12.0	9.5
31	17.0	14.0	---	---	11.0	9.5	8.0	8.0	---	---	11.0	10.0
MONTH	22.0	14.0	17.0	11.0	14.0	9.5	11.0	8.0	10.5	7.5	12.5	8.5

11421000 YUBA RIVER NEAR MARYSVILLE, CA--Continued

WATER QUALITY DATA, 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	11.0	9.5	14.0	10.0	17.5	12.0	22.0	16.0	18.5	14.0	18.5	14.0
2	12.0	9.0	14.0	10.0	19.0	13.0	21.5	16.0	18.5	14.0	18.5	14.0
3	11.0	9.5	15.0	10.5	19.5	14.0	22.0	16.5	18.0	14.0	18.5	14.0
4	12.0	9.5	13.5	10.5	20.5	14.5	22.0	16.5	18.5	14.0	18.5	14.5
5	11.0	9.0	14.0	10.0	19.5	15.0	22.5	17.0	18.5	14.0	16.5	15.0
6	11.0	9.0	13.5	10.5	19.0	14.0	22.5	17.0	19.0	13.5	18.0	15.0
7	12.0	9.0	14.0	10.5	19.0	14.0	22.5	17.0	18.5	14.0	18.0	14.5
8	12.0	9.0	14.0	10.5	20.0	14.5	23.0	17.5	19.0	14.5	18.5	14.0
9	12.5	9.0	14.0	10.5	19.5	15.0	23.5	18.0	18.5	14.5	15.5	14.5
10	12.5	9.5	14.0	10.5	19.0	14.5	22.5	17.0	18.5	14.0	17.5	15.0
11	12.5	9.5	16.5	10.5	20.0	14.5	20.0	15.0	18.5	14.0	18.0	14.5
12	13.0	9.5	14.0	10.0	18.5	14.5	19.5	15.0	18.0	14.0	18.0	14.5
13	12.5	9.5	14.5	10.5	20.5	15.0	20.0	15.5	18.0	14.0	18.0	14.0
14	11.0	9.5	14.5	10.5	20.5	15.0	20.0	15.0	18.0	14.0	18.5	14.5
15	10.5	9.5	13.5	10.5	20.5	15.0	20.0	15.0	18.5	14.0	18.5	15.0
16	11.5	9.0	14.5	10.5	20.5	15.0	20.0	15.0	18.0	14.0	18.5	15.0
17	12.0	9.0	14.5	10.5	20.5	15.5	19.5	14.5	18.0	14.0	17.5	14.5
18	12.5	9.0	14.5	10.5	20.5	15.0	19.5	15.0	18.0	13.5	17.5	14.0
19	12.0	9.0	14.5	10.5	21.5	15.5	19.5	14.5	18.0	14.0	18.0	14.0
20	11.5	9.0	15.0	10.5	21.5	16.0	19.5	14.5	18.0	13.5	18.0	14.0
21	12.5	9.0	15.0	10.5	22.5	16.5	19.5	14.5	17.5	13.5	18.0	14.5
22	12.5	9.0	15.0	10.5	22.0	16.5	19.5	14.5	17.5	13.5	18.5	14.5
23	12.0	9.0	14.5	11.0	22.0	16.0	19.5	14.5	17.5	13.5	18.5	15.0
24	11.0	9.5	14.5	10.5	21.5	15.5	19.5	14.5	17.5	13.5	19.0	15.0
25	11.5	10.0	17.0	10.5	22.0	16.5	18.5	14.5	18.0	13.5	18.5	15.5
26	12.5	10.5	15.0	10.5	19.5	16.5	19.0	14.5	18.0	14.0	18.5	15.5
27	13.5	10.5	16.0	11.0	20.5	16.5	19.5	14.0	18.0	14.0	18.5	15.0
28	13.0	10.5	18.0	11.5	21.0	16.5	19.0	14.0	18.0	14.0	19.0	15.0
29	13.5	10.5	17.0	11.5	22.0	16.5	21.5	15.0	18.5	14.0	19.0	15.5
30	12.5	10.5	16.0	11.5	22.0	16.5	19.5	14.5	18.0	14.0	19.0	15.5
31	---	---	17.0	12.0	---	---	19.5	14.5	18.5	14.0	---	---
MONTH	13.5	9.0	18.0	10.0	22.5	12.0	23.5	14.0	19.0	13.5	19.0	14.0

11421700 FEATHER RIVER BELOW SHANGHAI BEND, NEAR OLIVEHURST, CA

LOCATION.--Lat 39°04'44", long 121°36'08", in New Helvetia Grant, Sutter County, on right bank 1.5 mi (2.4 km) downstream from Shanghai Bend, 3.0 mi (4.8 km) southeast of Olivehurst, and 3.4 mi (5.5 km) south of Yuba City.

DRAINAGE AREA.--5,334 mi² (13,815 km²).

PERIOD OF RECORD.--June 1944 to September 1969 in reports of California Department of Water Resources, October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3.01 ft (0.917 m) below National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources).

REMARKS.--Flow regulated by many reservoirs and powerplants. See schematic diagrams of South Fork Feather River, North Fork Feather River, and Yuba River basins and Feather River at Lake Oroville.

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

AVERAGE DISCHARGE.--9 years, 7,472 ft³/s (211.6 m³/s), 5,413,000 acre-ft/yr (6.67 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 133,000 ft³/s (3,770 m³/s) Jan. 22, 1970, gage height, 62.55 ft (19.065 m); minimum daily, 581 ft³/s (16.5 m³/s) June 1, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 24,900 ft³/s (705 m³/s) Mar. 7, gage height, 45.40 ft (13.838 m); minimum daily, 667 ft³/s (18.9 m³/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	667	1170	1180	1920	3710	5690	11100	11600	3010	3120	7960	5550
2	874	1190	1190	1630	3690	5760	11300	12200	2870	3140	7960	5550
3	938	1170	1160	1680	3680	11600	11200	12000	2860	3230	7510	5550
4	955	1140	1160	1930	3630	13300	11100	12300	2780	3450	6880	5610
5	1020	1220	1160	6600	3720	17700	11300	12200	2940	3580	6810	5650
6	1040	1160	1170	17500	4770	22100	12200	12000	3610	4050	6750	5740
7	1030	1150	1180	8890	7340	24200	13900	11000	3790	4490	6770	5720
8	1070	1110	1150	5770	8510	22900	12100	10200	3750	4570	7240	5720
9	1090	1170	1150	4480	7420	23200	11300	9930	3560	4580	7340	5800
10	1100	1140	1200	9340	7520	23100	11000	9030	3730	4600	7390	5970
11	1110	1130	1190	5600	7170	22200	10800	7000	3750	5560	7180	5940
12	1150	1120	1230	3740	6890	21800	10700	6420	3730	5780	6580	5900
13	1120	1130	1230	3350	7530	21500	10600	6910	3590	5820	6110	5870
14	1120	1150	1310	8660	7760	21200	10600	6910	3480	5880	5640	5830
15	1110	1140	2250	16500	6890	20900	10400	6910	3570	5930	5390	5880
16	1110	1180	2280	18600	6360	21000	10600	6660	3530	5940	5370	5880
17	1110	1160	2060	22300	5640	20300	10200	6350	3460	5910	5360	5780
18	1140	1240	2100	14300	5500	18500	9820	6340	3490	5910	5390	5760
19	1200	1150	1980	11400	5580	16500	9660	6290	3850	5910	5360	5690
20	1190	1150	1870	9740	5630	14500	9600	5970	3050	5960	5340	5710
21	1160	1300	1800	8360	5740	13400	9610	5510	3020	5940	5320	5750
22	1150	1470	1630	5380	5640	13400	9640	5450	3050	6400	5320	5720
23	1140	1350	3190	3920	5310	12100	9530	5350	3150	7280	5310	5790
24	1140	1230	3710	5840	5750	11600	9520	5150	3190	7370	5310	5810
25	1120	1180	2250	5740	5010	11400	10900	4080	3180	7490	5340	5780
26	1110	1160	1730	5380	4890	11200	14400	3930	3190	7480	5440	5820
27	1150	1150	1680	4950	4950	11100	11800	4170	3220	7470	5430	5820
28	1100	1140	2850	4070	5840	11100	10600	3290	3160	7470	5490	5630
29	1110	1180	3440	3940	---	11000	10900	3370	3120	6770	5550	5760
30	1160	1160	3450	3830	---	11000	11500	3680	3100	7370	5560	5620
31	1160	---	2750	3750	---	11000	---	3160	---	7470	5540	---
TOTAL	33644	35490	57680	229090	162070	496250	327880	225360	99170	175920	189940	172600
MEAN	1085	1183	1861	7390	5788	16010	10930	7270	3306	5675	6127	5753
MAX	1200	1470	3710	22300	8510	24200	14400	12300	3790	7490	7960	5970
MIN	667	1110	1150	1630	3630	5690	9520	3160	2780	3120	5310	5550
AC-FT	66730	70390	114400	454400	321500	984300	650300	447000	196700	348900	376700	342400
CAL YR 1977 TOTAL	526057			MEAN 1441	MAX 3710	MIN 581	AC-FT 1043000					
WTR YR 1978 TOTAL	2205094			MEAN 6041	MAX 24200	MIN 667	AC-FT 4374000					

11421720 BOARDMAN CANAL NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°17'49", long 120°42'08", in SE¼NE¼ sec.35, T.17 N., R.11 E., Placer County, on right bank 0.4 mi (0.6 km) downstream from Boardman diversion dam, and 1.8 mi (2.9 km) west of Emigrant Gap.

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

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 4,490 ft (1,370 m), revised, from topographic map. Prior to June 14, 1967, water-stage recorder 0.2 mi (0.3 km) downstream at different datum.

REMARKS.--Water is diverted from Bear River to be used for power development and irrigation in the Bear River basin. See schematic diagram of Bear 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.--14 years, 21.7 ft³/s (0.615 m³/s), 15,720 acre-ft/yr (19.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 43 ft³/s (1.22 m³/s) Dec. 21, 1964; no flow for several 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			0	11	12	12	12	7.1	17	23	30	31
2			0	14	12	7.7	12	7.1	17	23	30	31
3			0	14	13	8.9	12	7.1	17	25	29	30
4			0	14	15	8.9	12	7.0	17	26	29	29
5			0	12	15	8.5	12	7.0	17	26	29	30
6			0	11	16	4.9	12	7.0	17	26	29	29
7			0	10	13	2.8	9.9	7.0	17	26	29	29
8			0	11	8.3	2.3	6.2	7.0	19	26	30	29
9			0	8.3	8.3	2.3	6.2	7.0	21	26	30	28
10			0	5.5	8.7	2.1	6.2	7.0	21	26	30	27
11			0	8.1	12	2.1	6.2	7.0	21	27	30	27
12			0	7.7	12	1.9	6.2	7.0	21	29	31	26
13			0	8.5	14	1.7	6.2	7.0	21	30	31	26
14			0	8.5	14	2.8	6.2	7.0	21	30	30	26
15			0	9.1	14	5.2	6.2	7.0	21	30	30	24
16			0	16	14	8.5	9.0	7.0	22	31	31	22
17			0	7.1	14	8.5	9.6	7.0	22	31	31	22
18			0	2.8	14	8.5	5.9	6.8	22	32	31	7.0
19			0	12	14	8.5	5.9	8.4	22	32	32	.42
20			0	12	14	8.5	10	11	23	32	32	.42
21			0	12	14	8.3	13	11	23	32	32	.36
22			0	12	14	8.1	7.4	11	22	32	32	.36
23			0	12	14	8.1	7.3	14	23	31	31	.36
24			9.5	12	14	8.1	7.4	18	23	30	31	.36
25			13	12	14	8.1	7.4	18	23	30	31	.36
26			13	12	14	7.5	7.3	17	23	32	31	.32
27			8.5	12	14	6.8	7.1	17	23	30	31	.30
28			7.1	12	14	7.0	7.1	17	23	30	31	.30
29			3.8	12	---	6.4	7.1	17	23	31	31	12
30			6.2	12	---	12	7.1	17	23	30	31	24
31		---	8.5	12	---	12	---	17	---	30	31	---
TOTAL	0	0	69.6	334.6	369.3	209.0	250.1	319.5	625	895	947	512.56
MEAN	0	0	2.25	10.8	13.2	6.74	8.34	10.3	20.8	28.9	30.5	17.1
MAX	0	0	13	16	16	12	13	18	23	32	32	31
MIN	0	0	0	2.8	8.3	1.7	5.9	6.8	17	23	29	.30
AC-FT	0	0	138	664	733	415	496	634	1240	1760	1880	1020

CAL YR 1977 TOTAL 2968.15 MEAN 8.13 MAX 21 MIN 0 AC-FT 5890
WTR YR 1978 TOTAL 4531.66 MEAN 12.4 MAX 32 MIN 0 AC-FT 8990

11421750 DUTCH FLAT NO. 1 POWERPLANT NEAR DUTCH FLAT, CA

LOCATION.--Lat 39°13'02", long 120°50'04", in SW¼SE¼ sec.27, T.16 N., R.10 E., Placer County, at powerplant 0.8 mi (1.3 km) north of Dutch Flat.

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

GAGE.--Recorded powerplant output.

REMARKS.--Water is diverted from Drum Afterbay through a tunnel to Dutch Flat No. 1 powerplant and returned to Dutch Flat Afterbay. See schematic diagram showing diversion and storage in Bear River basin.

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

AVERAGE DISCHARGE.--14 years, 239 ft³/s (6.768 m³/s), 173,200 acre-ft/yr (214 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 548 ft³/s (15.5 m³/s) for several days in January, February, April 1965; 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	253	142	408	359	189	515	461	388	398	339	428
2	0	205	111	501	349	245	515	501	474	368	330	501
3	126	197	71	501	438	501	529	428	339	398	339	501
4	111	166	0	501	253	501	438	408	408	359	448	461
5	36	0	111	359	205	529	448	461	388	349	349	63
6	181	0	158	543	339	515	461	487	303	378	330	0
7	0	173	197	461	418	438	529	448	448	368	312	0
8	205	197	119	529	236	398	529	515	418	359	349	0
9	0	173	150	487	474	428	529	448	359	378	349	0
10	0	158	0	487	428	398	529	388	378	368	278	0
11	0	87	0	398	359	474	515	408	398	349	398	0
12	0	0	158	398	359	501	515	368	398	359	339	0
13	0	0	197	359	368	501	515	428	438	359	339	0
14	0	150	205	461	320	515	529	448	418	339	388	0
15	0	142	253	368	359	515	428	448	461	339	398	0
16	0	142	189	303	359	515	438	461	474	349	378	0
17	0	173	63	529	378	501	448	408	418	359	408	0
18	0	197	55	461	418	487	448	438	418	278	349	245
19	0	0	236	418	349	501	428	408	388	388	349	320
20	0	0	388	474	359	515	448	398	339	474	320	330
21	0	253	388	438	330	515	448	474	428	368	270	312
22	0	212	461	448	398	501	408	515	368	339	359	349
23	0	173	474	418	349	461	438	408	398	368	339	303
24	0	0	408	398	368	515	398	418	368	368	448	359
25	0	158	461	330	330	515	388	474	268	330	438	312
26	119	0	418	428	388	501	461	474	339	378	501	330
27	220	0	428	359	359	487	408	428	398	359	501	349
28	228	173	428	368	339	529	378	438	408	330	438	359
29	9.9	212	428	359	---	515	438	388	398	320	408	312
30	0	253	448	359	---	418	438	428	359	359	461	303
31	189	---	398	359	---	501	---	428	---	398	501	---
TOTAL	1424.9	3847	7543	13210	9988	14625	13937	13631	11885	11233	11753	6137
MEAN	46.0	128	243	426	357	472	465	440	396	362	379	205
MAX	228	253	474	543	474	529	529	515	474	474	501	501
MIN	0	0	0	303	205	189	378	368	303	278	270	0
AC-FT	2830	7630	14960	26200	19810	29010	27640	27040	23570	22280	23310	12170
CAL YR 1977 TOTAL	30627.30			MEAN 83.9	MAX 474	MIN 0	AC-FT 60750					
WTR YR 1978 TOTAL	119213.90			MEAN 327	MAX 543	MIN 0	AC-FT 236500					

SACRAMENTO RIVER BASIN

11421760 DUTCH FLAT NO. 2 FLUME NEAR BLUE CANYON, CA

LOCATION.--Lat 39°15'16", long 120°46'28", in SE¼NE¼ sec.18, T.16 N., R.11 E., Placer County, on left bank 600 ft (183 m) downstream from Drum Afterbay, and 3.6 mi (5.8 km) west of Blue Canyon.

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

GAGE.--Water-stage recorder. Datum of gage is 3,348.09 ft (1,020.498 m) National Geodetic Vertical Datum of 1929 (levels by Nevada Irrigation District).

REMARKS.--Records good except flows below 40 ft³/s (1.13 m³/s), which are poor. Water is diverted from Drum Afterbay through the flume to Dutch Flat No. 2 powerplant and then to Dutch Flat Afterbay. See schematic diagram of Bear River basin.

AVERAGE DISCHARGE.--12 years, 342 ft³/s (9.685 m³/s), 247,800 acre-ft/yr (306 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 610 ft³/s (17.3 m³/s) Mar. 1, 1968; 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	1.1	39	82	367	436	546	491	590	455	433	339	261
2	1.1	39	93	362	443	556	449	418	430	423	364	277
3	1.1	22	13	267	340	522	513	487	436	398	394	256
4	1.1	84	13	353	306	489	455	527	432	404	333	183
5	1.1	11	85	316	192	600	410	501	444	379	401	26
6	1.1	1.0	64	175	564	595	443	441	435	386	397	1.0
7	1.1	30	83	396	514	439	502	476	429	384	379	1.0
8	12	47	93	345	404	489	431	484	457	379	401	1.0
9	23	95	104	372	565	444	483	493	440	365	398	1.0
10	23	107	13	319	512	478	511	501	446	311	378	1.0
11	23	153	13	437	473	369	513	523	447	405	381	1.0
12	23	1.0	47	496	467	309	482	455	417	374	374	1.0
13	23	1.0	81	393	471	312	489	484	424	377	381	1.0
14	222	42	62	360	459	262	547	501	433	379	382	1.0
15	292	79	62	390	484	288	458	493	427	376	316	1.0
16	23	145	65	382	416	242	485	510	406	354	375	1.0
17	198	26	13	575	360	276	499	481	435	379	380	14
18	301	17	13	520	344	294	506	478	411	363	380	264
19	278	9.0	198	497	445	269	475	518	428	337	380	219
20	311	1.0	349	463	462	323	553	532	431	352	339	214
21	295	24	248	418	464	329	526	417	423	372	412	243
22	12	79	435	415	414	368	503	429	439	369	381	240
23	1.1	121	276	370	401	550	530	438	441	366	319	239
24	259	8.0	288	402	461	495	496	448	420	375	307	258
25	282	1.0	370	406	435	404	560	463	435	371	337	258
26	172	1.0	306	409	376	438	570	418	423	340	262	287
27	12	1.0	381	436	392	425	536	416	406	412	234	222
28	1.1	90	340	435	413	490	570	416	417	383	337	276
29	1.1	14	359	441	---	368	493	422	417	368	272	267
30	1.1	53	395	442	---	454	509	451	399	341	306	299
31	58	---	351	435	---	513	---	423	---	367	251	---
TOTAL	2854.1	1341.0	5295	12394	12013	12936	14988	14634	12883	11622	10890	4314.0
MEAN	92.1	44.7	171	400	429	417	500	472	429	375	351	144
MAX	311	153	435	575	565	600	570	590	457	433	412	299
MIN	1.1	1.0	13	175	192	242	410	416	399	311	234	1.0
AC-FT	5660	2660	10500	24580	23830	25660	29730	29030	25550	23050	21600	8560
CAL YR 1977 TOTAL	14602.51	MEAN	40.0	MAX	435	MIN	.83	AC-FT	28960			
WTR YR 1978 TOTAL	116164.10	MEAN	318	MAX	600	MIN	1.0	AC-FT	230400			

11421770 BEAR RIVER BELOW DRUM AFTERBAY, NEAR BLUE CANYON, CA

LOCATION.--Lat 39°15'16", long 120°46'26", in SW¼NW¼ sec.17, T.16 N., R.11 E., Placer County, on left bank 60 ft (18 m) downstream from Drum Afterbay Dam, and 3.5 mi (5.6 km) west of Blue Canyon.

DRAINAGE AREA.--12.3 mi² (31.9 km²).

PERIOD OF RECORD.--April 1966 to current year, low flows only April to September 1966.

GAGE.--Water-stage recorder and 4-ft (1.2 m) steel Cipolletti weir set in a concrete broad-crested weir. Altitude of gage is 3,300 ft (1,006 m), from topographic map. April 1966 to May 25, 1967, water-stage recorder at present site at different datum, May 26, 1967, to Feb. 11, 1968, water-stage recorder at site 1,000 ft (305 m) downstream at different datum.

REMARKS.--Water for Dutch Flat No. 1 powerplant (station 11421750) and Dutch Flat No. 2 flume (station 11421760) is diverted from Drum Afterbay just upstream from station. See schematic diagram of Bear River basin.

COOPERATION.--Records 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.--12 years, 12.3 ft³/s (0.348 m³/s), 8,910 acre-ft/yr (11.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,880 ft³/s (81.6 m³/s) Jan. 21, 1970, gage height, 3.68 ft (1.122 m), from rating curve extended above 900 ft³/s (25.5 m³/s); minimum daily, 1.0 ft³/s (0.028 m³/s) Dec. 9, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 432 ft³/s (12.2 m³/s) Mar. 5, gage height, 2.33 ft (0.710 m); minimum daily, 2.2 ft³/s (0.062 m³/s) Jan. 3, 4, 14, 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	2.8	2.6	2.5	2.5	5.5	8.1	10	10	10	10	10	10
2	2.8	2.6	2.5	2.4	5.5	10	10	10	10	10	10	10
3	2.8	2.6	2.4	2.2	5.4	10	10	10	10	10	10	10
4	2.8	2.6	2.5	2.2	5.4	10	10	10	10	10	10	10
5	2.8	2.6	2.5	2.6	12	198	10	10	10	10	10	18
6	2.8	2.6	2.6	2.7	5.5	11	10	10	10	10	10	15
7	2.8	2.6	2.6	2.4	5.4	10	10	10	10	10	10	11
8	2.8	2.6	2.6	2.3	5.5	10	10	10	10	10	10	10
9	2.8	2.6	2.6	2.4	5.4	9.8	10	10	10	10	10	13
10	2.7	2.6	2.6	2.3	5.4	10	10	10	10	10	10	17
11	2.7	2.5	2.6	2.3	5.5	10	10	10	10	10	10	12
12	2.6	2.6	2.6	2.3	5.5	10	10	10	10	10	10	10
13	2.6	2.6	2.6	2.4	5.4	10	10	10	10	10	10	10
14	2.6	2.5	2.5	2.2	5.4	10	10	10	10	10	10	10
15	2.6	2.5	2.3	2.2	5.4	10	10	10	10	10	10	10
16	2.6	2.6	2.3	97	5.4	10	10	10	10	10	10	10
17	2.6	2.6	2.3	140	5.4	10	10	10	10	10	10	10
18	2.6	2.6	2.3	2.7	5.4	10	10	10	10	10	10	10
19	2.6	2.6	2.3	4.0	5.4	10	10	10	10	10	10	10
20	2.6	2.6	2.3	5.3	5.4	10	43	10	10	10	10	10
21	2.6	2.6	2.3	5.9	5.4	10	10	10	10	10	10	10
22	2.6	2.6	2.5	5.4	5.4	10	10	10	10	10	10	10
23	2.6	2.6	2.5	5.2	5.4	10	10	10	10	10	10	10
24	2.6	2.5	2.4	5.1	5.4	10	10	10	10	10	10	10
25	2.6	2.5	2.3	3.3	5.4	10	10	10	10	10	10	10
26	2.6	2.6	2.3	4.3	5.4	10	34	10	10	10	10	10
27	2.6	2.6	2.3	5.5	5.4	10	26	10	10	10	10	10
28	2.6	2.6	2.3	5.5	5.4	10	29	10	10	10	10	10
29	2.8	2.5	2.5	5.5	---	10	37	10	10	10	10	10
30	2.8	2.5	2.4	5.4	---	10	31	10	10	10	10	10
31	2.6	---	2.3	5.4	---	10	---	10	---	10	10	---
TOTAL	83.0	77.3	75.6	340.9	158.4	496.9	440	310	300	310	310	326
MEAN	2.68	2.58	2.44	11.0	5.66	16.0	14.7	10.0	10.0	10.0	10.0	10.9
MAX	2.8	2.6	2.6	140	12	198	43	10	10	10	10	18
MIN	2.6	2.5	2.3	2.2	5.4	8.1	10	10	10	10	10	10
AC-FT	165	153	150	676	314	986	873	615	595	615	615	647

CAL YR 1977 TOTAL 1049.0 MEAN 2.87 MAX 5.2 MIN 1.9 AC-FT 2080
WTR YR 1978 TOTAL 3228.1 MEAN 8.84 MAX 198 MIN 2.2 AC-FT 6400

SACRAMENTO RIVER BASIN

11421780 CHICAGO PARK FLUME NEAR DUTCH FLAT, CA

LOCATION.--Lat 39°12'55", long 120°50'23", in NW¼NE¼ sec.34, T.16 N., R.10 E., Nevada County, on left bank 670 ft (204 m) downstream from Dutch Flat Afterbay, and 0.6 mi (1.0 km) north of Dutch Flat.

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

GAGE.--Water-stage recorder. Altitude of gage is 2,600 ft (792 m), from topographic map. Prior to Sept. 8, 1968, at site 420 ft (128 m) upstream at same datum.

REMARKS.--Records good except flows below 70 ft³/s (1.98 m³/s), which are poor. Flow regulated by Dutch Flat Afterbay. See schematic diagram of Bear River basin.

AVERAGE DISCHARGE.--12 years, 599 ft³/s (16.96 m³/s), 434,000 acre-ft/yr (535 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,080 ft³/s (30.6 m³/s) Nov. 12, 13, 1973; no flow for several 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	20	339	225	867	837	702	1060	1070	903	951	829	827
2	20	269	238	1070	900	864	1070	1070	994	931	805	730
3	134	190	78	993	919	1070	1070	1070	1000	857	798	815
4	119	298	20	915	667	1060	1070	1070	906	814	803	987
5	20	20	207	1030	377	1060	1060	1070	947	872	857	190
6	222	20	282	1040	1060	1060	1060	1070	950	872	837	2.0
7	20	252	299	1040	1050	1060	1070	1070	952	872	828	2.0
8	282	234	256	944	1040	1060	1070	1070	945	898	829	2.0
9	20	289	261	1040	1050	1060	1070	1070	935	835	827	2.0
10	20	220	20	965	1050	1060	1070	1070	937	767	724	2.0
11	20	220	20	995	1050	1050	1070	1070	935	747	830	2.0
12	20	20	257	875	1060	887	1070	1030	936	835	829	2.0
13	20	20	286	927	987	948	1070	1030	936	864	829	2.0
14	172	266	396	1040	767	937	1070	937	936	853	827	2.0
15	306	257	422	1040	1050	878	1070	1070	975	726	829	2.0
16	20	240	331	1040	1000	791	1070	1070	1010	843	829	2.0
17	181	281	191	1040	712	795	1060	1070	932	839	829	2.0
18	316	248	31	1050	842	832	1070	1070	903	842	830	212
19	253	20	442	1040	861	904	1070	1060	904	841	828	577
20	287	20	803	1040	902	962	1070	1030	903	839	810	645
21	294	353	827	1040	900	1050	1070	996	905	806	828	648
22	20	387	881	1040	901	988	1070	1010	958	794	829	604
23	20	293	1060	939	934	1050	1070	995	958	792	815	623
24	271	20	708	891	902	1050	1060	960	962	818	767	625
25	271	201	961	826	872	1050	920	982	895	827	732	647
26	161	20	875	894	848	1050	1070	963	856	829	820	647
27	274	20	993	892	838	1060	1070	938	840	828	867	642
28	306	353	816	894	802	1060	1070	954	849	829	873	645
29	20	260	1040	893	---	1060	1070	823	905	829	876	647
30	20	206	1060	893	---	1050	1070	985	950	806	817	645
31	313	---	878	892	---	1060	---	944	---	786	797	---
TOTAL	4442	5836	15164	30085	25178	30568	31900	31687	27917	25842	25428	11380.0
MEAN	143	195	489	970	899	986	1063	1022	931	834	820	379
MAX	316	387	1060	1070	1060	1070	1070	1070	1010	951	876	987
MIN	20	20	20	826	377	702	920	823	840	726	724	2.0
AC-FT	8810	11580	30080	59670	49940	60630	63270	62850	55370	51260	50440	22570
CAL YR 1977 TOTAL	53635.0			MEAN 147	MAX 1060	MIN 1.0	AC-FT 106400					
WTR YR 1978 TOTAL	265427.0			MEAN 727	MAX 1070	MIN 2.0	AC-FT 526500					

11421790 BEAR RIVER BELOW DUTCH FLAT AFTERBAY, NEAR DUTCH FLAT, CA

LOCATION.--Lat 39°12'55", long 120°50'23", in NE¼NW¼ sec.34, T.16 N., R.10 E., Placer County, at the left bank downstream end of spillway on Dutch Flat Afterbay Dam, 0.6 mi (1.0 km) north of Dutch Flat.

DRAINAGE AREA.--21.5 mi² (55.7 km²).

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

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 2,600 ft (790 m), from topographic map.

REMARKS.--Records excellent except flows above 13 ft³/s (0.37 m³/s), which are good. Water is imported from South Yuba River basin via Drum Canal above forebay (station 11414190). Chicago Park flume (station 11421780) diverts above station to Chicago Park powerplant. Records include spill over Dutch Flat Afterbay Dam. This station measures flow from Dutch Flat Afterbay in connection with a Federal Power Commission Project. See schematic diagram of Bear River basin.

COOPERATION.--Records of elevations for Dutch Flat Afterbay furnished by Pacific Gas and Electric Co.

AVERAGE DISCHARGE.--12 years, 26.9 ft³/s (0.762 m³/s), 19,490 acre-ft/yr (24.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,500 ft³/s (42.5 m³/s) Jan. 20, 1969; minimum daily, 0.08 ft³/s (0.002 m³/s) Mar. 8-19, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,020 ft³/s (28.9 m³/s) Mar. 5; minimum daily, 4.6 ft³/s (0.13 m³/s) Oct. 6-18.

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	5.0	5.0	5.0	4.8	4.8	5.2	5.2	175	11	11	10	10
2	5.0	5.0	5.0	4.8	4.8	5.2	5.2	27	11	11	10	11
3	5.0	5.0	5.0	4.8	4.8	307	94	11	11	11	11	11
4	5.0	5.0	5.0	4.8	4.8	294	23	11	11	11	11	11
5	4.8	5.0	5.0	89	4.8	826	5.2	10	11	11	11	10
6	4.6	5.0	5.0	5.0	5.0	436	5.2	10	11	10	11	27
7	4.6	5.0	5.0	4.8	5.0	42	53	10	11	10	11	98
8	4.6	5.0	5.0	4.8	5.0	5.2	56	10	11	10	11	50
9	4.6	5.0	5.0	4.8	5.0	5.2	109	10	11	10	10	29
10	4.6	5.0	5.0	4.8	57	5.0	140	10	11	10	11	52
11	4.6	5.0	5.0	4.8	17	5.0	131	10	11	10	11	13
12	4.6	5.0	5.0	4.8	4.8	5.0	79	10	11	10	11	13
13	4.6	5.0	5.0	4.8	4.8	5.0	86	10	11	10	11	13
14	4.6	5.0	5.0	4.8	4.8	5.0	180	10	11	10	11	13
15	4.6	5.0	5.0	4.8	4.8	5.0	22	10	11	10	10	13
16	4.6	5.0	5.0	68	4.8	5.0	5.2	10	11	10	10	13
17	4.6	5.0	5.0	663	4.8	5.0	5.2	10	11	10	11	13
18	4.6	5.0	4.8	206	4.8	5.0	5.2	10	11	10	11	13
19	4.8	5.0	4.8	180	4.8	5.0	23	10	11	10	11	13
20	4.8	5.0	4.8	68	5.0	5.0	172	10	11	10	10	11
21	5.0	5.0	4.8	5.0	5.0	5.0	78	10	11	10	11	11
22	5.0	5.0	4.8	4.8	5.0	5.0	44	10	11	10	11	11
23	5.0	5.0	4.8	4.8	5.0	5.2	46	10	11	10	11	11
24	5.0	5.0	4.8	4.8	5.0	5.2	11	10	10	11	10	11
25	5.0	5.0	4.8	4.8	5.0	5.2	288	10	10	11	11	11
26	5.0	5.0	4.8	4.8	5.0	5.2	218	10	10	10	11	11
27	5.0	5.0	4.8	4.8	5.0	5.2	117	10	11	10	11	11
28	5.0	5.0	4.8	4.8	5.2	5.2	92	10	11	10	11	11
29	5.0	5.0	4.8	4.8	---	5.2	93	10	11	10	11	11
30	5.0	5.0	4.8	4.8	---	5.2	107	11	11	10	10	11
31	5.0	---	4.8	4.8	---	5.2	---	11	---	10	11	---
TOTAL	149.2	150.0	152.2	1394.4	201.6	2090.4	2298.4	496	327	317	333	547
MEAN	4.81	5.00	4.91	45.0	7.20	67.4	76.6	16.0	10.9	10.2	10.7	18.2
MAX	5.0	5.0	5.0	663	57	826	288	175	11	11	11	98
MIN	4.6	5.0	4.8	4.8	4.8	5.0	5.2	10	10	10	10	10
AC-FT	296	298	302	2770	400	4150	4560	984	649	629	661	1080
CAL YR 1977 TOTAL	1859.1			MEAN 5.09	MAX	5.3	MIN 4.6	AC-FT 3690				
WTR YR 1978 TOTAL	8456.2			MEAN 23.2	MAX	826	MIN 4.6	AC-FT 16770				

11421800 ROLLINS RESERVOIR NEAR COLFAX, CA

LOCATION.--Lat 39°08'05", long 120°56'54", in NE¼SE¼ sec.22, T.15 N., R.9 E., Placer County, on left bank just upstream from Rollins Dam on Bear River, 2.3 mi (3.7 km) north of Colfax.

DRAINAGE AREA.--104 mi² (269 km²).

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Nevada Irrigation District).

REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 15, 1964. Usable capacity, 66,000 acre-ft (81.4 hm³) between elevations 1,970.0 ft (600.46 m), invert of outlet tunnel and 2,171.0 ft (661.72 m), spillway crest. Dead storage, 270 acre-ft (333,000 m³). Several diversions into and out of basin upstream for power development and irrigation. Stored water is released into Bear River, part of which is diverted to Pacific Gas and Electric's Bear River Canal for power development. Water is later used for irrigation. See schematic diagram of Bear River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 70,100 acre-ft (86.4 hm³) Jan. 21, 1970, elevation, 2,175.8 ft (663.18 m); minimum since reservoir first filled, 4,250 acre-ft (5.24 hm³) Oct. 10, 1977, elevation, 2,022.5 ft (616.46 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 68,100 acre-ft (84.0 hm³) Jan. 16, elevation, 2,173.5 ft (662.48 m); minimum, 4,250 acre-ft (5.24 hm³) Oct. 10, elevation, 2,022.5 ft (616.46 m).

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

2020	3920	2080	16800
2030	5320	2120	32700
2040	6990	2140	43800
2050	8940	2160	57300
2060	11200	2176	70200

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 1600

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5420	8940	19400	51700	66600	66700	67000	67000	66700	66700	66600	66600
2	5220	9470	19800	53200	66200	67200	67000	66900	66700	66700	66600	66400
3	5070	9690	19900	54500	66700	67400	67000	66900	66700	66700	66600	66500
4	5100	10400	19900	56100	66300	67800	67000	66800	66700	66600	66600	66700
5	5110	10400	20300	63700	66300	67900	66900	66800	66700	66700	66600	65700
6	5200	10400	20800	66300	67000	67400	67000	66800	66700	66700	66600	65000
7	5110	10800	21300	66700	67300	67200	67000	66800	66700	66700	66600	64200
8	5370	11300	21800	67000	67100	67200	67000	66800	66700	66700	66600	63200
9	5220	11800	22200	67200	67100	67100	67000	66800	66700	66700	66600	62300
10	4250	12300	22200	66900	67000	67100	67000	66800	66700	66600	66600	61400
11	4760	12600	22300	66900	67000	67000	67000	66800	66700	66600	66600	60400
12	4600	12600	22700	66800	67100	66900	67000	66800	66700	66600	66600	59400
13	4550	12500	23200	67000	67100	66800	66900	66800	66700	66700	66600	58300
14	4610	13000	24200	67800	67000	66800	66900	66700	66700	66700	66600	57300
15	4760	13400	26000	67500	67000	66700	67000	66800	66700	66500	66600	56200
16	4710	13800	26900	68100	67000	66700	67000	66800	66700	66600	66500	55200
17	4720	14200	27800	67700	66700	66700	66900	66800	66700	66600	66600	54100
18	5000	14700	28100	67300	66700	66700	66900	66800	66700	66600	66600	53300
19	5510	14600	28500	67200	66700	66700	66900	66800	66700	66600	66600	53400
20	5990	14600	30100	67100	66700	66800	67100	66800	66700	66600	66500	53700
21	6380	15500	31800	67000	66700	66900	67000	66700	66700	66600	66500	53900
22	6260	16600	34500	67000	66700	66800	66900	66700	66700	66600	66500	54200
23	6160	17200	37400	66800	66700	67000	66900	66700	66700	66600	66500	54400
24	6410	17200	38400	66700	66700	66900	67000	66700	66700	66600	66500	54700
25	6900	17600	39500	66700	66700	66900	67200	66700	66700	66600	66400	54900
26	7060	17600	40700	66700	66700	66900	67200	66700	66700	66600	66500	55200
27	7430	17600	42300	66700	66700	66900	67000	66700	66700	66600	66600	55400
28	7930	18200	43900	66600	66700	66900	67000	66700	66700	66600	66600	55700
29	7910	18600	46800	66600	---	66800	67000	66700	66700	66600	66600	56000
30	7830	19000	49000	66700	---	66800	66900	66700	66700	66600	66500	56200
31	8360	---	51200	66600	---	67000	---	66700	---	66600	66500	---
MAX	8360	19000	51200	68100	67300	67900	67200	67000	66700	66700	66600	66700
MIN	4250	8940	19400	51700	66200	66700	66900	66700	66700	66500	66400	53300
†	2047.2	2086.7	2151.5	2171.7	2171.8	2172.2	2172.1	2171.9	2171.9	2171.7	2171.6	2158.5
‡	+2850	+10600	+32200	+15400	+100	+300	-100	-200	0	-100	-100	-10300

CAL YR 1977 ‡ +44700
WTR YR 1978 ‡ +50700

† Elevation, in feet NGVD, at end of month.
‡ Change in contents, in acre-feet.

Correction required:
10/10 5220 - 264 = 4956 → 4950 (assume "2" in place of "9" was typo and the "50" was correct.)

11422000 BEAR RIVER CANAL INTAKE NEAR COLFAX, CA

LOCATION.--Lat 39°07'58", long 120°57'12", in SW¼SE¼ sec.22, T.15 N., R.9 E., Placer County, on right bank 600 ft (183 m) downstream from canal inlet, 0.2 mi (0.3 km) below Rollins Dam, and 2.2 mi (3.5 km) north of Colfax.

PERIOD OF RECORD.--January 1912 to September 1953, October 1964 to current year. Monthly discharge only for some periods published in WSP 1315-A. Prior to October 1912, published as Pacific Gas and Electric Co.'s Canal near Colfax, October 1912 to September 1953, published as Bear River Canal near Colfax.

GAGE.--Water-stage recorder. Altitude of gage is 1,980 ft (604 m), from topographic map. Prior to Mar. 25, 1946, water-stage recorder at site 1.5 mi (2.4 km) downstream at different datum.

REMARKS.--Canal diverts from left bank of Bear River. Water is first used to develop power at Halsey and Wise powerhouse, part of it is then distributed for irrigation and part is eventually spilled into North Fork American River. See schematic diagram showing diversion and storage in Bear 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.--55 years (water years 1913-53, 1965-78), 289 ft³/s (8.184 m³/s), 209,400 acre-ft/yr (258 hm³).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 516 ft³/s (14.6 m³/s) Oct. 6, 1976; 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	79	7.9	32	408	492	497	488	493	503	472	455	471
2	82	7.7	32	408	493	453	488	493	505	471	455	471
3	80	7.6	32	421	494	412	487	493	505	470	455	471
4	85	17	32	431	495	412	487	493	505	470	455	471
5	82	40	32	390	465	412	487	493	505	469	455	464
6	88	29	31	388	451	430	487	493	505	468	456	462
7	91	7.9	29	433	445	472	489	495	505	468	456	464
8	107	7.9	30	429	430	447	488	495	505	467	456	464
9	108	7.7	30	430	429	423	488	495	505	466	456	464
10	102	11	30	430	444	423	489	495	507	467	456	464
11	93	25	30	430	443	423	489	495	506	465	457	464
12	36	27	30	438	443	422	489	495	506	464	456	465
13	7.8	27	30	448	442	461	489	495	506	464	456	464
14	63	27	25	397	445	483	489	496	506	463	456	465
15	104	29	21	396	447	482	489	496	505	463	456	465
16	109	31	21	397	445	480	489	497	505	463	463	467
17	93	39	22	396	464	477	490	497	504	463	467	467
18	82	46	22	427	487	475	490	497	503	463	468	465
19	72	52	23	449	490	473	491	502	503	463	467	465
20	67	57	25	458	487	470	491	505	502	463	469	472
21	67	49	26	472	485	468	491	505	501	464	469	478
22	61	36	26	472	486	478	491	505	501	464	468	476
23	57	30	187	478	488	484	491	504	500	464	469	476
24	57	31	372	483	489	484	491	502	491	464	468	476
25	52	31	406	488	492	484	491	502	487	464	462	478
26	47	31	397	496	495	484	491	502	486	458	468	478
27	47	31	404	496	496	484	493	502	485	453	468	478
28	49	31	361	497	496	484	492	503	486	453	470	478
29	49	31	335	499	---	484	493	503	479	453	470	476
30	38	31	357	500	---	484	493	503	472	453	470	476
31	9.0	---	395	498	---	484	---	503	---	453	470	---
TOTAL	2163.8	835.7	3825	13783	13158	14329	14691	15447	14984	14365	14322	14095
MEAN	69.8	27.9	123	445	470	462	490	498	499	463	462	470
MAX	109	57	406	500	496	497	493	505	507	472	470	478
MIN	7.8	7.6	21	388	429	412	487	493	472	453	455	462
AC-FT	4290	1660	7590	27340	26100	28420	29140	30640	29720	28490	28410	27960
CAL YR 1977 TOTAL	31444.5		MEAN 86.1	MAX 406	MIN 7.6	AC-FT 62370						
WTR YR 1978 TOTAL	135998.5		MEAN 373	MAX 507	MIN 7.6	AC-FT 269800						

11422500 BEAR RIVER BELOW ROLLINS DAM, NEAR COLFAX, CA

LOCATION.--Lat 39°07'53", long 120°57'29", in SE¼SW¼ sec.22, T.15 N., R.9 E., Nevada County, on right bank 65 ft (20 m) downstream from highway bridge, 0.5 mi (0.8 km) downstream from Rollins Dam, and 2.2 mi (3.5 km) north of Colfax.

DRAINAGE AREA.--105 mi² (272 km²).

PERIOD OF RECORD.--January 1912 to September 1913, October 1913 to July 1915 (gage heights and discharge measurements only), August 1915 to June 1917, November 1949 to September 1953, August 1964 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to August 1964, published as Bear River near Colfax. Records for November and December 1911 include diversion to Bear River Canal and are not equivalent.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,927.41 ft (587.475 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 8, 1915, nonrecording gages at several sites above diversion dam 0.3 mi (0.5 km) upstream at different datums. Aug. 8, 1915, to June 30, 1917, nonrecording gage 0.7 mi (1.1 km) downstream at different datum. Nov. 1, 1949, to Sept. 30, 1953, at site 0.2 mi (0.3 km) downstream at different datum.

REMARKS.--Records good. Flow regulated by Rollins Reservoir (station 11421800) beginning Dec. 15, 1964. Bear River Canal (station 11422000) diverts above station. See schematic diagram of Bear River basin.

AVERAGE DISCHARGE (unadjusted).--19 years (water years 1913, 1916, 1951-53, 1965-78), 367 ft³/s (10.39 m³/s), 265,900 acre-ft/yr (328 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (prior to construction of Rollins Dam in 1964), 9,620 ft³/s (272 m³/s) Nov. 20, 1950, gage height, 21.40 ft (6.523 m) site and datum then in use, from rating curve extended above 3,600 ft³/s (102 m³/s) on basis of slope-area measurement of maximum flow; no flow at times in 1912, 1952. Maximum discharge since construction of Rollins Dam, 12,700 ft³/s (360 m³/s) Jan. 21, 1970, gage height, 11.72 ft (3.572 m), from rating curve extended above 6,000 ft³/s (170 m³/s); minimum daily, 0.5 ft³/s (0.014 m³/s) Nov. 17, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,550 ft³/s (129 m³/s) Jan. 17, gage height, 7.22 ft (2.201 m); minimum daily, 3.6 ft³/s (0.10 m³/s) Dec. 26, 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	19	13	9.7	4.3	484	410	984	1030	505	487	342	319
2	19	11	9.7	6.6	524	777	970	942	509	491	364	278
3	20	12	9.7	6.7	540	2200	920	854	552	426	345	301
4	20	11	9.6	9.7	496	2530	1020	827	503	378	338	390
5	26	11	9.6	64	64	3650	916	811	476	387	362	285
6	30	12	9.4	333	714	2810	1050	789	495	402	374	73
7	30	11	9.4	1110	1480	1740	1060	777	496	406	357	74
8	31	10	6.3	893	1520	1360	1080	766	492	416	355	76
9	31	10	4.8	1310	1540	1270	1010	760	473	398	354	74
10	31	9.2	4.8	1280	1250	1160	1020	748	471	317	286	73
11	60	8.7	5.1	944	1160	1100	996	739	471	298	323	74
12	45	9.7	4.8	799	1140	959	944	703	468	356	349	75
13	15	9.7	4.8	758	1350	859	903	686	468	386	358	73
14	21	12	6.8	1760	971	794	932	587	467	408	357	72
15	23	11	7.7	2770	1130	725	963	709	480	286	354	75
16	23	10	5.1	2940	1030	589	1010	723	529	344	349	78
17	21	10	6.1	3810	723	552	953	701	502	368	343	76
18	20	10	5.1	2120	664	534	915	696	440	372	343	74
19	20	9.7	4.8	1750	635	605	911	675	431	371	343	73
20	20	9.7	4.8	1430	656	635	1030	638	427	369	330	72
21	20	11	4.9	1100	657	832	1090	597	428	357	334	73
22	15	10	6.9	991	633	817	971	597	456	328	342	73
23	11	9.7	11	863	642	887	899	593	474	325	330	70
24	11	9.7	4.8	710	613	923	914	581	487	334	317	74
25	11	9.7	3.9	615	577	844	1250	583	458	349	255	74
26	11	9.7	3.6	598	532	809	1310	556	413	359	291	75
27	11	9.7	5.5	585	515	788	1190	531	390	364	356	75
28	11	9.7	6.3	563	477	780	1070	530	389	361	375	75
29	11	9.7	8.6	543	---	767	1030	460	421	360	379	75
30	10	9.7	5.1	524	---	752	999	458	469	350	359	75
31	12	---	3.6	513	---	848	---	499	---	326	316	---
TOTAL	659	309.3	202.3	31703.3	22717	34306	30310	21146	14040	11479	10580	3427
MEAN	21.3	10.3	6.53	1023	811	1107	1010	682	468	370	341	114
MAX	60	13	11	3810	1540	3650	1310	1030	552	491	379	390
MIN	10	8.7	3.6	4.3	64	410	899	458	389	286	255	72
AC-FT	1310	613	401	62880	45060	68050	60120	41940	27850	22770	20990	6800

CAL YR 1977 TOTAL 6101.3 MEAN 16.7 MAX 60 MIN 3.6 AC-FT 12100
WTR YR 1978 TOTAL 180878.9 MEAN 496 MAX 3810 MIN 3.6 AC-FT 358800

River Canal
10/10 314 102 = 133 = 264 AF
10/11 31 + 93 = 124 = 246

11423700 NEW CAMP FAR WEST RESERVOIR NEAR WHEATLAND, CA

LOCATION.--Lat 39°03'01", long 121°18'53", in NE¼SW¼ sec.21, T.14 N., R.6 E., on Yuba-Placer County line, in center of New Camp Far West Dam on the Bear River, 6.4 mi (10.3 km) east of Wheatland, and 11.8 mi (19.0 km) northeast of Sheridan.

DRAINAGE AREA.--283 mi² (733 km²).

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by South Sutter Water District).

REMARKS.--Reservoir is formed by an earthfill dam. Storage began Sept. 30, 1963. Usable capacity, 102,200 acre-ft (126 hm³) between elevations 175.0 ft (53.34 m) bottom of lowest river outlet, and 300.0 ft (91.44 m) crest of spillway. Dead storage, 2,200 acre-ft (2.71 hm³). See schematic diagram of Bear River basin.

COOPERATION.--Records furnished by South Sutter Water District and California Department of Water Resources.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 120,200 acre-ft (148 hm³) Jan. 21, 1970, elevation, 307.3 ft (93.66 m); minimum, 2,200 acre-ft (2.71 hm³) Oct. 11, 1968, elevation, 175.0 ft (53.34 m), may have been lower during periods of no record Oct. 12-16, 1968, and during the 1977 water year.

EXTREMES FOR CURRENT YEAR.--Maximum observed contents, 112,600 acre-ft (139 hm³) Mar. 4, elevation, 303.76 ft (92.586 m); minimum observed, 3,000 acre-ft (3.70 hm³) Oct. 4, 16, elevation, 180.0 ft (54.86 m), but may have been less during periods of no record.

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

170	1400	250	34200
180	3000	260	44000
190	4800	270	55500
200	7000	280	69500
210	9800	290	85600
220	14000	300	104400
230	19400	320	151000
240	25800		

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	---	3200	4600	---	106100	106100	107000	107200	105900	102100	89200	74300
2	---	---	---	---	106100	108100	107000	107200	105900	102000	88600	73800
3	---	---	---	---	106100	109800	107000	107000	105900	101800	88000	73400
4	3000	---	---	---	106100	112600	107200	107000	105900	101600	87700	73000
5	---	---	4700	---	106100	112000	107200	106800	105900	101400	87100	72700
6	---	---	---	---	106600	110000	108100	106800	105900	101000	86500	72900
7	---	3300	---	---	109400	108700	108100	106800	105900	100600	86000	72400
8	---	---	---	---	108700	108300	107700	106100	105900	100500	85600	71800
9	---	---	---	---	109000	107900	107400	106400	105700	100100	85100	---
10	---	---	---	---	108100	107700	107400	106400	105500	99500	84600	70900
11	---	---	---	---	107900	107400	107200	106400	105500	99100	84200	70500
12	---	---	4900	---	108100	107400	107200	106400	105300	98600	83700	70000
13	---	---	---	---	108300	107200	107000	106400	105100	98200	---	69700
14	---	3300	---	---	107900	107000	107000	106400	104800	97800	82500	69500
15	---	---	6500	---	107700	106800	107400	106400	104800	97400	82100	69200
16	3000	---	7200	---	107400	106600	107900	106400	104600	96900	81600	68900
17	---	---	---	---	107000	106600	107700	106400	104600	96300	81100	68700
18	---	---	---	---	106800	106400	107200	106400	104600	95900	---	68400
19	---	---	8100	109000	106800	106400	107200	106400	104400	95400	80300	68100
20	---	---	8200	108300	106600	106400	107200	106400	104200	95000	79800	68000
21	---	---	8300	107700	106600	106600	107200	106400	104000	94600	79300	67800
22	---	3300	8400	107200	106600	106800	107200	106100	103800	94100	78800	67700
23	---	4500	9200	107000	106600	106800	107000	106100	103600	93500	78400	67500
24	---	---	---	106800	106400	106800	107000	106100	103600	92900	77900	67400
25	---	---	---	106600	106400	106800	109000	106100	103500	92400	77400	67300
26	---	---	12700	106400	106400	106800	108500	106100	103300	91800	76700	67300
27	---	---	---	106400	106100	106800	108100	106100	102900	91400	76300	67100
28	3100	---	13600	106400	106100	106800	107700	106100	102700	90900	75800	67000
29	---	---	15600	106100	---	106800	107400	106100	102500	90300	75300	67000
30	---	4600	18300	106100	---	106800	107200	105900	102100	89700	75000	66800
31	3200	---	19200	106100	---	106800	---	105900	---	89400	74700	---
MAX	---	---	---	---	109400	112600	109000	107200	105900	102100	---	---
MIN	---	---	---	---	106100	106100	107000	105900	102100	89400	---	---
†	181.0	189.0	229.7	300.8	300.8	301.1	301.3	300.7	298.8	292.0	283.2	278.1
‡	+200	+1400	+14600	+86900	0	+700	+400	-1300	-3800	-12700	-14700	-7900

CAL YR 1977 ‡ --
WTR YR 1978 ‡ +63,800

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

11424000 BEAR RIVER NEAR WHEATLAND, CA

LOCATION.--Lat 39°00'01", long 121°24'21", in SE¼SW¼ sec.3, T.13 N., R.5 E., Placer County, on right bank 100 ft (30 m) downstream from bridge on U.S. Highway 99E, 1 mi (2 km) southeast of Wheatland, and 6.5 mi (10.5 km) downstream from Rock Creek.

DRAINAGE AREA.--292 mi² (756 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1928 to current year.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 71.92 ft (21.921 m) National Geodetic Vertical Datum of 1929. See WSP 2131 for history of changes prior to May 28, 1970.

REMARKS.--Records good. Natural flow of stream affected by inflow from Yuba River and American River basins. Flow regulated by Lake Combie, usable capacity, 7,840 acre-ft (9.67 hm³), Rollins Reservoir (station 11421800) since December 1964, and New Camp Far West Reservoir (station 11423700) since October 1963. Many diversions for irrigation and power. See schematic diagram of Bear River basin.

AVERAGE DISCHARGE (adjusted for diversions and change in contents in New Camp Far West Reservoir since 1966).--49 years, 453 ft³/s (12.83 m³/s), 328,200 acre-ft/yr (405 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft³/s (935 m³/s) Dec. 22, 1955, gage height, 19.30 ft (5.883 m) site and datum then in use; maximum gage height, 20.83 ft (6.349 m) Nov. 21, 1950, site and datum then in use; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,010 ft³/s (255 m³/s) Jan. 17, gage height, 13.11 ft (3.996 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	0	0	.54	768	621	1100	1080	13	7.3	2.5	5.7		
2	0	0	0	.47	763	765	1220	1040	10	7.9	4.9	4.8		
3	0	0	0	.61	775	3330	1140	945	24	8.2	6.7	4.1		
4	0	0	0	2.9	778	5150	1160	818	60	8.2	4.5	3.9		
5	0	0	0	161	773	6930	1260	747	53	7.2	7.3	8.2		
6	0	0	0	75	803	5190	1530	695	45	7.3	8.3	12		
7	0	0	0	17	2130	3220	1890	650	42	4.5	6.1	9.5		
8	0	0	0	9.2	3290	2240	1590	762	15	3.7	5.5	7.3		
9	0	0	0	31	3040	2020	1400	478	5.9	2.4	4.1	8.1		
10	0	0	.21	16	2380	1690	1250	450	4.7	2.1	4.2	13		
11	0	0	.38	7.9	2010	1610	1190	445	5.7	1.8	3.8	11		
12	0	0	.48	5.7	1790	1530	1130	403	7.6	2.6	4.1	11		
13	0	0	.24	17	2250	1360	1060	341	9.2	2.6	4.1	9.7		
14	0	0	.95	145	2150	1180	997	315	8.8	2.2	4.1	8.8		
15	0	0	2.3	665	1680	1040	1060	239	7.1	1.9	3.8	9.4		
16	0	0	.45	6160	1600	919	1630	255	6.7	2.2	3.9	8.9		
17	0	0	.47	7930	1380	818	1600	285	5.6	2.4	5.9	8.1		
18	0	0	.45	4500	1100	762	1350	280	5.0	1.9	8.7	6.5		
19	.04	0	.30	3100	1010	722	1190	267	5.6	6.5	6.8	3.1		
20	.03	0	.27	2490	947	722	1150	241	6.9	5.8	8.7	2.0		
21	0	.10	.27	1890	899	801	1220	217	7.1	5.4	7.9	1.8		
22	0	1.8	.55	1580	873	1010	1180	172	8.6	5.1	7.5	1.8		
23	0	.27	5.5	1400	832	1110	1080	146	7.7	5.7	8.0	1.9		
24	0	.02	1.0	1190	772	1090	1020	137	8.9	5.6	8.7	3.0		
25	0	0	.69	1030	726	1060	1880	130	11	4.5	8.6	4.4		
26	0	0	.61	935	688	984	2490	121	10	5.6	8.5	3.7		
27	0	0	1.1	889	649	939	1840	108	9.5	4.2	8.6	2.7		
28	0	0	3.6	863	642	900	1470	86	9.2	3.4	8.4	2.5		
29	0	0	6.5	836	---	876	1250	74	8.6	2.7	8.7	1.8		
30	0	0	2.1	809	---	864	1130	44	7.8	2.4	8.2	1.9		
31	0	---	.75	785	---	915	---	16	---	2.7	6.1	---		
TOTAL	.07	2.19	29.17	37541.32	37498	52368	40457	11987	429.2	136.0	197.2	180.6		
MEAN	.002	.073	.94	1211	1339	1689	1349	387	14.3	4.39	6.36	6.02		
MAX	.04	1.8	6.5	7930	3290	6930	2490	1080	80	8.2	8.7	13		
MIN	0	0	0	.47	642	621	997	16	4.7	1.8	2.5	1.8		
AC-FT	.1	4.3	58	74460	74380	103900	80250	23780	851	270	391	358		
†	67	342	0	0	0	0	300	21730	28384	29959	29508	11489		
CAL YR 1977 TOTAL		601.68	MEAN	1.65	MAX	8.2	MIN	0	AC-FT	1190	MEAN †	35.5	AC-FT †	25710
WTR YR 1978 TOTAL		180825.75	MEAN	495	MAX	7930	MIN	0	AC-FT	358700	MEAN †	752	AC-FT †	544300

† Diversion, in acre-feet, to Camp Far West North and South Canals and South Sutter conveyance canal, furnished by South Sutter Water District.

‡ Adjusted for diversions and change in contents in New Camp Far West Reservoir.

11424000 BEAR RIVER NEAR WHEATLAND, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1953 to current year.

COOPERATION.--Records furnished by 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)
DEC 30...	1400	1.4	228	7.7	13.0	1.0	11.3
JAN 26...	1115	931	96	7.2	9.0	30	11.3
FEB 16...	1130	1610	90	7.3	9.0	25	11.8
MAR 16...	1220	876	93	7.4	13.0	15	10.7
APR 18...	1145	1340	80	7.5	14.0	4.0	10.3
MAY 18...	1205	279	83	7.4	20.0	1.0	9.5
JUN 22...	1045	9.0	260	7.8	26.0	2.0	8.6
JUL 21...	0920	5.3	182	7.8	27.0	--	8.6

DATE	HARD- NESS (MG/L AS CACO3)	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)
DEC 30...	90	30	18	8.6	60	12	165
JAN 26...	30	9	5.0	2.7	21	1.9	84
FEB 16...	29	5	7.0	3.3	24	4.7	66
MAR 16...	29	2	6.3	4.0	27	2.2	38
APR 18...	30	--	7.8	3.0	27	4.4	40
MAY 18...	30	--	6.8	3.4	26	3.1	54
JUN 22...	110	--	21	8.2	85	7.1	158
JUL 21...	87	--	17	6.6	68	5.6	133

SACRAMENTO RIVER BASIN

11425000 FEATHER RIVER NEAR NICOLAUS, CA

LOCATION.--Lat 38°53'26", long 121°36'12", in SE4NE4 sec.14, T.12 N., R.3 E., Sutter County, on left bank 1.7 mi (2.7 km) southwest of Nicolaus, 4.2 mi (6.8 km) downstream from Bear River, and at mile 8.1 (13.0 km).

DRAINAGE AREA.--5,921 mi² (15,335 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1921 to December 1942 (low-water periods only), April 1943 to current year. Prior to October 1974, published as "at Nicolaus."

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3.30 ft (1.006 m) below National Geodetic Vertical Datum of 1929. Prior to November 1931, on middle fender pier of bridge 1.6 mi (2.6 km) upstream at same datum. November 1931 to September 1974, at highway bridge 1.3 mi (2.1 km) upstream at same datum.

REMARKS.--Records good. Flow partly regulated by many reservoirs, total capacity, 6,868,000 acre-ft (8.47 km³), the largest of which are Lake Oroville (station 11406800) completed in 1968, Lake Almanor (station 11399000) completed in 1913, and New Bullards Bar Reservoir (station 11413515) completed in 1969. Diversions for irrigation of about 87,000 acres (352 km²) between stations at Oroville and near Nicolaus.

AVERAGE DISCHARGE.--35 years (water years 1944-78), 8,007 ft³/s (226.8 m³/s), 5,801,000 acre-ft/yr (7.15 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1944-78), 357,000 ft³/s (10,100 m³/s) Dec. 23, 1955; maximum gage height, 51.60 ft (15.728 m) Dec. 23, 1955; no flow Aug. 2-18, 1924, July 11-22, 24, 26, Aug. 1, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26,200 ft³/s (742 m³/s) Jan. 6, gage height, 33.40 ft (10.180 m); maximum gage height, 39.44 ft (12.021 m) Jan. 17, backwater from the Sacramento River; minimum daily discharge, 748 ft³/s (21.2 m³/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	748	1210	1240	2400	5070	6320	12500	13600	2570	2800	7630	5330
2	847	1220	1230	2000	4870	6050	12900	13500	2460	2800	7750	5340
3	990	1200	1230	1880	4780	14200	12900	14100	2460	2850	7550	5300
4	1010	1190	1230	2040	4690	15600	12500	13600	2450	3150	6760	5330
5	1040	1240	1220	5130	4720	23700	12900	13600	2500	3250	6560	5360
6	1080	1260	1230	23600	5210	27000	13500	13400	3220	3680	6480	5450
7	1090	1250	1230	12600	7000	28700	17700	12300	3530	4160	6480	5490
8	1100	1210	1210	5830	13000	25900	14700	11200	3630	4350	6830	5510
9	1140	1210	1210	3160	12000	25100	13300	10800	3310	4380	7110	5510
10	1150	1200	1240	6810	11000	25500	12900	9980	3430	4370	7140	5740
11	1130	1170	1230	4100	10000	24700	12300	8500	3510	5010	7080	5790
12	1170	1190	1270	2900	9800	24200	12000	7700	3520	5530	6470	5770
13	1180	1190	1260	3420	11700	23700	11900	7250	3410	5600	5990	5680
14	1140	1210	1280	7850	11000	23200	11900	6920	3250	5610	5560	5660
15	1140	1220	1710	16200	9400	22800	11900	6620	3290	5650	5190	5670
16	1140	1230	2400	22600	8300	22700	12800	6450	3320	5650	5150	5700
17	1150	1230	2180	33500	7500	22100	12600	6120	3220	5640	5160	5670
18	1150	1280	2140	22000	7000	19700	11700	6090	3220	5620	5170	5570
19	1180	1240	2540	14500	6900	17400	11300	6060	3110	5590	5180	5500
20	1190	1220	2050	11700	6800	15100	11200	5910	2790	5610	5160	5480
21	1210	1270	1820	9650	6800	13400	11600	5260	2690	5600	5150	5540
22	1210	1470	1730	6560	6500	13500	11600	5200	2670	5840	5150	5510
23	1210	1460	2310	5310	6200	12400	11400	5060	2760	6750	5140	5510
24	1210	1330	4430	6890	6500	11600	11100	4930	2840	7080	5140	5550
25	1190	1280	3350	6530	5800	11600	12200	4250	2880	7200	5170	5510
26	1150	1250	2270	6960	5600	11700	18900	3140	2890	7220	5250	5580
27	1140	1230	1790	5120	5600	11700	16600	3910	2920	7230	5220	5570
28	1130	1240	2640	4210	6010	12400	13600	3140	2920	7210	5270	5510
29	1120	1240	3650	4170	---	12200	13000	2880	2860	6730	5320	5430
30	1180	1260	4080	4600	---	12100	13400	3170	2810	6880	5330	5510
31	1220	---	3380	5460	---	12200	---	3070	---	7220	5330	---
TOTAL	34735	37400	61780	269680	209750	548470	388800	237710	90440	166260	183870	166100
MEAN	1120	1247	1993	8699	7491	17690	12960	7668	3015	5363	5931	5537
MAX	1220	1470	4430	33500	13000	28700	18900	14100	3680	7230	7750	5790
MIN	748	1170	1210	1880	4690	6050	11100	2880	2450	2800	5140	5300
AC-FT	68900	74180	122500	534900	416000	1088000	771200	471500	179400	329800	364700	329500

CAL YR 1977 TOTAL 537271 MEAN 1472 MAX 4430 MIN 589 AC-FT 1066000
WTR YR 1978 TOTAL 2394995 MEAN 6562 MAX 33500 MIN 748 AC-FT 4750000

11425000 FEATHER RIVER NEAR NICOLAUS, CA--Continued

WATER-QUALITY RECORDS

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

CHEMICAL ANALYSES: Water years 1951-66. Published as "at Nicolaus".

WATER TEMPERATURES: Water years 1951-58, 1960 to current year. Published as station 11425100 for period 1964-74.

PERIOD OF DAILY RECORD.--

CHEMICAL ANALYSES: October 1951 to September 1958, November 1959 to September 1962.

SPECIFIC CONDUCTANCE: March 1951 to September 1958, October 1960 to June 1966.

WATER TEMPERATURES: March 1951 to September 1958, November 1959 to current year.

INSTRUMENTATION.--Temperature recorder since November 1961.

REMARKS.--Unpublished records of daily specific conductance available in files of district office. Prior to 1964 water year, thermograph located at gaging station "at Nicolaus", 1.3 mi (2.1 km) upstream. Records from October 1964 to September 1974 were obtained 2.5 mi (4.0 km) downstream and are considered equivalent.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 34.5°C July 21, 1961; minimum recorded, 0.0°C Jan. 3-6, 1961.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 26.5°C June 5-8, July 6, 9; minimum recorded, 7.5°C Dec. 20.

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	23.5	18.0	17.0	13.5	12.5	11.0	10.0	9.5	9.5	8.5	12.0	12.0
2	23.0	18.0	17.0	13.5	12.5	10.5	10.0	9.5	10.0	9.0	12.5	11.5
3	23.0	18.5	16.0	13.5	12.5	11.0	10.5	10.0	10.5	9.0	13.0	12.0
4	23.0	18.5	14.5	12.5	11.5	10.5	10.5	10.0	10.0	9.5	12.5	12.5
5	21.0	17.5	15.0	12.5	12.0	11.0	10.5	10.0	10.5	9.5	13.0	12.0
6	20.5	17.0	14.5	12.0	12.0	11.5	10.5	10.0	10.5	10.0	13.0	12.0
7	21.0	17.0	14.5	11.5	12.5	11.5	10.5	10.0	11.0	10.5	13.0	12.0
8	21.0	17.0	13.5	10.5	11.5	10.0	11.0	10.5	10.5	10.0	12.5	11.5
9	21.0	17.0	13.5	10.5	10.5	9.5	11.5	11.0	10.5	10.0	12.0	11.5
10	21.0	17.0	13.0	11.0	10.5	9.0	11.5	11.0	10.0	9.5	12.0	11.5
11	21.0	17.0	13.5	11.5	10.0	9.0	12.0	11.5	10.0	9.5	12.0	11.5
12	20.5	17.5	15.0	12.0	11.0	10.0	12.0	11.5	10.0	9.0	11.5	10.5
13	21.0	17.0	15.0	12.0	11.0	10.0	11.5	11.5	10.0	9.0	11.0	10.5
14	20.5	17.0	14.5	12.5	11.5	10.5	11.5	11.5	10.0	9.0	11.5	10.5
15	21.0	17.5	15.0	12.0	12.0	11.0	11.5	10.5	10.5	9.5	11.5	11.0
16	20.5	17.0	15.0	12.0	11.0	10.5	10.5	10.5	10.5	10.0	11.5	11.0
17	20.5	16.5	14.5	12.0	10.5	10.0	11.0	10.5	10.0	9.5	12.0	11.5
18	19.5	16.5	13.5	11.5	10.5	9.5	11.0	10.5	10.5	9.5	12.0	11.5
19	19.0	16.0	12.0	9.5	10.0	8.0	11.0	10.5	11.0	9.5	12.5	11.5
20	17.5	15.0	10.0	8.0	9.0	7.5	11.0	10.5	11.5	10.0	12.5	12.0
21	18.5	15.0	9.5	8.5	9.5	8.5	11.0	10.5	12.0	10.5	12.5	12.5
22	18.5	15.0	11.0	8.5	10.5	9.0	11.0	10.5	12.5	11.0	13.5	12.5
23	17.5	15.5	11.0	9.5	11.5	10.0	10.5	9.5	12.5	11.0	13.5	12.5
24	19.0	15.5	13.0	11.0	11.0	10.5	9.5	8.5	12.0	11.5	14.0	12.0
25	20.0	16.0	13.0	10.5	11.0	10.0	9.5	8.5	12.5	11.0	14.0	12.5
26	19.5	17.0	14.0	11.5	10.5	10.0	9.5	9.0	13.0	11.5	14.5	13.0
27	18.0	16.0	13.5	12.0	10.5	10.0	9.5	9.0	13.0	11.0	15.0	13.0
28	16.5	15.5	14.0	11.5	10.5	10.0	10.0	9.0	12.5	11.5	15.5	13.5
29	17.0	14.5	13.5	11.5	11.5	10.5	10.0	9.5	---	---	15.0	14.0
30	17.5	14.5	13.5	11.5	11.5	10.5	9.5	9.0	---	---	14.5	14.0
31	17.0	14.5	---	---	11.0	10.0	9.0	9.0	---	---	14.5	13.5
MONTH	23.5	14.5	17.0	8.0	12.5	7.5	12.0	8.5	13.0	8.5	15.5	10.5

11425000 FEATHER RIVER NEAR NICOLAUS, 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	14.0	13.0	16.0	14.0	22.5	17.5	23.5	20.0	23.5	21.5	21.5	19.5
2	14.0	12.5	16.5	14.0	23.5	18.0	23.5	19.5	23.0	21.0	21.5	19.5
3	13.5	13.0	16.5	15.0	24.0	19.5	24.0	20.0	23.0	20.5	21.5	19.5
4	14.0	12.5	16.0	15.0	25.5	21.0	25.0	21.0	23.5	21.0	21.0	19.5
5	13.5	12.5	15.0	13.5	26.5	22.0	26.0	22.0	23.5	21.5	19.5	19.0
6	12.5	12.0	15.0	13.0	26.5	23.0	26.5	23.0	24.0	21.5	20.5	18.0
7	13.5	12.0	15.5	14.0	26.5	22.0	26.0	22.5	24.0	22.0	20.0	18.5
8	14.0	12.0	17.0	15.0	26.5	22.0	26.0	22.5	24.5	22.5	20.0	18.5
9	14.5	12.0	17.0	15.0	26.0	22.0	26.5	23.0	25.0	22.5	18.5	17.0
10	15.0	13.0	17.0	15.5	24.0	20.5	25.0	22.0	24.5	22.0	18.5	16.5
11	15.5	14.0	17.0	15.5	24.5	20.5	23.0	20.5	23.0	21.5	19.0	17.0
12	16.0	14.5	19.5	16.5	23.5	20.0	23.0	20.0	22.0	20.0	19.0	17.0
13	16.0	14.5	17.5	16.5	24.5	20.5	24.0	20.5	22.0	19.5	19.0	17.0
14	15.0	13.5	17.5	16.5	24.0	19.5	24.5	21.5	22.0	19.5	19.0	17.5
15	13.5	12.5	16.5	15.5	24.5	20.5	24.0	21.5	22.5	20.0	19.5	17.5
16	13.0	12.0	16.5	14.5	24.0	20.0	24.0	21.0	21.5	19.5	20.0	18.0
17	14.0	12.0	17.0	15.5	24.5	20.0	24.5	21.0	21.0	19.0	18.5	16.5
18	14.5	12.5	17.5	16.0	24.0	19.5	25.0	22.0	21.5	19.0	17.0	16.0
19	14.5	13.0	17.5	16.5	24.5	20.0	25.0	22.0	21.5	19.0	17.5	15.5
20	14.0	13.0	18.5	16.5	24.0	19.5	25.0	22.0	21.5	19.0	18.0	15.5
21	14.5	12.0	19.0	16.5	24.5	20.0	25.0	22.0	20.5	19.0	18.0	16.0
22	14.5	12.5	18.0	16.0	24.0	20.0	25.0	22.0	20.5	18.5	18.5	16.5
23	15.0	13.5	18.0	15.5	23.5	19.5	24.0	22.0	20.5	18.5	19.0	17.0
24	14.0	13.5	17.5	15.5	23.5	19.0	24.0	21.5	20.5	18.0	19.5	17.5
25	14.5	13.5	18.5	15.5	24.0	20.0	23.0	21.5	21.0	18.5	19.5	18.0
26	15.5	14.0	21.0	15.5	23.5	20.5	23.0	21.0	21.0	19.0	19.5	18.0
27	16.5	14.5	20.0	16.5	23.0	20.0	23.0	20.5	21.5	19.0	19.0	17.5
28	16.5	15.0	22.5	17.0	23.5	20.0	23.0	20.0	21.5	19.0	19.0	17.5
29	16.5	15.5	23.0	19.0	24.0	20.0	23.0	20.0	22.5	20.0	19.5	17.0
30	15.5	14.5	21.5	18.5	24.0	20.0	23.0	20.5	21.5	20.0	19.5	17.5
31	---	---	21.5	17.5	---	---	23.5	21.0	21.5	19.5	---	---
MONTH	16.5	12.0	23.0	13.0	26.5	17.5	26.5	19.5	25.0	18.0	21.5	15.5

11425500 SACRAMENTO RIVER AT VERONA, CA

LOCATION.--Lat 38°46'51", long 121°36'12", in SW¼SE¼ sec.23, T.11 N., R.3 E., Sutter County, on left bank 0.8 mi (1.3 km) southeast of Verona, 1 mi (2 km) downstream from Feather River, 6.2 mi (10.0 km) east of Knights Landing, and at mile 19.6 (31.5 km) upstream from Sacramento.

DRAINAGE AREA.--21,251 mi² (55,040 km²).

PERIOD OF RECORD.--May 1926 to September 1929 (low-water periods only), October 1929 to current year.

REVISED RECORDS.--WDR CA 77-4: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3.00 ft (0.914 m) below National Geodetic Vertical Datum of 1929.

REMARKS.--Records excellent. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation, return flow from irrigated areas, and bypassing for flood control. When discharge exceeds about 55,000 ft³/s (1,560 m³/s) flow begins over Fremont weir (just upstream) into Yolo Bypass (station 11453000). Gage height of crest of Fremont weir is 33.5 ft (10.21 m).

AVERAGE DISCHARGE.--49 years (water years 1930-78), 18,830 ft³/s (533.3 m³/s), 13,640,000 acre-ft/yr (16.8 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 79,200 ft³/s (2,240 m³/s) Mar. 1, 1940, gage height, 41.20 ft (12.558 m); minimum daily, 304 ft³/s (8.61 m³/s) July 23, 24, 1931; maximum reverse flow, 16,800 ft³/s (476 m³/s) Dec. 4, 1950, backwater from American River. Maximum combined discharge of Sacramento River at Verona and Fremont weir, about 322,000 ft³/s (9,120 m³/s) Dec. 25, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 68,300 ft³/s (1930 m³/s) Jan. 17, gage height, 35.52 ft (10.826 m); minimum daily, 4,260 ft³/s (121 m³/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	5200	5780	7220	13900	22200	22800	27300	29900	11400	10200	14700	15200
2	5350	5780	6800	12400	20800	22300	28200	29600	10500	10200	14900	15100
3	5200	5910	6470	11200	19800	27000	31800	29100	9770	10300	14900	15100
4	5070	6110	6250	11100	19400	38700	33200	27900	9330	10600	14300	15100
5	5010	6300	6130	15300	19600	49200	32400	27200	9840	10800	13900	15100
6	4920	6530	6070	36200	20500	58700	33700	26700	9520	10900	14000	15000
7	4780	6570	6000	41400	31000	63100	36200	25800	9670	11200	14100	15400
8	4570	6640	5950	36800	40800	63300	40000	23900	9880	11300	14200	15600
9	4570	6670	5900	30100	48200	62800	41100	22500	9470	11000	14600	15600
10	4570	6690	5950	34100	57300	62900	40600	20800	9360	11000	14600	16200
11	4640	6740	6020	39600	58500	63000	39300	19200	9420	11100	14500	16400
12	4500	6720	6110	45500	57400	62800	37600	16500	9510	11600	14200	16900
13	4440	6570	6170	52700	57100	62300	36100	16100	9210	11600	13800	16900
14	4380	6500	6300	54800	56600	61700	34500	15900	8950	11600	14000	16600
15	4320	6430	7110	60900	56200	61000	33200	16000	8820	11800	14200	16100
16	4320	6400	13400	63900	55300	60300	32900	16300	9120	12300	14300	15700
17	4320	6370	20400	67600	53700	59400	34600	16300	9380	12700	14400	15300
18	4260	6330	19800	65300	51100	57900	35000	15800	9650	12800	14400	14700
19	4380	6330	23200	64500	47200	55800	33500	15000	9800	12600	14400	14400
20	4500	6290	19700	62700	42300	52400	31900	14300	9540	12600	14200	14000
21	4500	6460	15500	60900	37100	47400	30600	13800	9220	12600	13900	13900
22	4440	7070	12400	58800	33800	42400	30200	13700	8910	12700	13700	13800
23	4440	7630	10700	56300	31500	38000	28600	14100	8870	13200	13800	13700
24	4440	8520	17500	53400	29600	34800	26800	14300	8850	13800	14000	13700
25	4440	9070	24300	48700	27300	33000	25900	13800	8850	14100	13600	13600
26	4500	9070	20600	42300	25300	31600	29100	12600	9070	14000	13700	13500
27	4780	8480	16300	36500	23800	30300	33200	12900	9380	14100	14100	13400
28	5200	8090	13800	31700	23000	29200	34200	12500	9580	14100	14500	13400
29	5390	7680	14200	28600	---	28300	31300	11800	9620	14000	14800	13400
30	5460	7490	16400	26300	---	27700	29800	11900	9890	13800	15100	13500
31	5590	---	15300	24200	---	27300	---	12100	---	14400	15200	---
TOTAL	146480	207220	367950	1287700	1066400	1437400	992800	568300	283580	379000	443000	446300
MEAN	4725	6907	11870	41540	38090	46370	33090	18330	9453	12230	14290	14880
MAX	5590	9070	24300	67600	58500	63300	41100	29900	11400	14400	15200	16900
MIN	4260	5780	5900	11100	19400	22300	25900	11800	8820	10200	13600	13400
AC-FT	290500	411000	729800	2554000	2115000	2851000	1969000	1127000	562500	751700	878700	885200
CAL YR 1977 TOTAL	2666120			7304					5288000			
WTR YR 1978 TOTAL	7626130			20890					15130000			

11426000 SACRAMENTO WEIR SPILL TO YOLO BYPASS, NEAR SACRAMENTO, CA

LOCATION.--Lat 38°36'25", long 121°33'15", unsurveyed, Sacramento County, 2 gages on right bank, one 100 ft (30 m) upstream from weir and one 100 ft (30 m) downstream from weir, 3.2 mi (5.1 km) upstream from American River, 4 mi (6 km) northwest of Sacramento, and at mile 4.2 (6.8 km) upstream from Sacramento.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for water years 1940-51, published in WSP 1735. Published as Sacramento weir near Sacramento 1939-61. Gage-height records collected at same site February 1926 to September 1934 and major flood flows only October 1934 to September 1939 are contained in reports of California Department of Water Resources.

GAGE.--Water-stage recorders and concrete weir crest. Datum of gage is 3.00 ft (0.914 m) below National Geodetic Vertical Datum of 1929. October 1939 to September 1942, October 1959 to September 1963, water-stage recorder or nonrecording gage at downstream end of weir. October 1942 to September 1959, water-stage recorder on left bank at Sacramento River opposite center of weir. Since February 1963, water-stage recorders on right bank 100 ft (30 m) upstream and 100 ft (30 m) downstream from ends of weir.

REMARKS.--Crest of weir is at gage height 22.0 ft (6.71 m) and top of moveable gates at 28.0 ft (8.53 m). Weir consists of 48 gates each 38.1 ft (11.61 m) long. Flow over weir enters Yolo Bypass by way of Sacramento Bypass. Flow regulated by weir gates. Since February 1963, stage is obtained by averaging the stage obtained at sites above and below the weir. Flow for current year is leakage through the weir gates.

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

AVERAGE DISCHARGE.--39 years, 197 ft³/s (5.579 m³/s) 142,700 acre-ft/yr (176 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 118,000 ft³/s (3,340 m³/s) Mar. 26, 1928; maximum gage height, 33.01 ft (10.061 m) Dec. 23, 1955; no flow all or most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 502 ft³/s (14.2 m³/s) Mar. 9; no flow most of 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	0						
2				0	0	0						
3				0	0	0						
4				0	0	0						
5				0	0	0						
6				0	0	112						
7				0	0	420						
8				0	0	487						
9				0	0	502						
10				0	8.0	460						
11				0	34	270						
12				0	26	228						
13				0	29	200						
14				0	12	168						
15				4.0	.50	136						
16				46	0	116						
17				216	0	86						
18				330	0	45						
19				371	0	7.0						
20				254	0	0						
21				135	0	0						
22				60	0	0						
23				6.0	0	0						
24				0	0	0						
25				0	0	0						
26				0	0	0						
27				0	0	0						
28				0	0	0						
29				0	---	0						
30				0	---	0						
31		---		0	---	0	---		---			---
TOTAL	0	0	0	1422.0	109.50	3237.0	0	0	0	0	0	0
MEAN	0	0	0	45.9	3.91	104	0	0	0	0	0	0
MAX	0	0	0	371	34	502	0	0	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	0	2820	217	6420	0	0	0	0	0	0
CAL YR 1977 TOTAL	0.00		MEAN .000	MAX .00	MIN 0	AC-FT 0						
WTR YR 1978 TOTAL	4768.50		MEAN 13.1	MAX 502	MIN 0	AC-FT 9460						

11426150 ONION CREEK NEAR SODA SPRINGS, CA

LOCATION.--Lat 39°16'02", long 120°21'50", in SE¼NE¼ sec.11, T.16 N., R.14 E., Placer County, Tahoe National Forest, on right bank 0.3 mi (0.5 km) upstream from unnamed tributary, 1 mi (2 km) upstream from mouth, and 4.0 mi (6.5 km) south of Soda Springs.

DRAINAGE AREA.--3.58 mi² (9.27 km²).

PERIOD OF RECORD.--August 1959 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 5,900 ft (1,798 m), from topographic map.

REMARKS.--Records good except those for the winter months and below 0.05 ft³/s (0.001 m³/s), which are poor.

AVERAGE DISCHARGE.--19 years, 9.19 ft³/s (0.260 m³/s), 6,660 acre-ft/yr (8.21 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,750 ft³/s (49.6 m³/s) Dec. 23, 1964, gage height, 4.98 ft (1.518 m) in gage well, 6.82 ft (2.079 m) from floodmarks, from rating curve extended above 120 ft³/s (3.40 m³/s) on basis of slope-area measurement of maximum flow; minimum daily, 0.01 ft³/s (0.0003 m³/s) Sept. 1, 2, 7-10, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft³/s (1.42 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)	
May 3	1945	70	1.98	2.24	0.683
May 14	1745	*131	3.71	2.51	0.765
May 29	1500	75	2.12	2.26	0.689

Minimum daily, 0.06 ft³/s (0.002 m³/s) Oct. 11-13, 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	.12	.16	.81	3.1	2.8	5.0	30	35	51	7.1	1.3	.28
2	.11	.12	.75	2.8	2.7	6.2	26	46	49	6.8	1.2	.27
3	.09	.12	.72	2.7	2.6	7.0	23	53	48	6.1	1.2	.26
4	.07	.13	.76	2.5	2.7	7.8	20	54	50	5.8	1.1	.24
5	.07	.30	.96	2.5	3.5	8.0	18	47	52	5.3	.97	4.2
6	.07	.21	.98	2.4	3.8	7.6	17	42	52	5.1	.92	3.2
7	.08	.21	.81	2.5	3.5	7.7	16	46	49	5.0	.87	1.1
8	.09	.20	.65	2.5	3.3	8.0	15	54	46	4.3	.74	.58
9	.09	.18	.55	3.3	3.1	8.0	16	65	43	4.0	.62	1.1
10	.07	.19	.54	3.0	3.0	8.0	21	71	37	3.7	.55	3.6
11	.06	.19	.59	2.9	2.8	8.0	27	69	34	3.4	.53	1.1
12	.06	.21	.57	2.6	2.8	7.9	31	68	32	3.1	.52	.68
13	.06	.19	1.0	3.0	2.8	7.5	31	79	30	2.9	.54	.54
14	.07	.17	2.5	5.1	2.8	7.3	28	89	28	2.7	.51	.61
15	.09	.17	5.8	5.5	2.7	7.4	24	77	24	2.7	.47	.50
16	.09	.17	2.1	5.0	2.7	8.5	21	56	22	2.5	.47	.42
17	.07	.18	2.8	4.3	2.7	9.6	19	52	20	2.3	.46	.44
18	.06	.18	2.1	3.6	2.7	11	19	54	19	2.2	.43	.43
19	.08	.16	1.7	3.3	2.7	12	19	58	18	2.0	.39	.42
20	.09	.16	1.4	3.0	2.8	14	19	61	17	2.0	.37	.41
21	.10	.70	1.3	3.0	3.0	17	17	67	15	1.9	.38	.39
22	.12	1.9	1.3	2.8	3.4	20	17	64	14	1.8	.40	.34
23	.12	1.2	1.3	2.7	3.8	21	17	50	13	1.8	.41	.33
24	.10	.85	1.2	2.4	4.2	19	20	40	12	1.7	.39	.32
25	.10	.87	1.2	2.3	4.3	20	33	35	11	1.6	.37	.32
26	.11	.92	1.4	2.4	4.3	22	27	36	9.6	1.6	.37	.31
27	.28	.93	6.0	2.4	4.3	25	31	42	11	1.6	.35	.31
28	.16	.91	5.6	2.5	4.5	28	33	50	9.2	1.6	.30	.29
29	.18	.88	7.5	2.6	---	31	33	57	8.8	1.4	.28	.27
30	.22	.85	6.0	2.7	---	36	33	57	8.3	1.4	.28	.26
31	.19	---	3.9	2.8	---	42	---	52	---	1.4	.28	---
TOTAL	3.27	13.61	64.79	94.2	90.3	447.5	701	1726	832.9	96.8	17.97	23.52
MEAN	.11	.45	2.09	3.04	3.23	14.4	23.4	55.7	27.8	3.12	.58	.78
MAX	.28	1.9	7.5	5.5	4.5	42	33	89	52	7.1	1.3	4.2
MIN	.06	.12	.54	2.3	2.6	5.0	15	35	8.3	1.4	.28	.24
AC-FT	6.5	27	129	187	179	888	1390	3420	1650	192	36	47

CAL YR 1977 TOTAL 504.24 MEAN 1.38 MAX 10 MIN .01 AC-FT 1000
WTR YR 1978 TOTAL 4111.86 MEAN 11.3 MAX 89 MIN .06 AC-FT 8160

NOTE.--No gage-height record Feb. 15 to Apr. 10.

11426190 LAKE VALLEY CANAL NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°17'58", long 120°39'11", in NE¼NW¼ sec.32, T.17 N., R.12 E., Placer County, Tahoe National Forest, on right bank 500 ft (152 m) upstream from inlet to Carpenter Flat siphon, and 1 mi (2 km) east of Emigrant Gap.

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

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 5,360 ft (1,634 m), from topographic map.

REMARKS.--Canal diverts from right bank of the North Fork of North Fork American River, 2.7 mi (4.3 km) downstream from Lake Valley Reservoir to the Drum Canal in the Bear River basin. See schematic diagram of Bear River and Yuba River basins.

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.--14 years, 13.3 ft³/s (0.377 m³/s), 9,640 acre-ft/yr (11.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 40 ft³/s (1.133 m³/s) Mar. 29, 1974; 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	27	35	35	33	33	34	12	13	29
2			0	29	36	38	33	34	34	11	13	29
3			0	30	36	35	33	34	34	10	13	29
4			0	30	36	39	33	34	34	9.4	12	22
5			0	35	35	38	33	34	34	8.4	12	3.2
6			0	35	32	35	33	35	34	7.5	12	1.2
7			0	30	34	35	33	35	34	6.7	12	.08
8			0	33	32	35	33	35	34	6.1	12	.03
9			0	31	34	35	33	35	33	5.5	9.2	.08
10			0	28	31	35	33	35	33	4.7	8.8	.11
11			0	35	29	34	33	35	32	4.0	8.7	.05
12			0	33	27	34	33	35	32	3.7	9.3	.02
13			0	36	31	33	33	35	31	3.6	12	0
14			0	38	30	33	33	35	33	10	12	0
15			0	27	28	33	33	35	35	21	12	0
16			0	31	28	34	33	35	35	21	12	0
17			0	30	30	33	33	35	35	19	12	0
18			0	29	31	33	33	35	35	13	12	0
19			0	35	32	35	33	35	35	13	9.1	9.7
20			0	31	32	37	33	35	33	13	8.8	33
21			0	27	33	38	33	35	31	13	8.9	30
22			0	23	33	38	33	35	29	13	8.9	28
23			2.5	23	34	35	33	35	28	13	11	25
24			2.5	25	34	33	33	34	25	13	20	21
25			2.5	26	33	33	33	33	16	13	25	25
26			2.5	27	33	33	33	33	9.2	13	27	29
27			18	31	33	33	33	33	13	13	29	29
28			28	31	33	33	33	34	17	13	29	30
29			28	33	---	33	33	35	16	13	30	30
30			28	35	---	33	33	35	15	13	30	30
31		---	27	35	---	33	---	35	---	13	29	---
TOTAL	0	0	139.0	949	905	1074	990	1071	873.2	345.6	472.7	433.47
MEAN	0	0	4.48	30.6	32.3	34.6	33.0	34.5	29.1	11.1	15.2	14.4
MAX	0	0	28	38	36	39	33	35	35	21	30	33
MIN	0	0	0	23	27	33	33	33	9.2	3.6	8.7	0
AC-FT	0	0	276	1880	1800	2130	1960	2120	1730	685	938	860
CAL YR 1977	TOTAL	1059.33	MEAN	2.90	MAX	35	MIN	0	AC-FT	2100		
WTR YR 1978	TOTAL	7252.97	MEAN	19.9	MAX	39	MIN	0	AC-FT	14390		

LOCATION.--Lat 39°08'37", long 120°45'30", in NW¼SE¼ sec.17, T.15 N., R.11 E., Placer County, Tahoe National Forest, on right bank 0.2 mi (0.3 km) downstream from Big Reservoir, and 6.0 mi (9.7 km) southeast of Dutch Flat.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 58 ft³/s (1.64 m³/s) Jan. 17, gage height, 3.73 ft (1.137 m); no flow Oct. 1, 2, 23-25.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.10	.20	.20	15	10	8.0	14	1.0	4.4	3.2	2.8
2	0	.10	.20	.20	11	16	7.3	12	1.0	4.2	3.1	2.7
3	.10	.10	.20	.20	9.0	21	6.3	11	.90	4.0	3.1	2.7
4	.10	.10	.20	.40	7.6	28	7.3	9.4	.80	4.0	3.1	3.0
5	.10	.30	.20	3.2	9.0	39	8.3	9.1	.60	2.9	3.2	4.0
6	.10	.20	.20	1.3	16	38	10	8.0	.60	2.3	3.4	3.9
7	.10	.10	.20	.60	23	34	9.6	7.6	.80	2.3	3.4	3.8
8	.10	.10	.20	.40	25	29	8.7	7.1	.80	2.3	3.4	3.7
9	.10	.20	.20	1.3	30	24	8.7	6.8	.80	2.3	3.4	3.8
10	.10	.20	.20	.90	30	20	8.7	6.3	2.0	2.3	3.5	3.9
11	.10	.20	.20	.60	27	18	8.7	6.0	4.5	2.3	3.6	3.8
12	.10	.20	.20	.50	24	16	8.7	5.5	5.5	2.4	3.6	3.6
13	.10	.20	.10	.70	24	16	8.7	5.0	5.5	2.4	3.6	3.6
14	.10	.20	.30	5.2	20	14	8.7	4.7	5.2	2.5	3.6	2.3
15	.10	.20	.60	6.8	19	11	10	5.0	5.0	2.6	3.7	.20
16	.10	.20	.20	26	17	9.6	12	4.7	4.7	2.7	3.6	.10
17	.10	.20	.60	44	15	8.7	11	4.2	4.7	2.9	3.4	.10
18	.10	.20	.30	42	14	7.8	10	3.4	4.7	2.9	3.4	.10
19	.10	.30	.20	37	13	7.3	9.8	3.1	4.9	2.9	3.4	.10
20	.10	.20	.20	33	12	6.8	14	2.7	5.0	2.9	3.0	.10
21	.10	.70	.20	30	11	7.1	14	2.5	5.0	2.9	2.6	.10
22	.10	.60	.50	27	11	6.8	13	2.3	5.0	2.9	2.6	.10
23	0	.40	.70	23	11	7.3	12	2.2	5.0	2.7	2.7	.10
24	0	.40	.30	20	9.6	7.3	13	2.3	5.0	2.7	2.7	.10
25	0	.40	.20	18	9.6	6.9	20	2.2	5.0	2.6	2.7	.10
26	.10	.30	.20	16	9.0	6.9	18	1.9	5.0	2.6	2.7	.10
27	.10	.20	.30	15	9.0	6.0	17	1.8	5.0	2.5	2.8	.10
28	.10	.20	.40	13	8.6	5.2	15	1.7	5.0	2.5	2.9	.10
29	.10	.20	.80	12	---	5.0	14	1.5	5.0	2.5	2.9	.10
30	.10	.20	.60	11	---	5.0	14	1.4	4.7	2.4	2.9	.10
31	.10	---	.30	17	---	6.4	---	1.1	---	2.5	2.9	---
TOTAL	2.60	7.20	9.40	406.50	439.4	444.1	334.5	156.5	108.50	86.3	98.1	49.30
MEAN	.084	.24	.30	13.1	15.7	14.3	11.2	5.05	3.62	2.78	3.16	1.64
MAX	.10	.70	.80	44	30	39	20	14	5.5	4.4	3.7	4.0
MIN	0	.10	.10	.20	7.6	5.0	6.3	1.1	.60	2.3	2.6	.10
AC-FT	5.2	14	19	806	872	881	663	310	215	171	195	98
CAL YR 1977	TOTAL	61.50	MEAN	.17	MAX	.80	MIN 0	AC-FT	122			
WTR YR 1978	TOTAL	2142.40	MEAN	5.87	MAX	44	MIN 0	AC-FT	4250			

SACRAMENTO RIVER BASIN

11426400 NORTH SHIRTTAIL CREEK NEAR DUTCH FLAT, CA

LOCATION.--Lat 39°07'49", long 120°47'44", in NW¼SE¼ sec.24, T.15 N., R.10 E., Placer County, Tahoe National Forest, on right bank 200 ft (61 m) downstream from Forbes Creek, and 7.0 mi (11.3 km) southeast of Dutch Flat.

DRAINAGE AREA.--9.10 mi² (23.57 km²).

PERIOD OF RECORD.--July 1956 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,500 ft (1,067 m), from topographic map.

REMARKS.--Flow slightly regulated by Big Reservoir, capacity, 2,200 acre-ft (2.71 hm³).

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--22 years, 20.0 ft³/s (0.566 m³/s), 14,490 acre-ft/yr (17.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,780 ft³/s (50.4 m³/s) Dec. 22, 1964, gage height, 7.56 ft (2.304 m), from rating curve extended above 590 ft³/s (16.7 m³/s) on basis of slope-area measurement at gage height 6.36 ft (1.939 m); no flow many days in 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a stage of 7.30 ft (2.225 m) from floodmarks, discharge, 1,650 ft³/s (46.7 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 473 ft³/s (13.4 m³/s) Jan. 16, gage height, 4.17 ft (1.271 m); no flow Oct. 2-18.

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	.10	.10	.30	19	26	28	44	42	5.9	3.1	1.2	.60
2	0	.10	.30	15	26	56	45	37	5.6	3.1	1.2	.50
3	0	.10	.30	16	22	116	37	33	5.3	3.1	1.1	.50
4	0	.10	.30	23	20	164	42	31	4.9	2.9	1.0	.50
5	0	.30	.30	172	27	266	38	25	4.5	2.7	1.0	5.0
6	0	.10	.30	149	67	194	44	26	4.1	2.5	.90	3.6
7	0	.10	.30	63	130	137	44	24	3.9	2.5	.90	2.0
8	0	.10	.30	41	129	110	47	23	3.5	2.2	.80	1.5
9	0	.10	.30	95	171	91	50	22	3.3	3.2	.80	1.8
10	0	.10	.30	78	123	79	46	21	3.3	2.1	.70	3.5
11	0	.10	.70	52	96	70	42	20	3.8	2.0	.90	2.0
12	0	.10	.60	37	89	66	37	19	4.0	1.8	.90	1.4
13	0	.10	.40	35	91	61	34	18	3.9	1.6	.90	1.1
14	0	.10	4.8	115	84	53	32	18	3.9	1.5	.90	1.1
15	0	.10	30	148	67	43	41	19	4.1	1.5	.80	.90
16	0	.10	6.2	257	62	43	44	17	4.2	1.6	.80	.80
17	0	.10	32	336	56	38	45	16	4.2	1.5	.80	.70
18	0	.10	14	200	50	34	46	14	3.9	1.5	.90	.60
19	.10	.10	6.4	156	48	31	46	12	3.9	1.5	.80	.50
20	.10	.10	133	110	44	28	65	10	3.9	1.4	.80	.40
21	.10	6.3	17	89	41	32	60	9.8	3.7	1.3	.80	.40
22	.10	6.8	26	74	38	31	54	9.9	3.6	1.3	.80	.40
23	.10	1.3	49	65	36	39	49	11	3.4	1.3	.80	.30
24	.10	.70	16	56	34	36	50	11	3.3	1.3	.70	.30
25	.10	.60	9.1	49	32	30	74	10	3.3	1.2	.70	.30
26	.10	.50	8.0	42	31	27	65	9.4	3.3	1.2	.80	.30
27	.10	.40	21	36	30	24	60	8.5	3.5	1.1	.80	.30
28	.10	.40	24	31	29	23	53	7.9	3.7	1.1	.60	.30
29	.10	.40	67	28	---	21	46	7.4	3.6	1.1	.60	.40
30	.10	.40	59	25	---	22	44	6.9	3.2	1.1	.60	.30
31	.10	---	29	28	---	31	---	6.4	---	1.1	.60	---
TOTAL	1.40	20.00	556.20	2640	1699	2024	1424	545.2	118.7	56.4	25.90	32.30
MEAN	.045	.67	17.9	85.2	60.7	65.3	47.5	17.6	3.96	1.82	.84	1.08
MAX	.10	6.8	133	336	171	266	74	42	5.9	3.2	1.2	5.0
MIN	0	.10	.30	15	20	21	32	6.4	3.2	1.1	.60	.30
AC-FT	2.8	40	1100	5240	3370	4010	2820	1080	235	112	51	64

CAL YR 1977 TOTAL 804.10 MEAN 2.20 MAX 133 MIN 0 AC-FT 1590
WTR YR 1978 TOTAL 9143.10 MEAN 25.0 MAX 336 MIN 0 AC-FT 18140

11427000 NORTH FORK AMERICAN RIVER AT NORTH FORK DAM, CA

LOCATION.--Lat 38°56'10", long 121°01'22", in SW¼NW¼ sec.31, T.13 N., R.9 E., Placer County, on left bank 50 ft (15 m) upstream from spillway of North Fork Dam, 2 mi (3 km) upstream from Middle Fork, and 4 mi (6 km) north-east of Auburn.

DRAINAGE AREA.--342 mi² (886 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1941 to current year.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 715.0 ft (217.93 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good. Minor regulation by Lake Clementine, usable capacity, 12,800 acre-ft (15.8 hm³) formed by North Fork Dam. Storage in Big Reservoir and Lake Valley Reservoir, combined capacity, 10,300 acre-ft (12.7 hm³) above station. Lake Valley Canal (station 11426190) diverts from North Fork of North Fork American River into Bear River basin for power development in powerhouses of Pacific Gas and Electric Co. Combined storage and diversion have small effect on natural flow.

AVERAGE DISCHARGE.--37 years, 807 ft³/s (22.85 m³/s), 584,700 acre-ft/yr (721 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,400 ft³/s (1,850 m³/s) Dec. 23, 1964, gage height, 11.87 ft (3.618 m), from rating curve extended above 24,000 ft³/s (680 m³/s) on basis of computed flow over spillway of dam at gage height 10.22 ft (3.115 m); no flow Aug. 27-30, Sept. 2-11, 1944, Oct. 5, 6, 1963, Nov. 7-10, 1965, caused by operation of valve in North Fork Dam.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,300 ft³/s (122 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 30	0200	5000 142	3.74 1.140	Mar. 5	0030	7690 218	4.49 1.369
Jan. 5	2100	*9630 273	4.93 1.503	Apr. 25	1100	4300 122	3.50 1.067
Jan. 9	2000	4820 137	3.68 1.122				

Minimum daily, 14 ft³/s (0.40 m³/s) Oct. 9.

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	28	71	1050	657	812	2510	1890	1780	455	100	52
2	23	28	69	811	684	1840	1990	1940	1730	444	96	52
3	20	26	66	825	662	4070	1650	2230	1680	415	92	50
4	18	27	63	915	621	4680	1570	2280	1670	376	88	50
5	18	42	63	4480	680	7140	1410	2130	1910	356	84	86
6	17	46	62	4520	1400	5220	1620	1740	1950	355	80	157
7	16	46	65	1970	2890	3560	1810	1670	1920	367	77	116
8	15	39	62	1370	3080	2780	1640	1810	1810	354	74	80
9	14	35	60	2590	3520	2350	1540	2090	1700	326	70	80
10	15	33	58	3050	2640	1990	1600	2280	1560	320	71	120
11	15	35	62	1840	2060	1810	1740	2300	1340	306	67	173
12	15	34	83	1390	1850	1680	1780	2170	1270	282	63	128
13	15	34	80	1210	2110	1450	1720	2180	1290	253	63	96
14	15	34	80	3540	1860	1290	1690	2510	1290	235	62	83
15	15	34	1760	6290	1620	1200	1620	3200	1170	231	61	81
16	15	37	729	6100	1400	1150	1810	2160	985	225	59	77
17	15	37	1040	7890	1230	1200	1620	1680	867	208	58	72
18	15	37	1370	4410	1100	1270	1550	1680	862	191	58	68
19	16	36	547	3360	1020	1230	1530	1820	822	179	57	67
20	15	36	348	2510	994	1340	1780	1950	751	166	56	66
21	18	75	270	1920	974	1530	1680	2060	744	158	55	65
22	18	595	463	1580	971	1760	1550	2280	707	151	55	65
23	19	223	2040	1340	983	1830	1470	2090	673	147	54	64
24	19	115	1090	1140	981	2000	1490	1550	645	142	55	64
25	19	86	629	1020	933	1540	3450	1270	597	136	55	63
26	22	81	469	919	893	1520	3030	1120	538	131	55	61
27	21	82	1200	845	851	1580	2450	1240	500	129	54	59
28	22	80	1480	792	802	1640	2460	1570	651	125	54	60
29	23	78	3230	746	---	1730	2100	1910	497	120	52	58
30	26	73	3480	710	---	1800	2060	2100	468	112	50	58
31	28	---	1600	682	---	2390	---	1960	---	105	50	---
TOTAL	566	2192	22689	71815	39466	67382	55920	60860	34257	7500	2025	2371
MEAN	18.3	73.1	732	2317	1410	2174	1864	1963	1142	242	65.3	79.0
MAX	28	595	3480	7890	3520	7140	3450	3200	1950	455	100	173
MIN	14	26	58	682	621	812	1410	1120	468	105	50	50
AC-FT	1120	4350	45000	142400	78280	133700	110900	120700	67950	14880	4020	4700
CAL YR 1977 TOTAL	54409			149	MAX 3480	MIN 12	AC-FT 107900					
WTR YR 1978 TOTAL	367043			1006	MAX 7890	MIN 14	AC-FT 728000					

11427000 NORTH FORK AMERICAN RIVER AT NORTH FORK DAM, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960 to current year.

CHEMICAL ANALYSES: Water year 1977.

WATER TEMPERATURES: Water years 1960 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: November 1959 to current year.

INSTRUMENTATION.--Temperature recorder since November 1959.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 29.0°C Aug. 8, 9, 1978; minimum recorded, 4.5°C Jan. 21, 1967, Jan. 25, 1976.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 29.0°C Aug. 8, 9; minimum recorded, 7.0°C Nov. 20.

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	21.5	14.5	17.0	11.5	12.0	10.0	8.5	8.0	8.0	7.5	11.0	10.0
2	21.0	14.5	16.5	11.0	12.5	9.5	8.0	8.0	8.5	8.0	10.5	10.0
3	21.5	14.0	16.5	11.0	12.0	9.5	8.5	8.0	8.5	8.0	10.0	9.5
4	21.5	14.5	15.5	12.0	12.5	9.5	8.5	8.0	9.0	8.0	10.5	9.5
5	21.0	14.0	15.0	12.0	13.0	10.0	8.5	8.0	9.5	8.5	10.0	9.0
6	20.0	14.5	15.5	11.0	11.5	9.5	9.5	8.5	9.0	8.5	9.5	9.0
7	20.0	13.0	14.5	11.0	11.0	9.5	9.5	9.0	8.5	8.0	10.0	9.5
8	20.0	13.0	15.0	10.0	12.0	8.5	9.5	9.0	9.0	8.5	10.5	10.0
9	20.0	13.0	14.5	9.5	11.0	8.0	9.5	9.0	9.0	8.5	11.0	10.5
10	20.0	13.0	14.0	9.5	11.0	7.5	9.0	9.0	9.0	9.0	11.0	10.0
11	20.0	14.0	14.0	10.5	9.5	8.0	9.0	8.5	9.0	8.5	10.5	10.0
12	20.0	14.0	15.0	10.0	11.0	9.0	9.5	8.5	8.5	8.0	10.5	9.5
13	20.0	13.5	14.5	10.5	10.5	10.0	9.5	9.0	8.0	8.0	10.5	9.5
14	20.0	13.0	14.0	10.0	10.5	10.0	9.5	9.5	8.5	8.0	10.5	9.5
15	19.5	14.5	14.5	9.5	11.0	10.0	9.5	9.0	8.5	8.0	11.0	9.5
16	19.0	14.0	14.0	9.5	10.0	9.5	9.0	9.0	8.5	8.5	11.0	9.5
17	19.5	13.0	13.0	9.5	10.0	9.0	9.5	9.0	8.5	8.0	11.5	9.5
18	19.5	13.5	13.5	9.0	9.5	8.5	9.5	9.0	8.5	8.0	11.5	10.5
19	19.5	13.0	13.0	7.5	8.5	8.0	9.5	9.0	9.0	8.0	11.5	11.0
20	19.0	14.0	10.5	7.0	8.5	8.0	9.5	9.0	9.5	8.5	12.0	10.5
21	18.5	12.5	10.5	8.0	8.5	8.0	9.5	9.0	10.0	8.5	11.5	10.5
22	18.5	12.0	12.5	10.5	9.0	8.5	9.0	8.5	10.0	9.0	11.5	10.5
23	17.5	13.0	12.5	12.0	9.0	8.0	9.0	8.5	10.5	9.5	11.0	10.0
24	18.5	14.0	13.5	12.0	9.0	8.5	8.0	8.0	10.5	9.5	10.5	9.5
25	19.5	14.0	13.5	11.5	9.0	8.5	8.5	7.5	10.5	9.5	11.0	9.5
26	19.5	15.5	13.5	11.5	9.0	8.5	8.0	7.5	10.0	9.5	11.0	10.0
27	18.0	13.5	12.5	11.5	9.0	8.0	8.0	7.5	10.0	9.5	11.5	10.5
28	16.5	13.5	13.0	10.5	9.0	8.0	8.0	7.5	10.5	9.5	12.0	11.0
29	17.0	13.0	12.5	10.5	9.0	8.5	8.0	7.5	---	---	12.0	11.0
30	17.5	13.5	12.5	10.5	9.0	9.0	8.0	7.5	---	---	12.0	11.0
31	17.5	12.0	---	---	8.5	8.5	8.0	7.5	---	---	12.0	11.0
MONTH	21.5	12.0	17.0	7.0	13.0	7.5	9.5	7.5	10.5	7.5	12.0	9.0

11427000 NORTH FORK AMERICAN RIVER AT NORTH FORK 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	11.0	9.5	12.0	10.5	---	---	20.0	17.5	27.0	24.0	25.0	20.5
2	10.0	9.0	12.5	11.0	---	---	20.0	17.5	26.5	23.5	25.5	21.0
3	10.5	9.0	13.0	12.0	---	---	20.5	18.5	27.5	24.5	25.0	21.0
4	10.5	9.5	13.0	12.0	---	---	21.5	19.0	27.5	24.5	24.0	20.5
5	10.5	9.0	13.0	12.0	---	---	22.0	19.5	28.0	24.5	21.5	21.0
6	10.0	9.0	12.5	10.5	15.0	13.5	22.5	20.0	28.5	25.0	24.0	21.5
7	9.5	8.5	12.5	11.0	15.0	14.0	23.0	20.5	28.5	25.5	23.5	21.0
8	9.5	8.5	---	---	15.5	14.0	23.5	21.5	29.0	25.5	22.5	20.0
9	10.5	9.0	---	---	15.5	14.0	24.5	22.0	29.0	26.0	21.0	19.5
10	12.0	10.0	---	---	15.5	14.5	24.0	21.0	28.5	25.5	21.5	20.0
11	12.5	11.5	---	---	16.0	14.0	23.5	21.0	28.0	24.5	22.5	20.0
12	13.0	12.0	---	---	16.0	14.5	23.5	21.5	26.0	23.0	22.0	19.5
13	12.5	11.5	---	---	16.0	14.0	24.5	22.0	26.0	22.0	21.0	19.5
14	12.0	11.0	---	---	16.5	14.5	25.0	22.0	26.0	21.5	22.0	19.5
15	11.0	10.0	---	---	16.5	14.0	25.5	22.5	26.0	22.0	22.5	19.5
16	10.0	9.5	---	---	17.0	14.5	25.5	22.5	25.5	21.5	23.0	20.0
17	9.5	8.5	---	---	17.5	15.0	25.5	22.5	25.0	20.0	22.5	19.5
18	10.5	8.5	---	---	17.5	15.5	25.5	22.5	25.0	20.0	20.5	17.0
19	11.0	9.5	---	---	18.0	16.0	26.0	22.5	25.0	20.5	20.5	16.0
20	11.0	10.5	---	---	18.0	16.0	26.0	23.0	24.5	20.0	20.5	16.5
21	11.0	9.5	---	---	18.5	16.0	26.5	23.0	24.5	20.5	20.5	17.0
22	11.0	9.5	---	---	18.5	16.0	26.5	23.5	24.5	19.5	21.5	17.5
23	11.5	9.5	---	---	19.0	16.5	27.0	24.0	23.5	19.0	21.5	18.0
24	11.5	10.5	---	---	19.0	17.0	27.0	24.0	23.5	19.0	22.5	18.5
25	11.0	10.5	---	---	19.5	17.0	27.5	24.5	24.0	19.0	22.5	19.0
26	10.5	10.0	---	---	19.0	17.0	27.5	24.5	24.5	20.0	22.5	19.0
27	10.5	10.0	---	---	19.0	17.0	27.5	24.5	24.0	19.5	21.5	17.5
28	12.0	10.5	---	---	19.0	17.0	27.0	24.0	24.5	20.0	21.5	17.0
29	12.0	11.0	---	---	19.0	16.5	27.5	24.0	25.0	21.0	21.5	18.0
30	12.0	11.5	---	---	20.0	17.0	27.0	24.0	25.0	21.0	22.0	18.0
31	---	---	---	---	---	---	27.0	23.5	25.0	20.5	---	---
MONTH	13.0	8.5	---	---	20.0	13.5	27.5	17.5	29.0	19.0	25.5	16.0

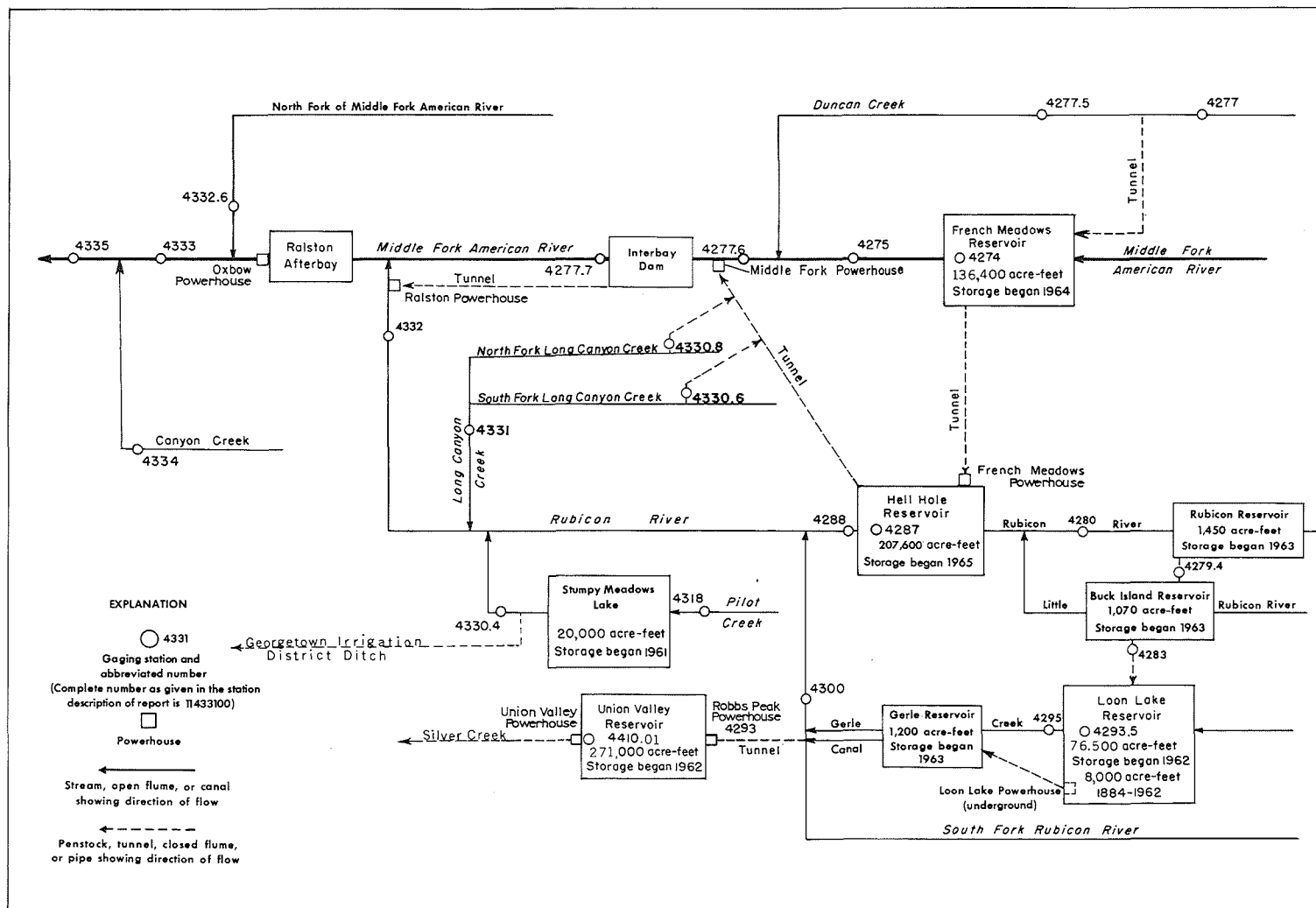


FIGURE 10.--Schematic diagram showing diversions and storage in Middle Fork American and Rubicon river basins.

11427400 FRENCH MEADOWS RESERVOIR NEAR FORESTHILL, CA

LOCATION.--Lat 39°06'32", long 120°25'49", in SW¼NE¼ sec.32, T.15 N., R.14 E., Placer County, Tahoe National Forest, on left bank 2.2 mi (3.5 km) upstream from dam on Middle Fork American River, 6.9 mi (11.1 km) upstream from Chipmunk Creek, and 21 mi (34 km) northeast of Foresthill.

DRAINAGE AREA.--47.0 mi² (121.7 km²).

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Placer County Water Agency).

REMARKS.--Reservoir is formed by rockfill dam with earth core. Storage began Dec. 21, 1964. Usable capacity, 125,601 acre-ft (155 hm³) between elevations 5,125 ft (1,562.1 m), minimum operating level and 5,263 ft (1,604.2 m), top of radial gates. Dead storage, 10,804 acre-ft (13.3 hm³). Reservoir is used to store water for hydroelectric power. Up to 400 ft³/s (11.3 m³/s) is diverted from Duncan Creek through a tunnel to reservoir. Water is released through a tunnel to French Meadows powerplant at Hell Hole Reservoir on the Rubicon River; releases began Dec. 13, 1965. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 137,700 acre-ft (170 hm³) May 19, 1966, elevation, 5,263.9 ft (1,604.44 m); minimum since reservoir first filled, 37,722 acre-ft (46.5 hm³) Nov. 20, 1977, elevation, 5,170.86 ft (1,576.078 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 135,839 acre-ft (167 hm³) July 3, elevation, 5,262.60 ft (1,604.040 m); minimum, 37,722 acre-ft (46.5 hm³) Nov. 20, elevation, 5,170.86 ft (1,576.078 m).

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

5125	10804	5200	62447
5130	13075	5230	94074
5150	23743	5270	146502
5170	37085		

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	38088	37775	38487	50033	49939	42611	54063	79781	118548	135261	123313	106884
2	38074	37767	38493	50427	49555	42650	54792	81251	119505	135599	122778	106453
3	38066	37745	38516	50806	49045	42737	55690	82900	120719	135839	122125	106170
4	38051	37745	38531	51245	48902	43564	56468	84487	122112	135698	121619	105876
5	38028	37812	38546	51619	48969	44471	57095	85932	123313	135416	121314	105509
6	38014	37812	38561	52467	48936	44722	57780	87177	124791	135472	121034	104947
7	38014	37797	38576	52719	48750	44689	58276	88408	125601	135487	120546	104532
8	38006	37797	38591	53106	48395	44657	58755	89861	126443	135501	119887	103863
9	37991	37790	38606	53920	48111	44495	59329	91692	127299	135515	119256	103631
10	37969	37782	38621	54399	47833	44487	59914	93566	127970	135374	118587	103631
11	37961	37767	38651	54480	47783	44698	60879	95565	128450	134978	118025	103135
12	37954	37760	38688	54124	47858	44860	61916	97205	128971	134542	117764	102422
13	37946	37752	38711	53813	47682	44819	62923	99809	129521	134080	117504	101796
14	37939	37752	38793	54302	47025	44479	63910	101219	130016	133631	116919	101147
15	37924	37744	40025	54570	46454	44414	64903	103153	130305	133159	116206	100608
16	37894	37744	40270	54936	46337	43803	66207	104129	130457	132806	115496	100333
17	37886	37744	41249	55061	45469	43691	66334	104898	130582	132123	114839	100059
18	37871	37734	41560	55007	45339	43932	66991	105691	130693	131635	114354	99701
19	37864	37730	41716	54801	45297	44253	68137	106736	130859	131080	113995	98833
20	37849	37722	41810	54569	45217	44455	68473	107935	131192	130526	113699	97993
21	37827	38161	41936	54569	44997	44722	68941	109254	131358	129974	113150	97522
22	37827	38252	42226	54578	44366	45072	69621	110217	131538	129546	112527	97227
23	37820	38315	42864	54399	43924	45551	70092	111173	131900	128804	111855	97217
24	37812	38320	43110	53946	43652	46042	70575	111855	132429	128214	111185	97181
25	37805	38350	43261	53504	43662	46330	72994	112199	132875	127640	110594	97169
26	37790	38380	43508	53088	43628	47449	74270	113278	133351	127068	110343	97156
27	37797	38410	44617	52474	43364	48118	75494	113484	133855	126415	110193	97144
28	37790	38425	45592	52002	42896	48555	76697	114288	134248	125872	109644	97133
29	37790	38463	47916	51234	---	49385	77624	115664	134712	125196	108914	97109
30	37790	38471	49045	50970	---	49982	78710	116620	134866	124656	108220	97087
31	37790	---	49615	50496	---	51967	---	117556	---	123984	107588	---
MAX	38088	38471	49615	55061	49939	51967	78710	117556	134866	135839	123313	106884
MIN	37790	37722	38487	50033	42896	42611	54063	79781	118548	123984	107588	97087
†	5170.95	5171.86	5185.77	5186.80	5177.60	5188.50	5216.16	5249.14	5261.91	5254.00	5241.29	5232.58
‡	-373	+681	+11144	+881	-7600	+9071	+26743	+38846	+17310	-10882	-16396	-10501

CAL YR 1977 † +9965
WTR YR 1978 ‡ +58924

† Elevation, in feet NGVD, at end of month.
‡ Change in contents, in acre-feet.

11427500 MIDDLE FORK AMERICAN RIVER AT FRENCH MEADOWS, CA

LOCATION.--Lat 39°06'35", long 120°28'49", in SW¼NW¼ sec.36, T.15 N., R.13 E., Placer County, Tahoe National Forest, on left bank 0.6 mi (1.0 km) downstream from French Meadows Dam, 4.1 mi (6.6 km) upstream from Chipmunk Creek, and 14 mi (23 km) south of Cisco.

DRAINAGE AREA.--47.9 mi² (124.1 km²).

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 1445: 1953-54. WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,920 ft (1,500 m), from topographic map. Prior to Oct. 1, 1962, at site 0.8 mi (1.3 km) upstream at different datum.

REMARKS.--Flow regulated by French Meadows Reservoir (station 11427400) 0.6 mi (1.0 km) upstream beginning in December 1964. Diversions from Duncan Creek to French Meadows Reservoir since December 1964 and from French Meadows Reservoir to Hell Hole Reservoir since December 1965. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--13 years (water years 1952-64, prior to regulation by French Meadows Reservoir), 149 ft³/s (4.22 m³/s), 107,900 acre-ft/yr (133.0 hm³/yr); 14 years (water years 1965-78), 20.6 ft³/s (0.583 m³/s), 14,920 acre-ft/yr (18.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,500 ft³/s (609 m³/s) Jan. 31, 1963, gage height, 14.20 ft (4.328 m), from rating curve extended above 1,100 ft³/s (31.2 m³/s) on basis of maximum flow at former site; minimum, 0.3 ft³/s (0.008 m³/s) Oct. 4, 5, 21-25, 1960, Oct. 5, 6, 1961. Maximum discharge since construction of French Meadows Dam in 1964, 1,310 ft³/s (37.1 m³/s) Apr. 30, 1965, gage height, 7.68 ft (2.341 m); minimum daily, 0.8 ft³/s (0.023 m³/s) Oct. 22-25, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 51 ft³/s (1.44 m³/s) Jan. 16, gage height, 4.67 ft (1.424 m); minimum daily, 2.7 ft³/s (0.076 m³/s) Oct. 1-25.

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	2.7	3.0	3.0	6.2	5.6	9.4	16	8.4	4.1	8.3	7.7	7.3
2	2.7	3.0	3.0	6.0	6.3	16	14	7.7	4.1	8.5	7.7	7.3
3	2.7	3.0	3.0	6.2	6.5	13	10	7.3	4.1	8.4	7.7	7.3
4	2.7	3.0	2.8	6.5	6.5	21	7.2	6.9	3.7	8.0	7.7	7.3
5	2.7	3.2	3.0	15	8.1	25	6.5	6.6	3.9	8.3	7.7	7.7
6	2.7	3.1	3.0	10	9.1	18	6.4	6.2	5.8	8.3	7.7	8.0
7	2.7	3.1	3.0	7.6	11	14	6.0	5.8	7.9	8.3	7.7	8.0
8	2.7	3.0	3.0	7.0	9.8	12	6.0	5.7	8.0	8.3	7.7	7.8
9	2.7	3.0	3.0	21	13	11	6.7	5.6	8.1	8.3	7.7	8.0
10	2.7	3.0	3.0	10	9.6	10	6.9	5.3	8.3	8.0	7.7	8.6
11	2.7	3.0	3.1	8.3	8.5	10	6.7	5.1	8.3	7.7	7.7	8.3
12	2.7	3.0	3.1	7.3	8.0	9.8	6.4	5.0	8.3	7.7	7.7	8.1
13	2.7	3.0	3.1	9.0	7.7	9.0	6.2	4.8	8.3	7.7	7.7	8.0
14	2.7	3.0	3.9	25	7.3	8.4	6.3	4.6	8.3	7.7	7.7	8.0
15	2.7	3.0	8.6	14	7.3	8.3	7.2	5.4	8.3	7.7	7.7	8.0
16	2.7	3.0	3.5	25	7.0	8.5	6.8	5.1	8.3	7.7	7.7	8.0
17	2.7	3.0	12	20	6.9	8.9	6.6	4.6	8.3	7.7	7.5	8.0
18	2.7	2.9	4.9	15	6.8	9.0	7.0	4.4	8.3	7.7	7.3	8.0
19	2.7	2.8	4.1	9.7	7.0	9.2	7.3	4.4	8.3	7.7	7.3	8.0
20	2.7	2.8	3.7	8.0	7.3	9.8	8.1	4.5	8.3	7.7	7.3	8.0
21	2.7	4.4	3.3	7.1	7.3	12	7.3	4.4	8.6	7.7	7.6	8.0
22	2.7	4.7	4.8	6.5	7.5	13	7.4	4.4	8.6	7.7	7.1	7.7
23	2.7	3.3	15	6.4	7.8	16	7.5	4.5	9.0	7.7	7.1	7.7
24	2.7	3.3	5.4	6.3	8.0	13	9.4	4.4	8.6	7.8	7.1	7.7
25	2.7	3.3	4.6	6.2	8.1	11	20	4.3	8.6	7.7	7.3	7.7
26	2.8	3.3	4.4	6.0	8.3	10	14	4.1	8.0	7.7	7.3	7.7
27	3.0	3.3	9.0	6.0	8.4	10	11	4.1	8.3	7.7	7.3	7.7
28	3.0	3.3	9.3	5.9	8.8	10	9.6	4.1	8.3	7.7	7.3	7.7
29	3.0	3.0	21	5.7	---	10	8.5	4.1	8.3	7.7	7.3	7.7
30	3.0	3.0	13	5.7	---	11	9.1	3.9	8.4	7.7	7.3	7.7
31	3.0	---	7.3	5.4	---	15	---	3.9	---	7.7	7.3	---
TOTAL	85.3	94.8	176.9	304.0	223.5	371.3	258.1	159.6	225.7	244.5	232.6	235.0
MEAN	2.75	3.16	5.71	9.81	7.98	12.0	8.60	5.15	7.52	7.89	7.50	7.83
MAX	3.0	4.7	21	25	13	25	20	8.4	9.0	8.5	7.7	8.6
MIN	2.7	2.8	2.8	5.4	5.6	8.3	6.0	3.9	3.7	7.7	7.1	7.3
AC-FT	169	188	351	603	443	736	512	317	448	485	461	466
†	0	0	0	12920	13850	15550	0	7100	12430	16970	16460	10860
CAL YR 1977 TOTAL	1389.0											
WTR YR 1978 TOTAL	2611.3											
MEAN 3.81												
MAX 21												
MIN 2.6												
AC-FT 2760												
MEAN 7.15												
MAX 25												
MIN 2.7												
AC-FT 5180												

† Diversion, in acre-feet, from French Meadows Reservoir to Hell Hole Reservoir through French Meadows powerplant, furnished by Placer County Water Agency.

11427700 DUNCAN CREEK NEAR FRENCH MEADOWS, CA

LOCATION.--Lat 39°08'09", long 120°28'39", in NE¼NW¼ sec.24, T.15 N., R.13 E., Placer County, Tahoe National Forest, on left bank 0.2 mi (0.3 km) upstream from diversion dam, 0.5 mi (0.8 km) downstream from Little Duncan Creek, 2 mi (3 km) northwest of French Meadows, and 20 mi (32 km) northeast of Foresthill.

DRAINAGE AREA.--9.94 mi² (25.74 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 5,270 ft (1,606 m), from topographic map. Prior to Sept. 3, 1965, at site 150 ft (46 m) upstream at datum 9.56 ft (2.914 m) higher.

REMARKS.--No storage or diversion above station. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by the Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--18 years, 34.4 ft³/s (0.974 m³/s), 24,920 acre-ft/yr (30.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,650 ft³/s (103 m³/s) Dec. 22, 1964, gage height, 10.6 ft (3.23 m) from floodmarks, from rating curve extended above 400 ft³/s (11.3 m³/s) on basis of computation of flow over diversion dam; minimum daily, 0.10 ft³/s (0.003 m³/s) July 31, Aug. 1, 2, 8, 9, 13-16, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft³/s (7.08 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 15	0130	*355 10.1	7.47 2.277
Dec. 29	1145	315 8.92	7.23 2.204
May 14	1800	273 7.73	7.23 2.204

Minimum daily, 0.12 ft³/s (0.003 m³/s) Oct. 15-22.

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	.39	3.4	54	21	32	154	105	172	25	1.9	.55
2	.32	.34	3.1	44	21	50	119	123	160	23	1.8	.46
3	.25	.28	3.3	42	21	44	95	150	166	21	1.7	.41
4	.20	.27	3.8	38	21	71	80	161	176	19	1.6	.41
5	.19	1.3	4.8	37	28	68	66	152	182	18	1.4	2.3
6	.17	1.0	3.7	31	30	60	60	134	185	17	1.2	5.0
7	.17	1.0	3.1	28	27	64	52	134	183	16	1.1	2.1
8	.14	.98	2.6	32	26	62	49	148	172	15	1.1	1.4
9	.14	.80	2.2	52	27	57	54	172	161	14	1.1	3.1
10	.14	.76	2.0	40	26	51	64	182	143	13	1.0	14
11	.14	.75	2.0	36	23	49	73	187	125	12	.92	3.5
12	.14	.85	2.1	33	23	44	83	182	118	11	.89	2.2
13	.14	.72	2.5	40	21	40	87	202	112	9.8	.92	1.7
14	.14	.67	24	74	20	37	90	226	103	9.1	.88	1.7
15	.12	.72	136	63	20	37	81	228	89	8.4	.85	1.6
16	.12	.73	18	67	18	41	69	175	76	7.7	.84	1.5
17	.12	.83	102	55	18	48	62	157	70	7.1	.78	1.4
18	.12	.89	37	45	18	50	62	154	66	6.6	.76	1.3
19	.12	.80	21	40	20	57	62	163	60	5.9	.71	1.5
20	.12	.70	17	35	21	69	60	175	56	5.3	.64	1.4
21	.12	12	14	33	23	93	53	192	52	4.9	.64	1.3
22	.12	26	17	31	24	101	51	194	49	4.3	.64	1.4
23	.14	5.9	52	29	26	123	51	170	45	4.0	.67	1.3
24	.14	4.0	27	27	27	114	69	132	41	3.7	.64	1.2
25	.14	4.9	21	25	26	105	154	108	36	3.4	.64	1.3
26	.14	5.4	27	24	26	106	124	100	33	3.2	.64	1.2
27	.66	4.9	135	24	25	115	123	115	33	2.9	.67	1.2
28	.55	4.0	134	23	24	126	119	146	32	2.7	.62	1.1
29	.35	4.7	284	23	---	140	110	177	29	2.5	.56	1.2
30	.53	4.7	150	23	---	152	112	189	26	2.4	.56	1.2
31	.52	---	79	22	---	189	---	182	---	2.2	.56	---
TOTAL	6.94	91.28	1333.6	1170	651	2395	2488	5015	2951	300.1	28.93	59.93
MEAN	.22	3.04	43.0	37.4	23.3	77.3	82.9	162	98.4	9.68	.93	2.00
MAX	.66	26	284	74	30	189	154	228	185	25	1.9	14
MIN	.12	.27	2.0	22	18	32	49	100	26	2.2	.56	.41
AC-FT	14	181	2650	2320	1290	4750	4930	9950	5850	595	57	119
CAL YR 1977 TOTAL	2912.63			MEAN 7.98	MAX 284	MIN .10	AC-FT 5780					
WTR YR 1978 TOTAL	16490.78			MEAN 45.2	MAX 284	MIN .12	AC-FT 32710					

11427750 DUNCAN CREEK BELOW DIVERSION DAM, NEAR FRENCH MEADOWS, CA

LOCATION.--Lat 39°07'59", long 120°28'58", in NE¼SE¼ sec.23, T.15 N., R.13 E., Placer County, Tahoe National Forest, on right bank 800 ft (244 m) downstream from unnamed right bank tributary, 1,000 ft (305 m) downstream from Duncan Creek diversion dam, and 20 mi (32 km) northeast of Foresthill.

DRAINAGE AREA.--10.5 mi² (27.2 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 5,210 ft (1,588 m), from topographic map.

REMARKS.--Flow is diverted above station through Duncan Creek diversion tunnel to French Meadows Reservoir (station 11427400). Maximum design flow of tunnel is 400 ft³/s (11.3 m³/s). See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--14 years, 12.9 ft³/s (0.365 m³/s), 9,350 acre-ft/yr (11.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,640 ft³/s (103 m³/s) Dec. 22, 1964, gage height, 8.74 ft (2.664 m) in gage well, 10.0 ft (3.05 m) from floodmarks, from rating curve extended above 400 ft³/s (11.3 m³/s) on basis of computation of peak flow over diversion dam; no flow at times in 1965-66.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 304 ft³/s (8.61 m³/s) Dec. 15, gage height, 3.56 ft (1.085 m); minimum daily, 0.30 ft³/s (0.008 m³/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	.61	.52	2.3	12	8.8	9.1	12	7.8	105	7.8	2.1	.65
2	.50	.47	2.2	11	8.8	11	9.3	8.8	14	7.8	2.0	.63
3	.44	.46	2.2	10	8.8	11	7.8	9.1	2.7	7.8	2.0	.61
4	.41	.44	2.2	10	8.8	14	6.9	9.1	5.9	7.8	1.8	.61
5	.40	1.2	2.2	11	9.5	14	6.0	8.2	3.2	7.8	1.8	2.2
6	.37	1.1	2.2	10	9.7	13	5.4	7.0	5.0	7.8	1.6	4.9
7	.36	.96	3.5	9.5	9.2	12	4.8	6.7	6.5	7.8	1.6	2.2
8	.36	.97	3.1	9.7	8.9	12	4.6	7.2	6.6	7.6	1.8	1.5
9	.36	.78	2.6	11	9.3	12	5.1	7.5	6.6	7.6	1.5	2.1
10	.36	.71	2.4	10	8.8	11	5.9	7.4	6.5	7.6	1.3	6.8
11	.33	.76	2.4	10	8.5	11	7.8	7.0	6.4	7.6	1.2	3.6
12	.33	.75	2.6	9.9	8.3	10	8.8	6.7	6.4	7.6	1.2	2.2
13	.33	.68	2.9	10	8.1	10	8.8	21	6.4	7.6	1.2	1.8
14	.33	.71	6.3	13	7.8	9.8	8.6	77	6.3	7.3	1.2	1.7
15	.33	.71	84	12	7.8	9.8	7.6	143	6.1	7.3	1.1	1.5
16	.33	.71	7.3	14	7.5	10	6.6	83	6.1	7.1	1.1	1.4
17	.31	.76	18	13	7.5	12	5.9	60	6.0	6.8	1.0	1.4
18	.30	.76	10	11	7.1	13	5.7	62	5.9	6.1	1.0	1.4
19	.30	.72	8.5	11	7.1	13	6.1	75	6.6	5.5	.96	1.3
20	.30	.64	8.1	10	7.4	14	6.1	89	7.3	5.1	.91	1.4
21	.30	1.8	7.8	9.8	7.7	16	5.7	118	7.3	4.7	.92	1.3
22	.30	3.6	8.1	9.3	8.4	16	5.5	122	7.3	4.4	.93	1.3
23	.30	2.3	12	9.1	9.0	16	5.5	100	7.3	4.0	.93	1.2
24	.32	2.3	9.5	8.8	9.5	15	6.8	53	7.3	3.7	.92	1.2
25	.33	2.3	9.0	8.6	9.4	15	15	25	7.3	3.5	.89	1.1
26	.33	2.3	9.0	8.6	9.3	16	11	18	7.6	3.2	.89	1.1
27	.63	2.3	38	8.6	8.9	17	9.7	33	8.0	3.1	.85	1.0
28	.64	2.3	16	8.6	8.7	18	9.4	68	8.2	3.0	.79	1.1
29	.52	2.3	58	8.6	---	19	8.6	105	8.1	2.8	.76	1.1
30	.59	2.3	20	8.6	---	18	8.8	119	7.9	2.7	.73	1.0
31	.60	---	14	8.8	---	16	---	110	---	2.3	.70	---
TOTAL	12.22	38.61	376.4	315.5	238.6	413.7	225.8	1573.5	301.8	182.8	37.68	51.30
MEAN	.39	1.29	12.1	10.2	8.52	13.3	7.53	50.8	10.1	5.90	1.22	1.71
MAX	.64	3.6	84	14	9.7	19	15	143	105	7.8	2.1	6.8
MIN	.30	.44	2.2	8.6	7.1	9.1	4.6	6.7	2.7	2.3	.70	.61
AC-FT	24	77	747	626	473	821	448	3120	599	363	75	102
CAL YR 1977	TOTAL	1130.09	MEAN	3.10	MAX	84	MIN	.21	AC-FT	2240		
WTR YR 1978	TOTAL	3767.91	MEAN	10.3	MAX	143	MIN	.30	AC-FT	7470		

11427760 MIDDLE FORK AMERICAN RIVER ABOVE MIDDLE FORK POWERHOUSE, NEAR FORESTHILL, CA

LOCATION.--Lat 39°01'31", long 120°35'40", in NW¼NW¼ sec.36, T.14 N., R.12 E., Placer County, Tahoe National Forest, on right bank 300 ft (91 m) upstream from Middle Fork powerhouse, 3.7 mi (6.0 km) upstream from Big Mosquito Creek, and 11 mi (18 km) east of Foresthill.

DRAINAGE AREA.--87.8 mi² (227.4 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 2,540 ft (774 m), from topographic map.

REMARKS.--Records good. Flow regulated by French Meadows Reservoir (station 11427400). See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--13 years, 92.3 ft³/s (2.614 m³/s), 66,870 acre-ft/yr (82.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,900 ft³/s (110 m³/s) Jan. 21, 1970, gage height, 8.00 ft (2.438 m); minimum daily, 5.3 ft³/s (0.15 m³/s) Sept. 10, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 330 ft³/s (9.35 m³/s) Jan. 16, gage height, 4.38 ft (1.335 m); minimum daily, 6.8 ft³/s (0.19 m³/s) Oct. 11, 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	7.6	8.5	13	133	93	130	295	269	177	44	24	18
2	7.4	8.5	12	109	97	260	264	253	137	44	23	18
3	7.6	8.2	12	105	93	278	232	246	61	43	23	18
4	7.4	8.2	12	111	91	432	221	239	58	43	23	18
5	7.3	13	12	249	105	638	196	225	60	42	22	26
6	7.8	11	12	278	148	534	202	203	56	41	22	34
7	7.7	9.2	12	190	222	405	185	190	61	41	21	25
8	7.1	8.8	13	158	218	348	178	184	59	41	21	22
9	7.4	8.5	13	287	278	307	183	183	58	40	21	22
10	7.1	8.4	12	269	234	274	196	177	56	40	21	41
11	6.8	8.1	13	213	202	264	203	169	54	38	20	29
12	6.8	8.1	15	177	186	243	203	160	52	38	20	24
13	7.1	8.1	13	173	179	216	200	160	52	37	20	22
14	7.1	8.1	16	351	158	197	198	216	51	37	20	22
15	6.9	7.8	214	398	149	185	216	314	50	36	20	21
16	7.1	7.8	42	512	135	178	212	225	48	35	20	21
17	7.0	7.8	158	642	123	183	197	185	48	35	20	21
18	7.0	7.8	91	424	115	187	198	179	46	34	20	21
19	7.1	7.8	48	340	111	186	204	187	46	33	19	21
20	7.1	7.8	37	276	110	195	254	197	48	32	19	20
21	7.1	34	33	232	110	227	233	221	47	31	19	20
22	7.4	66	55	201	114	250	227	232	46	30	20	20
23	7.3	19	205	175	122	292	223	208	45	29	19	20
24	7.4	15	92	154	126	283	243	156	44	28	19	20
25	7.4	15	64	139	124	251	469	118	44	28	19	20
26	7.6	14	56	128	123	244	412	99	44	28	19	18
27	8.1	14	163	118	119	241	368	104	48	27	19	18
28	8.1	14	145	111	115	239	339	142	50	26	19	18
29	8.0	13	382	104	---	242	302	179	46	26	19	18
30	8.7	13	290	101	---	253	290	197	44	25	19	18
31	8.7	---	180	97	---	310	---	189	---	25	19	---
TOTAL	230.2	388.5	2435	6955	4000	8472	7343	6006	1736	1077	629	654
MEAN	7.43	13.0	78.5	224	143	273	245	194	57.9	34.7	20.3	21.8
MAX	8.7	66	382	642	278	638	469	314	177	44	24	41
MIN	6.8	7.8	12	97	91	130	178	99	44	25	19	18
AC-FT	457	771	4830	13800	7930	16800	14560	11910	3440	2140	1250	1300
CAL YR 1977 TOTAL	7100.2			MEAN 19.5	MAX 382	MIN 5.3	AC-FT 14080					
WTR YR 1978 TOTAL	39925.7			MEAN 109	MAX 642	MIN 6.8	AC-FT 79190					

11427770 MIDDLE FORK AMERICAN RIVER BELOW INTERBAY DAM, NEAR FORESTHILL, CA

LOCATION.--Lat 39°01'35", long 120°36'09", in SW¼SE¼ sec.26, T.14 N., R.12 E., Placer County, Tahoe National Forest, on right bank 500 ft (152 m) downstream from Interbay Dam, 3.3 mi (5.3 km) upstream from Big Mosquito Creek, and 10.6 mi (17.1 km) east of Foresthill.

DRAINAGE AREA.--89.1 mi² (230.8 km²).

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

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 2,470 ft (753 m), from topographic map.

REMARKS.--Flow regulated by French Meadows Reservoir (station 11427400) and after Aug. 22, 1966, by Interbay Reservoir, capacity, 130 acre-ft (160,000 m³) between normal operating limits of 2,502.0 ft (762.61 m) and 2,526.0 ft (769.92 m). Water is diverted from Hell Hole Reservoir through a tunnel to Middle Fork powerplant and re-diverted to Ralston powerplant. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--13 years, 42.5 ft³/s (1.204 m³/s), 30,790 acre-ft/yr (38.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,770 ft³/s (107 m³/s) Jan. 21, 1970, gage height, 6.95 ft (2.118 m); minimum daily, 1.0 ft³/s (0.028 m³/s) Oct. 25-30, 1966, Jan. 19, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 246 ft³/s (6.97 m³/s) Dec. 15, gage height, 2.95 ft (0.899 m); minimum daily, 4.8 ft³/s (0.14 m³/s) Oct. 30.

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	5.5	6.3	10	8.9	28	24	24	24	24	24	24	23
2	5.6	6.3	10	8.6	28	24	24	24	24	23	24	23
3	5.7	6.3	10	8.6	28	24	24	24	23	23	24	23
4	5.7	6.3	10	8.6	28	26	24	24	24	23	24	23
5	5.7	6.3	10	9.0	28	26	24	24	24	24	24	23
6	5.7	6.3	10	9.2	28	26	24	24	24	24	24	23
7	5.7	6.5	10	8.9	29	26	24	24	25	23	24	23
8	5.7	6.8	10	8.9	28	25	24	24	24	24	24	23
9	5.7	8.8	9.5	9.0	28	25	24	24	24	23	24	23
10	5.7	10	8.6	8.9	28	25	24	24	24	24	24	23
11	5.7	10	8.6	8.9	28	25	24	24	24	24	24	23
12	5.7	10	8.5	8.9	28	25	24	24	24	24	24	22
13	5.7	10	8.6	8.8	28	25	24	24	23	24	24	22
14	5.7	10	8.7	9.0	28	25	24	24	23	24	24	22
15	5.7	10	15	9.3	28	25	24	24	24	24	24	22
16	5.7	9.8	8.6	9.4	28	25	24	24	24	24	24	22
17	5.7	9.8	8.8	9.6	28	24	24	24	23	24	24	22
18	5.7	10	8.8	9.3	28	24	23	24	24	24	24	22
19	5.7	10	8.6	9.3	28	24	24	24	24	24	24	22
20	6.2	10	8.6	9.2	28	24	24	24	24	24	24	22
21	6.6	10	8.6	9.1	28	24	24	24	24	24	24	22
22	6.5	10	8.7	8.9	28	24	25	24	24	24	24	22
23	6.3	9.9	9.0	8.9	26	24	24	24	24	24	23	22
24	6.3	10	8.8	8.9	24	24	24	24	23	24	23	22
25	6.3	9.9	8.6	19	24	24	24	24	24	24	23	22
26	6.3	9.8	8.7	28	24	24	24	24	23	24	23	20
27	6.3	10	8.7	28	24	24	24	24	23	24	23	20
28	6.3	10	8.7	28	24	24	24	24	23	24	23	20
29	5.5	10	8.9	28	---	24	24	24	22	22	23	20
30	4.8	9.9	8.9	28	---	24	24	24	23	23	23	20
31	5.7	---	8.9	28	---	24	---	24	---	23	23	---
TOTAL	181.1	269.0	287.4	403.1	763	761	720	744	710	735	735	661
MEAN	5.84	8.97	9.27	13.0	27.3	24.5	24.0	24.0	23.7	23.7	23.7	22.0
MAX	6.6	10	15	28	29	26	25	24	25	24	24	23
MIN	4.8	6.3	8.5	8.6	24	24	23	24	22	22	23	20
AC-FT	359	534	570	800	1510	1510	1430	1480	1410	1460	1460	1310
†	1880	3180	7690	38000	51130	54310	26010	54090	23720	29390	43760	24690
CAL YR 1977	TOTAL	3360.1	MEAN	9.21	MAX	15	MIN	4.8	AC-FT	6660		
WTR YR 1978	TOTAL	6969.6	MEAN	19.1	MAX	29	MIN	4.8	AC-FT	13820		

† Diversion, in acre-feet, to Ralston powerplant.

11427940 RUBICON-ROCKBOUND TUNNEL NEAR MEEKS BAY, CA

LOCATION.--Lat 38°59'20", long 120°13'31", in NE¼SE¼ sec.8, T.13 N., R.16 E., El Dorado County, Eldorado National Forest, on right bank at tunnel intake 100 ft (30 m) upstream from diversion dam on Rubicon River, 2.5 mi (4.0 km) upstream from Rubicon Springs, and 6.5 mi (10.5 km) southwest of Meeks Bay.

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

GAGE.--Water-stage recorder. Datum of gage is 6,533.23 ft (1,991.328 m) National Geodetic Vertical Datum of 1929 (levels by Sacramento Municipal Utility District). Auxiliary water-stage recorder since Aug. 26, 1966, 300 ft (91 m) downstream from tunnel outlet at different datum.

REMARKS.--Records good. Tunnel diverts water from Rubicon River to Rockbound Lake. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--15 years, 101 ft³/s (2.860 m³/s), 73,170 acre-ft/yr (90.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,120 ft³/s (31.7 m³/s) Dec. 23, 1964; 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	.11	0	14	46	20	22	166	143	573	290	60	0
2	0	0	10	40	20	29	103	206	575	303	52	0
3	0	0	9.4	35	20	29	70	288	547	253	48	0
4	0	0	10	33	20	43	56	343	598	210	28	0
5	0	0	18	32	23	47	46	324	711	220	.10	.27
6	0	0	17	33	29	34	42	208	743	251	.10	70
7	0	0	14	37	26	32	39	207	763	279	.10	101
8	0	0	11	37	25	39	34	285	736	273	7.5	51
9	0	0	7.8	59	27	35	36	393	724	264	23	37
10	0	0	5.8	63	28	27	73	438	652	291	25	395
11	0	0	5.1	44	26	25	142	467	517	285	22	115
12	0	0	5.1	33	23	23	178	429	588	235	18	43
13	0	0	5.8	32	22	20	171	521	784	190	14	23
14	0	0	50	46	21	19	148	722	826	197	11	39
15	0	0	369	60	20	20	111	815	646	213	9.0	38
16	0	0	158	48	20	26	83	375	427	202	6.7	22
17	0	0	96	45	19	46	63	223	365	156	5.8	15
18	0	0	67	42	19	61	54	262	405	150	4.2	10
19	0	0	40	35	19	57	68	349	398	137	3.2	100
20	0	0	29	31	21	80	74	439	383	125	1.8	88
21	0	0	24	28	26	85	63	536	414	116	1.1	26
22	0	0	24	26	29	77	49	618	401	120	.87	12
23	0	.63	33	24	31	80	46	523	404	125	.87	6.7
24	0	4.2	30	22	32	62	75	258	417	120	.30	4.4
25	0	12	24	22	29	58	259	160	344	115	.21	2.8
26	0	18	22	22	26	89	198	161	274	120	0	1.8
27	0	24	197	23	24	111	160	282	241	118	0	1.2
28	0	22	205	23	22	156	203	460	255	104	0	.66
29	0	17	158	23	---	173	157	609	223	90	0	.31
30	0	16	127	23	---	188	164	666	247	73	0	.09
31	0	---	67	21	---	232	---	610	---	69	0	---
TOTAL	.11	113.83	1853.0	1088	667	2025	3131	12320	15181	5694	342.85	1203.23
MEAN	.004	3.79	59.8	35.1	23.8	65.3	104	397	506	184	11.1	40.1
MAX	.11	24	369	63	32	232	259	815	826	303	60	395
MIN	0	0	5.1	21	19	19	34	143	223	69	0	0
AC-FT	.2	226	3680	2160	1320	4020	6210	24440	30110	11290	680	2390

CAL YR 1977 TOTAL 13031.06 MEAN 35.7 MAX 369 MIN 0 AC-FT 25850
WTR YR 1978 TOTAL 43619.02 MEAN 120 MAX 826 MIN 0 AC-FT 86520

11428000 RUBICON RIVER AT RUBICON SPRINGS, NEAR MEEKS BAY, CA

LOCATION.--Lat 39°01'10", long 120°14'46", in SW¼NE¼ sec.31, T.14 N., R.16 E., El Dorado County, Eldorado National Forest, on right bank 200 ft (61 m) downstream from Rubicon Springs, 0.7 mi (1.1 km) upstream from Miller Creek, and 7 mi (11 km) west of Meeks Bay.

DRAINAGE AREA.--31.4 mi² (81.3 km²).

PERIOD OF RECORD.--February 1910 to March 1914 (published as "at Rubicon Springs"), October 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 6,052.97 ft (1,844.945 m) National Geodetic Vertical Datum of 1929. Feb. 1, 1910, to Mar. 31, 1914, nonrecording gage or water-stage recorder at site 0.4 mi (0.6 km) downstream at different datum.

REMARKS.--Records fair. Low summer flow, beginning in 1950, augmented by release from streamflow maintenance dams on Lakes Clyd, Lois, Middle Velma, and Schmidell, total controlled capacity, 555 acre-ft (684,000 m³). Flow below 1,200 ft³/s (34.0 m³/s) controlled by Rubicon diversion dam 5.5 mi (8.8 km) upstream. Diversion to Rubicon-Rockbound tunnel began Dec. 26, 1963 (station 11427940). See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE (adjusted for diversion to Rubicon-Rockbound tunnel).--25 years (water years 1911-13, 1957-78), 118 ft³/s (3.342 m³/s), 85,490 acre-ft/yr (105 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s (326 m³/s) Feb. 1, 1963, gage height, 14.28 ft (4.353 m), from rating curve extended above 1,200 ft³/s (34.0 m³/s) on basis of slope-conveyance computation of maximum flow; no flow at times in some years prior to construction of Rubicon diversion dam in 1963 and 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of December 1955 reached a stage of 13.0 ft (3.96 m) from floodmarks, present site and datum, discharge, 9,270 ft³/s (263 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 338 ft³/s (9.57 m³/s) Dec. 15, gage height, 4.24 ft (1.292 m); no flow Oct. 21-26.

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	1.8	.11	2.0	11	9.9	31	59	64	44	7.8	7.1	5.9
2	4.6	.10	2.1	9.6	9.8	47	38	95	38	7.7	7.0	5.8
3	4.8	.18	1.8	9.9	10	38	31	97	36	7.5	6.9	5.8
4	4.9	.22	1.8	9.4	10	89	28	94	38	7.4	6.8	5.8
5	2.2	.27	3.3	9.3	19	62	24	67	38	7.3	6.8	7.5
6	1.2	.53	2.2	9.0	22	38	23	48	35	7.3	7.2	10
7	1.3	.33	1.7	8.1	15	38	20	68	33	7.6	7.6	9.6
8	1.3	.24	1.5	9.6	13	42	20	88	29	7.5	7.8	6.7
9	1.2	.21	1.3	53	17	38	29	95	25	7.5	7.7	11
10	1.2	.19	1.2	33	14	31	65	99	21	7.6	7.6	33
11	.73	.17	1.2	19	12	31	79	87	18	7.5	7.6	8.7
12	.29	.15	1.4	14	11	26	77	88	17	7.3	7.5	7.5
13	.19	.14	1.9	14	10	22	74	99	17	7.3	7.6	7.3
14	.14	.13	19	59	9.4	21	64	118	20	7.2	7.5	10
15	.12	.13	135	47	9.4	24	48	140	14	7.1	7.4	7.8
16	.10	.13	10	52	8.9	32	35	51	12	7.3	7.4	7.4
17	.08	.12	81	35	8.6	49	29	46	10	7.3	7.2	7.1
18	.05	.12	22	19	8.5	51	34	57	10	7.2	7.1	7.0
19	.03	.12	8.8	15	9.5	51	43	64	9.8	7.3	7.1	7.0
20	.01	.12	6.2	12	13	64	46	68	9.1	7.2	7.1	6.2
21	0	.32	5.1	11	17	69	33	77	9.0	7.2	7.1	5.6
22	0	27	5.9	11	20	65	30	73	8.7	7.0	6.3	5.3
23	0	4.1	32	9.5	24	75	35	51	8.4	7.0	5.9	5.4
24	0	4.0	14	8.9	23	53	65	30	8.5	7.0	6.2	5.3
25	0	6.3	8.9	8.7	19	55	126	23	8.2	7.0	6.3	5.4
26	0	5.6	8.3	8.9	17	74	65	29	7.7	7.2	6.2	5.7
27	.02	5.8	97	9.1	17	84	79	42	8.0	7.2	6.4	5.7
28	.12	3.7	40	9.5	17	89	75	55	8.6	7.2	6.0	5.7
29	.15	1.8	97	9.7	---	83	63	61	8.1	6.9	5.9	5.7
30	.14	2.2	47	10	---	97	59	56	7.9	7.2	5.9	7.1
31	.12	---	16	10	---	109	---	45	---	7.2	5.9	---
TOTAL	26.79	64.53	676.6	554.2	394.0	1678	1496	2175	557.0	226.0	214.1	234.0
MEAN	.86	2.15	21.8	17.9	14.1	54.1	49.9	70.2	18.6	7.29	6.91	7.80
MAX	4.9	27	135	59	24	109	126	140	44	7.8	7.8	33
MIN	0	.10	1.2	8.1	8.5	21	20	23	7.7	6.9	5.9	5.3
AC-FT	53	128	1340	1100	781	3330	2970	4310	1100	448	425	464
MEAN ‡	.86	5.95	81.6	53.0	37.8	120	154	468	525	191	17.9	47.9
AC-FT ‡	53	354	5020	3260	2100	7350	9180	28750	31210	11740	1100	2850
CAL YR 1977	TOTAL	2211.22	MEAN	6.06	MAX	135	MIN	0	AC-FT	4390	MEAN ‡	40.4
WTR YR 1978	TOTAL	8296.22	MEAN	22.7	MAX	140	MIN	0	AC-FT	16460	MEAN ‡	142
											AC-FT ‡	29230
											AC-FT ‡	103000

‡ Adjusted for diversion to Rubicon-Rockbound tunnel.

11428300 BUCK-LOON TUNNEL NEAR MEEKS BAY, CA

LOCATION.--Lat 39°00'15", long 120°15'20", in SE&NW¼ sec.6, T.13 N., R.16 E., El Dorado County, Eldorado National Forest, on right bank at tunnel intake near left abutment of diversion dam, 7.6 mi (12.2 km) southwest of Meeks Bay.

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

GAGE.--Water-stage recorder. Datum of gage is 6,425.0 ft (1,958.34 m) National Geodetic Vertical Datum of 1929 (levels by Sacramento Municipal Utility District).

REMARKS.--Records good except those for the period Aug. 4 to Sept. 5, which are fair. Tunnel diverts water from Buck Island Lake and discharges into Loon Lake. Gates are closed at the tunnel entrance during the summer and opened each fall to raise the level of Buck Island Lake for recreation purposes. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--15 years, 130 ft³/s (3.682 m³/s), 94,180 acre-ft/yr (116 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,240 ft³/s (35.1 m³/s) Dec. 23, 1964; 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	.46	0	20	76	30	33	257	195	770	337	78	1.5
2	.22	0	16	61	30	44	166	254	774	368	69	1.4
3	.12	0	14	54	29	52	110	359	735	330	62	1.4
4	.04	0	15	50	28	62	87	443	773	267	26	1.4
5	0	0	18	56	32	84	71	445	918	260	1.1	1.4
6	0	0	21	57	45	64	68	308	996	292	1.2	1.0
7	0	0	21	50	50	52	61	258	1010	330	1.3	97
8	0	0	19	50	45	54	53	333	959	334	1.3	87
9	0	0	16	75	47	56	50	481	916	313	1.4	49
10	0	0	12	99	44	47	71	570	907	337	1.4	375
11	0	0	9.8	74	41	43	146	626	729	344	1.5	236
12	0	0	9.5	55	37	39	217	573	714	300	9.9	86
13	0	0	8.5	46	36	33	227	645	926	242	13	41
14	0	0	38	61	32	30	213	851	1050	227	12	39
15	0	0	498	94	31	29	171	1070	943	247	9.9	46
16	0	0	299	88	29	33	136	690	622	248	8.4	34
17	0	0	174	82	28	48	103	334	474	206	6.9	22
18	0	0	127	62	26	72	84	313	488	183	5.4	16
19	0	0	74	56	26	78	87	416	509	170	4.3	134
20	0	0	50	47	28	94	107	540	474	156	3.5	152
21	0	0	39	42	32	114	102	670	509	143	2.5	68
22	0	0	40	38	38	117	81	809	506	141	1.9	30
23	0	.82	53	35	42	117	71	780	490	145	1.7	15
24	0	2.5	50	32	45	102	83	439	522	144	1.5	9.1
25	0	5.6	40	31	44	83	299	240	460	137	1.5	5.6
26	0	13	34	31	40	102	322	199	362	137	1.5	3.7
27	0	24	204	31	37	149	223	317	300	140	1.5	2.5
28	0	29	326	31	34	192	260	547	314	129	1.5	1.7
29	0	27	263	31	---	223	228	761	278	114	1.5	1.0
30	0	24	222	31	---	242	223	883	291	96	1.5	.63
31	0	---	125	31	---	310	---	845	---	84	1.5	---
TOTAL	.84	125.92	2855.8	1657	1006	2798	4377	16194	19719	6901	335.6	1568.33
MEAN	.027	4.20	92.1	53.5	35.9	90.3	146	522	657	223	10.8	52.3
MAX	.46	29	498	99	50	310	322	1070	1050	368	78	375
MIN	0	0	8.5	31	26	29	50	195	278	84	1.1	.63
AC-FT	1.7	250	5660	3290	2000	5550	8680	32120	39110	13690	666	3110
CAL YR 1977	TOTAL	17183.41	MEAN	47.1	MAX	498	MIN	0	AC-FT	34080		
WTR YR 1978	TOTAL	57538.49	MEAN	158	MAX	1070	MIN	0	AC-FT	114100		

SACRAMENTO RIVER BASIN

11428700 HELL HOLE RESERVOIR NEAR MEEKS BAY, CA

LOCATION.--Lat 39°03'54", long 120°24'50", in SE¼NW¼ sec.16, T.14 N., R.14 E., Placer County, Eldorado National Forest, on right bank 0.3 mi (0.5 km) upstream from Hell Hole Dam on Rubicon River, and 15.6 mi (25.1 km) west of Meeks Bay.

DRAINAGE AREA.--114 mi² (295 km²).

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Placer County Water Agency).

REMARKS.--Reservoir is formed by rockfill dam with earth core. Storage began Dec. 6, 1965. Usable capacity, 207,342 acre-ft (256 hm³) between elevations 4,287.65 ft (1,306.876 m), invert of river outlet and 4,630.0 ft (1,411.22 m), crest of ogee spillway. Dead storage 248 acre-ft (306,000 m³). Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 209,500 acre-ft (258 hm³) June 17, 1967, elevation, 4,631.5 ft (1,411.68 m); minimum since reservoir first filled, 37,499 acre-ft (46.2 hm³) Mar. 23, 1973, elevation, 4,428.28 ft (1,349.740 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 194,696 acre-ft (240 hm³) July 10, elevation, 4,619.53 ft (1,408.033 m); minimum, 71,409 acre-ft (88.0 hm³) Dec. 14, elevation, 4,483.77 ft (1,366.653 m).

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

4340	5220	4500	83025
4360	9835	4550	122720
4380	16250	4600	171865
4400	24160	4650	233420
4450	49610		

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	77647	75201	73106	86891	96856	80392	95615	118359	150971	189243	184401	158143
2	77625	74882	72896	87534	96226	81003	96646	119319	152515	189816	183462	157121
3	77454	74712	72770	87828	95358	81288	97072	120595	153318	190569	182868	156084
4	77432	74656	72840	88256	94201	81770	97206	121358	156387	191527	181909	155001
5	77418	74585	72546	88911	93386	84073	97135	121843	158535	192488	180929	154659
6	77403	74550	72385	89614	93125	84939	97066	121792	160281	192825	179758	154543
7	76838	74444	72203	90060	93324	85697	97012	121851	160987	193849	178972	154091
8	76831	74330	71931	90584	93224	86420	97112	122328	163666	193861	178212	153376
9	76816	74197	71667	92206	93693	86809	97198	123602	164889	194164	177441	152498
10	76795	74077	71653	93140	93370	87347	97471	124692	165312	194696	176605	151803
11	76531	74013	71667	93747	92626	87332	98032	125802	166210	194212	176399	151021
12	76502	73999	71646	94085	91778	86607	98706	126584	168272	193801	175372	151011
13	76353	73992	71437	94555	91260	86077	99358	127894	170384	193404	174123	150890
14	76082	73872	71409	97260	90888	85786	99852	129656	171539	193174	173126	150465
15	76017	73865	73373	99342	90197	85489	100325	131701	173590	193078	172585	149789
16	76003	73858	73668	102104	89814	85258	101407	133727	174128	192512	171856	149328
17	75982	73753	75584	103735	89145	85065	102287	134405	176137	192079	171102	149548
18	75962	73626	76103	104135	88188	84702	103177	135287	178017	191647	170185	149508
19	75953	73577	76075	104551	87338	84375	103791	136485	179295	191060	169004	149789
20	75939	73521	76075	104343	85660	84465	105368	137738	180488	190688	168129	149488
21	75925	73528	76195	103723	84961	85206	106285	139454	182040	190031	167189	149458
22	75911	73654	76487	102938	84502	86017	107124	141141	183147	190126	166441	149057
23	75889	73528	77289	102302	84095	87206	108201	142126	183567	189959	165443	148807
24	75882	73500	78244	101803	83688	87625	109192	142962	184495	189350	164553	148397
25	75868	73584	78488	101256	82730	87662	111867	142992	185319	188922	163872	147999
26	75853	73514	78834	101003	81784	88233	113358	142743	186027	188208	162798	147561
27	75847	73500	80610	100041	81200	89062	114078	143332	186785	187555	161837	147541
28	75861	73387	82534	99436	80654	90167	115065	144659	187448	186879	160960	147393
29	75854	73352	84332	98722	---	91146	115961	145991	188065	186524	160174	147136
30	75847	73303	85786	98127	---	92076	116474	148058	188548	186051	159278	146878
31	75435	---	86435	97486	---	94170	---	149468	---	184990	158705	---
MAX	77647	75201	86435	104551	96856	94170	116474	149468	188548	194696	184401	158143
MIN	75435	73303	71409	86891	80654	80392	95615	118359	150971	184990	158705	146878
†	4489.50	4486.48	4504.60	4519.08	4496.76	4514.80	4542.60	4579.01	4614.49	4611.40	4587.96	4576.41
‡	-2226	-2132	+13132	+11051	-16832	+13516	+22304	+32994	+39080	-3558	-26285	-11827

CAL YR 1977 † -3050
WTR YR 1978 ‡ +69217

† Elevation, in feet NGVD, at end of month.
‡ Change in contents, in acre-feet.

11428800 RUBICON RIVER BELOW HELL HOLE DAM, NEAR MEEKS BAY, CA

LOCATION.--Lat 39°03'24", long 120°24'25", in NE¼NE¼ sec.21, T.14 N., R.14 E., Placer County, Eldorado National Forest, on right bank 600 ft (183 m) downstream from outlet of dam, and 15.3 mi (24.6 km) west of Meeks Bay.

DRAINAGE AREA.--114 mi² (295 km²).

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

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 4,231.52 ft (1,289.767 m) National Geodetic Vertical Datum of 1929 (levels by Placer County Water Agency).

REMARKS.--Flow regulated by Hell Hole Reservoir (station 11428700) beginning December 1965. Water is diverted out of the basin above the station through Buck-Loon tunnel (station 11428300). Water is diverted from Middle Fork American River basin by tunnel from French Meadows Reservoir (station 11427400) to Hell Hole Reservoir. Water is diverted from Hell Hole Reservoir through a tunnel to Middle Fork powerplant. Diversion began Sept. 8, 1966. During years when Hell Hole Dam spills, records include flow which bypasses the station. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--12 years, 23.1 ft³/s (0.654 m³/s), 16,740 acre-ft/yr (20.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,290 ft³/s (64.8 m³/s) June 18, 1967, including flow over spillway; no flow Aug. 25 to Sept. 11, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 240 ft³/s (6.80 m³/s) June 28, gage height, 5.61 ft (1.710 m); minimum daily, 6.2 ft³/s (0.18 m³/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	6.5	10	6.8	28	7.0	20	26	17	21	20	16	11
2	6.2	10	6.8	19	13	24	24	16	21	19	16	11
3	6.5	10	6.8	21	18	24	23	16	21	19	16	11
4	6.5	11	6.8	25	18	34	23	17	22	19	16	11
5	6.6	7.9	6.8	54	19	36	23	17	22	19	16	11
6	7.0	6.8	7.1	44	22	26	23	16	21	19	16	12
7	7.1	6.8	7.1	27	26	23	23	16	21	19	13	11
8	7.2	6.8	7.5	27	22	23	24	17	20	19	10	11
9	7.2	6.6	7.5	62	24	22	25	18	20	19	10	11
10	7.3	6.5	7.1	38	20	22	25	18	19	19	9.8	12
11	8.1	6.6	7.1	28	19	23	24	18	19	19	9.0	11
12	8.1	6.7	7.1	21	19	22	24	19	19	19	11	11
13	8.3	6.8	6.8	23	19	21	23	19	19	18	11	11
14	8.2	6.8	10	60	19	21	23	20	18	18	10	11
15	8.2	6.8	45	40	19	20	23	22	18	18	9.7	11
16	8.3	6.8	8.0	58	18	21	22	20	18	18	9.4	11
17	8.4	6.8	66	44	18	21	22	19	18	18	9.3	11
18	8.6	6.9	21	30	18	21	22	20	18	18	9.1	11
19	8.8	7.1	9.4	26	19	21	21	20	17	18	8.9	12
20	9.1	7.1	7.9	17	19	22	21	20	17	17	8.6	12
21	9.3	25	7.1	15	19	23	21	21	17	17	8.5	12
22	9.3	30	30	13	19	25	19	21	17	17	8.2	12
23	9.3	7.8	66	12	19	26	19	20	17	17	8.1	12
24	9.3	7.1	21	11	19	25	19	20	17	17	9.9	12
25	9.5	7.1	11	9.8	20	24	28	19	17	17	12	12
26	9.7	6.8	12	9.3	19	24	22	19	17	18	12	12
27	10	6.8	46	9.0	19	22	20	19	17	15	12	12
28	10	6.8	36	8.9	19	20	19	21	24	15	11	12
29	10	6.5	68	8.6	---	21	18	22	16	16	11	12
30	10	6.8	55	8.1	---	22	17	21	20	16	11	12
31	10	---	34	7.2	---	26	---	21	---	16	11	---
TOTAL	258.6	261.5	644.7	803.9	529.0	725	666	589	572	553	349.5	344
MEAN	8.34	8.72	20.8	25.9	18.9	23.4	22.2	19.0	19.1	17.8	11.3	11.5
MAX	10	30	68	62	26	36	28	22	24	20	16	12
MIN	6.2	6.5	6.8	7.2	7.0	20	17	16	17	15	8.1	11
AC-FT	513	519	1280	1590	1050	1440	1320	1170	1130	1100	693	682
†	1760	2850	3460	25120	43960	39610	13450	45630	22130	29420	44410	24690
CAL YR 1977 TOTAL	3052.2			MEAN 8.36	MAX 68	MIN 5.9	AC-FT 6050					
WTR YR 1978 TOTAL	6296.2			MEAN 17.2	MAX 68	MIN 6.2	AC-FT 12490					

† Diversion, in acre-feet, from Hell Hole Reservoir to Middle Fork powerplant, furnished by Placer County Water Agency.

SACRAMENTO RIVER BASIN

11429300 ROBBS PEAK POWERPLANT NEAR KYBURZ, CA

LOCATION (revised).--Lat 38°53'50", long 120°22'38", in SE¼SW¼ sec.11, T.12 N., R.14 E., El Dorado County, Eldorado National Forest, in powerhouse on shore of Union Valley Reservoir, 9.5 mi (15.3 km) northwest of Kyburz.

PERIOD OF RECORD.--October 1962 to current year. Prior to October 1965, published as Robbs Peak tunnel near Riverton.

GAGE.--Discharge computed from powerplant output. Altitude of gage is 4,880 ft (1,487 m), from topographic map. Prior to October 1965, water-stage recorder and concrete control in abandoned section of canal 0.5 mi (0.8 km) upstream at different datum.

REMARKS.--Tunnel diverts at South Fork Rubicon River diversion dam in NE¼ sec.27, T.13 N., R.14 E., and discharges into Union Valley Reservoir (station 11441001). Water is imported from Rubicon River basin via Rubicon-Rockbound tunnel and Buck-Loon tunnel to Loon Lake, then via Loon Lake powerplant or Gerle Creek to Robbs Peak tunnel and powerplant. The water is later used in the South Fork American River basin for power development. See schematic diagrams of Middle Fork American and Rubicon River basins and South Fork American River basin.

COOPERATION.--Records furnished by Sacramento Municipal Utility District, rounded to Geological Survey standards.

AVERAGE DISCHARGE.--16 years, 231 ft³/s (6.542 m³/s) 167,400 acre-ft/yr (206 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,440 ft³/s (40.8 m³/s) Dec. 22-24, 1964; no flow many days during 1965-78.

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	424	117	163	106	545	497	505	575	211	218	143
2	0	111	106	80	270	528	340	682	572	41	221	127
3	0	78	9.0	159	317	448	420	676	573	233	230	8.0
4	0	85	3.0	313	309	604	419	665	561	33	204	0
5	0	32	140	454	168	474	394	634	624	208	231	131
6	0	0	25	194	221	513	479	674	583	198	0	157
7	0	62	30	124	295	577	483	720	624	185	223	106
8	0	3.0	57	146	389	566	440	757	592	267	219	132
9	0	5.0	64	329	332	374	286	828	625	249	207	201
10	0	6.0	0	274	449	240	538	759	580	199	224	94
11	0	102	19	232	474	213	617	810	513	199	213	35
12	0	0	23	174	177	233	779	812	522	177	266	0
13	0	0	10	210	243	190	820	800	552	168	0	0
14	0	5.0	72	462	358	152	718	819	554	173	198	0
15	0	18	292	391	383	117	610	818	552	200	205	0
16	0	11	61	357	467	196	402	552	548	0	205	0
17	0	60	300	370	439	224	493	677	543	194	208	0
18	0	0	211	280	430	314	517	725	515	163	209	0
19	0	0	40	317	486	268	610	752	533	146	176	0
20	0	0	102	385	485	544	637	760	492	250	12	0
21	0	66	51	172	484	461	500	793	521	171	191	0
22	0	0	109	137	520	475	562	784	479	148	225	0
23	0	12	226	161	526	507	380	695	351	0	219	3.0
24	0	0	151	205	263	432	564	651	333	165	221	0
25	297	0	88	215	152	345	941	557	287	208	193	142
26	183	0	8.0	225	140	384	581	559	326	142	206	113
27	227	0	505	174	116	527	635	485	284	167	0	2.0
28	261	85	344	68	67	597	739	400	273	177	255	126
29	0	16	763	80	---	605	419	474	284	130	195	127
30	0	2.0	501	208	---	831	408	431	329	0	211	129
31	459	---	176	193	---	864	---	454	---	147	199	---
TOTAL	1427	1183.0	4603.0	7252	9066	13348	16228	20708	14700	4949	5784	1776.0
MEAN	46.0	39.4	148	234	324	431	541	668	490	160	187	59.2
MAX	459	424	763	462	526	864	941	828	625	267	266	201
MIN	0	0	0	68	67	117	286	400	273	0	0	0
AC-FT	2830	2350	9130	14380	17980	26480	32190	41070	29160	9820	11470	3520
CAL YR 1977	TOTAL	19202.00	MEAN	52.6	MAX	763	MIN	0	AC-FT	38090		
WTR YR 1978	TOTAL	101024.00	MEAN	277	MAX	941	MIN	0	AC-FT	200400		

11429350 LOON LAKE NEAR MEEKS BAY, CA

LOCATION.--Lat 38°58'59", long 120°19'22", in SE¼SW¼ sec.8, T.13 N., R.15 E., El Dorado County, Eldorado National Forest, in powerhouse intake structure, 1.6 mi (2.6 km) southwest of right bank end of Loon Lake Dam on Gerle Creek, and 10 mi (16 km) southwest of town of Meeks Bay.

DRAINAGE AREA.--7.96 mi² (20.62 km²).

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

REVISED RECORDS.--WDR CA-76-4: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Sacramento Municipal Utility District). Prior to Sept. 23, 1975, at site 1.6 mi (2.6 km) on right bank end of Loon Lake Dam at same datum.

REMARKS.--Reservoir is formed by an earthfill dam completed Dec. 27, 1963. Storage began Dec. 5, 1963. Prior to September 1962, reservoir was formed by granite-block dam built in 1884, capacity, 8,000 acre-ft (9.86 hm³). Usable capacity, 74,100 acre-ft (91.4 hm³) between elevations 6,325 ft (1,927.9 m), invert of fishwater release valve and 6,410 ft (1,953.8 m) crest of spillway. Dead storage, 2,360 acre-ft (2.91 hm³). Lake receives water from Rubicon River via Rubicon-Rockbound tunnel to Buck Island Lake and from Buck Island Lake to Loon Lake via Buck-Loon tunnel (stations 11427940, 11428300). Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Middle Fork American and Rubicon River basins.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 77,700 acre-ft (95.8 hm³) June 6, 1969, elevation, 6,411.1 ft (1,954.10 m); minimum since reservoir first filled, 3,690 acre-ft (4.55 hm³) Nov. 3, 1970, elevation, 6,330.3 ft (1,929.48 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 73,300 acre-ft (90.4 hm³) July 17, 18, elevation, 6,407.9 ft (1,953.13 m); minimum, 17,000 acre-ft (21.0 hm³) Mar. 9, elevation, 6,356.8 ft (1,937.55 m).

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

6330	3600
6340	7200
6350	12500
6360	19600
6370	28500
6390	50000
6412	79000

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	23900	19100	17800	25800	28000	18000	24000	24100	49500	68700	71900	58600
2	23800	19000	17600	26000	27700	17900	24400	24500	50500	69300	71400	58300
3	23800	18800	17600	26200	27400	17800	24300	25400	51500	69800	71000	58200
4	23800	18600	17600	25900	26900	18000	24200	26400	52500	70200	70500	58200
5	23800	18600	17500	25700	27000	18400	23900	27200	53800	70500	70000	58100
6	23800	18600	17500	25900	27200	18000	23600	27300	55300	70600	69900	57800
7	23800	18500	17500	26000	27100	17400	23100	27300	56600	71000	69300	57800
8	23800	18500	17300	26200	26800	17100	22700	27700	57800	71200	68900	57700
9	23700	18300	17300	26600	26700	17000	22900	28400	59000	71300	68400	57600
10	23700	18400	17300	26900	26000	17100	22600	29500	60000	71700	67900	58300
11	23700	18100	17300	27100	25300	17300	22600	30500	60800	72000	67400	59000
12	23700	18100	17300	27200	25400	17500	22500	31300	61500	72400	66900	59100
13	23600	18000	17300	27200	25200	17600	22400	32300	62600	72400	66900	59200
14	23600	18000	17400	27700	24600	17600	22300	34100	63900	72600	66300	59200
15	23600	18000	18900	28000	23800	17700	22400	36700	64800	72700	65800	59400
16	23600	18000	19600	28500	23000	17900	22500	37800	65200	73100	65400	59400
17	23500	17800	20300	28800	22400	18000	22000	37900	65300	73300	64900	59400
18	23500	17700	20600	28900	21600	18300	21800	38000	65400	73300	64400	59500
19	23500	17700	20900	28800	20900	18500	21400	38500	65700	73100	63900	59600
20	23500	17700	20800	28400	20100	18400	21100	39100	65800	73000	63900	59900
21	23400	17900	20900	28500	19400	18800	20800	40100	66000	72800	63400	59900
22	23300	17900	21000	28700	18600	19300	20300	41300	66100	72800	63000	60000
23	23300	17900	21300	28600	18000	19800	20300	42300	66600	73000	62400	60000
24	23100	17900	21400	28400	18000	20100	20200	42500	67100	73000	61900	60000
25	22500	17900	21500	28200	18200	20400	21300	42300	67500	72800	61400	59800
26	22100	18000	21700	28000	18300	20900	22100	42100	67800	72700	60900	59400
27	21700	18000	22400	28000	18400	21000	22400	42300	67900	72600	60900	59400
28	21200	18000	23300	28100	18500	21400	22700	43600	68200	72400	60300	59100
29	21200	18000	24600	28200	---	21700	23400	45100	68300	72300	59900	58700
30	21200	18000	25200	28100	---	22200	24100	46900	68300	72400	59400	58300
31	20200	---	25600	28000	---	23200	---	48400	---	72300	59000	---
MAX	23900	19100	25600	28900	28000	23200	24400	48400	68300	73300	71900	60000
MIN	20200	17700	17300	25700	18000	17000	20200	24100	49500	68700	59000	57600
†	6360.7	6358.0	6366.9	6369.5	6358.6	6364.3	6365.3	6388.7	6404.3	6407.2	6397.1	6396.6
‡	-3700	-2200	+7600	+2400	-9500	+4700	+900	+24300	+19900	+4000	-13300	-700

CAL YR 1977 ‡ +20420
WTR YR 1978 ‡ +34400

† Elevation, in feet NGVD, at end of month.
‡ Change in contents, in acre-feet.

11429500 GERLE CREEK BELOW LOON LAKE DAM, NEAR MEEKS BAY, CA

LOCATION.--Lat 39°00'20", long 120°18'52", in NE¼NE¼ sec.5, T.13 N., R.15 E., El Dorado County, Eldorado National Forest, on right bank 0.3 mi (0.5 km) downstream from Loon Lake Dam, and 11 mi (18 km) southwest of Meeks Bay.

DRAINAGE AREA.--8.01 mi² (20.7 km²).

PERIOD OF RECORD.--July 1910 to April 1914 (fragmentary), August 1962 to current year. Prior to August 1962, published as "near Rubicon Springs."

GAGE.--Water-stage recorder and V-notch concrete weir. Altitude of gage is 6,250 ft (1,905 m), from topographic map. Prior to August 1962, nonrecording gage at site 1,400 ft (427 m) upstream at different datum.

REMARKS.--Records good. Beginning in 1884, flow regulated by Loon Lake (station 11429350). Original dam was dismantled during September and October 1962 to permit construction of a new earthfill dam which was completed Dec. 27, 1963. Storage began Dec. 5, 1963. Loon Lake receives water from Rubicon River via Rubicon-Rockbound tunnel to Buck Island Lake and from Buck Island Lake to Loon Lake via Buck-Loon tunnel (stations 11427940, 11428300). Diversion to Loon Lake powerplant starting August 1971, bypasses station and returns to Gerle Creek at Gerle Creek Dam. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--10 years (water years, 1911, 1963-71, revised, prior to diversion to Loon Lake powerplant), 131 ft³/s (3.710 m³/s), 94,910 acre-ft/yr (117 hm³/yr); 7 years (water years 1972-78, revised), 8.08 ft³/s (0.229 m³/s), 5,850 acre-ft/yr (7.21 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,240 ft³/s (91.8 m³/s), unregulated, Feb. 1, 1963, gage height, 12.65 ft (3.856 m), from rating curve extended above 600 ft³/s (17.0 m³/s) on basis of slope-area measurement of maximum flow; no flow Oct. 15, 1913. Maximum discharge since construction of Loon Lake Dam in 1963, 1,050 ft³/s (29.7 m³/s) June 5, 1969, gage height, 9.03 ft (2.752 m); minimum daily, 3.6 ft³/s (0.10 m³/s) Sept. 27, 28, Nov. 3, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12 ft³/s (0.34 m³/s) May 14, Aug. 7, gage height, 2.07 ft (0.631 m); minimum daily, 3.6 ft³/s (0.10 m³/s) Nov. 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	3.8	4.0	3.8	4.5	4.3	6.0	9.1	7.9	8.7	8.0	7.2	8.0
2	3.9	4.0	3.8	4.5	4.3	6.5	8.8	8.7	8.5	8.0	7.2	8.0
3	4.0	3.6	3.8	4.5	4.3	6.8	8.7	8.6	8.4	8.0	7.2	7.9
4	4.0	4.0	3.8	4.5	4.3	7.2	8.7	8.8	8.5	8.0	7.2	8.0
5	4.0	4.2	3.8	4.6	4.5	7.0	8.5	8.3	8.7	8.0	7.2	8.4
6	4.0	4.0	3.8	4.9	4.5	6.7	8.4	8.2	8.6	8.0	7.2	8.4
7	4.0	4.0	3.8	4.5	4.5	6.7	8.4	8.5	8.4	8.0	7.6	8.1
8	4.0	4.0	3.8	4.6	4.4	7.1	8.4	8.7	8.4	8.0	8.0	8.2
9	4.0	4.1	3.8	5.3	4.4	7.5	8.6	9.3	8.4	8.0	8.2	8.5
10	4.0	4.0	3.8	4.8	4.7	7.5	9.0	9.4	8.4	8.0	8.2	8.8
11	3.9	4.0	3.8	4.5	4.9	7.5	9.0	9.3	8.4	8.0	8.1	8.2
12	3.8	4.0	3.8	4.5	4.9	7.5	9.0	9.2	8.4	8.0	8.0	8.2
13	3.9	4.0	3.9	4.6	4.9	7.6	8.9	9.5	8.4	7.7	8.0	8.3
14	4.0	4.0	5.0	5.5	4.9	7.7	8.5	10	8.3	7.7	8.0	8.3
15	4.0	4.1	5.4	5.0	5.2	7.8	8.3	9.7	8.2	7.7	8.0	8.2
16	4.0	4.0	4.2	4.9	5.8	8.2	8.1	8.6	8.1	8.0	8.0	8.2
17	4.0	4.0	5.8	4.8	5.8	8.3	8.0	8.9	7.8	7.9	8.0	8.2
18	4.0	4.0	4.3	4.7	5.8	8.3	8.0	9.0	7.6	7.7	8.0	8.2
19	3.8	4.0	4.2	4.7	5.8	8.4	8.0	8.9	7.3	7.7	8.0	8.2
20	3.8	3.8	4.2	4.7	5.8	8.6	8.1	8.4	7.2	7.7	8.0	8.2
21	3.8	4.0	4.2	4.7	5.8	8.9	8.0	8.7	7.5	7.7	8.0	8.2
22	3.8	4.5	4.2	4.6	5.8	9.0	8.0	8.7	7.7	7.6	8.2	8.2
23	3.8	4.0	4.7	4.5	5.7	9.1	8.0	8.4	7.9	7.5	8.2	8.4
24	3.8	4.1	4.2	4.5	5.6	8.8	8.2	8.2	8.2	7.5	8.2	8.4
25	3.8	4.1	4.3	4.3	5.6	8.8	9.3	8.0	8.2	7.5	8.2	8.4
26	4.0	4.1	5.0	4.3	5.6	8.8	8.5	8.1	8.2	7.2	8.2	8.4
27	4.0	3.9	6.2	4.3	5.6	8.9	8.4	8.3	8.2	7.2	8.2	8.4
28	4.0	3.8	5.9	4.3	5.6	9.1	7.8	8.5	8.2	7.2	8.1	8.4
29	3.8	3.9	7.0	4.3	---	9.2	7.7	8.6	8.2	7.2	8.0	8.4
30	4.0	3.8	5.1	4.3	---	9.7	7.7	8.6	8.0	7.2	8.0	8.4
31	4.0	---	4.7	4.3	---	9.8	---	8.4	---	7.2	8.0	---
TOTAL	121.7	120.0	138.1	143.0	143.3	249.0	252.1	270.4	245.0	239.1	244.6	248.1
MEAN	3.93	4.00	4.45	4.61	5.12	8.03	8.40	8.72	8.17	7.71	7.89	8.27
MAX	4.0	4.5	7.0	5.5	5.8	9.8	9.3	10	8.7	8.0	8.2	8.8
MIN	3.8	3.6	3.8	4.3	4.3	6.0	7.7	7.9	7.2	7.2	7.2	7.9
AC-FT	241	238	274	284	284	494	500	536	486	474	485	492
†	3240	2240	1370	3490	12080	5040	12500	15990	19820	9490	14150	3630
CAL YR 1977 TOTAL	1841.9		MEAN 5.05	MAX	9.8	MIN 3.6	AC-FT	3650				
WTR YR 1978 TOTAL	2414.4		MEAN 6.61	MAX	10	MIN 3.6	AC-FT	4790				

† Diversion, in acre-feet, to Loon Lake powerplant, furnished by Sacramento Municipal Utility District.

LOCATION.--Lat 38°57'17", long 120°24'02", in SW¼SW¼ sec.22, T.13 N., R.14 E., El Dorado County, Eldorado National Forest, on left bank 600 ft (183 m) downstream from Gerle Creek, and 18 mi (29 km) east of Georgetown.

PERIOD OF RECORD.--February 1910 to June 1914 (published as Little South Fork Rubicon River below Gerle Creek near Quintette), August 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,970 ft (1,515 m), from topographic map. Feb. 1, 1910, to June 21, 1914, nonrecording gage at site about 700 ft (213 m) downstream at different datum.

REMARKS.--Records good. Beginning in 1884, flow regulated by Loon Lake (station 11429350). Original dam was dismantled during September and October 1962 to permit construction of a new earthfill dam which was completed Dec. 27, 1963. Loon Lake receives water from Rubicon River via Rubicon-Rockbound tunnel to Buck Island Lake and from Buck Island Lake to Loon Lake via Buck-Loon tunnel (stations 11427940, 11428300). Prior to Dec. 3, 1961, water was diverted out of the basin in Georgetown Divide ditch. Robbs Peak tunnel 1.2 mi (1.9 km) upstream (station 11429800) began diversion of up to 1,320 ft³/s (37.4 m³/s) to Silver Creek basin October 1962. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE (unadjusted).--16 years (water years 1962-78), 19.2 ft³/s (0.544 m³/s), 13,910 acre-ft/yr (17.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s (326 m³/s) Jan. 31, 1963, gage height, 12.32 ft (3.755 m), from rating curve extended above 2,500 ft³/s (70.8 m³/s) on basis of slope-area measurement of maximum flow; minimum, 0.8 ft³/s (0.023 m³/s) Sept. 21, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 294 ft³/s (8.33 m³/s) Apr. 25, gage height, 4.21 ft (1.283 m); minimum daily, 1.8 ft³/s (0.051 m³/s) Oct. 4.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	2.4	2.4	5.3	4.0	7.5	9.7	9.7	11	10	10	10
2	2.4	2.3	2.4	5.0	4.1	13	8.0	14	11	10	10	10
3	2.2	2.2	2.4	5.6	4.1	12	6.8	12	11	11	10	10
4	1.8	2.6	2.3	5.7	4.1	23	6.6	10	11	10	10	10
5	2.2	3.3	2.3	15	5.3	26	6.1	11	11	10	10	11
6	2.4	2.6	2.3	11	6.9	17	6.3	11	11	10	10	11
7	2.5	2.6	2.2	7.5	11	12	5.8	11	11	10	10	11
8	2.5	2.5	2.2	6.9	8.3	11	6.2	11	11	10	11	11
9	2.5	2.5	2.2	19	12	10	6.7	11	11	10	10	11
10	2.5	2.3	2.2	11	7.3	9.3	6.8	11	11	10	10	11
11	2.5	2.3	2.3	8.2	6.2	10	6.4	11	11	9.9	10	11
12	2.5	2.3	2.4	6.9	5.7	9.3	5.9	11	11	9.9	10	17
13	2.5	2.2	2.3	7.5	5.3	8.1	5.5	10	11	9.8	9.8	15
14	2.5	2.2	3.6	19	5.0	7.6	5.5	14	11	9.9	9.8	16
15	2.5	2.1	8.9	13	4.9	7.2	7.0	16	10	9.8	9.8	13
16	2.5	2.1	3.7	23	4.6	7.3	6.9	10	11	9.7	9.8	12
17	2.5	2.1	18	21	4.5	7.5	6.6	10	11	9.9	9.9	11
18	2.5	2.3	6.4	12	4.4	7.2	7.3	10	11	9.8	10	11
19	2.4	2.4	4.4	11	4.6	6.9	7.4	10	11	9.9	10	10
20	2.3	2.4	3.7	8.7	4.8	7.4	8.1	10	10	10	9.8	11
21	2.3	7.1	3.5	7.1	4.9	8.8	7.4	9.9	10	10	9.9	11
22	2.4	5.9	6.6	6.2	5.1	9.2	7.6	10	10	10	10	11
23	2.4	3.1	17	5.6	5.3	11	7.8	10	10	10	10	10
24	2.4	2.9	6.1	5.1	5.3	9.5	10	10	10	10	10	9.8
25	2.9	2.7	4.7	4.9	5.0	7.9	87	10	10	10	10	9.8
26	2.4	2.6	4.8	4.7	4.9	7.4	12	11	10	10	10	11
27	2.5	2.7	10	4.6	5.0	7.0	9.9	11	11	10	10	10
28	2.3	2.9	7.2	4.5	5.4	6.8	8.6	11	11	10	10	10
29	2.3	2.5	18	4.4	---	6.5	7.5	11	11	10	10	10
30	2.3	2.5	10	4.3	---	7.2	6.9	11	10	10	10	10
31	2.3	---	6.7	4.1	---	11	---	11	---	10	10	---
TOTAL	74.4	82.6	173.2	277.8	158.0	311.6	300.3	339.6	321	309.6	309.8	335.6
MEAN	2.40	2.75	5.59	8.96	5.64	10.1	10.0	11.0	10.7	9.99	9.99	11.2
MAX	2.9	7.1	18	23	12	26	87	16	11	11	11	17
MIN	1.8	2.1	2.2	4.1	4.0	6.5	5.5	9.7	10	9.7	9.8	9.8
AC-FT	148	164	344	551	313	618	596	674	637	614	614	666
CAL YR 1977	TOTAL	1148.6	MEAN 3.15	MAX 18	MIN 1.5	AC-FT 2280						
WTR YR 1978	TOTAL	2993.5	MEAN 8.20	MAX 87	MIN 1.8	AC-FT 5940						

11431800 PILOT CREEK ABOVE STUMPY MEADOWS LAKE, CA

LOCATION.--Lat 38°53'41", long 120°34'02", in NE¼NW¼ sec.18, T.12 N., R.13 E., El Dorado County, on right bank 2.1 mi (3.4 km) upstream from Stumpy Meadows Dam, and 12.5 mi (20.1 km) east of Georgetown.

DRAINAGE AREA.--11.7 mi² (30.3 km²).

PERIOD OF RECORD.--October 1960 to current year. Prior to October 1971, published as "above Stumpy Meadows Reservoir."

GAGE.--Water-stage recorder. Altitude of gage is 4,280 ft (1,305 m), from topographic map.

REMARKS.--Records good. No regulation or diversion above station. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--18 years, 23.4 ft³/s (0.663 m³/s), 16,950 acre-ft/yr (20.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,380 ft³/s (67.4 m³/s) Dec. 23, 1964, gage height, 5.92 ft (1.804 m) in gage well, 6.6 ft (2.01 m) from floodmarks, from rating curve extended above 170 ft³/s (4.81 m³/s) on basis of slope-area measurement of maximum flow; maximum gage height, 8.05 ft (2.454 m) Jan. 31, 1963; minimum daily discharge, 0.14 ft³/s (0.004 m³/s) Aug. 16, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft³/s (2.83 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Nov. 22	0100	118 3.34	2.50 0.762	Jan. 9	1530	228 6.46	2.91 0.887
Dec. 17	1430	179 5.07	2.72 0.829	Jan. 17	0330	325 9.20	3.21 0.978
Dec. 23	0500	143 4.05	2.56 0.780	Feb. 9	0545	120 3.40	2.50 0.762
Dec. 29	2115	123 3.48	2.46 0.750	Mar. 5	1830	*328 9.29	3.24 0.988
Jan. 5	1830	147 4.16	2.58 0.786	Apr. 25	unknown	unknown --	unknown --

Minimum daily, 0.73 ft³/s (0.021 m³/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	.93	1.2	3.4	41	22	30	64	70	17	11	5.9	4.3
2	.85	1.2	3.3	33	22	69	57	63	17	10	5.8	4.2
3	.79	1.2	3.2	32	20	85	49	60	16	10	5.7	4.1
4	.75	1.2	3.0	35	19	157	49	57	16	10	5.6	4.1
5	.77	2.5	3.0	92	22	288	45	50	15	9.9	5.5	7.6
6	.76	2.1	2.9	119	35	221	46	49	15	9.6	5.4	10
7	.76	1.7	2.8	81	69	149	43	48	14	9.4	5.2	7.0
8	.77	1.6	2.7	63	68	114	43	43	14	9.2	5.3	6.1
9	.79	1.5	2.7	145	94	92	43	38	14	8.9	5.1	7.0
10	.77	1.4	2.6	129	78	77	43	40	13	8.6	5.0	15
11	.74	1.4	2.9	88	66	71	41	39	13	8.5	5.0	8.3
12	.73	1.4	3.6	68	58	63	39	37	13	8.3	5.0	6.8
13	.75	1.4	3.0	60	51	55	38	35	13	8.1	5.1	6.3
14	.75	1.4	4.8	116	45	49	37	34	13	7.9	5.2	6.5
15	.75	1.4	51	127	40	44	43	37	13	7.7	5.0	6.0
16	.80	1.3	15	184	36	41	75	34	12	7.6	5.0	5.8
17	.79	1.3	87	279	33	40	70	31	12	7.5	5.0	5.7
18	.77	1.3	41	183	30	39	56	29	12	7.3	5.0	5.8
19	.77	1.3	19	145	29	38	73	28	12	7.2	4.7	5.7
20	.80	1.4	13	107	27	37	73	27	12	7.1	4.6	5.7
21	.83	31	11	85	26	44	69	26	11	7.0	4.6	5.5
22	.87	41	20	70	26	50	64	25	11	6.8	4.8	5.5
23	.88	9.2	82	58	26	57	54	24	11	6.7	4.9	5.5
24	.89	6.2	35	50	26	55	68	24	11	6.5	4.9	5.5
25	.89	5.3	22	44	26	46	132	23	11	6.4	4.8	5.4
26	1.0	4.7	19	38	25	44	120	22	11	6.5	4.8	5.4
27	1.1	4.4	44	34	25	43	100	21	12	6.4	4.7	5.3
28	1.2	4.1	40	31	25	42	90	19	13	6.3	4.5	5.3
29	1.2	3.8	92	28	---	42	83	19	11	6.1	4.4	5.2
30	1.2	3.6	92	25	---	47	78	18	11	6.1	4.4	5.2
31	1.2	---	58	24	---	66	---	18	---	6.0	4.4	---
TOTAL	26.85	142.5	784.9	2614	1069	2295	1885	1088	389	244.6	155.3	185.8
MEAN	.87	4.75	25.3	84.3	38.2	74.0	62.8	35.1	13.0	7.89	5.01	6.19
MAX	1.2	41	92	279	94	288	132	70	17	11	5.9	15
MIN	.73	1.2	2.6	24	19	30	37	18	11	6.0	4.4	4.1
AC-FT	53	283	1560	5180	2120	4550	3740	2160	772	485	308	369
CAL YR 1977 TOTAL	1767.93			MEAN 4.84	MAX 92	MIN .14	AC-FT 3510					
WTR YR 1978 TOTAL	10879.95			MEAN 29.8	MAX 288	MIN .73	AC-FT 21580					

11433040 PILOT CREEK BELOW MUTTON CANYON, NEAR GEORGETOWN, CA

LOCATION.--Lat 38°55'25", long 120°38'27", in NE&NW¼ sec.4, T.12 N., R.12 E., El Dorado County, Eldorado National Forest, on left bank 450 ft (137 m) downstream from Mutton Canyon, 500 ft (150 m) downstream from Georgetown Divide diversion dam, 2.5 mi (4.0 km) downstream from Stumpy Meadows Dam, and 10 mi (16 km) east of Georgetown.

DRAINAGE AREA.--21.1 mi² (54.6 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 3,760 ft (1,146 m), from topographic map.

REMARKS.--Records good. Flow regulated by Stumpy Meadows Lake, usable capacity, 20,000 acre-ft (24.7 hm³) completed in November 1961. Georgetown Irrigation District ditch, capacity, about 20 ft³/s (0.57 m³/s) diverts water out of Pilot Creek, 500 ft (150 m) above station. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--17 years, 27.0 ft³/s (0.765 m³/s), 19,560 acre-ft/yr (24.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,430 ft³/s (154 m³/s) Dec. 22, 1964, gage height, 9.60 ft (2.926 m), from rating curve extended above 300 ft³/s (8.50 m³/s) on basis of slope-area measurement at gage height 5.00 ft (1.524 m); maximum gage height, 10.06 ft (3.066 m) Dec. 23, 1964; minimum daily discharge, 0.20 ft³/s (0.006 m³/s) Sept. 24, Nov. 1-5, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 254 ft³/s (7.19 m³/s) Apr. 25, gage height, 4.87 ft (1.484 m); minimum daily, 0.33 ft³/s (0.009 m³/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	.37	1.2	.53	3.1	15	17	112	137	4.4	2.2	1.4	1.1
2	.35	1.3	.53	2.5	16	34	98	111	4.3	2.1	1.4	1.0
3	.35	.68	.53	2.5	14	39	81	98	3.8	2.1	1.4	1.0
4	.34	.41	.53	7.2	13	55	99	94	3.2	2.1	1.4	1.1
5	.34	.83	.53	39	15	76	80	85	2.9	2.0	1.4	2.9
6	.33	.83	.53	47	25	68	90	71	2.7	2.0	1.4	2.2
7	.34	1.0	.53	23	40	58	81	64	2.7	2.0	1.3	1.5
8	.38	.51	.53	18	31	50	72	60	2.6	1.9	1.3	1.4
9	.38	1.9	.53	37	45	55	73	56	2.6	1.9	1.3	1.8
10	.37	1.4	.53	27	36	133	74	53	2.6	1.9	1.3	3.4
11	.37	1.4	.71	21	33	141	73	49	2.5	1.9	1.3	1.7
12	.37	1.4	.81	18	34	130	72	45	2.5	1.9	1.3	1.4
13	.37	1.4	.62	19	33	110	70	42	2.5	1.8	1.3	1.4
14	.37	1.4	1.5	41	28	97	70	41	2.5	1.8	1.3	1.4
15	.37	.95	9.2	40	27	86	92	44	2.4	1.7	1.3	1.3
16	.37	.41	1.9	74	25	76	108	42	2.4	1.7	1.2	1.3
17	1.1	.41	10	103	23	72	89	35	2.4	1.7	1.3	1.3
18	1.2	.41	3.7	70	22	68	81	30	2.4	1.7	1.2	1.3
19	1.1	.41	1.8	64	21	67	80	28	2.4	1.6	1.2	1.2
20	1.2	.41	1.4	48	20	68	120	26	2.4	1.6	1.2	1.2
21	1.2	5.4	1.3	41	19	77	113	24	2.4	1.6	1.2	1.2
22	1.2	5.0	3.1	36	19	87	106	24	2.2	1.6	1.2	1.2
23	1.1	1.0	11	32	18	96	104	22	2.2	1.6	1.2	1.2
24	.50	.75	3.4	28	17	93	136	23	2.2	1.6	1.2	1.2
25	.41	.68	2.1	25	17	79	239	20	2.2	1.6	1.2	1.2
26	1.1	.63	2.0	22	16	70	240	19	2.2	1.6	1.2	1.1
27	1.1	.62	5.2	20	16	65	213	17	2.4	1.6	1.2	1.1
28	1.1	.57	4.6	19	15	63	190	16	2.4	1.5	1.1	1.1
29	1.2	.57	13	18	---	63	168	15	2.4	1.5	1.1	1.1
30	1.2	.56	8.9	17	---	65	152	9.9	2.2	1.5	1.1	1.1
31	1.2	---	4.7	15	---	100	---	5.4	---	1.5	1.1	---
TOTAL	21.68	34.44	96.24	977.3	653	2358	3376	1406.3	79.0	54.8	39.0	42.4
MEAN	.70	1.15	3.10	31.5	23.3	76.1	113	45.4	2.63	1.77	1.26	1.41
MAX	1.2	5.4	13	103	45	141	240	137	4.4	2.2	1.4	3.4
MIN	.33	.41	.53	2.5	13	17	70	5.4	2.2	1.5	1.1	1.0
AC-FT	43	68	191	1940	1300	4680	6700	2790	157	109	77	84
CAL YR 1977 TOTAL	374.80			MEAN 1.03	MAX 13	MIN .33	AC-FT 743					
WTR YR 1978 TOTAL	9138.16			MEAN 25.0	MAX 240	MIN .33	AC-FT 18130					

11433060 SOUTH FORK LONG CANYON CREEK DIVERSION TUNNEL NEAR VOLCANOVILLE, CA

LOCATION.--Lat 39°03'04", long 120°28'14", in SW¼NE¼ sec.24, T.14 N., R.13 E., Placer County, Eldorado National Forest, on right bank at diversion dam, 3.3 mi (5.3 km) upstream from confluence with North and South Forks Long Canyon Creek, and 17.2 mi (27.7 km) east of Volcanoville.

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

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 4,630 ft (1,411 m), from topographic map.

REMARKS.--Tunnel completed in September 1965; diversion began in February 1966. Flow is diverted from South Fork Long Canyon Creek to a tunnel from Hell Hole Reservoir to Middle Fork powerplant on the Middle Fork American River. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--13 years, 9.49 ft³/s (0.269 m³/s), 6,880 acre-ft/yr (8.48 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 251 ft³/s (7.11 m³/s) Nov. 12, 1973; no flow for part 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	.65	22	18	28	79	56	32	2.6		
2		0	.65	20	19	55	66	58	31	2.2		
3		0	.54	21	19	49	58	59	29	2.0		
4		0	.54	22	19	87	54	62	29	1.8		
5		0	.54	39	26	111	46	58	29	1.2		
6		0	.33	32	31	86	43	52	29	1.0		
7		0	0	27	40	67	39	51	28	.65		
8		0	0	26	37	58	39	54	27	.33		
9		0	0	53	48	53	41	57	25	0		
10		0	0	44	35	47	47	57	23	0		
11		0	0	34	29	49	50	56	20	0		
12		0	.11	28	26	43	48	56	19	0		
13		0	.33	34	25	37	46	58	17	0		
14		0	1.2	79	22	33	45	62	16	0		
15		0	2.5	63	18	32	46	70	15	0		
16		0	5.3	81	16	34	41	58	13	0		
17		0	32	80	15	39	39	51	11	0		
18		0	13	57	15	39	43	47	11	0		
19		0	6.5	46	16	41	43	47	9.3	0		
20		0	4.8	35	17	46	47	46	8.0	0		
21		1.6	4.3	31	18	60	43	47	7.4	0		
22		6.5	9.3	28	23	74	43	47	6.5	0		
23		1.2	33	25	25	84	43	43	5.6	0		
24		.84	14	22	24	71	52	38	5.3	0		
25		.84	9.0	21	23	60	110	33	4.8	0		
26		.84	9.3	20	22	61	89	31	4.0	0		
27		.84	32	19	21	62	77	30	4.0	0		
28		.84	30	19	22	64	68	31	4.5	0		
29		.65	75	19	---	66	61	32	3.3	0		
30		.65	49	19	---	72	62	34	2.8	0		
31		---	27	18	---	96	---	34	---	0		---
TOTAL	0	14.80	360.89	1084	669	1804	1608	1515	469.5	11.78	0	0
MEAN	0	.49	11.6	35.0	23.9	58.2	53.6	48.9	15.7	.38	0	0
MAX	0	6.5	75	81	48	111	110	70	32	2.6	0	0
MIN	0	0	0	18	15	28	39	30	2.8	0	0	0
AC-FT	0	29	716	2150	1330	3580	3190	3010	931	23	0	0
CAL YR 1977	TOTAL	532.33	MEAN	1.46	MAX	75	MIN	0	AC-FT	1060		
WTR YR 1978	TOTAL	7536.97	MEAN	20.6	MAX	111	MIN	0	AC-FT	14950		

11433080 NORTH FORK LONG CANYON CREEK DIVERSION TUNNEL NEAR VOLCANOVILLE, CA

LOCATION.--Lat 39°02'57", long 120°28'56", in SW¼NW¼ sec.24, T.14 N., R.13 E., Placer County, Eldorado National Forest, on left bank at diversion dam, 3.2 mi (5.1 km) upstream from confluence of North and South Forks Long Canyon Creek, and 16.9 mi (27.2 km) east of Volcanoville.

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

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 4,700 ft (1,430 m), from topographic map.

REMARKS.--No regulation or diversion above station. Tunnel completed in September 1965 and diversions began in February 1966. Flow is diverted from North Fork Long Canyon Creek to a tunnel from Hell Hole Reservoir to Middle Fork powerplant on the Middle Fork American River. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--13 years, 3.42 ft³/s (0.097 m³/s), 2,480 acre-ft/yr (3.06 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 56 ft³/s (1.59 m³/s) Mar. 31, 1978; no flow for part 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	4.8	3.4	14	40	31	12	.12		
2		0	0	3.6	3.3	29	32	34	11	.12		
3		0	0	4.1	3.5	20	27	36	10	.12		
4		0	0	4.1	3.8	46	24	36	9.0	.12		
5		0	0	14	9.8	47	21	31	8.0	.08		
6		0	0	12	12	35	20	28	7.1	.08		
7		0	0	6.7	14	28	17	29	6.3	.08		
8		0	0	6.5	12	24	18	31	5.7	.08		
9		0	0	29	16	19	24	34	5.0	.08		
10		0	0	19	10	17	22	34	4.0	.08		
11		0	0	13	6.9	16	28	33	3.5	.08		
12		0	0	9.3	5.6	14	27	32	3.3	.12		
13		0	0	14	4.5	12	26	33	2.9	.12		
14		0	2.0	44	3.5	10	25	34	2.6	.16		
15		0	9.7	29	3.0	11	23	39	1.6	.21		
16		0	.02	43	2.6	13	20	29	1.4	.16		
17		0	6.0	37	2.1	18	19	27	1.2	.16		
18		0	2.3	22	2.2	21	22	25	1.0	.12		
19		0	1.2	17	3.2	25	24	25	.89	.08		
20		0	0	13	4.8	27	24	24	.76	.05		
21		.08	0	10	6.7	37	22	25	.60	.02		
22		1.0	1.7	8.3	9.2	39	23	23	.38	.01		
23		0	2.3	6.1	10	50	24	20	.32	.01		
24		0	4.8	4.8	10	42	31	18	.21	0		
25		.21	1.3	4.3	9.0	36	52	15	.12	0		
26		.01	2.4	3.8	8.0	37	44	15	.08	0		
27		0	30	3.8	6.7	38	43	15	.52	0		
28		0	22	3.6	6.5	41	36	15	.76	0		
29		0	39	4.0	---	42	34	15	.32	0		
30		0	23	4.0	---	45	33	14	.16	0		
31		---	9.0	4.0	---	56	---	13	---	0		---
TOTAL	0	1.30	156.72	401.8	192.3	909	825	813	100.72	2.26	0	0
MEAN	0	.043	5.06	13.0	6.87	29.3	27.5	26.2	3.36	.073	0	0
MAX	0	1.0	39	44	16	56	52	39	12	.21	0	0
MIN	0	0	0	3.6	2.1	10	17	13	.08	0	0	0
AC-FT	0	2.6	311	797	381	1800	1640	1610	200	4.5	0	0
CAL YR 1977	TOTAL	160.69	MEAN	.44	MAX	39	MIN	0	AC-FT	319		
WTR YR 1978	TOTAL	3402.10	MEAN	9.32	MAX	56	MIN	0	AC-FT	6750		

11433100 LONG CANYON CREEK NEAR FRENCH MEADOWS, CA

LOCATION.--Lat 39°01'16", long 120°30'53", in SE¼NW¼ sec.34, T.14 N., R.13 E., Placer County, Eldorado National Forest, on right bank 75 ft (23 m) downstream from North Fork Long Canyon, 6.5 mi (10.5 km) south of French Meadows, and 18 mi (29 km) east of Foresthill.

DRAINAGE AREA.--18.0 mi² (46.6 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 4,100 ft (1,250 m), from topographic map.

REMARKS.--Water is diverted above this station to a diversion tunnel from Hell Hole Reservoir to Middle Fork American River powerplant via South Fork and North Fork Long Canyon diversion tunnels (stations 11433060, 11433080); diversions began in February 1966. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE (since diversion to Middle Fork American River powerplant).--12 years (water years 1967-78), 28.1 ft³/s (0.796 m³/s) 20,360 acre-ft/yr (25.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,690 ft³/s (133 m³/s) Dec. 23, 1964, gage height, 11.20 ft (3.414 m), from rating curve extended above 300 ft³/s (8.50 m³/s) on basis of slope-area measurements at gage heights 6.62 ft (2.018 m) and 10.27 ft (3.130 m); minimum daily, 0.08 ft³/s (0.002 m³/s) Sept. 27, 28, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 248 ft³/s (7.02 m³/s) Jan. 16, gage height, 5.26 ft (1.603 m); minimum daily, 0.21 ft³/s (0.006 m³/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	.28	.93	1.7	28	26	31	41	52	13	8.5	2.4	1.3
2	.24	.93	1.5	24	27	62	39	48	12	8.1	2.2	1.3
3	.28	.93	1.4	24	26	74	35	45	12	8.1	2.2	1.2
4	.25	.93	1.4	25	26	132	35	42	12	8.1	2.1	1.1
5	.21	1.8	1.3	75	31	182	33	38	12	8.1	2.1	2.3
6	.21	1.1	1.4	81	44	140	34	36	12	7.8	2.0	2.7
7	.26	.93	1.4	51	79	101	32	34	11	7.4	1.9	1.8
8	.26	.77	1.3	41	74	83	35	32	11	6.9	1.9	1.6
9	.28	.68	1.2	106	96	72	38	31	10	6.3	1.8	2.0
10	.26	.68	1.2	77	70	64	39	29	10	5.5	1.8	3.6
11	.25	.68	1.4	56	57	64	38	28	10	4.7	1.8	2.3
12	.25	.68	1.8	45	50	59	35	26	9.7	4.0	1.8	2.2
13	.26	.61	1.4	45	47	53	34	25	10	3.5	1.7	2.1
14	.28	.61	3.5	113	41	49	34	24	10	3.0	1.7	2.1
15	.30	.54	46	102	37	45	39	26	10	3.3	1.6	1.9
16	.33	.61	11	157	33	43	39	24	9.7	3.5	1.6	1.9
17	.32	.54	52	171	31	39	40	23	9.3	3.3	1.6	1.9
18	.33	.61	21	106	29	34	43	22	9.3	3.0	1.6	1.9
19	.30	.68	12	90	31	32	47	21	9.0	3.2	1.5	1.8
20	.28	.77	7.9	73	32	31	60	20	9.0	3.1	1.5	1.8
21	.28	4.8	6.2	61	32	36	56	19	8.5	2.9	1.5	1.8
22	.32	12	16	53	33	38	56	19	8.5	2.7	1.5	1.8
23	.37	2.9	58	46	33	46	56	19	8.1	2.5	1.5	1.7
24	.37	2.2	23	40	33	44	62	19	7.7	2.4	1.5	1.7
25	.42	2.5	17	36	31	38	123	17	7.7	2.3	1.5	1.7
26	.54	2.5	16	33	30	35	95	17	7.7	2.2	1.5	1.6
27	.77	2.4	29	31	28	34	79	16	8.5	2.2	1.5	1.6
28	.86	2.1	29	30	27	32	69	15	9.3	2.1	1.4	1.6
29	.86	1.9	92	29	---	31	62	15	9.0	2.5	1.3	1.5
30	.93	1.9	65	28	---	32	58	14	8.5	2.6	1.4	1.5
31	1.0	---	36	27	---	42	---	14	---	2.6	1.3	---
TOTAL	12.15	51.21	559.0	1904	1134	1798	1486	810	294.5	136.4	52.7	55.3
MEAN	.39	1.71	18.0	61.4	40.5	58.0	49.5	26.1	9.82	4.40	1.70	1.84
MAX	1.0	12	92	171	96	182	123	52	13	8.5	2.4	3.6
MIN	.21	.54	1.2	24	26	31	32	14	7.7	2.1	1.3	1.1
AC-FT	24	102	1110	3780	2250	3570	2950	1610	584	271	105	110
CAL YR 1977	TOTAL	1365.51	MEAN	3.74	MAX	92	MIN	.11	AC-FT	2710		
WTR YR 1978	TOTAL	8293.26	MEAN	22.7	MAX	182	MIN	.21	AC-FT	16450		

11433200 RUBICON RIVER NEAR FORESTHILL, CA

LOCATION.--Lat 38°59'33", long 120°43'14", in SE¼NW¼ sec.11, T.13 N., R.11 E., Placer County, Eldorado National Forest, on right bank 0.6 mi (1.0 km) upstream from Ralston powerhouse, 1.2 mi (1.9 km) upstream from confluence of Rubicon River and Middle Fork American River, and 5.6 mi (9.0 km) southeast of Foresthill.

DRAINAGE AREA.--315 mi² (816 km²).

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

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,200 ft (366 m), from topographic map. October 1958 to May 17, 1963, at site 2.0 mi (3.2 km) upstream, 150 ft (46 m) downstream from Ralston Bridge, and May 17, 1963, to Mar. 30, 1965, at site 2.1 mi (3.4 km) upstream, 100 ft (30 m) upstream from Ralston Bridge at datum 1,362.20 ft (415.199 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Flow regulated by Hell Hole Reservoir (station 11428700), Loon Lake (station 11429350), and Stumpy Meadows Lake, capacity, 20,000 acre-ft (24.7 hm³). Water is imported from French Meadows Reservoir on Middle Fork American River through a tunnel to French Meadows powerplant on shore of Hell Hole Reservoir. Water is diverted from Hell Hole Reservoir through a tunnel to Middle Fork powerplant on Middle Fork American River. Robbs Peak tunnel and powerplant (station 11429800) divert water to South Fork American River basin. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE (prior to construction of Hell Hole Dam).--7 years (water years 1959-65), 609 ft³/s (17.2 m³/s), 440,900 acre-ft/yr (544 hm³/yr); 13 years (water years 1966-78), 266 ft³/s (7.533 m³/s), 192,700 acre-ft/yr (238 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, unknown, Dec. 23, 1964, gage height, 55.4 ft (16.89 m) from floodmarks, caused by overtopping of the partly constructed Hell Hole Dam; next highest peak discharge, 83,000 ft³/s (2,350 m³/s) Feb. 1, 1963, gage height, 35.0 ft (10.67 m) former site and datum; minimum daily, 10 ft³/s (0.28 m³/s) Sept. 20-27, 1962. Maximum discharge since construction of Hell Hole Dam in 1965, 15,100 ft³/s (428 m³/s) Jan. 21, 1970, gage height, 14.60 ft (4.450 m); minimum daily, 7.4 ft³/s (0.21 m³/s) Sept. 11, 12, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of December 1937, November 1950, and December 1955 had approximate discharges of 44,000 ft³/s (1,250 m³/s), 56,000 ft³/s (1,590 m³/s), and 73,000 ft³/s (2,070 m³/s), respectively, on basis of 1958-64 stage-discharge relation and U.S. Forest Service floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,020 ft³/s (85.5 m³/s) Jan. 17, gage height, 10.50 ft (3.200 m); minimum daily, 10 ft³/s (0.28 m³/s) Oct. 8-17.

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	14	18	23	228	214	300	696	806	205	99	52	44
2	14	18	22	178	218	554	646	740	199	98	52	44
3	14	18	21	164	210	811	559	685	195	96	50	42
4	11	20	21	172	209	1390	579	646	186	95	50	42
5	11	21	20	701	229	2390	526	602	178	92	50	60
6	11	23	20	1070	370	1890	591	549	171	89	50	82
7	11	23	20	505	818	1350	569	509	167	86	49	63
8	10	21	21	349	850	1080	548	483	160	86	47	54
9	10	19	21	841	1040	927	561	468	157	83	48	50
10	10	18	21	842	818	895	575	453	156	83	45	80
11	10	18	22	511	661	871	558	430	153	80	44	73
12	10	18	26	385	611	810	534	405	149	78	42	58
13	10	18	26	340	653	701	509	388	146	77	42	55
14	10	18	28	898	568	627	491	380	145	75	42	58
15	10	17	272	1480	519	570	590	416	137	74	42	57
16	10	16	130	1840	464	527	693	384	133	72	42	55
17	10	15	304	2410	403	513	624	348	130	70	42	52
18	11	14	291	1390	384	487	633	329	129	69	42	50
19	11	14	117	1110	368	467	637	311	121	67	42	50
20	11	14	73	840	355	460	895	299	121	67	42	47
21	11	64	57	653	348	513	876	288	116	65	42	46
22	11	212	94	535	341	588	828	283	116	65	42	46
23	13	74	570	455	336	634	785	275	111	64	42	46
24	13	44	282	394	327	664	822	275	107	62	43	45
25	13	33	174	348	317	573	1610	261	103	60	44	44
26	13	30	143	314	308	535	1390	252	103	60	44	42
27	13	27	239	289	299	512	1190	241	104	60	44	42
28	14	25	268	268	291	493	1090	233	115	59	44	44
29	15	24	526	252	---	483	968	225	108	55	44	44
30	17	23	606	239	---	489	888	222	105	54	42	46
31	18	---	340	225	---	653	---	206	---	54	43	---
TOTAL	370	917	4798	20226	12529	23757	22461	12392	4226	2294	1389	1561
MEAN	11.9	30.6	155	652	447	766	749	400	141	74.0	44.8	52.0
MAX	18	212	606	2410	1040	2390	1610	806	205	99	52	82
MIN	10	14	20	164	209	300	491	206	103	54	42	42
AC-FT	734	1820	9520	40120	24850	47120	44550	24580	8380	4550	2760	3100
CAL YR 1977	TOTAL	12986.6	MEAN	35.6	MAX	606	MIN	7.4	AC-FT	25760		
WTR YR 1978	TOTAL	106920.0	MEAN	293	MAX	2410	MIN	10	AC-FT	212100		

11433260 NORTH FORK OF MIDDLE FORK AMERICAN RIVER NEAR FORESTHILL, CA

LOCATION.--Lat 39°01'27", long 120°43'03", in NE&NW& sec.35, T.14 N., R.11 E., Placer County, Tahoe National Forest, on right bank 1.0 mi (1.6 km) downstream from El Dorado Canyon, and 4.8 mi (7.7 km) east of Foresthill.

DRAINAGE AREA.--88.9 mi² (230.3 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 1,300 ft (396 m), from topographic map.

REMARKS.--No storage or diversion above station. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--13 years, 243 ft³/s (6,882 m³/s), 176,100 acre-ft/yr (217 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft³/s (385 m³/s) Jan. 21, 1970, gage height, 12.80 ft (3.901 m) in gage well, 13.5 ft (4.11 m) from floodmarks; minimum daily, 7.1 ft³/s (0.20 m³/s) Sept. 9, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,220 ft³/s (91.2 m³/s) Jan. 16, gage height, 8.09 ft (2.466 m); minimum daily, 9.1 ft³/s (0.26 m³/s) Oct. 8-14.

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	13	12	25	490	221	352	782	682	246	62	31	24
2	11	12	23	372	235	1010	720	648	229	59	31	23
3	10	12	23	336	219	1260	606	664	214	58	30	23
4	9.9	11	23	355	209	1870	581	649	210	56	30	23
5	9.8	19	22	1240	255	2750	520	603	209	55	29	45
6	9.7	25	22	1320	519	1940	553	527	198	52	29	76
7	9.4	17	22	780	1070	1300	530	490	190	50	28	38
8	9.1	15	21	583	1030	1060	515	488	176	48	28	32
9	9.1	14	20	1070	1280	917	557	514	161	47	28	32
10	9.1	14	20	1020	970	790	626	515	153	45	28	92
11	9.1	13	21	717	754	730	626	495	140	43	27	55
12	9.1	13	28	561	643	644	604	465	129	43	27	37
13	9.1	13	25	501	615	563	568	456	125	42	27	33
14	9.1	13	27	1130	534	505	544	478	120	41	28	32
15	9.5	13	654	1400	497	457	565	540	113	40	27	31
16	9.5	13	157	1960	433	431	563	413	105	38	27	30
17	9.5	13	776	2770	386	435	528	354	100	38	27	29
18	9.5	13	463	1540	349	444	542	344	97	37	27	29
19	9.5	12	203	1170	335	435	582	344	90	36	26	29
20	9.5	12	145	944	338	458	824	342	86	35	26	29
21	9.5	107	115	749	348	541	754	343	84	35	26	29
22	9.5	412	173	613	367	615	703	341	80	35	26	28
23	9.8	70	967	510	391	743	680	321	77	36	26	28
24	9.8	38	423	431	395	774	716	278	75	35	26	28
25	9.5	34	243	370	375	625	1410	249	73	34	27	28
26	9.5	32	183	330	363	582	1160	231	71	34	26	26
27	9.5	31	548	299	343	572	985	231	74	33	26	25
28	9.8	29	547	278	322	568	900	249	82	33	26	25
29	11	27	1550	258	---	573	804	268	75	32	25	25
30	11	25	1340	246	---	582	761	275	67	32	24	25
31	12	---	728	232	---	768	---	263	---	32	24	---
TOTAL	304.4	1084	9537	24575	13796	25294	20809	13060	3849	1296	843	1009
MEAN	9.82	36.1	308	793	493	816	694	421	128	41.8	27.2	33.6
MAX	13	412	1550	2770	1280	2750	1410	682	246	62	31	92
MIN	9.1	11	20	232	209	352	515	231	67	32	24	23
AC-FT	604	2150	18920	48740	27360	50170	41270	25900	7630	2570	1670	2000
CAL YR 1977	TOTAL	18314.1	MEAN	50.2	MAX	1550	MIN	7.1	AC-FT	36330		
WTR YR 1978	TOTAL	115456.4	MEAN	316	MAX	2770	MIN	9.1	AC-FT	229000		

11433300 MIDDLE FORK AMERICAN RIVER NEAR FORESTHILL, CA

LOCATION.--Lat 39°00'23", long 120°45'40", in NW¼NW¼ sec.4, T.13 N., R.11 E., Placer County, Tahoe National Forest, on right bank 1.7 mi (2.7 km) downstream from Oxbow powerhouse, and 3.2 mi (5.1 km) east of Foresthill.

DRAINAGE AREA.--524 mi² (1,357 km²).

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

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,060 ft (323 m), from topographic map. Prior to Oct. 22, 1965, at site 3.2 mi (5.1 km) downstream at different datum.

REMARKS.--Flow regulated by French Meadows Reservoir (station 11427400), Hell Hole Reservoir (station 11428700), Loon Lake (station 11429350), Stumpy Meadows Lake, usable capacity, 20,000 acre-ft (24.7 hm³), and Ralston and Oxbow powerplants. Robbs Peak tunnel (station 11429800) and Georgetown Divide ditch, capacity, about 25 ft³/s (0.71 m³/s) divert water out of basin above station. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--20 years, 1,055 ft³/s (29.88 m³/s), 764,300 acre-ft/yr (942 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 310,000 ft³/s (8,780 m³/s) Dec. 23, 1964, gage height, 69.0 ft (21.03 m) from floodmarks, site and datum then in use, caused by overtopping of the partly constructed Hell Hole Dam on the Rubicon River, from rating curve extended above 28,000 ft³/s (793 m³/s) on basis of slope-area measurement at gage height 38.0 ft (11.58 m) and slope-conveyance study at gage height 69.0 ft (21.03 m) at site and datum then in use; next highest peak, 113,000 ft³/s (3,200 m³/s) Feb. 1, 1963, gage height, 38.00 ft (11.582 m) site and datum then in use; minimum, 35 ft³/s (0.99 m³/s) Oct. 10, 20, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,640 ft³/s (245 m³/s) Jan. 16, gage height, 11.59 ft (3.533 m); minimum daily, 47 ft³/s (1.33 m³/s) Oct. 19, 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	99	78	199	962	1480	1680	2090	2130	1300	224	780	702
2	94	232	145	757	1490	2700	1800	1940	1080	222	875	827
3	90	123	123	703	1470	3510	1820	2040	901	216	844	760
4	88	60	59	932	1460	4880	1840	2320	871	210	774	797
5	73	133	251	2680	1510	6940	1770	2210	940	205	772	673
6	49	97	169	3230	1860	5450	1910	2060	1230	201	841	677
7	77	99	175	1720	3070	4020	1770	1960	1230	195	774	757
8	52	77	205	1210	3100	3270	1640	1940	1210	543	813	774
9	53	110	224	2420	3600	2810	1740	1800	1200	205	812	840
10	52	96	54	2500	2990	2640	1890	1910	1190	544	819	820
11	52	57	59	1920	2450	2680	1870	1890	1190	915	635	895
12	52	58	137	1750	2270	2590	1750	1820	877	841	745	476
13	52	56	176	1690	2210	2290	1720	1820	680	842	811	514
14	52	55	312	2660	2130	2130	1700	1810	609	732	796	719
15	53	56	1390	3960	2040	2060	1780	1910	686	654	755	766
16	51	54	437	4950	1920	1980	1530	1770	568	865	730	385
17	48	54	1400	7230	1840	1960	1360	1660	662	814	768	92
18	48	94	995	4430	1790	1960	1390	1610	288	793	814	383
19	47	51	562	3570	1760	1930	1430	1610	439	814	838	299
20	47	51	398	2900	1740	1960	1950	1600	419	747	659	586
21	48	349	301	2360	1740	2060	1880	1580	436	984	809	448
22	50	937	466	2080	1750	2250	1770	1590	434	453	816	473
23	51	376	1970	1900	1740	2420	1750	1540	406	468	903	250
24	52	91	901	1770	1750	2510	1750	1490	238	809	845	303
25	50	116	554	1710	1730	2200	3960	1460	239	701	717	388
26	50	165	420	1650	1720	1950	3530	1440	229	838	776	179
27	50	130	969	1600	1640	1920	3300	1240	247	841	714	77
28	50	176	1010	1570	1660	2040	2860	1310	276	837	819	221
29	51	125	2710	1520	---	2030	2310	1350	256	560	801	233
30	52	106	2650	1510	---	1930	2090	1310	223	808	838	227
31	57	---	1410	1490	---	2040	---	1390	---	880	751	---
TOTAL	1790	4262	20831	71334	55910	82790	59950	53510	20554	18961	24444	15541
MEAN	57.7	142	672	2301	1997	2671	1998	1726	685	612	789	518
MAX	99	937	2710	7230	3600	6940	3960	2320	1300	984	903	895
MIN	47	51	54	703	1460	1680	1360	1240	223	195	635	77
AC-FT	3550	8450	41320	141500	110900	164200	118900	106100	40770	37610	48480	30830
CAL YR 1977 TOTAL	75938			208	MAX 2710	MIN 47	AC-FT 150600					
WTR YR 1978 TOTAL	429877			1178	MAX 7230	MIN 47	AC-FT 852700					

11433400 CANYON CREEK NEAR GEORGETOWN, CA

LOCATION.--Lat 38°56'03", long 120°52'21", in SW¼NW¼ sec.33, T.13 N., R.10 E., El Dorado County, Eldorado National Forest, on right bank 0.7 mi (1.1 km) downstream from West Canyon, and 2.6 mi (4.2 km) northwest of Georgetown.

DRAINAGE AREA.--12.5 mi² (32.4 km²)

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 1,995 ft (608 m), from topographic map.

REMARKS.--Records good. Small diversions above station for irrigation and domestic purposes. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--12 years, 17.7 ft³/s (0.501 m³/s), 12,820 acre-ft/yr (15.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,300 ft³/s (36.8 m³/s) Jan. 21, 1970, gage height, 11.01 ft (3.356 m); minimum daily, 0.03 ft³/s (0.001 m³/s) Aug. 23, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 170 ft³/s (4.81 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)	
Jan. 5	2100	536	15.2	9.14	2.786
Jan. 16	2200	463	13.1	8.86	2.701
Mar. 4	2100	*572	16.2	9.27	2.825

Minimum daily, 0.43 ft³/s (0.012 m³/s) Oct. 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	.78	.53	1.6	10	6.6	7.8	32	29	8.4	6.1	2.6	2.2
2	.67	.53	1.6	7.1	6.8	44	29	26	9.0	6.0	2.6	2.1
3	.57	.54	1.5	6.6	6.2	93	22	26	9.1	5.9	2.6	3.5
4	.52	.54	1.4	9.1	5.9	182	26	23	8.7	5.6	2.5	4.6
5	.48	.60	1.4	156	8.3	224	22	20	8.2	5.2	2.4	15
6	.52	.79	1.3	109	24	109	48	21	7.9	4.8	2.4	7.0
7	.44	.75	1.3	21	61	57	62	21	7.6	4.6	2.3	2.8
8	.44	.66	1.2	10	44	41	45	17	7.4	4.3	2.3	2.0
9	.45	.64	1.2	67	81	33	34	16	7.3	4.1	2.2	2.4
10	.46	.60	1.2	40	43	28	28	17	7.3	4.0	2.1	6.4
11	.46	.60	1.6	15	37	26	24	17	7.2	4.0	2.1	3.1
12	.45	.60	3.2	8.9	46	24	22	16	7.0	3.9	2.2	2.3
13	.43	.60	2.0	10	66	21	20	15	7.0	3.8	2.3	2.9
14	.44	.60	4.6	110	44	18	19	15	6.8	5.0	2.5	2.8
15	.44	.76	60	195	33	16	29	15	6.7	5.2	2.6	2.1
16	.44	1.1	13	211	25	15	50	14	6.5	4.6	2.4	1.8
17	.44	1.1	35	210	20	15	48	14	6.4	4.1	2.3	1.8
18	.44	1.1	15	68	17	14	34	13	6.3	3.9	2.3	1.8
19	.48	1.2	6.0	50	15	13	28	12	6.1	3.5	2.2	1.9
20	.52	1.3	4.0	33	13	13	38	12	6.0	3.3	2.2	1.9
21	.56	8.0	3.3	22	12	17	37	11	5.8	3.2	2.2	1.9
22	.61	40	7.1	17	11	19	30	11	5.7	3.2	2.3	1.9
23	.67	10	52	13	10	19	27	11	5.5	3.1	2.4	1.9
24	.67	5.0	13	11	9.4	18	32	11	6.0	3.0	2.5	2.1
25	.67	3.0	6.6	10	8.8	16	107	10	6.7	3.0	2.5	1.9
26	1.2	2.5	5.4	9.2	8.4	14	57	10	7.0	3.0	2.5	1.8
27	.77	2.0	17	8.4	8.0	13	41	9.6	7.6	2.9	2.4	1.8
28	.53	2.0	20	7.8	7.7	13	37	9.3	8.1	2.9	2.3	1.7
29	.49	1.8	65	7.6	---	12	35	9.0	7.7	2.8	2.2	1.7
30	.51	1.7	47	7.2	---	12	32	8.7	6.5	2.7	2.2	1.7
31	.54	---	18	6.9	---	19	---	8.5	---	2.7	2.2	---
TOTAL	17.09	91.14	412.5	1466.8	678.1	1165.8	1095	468.1	213.5	124.4	72.8	88.8
MEAN	.55	3.04	13.3	47.3	24.2	37.6	36.5	15.1	7.12	4.01	2.35	2.96
MAX	1.2	40	65	211	81	224	107	29	9.1	6.1	2.6	15
MIN	.43	.53	1.2	6.6	5.9	7.8	19	8.5	5.5	2.7	2.1	1.7
AC-FT	34	181	818	2910	1350	2310	2170	928	423	247	144	176
CAL YR 1977 TOTAL	952.79			MEAN 2.61	MAX 65	MIN .03	AC-FT 1890					
WTR YR 1978 TOTAL	5894.03			MEAN 16.1	MAX 224	MIN .43	AC-FT 11690					

11433400 CANYON CREEK NEAR GEORGETOWN, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: July 1966 to current year.

INSTRUMENTATION.--Temperature recorder since July 1966.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 23.5°C July 22, 1966; minimum recorded, 0.5°C Jan. 2, 3, 31, Feb. 1, 1975, Dec. 27-29, 1976, Jan. 8, 9, 1977.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 21.0°C Aug. 8, 9; minimum recorded, 1.5°C Nov. 20.

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	13.0	9.0	8.5	6.0	7.0	4.5	7.0	5.5	---	---	10.5	8.0
2	13.0	9.5	8.5	5.5	6.0	4.5	7.5	6.5	8.0	6.5	9.5	8.5
3	13.0	9.0	8.5	6.0	6.0	4.0	8.0	7.0	7.5	6.0	10.0	8.5
4	13.0	8.5	9.5	8.0	6.5	4.5	8.0	7.5	8.0	6.0	9.5	9.0
5	12.5	8.5	9.5	8.0	6.0	4.5	8.0	7.5	8.0	7.0	9.5	9.0
6	11.5	6.0	8.0	6.5	7.0	4.0	8.5	7.5	8.0	7.0	10.0	8.0
7	11.0	7.0	8.0	6.0	7.0	4.5	7.5	6.5	8.5	7.5	10.5	8.5
8	11.5	7.5	7.0	5.0	6.0	3.5	8.0	6.5	8.5	7.5	10.5	9.0
9	11.5	6.5	6.5	4.5	4.5	2.5	8.5	7.5	8.5	8.0	10.5	9.0
10	11.5	7.5	7.5	4.5	4.0	3.0	8.0	7.5	8.0	6.0	10.5	8.5
11	12.0	7.0	8.0	5.5	6.0	3.0	8.5	7.5	7.5	6.0	9.5	8.5
12	12.0	8.0	7.0	5.0	6.5	5.0	8.0	7.0	7.0	6.0	10.0	8.0
13	11.5	8.0	7.0	5.0	7.5	5.5	8.5	7.5	8.0	7.0	9.5	7.0
14	11.0	7.5	7.0	4.5	8.0	6.0	9.0	8.0	7.5	6.0	10.0	7.0
15	11.5	8.0	6.5	5.0	9.0	6.5	8.0	5.5	8.0	6.5	10.0	6.5
16	11.0	8.0	6.5	4.5	6.5	5.5	---	---	7.5	6.0	10.5	7.0
17	11.0	6.5	8.0	4.5	8.0	6.5	---	---	7.5	5.5	11.0	6.5
18	11.0	7.5	7.0	4.0	7.5	6.0	---	---	8.0	6.0	11.0	8.5
19	11.0	7.5	4.0	2.5	5.5	3.5	---	---	8.0	6.0	11.5	8.5
20	10.5	7.5	4.5	1.5	5.5	3.5	---	---	8.0	6.0	11.0	8.5
21	10.0	7.0	6.5	4.5	6.5	4.5	---	---	8.5	6.0	11.0	10.0
22	10.0	6.5	7.5	6.5	7.5	6.0	---	---	9.0	6.5	11.5	10.0
23	10.5	7.5	7.5	6.0	8.5	7.5	---	---	9.0	6.5	10.5	9.5
24	11.5	9.0	8.5	7.0	7.5	6.5	---	---	9.0	6.5	11.0	6.5
25	11.5	8.5	7.5	5.5	7.0	5.5	---	---	9.0	7.0	12.0	8.0
26	12.0	10.0	8.0	6.0	7.0	6.0	---	---	9.5	7.5	12.0	9.0
27	11.0	9.0	8.0	6.0	9.0	7.0	---	---	9.0	7.5	13.0	9.0
28	10.5	7.0	6.5	4.5	9.0	8.0	---	---	9.5	7.0	13.0	6.5
29	10.5	9.0	7.0	4.5	9.5	8.5	---	---	---	---	12.5	6.5
30	10.5	9.5	7.0	5.0	9.0	7.5	---	---	---	---	12.5	6.5
31	9.0	7.5	---	---	7.5	6.0	---	---	---	---	11.5	6.5
MONTH	13.0	6.0	9.5	1.5	9.5	2.5	---	---	9.5	5.5	13.0	6.5

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

11433420 MAINE BAR CANYON CREEK NEAR GREENWOOD, CA

LOCATION.--Lat 38°55'34", long 120°56'51", in NW¼NW¼ sec.2, T.12 N., R.9 E., El Dorado County, on right bank
2.8 mi (4.5 km) northwest of Greenwood, and 4.5 mi (7.2 km) northeast of Cool.

DRAINAGE AREA.--0.76 mi² (1.97 km²).

PERIOD OF RECORD.--March to September 1972 (discharge measurements only), October 1972 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,520 ft (463 m), from topographic map.

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

AVERAGE DISCHARGE.--6 years, 0.89 ft³/s (0.025 m³/s), 645 acre-ft/yr (795,000 m³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 115 ft³/s (3.26 m³/s) Jan. 5, 1978, gage height, 1.95 ft (0.594 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft³/s (0.57 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)		Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)	
Dec. 15	0445	21	0.590	0.98	0.299	Jan. 16	1900	65	1.84	1.51	0.460
Jan. 5	1930	*115	3.26	1.95	0.594	Mar. 3	unknown	62	1.76	1.48	0.451
Jan. 9	1145	30	0.850	1.12	0.341						

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	.01	0	.02	1.2	.58	2.0	1.6	.57	.06	.02		0
2	.01	0	.02	.98	.55	15	1.2	.52	.05	.02		0
3	0	0	.02	1.6	.47	30	.97	.44	.05	.02		0
4	0	0	.02	3.3	.43	14	1.4	.36	.05	.01		0
5	0	.05	.02	72	1.1	13	.94	.33	.06	.01		.11
6	0	.02	.02	14	2.8	6.1	5.6	.29	.08	.01		.02
7	0	.02	.02	4.6	5.0	3.8	4.7	.28	.05	.01		.01
8	0	.01	.03	3.5	2.6	2.9	2.8	.27	.03	.01		0
9	0	.01	.03	12	3.5	2.3	1.9	.24	.02	.01		.02
10	0	.01	.03	5.8	1.0	2.0	1.4	.22	.02	.01		.05
11	0	.01	.08	3.5	2.0	2.1	1.1	.22	.03	.01		.01
12	0	.01	.11	2.8	1.0	2.6	.90	.24	.02	.01		.01
13	0	.01	.05	5.8	5.0	1.6	.84	.21	.02	.01		0
14	0	.01	1.7	24	4.0	1.1	.78	.19	.02	0		.01
15	0	.01	5.9	22	2.5	.94	2.4	.17	.02	0		.01
16	0	.01	.67	27	2.0	.78	3.2	.16	.02	0		.01
17	0	.01	3.4	17	1.5	1.7	2.5	.14	.02	0		.01
18	0	.01	1.1	8.5	1.3	1.3	1.7	.14	.02	0		.01
19	0	.01	.53	7.1	1.0	.78	1.4	.15	.02	0		.01
20	0	.01	.38	4.7	.85	.73	1.1	.18	.02	0		0
21	0	1.9	.35	4.0	.75	1.8	.84	.17	.02	0		.01
22	0	.61	1.7	3.0	.70	1.6	.80	.15	.01	0		.01
23	0	.10	3.5	2.7	.60	1.2	4.7	.14	.02	0		.01
24	0	.05	1.1	2.2	.55	.98	2.9	.12	.02	0		.01
25	0	.03	.71	1.9	.50	.84	2.0	.11	.02	0		0
26	0	.03	.97	1.6	.45	.74	1.5	.09	.02	0		0
27	0	.03	2.4	1.3	.43	.65	1.2	.08	.03	0		0
28	0	.02	2.7	1.1	.40	.60	.97	.07	.03	0		0
29	0	.02	4.6	1.0	---	.55	.83	.08	.02	0		0
30	0	.02	3.8	.70	---	.55	.70	.08	.02	0		0
31	0	---	1.8	.65	---	1.5	---	.08	---	0		---
TOTAL	.02	3.03	37.78	261.53	43.56	115.74	54.87	6.49	.89	.16	0	.33
MEAN	.0006	.10	1.22	8.44	1.56	3.73	1.83	.21	.030	.005	0	.011
MAX	.01	1.9	5.9	72	5.0	30	5.6	.57	.08	.02	0	.11
MIN	0	0	.02	.65	.40	.55	.70	.07	.01	0	0	0
AC-FT	.04	6.0	75	519	86	230	109	13	1.8	.3	0	.7
CAL YR 1977	TOTAL	66.27	MEAN	.18	MAX	5.9	MIN	0	AC-FT	131		
WTR YR 1978	TOTAL	524.40	MEAN	1.44	MAX	72	MIN	0	AC-FT	1040		

11433500 MIDDLE FORK AMERICAN RIVER NEAR AUBURN, CA

LOCATION.--Lat 38°55'05", long 121°00'51", in NE&SW¼ sec.6, T.12 N., R.9 E., Placer County, on right bank at Mountain Quarry Co. plant, 1.4 mi (2.2 km) upstream from mouth, and 3.3 mi (5.3 km) northeast of Auburn.
DRAINAGE AREA.--614 mi² (1,590 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1911 to current year. Prior to October 1934, published as "near East Auburn."

REVISED RECORDS.--WSP 861: 1928. WSP 1315-A: 1913-15, 1919, 1921, 1923(M), 1929(M), 1930. WSP 1931:

Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 552.35 ft (168.356 m) National Geodetic Vertical Datum of 1929 (levels by Murray Engineers). Prior to December 1930, nonrecording gages near present site at different datums. December 1930 to Mar. 1, 1963, water-stage recorder at site 0.4 mi (0.6 km) upstream at different datum.

REMARKS.--Records good. Natural flow of stream affected by French Meadows Reservoir (station 11427400), Hell Hole Reservoir (station 11428700), Loon Lake (station 11429350), Stumpy Meadows Lake, usable capacity, 20,000 acre-ft (24.7 hm³), diversion dams on Rubicon and Little Rubicon Rivers, and Ralston and Oxbow powerplants. Robbs Peak powerplant (station 11429300) diverts water out of basin. See schematic diagram of Middle Fork American and Rubicon River basin.

AVERAGE DISCHARGE.--67 years, 1,309 ft³/s (37.07 m³/s), 948,400 acre-ft/yr (1.17 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 253,000 ft³/s (7,160 m³/s) Dec. 23, 1964, gage height, 60.4 ft (18.41 m) from floodmarks, from rating curve extended above 69,000 ft³/s (1,950 m³/s) on basis of slope-area measurement of maximum flow (caused by overtopping of the partly constructed Hell Hole Dam); next highest peak, 121,000 ft³/s (3,430 m³/s) Feb. 1, 1963, gage height, 43.1 ft (13.14 m) from floodmarks, site and datum then in use; minimum, 20 ft³/s (0.57 m³/s) Sept. 6, 1931, Sept. 19, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,380 ft³/s (237 m³/s) Mar. 4, gage height, 13.38 ft (4.078 m); minimum daily, 55 ft³/s (1.56 m³/s) Oct. 20-22.

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	191	63	103	973	1430	1610	2180	2310	1400	223	806	745
2	93	88	189	736	1470	2540	2010	2040	1320	215	818	682
3	87	166	154	661	1420	3930	1880	2080	850	215	840	749
4	85	109	115	752	1420	4780	1880	2390	960	212	763	759
5	85	74	94	2930	1480	7730	1840	2260	1210	199	742	729
6	71	137	193	4500	1890	6300	2160	2160	1240	197	817	774
7	76	75	144	1950	3240	4440	2340	2050	1230	193	795	587
8	74	87	155	1280	3610	3490	1870	2020	1220	250	772	781
9	60	89	212	2190	3970	2980	1990	1860	1210	481	798	788
10	59	98	162	2940	3410	2770	2020	1910	1800	254	795	793
11	59	89	70	1910	2890	2770	1960	1880	1190	961	630	888
12	58	63	77	1680	2650	2700	1830	1870	1070	787	727	649
13	58	62	133	1620	2730	2450	1790	1810	551	832	782	426
14	58	62	162	2790	2540	2260	1780	1740	636	724	766	579
15	59	60	1380	5450	2350	2150	1820	1610	716	656	757	775
16	59	60	602	5390	2160	2070	2030	1900	554	816	694	488
17	58	60	894	7510	2020	2020	1710	1770	653	814	756	376
18	56	60	1330	5160	1920	2000	1660	1680	492	752	762	190
19	56	87	516	3930	1840	1960	1610	1650	332	804	835	319
20	55	61	435	3230	1800	1970	2020	1640	389	762	635	422
21	55	149	296	2640	1770	2040	2160	1610	429	896	762	428
22	55	930	374	2330	1750	2300	2000	1550	431	817	817	535
23	57	424	1740	2090	1740	2310	1910	1580	484	126	857	333
24	58	199	1060	1890	1740	2580	1870	1590	305	836	846	194
25	58	90	577	1770	1730	2250	3860	1540	238	689	713	344
26	58	109	411	1700	1670	1960	3690	1520	230	758	761	379
27	58	146	711	1620	1600	1920	3370	1310	237	845	683	135
28	59	121	996	1580	1610	2030	2980	1350	264	827	743	92
29	59	155	2250	1520	---	2050	2570	1380	262	703	789	172
30	60	120	2880	1500	---	2030	2170	1350	240	717	828	222
31	60	---	1520	1460	---	2010	---	1450	---	820	757	---
TOTAL	2074	4093	19935	77682	59850	86400	64960	54860	21543	18381	23846	15333
MEAN	66.9	136	643	2506	2138	2787	2165	1770	718	593	769	511
MAX	191	930	2880	7510	3970	7730	3860	2390	1400	961	857	888
MIN	55	60	70	661	1420	1610	1610	1310	230	126	630	92
AC-FT	4110	8120	39540	154100	118700	171400	128800	108800	42730	36460	47300	30410
CAL YR 1977 TOTAL	76795	MEAN	210	MAX	2880	MIN	55	AC-FT	152300			
WTR YR 1978 TOTAL	448957	MEAN	1230	MAX	7730	MIN	55	AC-FT	890500			

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1957-67, 1977-78.

CHEMICAL ANALYSES: Water years 1958-66, 1977-78.

SEDIMENT RECORDS: Water years 1957-67.

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	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	ALKA- LITY (MG/L AS CAC03)
DEC 06...	1345	139	450	7.3	9.0	11.9	26

11433800 NORTH FORK AMERICAN RIVER BELOW AUBURN DAMSITE, NEAR AUBURN, CA

LOCATION.--Lat 38°52'20", long 121°03'18", in SE&SW¼ sec.23, T.12 N., R.8 E., Placer County, on right bank 1,080 ft (329 m) upstream from Knickerbocker Creek, and 2.0 mi (3.2 km) southeast of Auburn.

DRAINAGE AREA.--973 mi² (2,520 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1972 to current year.

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

REMARKS.--Records good. Natural flow of stream affected by many reservoirs and diversions (see REMARKS for stations 11427000, 11433500).

AVERAGE DISCHARGE.--6 years, 1,761 ft³/s (49.9 m³/s), 1,276,000 acre-ft/yr (1.57 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,100 ft³/s (966 m³/s) Jan. 17, 1974, gage height, 79.37 ft (24.192 m); minimum daily, 51 ft³/s (1.44 m³/s) July 12, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,300 ft³/s (518 m³/s) Jan. 17, gage height, 73.24 ft (22.324 m); minimum daily, 68 ft³/s (1.93 m³/s) Oct. 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	282	83	160	2090	2320	2480	4710	4250	3180	671	909	777
2	108	98	235	1570	2360	4460	4190	4040	3050	660	897	712
3	106	211	234	1460	2280	8200	3690	4250	2530	634	929	781
4	106	132	168	1640	2260	9580	3560	4600	2630	593	833	783
5	104	110	118	6150	2380	15200	3320	4380	2870	565	812	844
6	95	175	258	8950	3380	11700	3790	3970	3230	555	885	901
7	72	124	203	4080	5650	8210	3810	3770	3220	558	869	699
8	84	121	202	2710	6540	6340	3450	3830	3100	561	831	860
9	80	120	231	4160	6750	5210	3660	3950	2980	880	858	851
10	73	129	237	5760	5820	4710	3700	4190	2870	524	855	897
11	73	117	118	3810	5020	4540	3810	4180	2620	1290	700	1090
12	72	92	141	3100	4540	4360	3750	4040	2470	1090	770	838
13	72	85	203	2850	4930	3940	3620	3990	1840	1110	827	506
14	73	86	228	5610	4540	3620	3590	4250	1990	973	800	634
15	73	85	2960	10300	4100	3410	3550	4810	1930	899	813	838
16	74	84	1510	9730	3700	3250	4000	4060	1580	1040	743	571
17	74	84	1550	15400	3370	3280	3300	3450	1530	1040	784	508
18	70	84	3030	8540	3150	3310	3300	3360	1430	941	796	213
19	69	108	1090	6670	2990	3240	3250	3470	1120	999	882	416
20	68	89	774	5610	2930	3340	3840	3590	1180	952	695	402
21	69	140	569	4660	2890	3560	3670	3670	1160	1050	792	518
22	70	1460	766	4060	2870	4110	3530	3830	1140	1060	862	563
23	72	704	3580	3580	2860	4120	3490	3670	1160	262	887	449
24	74	374	2360	3200	2820	4600	3440	3140	974	930	905	262
25	74	177	1230	2960	2690	3900	6230	2810	823	814	777	346
26	74	181	857	2810	2590	3580	6220	2640	754	856	795	475
27	74	219	1770	2640	2480	3630	5540	2550	723	974	714	201
28	74	191	2650	2550	2450	3790	5270	2920	790	949	766	134
29	75	226	4870	2430	---	3890	4670	3290	749	892	838	230
30	80	185	6000	2410	---	3950	4250	3450	710	762	864	269
31	81	---	3260	2380	---	4370	---	3410	---	906	805	---
TOTAL	2645	6074	41562	143870	100660	155880	120200	115810	56333	25990	25493	17568
MEAN	85.3	202	1341	4641	3595	5028	4007	3736	1878	838	822	586
MAX	282	1460	6000	15400	6750	15200	6230	4810	3230	1290	929	1090
MIN	68	83	118	1460	2260	2480	3250	2550	710	262	695	134
AC-FT	5250	12050	82440	285400	199700	309200	238400	229700	111700	51550	50570	34850
CAL YR 1977	TOTAL	125490	MEAN	344	MAX	6000	MIN	51	AC-FT	248900		
WTR YR 1978	TOTAL	812085	MEAN	2225	MAX	15400	MIN	68	AC-FT	1611000		

11433800 NORTH FORK AMERICAN RIVER BELOW AUBURN DAMSITE, NEAR AUBURN, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSIS: 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)	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)
MAY 25...	0857	2870	41	8.2	10.5	11.4	20	2	5.7	1.3	1.5
AUG 29...	0915	870	42	7.8	16.0	9.6	18	1	5.5	1.1	1.7

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)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
MAY 25...	14	.1	.5	18	2.8	1.0	.1	10	34	.05	.02
AUG 29...	16	.2	.5	17	2.3	1.3	.0	10	33	.04	.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 P04)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
MAY 25...	.02	.00	.19	.19	.21	.00	.00	.00	6	40
AUG 29...	.03	.01	.24	.25	.28	.02	.00	.00	2	20

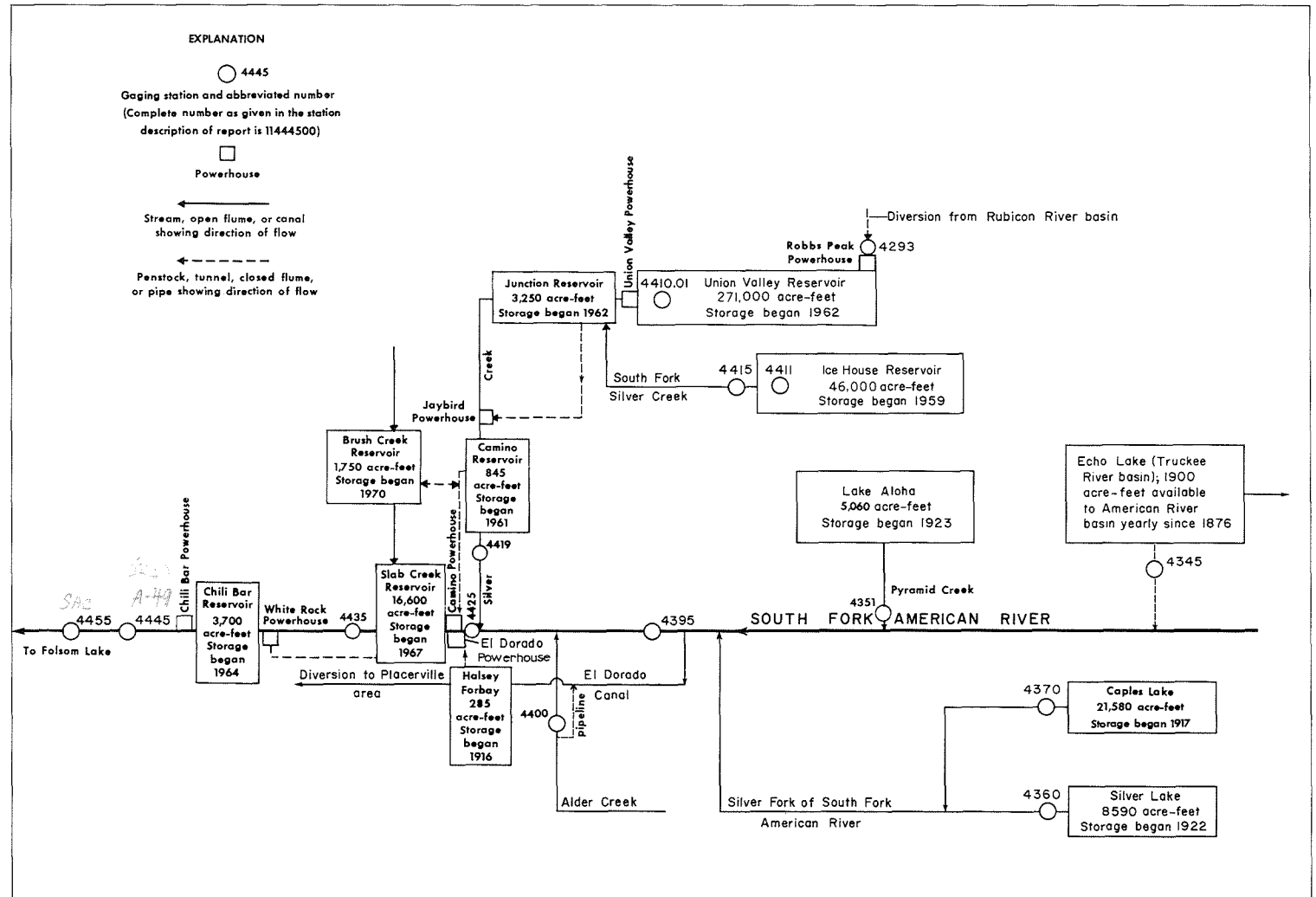


FIGURE 11.--Schematic diagram showing diversions and storage in South Fork American River basin.

11434500 ECHO LAKE CONDUIT NEAR PHILLIPS, CA

LOCATION.--Lat 38°49'52", long 120°02'12", in NW¼ sec.6, T.11 N., R.18 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank in Berkeley Municipal Camp, 0.5 mi (0.8 km) downstream from intake, and 2.4 mi (3.9 km) northeast of Phillips.

PERIOD OF RECORD.--August 1923 to current year. Prior to October 1974 diversion seasons only. Monthly discharge only for July 1933, published in WSP 1315-A. Published as Echo Lake flume near Vade prior to 1943 and as Echo Lake conduit near Vade for seasons 1944-53.

GAGE.--Water-stage recorder. Altitude of gage is 7,420 ft (2,262 m), from topographic map. Prior to July 16, 1929, nonrecording gage at site 0.4 mi (0.6 km) upstream at different datum.

REMARKS.--Conduit diverts from Echo Lake, capacity, 1,900 acre-ft (2.34 hm³) in Truckee River basin into basin of South Fork American River for power and irrigation. See schematic diagram of South Fork American River basin.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 31 ft³/s (0.88 m³/s) Sept. 10, 1963, Sept. 13-15, 1971, Sept. 16, 17, 1978; no flow for 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	.02	5.5										0
2	.01	5.0										0
3	0	4.5										0
4	0	2.3										0
5	0	.44										0
6	0	1.4										0
7	0	4.8										0
8	0	4.4										0
9	0	4.1										0
10	0	3.8										0
11	0	3.4										16
12	0	2.3										26
13	0	6.7										21
14	0	2.3										20
15	11	1.1										25
16	17	0										31
17	16	0										31
18	15	0										30
19	13	0										30
20	12	0										30
21	11	0										29
22	10	0										29
23	9.2	0										29
24	8.5	0										13
25	5.5	0										0
26	1.2	0										0
27	4.9	0										0
28	7.1	0										0
29	6.5	0										0
30	6.3	0										0
31	5.9	---										---
TOTAL	160.13	52.04	0	0	0	0	0	0	0	0	0	360
MEAN	5.17	1.73	0	0	0	0	0	0	0	0	0	12.0
MAX	17	6.7	0	0	0	0	0	0	0	0	0	31
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	318	103	0	0	0	0	0	0	0	0	0	714
CAL YR 1977	TOTAL 829.27	MEAN 2.27	MAX 29	MIN 0	AC-FT 1640							
WTR YR 1978	TOTAL 572.17	MEAN 1.57	MAX 31	MIN 0	AC-FT 1130							

11435100 PYRAMID CREEK AT TWIN BRIDGES, CA

LOCATION.--Lat 38°48'57", long 120°06'58", in NW¼SW¼ sec.9, T.11 N., R.17 E., E1 Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 0.5 mi (0.8 km) northeast of Twin Bridges, and 2.2 mi (3.5 km) west of Phillips.

DRAINAGE AREA.--8.76 mi² (22.69 km²).

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,320 ft (1,926 m), from topographic map.

REMARKS.--Flow regulated by Lake Aloha, capacity, 5,060 acre-ft (6.24 hm³); no contents Sept. 30, 1977, and Sept. 30, 1978. Lake of the Woods, Ropi Lake, and Toem Lakes (unknown capacities) are also regulated at times. See schematic diagram of South Fork American 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.--8 years, 37.6 ft³/s (1.065 m³/s), 27,240 acre-ft/yr (33.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 858 ft³/s (24.3 m³/s) June 26, 1971, gage height, 4.62 ft (1.408 m), from rating curve extended above 160 ft³/s (4.53 m³/s); minimum daily, 0.20 ft³/s (0.006 m³/s) Nov. 4, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 378 ft³/s (10.7 m³/s) Sept. 10, gage height, 3.42 ft (1.042 m); minimum daily, 0.20 ft³/s (0.006 m³/s) 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	.68	.33	6.3	16	12	15	32	33	174	124	19	54
2	.63	.32	6.3	15	12	15	24	49	174	114	27	48
3	.59	.32	7.1	14	12	14	20	61	174	97	28	42
4	.57	.20	7.7	13	12	16	18	65	192	94	40	34
5	.57	1.0	9.0	14	12	13	17	56	205	103	40	30
6	.57	1.6	8.2	19	12	15	16	89	204	105	40	61
7	.55	1.8	7.7	15	12	15	16	126	210	98	40	74
8	.53	2.1	7.0	14	14	17	15	133	207	93	55	50
9	.52	2.1	6.3	16	14	15	17	145	207	96	54	52
10	.50	2.2	5.9	15	13	14	29	151	181	99	53	154
11	.48	2.3	5.7	14	12	14	41	146	179	88	74	62
12	.48	2.2	6.2	13	12	13	42	155	214	60	92	56
13	.45	2.2	6.4	14	12	12	38	187	238	56	91	52
14	.40	2.2	20	16	12	12	32	225	222	47	90	57
15	.38	2.1	62	16	11	13	24	187	180	45	94	47
16	.36	2.1	25	15	11	18	21	118	161	41	93	38
17	.32	2.1	26	17	11	23	19	116	160	35	93	27
18	.32	2.0	20	15	10	22	20	130	172	35	91	20
19	.32	1.9	18	15	11	20	22	148	161	31	88	16
20	.30	1.8	13	14	13	23	22	164	169	28	86	14
21	.29	3.6	13	13	14	25	19	181	170	27	84	12
22	.28	31	14	13	15	22	19	184	165	27	83	8.7
23	.26	11	16	12	16	22	21	142	170	26	81	6.3
24	.24	4.2	14	13	16	19	26	104	163	25	79	5.5
25	.23	4.6	12	12	14	23	43	96	144	26	77	5.1
26	.22	5.7	13	12	14	31	29	106	120	27	75	4.9
27	.48	6.8	78	12	13	37	35	137	143	24	74	4.8
28	.43	7.0	40	12	13	43	38	170	123	23	71	4.8
29	.36	7.1	34	12	---	48	32	182	128	21	69	4.8
30	.36	7.0	24	13	---	53	36	182	135	18	66	4.7
31	.38	---	18	12	---	53	---	171	---	18	62	---
TOTAL	13.05	120.87	549.8	436	355	697	783	4139	5245	1751	2109	1049.6
MEAN	.42	4.03	17.7	14.1	12.7	22.5	26.1	134	175	56.5	68.0	35.0
MAX	.68	31	78	19	16	53	43	225	238	124	94	154
MIN	.22	.20	5.7	12	10	12	15	33	120	18	19	4.7
AC-FT	26	240	1090	865	704	1380	1550	8210	10400	3470	4180	2080
CAL YR 1977 TOTAL	5620.00			MEAN 15.4	MAX 86	MIN .20	AC-FT 11150					
WTR YR 1978 TOTAL	17248.32			MEAN 47.3	MAX 238	MIN .20	AC-FT 34210					

11436000 SILVER LAKE OUTLET NEAR KIRKWOOD, CA

LOCATION.--Lat 38°40'17", long 120°07'18", in SW¼ sec.32, T.10 N., R.17 E., Amador County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 1,000 ft (305 m) downstream from Silver Lake Dam, and 3.5 mi (5.6 km) southwest of Kirkwood.

DRAINAGE AREA.--15.2 mi² (39.4 km²).

PERIOD OF RECORD.--September 1922 to current year. Records for water year 1923 incomplete, yearly estimate published in WSP 1315-A.

REVISED RECORDS.--WDR CA-75-4: 1927(M), 1929(M), 1932(M), 1937-38(M), 1940-45(M), 1950-53(M), 1955-58(M), 1963(M), 1965(M), 1967(M), 1969-70(M), 1973(M).

GAGE.--Water-stage recorder. Datum of gage is 7,199.5 ft (2,194.41 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Flow regulated by Silver Lake 1,000 ft (305 m) upstream, capacity, 3,840 acre-ft (4.73 hm³) at spillway level and 8,590 acre-ft (10.6 hm³) with 11 ft (3.4 m) of flashboards; contents in Silver Lake, 1,820 acre-ft (2.24 hm³) Sept. 30, 1977, and 5,310 acre-ft (6.55 hm³) Sept. 30, 1978. Some water, in addition to that released through dam and over spillway, escapes from Silver Lake through porous rock formation. See schematic diagram of South Fork American River basin.

COOPERATION.--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.--56 years, 34.0 ft³/s (0.963 m³/s), 24,630 acre-ft/yr (30.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,100 ft³/s (31.2 m³/s) Nov. 21, 1950, gage height, 6.03 ft (1.838 m), from rating curve extended above 430 ft³/s (12.2 m³/s); no flow many days in February, March 1948, Jan. 13, 14, 1954, Nov. 3, 1959, to Feb. 5, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 298 ft³/s (8.44 m³/s) June 8, gage height, 3.54 ft (1.079 m); minimum daily, 0.60 ft³/s (0.017 m³/s) Jan. 30.

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	17	4.4	1.6	20	1.7	21	105	252	51	2.4	3.6
2	1.7	17	4.0	1.7	20	1.7	100	107	262	60	2.2	3.6
3	1.7	16	3.8	1.6	15	1.7	103	108	264	61	2.2	3.4
4	1.8	16	3.6	1.5	10	1.7	101	110	268	58	2.0	3.4
5	1.8	16	3.4	1.5	10	1.7	93	115	264	59	2.0	4.4
6	1.8	16	3.2	1.5	10	1.7	80	121	260	61	1.8	35
7	1.8	19	3.0	1.5	10	1.5	66	126	282	67	1.8	3.2
8	2.0	22	2.7	1.5	10	1.5	53	89	289	67	2.8	20
9	2.2	22	2.2	1.6	11	1.6	47	68	285	67	2.8	78
10	2.2	20	2.1	1.6	11	1.7	38	79	272	68	2.8	39
11	2.4	17	2.0	1.6	7.2	1.7	32	88	252	62	2.6	1.7
12	2.4	13	2.1	1.7	1.7	1.7	27	96	230	56	2.4	1.8
13	2.4	13	2.0	1.7	1.7	1.7	28	107	219	24	2.3	20
14	2.4	13	2.1	1.7	1.7	2.1	46	136	227	7.6	2.3	35
15	2.4	15	4.2	1.8	1.7	2.1	68	209	224	13	2.2	19
16	2.4	18	4.9	1.8	1.7	2.3	68	216	186	16	2.2	19
17	2.4	17	7.8	2.0	1.7	1.9	68	197	118	16	2.1	43
18	2.4	15	12	2.0	1.7	1.7	68	192	106	8.3	2.0	57
19	2.4	13	8.8	2.0	1.7	1.7	69	198	73	3.6	2.0	63
20	2.4	11	8.7	2.2	1.7	1.7	55	207	5.7	3.6	1.8	69
21	6.2	16	6.8	2.2	1.7	1.7	43	222	9.5	3.6	2.6	74
22	8.3	23	7.1	2.4	1.7	1.7	39	241	45	3.2	4.1	79
23	8.3	13	8.4	2.4	1.7	1.7	45	247	77	2.8	4.0	81
24	8.3	11	8.0	2.4	1.7	1.7	45	218	107	2.6	3.9	47
25	6.6	9.4	7.2	2.4	1.7	1.7	38	195	114	2.6	3.9	1.8
26	1.7	8.6	7.6	2.4	1.7	1.7	34	185	109	2.6	3.8	2.0
27	1.7	7.6	8.3	2.4	1.7	1.7	36	189	103	2.6	3.9	1.9
28	11	5.9	11	2.4	1.7	1.7	75	195	103	2.6	3.6	1.8
29	18	5.2	13	.66	---	1.8	88	209	96	2.6	3.6	1.8
30	17	4.8	8.8	.60	---	2.0	97	227	70	2.4	3.6	1.7
31	17	---	1.6	12	---	3.0	---	241	---	2.4	3.6	---
TOTAL	146.6	430.5	174.8	66.36	163.1	55.5	1771	5043	5172.2	859.1	85.3	853.7
MEAN	4.73	14.4	5.64	2.14	5.83	1.79	59.0	163	172	27.7	2.75	28.5
MAX	18	23	13	12	20	3.0	103	247	289	68	4.1	81
MIN	1.5	4.8	1.6	.60	1.7	1.5	21	68	5.7	2.4	1.8	1.7
AC-FT	291	854	347	132	324	110	3510	10000	10260	1700	169	1690
CAL YR 1977 TOTAL	2508.43			MEAN 6.87	MAX 79	MIN .34	AC-FT 4980					
WTR YR 1978 TOTAL	14821.16			MEAN 40.6	MAX 289	MIN .60	AC-FT 29400					

11437000 CAPLES LAKE OUTLET NEAR KIRKWOOD, CA

LOCATION.--Lat 38°42'29", long 120°03'00", in SW¼SW¼ sec.18, T.10 N., R.18 E., Alpine County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 500 ft (152 m) downstream from main dam and outlet gate of Caples Lake, and 1.3 mi (2.1 km) east of Kirkwood.

DRAINAGE AREA.--13.5 mi² (35.0 km²).

PERIOD OF RECORD.--September 1922 to current year. Records for water year 1945 incomplete, yearly estimate published in WSP 1315-A. Prior to October 1969, published as Twin Lakes Outlet near Kirkwood.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder and concrete control for outlet, and water-stage recorder for spillway. Altitude of gage is 7,700 ft (2,347 m), from topographic map.

REMARKS.--Flow regulated by Caples Lake 500 ft (152 m) upstream, capacity, 19,750 acre-ft (24.4 hm³), spillway level, 21,580 acre-ft (26.6 hm³) with 3 ft (0.9 m) of flashboards, contents of which were 5,620 acre-ft (6.93 hm³) Sept. 30, 1977, and 20,000 acre-ft (24.7 hm³) Sept. 30, 1978. There was no flow over Caples Lake spillway during current year. No diversion above station. See schematic diagram of South Fork American 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 (including flow over Caples Lake spillway).--56 years, 36.4 ft³/s (1.031 m³/s), 26,370 acre-ft/yr (32.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum combined daily discharge for outlet and spillway, 669 ft³/s (18.9 m³/s) June 3, 1969; minimum daily, 0.1 ft³/s (0.003 m³/s) Mar. 25-31, 1944, Nov. 27, 28, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum combined daily discharge for outlet and spillway, 285 ft³/s (8.07 m³/s) June 14; minimum daily, 1.2 ft³/s (0.034 m³/s) Jan. 24-26.

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	1.7	1.5	1.9	1.3	1.9	3.6	3.8	2.1	81	100	65	68
2	1.7	1.5	12	1.3	1.9	3.6	3.7	3.3	82	102	52	73
3	1.7	1.5	22	1.3	1.9	3.6	3.7	3.4	111	103	51	90
4	1.7	1.5	22	1.3	1.9	3.6	3.7	3.4	135	103	50	93
5	1.7	1.5	22	1.3	1.9	3.6	3.7	3.2	149	103	50	41
6	1.7	1.5	21	1.3	1.9	3.6	3.7	3.2	158	103	49	5.2
7	1.7	1.5	21	1.3	1.9	3.6	3.7	3.4	159	105	47	6.0
8	1.7	1.5	21	1.3	1.9	3.6	3.7	3.5	160	103	39	5.8
9	1.7	1.5	26	1.3	1.9	3.6	3.7	3.6	163	101	34	5.2
10	1.6	1.5	30	1.3	1.9	3.6	3.8	3.6	166	103	34	5.0
11	1.5	1.4	30	1.3	1.9	3.6	4.0	3.6	167	115	30	3.6
12	1.5	1.4	29	1.3	1.9	3.6	4.0	3.6	169	122	12	4.1
13	1.5	1.4	28	1.3	1.9	3.6	4.1	3.7	226	113	3.5	4.1
14	1.5	1.4	27	1.3	2.7	3.6	4.1	3.9	285	91	3.6	4.4
15	1.5	2.5	15	1.3	3.5	3.6	4.0	3.4	284	81	3.6	4.6
16	1.5	4.1	1.5	1.3	3.5	3.6	3.8	3.3	281	83	3.6	4.6
17	1.5	4.1	1.5	1.3	3.5	3.7	3.8	3.4	253	84	3.5	4.7
18	1.5	4.1	1.5	1.3	3.5	3.7	2.6	3.6	201	69	15	4.7
19	1.5	4.1	1.5	1.3	3.5	3.7	1.4	3.6	165	62	23	4.7
20	1.5	11	1.5	1.3	3.5	3.7	1.4	3.6	138	45	23	4.6
21	1.5	25	1.5	1.3	3.5	3.7	1.4	3.7	131	36	22	4.6
22	1.5	14	1.4	1.3	3.5	3.7	1.4	3.7	133	35	24	4.6
23	1.5	1.9	1.4	1.3	3.5	3.7	1.4	3.4	134	40	27	4.4
24	1.5	1.9	1.3	1.2	3.5	3.6	1.5	3.4	136	54	33	4.3
25	1.5	1.9	1.3	1.2	3.5	3.7	1.6	3.4	137	70	36	4.2
26	1.5	1.9	1.4	1.2	3.5	3.8	1.5	3.5	118	84	35	4.1
27	1.6	1.9	1.4	1.5	3.5	3.8	1.6	3.7	111	73	37	4.0
28	1.5	1.9	1.3	2.0	3.5	3.9	1.6	3.8	111	61	45	4.0
29	1.5	1.9	1.3	2.0	---	4.0	1.6	3.9	110	58	53	3.9
30	1.5	1.9	1.3	2.0	---	4.1	1.6	48	102	65	60	3.8
31	1.5	---	1.3	2.0	---	4.0	---	81	---	69	60	---
TOTAL	48.5	104.7	350.3	43.0	76.4	114.4	85.6	229.9	4756	2536	1023.8	478.2
MEAN	1.56	3.49	11.3	1.39	2.73	3.69	2.85	7.42	159	81.8	33.0	15.9
MAX	1.7	25	30	2.0	3.5	4.1	4.1	81	285	122	65	93
MIN	1.5	1.4	1.3	1.2	1.9	3.6	1.4	2.1	81	35	3.5	3.6
AC-FT	96	208	695	85	152	227	170	456	9430	5030	2030	949

CAL YR 1977 TOTAL 4853.47 MEAN 13.3 MAX 102 MIN .83 AC-FT 9630
WTR YR 1978 TOTAL 9846.80 MEAN 27.0 MAX 285 MIN 1.2 AC-FT 19530

11439500 SOUTH FORK AMERICAN RIVER NEAR KYBURZ, CA

LOCATION.--Lat 38°45'49", long 120°19'39", in SW¼SW¼ sec.29, T.11 N., R.15 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank beside U.S. Highway 50, 0.8 mi (1.3 km) downstream from Silver Fork of South Fork, and 1.9 mi (3.1 km) southwest of Kyburz.

DRAINAGE AREA.--193 mi² (500 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August to December 1907, October 1922 to current year. Prior to October 1956, records for river and El Dorado Canal published separately; combined flow only, October 1956 to September 1960.

REVISED RECORDS.--WSP 1445: 1923(M), 1925(M), 1927(M), 1928 (river only), 1935-37(M). WSP 1515: 1928 (combined). WSP 1931: Drainage area.

GAGE.--Water-stage recorder on river; water-stage recorder for canal diversion. Altitude of gage is 3,840 ft (1,170 m), from topographic map. Prior to Oct. 1, 1962, at datum 1.00 ft (0.305 m) higher.

REMARKS.--Flow at low and medium stages greatly regulated by four reservoirs since beginning of record, total capacity, 37,100 acre-ft (45.7 hm³). See schematic diagram of South Fork American River basin. For records of combined discharge of river and canal, 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: 56 years (water years 1923-78), 285 ft³/s (8.071 m³/s), 206,500 acre-ft/yr (255 hm³/yr).

Combined river and diversion: 56 years (water years 1923-78), 401 ft³/s (11.36 m³/s), 290,500 acre-ft/yr (358 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 17,400 ft³/s (493 m³/s) Dec. 23, 1964, gage height, 10.92 ft (3.328 m), from rating curve extended above 6,300 ft³/s (178 m³/s) on basis of contracted-opening measurement at gage height 10.40 ft (3.170 m); minimum daily, 0.13 ft³/s (0.004 m³/s) Nov. 26, 1977. Combined flow, maximum discharge, 17,500 ft³/s (496 m³/s) Dec. 23, 1964; minimum daily, 10 ft³/s (0.28 m³/s) Oct. 17, 19, 1929.

EXTREMES FOR CURRENT YEAR.--River only, peak discharges above base of 2,000 ft³/s (57 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
May 14	2200	*3040 86.1	6.58 2.006	June 5	2200	2820 79.9	6.43 1.960
May 21	2300	2650 75.0	6.31 1.923	June 13	2200	2490 70.5	6.19 1.887
May 30	2230	2560 72.5	6.24 1.902				

Minimum daily discharge, 0.13 ft³/s (0.004 m³/s) Nov. 26,

Combined flow, maximum discharge, 3,180 ft³/s (90.1 m³/s)/ May 14; minimum daily, 12 ft³/s (0.34 m³/s) Oct. 7, 10, 11, 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	14	4.8	1.9	9.5	13	72	742	715	1890	564	6.2	5.1
2	13	4.8	1.9	1.4	15	171	579	929	1850	551	6.4	5.3
3	14	4.2	2.6	.73	8.4	185	515	1200	1800	502	6.6	5.4
4	13	4.0	1.9	2.4	5.2	425	455	1300	2020	456	5.1	5.1
5	13	4.8	2.0	19	24	500	376	1270	2160	452	7.2	30
6	13	4.5	2.6	15	61	331	356	1050	2190	462	5.3	124
7	12	4.7	2.6	5.8	80	286	309	1150	2270	466	5.4	84
8	13	5.1	2.6	2.8	64	274	278	1300	2170	434	6.7	13
9	13	4.9	2.8	83	99	235	285	1470	2120	417	6.0	29
10	12	4.8	2.9	103	73	195	403	1530	1890	411	5.4	316
11	12	4.8	3.2	48	54	197	622	1550	1730	388	7.6	31
12	13	4.7	2.9	21	36	170	745	1570	1820	329	22	12
13	13	4.6	2.9	18	29	140	721	1830	1950	275	12	6.7
14	13	4.6	3.1	144	14	126	725	2180	1890	222	5.9	51
15	7.0	4.4	233	218	11	124	624	2230	1740	174	7.1	36
16	.26	4.2	14	177	8.2	145	513	1500	1500	172	6.4	8.9
17	2.4	4.2	89	192	6.8	219	443	1390	1380	148	6.8	6.3
18	4.7	4.5	25	111	5.5	264	454	1490	1380	132	5.5	7.0
19	6.6	5.8	.37	86	5.8	254	476	1640	1130	90	9.0	8.3
20	5.1	5.2	.31	57	23	313	523	1780	969	80	7.4	7.8
21	4.4	8.0	.37	40	41	403	454	1970	937	51	5.7	8.1
22	5.1	3.1	1.3	30	57	443	417	2130	940	47	5.4	7.8
23	6.5	.50	38	14	69	461	420	1820	954	37	6.2	7.4
24	4.8	.32	2.9	10	77	406	530	1260	939	36	5.9	7.4
25	4.0	.22	.68	6.5	68	386	1280	1070	866	43	5.4	38
26	3.8	.13	.88	3.6	61	488	939	1060	767	73	5.4	50
27	4.8	.32	195	3.4	58	540	831	1280	799	59	5.4	48
28	5.6	1.0	116	4.0	53	617	952	1590	840	35	5.4	46
29	5.0	2.3	169	6.2	---	709	806	1860	664	21	5.4	46
30	4.7	2.0	193	6.1	---	938	852	1990	618	11	5.4	45
31	4.8	---	47	6.0	---	1100	---	1970	---	14	5.1	---
TOTAL	260.56	111.49	1161.71	1444.43	1119.9	11117	17625	47074	44173	7152	210.7	1095.6
MEAN	8.41	3.72	37.5	46.6	40.0	359	588	1519	1472	231	6.80	36.5
MAX	14	8.0	233	218	99	1100	1280	2230	2270	564	22	316
MIN	.26	.13	.31	.73	5.2	72	278	715	618	11	5.1	5.1
AC-FT	517	221	2300	2870	2220	22050	34960	93370	87620	14190	418	2170

CAL YR 1977 TOTAL 7719.66 MEAN 21.1 MAX 316 MIN .13 AC-FT 15310
WTR YR 1978 TOTAL 132545.39 MEAN 363 MAX 2270 MIN .13 AC-FT 262900

SACRAMENTO RIVER BASIN

11439500 SOUTH FORK AMERICAN RIVER NEAR KYBURZ, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF SOUTH FORK AMERICAN RIVER
AND EL DORADO CANAL NEAR KYBURZ, CA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	39	34	146	151	212	877	850	2040	725	169	167
2	13	33	32	128	157	305	714	1060	2000	713	162	157
3	14	33	38	117	150	315	650	1340	1950	663	159	167
4	13	32	47	115	140	551	590	1440	2170	617	161	174
5	13	42	50	152	165	620	511	1410	2310	614	169	197
6	13	36	50	154	201	457	491	1190	2340	625	162	294
7	12	33	48	136	214	416	444	1290	2420	630	163	255
8	13	38	46	129	198	407	413	1440	2320	598	168	168
9	13	40	43	222	229	376	420	1610	2270	581	167	193
10	12	38	51	245	202	336	538	1680	2040	575	154	486
11	12	38	54	195	184	336	757	1690	1880	552	168	201
12	13	33	54	167	168	305	880	1710	1970	493	186	181
13	13	31	53	162	165	275	856	1970	2100	439	175	165
14	13	30	65	284	149	261	861	2320	2050	386	164	220
15	16	29	369	358	151	259	759	2370	1900	338	163	205
16	12	32	130	317	140	280	648	1640	1660	336	162	159
17	27	35	214	332	137	354	578	1530	1540	312	168	165
18	28	34	157	251	136	399	589	1630	1540	296	159	175
19	28	33	78	226	144	389	611	1780	1290	254	168	174
20	26	23	73	197	163	449	658	1920	1130	242	171	173
21	25	63	64	180	182	536	589	2110	1100	215	167	175
22	25	106	78	170	197	576	552	2270	1100	211	167	172
23	29	62	168	153	209	594	555	1960	1120	201	169	170
24	31	40	118	141	218	540	663	1400	1100	200	168	163
25	34	38	85	143	209	522	1410	1210	1030	207	174	68
26	21	37	76	137	201	623	1070	1200	928	237	170	54
27	24	40	327	134	198	675	961	1420	959	223	166	53
28	25	38	256	134	193	752	1090	1730	1000	199	167	50
29	39	36	310	134	---	844	941	2000	826	185	172	50
30	34	36	333	136	---	1070	987	2130	780	175	173	49
31	40	---	187	137	---	1240	---	2120	---	178	169	---
TOTAL	645	1178	3688	5632	4951	15274	21663	51420	48863	12220	5180	5080
MEAN	20.8	39.3	119	182	177	493	722	1659	1629	394	167	169
MAX	40	106	369	358	229	1240	1410	2370	2420	725	186	486
MIN	12	23	32	115	136	212	413	850	780	175	154	49
AC-FT	1280	2340	7320	11170	9820	30300	42970	102000	96920	24240	10270	10080
CAL YR 1977	TOTAL	36289	MEAN	99.4	MAX	481	MIN	12	AC-FT	71980		
WTR YR 1978	TOTAL	175794	MEAN	482	MAX	2420	MIN	12	AC-FT	348700		

11439500 SOUTH FORK AMERICAN RIVER NEAR KYBURZ, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: August 1966 to current year.

INSTRUMENTATION.--Temperature recorder since August 1966.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 25.0°C July 16-18, 1972; minimum recorded, 0.0°C on many days in most years.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 23.5°C Aug. 5, 6; minimum recorded, 0.5°C Nov. 20, Dec. 9.

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	12.5	9.5	7.0	5.0	4.0	3.0	3.0	2.0	3.0	2.0	6.0	5.0
2	13.0	9.5	7.0	5.0	4.0	3.0	4.5	3.0	4.0	2.5	6.0	5.0
3	12.5	9.5	7.0	5.5	3.0	2.5	4.5	4.0	3.5	3.0	6.0	4.5
4	12.0	9.0	8.0	6.0	4.0	2.5	4.5	4.0	4.5	3.0	5.0	4.5
5	12.0	9.0	7.5	6.0	3.5	3.0	4.0	2.0	4.5	3.5	5.0	4.0
6	11.5	9.0	6.0	4.5	3.0	2.0	3.5	2.0	3.5	2.5	6.0	4.0
7	11.0	7.5	5.5	4.0	3.0	2.5	2.5	2.0	3.0	2.5	6.5	4.5
8	11.0	8.0	5.0	4.0	2.5	1.0	4.0	2.5	3.0	2.0	6.0	5.0
9	11.0	8.0	4.5	3.5	1.0	0.5	4.0	2.5	3.0	2.5	5.5	4.5
10	11.0	8.0	5.0	3.5	1.0	1.0	3.0	2.0	3.0	2.5	6.0	4.0
11	11.0	8.5	5.5	4.0	2.0	1.0	3.5	3.0	3.5	2.0	5.5	4.0
12	11.0	8.5	5.0	3.5	2.0	1.5	3.5	3.0	2.5	2.0	5.5	4.0
13	10.5	8.5	4.0	3.0	3.5	2.0	4.5	3.5	3.5	2.0	5.5	4.0
14	10.5	8.0	4.5	3.0	4.5	3.5	4.0	3.0	3.0	2.0	6.0	4.0
15	10.5	8.5	4.0	3.5	5.0	2.5	2.5	2.0	3.5	3.0	6.0	3.5
16	10.5	9.5	4.0	3.0	3.0	2.0	3.5	2.5	3.5	2.5	6.5	4.0
17	10.5	8.5	5.0	3.5	4.0	2.5	3.0	2.5	4.0	2.5	6.0	4.0
18	10.5	8.5	5.0	3.5	2.5	2.0	3.5	2.5	4.0	3.0	5.5	4.0
19	10.5	8.5	3.5	1.5	2.5	1.5	3.5	3.0	5.0	3.0	6.5	4.0
20	10.0	8.0	1.5	0.5	2.0	1.5	3.5	2.5	5.0	3.0	6.0	4.0
21	9.5	8.0	3.0	1.0	2.5	2.0	3.0	2.5	5.0	3.0	5.5	5.0
22	9.0	7.0	3.5	3.0	4.0	2.5	3.5	2.5	5.0	3.5	5.5	4.0
23	9.5	7.5	3.5	3.0	4.0	2.5	3.0	1.5	5.0	3.5	5.5	5.0
24	10.0	8.5	5.0	3.5	3.0	2.5	2.0	1.5	5.0	3.5	5.5	3.5
25	9.5	8.0	5.0	4.0	3.5	2.5	2.5	1.5	5.5	4.0	6.5	3.5
26	10.0	8.5	4.0	3.5	4.0	3.0	3.0	2.0	5.0	4.0	6.0	4.5
27	9.5	8.5	4.5	4.0	4.5	3.0	3.0	2.0	5.0	4.5	6.5	4.0
28	8.0	7.0	4.5	3.0	3.5	3.0	3.5	2.5	5.5	4.0	6.0	4.0
29	8.0	7.0	3.5	3.0	4.0	3.5	3.5	2.5	---	---	6.0	3.5
30	8.0	7.0	4.0	3.5	3.5	3.0	3.5	2.5	---	---	5.5	4.5
31	7.5	6.5	---	---	3.0	2.0	3.0	2.0	---	---	5.0	4.5
MONTH	13.0	6.5	8.0	0.5	5.0	0.5	4.5	1.5	5.5	2.0	6.5	3.5

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

11440000 ALDER CREEK NEAR WHITE HALL, CA

LOCATION.--Lat 38°45'19", long 120°22'17", in NE¼SE¼ sec.35, T.11 N., R.14 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 0.9 mi (1.4 km) upstream from mouth, and 2.2 mi (3.5 km) south-east of White Hall.

DRAINAGE AREA.--22.1 mi² (57.2 km²).

PERIOD OF RECORD.--October 1922 to current year (includes diversions by pipeline).

REVISED RECORDS.--WSP 1215: 1928(M). WSP 1445: 1925(M), 1929, 1935-36(M), 1938(M), 1940-43(M), 1945(M).

GAGE.--Water-stage recorder. Broad-crested weir with V-notch since Aug. 28, 1964. Altitude of gage is 3,840 ft (1,170 m), from topographic map. Prior to July 23, 1924, nonrecording gage at same site and datum.

REMARKS.--Records include flow diverted 1,300 ft (396 m) above station by pipeline into El Dorado Canal from Oct. 15 to June 13.

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 (including diversions by pipeline).--56 years, 37.2 ft³/s (1.054 m³/s), 26,950 acre-ft/yr (33.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Creek only, maximum discharge, 5,500 ft³/s (156 m³/s) Dec. 23, 1955, gage height, 8.40 ft (2.560 m), from floodmarks, from rating curve extended above 600 ft³/s (17.0 m³/s); no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Creek only, peak discharges above base of 170 ft³/s (4.8 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 17	1515	244 6.91	3.43 1.045	Mar. 23	1930	181 5.13	3.20 0.975
Jan. 9	1645	216 6.12	3.33 1.015	Mar. 31	1745	224 6.34	3.36 1.024
Jan. 14	2115	293 8.30	3.59 1.094	Apr. 25	0430	307 8.69	3.63 1.106
Mar. 4	1915	*366 10.4	3.80 1.158				

Minimum daily discharge, 0.03 ft³/s (0.001 m³/s) Nov. 28 to Dec. 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	.51	.81	2.3	82	55	76	207	167	77	11	3.2	1.6
2	.48	.80	2.3	69	53	124	176	161	73	11	3.2	1.5
3	.46	.80	2.2	61	51	140	154	161	68	10	3.2	1.5
4	.46	.81	2.1	59	50	270	145	164	64	9.4	3.0	1.5
5	.45	1.8	2.1	100	62	332	134	156	63	8.7	2.8	2.7
6	.44	1.6	2.0	106	81	241	127	141	60	8.0	2.7	5.9
7	.44	1.3	2.1	85	104	197	118	134	58	7.5	2.7	4.1
8	.46	.80	2.2	75	100	173	110	135	54	7.3	3.4	3.1
9	.46	.80	1.7	155	121	157	109	141	49	6.7	3.2	3.0
10	.44	.80	1.7	155	102	141	114	141	44	6.3	2.7	7.2
11	.44	.80	4.8	127	87	134	121	139	38	6.0	2.5	4.8
12	.44	.80	3.4	107	80	123	126	136	34	5.7	2.5	3.5
13	.44	.80	2.3	98	73	111	127	137	32	5.5	2.5	3.0
14	.44	.80	2.4	194	67	103	129	144	26	5.0	2.5	3.7
15	1.1	.80	64	208	64	97	134	151	28	4.8	2.5	3.1
16	.81	.80	21	199	59	95	132	129	25	4.6	2.5	2.8
17	.80	.80	113	208	55	99	121	116	22	4.4	2.5	2.8
18	.81	.80	72	160	53	104	128	111	20	4.1	2.4	3.0
19	.81	.80	37	141	53	108	132	110	19	4.0	2.1	2.8
20	.81	.80	26	119	55	115	139	109	17	3.7	2.1	2.8
21	.81	4.2	22	108	59	134	132	111	16	3.7	2.1	2.8
22	.81	24	40	99	64	156	130	112	15	3.5	2.1	2.8
23	.80	6.9	126	90	69	171	130	109	13	3.2	2.1	2.8
24	.80	4.6	78	84	73	170	143	93	13	3.2	2.1	2.8
25	.80	4.1	54	77	74	155	283	80	12	3.0	2.1	2.8
26	.80	3.9	46	71	73	153	250	73	11	3.2	2.1	2.8
27	.81	3.3	91	66	72	152	222	71	24	3.1	2.1	2.8
28	.81	3.0	80	63	70	154	209	74	20	2.8	2.1	2.8
29	.81	2.3	125	60	---	158	190	80	15	2.8	2.0	2.8
30	.81	2.3	143	59	---	183	180	82	13	2.7	1.9	2.8
31	.81	---	104	57	---	227	---	81	---	2.6	1.9	---
TOTAL	20.37	76.92	1275.6	3342	1979	4753	4552	3749	1023	167.5	76.8	92.4
MEAN	.66	2.56	41.1	108	70.7	153	152	121	34.1	5.40	2.48	3.08
MAX	1.1	24	143	208	121	332	283	167	77	11	3.4	7.2
MIN	.44	.80	1.7	57	50	76	109	71	11	2.6	1.9	1.5
AC-FT	40	153	2530	6630	3930	9430	9030	7440	2030	332	152	183
CAL YR 1977	TOTAL	2414.65	MEAN	6.62	MAX	143	MIN	.34	AC-FT	4790		
WTR YR 1978	TOTAL	21107.59	MEAN	57.8	MAX	332	MIN	.44	AC-FT	41870		

11441001 UNION VALLEY RESERVOIR NEAR RIVERTON, CA

LOCATION.--Lat 38°51'49", long 120°26'15", in NW¼NW¼ sec.29, T.12 N., R.14 E., El Dorado County, Eldorado National Forest, in valve control house near left bank at Union Valley Dam on Silver Creek, 0.7 mi (1.1 km) upstream from Little Silver Creek, and 6.6 mi (10.6 km) north of Riverton.

DRAINAGE AREA.--83.7 mi² (216.8 km²).

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Sacramento Municipal Utility District).

REMARKS.--Reservoir is formed by earthfill dam completed in December 1962. Storage began in May 1962. Usable capacity, 264,000 acre-ft (326 hm³) between elevations 4,645.0 ft (1,415.80 m), minimum operating level and 4,870.0 ft (1,484.38 m), top of radial spillway gates. Dead storage, 7,000 acre-ft (8.63 hm³). Reservoir receives water from the South Fork Rubicon River via Robbs Peak powerplant (station 11429800). Water is used for power development in the South Fork American River basin. See schematic diagram of Middle Fork American and Rubicon River basins and South Fork American River basin. Revised capacity table put into use Oct. 1, 1977 on basis of a reservoir survey made during 1976 water year.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 272,600 acre-ft (336 hm³) July 9, 1974, elevation, 4,870.6 ft (1,484.56 m); minimum since reservoir first filled, 18,300 acre-ft (22.6 hm³) Jan. 13, 1977, elevation, 4,683.3 ft (1,427.47 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 246,200 acre-ft (304 hm³) July 4, elevation, 4,859.1 ft (1,481.05 m); minimum, 46,200 acre-ft (57.0 hm³) Oct. 22, 23, elevation, 4,736.6 ft (1,443.72 m).

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

4680	17000	4780	90000
4700	25000	4800	119000
4720	35300	4820	154000
4740	48800	4840	197000
4760	66800	4870	277000

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	57700	50000	52500	73700	101700	129700	158600	179000	211900	245400	230600	211900
2	57700	50100	52800	74300	102600	131300	160200	179900	213200	245900	230100	211200
3	57100	50300	52800	75000	103400	132800	160400	181000	214400	245700	229300	211200
4	56300	50500	52900	75500	104300	135500	160000	182100	216200	246200	228500	211200
5	55500	50600	53100	75900	105200	137800	159400	183200	218000	245900	228000	210700
6	55000	50600	53200	76800	106200	139700	159200	183500	219500	245700	227700	210500
7	54700	50700	53300	77400	107500	141600	158600	184100	221000	245100	226900	210200
8	54700	50700	53500	78100	108700	143400	158800	185200	222500	244900	226200	209700
9	54700	50700	53500	79700	110200	144900	159200	186800	224600	244600	225400	209700
10	54700	50700	53500	80900	111400	145800	159400	188400	226400	244300	224900	210500
11	54100	50900	53700	81700	112700	146600	160000	189500	228800	244000	224100	210200
12	53300	50900	53800	82500	113400	147100	161000	191200	230300	243500	223600	209500
13	52600	50900	53900	83400	114400	147700	161400	192800	232500	242900	223600	208700
14	52300	50900	54300	85500	115300	147500	162200	194600	234000	242400	223100	208000
15	52300	50900	56000	87200	116200	146600	163000	197000	235600	241800	222000	207000
16	52300	50900	56500	89000	117000	145800	164600	197200	237000	241800	221300	206300
17	51500	50700	58500	91000	118000	145400	164600	198100	238300	241300	220500	206300
18	50400	50800	59300	92100	119100	145300	164600	199100	240200	240800	219700	205300
19	49000	50800	59600	93200	120400	146400	164400	200000	241300	240000	219200	204600
20	47800	50800	59600	94400	121500	147500	165700	201500	242400	239100	219200	203600
21	46500	51500	60000	95000	123000	148300	165900	202900	243800	238300	218500	202900
22	46200	51500	60500	95700	124200	148600	166300	204600	244000	237500	218200	201900
23	46200	51800	60700	96400	125700	149600	167100	205600	244000	236700	217700	201700
24	46300	51900	62200	97100	126500	149800	168600	205600	244300	235900	216900	201700
25	46900	52000	62600	97900	127200	149800	172600	205600	245100	235100	216200	201700
26	47300	52000	63000	98600	127800	151700	174500	205300	245100	234300	215700	201900
27	47700	52000	65300	99200	128500	152300	175800	205800	245100	233500	215700	202200
28	48200	52300	66900	99600	129000	153100	177100	206800	245400	233000	215200	202400
29	48200	52400	70200	100000	---	153600	178000	208500	245400	231900	214200	202700
30	48200	52400	72200	100700	---	155600	178600	209700	245400	231900	213400	202900
31	49100	---	73100	101300	---	158000	---	210900	---	231400	212700	---
MAX	57700	52400	73100	101300	129000	158000	178600	210900	245400	246200	230600	211900
MIN	46200	50000	52500	73700	101700	129700	158600	179000	211900	231400	212700	201700
†	4740.4	4744.4	4765.9	4788.3	4806.1	4821.8	4831.7	4845.6	4858.8	4853.6	4846.3	4842.3
‡	-9560	+3300	+20700	+28200	+27700	+29000	+20600	+32300	+34500	-14000	-18700	-9800
CAL YR 1977	†	+50500										
WTR YR 1978	†	+144200										

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

‡ Change in contents, in acre-feet.

11441100 ICE HOUSE RESERVOIR NEAR KYBURZ, CA

LOCATION.--Lat 38°49'26", long 120°21'34", in SE¼SW¼ sec.1, T.11 N., R.14 E., El Dorado County, Eldorado National Forest, on left bank at Ice House Dam on South Fork Silver Creek, 0.5 mi (0.8 km) upstream from Peavine Creek, and 4.8 mi (7.7 km) northwest of Kyburz.

DRAINAGE AREA.--27.2 mi² (70.4 km²).

PERIOD OF RECORD.--October 1959 to current year.

REVISED RECORDS.--WSP 1931: 1960.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Sacramento Municipal Utility District).

REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 15, 1959. Usable capacity, 45,800 acre-ft (56.5 hm³) between elevations 5,327.5 ft (1,623.82 m), centerline of fishwater outlet, and 5,450.0 ft (1,661.16 m), top of spillway gates. Dead storage, 160 acre-ft (197,000 m³). Reservoir is used to store water for power development. See schematic diagram of South Fork American River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 46,400 acre-ft (57.2 hm³) June 27, 1971, elevation, 5,450.6 ft (1,661.34 m); minimum since reservoir first filled, 1,740 acre-ft (2.15 hm³) Oct. 5-9, 1962, elevation, 5,349.85 ft (1,630.634 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 43,700 acre-ft (53.9 hm³) July 27-31, elevation, 5,446.9 ft (1,660.22 m); minimum, 11,400 acre-ft (14.1 hm³) Nov. 19, 20, Dec. 7-12, elevation, 5,384.7 ft (1,641.26 m).

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

5349	1600	5400	17600
5350	1760	5420	27400
5360	3840	5450	46000
5380	9600		

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	15500	12500	11700	13600	16000	17800	24200	24400	30500	40400	43600	39200
2	15500	11900	11700	13700	16100	17900	24400	24300	30800	40600	43500	39200
3	15500	11700	11700	13700	16100	18000	24600	24400	31000	40800	43300	39200
4	15500	11500	11700	13800	16200	18300	24700	24400	31400	41000	43200	39200
5	15500	11500	11700	13900	16200	18400	24700	24400	31900	41300	43100	39200
6	15500	11500	11600	14000	16300	18600	24700	24400	32400	41500	43000	39200
7	15500	11500	11400	14100	16400	18700	24600	24400	32800	41700	42800	39300
8	15500	11500	11400	14100	16500	18800	24600	24500	33300	41800	42700	39400
9	15500	11500	11400	14300	16500	18900	24600	24700	33800	42000	42600	39400
10	15500	11500	11400	14400	16600	19000	24600	25000	34200	42200	42500	39800
11	15500	11500	11400	14500	16700	19100	24800	25200	34600	42400	42400	40000
12	15500	11500	11400	14500	16700	19300	24900	25400	35000	42500	42200	40000
13	15500	11500	11500	14600	16800	19400	25000	25800	35500	42700	42000	40000
14	15400	11500	11500	14800	16900	19400	25000	26400	36000	42800	42000	40000
15	15400	11500	11700	14900	16900	19600	25000	26800	36300	42900	41800	40000
16	15400	11500	11800	15100	16900	19700	25000	27000	36500	43000	41600	40000
17	15400	11500	12000	15200	17000	19800	25000	27000	36800	43200	41500	40000
18	15400	11500	12100	15300	17100	20000	25000	27200	37000	43200	41300	39900
19	15400	11400	12200	15400	17100	20100	24900	27400	37200	43300	41100	39900
20	15400	11400	12200	15500	17200	20300	24900	27800	37300	43300	41000	39900
21	15300	11600	12300	15500	17200	20500	24900	28200	37600	43400	40800	39900
22	15300	11600	12300	15500	17300	20800	24800	28600	38000	43400	40600	39900
23	15300	11700	12400	15600	17400	21000	24700	28700	38300	43500	40500	39900
24	15300	11700	12500	15700	17400	21300	24700	28700	38600	43500	40400	39800
25	15200	11700	12500	15700	17500	21500	24900	28600	38900	43500	40200	39100
26	14600	11700	12600	15800	17600	21800	25000	28500	39100	43600	40000	38300
27	14100	11700	12700	15800	17600	22000	25000	28600	39400	43700	39800	37600
28	13900	11700	13000	15900	17700	22400	24900	28800	39800	43700	39800	37000
29	13900	11700	13200	15900	---	22800	24700	29300	40000	43700	39600	36300
30	13900	11700	13400	15900	---	23300	24500	29700	40200	43700	39400	35500
31	13300	---	13500	16000	---	23800	---	30100	---	43700	39200	---
MAX	15500	12500	13500	16000	17700	23800	25000	30100	40200	43700	43600	40000
MIN	13300	11400	11400	13600	16000	17800	24200	24300	30500	40400	39200	35500
†	5389.6	5385.5	5390.0	5396.2	5400.2	5412.8	5414.2	5425.1	5441.5	5446.8	5440.0	5434.3
‡	-2200	-1600	+1800	+2500	+1700	+6100	+700	+5600	+10100	+3500	-4500	-3700

CAL YR 1977 † +8870
WTR YR 1978 † +20000

† Elevation, in feet NGVD, at end of month.
‡ Change in contents, in acre-feet.

11441500 SOUTH FORK SILVER CREEK NEAR ICE HOUSE, CA

LOCATION.--Lat 38°49'08", long 120°21'51", in NW¼NW¼ sec.12, T.11 N., R.14 E., El Dorado County, Eldorado National Forest, on right bank 300 ft (91 m) upstream from Peavine Creek, 0.4 mi (0.6 km) downstream from Ice House Dam, and 4.8 mi (7.7 km) northwest of Kyburz.

DRAINAGE AREA.--27.5 mi² (71.2 km²).

PERIOD OF RECORD.--October 1924 to current year.

REVISED RECORDS.--WSP 1395: 1928, 1938. WSP 1635: Drainage area at former site.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 5,290 ft (1,612 m), from topographic map. Prior to Oct. 1, 1959, at site 0.3 mi (0.5 km) upstream at different datum.

REMARKS.--Records excellent. Flow regulated by Ice House Reservoir beginning in December 1959 (station 11441100). See schematic diagram of South Fork American River basin.

AVERAGE DISCHARGE (adjusted for change in contents in Ice House Reservoir).--54 years, 74.2 ft³/s (2.101 m³/s), 53,760 acre-ft/yr (66.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,940 ft³/s (112 m³/s) Dec. 23, 1955, gage height, 6.71 ft (2.045 m) site and datum then in use, from rating curve extended above 540 ft³/s (15.3 m³/s) on basis of slope-area measurement at gage height 6.69 ft (2.039 m); no flow Oct. 31 to Nov. 9, 1958. Maximum discharge since construction of Ice House Dam in 1959, 1,800 ft³/s (51.0 m³/s) Jan. 22, 1970, gage height, 5.66 ft (1.725 m), from rating curve extended above 620 ft³/s (17.6 m³/s) on basis of computation of flow over dam of peak flow; minimum daily, 1.2 ft³/s (0.03 m³/s) Mar. 17-19, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 394 ft³/s (11.2 m³/s) Oct. 28, 31, gage height, 4.30 ft (1.311 m); minimum daily, 2.9 ft³/s (0.082 m³/s) Nov. 16, 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	4.1	388	4.0	5.0	5.9	7.4	7.9	256	268	15	81	15
2	4.1	305	4.2	4.9	6.1	8.0	7.7	256	270	15	81	15
3	4.1	146	4.1	5.4	6.1	7.6	7.3	256	272	15	81	15
4	4.1	90	4.0	5.9	6.1	8.7	55	256	272	15	81	15
5	4.1	4.5	4.1	6.7	6.3	8.6	106	256	272	15	81	15
6	4.1	4.4	66	6.2	6.4	7.8	106	256	272	15	81	15
7	4.1	4.3	117	5.9	6.8	7.6	106	256	273	15	81	15
8	4.1	4.3	4.4	5.9	6.4	7.4	106	256	202	15	81	14
9	4.4	4.2	4.5	7.3	7.0	7.3	106	256	122	15	80	14
10	4.4	4.0	4.9	6.5	6.7	7.2	106	256	125	15	80	15
11	4.4	3.5	5.0	6.2	6.6	7.4	106	256	125	15	80	15
12	4.4	3.2	4.9	6.1	6.5	7.2	118	256	125	15	80	15
13	4.4	3.2	4.6	6.5	6.5	7.2	143	256	125	15	80	15
14	4.4	3.2	4.6	7.6	6.4	7.2	143	252	126	15	81	15
15	4.4	3.1	5.9	6.9	6.4	7.2	145	260	127	15	81	15
16	4.4	2.9	4.8	7.3	6.4	7.2	145	260	126	15	81	15
17	4.5	3.0	7.1	7.4	6.4	7.2	145	260	125	15	81	15
18	4.4	3.6	5.2	6.7	6.4	7.2	145	260	125	15	81	15
19	4.3	3.6	5.2	6.7	6.5	7.2	145	260	125	15	81	15
20	4.3	3.3	5.2	6.5	6.6	7.2	145	260	125	15	81	15
21	4.4	3.9	5.3	6.4	6.7	7.5	145	263	54	15	81	15
22	4.4	3.8	5.6	6.4	6.8	7.6	145	264	16	15	81	15
23	4.4	3.0	6.3	6.2	6.8	8.1	145	264	15	16	81	16
24	4.7	2.9	5.2	6.1	6.7	7.6	145	266	15	16	81	98
25	79	3.4	5.1	6.1	6.7	7.5	148	268	15	15	80	322
26	281	4.3	5.3	6.1	6.7	7.5	146	268	15	15	80	331
27	242	4.3	5.6	6.1	6.7	7.3	210	268	15	15	80	329
28	110	4.1	5.3	6.1	6.8	7.2	258	268	15	15	81	327
29	3.9	3.9	6.2	6.1	---	7.2	257	268	15	15	81	327
30	4.0	3.8	5.6	6.0	---	7.6	256	268	15	15	81	326
31	266	---	5.2	5.9	---	8.2	---	268	---	43	55	---
TOTAL	1089.3	1024.7	330.4	195.1	182.4	233.1	3948.9	8073	3792	495	2477	2404
MEAN	35.1	34.2	10.7	6.29	6.51	7.52	132	260	126	16.0	79.9	80.1
MAX	281	388	117	7.6	7.0	8.7	258	268	273	43	81	331
MIN	3.9	2.9	4.0	4.9	5.9	7.2	7.3	252	15	15	55	14
AC-FT	2160	2030	655	387	362	462	7830	16010	7520	982	4910	4770

CAL YR 1977 TOTAL 3649.0 MEAN 10.0 MAX 388 MIN 2.2 AC-FT 7240 MEAN ± 22.2 AC-FT ± 16110
WTR YR 1978 TOTAL 24244.9 MEAN 66.4 MAX 388 MIN 2.9 AC-FT 48090 MEAN ± 94.0 AC-FT ± 68090

‡ Adjusted for change in contents in Ice House Reservoir.

SACRAMENTO RIVER BASIN

11441900 SILVER CREEK BELOW CAMINO DIVERSION DAM, CA

LOCATION.--Lat 38°49'26", long 120°32'18", on line between secs.4 and 5, T.11 N., R.13 E., El Dorado County, Eldorado National Forest, on right bank 300 ft (91 m) downstream from Round Tent Canyon, 0.4 mi (0.6 km) downstream from diversion dam, and 5 mi (8 km) northeast of Pollock Pines.

DRAINAGE AREA.--171 mi² (443 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 2,754.06 ft (839.438 m) National Geodetic Vertical Datum of 1929 (Sacramento Municipal Utility District bench mark).

REMARKS.--Records good. Flow regulated by storage, diversions, and powerplants. Records not adjusted for diversions or changes in storage. See schematic diagram of South Fork American River basin.

AVERAGE DISCHARGE (unadjusted).--18 years, 84.2 ft³/s (2.385 m³/s), 61,000 acre-ft/yr (75.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,300 ft³/s (547 m³/s) Jan. 31, 1963, gage height, 11.28 ft (3.438 m) in gage well, 11.9 ft (3.63 m) from floodmarks, from rating curve extended above 1,500 ft³/s (42.5 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 2.0 ft³/s (0.057 m³/s) Mar. 7, 8, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 115 ft³/s (3.26 m³/s) Jan. 17, gage height, 3.44 ft (1.049 m); minimum daily, 2.9 ft³/s (0.082 m³/s) Oct. 9, 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	3.2	3.2	3.2	17	7.8	13	12	26	16	22	23	19
2	3.2	3.2	3.1	13	7.8	28	12	21	16	22	23	18
3	3.2	3.1	3.1	11	7.5	42	13	18	15	22	23	18
4	3.2	3.1	3.1	11	7.2	52	13	16	15	22	22	18
5	3.1	3.6	3.1	28	7.6	95	14	15	15	22	22	20
6	3.0	3.3	3.1	53	13	79	16	14	15	22	22	20
7	3.0	3.2	3.1	32	28	55	16	13	15	22	23	20
8	3.0	3.2	3.1	23	29	41	17	12	14	22	24	20
9	2.9	3.2	3.2	30	44	33	19	15	14	22	24	20
10	3.0	3.1	3.3	30	36	27	19	18	14	22	24	20
11	3.2	3.2	3.5	24	30	24	18	17	14	22	23	20
12	3.2	3.2	3.5	19	26	24	16	18	14	22	22	20
13	3.1	3.1	3.1	17	24	22	14	18	14	23	22	20
14	3.0	3.1	3.8	24	21	19	14	17	14	26	22	20
15	2.9	3.1	11	31	19	17	17	18	15	25	22	20
16	3.1	3.0	4.6	47	17	15	19	17	15	25	21	20
17	3.2	3.0	25	103	15	13	19	17	15	24	20	20
18	3.1	3.1	11	65	14	12	22	18	16	22	19	20
19	3.1	3.2	7.6	49	13	11	25	18	16	24	19	20
20	3.2	3.2	6.2	37	13	11	35	18	16	26	18	20
21	3.2	6.3	5.5	29	13	10	35	18	17	24	19	21
22	3.2	6.0	6.7	23	13	11	35	17	20	24	19	21
23	3.1	3.6	21	19	13	12	34	17	21	24	19	21
24	3.2	3.4	12	16	13	19	36	17	22	24	18	21
25	3.2	3.4	9.8	13	12	18	71	17	22	24	18	21
26	3.1	3.5	9.1	12	12	16	71	17	22	24	18	21
27	3.1	3.5	15	11	11	14	56	16	22	24	18	21
28	3.1	3.5	15	9.7	11	13	44	16	21	24	18	21
29	3.2	3.3	35	9.0	---	12	37	16	21	24	18	21
30	3.2	3.2	34	8.5	---	11	31	16	21	24	18	21
31	3.2	---	24	8.0	---	12	---	16	---	24	18	---
TOTAL	96.7	103.1	297.8	822.2	477.9	781	800	527	507	723	639	603
MEAN	3.12	3.44	9.61	26.5	17.1	25.2	26.7	17.0	16.9	23.3	20.6	20.1
MAX	3.2	6.3	35	103	44	95	71	26	22	26	24	21
MIN	2.9	3.0	3.1	8.0	7.2	10	12	12	14	22	18	18
AC-FT	192	204	591	1630	948	1550	1590	1050	1010	1430	1270	1200
CAL YR 1977 TOTAL	1501.0			MEAN 4.11	MAX 35	MIN 2.0	AC-FT 2980					
WTR YR 1978 TOTAL	6377.7			MEAN 17.5	MAX 103	MIN 2.9	AC-FT 12650					

11442500 SOUTH FORK AMERICAN RIVER BELOW SILVER CREEK, NEAR POLLOCK PINES, CA

LOCATION.--Lat 38°47'37", long 120°37'02", in NE¼NE¼ sec.22, T.11 N., R.12 E., El Dorado County, Eldorado National Forest, on right bank 350 ft (107 m) upstream from El Dorado powerhouse, 2.4 mi (3.9 km) downstream from Silver Creek, and 2.8 mi (4.5 km) northwest of Pollock Pines.

DRAINAGE AREA.--449 mi² (1,163 km²).

PERIOD OF RECORD.--August to December 1923 (published as "below Silver Creek"), November 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,862.79 ft (567.778 m) National Geodetic Vertical Datum of 1929. Aug. 11 to Dec. 16, 1923, nonrecording gage at same site at different datum.

REMARKS.--Records good. Flow regulated by storage, diversions, and powerplants. See schematic diagram of South Fork American River basin.

AVERAGE DISCHARGE (unadjusted).--8 years, 380 ft³/s (10.76 m³/s), 275,300 acre-ft/yr (33.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,200 ft³/s (629 m³/s) Jan. 21, 1970, gage height, 15.22 ft (4.639 m); minimum daily, 9.6 ft³/s (0.27 m³/s) Oct. 19, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,050 ft³/s (86.4 m³/s) May 15, gage height, 9.61 ft (2.929 m); minimum daily, 9.6 ft³/s (0.27 m³/s) Oct. 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	14	13	218	96	214	1180	1090	1910	683	47	32
2	19	14	13	150	104	490	973	1190	1880	676	42	32
3	18	15	13	131	94	688	865	1430	1830	623	40	32
4	18	15	13	122	85	1100	813	1560	1950	563	39	32
5	18	22	14	357	92	1820	700	1540	2140	549	38	42
6	18	23	14	707	231	1270	708	1170	2160	558	38	167
7	17	18	14	349	471	969	649	1310	2210	570	38	146
8	17	15	14	238	468	831	598	1440	2130	543	37	100
9	17	14	14	494	654	733	599	1620	2100	515	38	47
10	17	14	14	703	524	629	691	1710	1920	516	40	326
11	17	14	15	442	412	599	877	1710	1680	491	37	166
12	16	14	22	315	340	563	1000	1680	1770	443	36	58
13	16	15	18	252	345	478	968	1900	1870	382	54	46
14	16	15	18	564	284	428	989	2200	1960	319	55	49
15	16	15	367	1070	254	391	977	2440	1760	264	39	89
16	16	15	164	917	206	383	935	1650	1510	257	36	64
17	13	14	349	1520	181	450	831	1430	1340	227	36	42
18	10	13	329	910	159	509	857	1530	1240	206	34	38
19	9.6	13	98	722	149	497	884	1690	1170	158	32	38
20	11	14	59	546	149	549	1070	1770	1010	138	32	39
21	12	44	44	413	170	645	994	1960	942	115	35	39
22	12	124	68	328	197	781	932	2100	957	88	35	39
23	11	36	396	267	225	819	895	1980	960	81	33	39
24	12	20	218	205	243	810	945	1370	973	72	33	39
25	12	16	122	180	233	714	2000	1140	932	74	33	57
26	12	15	92	151	214	781	1760	1090	852	97	33	81
27	12	14	282	135	203	828	1460	1270	804	114	33	83
28	12	14	384	124	191	885	1500	1590	957	89	33	80
29	13	13	463	115	---	965	1290	1850	776	68	33	78
30	14	13	668	110	---	1150	1280	1970	743	55	32	76
31	14	---	371	104	---	1480	---	1980	---	46	32	---
TOTAL	455.6	615	4683	12859	6974	23449	30220	50360	44436	9580	1153	2196
MEAN	14.7	20.5	151	415	249	756	1007	1625	1481	309	37.2	73.2
MAX	20	124	668	1520	654	1820	2000	2440	2210	683	55	326
MIN	9.6	13	13	104	85	214	598	1090	743	46	32	32
AC-FT	904	1220	9290	25510	13830	46510	59940	99890	88140	19000	2290	4360
†	13870	3780	7830	20030	11240	46080	66200	80160	36890	30460	33450	22240
††	142	1740	5680	9950	9130	10180	10030	10400	9070	9740	8660	7250
CAL YR 1977 TOTAL		15904.6	MEAN 43.6	MAX 668	MIN 9.6	AC-FT 31550						
WTR YR 1978 TOTAL		186980.6	MEAN 512	MAX 2440	MIN 9.6	AC-FT 370900						

† Diversions, in acre-feet, to Camino powerplant, furnished by Sacramento Municipal Utility District.

†† Diversions, in acre-feet, to El Dorado powerplant, furnished by Pacific Gas and Electric Co.

SACRAMENTO RIVER BASIN

11443500 SOUTH FORK AMERICAN RIVER NEAR CAMINO, CA

LOCATION.--Lat 38°46'23", long 120°42'02", in NE¼SW¼ sec.25, T.11 N., R.11 E., El Dorado County, on right bank 500 ft (152 m) downstream from Slab Creek Dam, 500 ft (152 m) upstream from Iowa Canyon Creek, and 2.8 mi (4.5 km) northwest of Camino.

DRAINAGE AREA. --493 mi² (1,277 km²).

PERIOD OF RECORD.--October 1922 to current year. Monthly discharge only for October 1922, published in WSP 1315-A. Records for the river and the American River flume, published separately October 1922 to September 1956, October 1962 to December 1964 when flume was destroyed. Records of river and flume combined October 1956 to September 1962.

REVISED RECORDS.--WSP 931: 1928, 1938, 1940(M). WSP 1931: Drainage area at former site.

GAGE.--Water-stage recorder. Altitude of gage is 1,620 ft (494 m), from topographic map. See WSP 2131 for history of changes prior to Oct. 12, 1966.

REMARKS.--Records good. Flow regulated by six reservoirs, total usable capacity, 347,000 acre-ft (428 hm³) and since 1967 diversion from Slab Creek Dam to White Rock powerplant which bypass this station. Echo Lake conduit (station 11434500) imports up to 1,900 acre-ft (2.34 hm³) each year from Truckee River basin. Variable amounts of El Dorado Canal water, up to 40 ft³/s (1.13 m³/s) May to October, and about 7 ft³/s (0.20 m³/s) remainder of the year, diverted for irrigation and domestic use between Pollock Pines and Placerville. Water from Jenkinson Lake in North Fork Consumnes River basin diverted to Camino and substituted for flow from El Dorado Canal in some years. Since October 1962 water is imported from the Upper Rubicon River basin by way of Robbs Peak tunnel (station 11429800). See schematic diagram of South Fork American River basin.

AVERAGE DISCHARGE.--37 years (water years 1923-59, prior to extensive regulation and transbasin diversion in South Fork American River basin), 961 ft³/s (27.22 m³/s), 695,700 acre-ft/yr (858 hm³/yr), combined flow of South Fork American River and American River flume; 8 years (water years 1960-67, transition period prior to bypass to White Rock powerplant), 1,062 ft³/s (30.08 m³/s), 769,400 acre-ft/yr (949 hm³/yr); 11 years (water years 1968-78), 124 ft³/s (3.512 m³/s) 89,840 acre-ft/yr (111 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,800 ft³/s (1,410 m³/s) Dec. 23, 1955, gage height, 32.6 ft (9.94 m) from floodmarks, site and datum then in use, from rating curve extended above 24,000 ft³/s (680 m³/s) on basis of computation of maximum flow over dam; minimum daily, 1.3 ft³/s (0.037 m³/s) Aug. 24, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 84 ft³/s (2.38 m³/s) June 15, gage height, 6.26 ft (1.908 m); minimum daily, 9.2 ft³/s (0.26 m³/s) Feb. 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	9.3	10	11	11	9.7	19	75	66	77	56	35	35
2	9.3	11	12	11	9.8	19	76	64	76	35	35	35
3	9.7	10	12	11	9.9	20	76	70	76	35	35	35
4	9.7	10	12	11	10	21	76	74	78	35	35	35
5	9.7	11	11	11	9.9	22	75	76	80	35	35	35
6	11	11	11	11	9.7	22	76	78	78	35	35	35
7	11	11	11	10	9.6	23	75	80	75	35	35	35
8	9.7	11	11	10	9.2	22	74	81	75	35	35	36
9	9.7	11	10	11	9.3	22	74	81	77	35	35	36
10	9.7	11	10	10	13	22	74	77	78	35	35	35
11	9.6	11	10	10	16	22	74	74	79	36	35	35
12	9.7	11	10	10	15	22	75	73	77	36	35	35
13	9.7	11	10	10	16	22	75	71	77	36	35	35
14	10	11	10	11	15	22	76	71	79	35	35	35
15	11	10	10	11	15	21	76	72	81	35	35	35
16	11	10	10	11	15	21	76	71	80	35	35	35
17	11	10	10	11	15	20	75	70	79	35	35	35
18	10	10	9.9	10	15	20	76	74	78	35	35	35
19	10	10	9.9	10	15	21	77	76	79	35	35	35
20	10	10	10	10	15	21	77	75	78	35	35	35
21	10	10	11	10	18	21	76	77	78	35	35	35
22	9.9	10	11	10	20	20	76	77	78	35	35	35
23	9.9	9.9	11	9.9	19	20	76	77	80	36	35	35
24	9.8	9.5	11	9.8	19	20	77	75	81	37	35	35
25	9.7	9.5	11	9.9	18	20	77	77	81	37	35	35
26	9.7	9.5	11	9.9	18	20	76	76	81	40	35	35
27	9.8	9.5	11	9.8	18	20	75	76	80	42	35	35
28	9.9	9.5	11	9.9	18	20	73	77	80	39	35	35
29	9.9	9.5	12	9.7	---	20	71	78	80	36	35	35
30	9.9	9.5	11	9.9	---	20	68	77	80	36	35	35
31	9.8	---	11	9.9	---	48	---	77	---	36	35	---
TOTAL	309.1	307.4	332.8	319.7	400.1	673	2253	2318	2356	1133	1085	1052
MEAN	9.97	10.2	10.7	10.3	14.3	21.7	75.1	74.8	78.5	36.5	35.0	35.1
MAX	11	11	12	11	20	48	77	81	81	56	35	36
MIN	9.3	9.5	9.9	9.7	9.2	19	68	64	75	35	35	35
AC-FT	613	610	660	634	794	1330	4470	4600	4670	2250	2150	2090
CAL YR 1977	TOTAL	4090.7	MEAN	11.2	MAX	17	MIN	7.1	AC-FT	8110		
WTR YR 1978	TOTAL	12539.1	MEAN	34.4	MAX	81	MIN	9.2	AC-FT	24870		

11444500 SOUTH FORK AMERICAN RIVER NEAR PLACERVILLE, CA

LOCATION.--Lat 38°46'16", long 120°48'55", in NE¼SW¼ sec.25, T.11 N., R.10 E., El Dorado County, on right bank 700 ft (213 m) downstream from Chili Bar Dam, 0.5 mi (0.8 km) upstream from Big Canyon, and 2.5 mi (4.0 km) north of Placerville.

DRAINAGE AREA.--598 mi² (1,549 km²).

PERIOD OF RECORD.--August 1911 to July 1920, July 1964 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 931.05 ft (283.784 m) National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.). Aug. 11, 1911, to July 31, 1920, nonrecording gage 0.6 mi (1.0 km) downstream at different datum.

REMARKS.--Flow regulated by storage, diversions, and powerplants. See schematic diagram of South Fork American 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 extensive regulation and transbasin diversion).--9 years (water years 1912-20), 1,132 ft³/s (32.06 m³/s), 820,100 acre-ft/yr (1.01 km³/yr); 14 years (water years 1965-78), 1,405 ft³/s (39.79 m³/s), 1,018,000 acre-ft/yr (1.26 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,300 ft³/s (1,340 m³/s) Dec. 23, 1964, gage height, 17.4 ft (5.30 m) from floodmarks, from rating curve extended above 18,000 ft³/s (510 m³/s) on basis of computations of flow over dam of maximum flow; minimum daily, 0.2 ft³/s (0.006 m³/s) Nov. 12, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,440 ft³/s (154 m³/s) Jan. 17, gage height, 8.10 ft (2.469 m); minimum daily, 27 ft³/s (0.76 m³/s) Nov. 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	145	99	32	518	249	1090	3010	3480	3420	1610	894	524
2	28	36	33	819	131	1330	1460	3300	3480	1180	893	421
3	28	34	35	1330	131	2060	2290	3350	2950	1130	1030	443
4	883	32	35	1020	115	2950	2550	3310	2920	1150	800	561
5	626	32	559	660	444	3240	2490	3470	3140	1170	526	383
6	130	32	427	2220	1180	2560	2580	2510	3590	1120	557	544
7	47	32	31	863	1590	2270	2680	2830	3540	1250	1030	599
8	33	32	31	729	2260	2170	2660	2980	3590	1230	1060	577
9	33	32	31	1710	1440	2110	1740	3380	2590	1230	914	626
10	35	32	31	1730	1150	2040	2410	3240	2490	1370	792	399
11	33	283	31	1570	2310	1710	2490	3560	1690	957	806	1210
12	554	32	31	1100	1290	1080	2470	3930	1680	1260	503	509
13	92	31	31	836	1040	1540	2360	3910	2170	1250	440	564
14	383	31	31	1310	1560	1690	2540	3900	2180	1100	791	598
15	31	30	221	3130	1140	2230	2490	3930	2370	1070	758	1080
16	30	29	1680	2920	976	1740	2260	3940	2440	385	708	310
17	154	29	1680	4730	825	1720	2870	3550	2400	1090	578	449
18	484	330	226	3140	672	1670	2610	3240	1710	1050	727	440
19	848	36	897	1700	370	858	2560	3490	1880	1020	515	494
20	1030	36	974	1680	595	1550	2870	3500	1770	993	546	520
21	1090	440	180	1350	858	2540	3430	3570	1720	876	639	533
22	268	701	118	661	951	2470	2800	3850	1820	705	793	506
23	35	509	974	925	943	2460	1960	3870	1190	520	982	497
24	35	95	631	745	295	2490	2800	3160	1350	618	645	459
25	35	32	141	790	726	1960	4070	2660	1510	964	674	532
26	506	27	111	711	512	1390	4310	3030	992	983	516	458
27	31	30	972	875	308	1640	4190	2570	1680	844	506	411
28	331	30	620	842	796	2380	4090	3010	1620	714	796	588
29	38	31	1250	215	---	2400	4120	2810	1660	489	847	693
30	38	31	1900	369	---	2550	3840	3720	1560	628	796	327
31	499	---	1100	363	---	2850	---	3340	---	620	769	---
TOTAL	8533	3186	15044	41561	24857	62738	85000	104390	66782	30576	22831	16255
MEAN	275	106	485	1341	888	2024	2833	3367	2226	986	736	542
MAX	1090	701	1900	4730	2310	3240	4310	3940	3590	1610	1060	1210
MIN	28	27	31	215	115	858	1460	2510	992	385	440	310
AC-FT	16930	6320	29840	82440	49300	124400	168600	207100	132500	60650	45290	32240
CAL YR 1977 TOTAL	78010	MEAN	214	MAX	1900	MIN	15	AC-FT	154700			
WTR YR 1978 TOTAL	481753	MEAN	1320	MAX	4730	MIN	27	AC-FT	955600			

SACRAMENTO RIVER BASIN

11445500 SOUTH FORK AMERICAN RIVER NEAR LOTUS, CA

LOCATION.--Lat 38°49'07", long 120°56'45", in NW¼SW¼ sec.11, T.11 N., R.9 E., El Dorado County, on left bank 0.4 mi (0.6 km) downstream from Greenwood Creek, 2.4 mi (3.9 km) northwest of Lotus, and 3.3 mi (5.3 km) northwest of Coloma.

DRAINAGE AREA.--673 mi² (1,743 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1951 to current year.

REVISED RECORDS.--WSP 1931: Drainage area. WDR CA-75-4: 1964, 1966, 1970.

GAGE.--Water-stage recorder. Altitude of gage is 635 ft (194 m), from topographic map.

REMARKS.--Records good. Flow regulated by storage, diversions, and powerplants. See schematic diagram of South Fork American River basin.

AVERAGE DISCHARGE.--11 years (water years 1952-62, prior to extensive regulation and transbasin diversion), 1,109 ft³/s (31.41 m³/s), 802,900 acre-ft/yr (990 hm³/yr); 16 years (water years 1963-78), 1,413 ft³/s (40.02 m³/s), 1,024,000 acre-ft/yr (1.26 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,800 ft³/s (2,030 m³/s) Dec. 23, 1955, gage height, 21.37 ft (6.514 m); minimum daily, 14 ft³/s (0.40 m³/s) July 13, 15-18, 24, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since 1862 and prior to beginning of record, 20.4 ft (6.22 m) from floodmarks, Nov. 21, 1950, discharge, 64,500 ft³/s (1,830 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,140 ft³/s (231 m³/s) Jan. 17, gage height, 9.91 ft (3.021 m); minimum daily, 29 ft³/s (0.82 m³/s) Oct. 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	379	196	40	848	356	1120	3330	3650	3400	1640	869	549
2	35	40	41	609	193	1650	1720	3410	3480	1280	715	431
3	30	33	44	1390	180	2600	2280	3380	3070	1230	917	460
4	679	33	44	1100	168	3920	2670	3380	2940	1130	951	556
5	820	39	492	2660	190	4660	2570	3570	3120	1220	555	470
6	199	34	510	3190	1300	3080	3060	2570	3440	1070	525	666
7	55	33	80	1250	2580	2530	3150	2850	3550	1230	869	429
8	47	33	39	863	2710	2340	2910	2980	3560	1190	981	785
9	34	36	37	1870	2140	2240	2000	3370	2600	1160	1090	542
10	33	36	38	2150	1400	2170	2430	3290	2490	1450	748	523
11	33	199	39	1860	2610	1850	2550	3500	1900	973	896	1000
12	299	129	41	1070	1830	1300	2520	3940	1640	1060	587	797
13	346	36	39	1000	1470	1680	2410	3920	2170	1250	458	597
14	354	35	42	2310	1920	1790	2580	3910	2150	1150	777	606
15	69	33	182	4310	1350	2240	2610	3950	2220	999	809	980
16	29	34	1580	4150	1170	1890	2450	3960	2480	502	733	536
17	112	34	1830	6400	1010	1780	3370	3630	2410	954	598	535
18	461	287	627	3700	769	1720	2800	3250	1900	1040	740	509
19	583	88	696	2130	659	1020	2730	3450	1800	1010	635	559
20	1230	39	1110	1880	607	1330	2990	3540	1820	983	611	638
21	927	85	311	1560	808	2680	3670	3500	1730	851	646	539
22	593	866	199	785	1010	2610	2840	3840	1640	729	665	516
23	38	727	887	1020	983	2560	2280	3870	1210	542	994	504
24	32	205	988	840	644	2580	2670	3360	1340	565	823	470
25	31	55	195	821	570	2050	4630	2550	1540	906	699	441
26	450	36	183	751	531	1550	4700	3050	971	916	553	633
27	82	36	768	951	563	1590	4460	2660	1680	869	534	423
28	291	38	1030	816	616	2380	4290	2930	1640	729	768	500
29	65	39	1200	546	---	2420	4280	2750	1700	481	861	598
30	37	40	2160	348	---	2520	4030	3680	1580	610	801	576
31	395	---	1230	406	---	2800	---	3370	---	615	898	---
TOTAL	8768	3554	16702	53584	30337	68650	90980	105060	67171	30334	23306	17368
MEAN	283	118	539	1729	1083	2215	3033	3389	2239	979	752	579
MAX	1230	866	2160	6400	2710	4660	4700	3960	3560	1640	1090	1000
MIN	29	33	37	348	168	1020	1720	2550	971	481	458	423
AC-FT	17390	7050	33130	106300	60170	136200	180500	208400	133200	60170	46230	34450
CAL YR 1977 TOTAL	80431			220	2160	14	AC-FT	159500				
WTR YR 1978 TOTAL	515814			1413	6400	29	AC-FT	1023000				

11445500 SOUTH FORK AMERICAN RIVER NEAR LOTUS, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1957-68, 1970 to current year.

CHEMICAL ANALYSES: Water years 1958-66, 1978.

WATER TEMPERATURES: Water years 1960-68, 1970 to current year.

SEDIMENT RECORDS: Water years 1957-62.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: December 1959 to September 1968, February 1970 to current year.

INSTRUMENTATION.--Temperature recorder December 1959 to September 1968, and since February 1970.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 29.5°C July 20, 1960, Aug. 12, 22, 1977; minimum recorded, 1.0°C on several days in 1960 and 1962.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 20.5°C July 24; minimum recorded, 5.5°C Jan. 24, 29.

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 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)
MAY 25...	1200	2440	25	7.9	10.0	11.6	10	1	2.6	.9	1.7
AUG 29...	1145	321	29	7.5	17.0	10.0	11	1	2.8	.9	1.6

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 CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
MAY 25...	25	.2	.5	9	2.1	1.2	.1	7.4	22	.03	.08
AUG 29...	24	.2	.4	10	1.6	1.4	.0	7.9	23	.03	.05

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)
MAY 25...	.04	.20	.90	1.1	1.2	.00	.00	.00	9	70
AUG 29...	.05	.01	.17	.18	.23	.02	.00	.00	2	20

11445500 SOUTH FORK AMERICAN RIVER NEAR LOTUS, 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	18.0	15.0	13.0	11.5	10.5	9.0	7.5	6.5	7.0	6.5	10.0	7.5
2	19.0	16.0	13.0	11.5	10.0	8.5	8.0	7.0	9.0	7.0	9.0	7.5
3	19.0	17.0	13.0	11.0	10.0	8.5	7.5	7.0	9.5	7.5	9.5	8.5
4	19.5	16.0	13.0	12.5	10.5	8.5	7.5	7.0	9.0	7.5	9.5	8.5
5	17.0	15.0	13.5	13.0	10.5	9.0	8.5	7.0	9.0	8.5	10.0	9.0
6	17.0	15.0	13.0	11.5	9.5	8.0	9.0	8.0	8.0	6.5	10.5	9.0
7	17.0	14.5	12.5	10.5	9.5	8.5	8.5	7.0	7.5	6.0	10.5	8.5
8	18.0	15.0	11.5	10.0	9.5	8.5	8.5	7.5	7.5	6.5	9.5	8.5
9	18.0	15.5	11.5	10.0	9.0	7.5	9.5	7.5	8.0	7.0	9.5	8.5
10	18.0	15.5	11.0	10.0	8.5	7.0	8.0	7.5	8.0	7.5	10.0	8.5
11	18.5	16.0	11.0	9.0	8.5	7.5	8.0	7.0	7.5	6.0	9.5	8.5
12	18.5	16.0	11.0	9.0	9.0	8.0	7.5	7.0	7.5	6.0	11.5	8.5
13	17.0	14.0	11.5	9.5	9.5	8.5	9.0	7.0	8.5	6.5	10.0	8.0
14	17.5	14.5	11.5	10.0	9.5	9.0	9.5	8.0	8.0	6.5	10.5	8.0
15	16.5	14.0	11.5	10.0	11.0	9.5	9.5	8.0	8.0	6.5	10.5	8.0
16	16.5	14.5	11.5	9.5	9.0	8.0	8.5	7.5	7.5	6.0	10.5	7.5
17	17.5	15.0	11.5	10.0	9.0	8.5	8.5	8.0	7.5	6.0	10.5	8.0
18	16.5	14.5	11.0	9.5	8.5	8.0	8.0	7.5	8.5	6.0	9.5	8.0
19	16.0	13.5	9.5	8.0	8.0	6.5	8.0	7.5	9.0	6.0	11.5	8.0
20	14.5	13.5	8.5	6.5	7.5	6.5	8.0	7.0	9.0	6.0	11.0	8.5
21	13.5	12.5	8.5	8.0	7.5	7.0	8.0	6.5	9.5	6.5	9.0	8.5
22	14.0	12.0	10.5	9.0	8.5	7.5	9.0	7.0	9.5	6.5	10.0	8.5
23	14.5	13.0	10.5	9.5	10.0	7.5	8.0	6.5	9.5	6.5	9.5	8.5
24	15.5	14.0	12.0	10.5	8.5	7.5	7.0	5.5	8.5	6.5	10.5	8.0
25	16.5	14.5	11.5	10.0	8.5	7.5	7.0	5.5	10.5	7.0	10.5	8.0
26	17.5	13.5	12.0	10.0	8.5	7.5	7.0	5.5	8.5	7.0	11.5	8.0
27	14.0	13.0	12.0	11.0	10.0	8.0	7.0	5.5	10.0	7.0	11.5	8.5
28	13.5	13.0	11.5	10.0	9.0	7.5	7.5	5.5	9.5	8.0	11.0	8.5
29	14.0	13.0	11.5	9.5	10.0	8.0	7.5	5.5	---	---	10.0	8.5
30	15.0	13.5	11.0	10.0	8.5	7.5	8.0	6.5	---	---	10.0	9.0
31	15.0	12.5	---	---	8.0	7.0	7.0	6.0	---	---	9.5	9.0
MONTH	19.5	12.0	13.5	6.5	11.0	6.5	9.5	5.5	10.5	6.0	11.5	7.5

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.5	8.5	11.0	8.5	12.5	10.5	16.0	12.5	18.5	17.0	17.0	14.5
2	11.0	8.5	10.5	8.5	12.5	10.5	16.0	12.5	19.0	16.5	18.0	15.5
3	10.0	8.0	11.0	9.0	12.5	10.5	16.5	13.0	18.5	15.5	17.0	15.5
4	9.0	7.5	11.5	9.5	13.0	10.5	17.0	13.0	18.5	15.0	17.0	15.5
5	9.0	7.5	11.0	9.5	13.0	11.0	17.5	13.5	19.0	16.5	15.5	14.5
6	8.0	7.5	11.5	9.0	13.0	11.0	17.5	14.0	19.5	17.5	16.0	14.5
7	8.5	7.0	11.0	8.5	13.5	11.5	17.5	14.0	19.5	17.5	17.0	14.5
8	9.0	6.5	11.0	8.5	13.5	11.5	18.0	14.0	18.5	16.0	16.5	13.5
9	10.0	6.5	11.0	9.0	14.5	12.0	18.5	14.5	18.5	15.5	15.5	14.0
10	10.0	7.0	11.5	9.0	14.5	11.5	18.0	14.0	20.0	16.0	15.5	14.0
11	10.0	7.0	11.5	9.5	15.5	11.5	18.0	14.0	18.5	15.5	16.0	13.5
12	10.5	7.5	11.0	9.5	15.0	12.0	18.0	14.5	18.0	16.0	16.0	12.5
13	9.5	8.5	11.5	9.0	15.5	12.0	18.0	14.5	18.5	16.0	16.0	14.0
14	9.0	8.5	11.5	9.5	15.5	12.0	19.0	14.5	18.5	16.5	16.0	14.0
15	9.0	8.5	10.5	10.0	15.5	12.0	18.5	15.0	18.0	15.5	16.0	14.5
16	9.0	8.0	11.0	9.0	15.5	12.0	19.5	14.5	18.0	15.5	16.5	13.5
17	9.5	7.5	11.0	8.5	15.5	11.5	19.0	17.0	17.5	15.5	16.0	14.5
18	10.0	7.0	11.0	8.5	15.5	12.0	18.5	15.0	17.5	15.5	15.0	12.5
19	9.0	7.0	11.0	9.5	16.0	12.0	18.5	15.0	17.5	15.0	15.0	12.5
20	8.5	7.5	11.5	9.5	16.0	12.5	19.0	15.5	17.5	15.0	15.0	12.5
21	9.5	7.5	11.5	9.5	16.5	12.5	18.5	15.5	17.5	15.5	15.0	12.5
22	10.0	7.5	11.5	9.5	16.5	13.0	18.5	16.5	17.0	15.0	15.5	13.0
23	9.5	7.0	10.5	9.5	17.5	13.0	19.0	17.5	16.5	13.5	15.5	13.5
24	8.5	8.0	10.5	9.0	17.5	13.0	20.5	17.5	16.5	13.5	16.0	14.0
25	9.0	8.0	10.5	8.5	16.5	13.0	18.5	17.0	16.5	14.5	16.5	14.0
26	9.5	8.5	10.0	8.0	16.5	13.0	18.5	17.0	17.0	14.5	15.5	13.5
27	10.0	8.5	11.0	8.5	15.0	13.0	18.5	16.0	17.0	15.0	16.0	13.5
28	10.0	8.5	12.0	9.0	15.5	13.0	18.5	16.0	17.0	15.5	16.0	13.5
29	11.0	9.0	12.5	10.0	16.0	12.5	20.0	16.5	17.0	14.5	16.5	13.0
30	9.5	8.5	12.5	10.5	16.0	12.5	19.5	16.0	16.5	14.0	16.5	13.0
31	---	---	13.0	10.5	---	---	19.0	16.0	16.5	13.5	---	---
MONTH	11.0	6.5	13.0	8.0	17.5	10.5	20.5	12.5	20.0	13.5	18.0	12.5

11446200 FOLSOM LAKE NEAR FOLSOM, CA

LOCATION.--Lat 38°42'29", long 121°09'22", in NW¼NE¼ sec.24, T.10 N., R.7 E., Sacramento County, near center of dam on American River, 0.7 mi (1.1 km) downstream from South Fork American River, and 2.3 mi (3.7 km) north-east of Folsom.

DRAINAGE AREA.--1,861 mi² (4,820 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1955 to current year. Prior to October 1959, published as Folsom Reservoir near Folsom.

REVISED RECORDS.--WSP 1931: Drainage area.

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

REMARKS.--Reservoir is formed by concrete gravity-type dam with rolled-earth-wing dams, auxiliary dams, and dikes, completed May 14, 1956; storage began Feb. 25, 1955. Total capacity, 1,010,300 acre-ft (1.25 km³) between elevations 205.5 ft (62.64 m) invert of lower tier of river outlets and 466.0 ft (142.04 m) gross pool elevation, all of which is available for release. Spillway design flood pool elevation, 475.4 ft (144.90 m), capacity, 1,120,200 acre-ft (1.38 km³). Records, including extremes, represent usable contents at 2400 hours. See schematic diagram of South Fork American River basin.

COOPERATION.--Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,024,400 acre-ft (1.26 km³) June 15, 1963, elevation, 467.23 ft (142.412 m); minimum since storage pool first filled, 140,600 acre-ft (173 hm³) Nov. 20, 21, 1977, elevation, 347.57 ft (105.939 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 942,600 acre-ft (1.16 km³) June 18, elevation, 460.00 ft (140.208 m); minimum, 140,600 acre-ft (173 hm³) Nov. 20, 21, elevation, 347.57 ft (105.939 m).

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

345	133100	400	393300
350	148000	420	548300
360	181900	440	732900
370	222300	460	942600
380	270700	480	1176000
390	327800		

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	147800	146500	146700	265100	605300	648900	689200	847300	889700	925500	871300	805600
2	147900	146200	146600	269600	608200	660000	692700	849300	894800	923300	871100	806600
3	148000	145900	146400	276000	610500	679600	694600	849000	897000	921100	871800	796000
4	148600	145500	146200	282000	612700	697500	698400	849400	898700	918200	872000	791500
5	150200	145200	146400	306300	615900	727100	701300	849400	902600	915100	869100	787800
6	150100	144800	147300	339700	623500	728600	707300	847200	907900	912000	865400	783900
7	149300	144400	147600	352700	633100	720100	714500	845000	912900	909200	862000	779500
8	148500	143900	147400	361000	640300	707800	719400	843000	918500	906600	859400	775900
9	147600	143400	147400	377200	648200	693600	721300	842000	923400	904800	857300	772700
10	146600	143000	147400	397900	650500	683800	723800	841800	928200	902600	853300	770100
11	146000	142600	147200	411300	653200	682500	727600	841500	931400	900500	850300	768600
12	145200	142700	147000	421400	654700	679800	730500	842400	932900	898300	846400	766500
13	145800	142800	146800	432200	656000	676700	733400	844700	934700	897000	842500	763500
14	145600	142400	146900	457200	655900	673400	736200	847600	936600	895000	839000	764600
15	145300	142000	152900	497700	652900	670200	739700	851900	938700	892700	836100	762200
16	144900	141600	158500	535100	648200	666300	745500	855300	940400	890000	835500	759200
17	144400	141200	164900	588000	642400	662000	754000	857100	942000	887400	835100	755300
18	144600	141000	173000	605200	641300	657600	760300	858300	942600	885100	834700	750200
19	145000	141000	176100	612700	640300	651900	766200	860100	942000	882800	834500	745800
20	147000	140600	179400	615300	638000	646200	774300	861800	941500	880500	833600	742100
21	148100	140600	181100	614900	635500	646600	784700	863600	941100	878500	833300	738400
22	149300	144300	182600	610600	636800	652200	788700	867800	940400	876200	833600	734600
23	148800	147100	191700	605900	637600	657100	788300	873200	938800	871800	834100	730700
24	148200	147800	199600	604700	638600	661500	788700	876000	936900	871300	835300	726200
25	147600	147900	202800	602900	640800	664500	802900	875700	935700	871300	835200	721500
26	147400	147600	205200	603300	643000	665300	815700	876500	932600	871300	831000	718000
27	147300	147500	209800	602800	645100	665300	825500	875800	931400	871900	826600	713700
28	147100	147300	217900	603100	646700	668000	834200	877000	929900	871900	824200	708500
29	146900	147200	230400	603000	---	671400	840500	879100	929200	871600	818600	704100
30	146400	147000	248800	601500	---	675100	844300	882700	927400	871100	813700	700100
31	146300	---	258800	602500	---	681200	---	886600	---	871100	810000	---
MAX	150200	147900	258800	615300	656000	728600	844300	886600	942600	925500	872000	805600
MIN	144400	140600	146200	265100	605300	646200	689200	841500	889700	871100	810000	700100
†	349.45	349.67	377.70	426.18	431.02	434.67	450.91	454.88	458.62	453.44	447.63	436.64
‡	-700	+700	+111800	+343700	+44200	+34500	+163100	+42300	+40800	-56300	-61100	-109900
††	1120	450	160	370	760	1510	2120	6030	6950	7750	7120	4450

CAL YR 1977 ‡ -58200

WTR YR 1978 ‡ +553100

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

‡ Change in contents, in acre-feet.

†† Evaporation, in acre-feet.

SACRAMENTO RIVER BASIN

11446200 FOLSOM LAKE NEAR FOLSOM, CA--Continued

WATER-QUALITY RECORDS

FOLSOM LAKE SITE NO. 2 ON NORTH FORK ARM, NEAR FOLSOM, CA

LOCATION.--Lat 38°44'38", long 121°07'57", Placer County, at Granite Bay 5.0 mi (8.0 km) northeast of Folsom Post Office.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water year 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAM- PLING DEPTH (M) $\frac{1}{2}$	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)
MAY							
26...	1038	.50	48	8.0	19.0	9.0	96
26...	1039	1.0	48	8.0	19.4	8.9	96
26...	1040	2.0	48	8.0	19.1	8.9	95
26...	1041	3.0	48	7.9	19.0	8.9	95
26...	1042	4.0	48	7.9	18.9	8.9	95
26...	1043	5.0	48	8.0	18.8	8.8	93
26...	1044	6.0	48	7.9	18.5	8.4	87
26...	1045	7.0	46	7.7	16.8	8.8	90
26...	1046	8.0	46	7.7	14.5	8.8	86
26...	1047	9.0	46	7.7	14.0	8.8	85
26...	1048	10.0	33	7.6	13.7	9.1	91
26...	1049	11.0	32	7.6	13.6	9.2	87
26...	1050	12.0	32	7.6	13.6	9.2	87
26...	1051	13.0	32	7.6	13.6	9.2	87
26...	1052	14.0	31	7.6	13.5	9.2	87
26...	1053	15.0	32	7.6	13.4	9.2	87
26...	1054	20.0	36	7.5	12.3	9.1	85
26...	1055	23.0	40	7.4	11.8	8.9	82
AUG							
31...	1015	.50	61	8.1	24.3	8.0	94
31...	1016	1.0	61	8.0	24.3	8.0	94
31...	1017	2.0	61	8.0	24.3	8.0	94
31...	1018	3.0	61	8.0	24.2	8.0	93
31...	1019	4.0	61	8.0	24.2	8.0	93
31...	1020	5.0	61	8.0	24.2	8.0	93
31...	1021	6.0	61	8.0	24.2	8.0	93
31...	1022	7.0	61	8.0	24.2	7.9	92
31...	1023	8.0	61	7.9	24.0	7.8	91
31...	1024	9.0	61	7.7	23.5	7.6	88
31...	1025	10.0	60	7.7	23.1	7.6	87
31...	1026	11.0	58	7.7	21.8	7.8	87
31...	1027	12.0	56	7.6	20.8	7.9	87
31...	1028	13.0	54	7.6	20.1	8.2	89
31...	1029	14.0	53	7.6	19.1	8.4	90
31...	1030	15.0	52	7.6	18.8	8.4	89
31...	1031	17.0	58	7.5	17.9	8.3	87
31...	1032	18.0	51	7.5	17.8	8.2	85
31...	1033	19.0	51	7.4	17.5	7.8	85
31...	1034	20.0	52	7.4	16.3	6.8	69
31...	1035	22.0	57	7.2	14.6	5.8	57
31...	1036	24.0	59	7.1	14.1	5.6	54
31...	1037	25.0	60	7.1	13.9	5.6	54
31...	1038	30.0	61	7.1	12.9	5.7	54
31...	1039	35.0	62	7.1	12.3	5.8	54
31...	1040	40.0	63	7.0	12.0	5.7	53
31...	1041	45.0	63	7.0	11.9	5.7	53
31...	1042	48.0	63	7.0	11.8	5.7	53
31...	1043	49.0	63	7.0	11.7	5.6	52

DATE	TIME	SAM- PLING DEPTH (M) $\frac{1}{2}$	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)
MAY											
26...	1100	1.0	60	8.0	19.4	8.9	26	2	6.6	2.4	2.3
AUG											
31...	1050	1.0	60	8.0	24.3	8.0	24	2	6.2	2.0	1.4
31...	1055	11.0	57	7.7	21.8	7.8	25	4	6.9	1.9	2.1
31...	1100	30.0	61	7.1	12.9	5.7	24	2	6.8	1.8	1.8

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

11446200 FOLSOM LAKE NEAR FOLSOM, CA--Continued

FOLSOM LAKE SITE NO. 2 ON NORTH FORK ARM, NEAR FOLSOM, 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 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)
MAY 26...	16	.2	.7	25	4.6	2.2	.1	9.5	43	.06
AUG 31...	11	.1	.7	22	3.1	1.7	.0	9.3	38	.05
31...	15	.2	.6	21	3.0	1.6	.0	9.3	38	.05
31...	13	.2	.6	22	3.2	1.5	.0	12	42	.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)
MAY 26...	.01	.01	.00	.16	.16	.17	.01	.00	10	100
AUG 31...	.01	.01	.01	.17	.18	.19	.02	.00	2	10
31...	.01	.01	.01	.34	.35	.36	.02	.00	0	10
31...	.05	.18	.00	.18	.18	.23	.02	.00	2	20

FOLSOM LAKE SITE NO. 1 ON SOUTH FORK ARM, NEAR FOLSOM, CA

LOCATION.--Lat 38°44'11", long 121°05'51", El Dorado County, 1.2 mi (1.9 km) west of Iron Mountain and 7.5 mi (12.1 km) northeast of Folsom Post Office.

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water year 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)
MAY							
26...	1300	.50	47	8.2	19.9	8.3	90
26...	1301	1.0	48	8.3	19.8	8.8	95
26...	1302	2.0	49	8.4	19.1	9.8	104
26...	1303	3.0	50	8.3	18.8	10.1	107
26...	1304	4.0	49	8.3	17.4	10.7	111
26...	1305	5.0	49	8.3	17.2	10.9	112
26...	1306	6.0	49	8.3	17.1	11.2	115
26...	1307	7.0	49	8.1	16.2	11.0	113
26...	1308	8.0	48	7.9	15.7	11.0	110
26...	1309	9.0	48	7.8	15.1	11.0	109
26...	1310	10.0	48	7.7	14.4	10.7	104
26...	1311	11.0	46	7.6	14.1	10.3	100
26...	1312	12.0	44	7.5	13.7	10.1	97
26...	1313	13.0	40	7.5	13.4	9.9	94
26...	1314	14.0	36	7.5	13.0	9.9	94
26...	1315	15.0	30	7.4	12.8	9.7	91
26...	1316	16.0	22	7.3	12.5	9.0	84
26...	1317	17.0	18	7.3	12.3	9.1	85
26...	1318	18.0	16	7.3	12.1	9.2	85
26...	1319	19.0	16	7.3	12.0	9.3	86
26...	1320	20.0	18	7.5	11.9	9.9	92
26...	1321	25.0	17	7.4	11.1	10.1	92
26...	1322	30.0	20	7.4	10.8	9.8	88
26...	1323	35.0	24	7.3	10.7	9.4	85
26...	1324	40.0	28	7.2	10.6	8.9	80
26...	1325	43.0	35	7.2	10.4	8.1	72

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

11446200 FOLSOM LAKE NEAR FOLSOM, CA--Continued

FOLSOM LAKE SITE NO. 1 ON SOUTH FORK ARM, NEAR FOLSOM, CA--Continued

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)
AUG							
31...	1235	.50	59	8.1	24.3	8.2	96
31...	1236	1.0	58	8.1	24.2	8.2	96
31...	1237	2.0	58	8.1	24.0	8.2	95
31...	1238	3.0	58	8.1	23.9	8.2	95
31...	1239	4.0	58	8.1	23.7	8.2	95
31...	1240	5.0	59	8.1	23.7	8.1	94
31...	1241	6.0	58	8.1	23.7	8.1	94
31...	1242	7.0	58	8.0	23.7	8.1	94
31...	1243	8.0	58	8.0	23.3	8.0	92
31...	1244	9.0	56	7.6	22.2	7.3	82
31...	1245	10.0	52	7.6	21.4	7.1	79
31...	1246	11.0	48	7.4	20.3	6.8	74
31...	1247	12.0	47	7.3	19.5	6.6	71
31...	1248	13.0	44	7.1	19.2	6.7	71
31...	1249	14.0	43	7.0	18.8	6.5	69
31...	1250	15.0	44	6.9	18.8	6.4	68
31...	1251	16.0	43	6.9	18.5	6.5	69
31...	1252	17.0	43	6.8	18.3	6.5	68
31...	1253	18.0	43	6.8	18.3	6.3	66
31...	1254	20.0	45	6.7	17.5	5.9	61
31...	1255	22.0	44	6.7	16.0	5.8	58
31...	1256	24.0	45	6.7	14.8	5.7	56
31...	1257	25.0	44	6.6	14.2	5.1	50
31...	1258	27.0	45	6.6	13.4	4.7	45
31...	1259	29.0	46	6.6	13.0	4.7	44
31...	1300	30.0	46	6.6	12.8	4.8	45

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)	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)
MAY											
26...	1330	1.0	48	8.3	19.8	8.8	27	1	6.5	2.5	2.4
26...	1335	20.0	32	7.5	11.9	9.9	18	4	5.2	1.1	1.9
AUG											
31...	1305	1.0	58	8.1	24.2	8.2	21	0	5.2	1.9	1.7
31...	1310	13.0	43	7.1	19.2	6.7	17	1	4.6	1.3	2.9

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 SI02)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
MAY										
26...	16	.2	.7	25	3.1	2.1	.1	8.2	41	.06
26...	18	.2	.6	13	3.2	1.5	.1	6.6	28	.04
AUG										
31...	15	.2	.6	21	3.0	1.6	.0	9.3	36	.05
31...	27	.3	.5	16	1.6	1.0	.0	8.7	30	.04

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)
MAY										
26...	.02	.01	.00	.12	.12	.14	.01	.00	9	20
26...	.02	.02	.00	.44	.44	.46	.00	.00	9	40
AUG										
31...	.01	.00	.01	.14	.15	.16	.02	.00	4	10
31...	.01	.01	.00	.16	.16	.17	.02	.00	2	20

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

11446200 FOLSOM LAKE NEAR FOLSOM, CA--Continued

FOLSOM LAKE AT DAM, NEAR FOLSOM, CA

LOCATION.--Lat 38°42'44", long 121°08'45", Placer County, 0.6 mi (1.0 km) northeast of Folsom Dam and 2.7 mi (4.3 km) northeast of Folsom Post Office.

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)						OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)				
		SAM- PLING DEPTH (M) <u>1/</u>		PH	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)						
DATE		TIME		(UNITS)								
MAY												
26...	1531	.50	48	8.5	19.5	9.7	104					
26...	1532	1.0	49	8.5	19.2	9.7	104					
26...	1533	2.0	50	8.6	17.9	10.0	104					
26...	1534	3.0	50	8.5	17.4	10.0	103					
26...	1535	4.0	50	8.5	17.3	10.0	103					
26...	1536	5.0	49	8.6	17.2	10.1	104					
26...	1537	6.0	49	8.5	17.1	10.0	103					
26...	1538	10.0	50	8.3	16.5	9.8	100					
26...	1539	11.0	40	7.6	13.8	9.1	88					
26...	1540	12.0	39	7.5	13.2	9.0	86					
26...	1541	13.0	40	7.4	12.8	9.2	87					
26...	1542	14.0	41	7.5	12.7	9.2	86					
26...	1543	15.0	43	7.8	12.7	9.2	86					
26...	1544	20.0	40	7.4	11.7	9.2	85					
26...	1545	25.0	34	7.4	11.4	9.3	85					
26...	1546	30.0	36	7.3	10.9	9.2	83					
26...	1547	35.0	38	7.3	10.8	9.2	83					
26...	1548	40.0	45	7.3	10.7	9.1	82					
26...	1549	45.0	46	7.3	10.5	9.1	82					
26...	1550	50.0	48	7.3	10.2	8.9	79					
26...	1551	55.0	50	7.3	9.9	8.6	76					
26...	1552	59.0	52	7.1	9.7	8.1	71					
AUG												
31...	1423	.50	58	8.2	24.2	8.3	97					
31...	1424	1.0	58	8.2	24.0	8.3	97					
31...	1425	2.0	58	8.2	23.4	8.4	97					
31...	1426	3.0	58	8.2	23.2	8.4	84					
31...	1427	4.0	58	8.2	23.1	8.4	96					
31...	1428	5.0	58	8.2	23.0	8.4	96					
31...	1429	6.0	58	8.2	22.9	8.4	96					
31...	1430	8.0	58	8.2	22.8	8.4	96					
31...	1431	10.0	57	7.8	22.3	7.9	89					
31...	1432	12.0	53	7.6	21.2	7.4	82					
31...	1433	14.0	49	7.3	19.7	6.4	69					
31...	1434	15.0	49	7.3	19.4	6.4	69					
31...	1435	17.0	50	7.1	18.4	6.6	70					
31...	1436	19.0	52	7.1	17.2	5.8	60					
31...	1437	20.0	46	6.8	16.6	5.7	58					
31...	1438	25.0	46	6.8	13.9	6.4	62					
31...	1439	30.0	49	6.9	12.9	6.7	63					
31...	1440	35.0	51	6.9	12.3	6.6	62					
31...	1441	40.0	55	6.9	11.9	6.8	63					
31...	1442	45.0	58	6.9	11.6	6.9	63					
31...	1443	50.0	60	6.9	11.0	6.5	59					
31...	1444	55.0	60	6.9	10.6	6.1	55					
31...	1445	60.0	64	6.9	10.2	5.8	52					
31...	1446	70.0	68	6.9	9.9	3.8	34					
31...	1447	72.0	68	6.9	9.9	3.3	29					
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)	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)
MAY												
26...	1600	1.0	49	8.5	19.2	9.7	34	8	9.3	2.5	2.5	
26...	1605	11.0	40	7.6	13.8	9.1	26	2	6.5	2.4	2.3	
26...	1610	30.0	36	7.3	10.9	9.2	22	3	5.6	2.0	2.3	
AUG												
31...	1450	1.0	58	8.2	24.0	8.3	24	4	6.6	1.9	2.3	
31...	1455	20.0	46	6.8	16.6	5.7	18	0	4.7	1.4	3.4	
31...	1500	50.0	60	6.9	11.0	6.5	24	1	6.1	2.2	3.0	

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

SACRAMENTO RIVER BASIN

11446200 FOLSOM LAKE NEAR FOLSOM, CA--Continued

FOLSOM LAKE AT DAM, NEAR FOLSOM, 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 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)
MAY										
26...	14	.2	.7	25	3.6	2.8	.1	8.6	45	.06
26...	16	.2	.7	25	3.1	2.4	.1	8.6	41	.06
26...	18	.2	.6	19	2.9	2.0	.1	11	38	.05
AUG										
31...	17	.2	.6	21	3.6	1.7	.0	9.4	39	.05
31...	29	.4	.5	17	2.2	1.4	.0	9.7	34	.05
31...	21	.3	.5	23	3.8	1.8	.0	12	44	.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)
MAY										
26...	.02	.01	.00	.10	.10	.12	.01	.00	9	20
26...	.01	.02	.00	.10	.10	.11	.00	.00	6	10
26...	.06	.08	.00	.08	.08	.14	.00	.00	9	280
AUG										
31...	.01	.01	.01	.20	.21	.22	.02	.01	2	10
31...	.01	.01	.01	.14	.15	.16	.02	.01	2	20
31...	.13	.16	.00	.14	.14	.27	.02	.00	2	10

11446400 AMERICAN RIVER AT NIMBUS DAM, AT FAIR OAKS, CA

LOCATION.--Lat 38°38'06", long 121°13'10", in Rio de Los Americanos Grant, Sacramento County, on left bank 200 ft (61 m) downstream from Nimbus Dam and 1.0 mi (1.6 km) south of Fair Oaks.

DRAINAGE AREA.--1,887 mi² (4,887 km²).

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water year 1978.

REMARKS.--Site is located just upstream from Nimbus Fish Hatchery. Records of discharge given for American River at Fair Oaks (station 11446500).

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)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT											
11...	0940	282	87	7.3	19.5	3.0	10.4	15	43	11	12
24...	1040	293	78	--	18.5	2.0	11.0	9	33	0	10
NOV											
08...	1000	284	80	7.7	16.5	2.0	11.8	8	33	0	9.1
22...	1130	264	85	7.7	14.0	2.0	12.5	6	33	3	9.4
DEC											
06...	1045	247	91	7.5	13.0	2.0	11.2	40	39	2	11
20...	1100	250	89	6.9	11.0	3.0	12.2	0	36	2	10
JAN											
03...	1130	238	100	7.1	11.0	5.0	12.2	16	43	6	12
18...	1030	7100	103	8.2	11.0	30	11.8	23	41	12	11
31...	1000	2530	70	6.4	9.5	9.0	11.6	0	31	4	7.8
FEB											
13...	1000	7840	76	6.7	8.5	10	12.0	4	32	5	8.1
28...	1030	2520	75	7.0	9.0	4.0	11.6	1	32	4	8.2
MAR											
13...	0930	7600	75	7.0	9.0	9.0	11.8	7	32	4	7.7
27...	1100	4960	72	6.8	10.0	5.0	11.9	14	35	8	8.9
APR											
10...	1200	5020	78	7.3	12.0	2.0	12.0	6	29	3	6.9
24...	1050	6000	67	7.0	11.0	2.0	11.4	8	29	3	6.4
MAY											
08...	1130	8100	62	7.1	13.0	2.0	11.1	19	28	2	6.5
22...	1030	5050	60	7.6	13.0	1.0	10.7	8	24	1	6.0
JUN											
05...	1030	4100	51	7.4	14.0	1.0	10.7	6	21	0	5.5
19...	1115	3040	51	7.0	15.0	--	10.0	5	20	1	4.7
JUL											
10...	1200	2870	48	6.9	16.0	1.0	9.4	15	--	--	--
24...	1045	1470	50	6.9	17.5	1.0	9.0	38	21	0	5.5
AUG											
07...	1230	2960	46	6.9	16.0	1.0	9.0	1	17	0	4.5
21...	1130	1360	49	6.9	17.5	1.0	8.7	18	19	1	5.0
SEP											
05...	1130	3360	51	6.7	16.5	1.0	8.2	7	19	0	5.2
18...	1300	2920	51	6.9	16.5	2.0	8.8	4	20	0	5.0

DATE	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)	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)
OCT											
11...	3.2	3.7	15	.2	1.3	32	3.1	4.1	70	.10	5
24...	2.0	3.2	17	.2	.8	34	2.7	3.3	44	.06	12
NOV											
08...	2.5	3.7	19	.3	1.1	34	4.9	3.5	43	.06	5
22...	2.4	3.6	18	.3	1.0	30	3.7	3.7	57	.08	3
DEC											
06...	2.9	3.5	16	.2	1.2	37	3.6	3.5	58	.08	1
20...	2.7	3.5	17	.3	1.1	34	2.7	3.6	52	.07	6
JAN											
03...	3.1	3.6	15	.2	1.2	37	8.5	4.0	67	.09	11
18...	3.3	3.6	15	.2	1.5	--	9.2	4.0	69	.09	38
31...	2.7	2.5	15	.2	.8	27	7.3	2.5	46	.06	18
FEB											
13...	2.9	2.7	15	.2	.8	27	5.6	2.8	51	.07	28
28...	2.7	2.3	13	.2	.7	28	5.0	2.5	46	.06	9
MAR											
13...	3.0	2.5	14	.2	.7	28	4.2	2.5	--	--	25
27...	3.0	2.6	14	.2	.8	27	6.1	2.8	48	.07	7
APR											
10...	2.8	2.5	16	.2	.7	26	4.7	2.6	47	.06	2
24...	3.1	2.4	15	.2	.7	26	--	2.2	46	.06	29
MAY											
08...	2.8	2.2	14	.2	.6	26	3.3	2.2	43	.06	12
22...	2.3	2.2	16	.2	.6	24	3.9	3.7	48	.07	--
JUN											
05...	1.8	2.4	19	.2	.5	21	1.8	1.6	--	--	3
19...	2.1	2.1	18	.2	.6	20	1.6	1.7	39	.05	0
JUL											
10...	--	--	--	--	--	18	2.7	2.2	33	.04	3
24...	1.7	2.2	18	.2	.6	--	2.7	1.6	32	.04	12
AUG											
07...	1.5	1.9	19	.2	.6	19	1.6	1.5	30	.04	4
21...	1.7	2.1	18	.2	.6	19	2.3	1.9	36	.05	0
SEP											
05...	1.5	1.9	17	.2	.6	21	2.1	1.5	31	.04	3
18...	1.9	1.8	16	.2	.6	21	1.9	1.7	40	.05	6

SACRAMENTO RIVER BASIN

11446400 AMERICAN RIVER AT NIMBUS DAM, AT FAIR OAKS, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	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)	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,NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT											
11...	.02	.01	.03	.03	.02	.05	--	--	.08	--	--
24...	.03	.00	.03	.03	.20	.23	--	--	.26	--	1.5
NOV											
08...	.03	.02	.05	.04	.12	.16	--	--	.21	--	1.5
22...	.09	.01	.10	.01	.03	.04	--	--	.14	--	1.4
DEC											
06...	.22	.01	.23	.02	.09	.11	--	--	.34	--	1.6
20...	.13	.01	.14	.03	.12	.15	--	--	.29	--	1.2
JAN											
03...	.23	.00	.23	.01	.10	.11	--	--	.34	--	1.4
18...	.71	.01	.72	.06	.36	.42	--	--	1.1	--	4.7
31...	.20	.01	.21	.01	.07	.08	--	--	.29	.03	1.4
FEB											
13...	.22	.01	.23	.02	.06	.08	--	--	.31	.04	3.7
28...	.23	.01	.24	.01	.14	.15	--	--	.39	.01	2.1
MAR											
13...	.18	.01	.19	.01	.18	.19	--	--	.38	.08	2.1
27...	.20	.01	.21	.01	.30	.31	--	--	.52	.03	1.7
APR											
10...	.22	.00	.22	.00	.29	.29	.12	.17	.51	.02	2.6
24...	.11	.01	.12	.03	.01	.04	--	--	.16	.01	2.1
MAY											
08...	.07	.01	.08	.00	.35	.35	--	--	.43	.02	1.4
22...	.05	.00	.05	.01	.20	.21	--	--	.26	.01	1.2
JUN											
05...	.18	.01	.19	.00	.35	.35	--	--	.54	--	1.3
19...	--	--	--	--	--	--	--	--	--	--	1.7
JUL											
10...	.12	.00	.12	.00	1.3	1.3	--	--	1.4	.01	1.5
24...	.06	.00	.06	.00	.20	.20	--	--	.26	.00	1.4
AUG											
07...	.79	.01	.80	.01	1.2	1.2	--	--	2.0	.00	1.5
21...	.07	.01	.08	.00	.42	.42	--	--	.50	.01	1.5
SEP											
05...	.04	.01	.05	.01	.17	.18	--	--	.23	.01	1.5
18...	.03	.00	.03	.01	.30	.31	--	--	.34	.01	1.8

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	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)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
OCT								
24...	1040	0	5	<10	50	20	.0	20
NOV								
22...	1130	1	4	2	150	70	.0	20
DEC								
20...	1100	1	0	2	200	4	.0	20
JAN								
18...	1030	1	0	7	1800	70	.0	20
FEB								
13...	1000	1	10	2	280	40	.1	10
MAR								
13...	0930	1	10	7	760	40	.1	10
APR								
10...	1200	0	10	3	180	20	.7	--
MAY								
08...	1130	0	0	5	100	10	1.5	10
JUN								
05...	1030	1	15	6	60	10	.1	10
JUL								
10...	1200	1	0	7	190	20	.1	20
AUG								
07...	1230	1	10	6	40	20	.1	20
SEP								
05...	1130	0	10	6	70	20	.0	10

11446500 AMERICAN RIVER AT FAIR OAKS, CA

LOCATION.--Lat 38°38'08", long 121°13'36", in SE¼NE¼ sec.17, T.9 N., R.7 E., Sacramento County, on right bank 2,100 ft (640 m) downstream from Nimbus Dam, 2.4 mi (3.9 km) east of Fair Oaks, 8.1 mi (13.0 km) downstream from South Fork, and at mile 22.2 (35.7 km).

DRAINAGE AREA.--1,888 mi² (4,890 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1904 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1181: 1928(M). WSP 1515: 1907(M), 1910, 1931(M), 1943(M). WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 71.53 ft (21.802 m) National Geodetic Vertical Datum of 1929. See WSP 2131 for history of changes prior to July 15, 1970.

REMARKS.--Records excellent. Flow regulated by Folsom Lake beginning Feb. 25, 1955 (station 11446200). Some minor regulation of high flows by temporary pondage during period of construction January 1953 to February 1955. Diurnal fluctuations from Folsom powerplant re-regulated by Nimbus Reservoir, capacity, 2,800 acre-ft (3.45 km³) between normal operating elevations, 118.5 ft (36.12 m) and 125.0 ft (38.10 m) and powerplant. Many diversions above station for irrigation, municipal, and domestic water supply. Diversions of San Juan Suburban Water District, Cordova Water Service, city of Folsom, city of Roseville, and State of California are made at Folsom Dam. Diversion to Folsom South Canal from Nimbus Reservoir started in June 1973. Some inflow from Bear and Yuba River basins.

AVERAGE DISCHARGE (adjusted for change in contents, diversions, and evaporation from Folsom Lake since 1955).--74 years, 3,746 ft³/s (106.1 m³/s), 2,714,000 acre-ft/yr (3.35 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 180,000 ft³/s (5,100 m³/s) Nov. 21, 1950, gage height, 31.85 ft (9.708 m) site and datum then in use; minimum, 3.6 ft³/s (0.10 m³/s) Aug. 16, 1924. Maximum discharge since construction of Folsom Dam in 1953, 115,000 ft³/s (3,260 m³/s) Dec. 23-25, 1964, gage height, 27.65 ft (8.428 m), present datum; minimum, 86 ft³/s (2.44 m³/s) Apr. 7, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,660 ft³/s (245 m³/s) May 5, gage height, 9.92 ft (3.024 m); minimum daily, 232 ft³/s (6.57 m³/s) Jan. 11, 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	275	289	252	238	1560	2510	4970	7000	4970	3000	1470	3380
2	274	289	250	238	1500	2520	4960	7030	4170	3020	1500	3370
3	269	285	250	237	1340	5000	4940	8090	4210	3000	1460	3370
4	285	306	250	237	1440	7500	4970	8410	4280	2990	1530	3390
5	272	283	250	265	1480	8900	4980	8510	4100	3000	2770	3380
6	272	284	247	485	1570	15200	4970	8230	4040	3000	2920	3390
7	275	282	247	242	6150	15100	4980	8100	4000	3010	2980	3380
8	277	284	249	239	7860	15100	4990	8140	3940	3010	2980	3340
9	279	282	243	238	7850	15100	5010	8120	3020	2990	2930	2890
10	282	282	258	242	7800	15100	5020	8090	2990	2930	2900	2890
11	283	283	277	232	7590	15100	5070	8080	2980	2880	2890	2930
12	285	282	271	232	7710	7600	5040	8010	2970	2900	2890	2890
13	287	281	268	235	7940	7600	4980	7170	2980	2910	2900	2540
14	295	277	267	576	7500	7550	4980	7060	3010	2890	2930	796
15	296	267	241	928	8040	7550	5050	7080	3040	2890	2890	2760
16	294	265	274	979	8030	7520	4980	6330	3050	2890	1560	2880
17	294	263	276	1800	7820	7500	3680	6270	3040	2890	1480	2900
18	296	264	276	7100	5150	7500	3500	6110	3070	2890	1440	2900
19	293	261	264	7550	5030	7500	3460	6120	3090	2890	1430	2880
20	292	261	253	8000	5010	7450	3380	6270	3070	2900	1410	2890
21	293	262	241	7850	5030	6130	3540	6100	3120	2900	1380	2890
22	293	262	241	7820	3580	4990	5020	5330	2970	2890	1440	2900
23	292	262	244	7760	3520	4980	5960	5130	3020	2680	1450	2900
24	292	259	242	5330	3530	4980	6000	5170	3060	1520	1460	2890
25	278	255	238	5160	2540	4960	6060	5060	3060	1470	1580	2920
26	268	253	238	3590	2500	4980	6080	5230	2990	1460	3250	2930
27	270	254	239	3540	2510	4960	6050	5200	2970	1490	3320	2920
28	270	271	240	3570	2540	4970	6000	5240	2980	1460	3330	2920
29	271	260	241	3570	---	4990	6900	5160	2980	1440	3440	2930
30	299	254	241	3510	---	5000	7020	5040	2980	1460	3410	2960
31	302	---	238	2560	---	4990	---	5030	---	1430	3380	---
TOTAL	8803	8162	7806	84853	134120	240830	152540	205940	100150	79080	72700	88306
MEAN	284	272	252	2737	4790	7769	5085	6643	3338	2551	2345	2944
MAX	302	306	277	8000	8040	15200	7020	8510	4970	3020	3440	3390
MIN	268	253	238	232	1340	2510	3380	5030	2970	1430	1380	796
AC-FT	17460	16190	15480	168300	266000	477700	302600	408500	198600	156900	144200	175200
MEAN ‡	379	354	2135	8366	5647	8395	7934	7540	4275	1939	1656	1299
AC-FT ‡	23310	21080	131300	514400	313600	516200	472100	463600	254400	119200	101800	77310
†	5432	3736	3861	2006	2685	2476	4247	6791	8038	10894	11615	7558
CAL YR 1977 TOTAL	209244			MEAN 573	MAX 1300	MIN 215	AC-FT 415000	MEAN ‡ 618	AC-FT ‡ 447100			
WTR YR 1978 TOTAL	1183290			MEAN 3242	MAX 15200	MIN 232	AC-FT 2347000	MEAN ‡ 4155	AC-FT ‡ 3008000			

‡ Adjusted for change in contents, diversions, and evaporation from Folsom Lake.

† Diversions, in acre-feet, from Folsom-Nimbus Dam complex furnished by Bureau of Reclamation.

11446500 AMERICAN RIVER AT FAIR OAKS, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1906-07, 1951-58, 1960 to current year.

CHEMICAL ANALYSES: Water years 1906-07, 1951-62.

WATER TEMPERATURES: Water years 1951-58, 1960 to current year.

PERIOD OF DAILY RECORD.--

CHEMICAL ANALYSES: January to December 1906, March 1951 to September 1958, November 1959 to September 1962.

SPECIFIC CONDUCTANCE: March 1951 to September 1958, November 1959 to September 1962.

WATER TEMPERATURES: March 1951 to September 1958, November 1959 to current year.

INSTRUMENTATION.--Temperature recorder March 1951 to September 1958, and since November 1959.

REMARKS.--Water temperatures affected by construction of Folsom Dam beginning in February 1955. Extremes are given for two separate periods -- 1951-55, and 1956 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD (see REMARKS above):

WATER TEMPERATURES (1951-55): Maximum recorded, 27.0°C July 27, Aug. 3, 1954; minimum recorded, 3.5°C Oct. 30, 31, 1954.

(1956 to current year): Maximum recorded, 26.0°C Sept. 28, 1961; minimum recorded, 0.0°C on several days in 1957 and 1958.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 21.5°C on several days during October; minimum recorded, 9.0°C Feb. 13, 16-18.

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	21.5	21.0	19.5	19.0	15.0	14.0	12.0	11.5	9.5	9.5	10.0	10.0
2	21.5	21.0	19.5	18.5	15.0	14.0	12.0	11.5	9.5	9.5	10.0	10.0
3	21.5	20.5	19.5	18.5	14.5	14.0	11.5	11.5	10.0	9.5	10.0	10.0
4	21.5	21.0	19.0	18.5	15.0	14.0	12.5	11.5	10.0	9.5	10.0	10.0
5	21.5	21.0	19.0	18.5	14.5	14.0	12.5	11.5	10.0	9.5	10.0	10.0
6	21.5	20.5	18.5	18.0	14.5	14.0	12.5	11.5	10.0	9.5	10.5	10.0
7	21.5	20.5	18.5	17.5	14.0	13.5	12.5	11.5	10.0	9.5	10.5	10.5
8	21.0	20.5	18.0	17.5	14.0	13.5	11.5	11.5	9.5	9.5	10.5	10.5
9	21.5	20.5	18.0	17.5	14.5	13.5	12.0	11.5	9.5	9.5	10.5	10.5
10	21.0	20.5	18.0	17.5	13.5	13.0	12.0	11.5	9.5	9.5	10.5	10.5
11	21.0	20.5	17.5	17.0	13.0	13.0	12.0	11.5	9.5	9.5	10.5	10.5
12	21.0	20.5	17.5	17.0	13.0	13.0	11.5	11.5	9.5	9.5	10.5	10.0
13	21.5	20.5	17.5	17.0	13.5	13.0	12.0	11.5	9.5	9.0	10.5	10.0
14	21.0	20.5	17.5	16.5	13.0	13.0	12.0	11.5	9.5	9.5	10.5	10.5
15	21.0	20.5	17.5	16.5	15.0	13.0	12.0	11.5	9.5	9.5	10.5	10.5
16	21.0	20.5	17.5	16.5	13.0	12.5	11.5	11.5	9.5	9.0	10.5	10.5
17	21.0	20.5	17.0	16.5	13.0	12.5	11.5	11.0	9.5	9.0	10.5	10.5
18	21.0	20.5	17.0	16.0	12.5	12.5	11.5	11.0	9.5	9.0	10.5	10.5
19	21.0	20.5	16.5	15.5	13.0	12.0	10.5	10.5	9.5	9.5	10.5	10.5
20	20.5	20.0	16.5	15.5	12.0	11.5	10.5	10.0	9.5	9.5	10.5	10.5
21	20.5	20.0	16.0	15.5	13.0	12.0	10.0	10.0	9.5	9.5	10.5	10.5
22	20.5	20.0	16.0	15.0	12.5	12.0	10.0	10.0	9.5	9.5	10.5	10.5
23	20.0	20.0	15.5	14.5	12.5	12.0	10.0	9.5	9.5	9.5	10.5	10.5
24	20.5	20.0	15.5	14.5	12.5	12.0	10.0	9.5	9.5	9.5	11.0	10.5
25	20.5	20.0	15.5	14.5	12.0	12.0	10.0	9.5	9.5	9.5	11.0	10.5
26	20.5	20.0	15.5	14.5	12.0	12.0	10.0	9.5	9.5	9.5	11.0	11.0
27	20.0	19.5	15.0	14.5	12.0	12.0	9.5	9.5	9.5	9.5	11.0	11.0
28	20.0	19.5	15.5	14.5	12.0	12.0	9.5	9.5	10.0	9.5	11.0	11.0
29	20.0	19.5	15.0	14.5	12.0	12.0	9.5	9.5	---	---	11.0	11.0
30	20.0	19.0	15.0	14.5	12.0	11.5	9.5	9.5	---	---	11.5	11.0
31	20.0	19.0	---	---	12.5	11.5	9.5	9.5	---	---	12.0	11.5
MONTH	21.5	19.0	19.5	14.5	15.0	11.5	12.5	9.5	10.0	9.0	12.0	10.0

11446500 AMERICAN RIVER AT FAIR OAKS, 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	12.0	11.5	12.5	12.0	13.5	13.5	15.0	15.0	16.5	16.5	17.5	17.5
2	11.5	11.5	12.5	12.5	13.5	13.5	15.0	15.0	17.0	16.5	18.0	17.5
3	12.0	11.5	12.5	12.5	13.5	13.5	15.0	15.0	17.0	16.5	18.0	17.5
4	12.0	12.0	12.5	12.5	14.0	13.5	15.0	15.0	17.0	17.0	18.0	18.0
5	12.0	11.5	12.5	12.5	14.0	14.0	15.5	15.0	17.0	16.5	18.0	18.0
6	12.0	12.0	13.0	12.5	14.0	14.0	15.0	15.0	17.0	16.5	18.0	17.5
7	12.0	11.5	13.0	13.0	14.0	14.0	15.5	15.0	17.0	16.5	18.0	17.5
8	12.0	12.0	13.0	13.0	14.0	14.0	15.5	15.5	17.0	16.5	18.0	17.5
9	12.5	12.0	13.0	13.0	14.0	14.0	15.5	15.5	17.0	17.0	18.0	18.0
10	12.5	12.5	13.0	13.0	14.0	14.0	15.5	15.5	17.0	17.0	18.0	17.5
11	12.5	12.5	13.0	12.5	14.0	14.0	16.0	15.5	17.0	17.0	18.0	17.5
12	12.5	12.5	13.0	13.0	14.5	14.0	16.0	16.0	17.0	17.0	18.0	18.0
13	12.5	12.5	13.5	13.0	14.5	14.0	16.0	15.5	17.0	17.0	18.0	18.0
14	12.5	12.0	13.5	13.0	14.5	14.0	16.0	16.0	17.0	17.0	18.0	17.5
15	12.0	12.0	13.0	13.0	14.5	14.5	16.0	16.0	17.0	17.0	18.0	17.5
16	12.0	12.0	13.0	13.0	14.5	14.5	16.0	16.0	17.0	17.0	18.0	17.5
17	12.0	12.0	13.5	13.0	14.5	14.5	16.0	16.0	17.5	17.0	18.0	17.5
18	12.5	12.0	13.5	13.5	14.5	14.5	16.0	16.0	17.5	17.0	17.5	17.5
19	12.5	12.5	13.5	13.5	14.5	14.5	16.0	16.0	17.5	17.0	17.5	17.5
20	12.5	12.5	13.5	13.5	14.5	14.5	16.5	16.0	17.5	17.0	17.5	17.0
21	12.5	12.5	13.5	13.5	14.5	14.5	16.5	16.5	17.5	17.5	17.5	17.0
22	12.5	12.0	13.5	13.0	14.5	14.5	16.5	16.5	17.5	17.5	17.5	17.5
23	12.5	12.5	13.5	13.5	14.5	14.5	16.5	16.5	17.5	17.5	17.5	17.5
24	12.5	12.5	13.5	13.0	14.5	14.5	17.0	16.5	17.5	17.5	17.5	17.0
25	12.5	12.0	13.5	13.5	15.0	14.5	17.0	16.5	17.5	17.5	17.5	17.0
26	12.0	12.0	13.5	13.5	15.0	15.0	17.0	17.0	17.5	17.5	17.5	17.0
27	12.5	12.0	13.5	13.5	15.0	14.5	17.0	17.0	17.5	17.5	17.0	17.0
28	12.5	12.0	13.5	13.5	15.0	14.5	17.0	17.0	17.5	17.5	17.0	17.0
29	12.5	12.0	13.5	13.5	15.0	14.5	17.0	16.5	17.5	17.5	17.0	17.0
30	12.5	12.0	13.5	13.5	15.0	14.5	17.0	16.5	17.5	17.5	17.0	17.0
31	---	---	13.5	13.5	---	---	17.0	16.5	17.5	17.5	---	---
MONTH	12.5	11.5	13.5	12.0	15.0	13.5	17.0	15.0	17.5	16.5	18.0	17.0

SACRAMENTO RIVER BASIN

11447000 AMERICAN RIVER AT SACRAMENTO, CA

LOCATION.--Lat 38°33'35", long 121°24'57", in Rio de Americanos Grant, Sacramento County, at filtration plant intake 2,000 ft (610 m) downstream from Howe Avenue bridge, and 4.3 mi (6.9 km) southeast of State Capitol. DRAINAGE AREA.--1,936 mi² (5,014 km²).

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water year 1978.

REMARKS.--Streamflow data obtained from gaging station American River at Fair Oaks (station 11446500).

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)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT											
11...	1215	283	138	7.2	20.5	3.0	7.6	20	50	16	14
24...	1250	292	144	7.9	20.5	3.0	8.0	8	45	6	13
NOV											
08...	1200	284	133	7.4	15.5	2.0	9.2	14	36	0	9.8
22...	1000	262	122	6.9	11.5	30	8.7	28	34	--	9.5
DEC											
06...	0900	247	138	7.3	13.0	2.0	8.6	24	42	0	11
20...	0930	253	135	6.5	9.0	4.0	9.4	10	45	11	13
JAN											
03...	1000	237	150	6.8	10.5	6.0	9.1	19	46	5	13
18...	1315	7100	103	--	13.0	25	10.2	29	46	15	12
31...	1200	2560	78	6.6	8.5	10	10.4	1	39	11	11
FEB											
13...	1130	7940	76	7.0	10.0	10	11.0	25	34	7	9.3
28...	0900	2540	83	6.6	9.5	4.0	11.0	4	32	2	8.3
MAR											
13...	0930	7600	74	6.9	11.0	8.0	11.5	12	32	4	7.9
27...	1000	4960	75	6.7	12.5	4.0	11.2	12	36	7	9.3
APR											
10...	1000	5020	76	7.3	15.0	3.0	11.0	8	28	2	6.6
24...	0915	6000	64	6.9	13.5	2.0	10.6	10	29	3	7.1
MAY											
08...	1000	8140	64	7.2	14.5	2.0	10.6	24	27	1	6.4
22...	0900	5330	66	7.7	14.0	2.0	9.6	9	25	0	6.1
JUN											
05...	0915	4100	55	7.5	15.5	1.0	9.6	3	23	0	6.2
19...	0930	3090	56	7.0	17.5	--	9.8	20	20	0	4.6
JUL											
10...	1030	2930	56	7.1	16.5	1.0	9.3	15	22	3	5.6
24...	0915	1520	55	7.1	18.0	1.0	8.4	38	20	0	5.0
AUG											
07...	1030	2980	48	7.1	20.0	1.0	8.9	19	18	2	4.6
21...	1015	1380	59	7.0	18.5	2.0	8.2	16	20	0	5.0
SEP											
05...	1030	3380	49	6.9	18.0	2.0	8.3	7	18	0	4.9
18...	1130	2900	52	7.1	17.0	2.0	9.0	6	19	0	5.0

DATE	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)	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)
OCT											
11...	3.6	9.7	29	.6	2.2	--	12	10	98	.13	1
24...	3.1	9.3	30	.6	2.0	39	7.4	12	57	.08	14
NOV											
08...	2.8	9.7	35	.7	2.1	40	7.2	14	76	.10	5
22...	2.6	7.9	32	.6	2.2	--	9.4	9.1	80	--	32
DEC											
06...	3.6	9.3	31	.6	2.1	43	9.1	10	89	.12	1
20...	3.0	8.2	27	.5	2.1	--	7.9	9.6	74	.10	6
JAN											
03...	3.3	8.6	28	.6	2.2	41	11	11	86	.12	22
18...	3.9	4.4	17	.3	1.5	31	11	11	72	.10	43
31...	2.8	3.0	14	.2	.9	28	8.1	3.0	53	.07	20
FEB											
13...	2.6	2.8	15	.2	.9	27	5.9	2.5	--	--	27
28...	2.7	3.0	17	.2	.8	30	--	3.4	46	.06	8
MAR											
13...	3.0	2.6	15	.2	.7	28	4.0	2.7	43	.06	12
27...	3.0	2.8	14	.2	.8	29	5.1	2.8	46	.06	10
APR											
10...	2.8	2.7	17	.2	.7	26	1.8	2.8	47	.06	0
24...	2.8	2.5	15	.2	.7	26	9.6	2.8	45	.06	11
MAY											
08...	2.7	2.2	15	.2	.7	26	3.2	2.4	38	.05	10
22...	2.3	2.4	17	.2	.6	25	4.4	2.2	--	--	--
JUN											
05...	1.8	2.7	20	.2	.6	23	1.8	2.1	35	.05	15
19...	2.1	2.7	22	.3	.7	21	1.9	2.5	41	.06	1
JUL											
10...	2.0	2.8	21	.3	.8	20	3.9	2.5	37	.05	2
24...	1.8	3.0	24	.3	.8	--	3.9	2.5	37	.05	30
AUG											
07...	1.6	2.4	22	.2	.7	16	1.7	2.4	36	.05	4
21...	1.8	3.3	25	.3	.9	21	4.0	3.3	36	.05	0
SEP											
05...	1.5	1.5	15	.2	.6	20	2.6	1.8	34	.05	4
18...	1.6	2.1	19	.2	.7	21	2.0	2.2	38	.05	5

11447000 AMERICAN RIVER AT SACRAMENTO, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	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)	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,NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT											
11...	.29	.14	.43	1.4	.10	1.5	--	--	1.9	--	4.4
24...	.21	.10	.31	1.5	.00	1.5	--	--	1.8	--	--
NOV											
08...	.19	.08	.27	1.3	.40	1.7	--	--	2.0	--	2.8
22...	.80	.04	.84	1.4	.40	1.8	--	--	2.6	--	5.0
DEC											
06...	.45	.05	.50	1.7	.00	1.7	--	--	2.2	--	3.2
20...	.45	.04	.49	1.8	.00	1.7	--	--	2.2	--	1.9
JAN											
03...	.56	.03	.59	1.7	.20	1.9	--	--	2.5	--	2.8
18...	.87	.03	.90	.16	.46	.62	--	--	1.5	--	5.4
31...	.22	.01	.23	.09	.56	.65	--	--	.88	.10	2.0
FEB											
13...	.26	.01	.27	.02	.08	.10	--	--	.37	.06	2.3
28...	.22	.01	.23	.19	1.3	1.5	--	--	1.7	.11	2.0
MAR											
13...	.19	.01	.20	.04	.17	.21	--	--	.41	.10	2.5
27...	.20	.01	.21	.06	.33	.39	--	--	.60	.05	1.8
APR											
10...	.19	.00	.19	.01	.45	.46	.19	.27	.65	.04	2.2
24...	.13	.01	.14	.06	.22	.28	--	--	.42	.04	2.4
MAY											
08...	.08	.01	.09	.03	.14	.17	--	--	.26	.04	2.2
22...	.16	.01	.17	.01	.39	.40	--	--	.57	.05	1.4
JUN											
05...	.07	.01	.08	.05	.32	.37	--	--	.45	.00	1.6
19...	--	--	--	--	--	--	--	--	--	--	1.9
JUL											
10...	.17	.01	.18	.00	.63	.63	--	--	.81	.08	1.5
24...	.08	.01	.09	.05	.34	.39	--	--	.48	.10	1.6
AUG											
07...	.12	.01	.13	.03	.24	.27	--	--	.40	.04	2.1
21...	.07	.03	.10	.37	.24	.61	--	--	.71	.14	2.2
SEP											
05...	.04	.01	.05	.06	.46	.52	--	--	.57	.06	2.3
18...	.06	.01	.07	.09	.32	.41	--	--	.48	.05	2.2

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	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)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
OCT								
24...	1250	1	5	<10	460	20	.0	30
NOV								
22...	1000	3	0	8	1700	10	.0	40
DEC								
20...	0930	1	0	1	260	20	.1	40
JAN								
18...	1315	1	20	7	1100	60	.3	30
FEB								
13...	1130	1	0	2	330	40	.1	20
MAR								
13...	0930	1	0	5	370	--	.1	10
APR								
10...	1000	1	10	4	150	20	5.2	--
MAY								
08...	1000	0	0	8	100	10	.4	60
JUN								
05...	0915	1	15	6	120	20	.1	40
JUL								
10...	1030	0	0	7	80	10	.1	30
AUG								
07...	1030	2	0	6	420	20	.0	20
SEP								
05...	1030	0	0	6	110	10	.0	20

11447360 ARCADE CREEK NEAR DEL PASO HEIGHTS, CA

LOCATION.--Lat 38°38'28", long 121°22'38", in Del Paso Grant, Sacramento County, on right bank 1,200 ft (366 m) upstream from bridge on Interstate Highway 80, and 1.6 mi (2.6 km) east of city limits of Del Paso Heights.

DRAINAGE AREA.--31.5 mi² (81.6 km²).

PERIOD OF RECORD.--July 1963 to June 1978 (discontinued).

GAGE.--Water-stage recorder and concrete low-water control. Datum of gage is 47.98 ft (14.624 m) National Geodetic Datum of 1929 (levels by county of Sacramento).

REMARKS.--Records fair. Low summer flow sustained by residential and industrial waste water.

AVERAGE DISCHARGE.--14 years (water years 1964-77), 16.1 ft³/s (0.456 m³/s), 11,660 acre-ft/yr (14.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,170 ft³/s (61.5 m³/s) Feb. 27, 1973, gage height, 14.29 ft (4.356 m); maximum gage height, 14.42 ft (4.395 m) Jan. 21, 1967; no flow for many days in 1963-66, 1971-73, 1977.

EXTREMES FOR PERIOD OCTOBER 1977 TO JUNE 1978.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)		Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)	
Dec. 23	0500	553	15.7	10.29	3.136	Feb. 7	1730	946	26.8	11.95	3.642
Jan. 5	2045	1680	47.6	13.80	4.206	Feb. 13	0015	557	15.8	10.31	3.142
Jan. 9	1245	621	17.6	10.63	3.240	Mar. 2	2030	790	22.4	11.37	3.466
Jan. 14	0215	*2390	67.7	15.01	4.575	Mar. 4	1845	1060	30.0	12.32	3.755
Jan. 16	2115	1100	31.2	12.44	3.792						

Minimum daily, no flow many days.

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	0	0	0	2.5	1.6	3.3	26	3.5	2.5			
2	0	0	0	5.4	2.0	302	5.7	.67	1.9			
3	0	0	0	37	2.1	187	2.0	.82	2.1			
4	0	0	0	154	1.6	457	51	.34	2.5			
5	0	1.9	0	821	132	216	7.1	.27	2.8			
6	0	1.9	0	323	268	28	217	.26	2.7			
7	0	.59	0	15	541	8.7	108	.79	3.1			
8	0	.18	0	16	119	31	7.4	1.1	3.0			
9	0	.07	.16	342	125	158	2.9	1.9	2.9			
10	0	.01	.02	45	16	16	1.9	1.6	2.8			
11	0	0	4.6	12	7.5	18	1.4	1.7	2.7			
12	0	0	10	31	148	27	1.1	2.0	2.7			
13	0	0	.93	285	251	5.9	1.0	2.0	2.7			
14	0	0	22	1270	56	3.6	.62	2.2	2.9			
15	0	0	195	531	12	3.0	89	1.7	2.6			
16	0	0	8.0	632	7.0	2.4	62	1.3	3.1			
17	0	0	265	277	5.0	2.1	40	1.7	2.6			
18	0	0	52	38	3.6	2.1	4.2	2.2	2.4			
19	0	0	4.7	195	3.1	1.8	1.9	2.5	2.4			
20	0	0	2.6	22	2.7	1.7	1.0	4.7	2.5			
21	0	72	2.1	8.5	2.5	37	.62	4.7	2.7			
22	0	139	76	5.8	2.3	27	.71	2.5	2.9			
23	0	5.7	281	4.4	2.2	4.2	.48	2.2	2.5			
24	0	1.2	10	3.3	1.9	2.8	1.8	1.9	2.4			
25	0	.33	3.3	2.8	1.9	2.1	153	2.1	2.7			
26	.02	.14	14	2.6	1.9	1.4	31	2.2	2.5			
27	33	.06	71	2.4	1.5	1.3	3.3	2.7	2.6			
28	2.6	.04	75	2.1	1.4	1.4	1.4	2.6	2.3			
29	.33	0	68	1.9	---	.91	.70	2.4	2.3			
30	.20	0	16	1.8	---	.69	1.0	2.5	2.5			
31	.09	---	4.2	1.7	---	73	---	2.4	---			
TOTAL	36.24	223.12	1185.61	5091.2	1719.8	1626.40	825.23	61.45	78.3			
MEAN	1.17	7.44	38.2	164	61.4	52.5	27.5	1.98	2.61			
MAX	33	139	281	1270	541	457	217	4.7	3.1			
MIN	0	0	0	1.7	1.4	.69	.48	.26	1.9			
AC-FT	72	443	2350	10100	3410	3230	1640	122	155			
CAL YR 1977	TOTAL	2173.80	MEAN	5.96	MAX	281	MIN	0	AC-FT	4310		
WTR YR 1978	TOTAL	--	MEAN	--	MAX	--	MIN	--	AC-FT	--		

11447500 SACRAMENTO RIVER AT SACRAMENTO, CA

LOCATION.--Lat 38°35'12", long 121°30'16", Sacramento County, on left bank 1,000 ft (300 m) upstream from I Street Bridge, in city of Sacramento, and 0.5 mi (0.8 km) downstream from American River.

DRAINAGE AREA.--23,502 mi² (60,870 km²).

REVISED RECORDS.--WDR CA-76-4: Drainage area.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1904 to July 1905 (gage heights only), June to November 1921, October 1948 to current year. Gage heights collected in this vicinity November 1879 to May 1888, December 1890 to September 1963 are contained in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Oct. 15, 1912, nonrecording gage in vicinity of I Street Bridge. Oct. 15, 1912, to Nov. 16, 1956, water-stage recorder at various sites in vicinity of I Street Bridge. Prior to Nov. 16, 1956, datum of gages at low-water mark of Oct. 23, 1856, 0.12 ft (0.037 m) NGVD. Auxiliary water-stage recorder on right bank 10.8 mi (17.4 km) downstream near Freepoint.

REMARKS.--Records good above 8,000 ft³/s (227 m³/s) and fair below. Natural flow of stream affected by storage reservoirs, power development, diversions for irrigation, and return flow from irrigated areas. Flood flows bypass station through Yolo Bypass (stations 11426000, 11453000).

AVERAGE DISCHARGE.--30 years (water years 1949-78), 23,780 ft³/s (673 m³/s), 17,230,000 acre-ft/yr (21.2 km³/yr).

EXTREMES FOR PERIOD OF RECORD (since 1949).--Maximum discharge, 104,000 ft³/s (2,950 m³/s) Nov. 21, 1950, elevation, 30.14 ft (9.187 m) site and datum then in use; minimum daily, 3,970 ft³/s (112 m³/s) Oct. 15, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge known prior to Nov. 21, 1950, 103,000 ft³/s (2,920 m³/s) Jan. 17, 1909, elevation, 29.6 ft (9.02 m) present datum, from reports of California Department of Water Resources.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 79,300 ft³/s (2250 m³/s) Mar. 9; minimum daily, 3,970 ft³/s (112 m³/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	5280	5450	7030	14100	25600	25900	32600	36800	16400	13000	15400	18000
2	5200	5440	6660	12800	23700	26200	33000	36500	14700	13000	15900	17900
3	5060	5650	6440	11700	22400	30500	36500	37400	13900	12900	15800	17900
4	4950	5860	6240	11800	21900	46600	38900	36300	13500	13100	15300	18000
5	4860	6070	6010	16300	22600	60000	37900	35800	13200	13300	15600	18000
6	4770	6150	5860	34700	23900	72700	39600	35000	13400	13300	16100	18400
7	4680	6200	5650	41000	36300	78400	42000	34100	13600	13800	16300	18900
8	4520	6250	5620	36700	49800	79100	46000	32300	13700	13800	16500	19400
9	4380	6300	5450	31300	57000	79300	47600	30900	12400	13500	16700	19200
10	4350	6220	5550	32500	66900	78300	47600	29200	12200	13600	16800	19800
11	4420	6240	5840	38000	68900	74000	46100	27700	12300	13800	16800	20200
12	4250	6480	5950	43000	68500	73600	44100	24900	12400	14100	16600	20400
13	4110	6170	6210	51900	68600	73000	42500	23700	12100	14100	16400	20500
14	4020	6230	6660	57900	67600	72400	40600	23400	11900	14000	16200	18800
15	3970	6300	7640	64500	66900	71600	39200	23500	11800	14200	16400	18800
16	4000	6280	11700	68500	66000	71000	38700	22900	12100	14500	15900	19200
17	4000	6320	19700	73000	64300	70100	39300	22900	12300	15000	15100	18700
18	4100	6170	19100	75000	60300	68700	39600	23200	12700	15000	15200	18100
19	4200	6460	22100	76000	55500	66700	38000	21400	12800	14900	15200	17700
20	4300	6310	20200	73500	50200	63400	36200	20800	12600	14900	15200	17200
21	4300	6700	16200	70900	44200	57800	34500	20100	12100	14900	15000	16800
22	4300	7100	13400	68800	39000	51100	35000	19200	11800	14900	14600	16700
23	4230	7680	11800	66200	35800	45500	34900	19100	11700	15400	14400	16500
24	4120	8630	15600	62100	33800	41400	33100	19400	11600	15000	14600	16400
25	4150	9050	22900	56900	30800	39100	32600	19400	11600	15000	14600	16300
26	4310	8680	20900	49400	28300	37200	35100	17900	11700	15100	15400	16300
27	4520	8040	16900	42400	26900	35600	39300	18200	12000	15200	16200	16200
28	4730	7760	14200	37000	26000	34400	40900	17800	12300	15200	17000	16000
29	4900	7420	14700	33100	---	33700	38500	17000	12400	15000	17600	15800
30	5070	7010	16500	30800	---	32800	36600	17000	12600	14700	18100	15900
31	5270	---	15400	28400	---	32600	---	17200	---	15100	18100	---
TOTAL	139320	200620	364110	1410200	1251700	1722700	1166500	781000	379800	443300	495000	538000
MEAN	4494	6687	11750	45490	44700	55570	38880	25190	12680	14300	15970	17930
MAX	5280	9050	22900	76000	68900	79300	47600	37400	16400	15400	18100	20500
MIN	3970	5440	5450	11700	21900	25900	32600	17000	11600	12900	14400	15800
AC-FT	276300	397900	722200	2797000	2483000	3417000	2314000	1549000	753300	879300	981800	1067000
CAL YR 1977 TOTAL	2755160			7548		22900		3970		5465000		
WTR YR 1978 TOTAL	8892250			24360		79300		3970		17640000		

SACRAMENTO RIVER BASIN

11447500 SACRAMENTO RIVER AT SACRAMENTO, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1906-8, 1951 to current year.

CHEMICAL ANALYSES: Water years 1906-8, 1951-60. Published as "above Sacramento" in 1906-8.

WATER TEMPERATURES: Water years 1955 to current year.

SEDIMENT RECORDS: Water years 1957 to current year.

TURBIDITY: Water years 1972 to current year.

PERIOD OF DAILY RECORD. --

CHEMICAL ANALYSES: May 1955 to May 1960.

WATER TEMPERATURES: May 1955 to current year.

SEDIMENT RECORDS: October 1956 to current year.

REMARKS.--Unpublished records of daily specific conductance for period May 1955 to May 1960, and water temperatures for period May 1955 to September 1960 available in files of district office.

EXTREMES FOR PERIOD OF RECORD. --

WATER TEMPERATURES: Maximum recorded, 28.0°C on several days in 1969 and 1970; minimum recorded, 3.0°C

Dec. 14, 1973.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,960 mg/L Dec. 24, 1964; minimum daily mean, 8 mg/L Dec. 29,

30, 1976.

SEDIMENT DISCHARGE: Maximum daily, 525,000 tons (476,000 metric tons) Dec. 24, 1964; minimum daily, 151 tons (137 metric tons), Oct. 21, 22, 1977.

EXTREMES FOR CURRENT YEAR. --

SEDIMENT CONCENTRATIONS: Maximum daily mean, 800 mg/L Jan. 12; minimum daily mean, 13 mg/L Oct. 21, 22.

SEDIMENT DISCHARGE: Maximum daily, 101,000 tons (91,600 metric tons) Jan. 19; minimum daily, 151 tons (137 metric tons) Oct. 21, 22.

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	---	15.0	---	---	---	13.0	---	14.5	---	---	---	23.0
2	---	---	---	10.0	10.5	12.0	---	---	20.5	---	---	---
3	20.5	---	11.0	9.5	---	---	14.0	16.0	21.0	22.0	---	21.5
4	---	---	---	10.0	10.5	---	13.5	17.0	---	---	---	---
5	20.0	---	10.5	10.5	10.0	---	13.0	15.5	26.0	23.0	24.0	20.0
6	20.5	---	---	---	11.0	12.5	12.5	15.5	---	---	---	19.0
7	19.5	14.0	---	10.5	10.5	13.0	12.5	16.5	23.0	24.0	---	20.0
8	---	14.0	10.5	11.0	---	14.0	---	---	24.0	25.0	23.0	---
9	---	---	---	11.0	10.0	12.5	13.5	---	24.0	---	---	---
10	21.0	---	9.5	12.0	---	12.5	---	16.0	---	22.5	22.0	18.0
11	21.5	---	9.5	14.0	10.0	---	---	17.5	22.5	22.0	22.5	19.0
12	21.0	14.5	---	11.5	---	---	16.5	19.0	23.0	---	---	---
13	21.0	14.0	---	11.5	9.5	12.5	15.5	18.0	23.5	---	---	19.5
14	---	14.0	---	10.5	10.0	12.5	15.0	15.5	21.0	24.0	---	---
15	---	14.0	11.0	11.0	10.0	14.0	---	---	20.5	---	---	---
16	20.0	14.0	10.5	11.0	---	---	13.0	---	---	24.0	21.0	20.0
17	20.0	13.5	---	10.5	10.5	15.5	13.0	18.0	---	---	---	19.0
18	18.5	---	9.5	11.0	---	---	13.0	---	21.0	---	---	---
19	19.0	---	8.0	11.0	---	---	---	18.0	21.5	24.0	23.0	---
20	19.0	---	8.0	10.5	11.0	12.5	14.0	---	21.0	---	---	18.0
21	---	---	9.5	12.0	11.0	13.0	14.5	18.0	21.0	---	21.0	---
22	18.0	---	---	12.0	13.5	---	---	18.0	19.5	---	---	---
23	19.0	11.5	10.0	10.0	---	14.0	---	---	20.0	24.5	20.0	21.0
24	---	10.5	10.0	---	---	14.0	14.0	17.0	---	---	---	---
25	---	10.0	10.0	9.0	13.0	---	13.5	---	---	---	---	---
26	20.0	10.5	---	9.0	14.0	15.0	14.5	---	21.0	22.5	---	20.0
27	---	10.0	10.0	10.5	13.0	17.5	15.0	---	20.5	23.0	20.5	---
28	17.5	10.5	11.0	---	---	14.5	---	---	20.0	---	22.5	---
29	---	---	---	9.5	---	---	15.5	---	20.0	23.0	21.5	---
30	---	13.0	12.0	9.0	---	14.5	15.5	18.0	20.5	---	19.5	---
31	16.0	---	---	10.0	---	14.5	---	---	---	25.0	22.0	---
MONTH	---	---	---	10.5	---	---	---	---	---	---	---	---

11447500 SACRAMENTO RIVER AT SACRAMENTO, 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	5280	40	570	5450	21	309	7030	33	626
2	5200	35	491	5440	21	308	6660	29	521
3	5060	30	410	5650	22	336	6440	25	435
4	4950	25	334	5860	22	348	6240	23	388
5	4860	20	262	6070	22	361	6010	22	357
6	4770	20	258	6150	23	382	5860	20	316
7	4680	21	265	6200	23	385	5650	17	259
8	4520	22	268	6250	21	354	5620	14	212
9	4380	23	272	6300	22	374	5450	14	206
10	4350	24	282	6220	22	369	5550	14	210
11	4420	23	274	6240	23	388	5840	17	268
12	4250	24	275	6480	24	420	5950	17	273
13	4110	24	266	6170	20	333	6210	18	302
14	4020	24	260	6230	30	505	6660	18	324
15	3970	24	257	6300	28	476	7640	26	536
16	4000	24	259	6280	23	390	11700	112	3540
17	4000	24	259	6320	18	307	19700	550	29300
18	4100	23	255	6170	21	350	19100	656	33800
19	4200	17	193	6460	24	419	22100	640	38200
20	4300	14	163	6310	27	460	20200	460	25100
21	4300	13	151	6700	30	543	16200	262	11500
22	4300	13	151	7100	32	613	13400	156	5640
23	4230	14	160	7680	40	829	11800	120	3820
24	4120	14	156	8630	32	746	15600	200	8420
25	4150	14	157	9050	31	757	22900	590	36500
26	4310	15	175	8680	31	727	20900	510	28800
27	4520	17	207	8040	30	651	16900	360	16400
28	4730	18	230	7760	29	608	14200	190	7280
29	4900	19	251	7420	34	681	14700	210	8330
30	5070	20	274	7010	38	719	16500	152	6770
31	5270	21	299	---	---	---	15400	97	4030
TOTAL	139320	---	8084	200620	---	14448	364110	---	272663
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	14100	94	3580	25600	112	7740	25900	82	5730
2	12800	88	3040	23700	108	6910	26200	75	5310
3	11700	79	2500	22400	110	6650	30500	83	6840
4	11800	70	2230	21900	120	7100	46600	115	14500
5	16300	170	7480	22600	124	7570	60000	168	27200
6	34700	590	55300	23900	175	11300	72700	200	39300
7	41000	790	87500	36300	365	35800	78400	168	35600
8	36700	590	58500	49800	470	63200	79100	159	34000
9	31300	350	29600	57000	490	75400	79300	125	26800
10	32500	320	28100	66900	415	75000	78300	110	23300
11	38000	610	62600	68900	350	65100	74000	117	23400
12	43000	800	92900	68500	260	48100	73600	150	29800
13	51900	625	87600	68600	235	43500	73000	183	36100
14	57900	420	65700	67600	215	39200	72400	166	32400
15	64500	405	70500	66900	195	35200	71600	127	24600
16	68500	480	88800	66000	165	29400	71000	107	20500
17	73000	490	96600	64300	140	24300	70100	104	19700
18	75000	440	89100	60300	150	24400	68700	106	19700
19	76000	490	101000	55500	135	20200	66700	124	22300
20	73500	476	94500	50200	130	17600	63400	122	20900
21	70900	375	71800	44200	140	16700	57800	106	16500
22	68800	325	60400	39000	130	13700	51100	108	14900
23	66200	320	57200	35800	105	10100	45500	120	14700
24	62100	270	45300	33800	120	11000	41400	122	13600
25	56900	250	38400	30800	122	10100	39100	117	12400
26	49400	225	30000	28300	100	7640	37200	110	11000
27	42400	185	21200	26900	120	8720	35600	102	9800
28	37000	170	17000	26000	96	6740	34400	76	7060
29	33100	150	13400	---	---	---	33700	70	6370
30	30800	130	10800	---	---	---	32800	72	6380
31	28400	148	11300	---	---	---	32600	70	6160
TOTAL	1410200	---	1503930	1251700	---	728370	1722700	---	586850

11447500 SACRAMENTO RIVER AT SACRAMENTO, CA--Continued

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

APRIL				MAY				JUNE			
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)		
1	32600	74	6510	36800	68	6760	16400	40	1770		
2	33000	85	7570	36500	58	5720	14700	36	1430		
3	36500	144	14200	37400	71	7170	13900	34	1280		
4	38900	178	18700	36300	64	6270	13500	33	1200		
5	37900	143	14600	35800	66	6380	13200	32	1140		
6	39600	120	12800	35000	72	6800	13400	33	1190		
7	42000	160	18100	34100	80	7370	13600	33	1210		
8	46000	163	20200	32300	76	6630	13700	34	1260		
9	47600	155	19900	30900	74	6170	12400	30	1000		
10	47600	150	19300	29200	72	5680	12200	29	955		
11	46100	145	18000	27700	68	5090	12300	28	930		
12	44100	143	17000	24900	76	5110	12400	40	1340		
13	42500	103	11800	23700	80	5120	12100	36	1180		
14	40600	90	9870	23400	60	3790	11900	30	964		
15	39200	102	10800	23500	46	2920	11800	30	956		
16	38700	121	12600	22900	46	2840	12100	30	980		
17	39300	110	11700	22900	46	2840	12300	32	1060		
18	39600	126	13500	23200	57	3570	12700	32	1100		
19	38000	105	10800	21400	53	3060	12800	34	1180		
20	36200	93	9090	20800	51	2860	12600	36	1220		
21	34500	114	10600	20100	50	2710	12100	30	980		
22	35000	116	11000	19200	47	2440	11800	33	1050		
23	34900	115	10800	19100	47	2420	11700	30	948		
24	33100	116	10400	19400	48	2510	11600	31	971		
25	32600	75	6600	19400	49	2570	11600	29	908		
26	35100	78	7390	17900	44	2130	11700	29	916		
27	39300	95	10100	18200	44	2160	12000	30	972		
28	40900	126	13900	17800	43	2070	12300	36	1200		
29	38500	153	15900	17000	42	1930	12400	34	1140		
30	36600	93	9190	17000	42	1930	12600	35	1190		
31	---	---	---	17200	42	1950	---	---	---		
TOTAL	1166500	---	382920	781000	---	126970	379800	---	33620		

JULY				AUGUST				SEPTEMBER			
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)		
1	13000	40	1400	15400	44	1830	18000	44	2140		
2	13000	40	1400	15900	47	2020	17900	44	2130		
3	12900	39	1360	15800	47	2010	17900	44	2130		
4	13100	40	1410	15300	44	1820	18000	44	2140		
5	13300	42	1510	15600	45	1900	18000	44	2140		
6	13300	42	1510	16100	48	2090	18400	45	2240		
7	13800	48	1790	16300	49	2160	18900	46	2350		
8	13800	48	1790	16500	50	2230	19400	48	2510		
9	13500	44	1600	16700	51	2300	19200	47	2440		
10	13600	35	1290	16800	51	2310	19800	49	2620		
11	13800	36	1340	16800	51	2310	20200	49	2670		
12	14100	37	1410	16600	41	1840	20400	50	2750		
13	14100	37	1410	16400	40	1770	20500	50	2770		
14	14000	37	1400	16200	40	1750	18800	46	2330		
15	14200	38	1460	16400	40	1770	18800	46	2330		
16	14500	39	1530	15900	39	1670	19200	47	2440		
17	15000	42	1700	15100	36	1470	18700	46	2320		
18	15000	42	1700	15200	36	1480	18100	44	2150		
19	14900	41	1650	15200	36	1480	17700	43	2050		
20	14900	41	1650	15200	36	1480	17200	42	1950		
21	14900	41	1650	15000	36	1460	16800	41	1860		
22	14900	41	1650	14600	35	1380	16700	41	1850		
23	15400	44	1830	14400	35	1360	16500	40	1780		
24	15000	42	1700	14600	35	1380	16400	40	1770		
25	15000	42	1700	14600	35	1380	16300	40	1760		
26	15100	42	1710	15400	37	1540	16300	40	1760		
27	15200	43	1760	16200	40	1750	16200	40	1750		
28	15200	43	1760	17000	42	1930	16000	39	1680		
29	15000	42	1700	17600	43	2040	15800	38	1620		
30	14700	40	1590	18100	44	2150	15900	38	1630		
31	15100	42	1710	18100	44	2150	---	---	---		
TOTAL	443300	---	49070	495000	---	56210	538000	---	64060		

YEAR	8892250		3827195						
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11447500 SACRAMENTO RIVER AT SACRAMENTO, 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- 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
DEC								
20...	0950	21000	8.0	410	23200	37	50	62
20...	1203	19700	8.0	421	22400	39	51	64
JAN								
09...	1135	31600	11.0	323	27600	38	51	62
13...	1231	51900	11.5	724	101000	31	38	45
23...	1125	66500	10.0	305	54800	46	57	62
25...	0936	57700	9.0	244	38000	43	52	58
26...	1050	49500	9.0	229	30600	35	41	48
FEB								
06...	1200	24300	11.0	169	11100	50	57	67
13...	1600	68400	9.5	251	46400	36	47	52
15...	1328	67100	10.0	191	34600	37	46	56
17...	1135	64300	9.5	186	32300	29	37	44
MAR								
08...	0958	79000	14.0	201	42900	40	51	59
15...	0908	72200	14.0	126	24600	38	48	55
20...	0855	64000	12.5	122	21100	23	30	37
23...	1342	45500	14.0	129	15800	22	28	36
MAY								
03...	1006	36400	16.0	70	6880	20	27	34
JUN								
21...	1050	13800	21.0	32	1190	--	--	--
AUG								
08...	1029	16600	24.5	25	1120	27	36	50

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
DEC							
20...	73	81	88	98	100	--	--
20...	75	82	89	99	100	--	--
JAN							
09...	72	80	85	96	99	100	--
13...	50	55	64	79	84	99	100
23...	67	72	75	83	94	100	--
25...	64	71	76	86	97	100	--
26...	56	63	68	78	95	100	--
FEB							
06...	77	85	89	96	99	100	--
13...	57	60	62	71	95	100	--
15...	62	68	72	79	94	100	--
17...	51	59	65	75	93	100	--
MAR							
08...	64	68	71	80	95	100	--
15...	60	63	67	77	96	100	--
20...	47	57	63	74	93	99	100
23...	45	56	67	78	95	100	--
MAY							
03...	43	55	65	78	96	99	100
JUN							
21...	--	--	79	82	84	95	100
AUG							
08...	65	81	93	99	100	--	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM
DEC											
20...	1110	8.0	5	21000	2	6	34	97	99	100	--
20...	1111	--	--	--	1	4	33	99	100	--	--
20...	1112	--	--	--	2	6	22	96	100	--	--
20...	1113	--	--	--	7	11	17	62	90	97	100
20...	1114	--	--	--	52	93	97	100	--	--	--

SACRAMENTO RIVER BASIN

11447500 SACRAMENTO RIVER AT SACRAMENTO, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPERATURE (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM
JAN												
09...	1130	11.0	5	31600	13	23	28	86	99	100	--	--
09...	1131	--	--	--	55	75	84	98	100	--	--	--
09...	1132	--	--	--	0	1	22	98	100	--	--	--
09...	1133	--	--	--	0	7	30	94	99	100	--	--
09...	1134	--	--	--	5	39	74	99	100	--	--	--
13...	1226	11.5	5	51900	22	73	98	100	--	--	--	--
13...	1227	--	--	--	0	2	14	89	99	100	--	--
13...	1228	--	--	--	0	3	26	97	100	--	--	--
13...	1229	--	--	--	0	13	68	100	--	--	--	--
13...	1230	--	--	--	9	45	94	100	--	--	--	--
23...	1125	10.0	5	66500	4	11	38	98	99	100	--	--
23...	1126	--	--	--	--	0	10	95	100	--	--	--
23...	1127	--	--	--	--	0	6	93	100	--	--	--
23...	1128	--	--	--	0	1	18	99	100	--	--	--
23...	1129	--	--	--	0	3	29	96	100	--	--	--
25...	0930	9.0	5	57700	18	41	68	99	100	--	--	--
25...	0931	--	--	--	--	0	6	94	100	--	--	--
25...	0932	--	--	--	--	0	7	96	100	--	--	--
25...	0933	--	--	--	0	1	36	100	--	--	--	--
25...	0934	--	--	--	0	3	64	100	--	--	--	--
FEB												
06...	1207	11.0	14	24100	51	90	98	99	100	--	--	--
06...	1209	--	--	--	44	84	98	100	--	--	--	--
06...	1211	--	--	--	17	45	78	99	100	--	--	--
06...	1213	--	--	--	1	3	18	99	100	--	--	--
06...	1216	--	--	--	0	2	13	93	99	100	--	--
06...	1218	--	--	--	--	0	4	14	100	--	--	--
06...	1220	--	--	--	--	0	6	95	100	--	--	--
06...	1222	--	--	--	0	2	14	95	100	--	--	--
06...	1224	--	--	--	0	2	31	98	100	--	--	--
06...	1227	--	--	--	0	3	43	100	--	--	--	--
06...	1229	--	--	--	0	5	57	99	100	--	--	--
06...	1231	--	--	--	0	3	39	86	98	100	--	--
06...	1237	--	--	--	5	23	73	85	99	100	--	--
06...	1240	--	--	--	9	25	50	81	97	99	100	--
MAR												
15...	1030	14.0	5	71600	69	96	98	99	99	100	--	--
15...	1031	--	--	--	--	0	4	94	100	--	--	--
15...	1032	--	--	--	--	0	15	96	100	--	--	--
15...	1033	--	--	--	0	1	41	99	100	--	--	--
15...	1034	--	--	--	0	4	44	91	100	--	--	--
20...	0854	12.5	5	64000	66	98	99	100	--	--	--	--
20...	0856	--	--	--	--	0	5	94	100	--	--	--
20...	0858	--	--	--	--	0	4	87	99	100	--	--
20...	0900	--	--	--	0	2	41	95	99	100	--	--
20...	0902	--	--	--	0	1	35	90	99	100	--	--
APR												
18...	0825	13.0	5	40000	0	1	6	83	98	100	--	--
18...	0826	--	--	--	--	0	4	72	98	100	--	--
18...	0827	--	--	--	0	1	17	89	99	100	--	--
18...	0828	--	--	--	0	1	32	96	100	--	--	--
18...	0829	--	--	--	29	48	77	91	96	100	--	--
MAY												
03...	1315	16.0	5	37000	0	2	59	98	99	100	--	--
03...	1316	--	--	--	--	0	39	97	100	--	--	--
03...	1317	--	--	--	--	0	10	86	99	100	--	--
03...	1318	--	--	--	--	0	5	70	97	100	--	--
03...	1319	--	--	--	0	1	8	86	99	100	--	--
JUN												
21...	1310	21.0	6	13900	7	31	77	92	97	98	100	--
21...	1312	--	--	--	0	1	28	96	99	100	--	--
21...	1314	--	--	--	--	0	12	86	96	99	100	--
21...	1316	--	--	--	7	10	16	75	94	97	99	100
21...	1318	--	--	--	0	1	4	70	97	99	100	--
21...	1320	--	--	--	9	17	40	82	96	99	100	--
AUG												
08...	0825	23.0	6	15400	15	40	62	83	95	100	--	--
08...	0828	--	--	--	0	1	6	69	94	98	100	--
08...	0833	--	--	--	0	1	8	83	99	100	--	--
08...	0835	--	--	--	0	1	11	87	99	100	--	--
08...	0837	--	--	--	0	1	35	99	100	--	--	--
08...	0840	--	--	--	13	37	83	98	100	--	--	--
SEP												
20...	1113	18.0	5	17300	1	7	20	74	96	100	--	--
20...	1114	--	--	--	1	8	62	93	98	99	100	--
20...	1115	--	--	--	--	0	4	58	93	99	100	--
20...	1116	--	--	--	--	0	15	82	97	100	--	--
20...	1117	--	--	--	--	0	2	65	98	100	--	--

11447500 SACRAMENTO RIVER AT SACRAMENTO, 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- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	TUR- BID- ITY (NTU)
OCT						
03...	1600	6390	20.5	30	518	12
05...	1600	6580	20.0	20	355	8.0
06...	1700	5830	20.5	20	315	8.0
07...	1500	705	19.5	23	44	9.0
10...	1600	450	20.0	24	29	8.0
11...	1530	883	21.5	23	55	8.0
12...	1615	278	21.0	24	18	8.0
13...	1610	184	21.0	24	12	8.0
16...	1730	951	20.0	24	62	8.0
17...	1730	3700	20.0	24	240	8.0
18...	1610	6100	18.5	23	379	7.0
19...	1630	6400	19.0	15	259	7.0
20...	1715	6320	19.0	13	222	5.0
22...	1710	4920	18.0	13	173	5.0
23...	1550	-26	19.0	14	.98	5.0
26...	1600	-471	20.0	15	19	5.0
28...	1730	286	17.5	18	14	6.0
31...	1315	6480	16.0	21	367	8.0
NOV						
01...	1030	3020	15.0	20	163	8.0
07...	1230	4310	14.0	23	268	9.0
08...	1345	3880	14.0	21	220	8.0
12...	1500	5150	14.5	24	334	9.0
13...	1700	2000	14.0	19	103	7.0
14...	1550	7000	14.0	37	699	13
15...	1610	7460	14.0	26	524	8.0
16...	1350	6810	14.0	25	460	8.0
16...	1420	6980	14.0	22	415	7.0
17...	1345	5690	13.5	17	261	7.0
23...	1230	7890	11.5	46	980	13
24...	1330	8190	10.5	32	708	10
26...	1710	5320	10.5	31	445	14
28...	1630	5800	10.5	29	454	14
30...	1700	6840	13.0	42	776	18
DEC						
03...	1730	7640	11.0	25	516	11
05...	1700	7250	10.5	22	431	9.0
08...	1800	7510	10.5	14	284	7.0
10...	1745	1080	9.5	14	41	7.0
11...	2210	8350	9.5	19	428	7.0
15...	0850	4920	11.0	19	252	9.0
16...	1530	13700	10.5	110	4070	23
18...	1845	19700	9.5	662	35200	320
20...	0800	21200	7.0	440	25200	150
20...	0830	21200	7.0	466	26700	150
20...	0900	21000	7.0	463	26300	170
20...	0930	20900	7.0	478	27000	170
20...	1000	20700	7.0	478	26700	170
20...	1015	20900	8.0	435	24500	170
20...	1030	20500	7.0	467	25800	160
20...	1100	20400	7.0	448	24700	150
20...	1130	20000	7.0	464	25100	170
20...	1200	19700	7.0	436	23200	170
20...	1205	19700	8.0	435	23100	180
20...	1230	19300	7.0	434	22600	170
20...	1300	18800	7.5	431	21900	170
20...	1305	18800	8.0	418	21200	170
20...	1330	18600	7.5	418	21000	170
20...	1400	18500	7.5	390	19500	180
20...	1405	18500	8.0	390	19500	180
20...	1430	18500	7.5	418	20900	180
20...	1435	18500	8.0	390	19500	180
20...	1500	18400	7.5	398	19800	180
20...	1710	19000	8.0	418	21400	180
21...	1610	14300	9.5	185	7140	100
23...	2030	12700	10.0	115	3940	65
24...	1700	16100	10.0	150	6520	50
27...	1230	17400	10.0	406	19100	220
28...	1530	14300	11.0	180	6950	95
30...	1330	17100	12.0	118	5450	40

SACRAMENTO RIVER BASIN

11447500 SACRAMENTO RIVER AT SACRAMENTO, 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- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	TUR- BID- ITY (NTU)
JAN						
02...	1810	13700	10.0	91	3370	38
03...	1730	12600	9.5	75	2550	30
04...	1600	12500	10.0	66	2230	28
05...	2130	22300	10.5	308	18500	85
07...	1945	40100	10.5	780	84500	240
08...	1500	35200	11.0	574	54600	180
09...	0925	32000	11.0	366	31600	140
09...	1000	32200	11.0	358	31100	180
09...	1030	32000	11.0	362	31300	130
09...	1100	32000	11.5	341	29500	120
09...	1130	31600	11.0	360	30700	130
09...	1135	31600	11.0	323	27600	120
09...	1200	31600	11.5	306	26100	130
09...	1205	31600	11.0	346	29500	130
09...	1230	31300	11.5	354	29900	130
09...	1300	31100	11.5	334	28000	130
09...	1330	30900	11.5	356	29700	130
09...	1400	30600	11.5	347	28700	130
09...	1430	30200	11.5	357	29100	130
09...	1530	29600	11.5	323	25800	120
10...	1600	33500	12.0	318	28800	100
12...	0945	41100	11.5	882	97900	320
12...	1005	41300	11.5	861	96000	320
12...	1300	42900	11.0	823	95300	300
12...	1815	46200	10.0	707	88200	270
12...	2330	48400	10.5	748	97700	280
13...	1015	51300	11.5	684	94700	230
13...	1206	51500	12.0	625	86900	240
13...	1220	51700	11.5	626	87400	230
13...	1230	51900	11.5	675	94600	230
13...	1315	52000	11.5	520	73000	240
14...	1530	58600	--	429	67900	140
14...	1930	59800	--	434	70100	140
14...	2350	60900	10.5	455	74800	140
15...	1415	65200	11.0	373	65700	130
15...	2330	66000	10.5	417	74300	120
16...	1700	70000	11.0	508	96000	180
17...	0930	72000	10.5	533	104000	200
17...	1430	73000	12.0	382	75300	140
17...	2330	74000	10.5	455	90900	170
18...	1230	75000	11.0	438	88700	200
19...	1610	76000	11.5	503	103000	200
19...	2310	76000	11.0	496	102000	200
20...	2330	71900	10.5	456	88500	200
21...	1630	70500	12.0	316	60200	150
22...	1630	68400	12.0	327	60400	170
23...	1045	66100	10.0	289	51600	140
23...	1120	66300	10.0	342	61200	140
23...	1730	65500	10.5	300	53100	140
25...	0917	57700	9.0	258	40200	110
25...	0930	57700	9.0	268	41800	110
25...	1245	57000	9.0	249	38300	100
26...	1010	49600	9.0	209	28000	80
26...	1050	49500	9.0	229	30600	75
27...	1730	41000	10.5	182	20100	60
29...	1930	32200	9.5	151	13100	50
30...	1550	30700	9.0	128	10600	45
31...	1245	27800	10.0	154	11600	45
FEB						
02...	1745	23800	10.5	108	6940	45
04...	1700	21600	10.5	122	7120	45
05...	0610	22000	10.0	123	7310	40
06...	1030	24000	11.0	152	9850	70
06...	1315	23500	11.0	172	10900	75
07...	2030	43000	10.5	472	54800	100
08...	1745	51200	--	463	64000	140
09...	1340	57500	10.0	502	77900	160
10...	1745	68200	9.5	402	74000	160
11...	1505	69000	10.0	346	64500	150
13...	1515	68800	9.5	244	45300	100
13...	1520	68800	9.5	214	39800	100
13...	1600	68400	9.5	251	46400	100
13...	1650	68800	9.5	208	38600	100
14...	2330	67300	10.0	206	37400	75
15...	1300	66300	10.0	196	35100	75
15...	1327	67100	10.0	194	35100	75
15...	1345	66800	10.0	172	31000	70
17...	1115	64500	10.0	154	26800	60
17...	1134	64300	10.0	131	22700	50
17...	1157	64200	10.0	142	24600	50
17...	1730	63900	10.5	139	24000	65
20...	1145	50400	11.0	129	17600	50
21...	2230	42100	11.0	137	15600	35
22...	1730	37400	13.5	125	12600	37
23...	1430	36000	10.0	101	9820	32
25...	1530	30800	13.0	126	10500	37
26...	1245	28500	14.0	94	7230	28
27...	1530	27300	13.0	76	5600	27

11447500 SACRAMENTO RIVER AT SACRAMENTO, 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- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	TUR- BID- ITY (NTU)
MAR						
01...	1530	26400	13.0	84	5990	20
02...	1130	25100	12.0	74	5020	21
02...	1545	27000	12.5	78	5690	20
06...	1345	74000	12.5	206	41200	65
07...	1630	78700	13.0	157	33400	65
08...	0900	79100	14.0	190	40600	65
08...	1000	79000	14.0	173	36900	85
08...	1020	79200	14.0	180	38500	70
08...	1130	79400	12.0	152	32600	50
09...	1730	79200	12.5	123	26300	45
10...	1415	78800	12.5	102	21700	32
13...	1245	72900	12.5	190	37400	65
14...	1545	72300	12.5	160	31200	65
15...	0907	70500	12.0	137	26100	45
15...	1015	71800	12.0	106	20500	45
15...	1810	71500	12.5	113	21800	40
17...	1245	70100	15.5	104	19700	30
20...	0835	63900	12.5	116	20000	27
20...	0856	64000	12.5	132	22800	27
20...	1915	62100	15.0	111	18600	25
21...	1645	56300	13.0	106	16100	23
23...	1325	45600	14.0	99	12200	19
23...	1341	45500	14.0	122	15000	20
23...	1515	45000	13.5	102	12400	22
24...	1930	40200	14.0	122	13200	22
26...	1900	36300	15.0	111	10900	20
27...	1715	35800	17.5	102	9860	19
28...	1600	34600	14.5	70	6540	15
30...	1545	33000	14.5	73	6500	14
31...	1615	33000	14.5	70	6240	14
APR						
03...	1645	37200	14.0	160	16100	16
04...	1710	38600	13.5	183	19100	32
05...	1610	37400	13.0	130	13100	33
06...	1545	39800	12.5	116	12500	22
07...	1406	42700	12.5	170	19600	32
09...	1715	48100	13.5	283	36800	75
12...	1430	44100	16.5	138	16400	23
13...	1230	42400	15.5	94	10800	20
14...	1530	40500	15.0	88	9620	20
16...	1130	38500	13.0	128	13300	18
17...	1430	39200	13.0	108	11400	20
18...	0825	40000	13.0	138	14900	25
18...	0836	40000	13.0	132	14300	25
18...	0850	40100	13.0	131	14200	24
18...	1030	40000	13.5	122	13200	27
20...	1245	36600	14.0	88	8700	19
21...	1310	34600	14.5	117	10900	26
24...	1630	33200	14.0	118	10600	20
25...	1615	33000	13.5	68	6060	17
26...	1600	36400	14.5	80	7860	18
27...	1445	40100	15.0	96	10400	18
29...	1020	38600	15.5	167	17400	60
30...	1830	37000	15.5	81	8090	24
MAY						
01...	1530	36800	14.5	66	6560	16
03...	0730	37400	16.0	59	5960	13
03...	1007	37400	16.0	76	7670	14
03...	1245	37400	16.0	80	8080	17
04...	1610	36300	17.0	64	6270	15
05...	1700	35700	15.5	68	6560	14
06...	1610	35400	15.5	70	6690	17
07...	1530	34600	16.5	82	7660	12
10...	1930	28600	16.0	70	5410	14
11...	2010	26700	17.5	67	4830	13
12...	1715	24200	19.0	80	5230	18
13...	1730	23500	18.0	82	5200	15
14...	1845	23300	15.5	46	2890	13
17...	2015	22600	18.0	46	2810	6.0
19...	1220	21400	18.0	47	2720	12
21...	1530	19800	18.0	57	3050	2.0
22...	1430	19200	18.0	52	2700	9.0
24...	1945	19400	17.0	48	2510	13
30...	2030	17100	18.0	42	1940	11
JUN						
02...	1820	14300	20.5	40	1540	13
03...	1930	13800	21.0	32	1190	11
05...	1830	13300	26.0	34	1220	10
07...	1310	13600	23.0	30	1100	12
08...	1830	13700	24.0	35	1300	11

SACRAMENTO RIVER BASIN

11447500 SACRAMENTO RIVER AT SACRAMENTO, 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- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	TUR- BID- ITY (NTU)
JUN						
09...	1430	12400	24.0	34	1140	13
11...	1815	12600	22.5	26	885	12
12...	2010	12300	23.0	47	1560	16
13...	1745	12500	23.5	32	1080	12
14...	1630	12100	21.0	28	915	8.0
15...	1810	12100	20.5	28	915	9.0
18...	1845	12100	21.0	26	849	10
19...	1920	11700	21.5	25	790	9.0
20...	1845	10900	21.0	26	765	8.0
21...	0700	11600	--	16	501	7.0
21...	0808	12900	19.0	21	731	7.0
21...	1001	13800	20.0	26	969	8.0
21...	1007	13800	21.5	34	1270	9.0
21...	1158	13900	21.5	31	1160	10
21...	1204	13900	21.5	36	1350	12
21...	1220	13900	21.5	40	1500	10
21...	1233	13900	21.5	41	1540	10
21...	1312	13900	21.0	36	1350	11
21...	1404	13900	22.0	38	1430	10
21...	1605	13400	22.0	42	1520	12
21...	1658	12100	21.5	48	1570	13
22...	2045	10100	19.5	22	600	7.0
23...	2010	10200	20.0	36	991	8.0
26...	2010	11300	21.0	38	1160	10
27...	1550	12900	20.5	26	906	9.0
28...	1510	12400	20.0	28	937	9.0
29...	1115	13000	20.0	46	1620	12
30...	2010	13400	20.5	36	1300	10
JUL						
03...	1615	12300	22.0	58	1930	15
05...	1615	13800	23.0	52	1940	13
07...	2030	12400	24.0	33	1110	12
08...	2045	12200	25.0	35	1150	12
10...	1210	14600	22.5	29	1140	10
11...	1945	13300	22.0	44	1580	8.0
14...	1540	14100	24.0	36	1370	9.0
16...	1745	14600	24.0	38	1500	13
19...	1630	14400	24.0	46	1790	13
23...	1945	14500	24.5	47	1840	11
26...	2230	13100	22.5	37	1310	6.0
27...	1530	15300	23.0	42	1740	9.0
29...	1430	14000	23.0	47	1780	10
31...	2030	15700	25.0	43	1820	11
AUG						
05...	2010	14800	24.0	39	1560	11
08...	0622	15700	23.0	36	1530	5.0
08...	0833	15400	23.0	32	1330	10
08...	2030	15000	25.0	32	1300	9.0
10...	2040	15100	22.0	42	1710	8.0
11...	2030	15600	22.5	38	1600	10
16...	1615	15900	21.0	53	2280	12
19...	2030	15200	23.0	40	1640	12
21...	1815	15000	21.0	49	1980	11
23...	1845	14400	20.0	50	1940	12
27...	1615	16200	20.5	38	1660	10
28...	1615	17000	22.5	38	1740	12
29...	2130	17600	21.5	49	2330	13
30...	2030	18100	19.5	41	2000	14
31...	1830	18100	22.0	44	2150	13
SEP						
01...	1630	18000	23.0	48	2330	15
03...	1930	16900	21.5	43	1960	16
05...	1815	16800	20.0	42	1910	14
06...	0805	17400	19.0	44	2070	12
07...	1930	17900	20.0	46	2220	16
10...	1845	20400	18.0	58	3200	18
11...	1715	20100	19.0	60	3260	17
13...	1845	20600	19.5	62	3450	19
16...	1830	18100	20.0	42	2050	14
17...	1815	17000	19.0	48	2200	14
20...	1000	16700	20.0	43	1940	13
20...	1045	17100	20.0	36	1660	12
20...	1141	17300	20.0	44	2060	12
20...	1545	17800	18.0	41	1970	14
23...	1830	16900	21.0	40	1830	11
26...	1325	15200	20.0	29	1190	9.0
26...	1515	15200	21.0	36	1480	10
30...	1010	16800	19.5	24	1090	7.0

11447650 SACRAMENTO RIVER AT FREEPORT, CA
(National stream-quality accounting network and radiochemical station)

LOCATION.--Lat 38°27'20", long 121°30'07", in SE¼SE¼ sec.14, T.7 N., R.4 E., Sacramento County, at drawbridge at Freeport, 8.4 mi (13.5 km) south of State Capitol Building in Sacramento.

PERIOD OF RECORD.--Water years 1959 to current year.

CHEMICAL ANALYSES: Water years 1959 to current year.

BIOLOGICAL DATA: Water years 1974 to current year.

WATER TEMPERATURES: Water years 1960 to current year.

PERIOD OF DAILY RECORD.--

CHEMICAL ANALYSES: June 1960 to June 1963.

SPECIFIC CONDUCTANCE: June 1960 to June 1963, February 1974 to July 1975.

WATER TEMPERATURES: June 1960 to current year.

INSTRUMENTATION.--Temperature recorder since June 1960.

REMARKS.--Unpublished records of daily specific conductance readings for period June 1960 to June 1963 available in files of district office. Temperature recorder located on right bank 1.9 mi (3.1 km) northwest of Freeport, and 7.4 mi (11.9 km) southwest of State Capitol Building in Sacramento.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 27.0°C Sept. 8, 1977; minimum recorded, 4.5°C Dec. 12-15, 1972.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 24.5°C Aug. 8-10; minimum recorded, 8.0°C Dec. 21, 22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW (CFS)	STREAM- 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												
18...	1030	--	2400	216	7.7	19.5	--	--	28	K54	--	--
NOV												
15...	1100	--	3900	171	7.7	14.0	7.0	10.1	25	80	65	0
DEC												
13...	1100	--	8700	190	7.7	10.0	7.0	10.6	21	K87	72	0
JAN												
11...	0945	--	37700	126	8.0	11.0	110	10.0	220	890	56	13
FEB												
14...	1145	--	66800	123	8.1	9.0	--	11.0	230	470	--	--
MAR												
15...	1145	--	71000	106	8.2	12.0	65	10.4	K160	180	44	1
APR												
13...	0930	--	42700	113	7.9	14.5	30	10.1	80	70	47	1
MAY												
05...	1015	35800	--	101	7.5	14.5	25	9.9	78	K35	44	3
JUN												
06...	1000	13400	--	152	7.9	21.0	6.0	8.2	21	K22	60	4
JUL												
07...	1015	--	16900	151	7.8	22.0	5.6	8.0	55	46	--	--
AUG												
17...	1015	15100	--	144	7.9	21.0	12	8.3	80	46	55	0
SEP												
27...	1000	16200	--	127	7.1	19.0	5.0	8.7	22	50	53	1

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 SI02)
OCT											
18...	--	--	--	--	--	--	--	--	--	--	--
NOV											
15...	13	7.9	13	30	.7	2.0	73	7.8	8.6	.1	23
DEC											
13...	15	8.5	13	27	.7	2.0	77	9.5	9.9	.1	23
JAN											
11...	12	6.2	5.9	18	.3	1.7	43	11	6.7	.1	18
FEB											
14...	--	--	--	--	--	--	--	--	--	--	--
MAR											
15...	9.8	4.7	4.9	19	.3	1.0	43	6.8	3.1	.0	16
APR											
13...	10	5.4	5.2	19	.3	1.0	46	3.8	3.3	.1	17
MAY											
05...	11	4.1	4.3	17	.3	.8	42	3.6	2.8	.0	16
JUN											
06...	13	6.6	10	26	.6	1.2	56	22	7.9	.1	16
JUL											
07...	--	5.7	10	--	--	1.1	44	11	6.8	.0	14
AUG											
17...	12	6.1	10	28	.6	1.0	59	8.0	6.0	.1	18
SEP											
27...	12	5.7	7.9	24	.5	1.1	52	8.7	5.7	.1	15

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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. 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)
OCT 18...	--	--	--	.07	--	.77	--	--	.84	.30	--
NOV 15...	116	120	.16	.16	--	--	--	.49	--	.18	.17
DEC 13...	121	127	.16	.30	--	--	--	.86	--	.20	.18
JAN 11...	94	87	.13	.44	--	--	--	.31	--	.26	.06
FEB 14...	--	--	--	--	--	--	--	--	--	--	--
MAR 15...	68	72	.09	.19	.27	.32	.22	.10	.51	.13	.02
APR 13...	66	73	.09	.17	--	--	--	.19	--	.11	.03
MAY 05...	64	68	.09	.14	.49	.54	.20	.34	.68	.11	.02
JUN 06...	93	110	.13	.21	.42	.44	.03	.41	.65	.09	.07
JUL 07...	--	--	--	.15	.54	.54	.10	.44	.69	.10	.06
AUG 17...	95	97	.13	.09	.29	.39	.05	.34	.48	.07	.04
SEP 27...	82	87	.11	.09	.26	.35	.01	.34	.44	.16	.06

DATE	TIME	AROCLOR TOTAL 1254 PCB SERIES (UG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)
NOV 15...	1100	--	ND	ND	ND	ND	ND	ND
FEB 14...	1145	.1	--	ND	ND	ND	ND	ND
MAY 05...	1015	--	ND	ND	ND	ND	ND	ND
AUG 17...	1015	--	ND	ND	ND	ND	ND	ND

DATE	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN, 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)
NOV 15...	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 14...	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAY 05...	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 17...	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	METH- OXY- CHLOR, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	TOX- APHENE, TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
NOV 15...	ND	ND	ND	ND	ND	ND	ND	ND
FEB 14...	ND	ND	ND	ND	ND	ND	ND	ND
MAY 05...	ND	ND	ND	ND	ND	--	--	--
AUG 17...	ND	ND	ND	ND	ND	--	--	--

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

 QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES
 OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	OCT 18,77 1030	NOV 15,77 1100	MAR 15,78 1145	MAY 5,78 1015
TOTAL CELLS/ML	24000	5500	960	720
DIVERSITY: DIVISION	0.9	0.9	0.0	1.2
..CLASS	0.9	0.9	0.0	1.2
...ORDER	1.6	1.5	0.8	2.0
...FAMILY	2.1	1.9	1.2	3.0
....GENUS	2.6	2.7	1.5	3.0

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...CHARACIACEAE								
...SCHROEDERIA	--	--	--	--	--	--	--	--
...COELASTRACEAE								
...COELASTRUM	--	--	--	--	--	--	--	--
...MICRACTINIACEAE								
...GOLENKINIA	--	--	--	--	--	--	--	--
...MICRACTINIUM	--	--	--	--	--	--	--	--
...OOCYSTACEAE								
...ANKISTRODESMUS	490	2	430	8	--	--	38	5
...CHODATELLA	--	--	31	1	--	--	--	--
...FRANCEIA	*	0	--	--	--	--	--	--
...KIRCHNERIELLA	--	--	--	--	--	--	--	--
...OOCYSTIS	--	--	120	2	--	--	--	--
...TETRAEDRON	590	2	31	1	--	--	--	--
...SCENEDESMACEAE								
...CRUCIGENIA	--	--	--	--	--	--	--	--
...SCENEDESMUS	4500#	19	680	12	--	--	110#	16
..TETRASPORALES								
...COCCOMYXACEAE								
...ELAKATOTHRIX	--	--	--	--	--	--	--	--
...PALMELLACEAE								
...SPHAEROCYSTIS	--	--	--	--	--	--	--	--
...VOLVOCALES								
...CHLAMYDOMONADACEAE								
...CHLAMYDOMONAS	400	2	--	--	--	--	38	5
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...CENTRALES								
...COSCINODISCACEAE								
...CYCLOTELLA	1900	8	990#	18	41	4	--	--
...MELOSIRA	1400	6	1900#	34	710#	73	230#	32
...SKELETONEMA	990	4	--	--	--	--	--	--
...STEPHANODISCUS	790	3	180	3	--	--	--	--
..PENNALES								
...ACHNANTHAGEAE								
...ACHNANTHES	--	--	*	0	14	1	--	--
...COCONEIS	--	--	31	1	--	--	19	3
...RHOICOSPHEA	--	--	*	0	--	--	--	--

See footnotes at end of table.

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES
OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	OCT 18,77 1030		NOV 15,77 1100		MAR 15,78 1145		MAY 5,78 1015	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
...CYMBELLACEAE								
....CYMBELLA	--	-	* 0		--	-	38	5
....EPITHEMIA	--	-	--	-	--	-	--	-
...DIATOMACEAE								
....DIATOMA	--	-	--	-	--	-	19	3
...EUNOTIACEAE								
....EUNOTIA	--	-	--	-	--	-	--	-
...FRAGILARIACEAE								
....ASTERIONELLA	--	-	--	-	41	4	--	-
....FRAGILARIA	1300	5	--	-	--	-	--	-
....SYNEDRA	200	1	120	2	27	3	--	-
...GOMPHONEMACEAE								
....GOMPHONEMA	--	-	* 0		14	1	19	3
...NAVICULACEAE								
....NAVICULA	* 0		860# 16		81	8	76	11
...NITZSCHIACEAE								
....NITZSCHIA	11000# 45		31	1	41	4	95	13
...SURIPELLACEAE								
....SURIPELLA	--	-	--	-	--	-	--	-
...CHRYSOPHYCEAE								
...CHRYSONOMADALES								
...MALLONACEAE								
....MALLONAS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCOCCALES								
....CHROCOCCAEAE								
....ANACYSTIS	--	-	120	2	--	-	19	3
...HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	200	1	--	-	--	-	--	-
...OSCILLATORIA								
....OSCILLATORIA	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
....EUGLENACEAE								
....EUGLENA	--	-	--	-	--	-	19	3
....TRACHELOMONAS	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
..DINOPHYCEAE								
...PERIDINIALES								
....PERIDINIACEAE								
....PERIDINIUM	* 0		--	-	--	-	--	-

See footnotes at end of table.

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES
OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	JUN 6,78 1000	JUL 7,78 1015	AUG 17,78 1015
TOTAL CELLS/ML	2100	4400	2500
DIVERSITY: DIVISION	0.5	1.4	1.2
..CLASS	0.6	1.4	1.2
..ORDER	1.2	1.9	2.0
...FAMILY	1.4	3.1	2.8
....GENUS	2.3	3.1	3.2

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
....CHARACIACEAE						
....SCHROEDERIA	--	--	88	2	--	--
...COELASTRACEAE						
....COELASTRUM	--	--	350	8	--	--
...MICRACTINIACEAE						
....GOLENKINIA	--	--	22	1	--	--
....MICRACTINIUM	--	--	--	--	14	1
...OOCYSTACEAE						
....ANKISTRODESMUS	110	5	66	2	55	2
....CHODATELLA	22	1	--	--	14	1
....FRANCEIA	--	--	--	--	--	--
....KIRCHNERIELLA	--	--	--	--	430#	17
....OOCYSTIS	--	--	110	3	--	--
....TETRAEDRON	--	--	--	--	--	--
...SCENEDESMACEAE						
....CRUCIGENIA	--	--	1500#	34	--	--
....SCENEDESMUS	--	--	--	--	83	3
..TETRASPORALES						
...COCCOMYXACEAE						
....ELAKATOTHRIX	--	--	130	3	--	--
...PALMELLACEAE						
....SPHAEROCYSTIS	--	--	88	2	--	--
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	45	2	22	1	28	1
CHRYSTOPHYTA						
..BACILLARIOPHYCEAE						
...CENTRALES						
....COSCINODISCEAE						
....CYCLOTELLA	920#	44	22	1	260	11
....MELOSIRA	650#	31	270	6	370#	15
....SKELETONEMA	--	--	--	--	--	--
....STEPHANODISCUS	45	2	--	--	--	--
..PENNALES						
...ACHNANTHACEAE						
....ACHNANTHES	--	--	--	--	--	--
...COCCONEIS	45	2	--	--	--	--
....RHOICOSPHEIA	--	--	--	--	--	--
...CYMBELLACEAE						
....CYMBELLA	--	--	180	4	--	--
....EPITHEMIA	22	1	--	--	--	--
...DIATOMACEAE						
....DIATOMA	--	--	--	--	--	--
...EUNOTIACEAE						
....EUNOTIA	--	--	--	--	14	1
...FRAGILARIACEAE						
....ASTERIONELLA	--	--	--	--	--	--
....FRAGILARIA	--	--	550	13	540#	22
....SYNEDRA	--	--	--	--	14	1
...GOMPHONEMACEAE						
....GOMPHONEMA	--	--	22	1	--	--
...NAVICULACEAE						
....NAVICULA	67	3	66	2	83	3
...NITZSCHIACEAE						
....NITZSCHIA	110	5	240	6	380	13
...SURIPELLACEAE						
....SURIPELLA	--	--	--	--	28	1
..CHRYSTOPHYCEAE						
...CHRYSONOMADACEAE						
....MALLOMONADACEAE						
....MALLOMONAS	22	1	--	--	--	--

See footnotes at end of table.

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES
OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	JUN 6,78 1000		JUL 7,78 1015		AUG 17,78 1015	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROCCOCCALES						
...CHROCCOCCAEAE						
....ANACYSTIS	--	-	660#	15	55	2
...HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	--	-
...OSCILLATORIACEAE						
...OSCILLATORIA	--	-	--	-	140	6
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	--	-	--	-
...TRACHELOMONAS	22	1	--	-	14	1
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)
DEC 13...	28	7.16	5.83	2.70	.570	492
MAR 15...	29	28.4	24.8	24.3	.000	148
JUL 07...	31	21.6	16.9	39.4	17.2	119
SEP 27...	41	131	107	31.9	17.2	752

11447650 SACRAMENTO RIVER AT FREEPORT, 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	21.0	20.5	17.0	16.5	12.5	12.0	10.5	10.5	10.0	9.5	---	---
2	21.0	20.0	17.0	16.0	12.5	12.0	10.5	10.5	10.0	10.0	---	---
3	20.5	20.0	16.0	15.5	12.0	12.0	10.5	10.5	10.5	10.0	13.0	12.5
4	22.5	20.0	16.0	15.5	12.0	12.0	10.5	10.5	10.5	10.0	12.5	12.5
5	20.5	20.0	15.5	15.0	12.0	12.0	10.5	10.5	10.5	10.5	12.5	12.5
6	20.0	19.5	15.0	14.5	12.0	12.0	11.0	10.5	11.0	10.5	12.5	12.0
7	20.5	19.0	15.0	14.0	12.0	12.0	11.0	10.5	11.5	11.0	13.0	12.5
8	20.0	19.0	14.5	13.5	12.0	11.5	11.0	10.5	11.0	11.0	13.0	12.5
9	20.5	19.5	14.0	13.0	12.0	11.5	11.0	10.5	11.0	10.5	12.5	12.0
10	20.5	19.5	13.5	13.0	11.5	11.0	11.5	11.0	10.5	10.0	12.5	12.5
11	20.5	20.0	13.0	13.0	11.0	10.5	12.0	11.5	10.0	10.0	12.5	12.5
12	20.0	20.0	13.0	13.0	11.0	10.5	12.0	11.5	10.0	9.5	12.5	12.0
13	20.0	20.0	13.5	13.0	11.0	10.5	11.5	11.5	9.5	9.5	12.0	11.5
14	20.0	20.0	13.5	13.0	11.0	10.5	11.5	11.5	9.5	9.5	12.0	11.5
15	20.0	20.0	13.5	13.0	11.5	11.0	---	---	10.0	9.5	12.0	12.0
16	20.0	20.0	14.0	13.5	11.0	11.0	---	---	10.0	9.5	12.5	12.0
17	21.0	19.5	14.5	13.5	11.0	10.5	---	---	---	---	12.5	12.5
18	20.0	19.5	14.5	13.5	10.5	10.5	---	---	---	---	13.0	12.5
19	20.0	19.0	13.5	13.0	10.5	9.0	---	---	---	---	13.0	12.5
20	19.0	18.5	13.0	12.0	9.0	8.5	---	---	---	---	13.0	13.0
21	19.0	18.0	12.0	11.0	8.5	8.0	11.0	11.0	---	---	13.5	13.0
22	18.5	18.0	11.0	10.5	9.0	8.0	11.0	11.0	---	---	13.5	13.0
23	18.0	18.0	10.5	10.0	8.5	9.0	11.0	10.0	---	---	14.0	13.5
24	18.5	18.0	10.5	10.5	10.0	9.5	10.0	9.5	---	---	13.5	13.5
25	18.5	18.0	11.0	10.5	10.5	10.0	9.5	9.5	---	---	14.0	13.5
26	18.5	18.0	11.5	11.0	10.5	10.5	9.5	9.5	---	---	14.0	14.0
27	18.5	18.0	11.5	11.0	10.5	10.5	9.5	9.5	---	---	14.5	14.0
28	18.5	17.5	12.0	11.0	10.5	10.5	9.5	9.5	---	---	15.0	14.5
29	18.0	17.5	11.5	11.5	10.5	10.5	10.0	9.5	---	---	15.0	14.5
30	17.5	17.0	12.0	11.5	11.0	10.5	10.0	10.0	---	---	---	---
31	17.0	16.5	---	---	11.0	10.5	10.0	10.0	---	---	---	---
MONTH	22.5	16.5	17.0	10.0	12.5	8.0	12.0	9.5	---	---	15.0	11.5

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

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

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

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW (CFS)	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 18...	1030	19.5	--	2400	2	16	93
NOV 15...	1100	14.0	--	3900	16	168	89
DEC 13...	1100	10.0	--	8700	14	329	88
MAR 15...	1145	12.0	--	71000	178	34100	54
APR 13...	0930	14.5	--	42700	90	10400	75
MAY 05...	1015	14.5	35800	--	78	7540	75
JUN 06...	1000	21.0	13400	--	27	977	95
JUL 07...	1015	22.0	--	16900	21	958	95
AUG 17...	1015	21.0	15100	--	33	1350	89
SEP 27...	1000	19.0	16200	--	35	1530	87

11447810 SACRAMENTO RIVER AT GREEN'S LANDING, NEAR COURTLAND, CA

LOCATION.--Lat 38°20'45", long 121°32'42", in SW¼NE¼ sec.28, T.6 N., R.4 E., Sacramento County, on left bank 2.2 mi (3.5 km) upstream from Sutter Slough, and 1.6 mi (2.6 km) northeast of Courtland.

PERIOD OF RECORD.--Water years 1953-58, 1971 to current year.

CHEMICAL ANALYSES: Water years 1953-58, 1971 to current year. Published as "at Snodgrass Slough, near Courtland" in 1953-58.

SPECIFIC CONDUCTANCE: Water years 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1973 to current year.

COOPERATION.--Chemical-quality records furnished by California Department of Water Resources. Specific conductance data furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 400 micromhos Aug. 31, 1977; minimum recorded, 71 micromhos Apr. 2, 3, 1974.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 235 micromhos Oct. 5; minimum recorded, 85 micromhos May 4, 5.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	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)	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)
OCT 19...	0700	196	7.5	19.5	7.0	8.1	65	0	11	9.2	13
NOV 17...	1115	196	7.3	14.5	19	9.4	61	0	11	8.1	14
DEC 21...	0945	134	7.3	8.5	200	10.3	49	6	8.7	6.7	7.0
JAN 18...	1030	109	7.3	11.0	220	9.4	39	5	7.7	4.9	5.2
FEB 15...	1350	133	7.3	10.0	100	10.4	51	2	9.0	6.9	7.4
MAR 15...	1350	112	7.3	12.0	50	10.0	40	0	8.5	4.6	6.1
APR 19...	0800	105	7.4	13.0	30	9.9	43	0	9.5	4.7	5.5
MAY 17...	1230	122	7.3	18.0	17	8.5	46	0	9.1	5.7	7.6
JUN 21...	0945	141	7.4	21.0	12	8.4	54	--	7.2	8.8	11
JUL 19...	1210	119	7.4	24.5	12	7.9	49	--	7.1	7.7	8.5
AUG 16...	1400	152	7.5	21.5	11	7.0	51	--	10	6.3	11
SEP 20...	0700	162	7.4	18.0	16	8.6	60	--	11	7.9	11

DATE	SODIUM AD- SORP- TION RATIO	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)	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)	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)
OCT 19...	.7	69	9.9	11	.1	130	.18	.22	.44	.40	.48
NOV 17...	.8	69	9.7	10	.1	131	.18	.26	.38	.02	.40
DEC 21...	.4	43	14	6.0	.1	96	.13	.38	.13	.60	.73
JAN 18...	.4	34	5.9	5.0	.0	57	.08	.52	.08	1.0	1.1
FEB 15...	.5	49	9.4	5.8	.1	77	.10	.25	.04	.40	.44
MAR 15...	.4	43	2.6	2.9	.2	89	.12	.19	.02	.30	.32
APR 19...	.4	45	3.3	3.8	.0	81	.11	.18	.05	.20	.25
MAY 17...	.5	46	8.7	6.1	.1	81	.11	.18	.03	.50	.53
JUN 21...	.7	51	11	8.7	.1	99	.13	.19	.11	.20	.31
JUL 19...	.5	50	6.1	5.6	.1	86	.12	.14	.12	.20	.32
AUG 16...	.7	56	4.1	6.9	.1	106	.14	.10	.08	.20	.28
SEP 20...	.6	63	5.3	8.6	.0	100	.14	.12	.02	.40	.42

SACRAMENTO RIVER BASIN

11447810 SACRAMENTO RIVER AT GREEN'S LANDING, NEAR COURTLAND, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, DIS- SOLVED (UG/L AS B)	CHRO- MIUM, HEXA- VALENT, DIS- (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 19...	.38	.10	0	200	--	0	10	0	0	0	0
NOV 17...	.22	.19	0	0	--	10	50	0	20	10	20
DEC 21...	.65	.10	0	100	--	10	40	0	0	0	10
JAN 18...	.28	.15	0	100	--	20	20	0	0	10	40
FEB 15...	.25	.04	0	0	0	10	10	0	0	10	10
MAR 15...	.17	.04	0	100	--	10	20	0	40	10	30
APR 19...	.10	.04	0	0	--	20	20	10	10	0	20
MAY 17...	.27	.06	0	100	--	0	10	0	0	10	0
JUN 21...	.13	.08	0	0	--	10	20	0	20	10	20
JUL 19...	.14	.10	0	100	--	10	10	0	0	10	0
AUG 16...	.12	.06	0	0	--	10	20	0	0	10	0
SEP 20...	.15	.06	0	0	0	0	10	0	0	0	0

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	200	155	190	185	195	185	130	110	165	170	130	160
2	195	155	190	180	210	180	130	105	160	180	135	165
3	195	145	200	185	195	190	130	95	160	175	130	170
4	210	145	190	180	210	155	115	85	140	165	130	170
5	235	150	190	180	210	115	115	85	135	160	135	175
6	215	150	190	175	215	100	110	90	140	160	130	170
7	215	150	185	120	200	110	110	90	155	160	125	165
8	200	155	185	115	135	90	100	95	155	155	130	165
9	190	175	170	130	120	90	95	100	150	145	130	170
10	190	175	180	155	125	95	95	100	150	145	130	175
11	190	165	185	150	115	100	105	100	140	145	130	175
12	185	170	180	130	115	95	110	100	140	145	125	180
13	180	160	180	125	120	100	110	105	140	135	125	175
14	185	165	180	130	130	100	115	100	135	130	130	175
15	190	165	170	140	130	110	115	100	135	140	130	185
16	190	170	180	150	125	110	120	110	135	140	130	175
17	190	165	170	160	130	110	115	115	130	140	135	170
18	190	165	130	115	135	110	115	120	130	145	140	160
19	190	170	110	130	140	115	105	120	130	140	140	160
20	190	170	120	103	145	120	110	120	135	135	140	155
21	180	165	110	104	150	125	115	120	145	130	150	155
22	180	170	165	110	150	130	115	115	160	130	155	150
23	180	170	170	116	155	130	110	120	170	130	160	155
24	180	170	160	125	165	130	110	130	175	130	160	160
25	180	200	180	150	170	140	115	140	180	135	170	160
26	180	190	135	155	170	140	115	150	170	130	160	160
27	180	180	130	150	175	135	110	160	150	125	160	155
28	165	175	160	155	185	140	110	165	150	120	155	140
29	160	170	180	160	---	135	110	160	155	125	165	145
30	170	200	180	175	---	135	100	160	165	120	165	140
31	160	---	200	185	---	130	---	160	---	130	165	---
MONTH	188	167	169	146	158	124	112	117	149	142	142	164

11448500 ADOBE CREEK NEAR KELSEYVILLE, CA

LOCATION.--Lat 38°55'37", long 122°52'47", in SE¼SE¼ sec.32, T.13 N., R.9 W., Lake County, Hydrologic Unit 18020116, on left bank 2.3 mi (3.7 km) upstream from Highland Creek, and 4.2 mi (6.8 km) southwest of Kelseyville.

DRAINAGE AREA.--6.36 mi² (16.47 km²).

PERIOD OF RECORD.--October 1954 to September 1978 (discontinued).

REVISED RECORDS.--WSP 2131: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,476.06 ft (449.903 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some regulation and diversions above station for irrigation of about 200 acres (809,000 m²).

AVERAGE DISCHARGE.--24 years, 12.0 ft³/s (0.340 m³/s), 8,690 acre-ft/yr (10.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,570 ft³/s (44.5 m³/s) Jan. 16, 1974, gage height, 8.92 ft (2.719 m); maximum gage height, 9.22 ft (2.810 m) Jan. 31, 1963; no flow at times in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft³/s (11 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 22	2200	535 15.2	6.66 2.030	Jan. 14	1730	*938 26.6	7.69 2.344
Jan. 5	0445	545 15.4	6.69 2.039	Feb. 7	unknown	620 17.6	unknown
Jan. 9	0545	627 17.8	6.92 2.109	Mar. 8	0900	456 12.9	6.43 1.960

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	.41	.33	9.2	5.9	4.7	6.3	6.1	.67	.14		0
2	0	.30	.33	16	17	41	4.1	5.3	.68	.13		0
3	0	.25	.28	18	46	68	18	4.5	.62	.11		0
4	0	.38	.25	72	120	145	27	4.2	.51	.07		0
5	0	1.3	.25	321	335	119	40	3.8	.39	.06		0
6	0	.31	.25	102	260	55	84	3.4	.30	.03		0
7	0	.22	.25	36	430	32	33	3.1	1.4	.03		0
8	0	.17	.25	49	180	231	20	2.9	.36	.03		0
9	0	.15	.25	245	84	100	15	2.7	.24	.03		0
10	0	.15	.23	62	50	47	12	2.6	.30	.02		.01
11	0	.17	.69	34	38	29	9.5	2.4	.32	.01		.02
12	0	.20	.86	36	110	20	8.2	2.2	.31	0		.02
13	0	.20	.44	90	64	15	7.1	2.1	.34	0		.02
14	0	.16	112	365	43	13	6.6	2.3	.32	0		.02
15	0	.11	63	411	28	10	65	3.0	.29	0		.02
16	0	.12	14	466	21	8.8	27	2.1	.23	0		.01
17	0	.14	52	147	16	7.9	18	1.9	.19	0		.01
18	0	.18	14	66	13	7.1	15	1.7	.13	0		.01
19	0	.22	7.0	47	11	6.3	14	1.6	.02	0		.01
20	0	.27	4.3	31	9.6	5.7	15	1.4	0	0		.01
21	0	84	43	23	8.3	5.4	12	1.4	0	0		.01
22	0	22	156	17	7.4	5.1	10	1.4	0	0		.01
23	0	3.4	106	14	6.8	5.3	9.1	1.3	0	0		.01
24	0	1.6	24	11	6.1	4.3	9.6	1.3	.01	0		.01
25	0	1.0	13	9.5	5.7	3.9	14	1.3	.05	0		.01
26	0	.76	12	8.4	5.4	3.6	10	1.2	.09	0		.01
27	0	.60	20	7.3	4.9	3.5	8.8	1.1	.15	0		.01
28	.01	.44	15	6.3	4.6	3.2	7.8	1.0	.28	0		.01
29	.22	.38	15	5.6	---	3.1	7.2	.92	.34	0		0
30	.64	.33	13	5.1	---	3.0	7.1	.78	.19	0		0
31	.54	---	10	4.6	---	4.4	---	.68	---	0		---
TOTAL	1.41	119.92	697.96	2735.0	1930.7	1010.3	540.4	71.68	8.73	.66	0	.24
MEAN	.046	4.00	22.5	88.2	69.0	32.6	18.0	2.31	.29	.021	0	.008
MAX	.64	84	156	466	430	231	84	6.1	1.4	.14	0	.02
MIN	0	.11	.23	4.6	4.6	3.0	4.1	.68	0	0	0	0
AC-FT	2.8	238	1380	5420	3830	2000	1070	142	17	1.3	0	.5

CAL YR 1977 TOTAL 950.83 MEAN 2.61 MAX 156 MIN 0 AC-FT 1890
WTR YR 1978 TOTAL 7117.00 MEAN 19.5 MAX 466 MIN 0 AC-FT 14120

11448900 HIGHLAND CREEK ABOVE HIGHLAND CREEK DAM, CA

LOCATION.--Lat 38°55'48", long 122°55'11", in NW¼SE¼ sec.36, T.13 N., R.10 W., Lake County, Hydrologic Unit 18020116, on left bank 100 ft (30 m) downstream from Pipeline Creek, 1.7 mi (2.7 km) upstream from Highland Creek Dam, and 5.7 mi (9.2 km) southwest of Kelseyville.

DRAINAGE AREA.--11.9 mi² (30.8 km²).

PERIOD OF RECORD.--October 1962 to September 1978 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,490.07 ft (454.173 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Aug. 19 to Sept. 30, which are fair. No regulation or diversion above station.

AVERAGE DISCHARGE.--16 years, 20.9 ft³/s (0.592 m³/s), 15,140 acre-ft/yr (18.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,140 ft³/s (88.9 m³/s) Jan. 16, 1974, gage height, 10.91 ft (3.325 m); maximum gage height, 12.15 ft (3.703 m) Dec. 22, 1964; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft³/s (34 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage height (ft)	Gage height (m)
Dec. 22	2200	1250	35.4	7.61	2.320	Jan. 14	1645	*2710	76.7	10.20	3.109
Jan. 9	0530	1570	44.5	8.24	2.512	Feb. 7	0830	1610	45.6	8.31	2.533

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	.15	2.2	.57	8.0	12	11	10	11	2.1	.71	.02	0
2	.12	.89	.52	25	28	47	7.7	9.5	2.0	.65	0	0
3	.10	.29	.52	28	16	87	24	8.5	1.9	.57	0	0
4	.09	.27	.52	178	14	246	39	7.9	1.8	.51	0	0
5	.08	.19	.52	588	378	172	57	7.4	1.7	.48	0	0
6	.05	.21	.49	180	311	84	128	6.9	1.6	.42	0	0
7	.04	.33	.48	59	530	54	51	6.3	1.7	.37	0	0
8	.04	.33	.48	138	219	378	33	6.0	1.6	.35	0	0
9	.05	.33	.48	587	154	159	24	5.7	1.6	.36	0	1.5
10	.04	.33	.48	100	85	77	19	5.5	1.8	.36	0	.90
11	.02	.31	.75	52	55	52	15	5.2	1.6	.33	0	.63
12	.01	.28	.69	56	131	39	13	4.7	1.6	.27	0	.29
13	.01	.27	.57	206	133	30	12	4.5	1.5	.26	0	.23
14	0	.29	119	946	79	23	11	4.9	1.4	.27	0	.23
15	0	.29	87	695	56	20	127	5.5	1.4	.23	0	.24
16	0	.29	13	1020	46	18	53	4.6	1.2	.21	0	.22
17	0	.29	48	292	37	15	37	4.2	1.1	.22	0	.20
18	0	.29	14	140	31	14	30	4.0	1.1	.21	0	.19
19	0	.29	6.0	104	25	13	26	3.8	1.0	.20	0	.19
20	0	.34	3.8	70	22	12	31	3.6	.93	.18	0	.19
21	.02	85	122	51	19	11	26	3.6	.86	.16	0	.18
22	.10	21	354	37	17	10	22	3.4	.86	.14	0	.18
23	.10	3.0	192	29	15	10	19	3.4	.99	.13	0	.17
24	.09	1.4	28	23	14	8.8	19	3.4	.97	.12	0	.17
25	1.2	1.1	12	19	14	8.2	23	3.3	.93	.11	0	.16
26	.66	.86	9.6	16	13	7.8	18	3.1	1.1	.10	0	.16
27	.43	.81	31	14	12	7.2	16	2.9	1.0	.10	0	.15
28	.28	.68	20	12	11	6.8	14	2.7	.87	.09	0	.15
29	.24	.57	18	11	---	6.5	13	2.5	.84	.09	0	.15
30	.23	.57	15	9.6	---	6.3	12	2.4	.84	.08	0	.15
31	.24	---	9.6	8.4	---	8.4	---	2.2	---	.05	0	---
TOTAL	4.39	123.30	1109.07	5702.0	2477	1642.0	929.7	152.6	39.89	8.33	.02	6.63
MEAN	.14	4.11	35.8	184	88.5	53.0	31.0	4.92	1.33	.27	.0006	.22
MAX	1.2	85	354	1020	530	378	128	11	2.1	.71	.02	1.5
MIN	0	.19	.48	8.0	11	6.3	7.7	2.2	.84	.05	0	0
AC-FT	8.7	245	2200	11310	4910	3260	1840	303	79	17	.04	13
CAL YR 1977	TOTAL	1540.30	MEAN	4.22	MAX	354	MIN	0	AC-FT	3060		
WTR YR 1978	TOTAL	12194.93	MEAN	33.4	MAX	1020	MIN	0	AC-FT	24190		

11449100 SCOTTS CREEK NEAR LAKEPORT, CA

LOCATION.--Lat 39°05'44", long 122°57'38", in NE¼NW¼ sec.3, T.14 N., R.10 W., Lake County, Hydrologic Unit 18020116, on left bank at upstream side of Eickhoff Road bridge, 0.9 mi (1.4 km) downstream from small right-bank tributary, and 4.2 mi (6.8 km) northwest of Lakeport.

DRAINAGE AREA.--55.2 mi² (143.0 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 1,400 ft (427 m), from topographic map. Prior to Oct. 1, 1968, at site 3.0 mi (4.8 km) upstream at different datum.

REMARKS.--Small diversions above station for irrigation.

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

AVERAGE DISCHARGE.--18 years, 79.2 ft³/s (2.243 m³/s), 57,380 acre-ft/yr (70.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,100 ft³/s (314 m³/s) Jan. 16, 1974, gage height, 13.38 ft (4.078 m); maximum gage height, 17.88 ft (5.450 m) Dec. 22, 1964, site and datum then in use; no flow for several months in each year.

EXTREMES FOR CURRENT PERIOD.--Water year 1977: Maximum discharge, 40 ft³/s (1.13 m³/s) Mar. 18, gage height, 11.91 ft (3.630 m); no flow for several months.

Water year 1978: Maximum discharge, 4,880 ft³/s (138 m³/s) Jan. 16, gage height, 22.52 ft (6.864 m); no flow for several months.

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						0						
2						0						
3						0						
4						0						
5						0						
6						0						
7						0						
8						0						
9						0						
10						0						
11						0						
12						0						
13						0						
14						0						
15						0						
16						0						
17						.40						
18						18						
19						8.2						
20						3.4						
21						.70						
22						0						
23						0						
24						0						
25						4.9						
26						1.9						
27						0						
28						0						
29					---	0						
30					---	0						
31		---			---	0	---		---			---
TOTAL	0	0	0	0	0	37.50	0	0	0	0	0	0
MEAN	0	0	0	0	0	1.21	0	0	0	0	0	0
MAX	0	0	0	0	0	18	0	0	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	0	0	0	74	0	0	0	0	0	0
CAL YR 1976	TOTAL	2076.30	MEAN 5.67	MAX 179	MIN 0	AC-FT 4120						
WTR YR 1977	TOTAL	37.50	MEAN .10	MAX 18	MIN 0	AC-FT 74						

SACRAMENTO RIVER BASIN

11449100 SCOTTS CREEK NEAR LAKEPORT, 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	43	59	46	142	70	4.3			
2			0	206	182	97	98	59	3.2			
3			0	209	111	316	81	52	2.0			
4			0	533	88	878	302	49	1.5			
5			0	1630	800	852	212	45	.20			
6			0	888	1090	511	756	41	0			
7			0	350	1900	334	406	38	0			
8			0	394	1180	1220	274	34	0			
9			0	2170	1030	854	201	32	0			
10			0	636	521	494	154	29	0			
11			0	371	327	340	123	27	0			
12			0	383	570	252	104	25	0			
13			0	1070	660	197	90	24	0			
14			281	2560	454	159	79	23	0			
15			441	2560	328	128	297	35	0			
16			77	3750	255	111	202	27	0			
17			318	1890	212	99	151	21	0			
18			93	817	170	88	123	19	0			
19			35	666	140	78	131	18	0			
20			20	464	118	71	175	17	0			
21			48	331	101	65	149	16	0			
22			643	242	90	59	119	15	0			
23			612	182	79	70	108	15	0			
24			175	139	70	55	105	14	0			
25			84	113	66	49	177	14	.10			
26			60	94	59	46	126	13	.50			
27			207	78	53	44	107	11	0			
28			127	65	49	42	94	10	.60			
29			89	56	---	39	84	9.4	.10			
30			78	49	---	38	79	7.7	.10			
31		---	53	43	---	75	---	6.6	---			---
TOTAL	0	0	3441	22982	10762	7707	5249	816.7	12.60	0	0	0
MEAN	0	0	111	741	384	249	175	26.3	.42	0	0	0
MAX	0	0	643	3750	1900	1220	756	70	4.3	0	0	0
MIN	0	0	0	43	49	38	79	6.6	0	0	0	0
AC-FT	0	0	6830	45580	21350	15290	10410	1620	25	0	0	0
CAL YR 1977	TOTAL	3478.50	MEAN	9.53	MAX	643	MIN	0	AC-FT	6900		
WTR YR 1978	TOTAL	50970.30	MEAN	140	MAX	3750	MIN	0	AC-FT	101100		

11449500 KELSEY CREEK NEAR KELSEYVILLE, CA

LOCATION.--Lat 38°55'39", long 122°50'33", in SE¼SE¼ sec.34, T.13 N., R.9 W., Lake County, Hydrologic Unit 18020116, on left bank 1.6 mi (2.6 km) downstream from Widow Creek, and 3.5 mi (5.6 km) south of Kelseyville.

DRAINAGE AREA.--36.6 mi² (94.8 km²).

PERIOD OF RECORD.--October 1946 to current year.

REVISED RECORDS.--WSP 1285: 1947-48(M), 1950-52(P). WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,475.44 ft (449.714 m) National Geodetic Vertical Datum of 1929. Prior to July 16, 1955, at site 600 ft (183 m) upstream at different datum.

REMARKS.--Records fair except those for period of no gage-height record, July 30 to Sept. 30, which are poor. No regulation or diversion above station.

AVERAGE DISCHARGE.--32 years, 72.5 ft³/s (2.053 m³/s), 52,530 acre-ft/yr (64.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,800 ft³/s (249 m³/s) Dec. 21, 1955, gage height, 12.80 ft (3.901 m); maximum gage height, 13.48 ft (4.109 m) Jan. 5, 1965; minimum daily discharge, 0.18 ft³/s (0.005 m³/s) Aug. 15-23, 25, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,400 ft³/s (68 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 5	0600	4020 114	10.78 3.286
Jan. 9	0630	3990 113	10.76 3.280
Jan. 16	1615	*4820 137	11.29 3.441

Minimum daily discharge, 2.3 ft³/s (0.065 m³/s) Aug. 30 to Sept. 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	4.9	3.8	7.0	50	33	80	50	50	17	10	3.0	2.3
2	3.9	4.0	6.6	64	48	222	43	47	17	9.8	2.9	2.3
3	3.3	3.9	6.4	79	40	368	59	44	17	10	2.9	2.3
4	3.5	3.9	6.1	249	200	589	157	42	16	10	2.8	2.3
5	2.9	4.0	5.9	1870	700	565	103	40	15	10	2.8	2.3
6	2.8	4.1	5.8	509	500	313	280	38	14	8.5	2.7	2.3
7	2.8	4.0	5.6	228	1100	223	148	37	13	8.0	2.7	2.3
8	2.8	4.1	5.5	236	660	688	114	35	13	7.3	2.7	2.3
9	2.7	4.0	5.4	1320	350	486	93	34	13	6.8	2.7	6.0
10	2.6	4.2	5.2	333	220	290	83	33	13	6.8	2.7	5.6
11	2.7	4.1	5.5	201	168	224	75	32	13	6.9	2.6	4.8
12	2.6	4.1	9.4	202	430	183	68	31	13	7.2	2.6	4.5
13	2.6	4.1	7.4	418	300	157	56	30	13	7.0	2.6	4.3
14	2.6	4.2	499	1870	309	140	59	31	13	6.1	2.5	4.2
15	2.5	4.3	419	1790	255	122	197	34	13	5.4	2.5	4.2
16	2.5	4.2	85	2670	219	108	116	31	12	5.2	2.5	4.2
17	2.5	4.2	212	854	191	99	96	29	12	5.4	2.5	4.3
18	2.6	4.2	84	439	166	91	85	28	12	5.3	2.5	4.2
19	2.5	4.1	48	364	146	84	86	27	12	5.2	2.5	4.1
20	2.5	4.5	34	259	132	78	95	26	11	4.9	2.5	4.0
21	2.5	334	118	204	120	75	82	25	11	4.8	2.5	4.0
22	2.5	177	714	167	112	72	72	25	10	4.1	2.5	4.0
23	2.5	30	569	138	104	73	56	25	11	4.1	2.4	3.9
24	2.6	18	147	124	98	65	53	23	10	4.1	2.4	3.9
25	2.7	14	85	100	94	60	83	21	10	3.8	2.4	3.9
26	2.6	12	67	82	91	57	69	21	11	4.0	2.4	3.8
27	2.8	10	100	68	86	54	62	20	11	3.8	2.4	3.8
28	2.8	9.1	75	58	81	52	58	19	11	3.4	2.4	3.8
29	3.0	8.3	68	50	---	52	54	19	12	3.3	2.4	3.7
30	3.1	7.7	67	41	---	50	54	18	11	3.2	2.3	3.7
31	3.4	---	57	35	---	57	---	17	---	3.1	2.3	---
TOTAL	88.3	702.1	3529.8	15072	6953	5777	2706	932	380	187.5	79.6	111.3
MEAN	2.85	23.4	114	486	248	186	90.2	30.1	12.7	6.05	2.57	3.71
MAX	4.9	334	714	2670	1100	688	280	50	17	10	3.0	6.0
MIN	2.5	3.8	5.2	35	33	50	43	17	10	3.1	2.3	2.3
AC-FT	175	1390	7000	29900	13790	11460	5370	1850	754	372	158	221
CAL YR 1977	TOTAL	5650.86	MEAN	15.5	MAX	714	MIN	.18	AC-FT	11210		
WTR YR 1978	TOTAL	36518.60	MEAN	100	MAX	2670	MIN	2.3	AC-FT	72430		

SACRAMENTO RIVER BASIN

11450000 CLEAR LAKE AT LAKEPORT, CA

LOCATION.--Lat 39°02'21", long 122°54'44", in NE¼NE¼ sec.25, T.14 N., R.10 W., Lake County, Hydrologic Unit 18020116, on private pier at 410 Esplanada Street in Lakeport.

DRAINAGE AREA.--528 mi² (1,368 km²).

PERIOD OF RECORD.--1874-1900 (incomplete), January 1913 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,318.65 ft (401.925 m) National Geodetic Vertical Datum of 1929. Prior to July 8, 1947, nonrecording gage and July 8, 1947, to Mar. 17, 1949, at municipal wharf at foot of Third Street in Lakeport at datum 0.06 ft (0.018 m) lower. Mar. 18, 1949, to Sept. 30, 1967, at private pier at foot of Fourth Street at datum 0.06 ft (0.018 m) lower.

REMARKS.--This natural lake is regulated by gates on a dam at outlet, completed in 1915. Capacity between gage heights 0.00 and 7.56 ft (2.304 m), limits stipulated by court decree of 1920, about 319,000 acre-ft (393 hm³). Water is released down natural channel of Cache Creek from which it is diverted for irrigation (station 11451000).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 11.12 ft (3.389 m) Jan. 28, 1914; minimum observed, -3.50 ft (-1.067 m) Sept. 24-27, 1920.

EXTREMES FOR CURRENT YEAR.--Maximum daily mean gage height, 8.23 ft (2.509 m) Mar. 14; minimum gage height observed, -3.39 ft (-1.033 m) Nov. 14.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	-3.14	---	5.23	7.27	7.57	7.53	6.60	5.34	4.06	2.74
2	---	---	---	---	5.31	7.31	7.61	7.55	6.57	5.29	4.02	2.71
3	-3.13	---	---	---	5.35	7.42	7.65	7.55	6.52	5.25	3.98	2.67
4	---	---	---	---	5.40	7.60	7.71	7.53	6.49	5.23	3.95	2.64
5	---	---	---	---	5.64	7.80	7.77	7.50	6.46	5.19	3.91	2.63
6	---	---	---	---	5.99	7.94	7.89	7.49	6.42	5.16	3.88	2.59
7	---	-3.34	---	---	6.45	7.93	7.88	7.48	6.38	5.14	3.84	2.55
8	---	---	---	---	6.93	8.04	7.81	7.46	6.36	5.10	3.80	2.53
9	---	---	---	---	7.24	8.21	7.73	7.44	6.28	5.07	3.75	2.54
10	---	---	---	.27	7.31	8.23	7.65	7.42	6.23	5.02	3.69	2.54
11	-3.21	---	---	.46	7.35	8.21	7.64	7.39	6.20	4.99	3.62	2.52
12	---	---	---	.61	7.48	8.12	7.62	7.35	6.15	4.95	3.54	2.51
13	---	---	---	.78	7.55	8.05	7.58	7.34	6.11	4.91	3.50	2.48
14	---	-3.39	---	1.15	7.56	7.97	7.56	7.31	6.06	4.87	3.47	2.47
15	---	---	---	1.93	7.52	7.87	7.60	7.26	6.02	4.81	3.42	2.46
16	---	---	---	2.79	7.50	7.78	7.65	7.24	5.98	4.77	3.35	2.44
17	-3.27	---	---	3.72	7.44	7.67	7.64	7.22	5.95	4.74	3.32	2.37
18	---	---	---	4.22	7.38	7.57	7.55	7.20	5.90	4.69	3.28	2.35
19	---	---	---	4.51	7.28	7.47	7.44	7.17	5.86	4.65	3.24	2.34
20	---	---	---	4.71	7.24	7.38	7.37	7.14	5.81	4.61	3.17	2.32
21	---	-3.29	---	4.83	7.24	7.37	7.38	7.10	5.78	4.57	3.12	2.30
22	---	---	---	4.90	7.25	7.38	7.41	7.05	5.74	4.53	3.08	2.29
23	---	---	---	4.96	7.26	7.38	7.44	6.99	5.67	4.49	3.04	2.28
24	-3.32	---	---	5.01	7.27	7.41	7.49	6.90	5.62	4.45	3.00	2.27
25	---	---	---	5.04	7.27	7.43	7.51	6.82	5.57	4.40	2.95	2.26
26	---	---	---	5.07	7.26	7.45	7.45	6.80	5.53	4.35	2.91	2.23
27	---	---	---	5.10	7.27	7.46	7.54	6.77	5.51	4.30	2.88	2.21
28	---	-3.16	---	5.12	7.27	7.47	7.56	6.74	5.47	4.25	2.85	2.21
29	---	---	---	5.15	---	7.48	7.56	6.71	5.43	4.20	2.82	2.20
30	---	---	---	5.17	---	7.49	7.56	6.69	5.39	4.15	2.78	2.18
31	-3.33	---	---	5.19	---	7.54	---	6.64	---	4.11	2.76	---
MEAN	---	---	---	---	6.90	7.67	7.59	7.19	6.00	4.76	3.39	2.43
MAX	---	---	---	---	7.56	8.23	7.89	7.55	6.60	5.34	4.06	2.74
MIN	---	---	---	---	5.23	7.27	7.37	6.64	5.39	4.11	2.76	2.18

NOTE.--No gage-height record Oct. 1 to Jan. 9, gage heights are once-daily readings.

11451000 CACHE CREEK NEAR LOWER LAKE, CA

LOCATION.--Lat 38°55'27", long 122°33'53", in sec.6, T.12 N., R.6 W., Lake County, Hydrologic Unit 18020116, on left bank 500 ft (152 m) downstream from Clear Lake Dam, 1.9 mi (3.1 km) downstream from Copsey Creek, and 2.5 mi (4.0 km) northeast of Lower Lake.

DRAINAGE AREA.--528 mi² (1,368 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1944 to current year.

GAGE.--Water-stage recorder and rain gage. Datum of gage is 1,280.34 ft (390.248 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Flow completely regulated by Clear Lake (station 11450000) 500 ft (152 m) upstream.

AVERAGE DISCHARGE (unadjusted).--34 years, 348 ft³/s (9.855 m³/s), 252,100 acre-ft/yr (311 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,000 ft³/s (227 m³/s) Feb. 24, 1958, gage height, 9.40 ft (2.865 m); no flow Nov. 8-20, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,420 ft³/s (125 m³/s) Apr. 6, gage height, 7.63 ft (2.326 m); no flow Nov. 8-20.

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	.64	.33	.37	1.4	6.2	502	5.5	333	629	454	544	287
2	.64	.33	.47	1.4	6.2	506	5.3	330	625	474	468	295
3	.51	.28	.47	1.6	6.2	514	5.3	333	604	499	438	275
4	.50	.28	.47	1.7	6.2	651	6.2	333	548	485	400	267
5	.47	.28	.53	4.4	6.4	991	5.9	348	517	458	367	292
6	.42	.28	.53	1.9	7.6	2290	1890	358	485	438	383	300
7	.42	.28	.47	1.5	48	2930	2840	377	451	438	417	277
8	.42	0	.42	1.5	262	3380	2810	393	448	427	444	239
9	.37	0	.42	3.7	2070	3280	2760	403	487	424	451	207
10	.33	0	.42	1.7	2630	3170	1210	444	532	444	444	183
11	.28	0	.37	1.5	1940	3120	955	488	529	444	454	143
12	.28	0	.33	1.7	2590	3120	904	525	540	444	454	128
13	.33	0	.24	2.2	2660	3020	791	576	544	444	434	126
14	.37	0	.33	7.1	2610	2950	961	617	536	481	390	126
15	.37	0	.37	3.5	2610	2870	967	629	525	529	354	115
16	.42	0	.53	6.4	2560	2770	973	617	513	536	351	103
17	.42	0	.76	3.8	2550	2700	2040	608	517	536	377	113
18	.47	0	1.2	4.7	2530	2660	2720	608	525	532	403	123
19	.42	0	1.2	6.8	2460	2580	2670	608	536	513	380	124
20	.42	0	1.1	7.3	1260	1100	1180	604	552	510	361	129
21	.37	.33	1.2	7.1	525	309	8.3	612	544	536	361	124
22	.37	.24	2.2	7.1	448	201	8.1	625	540	540	380	119
23	.37	.33	2.7	6.6	499	19	7.6	629	548	521	413	119
24	.37	.37	2.0	6.4	502	12	7.1	629	540	525	431	117
25	.33	.33	1.8	6.4	499	10	44	633	513	532	417	129
26	.37	.24	1.7	6.2	499	8.6	75	629	492	532	383	142
27	.33	.28	1.8	6.2	499	7.8	79	629	502	540	354	134
28	.37	.28	1.8	6.2	502	7.1	184	625	513	540	351	121
29	.37	.28	1.7	6.2	---	6.6	333	612	513	521	339	112
30	.37	.33	1.6	6.2	---	6.2	336	612	481	506	308	103
31	.37	---	1.4	6.2	---	5.7	---	621	---	548	290	---
TOTAL	12.49	5.07	30.90	136.6	32791.8	45697.0	26781.3	16388	15829	15351	12341	5072
MEAN	.40	.17	1.00	4.41	1171	1474	893	529	528	495	398	169
MAX	.64	.37	2.7	7.3	2660	3380	2840	633	629	548	544	300
MIN	.28	0	.24	1.4	6.2	5.7	5.3	330	448	424	290	103
AC-FT	25	10	61	271	65040	90640	53120	32510	31400	30450	24480	10060
(†)	.43	3.17	4.99	16.33	7.38	5.34	3.42	.06	0	0	0	.56

CAL YR 1977 TOTAL 218.89 MEAN .60 MAX 2.7 MIN 0 AC-FT 434
WTR YR 1978 TOTAL 170436.16 MEAN 467 MAX 3380 MIN 0 AC-FT 338100

† Precipitation, in inches.

11451000 CACHE CREEK NEAR LOWER LAKE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1951-67, 1974 to current year.

COOPERATION.--Records were furnished by 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 CAC03)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO
OCT 14...	0800	.37	575	--	--	7.0	--	--	--	--
NOV 04...	1100	.28	570	--	--	9.0	--	--	--	--
DEC 09...	0915	.42	568	--	--	8.0	--	--	--	--
MAY 11...	0930	471	--	7.6	19.0	15	8.4	140	11	.4
JUN 08...	0845	458	252	7.8	24.5	25	7.0	--	--	--
JUL 13...	1015	444	267	7.6	24.5	20	7.3	--	--	--
AUG 10...	0815	448	256	8.2	28.0	10	6.7	--	--	--
SEP 14...	0910	126	--	7.9	20.0	.00	7.9	130	13	.5

DATE	ALKA- LITY (MG/L AS CAC03)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, NITRATE 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)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	BORON, DIS- SOLVED (UG/L AS B)
OCT 14...	--	--	--	--	--	--	--	--	--	--
NOV 04...	--	--	--	--	--	--	--	--	--	--
DEC 09...	--	--	--	--	--	--	--	--	--	--
MAY 11...	140	7.4	.03	.45	1.4	1.8	.19	.02	.06	1400
JUN 08...	--	--	.07	.62	1.4	2.0	.16	.02	.06	--
JUL 13...	--	--	.10	.39	1.1	1.5	.13	.02	.06	--
AUG 10...	--	--	.01	.03	1.3	1.3	.09	.00	.00	--
SEP 14...	140	7.7	.03	.04	1.1	1.1	.07	.00	.00	1300

11451100 NORTH FORK CACHE CREEK AT HOUGH SPRINGS, NEAR CLEARLAKE OAKS, CA

LOCATION.--Lat 39°09'56", long 122°37'08", in SE¼NW¼ sec.10, T.15 N., R.7 W., Lake County, Hydrologic Unit 18020116, on right bank 0.5 mi (0.8 km) upstream from Spanish Creek, 0.9 mi (1.4 km) upstream from Hough Springs, and 10 mi (16 km) northeast of Clearlake Oaks.

DRAINAGE AREA.--60.2 mi² (155.9 km²).

PERIOD OF REC AD.--October 1971 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,840 ft (561 m), from topographic map. Recording rain gage (relocation) 4.7 mi (7.6 km) northwest of gage. Altitude of gage is 2,050 ft (625 m), from topographic map.

REMARKS.--Records fair including those for period of no gage-height record, Jan. 8 to Feb. 15. No regulation or diversion above station.

AVERAGE DISCHARGE.--7 years, 85.4 ft³/s (2.419 m³/s), 61,870 acre-ft/yr (76.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,980 ft³/s (226 m³/s) Jan. 16, 1974, gage height, 9.23 ft (2.813 m) from floodmarks, from rating curve extended above 2,400 ft³/s (68.0 m³/s) on basis of slope-area measurement of maximum flow; no flow for many days in 1972, 1976-77.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage height (ft)	Gage height (m)
Dec. 22	Unknown	2220	62.9	5.29	1.612
Jan. 5	do	3500	99.1	unknown	
Jan. 16	do	*5060	143	7.58	2.310

Minimum daily discharge, 0.43 ft³/s (0.012 m³/s) Oct. 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	.76	.81	5.2	54	94	120	148	109	30	9.8	4.3	2.6
2	.73	.77	5.2	105	240	173	125	102	29	9.8	4.3	2.6
3	.65	.73	5.2	145	172	422	117	95	28	9.8	4.3	2.6
4	.63	.84	4.8	409	145	705	232	90	26	10	4.3	2.6
5	.56	1.8	4.8	1510	440	724	195	85	25	9.8	4.0	2.3
6	.50	1.7	4.8	986	810	563	573	79	24	9.2	4.0	2.3
7	.49	1.5	4.8	519	1040	442	361	74	23	8.1	4.0	2.3
8	.50	1.2	4.8	252	910	885	280	71	21	8.1	4.0	2.3
9	.51	1.1	4.6	1190	720	830	233	66	18	7.5	4.0	4.0
10	.52	1.0	4.5	440	580	619	197	65	18	7.5	4.0	7.5
11	.53	1.0	4.6	200	460	497	172	60	18	7.5	3.6	4.0
12	.50	1.1	7.0	190	780	403	155	58	17	7.5	3.6	2.9
13	.50	1.0	5.6	432	580	327	141	55	18	6.5	3.6	2.3
14	.47	1.0	372	1720	450	277	129	53	17	6.5	3.6	2.1
15	.46	1.1	290	1800	390	239	203	58	16	6.0	3.6	2.0
16	.44	1.1	200	2450	349	211	171	55	15	5.6	3.6	2.0
17	.44	1.1	120	892	311	191	147	51	15	5.6	3.6	2.0
18	.44	1.1	72	390	287	174	136	50	15	5.1	3.2	2.0
19	.44	1.0	34	290	265	157	138	47	14	5.1	3.2	2.0
20	.43	1.1	26	240	240	144	172	45	13	5.1	3.2	2.0
21	.43	169	23	205	216	136	166	43	12	5.1	3.2	2.0
22	.45	255	540	182	191	128	148	42	12	5.1	3.2	2.0
23	.45	37	470	150	176	131	135	41	12	4.7	3.2	2.0
24	.63	15	150	132	163	116	135	40	12	4.7	2.9	2.0
25	.59	10	109	122	153	107	204	41	12	4.7	2.9	1.8
26	.50	7.9	86	114	143	101	168	40	12	4.7	2.9	1.7
27	.50	6.6	143	103	134	96	149	38	12	4.7	2.9	1.7
28	.60	6.0	102	98	125	91	135	35	12	4.7	2.9	1.7
29	1.2	5.6	97	94	---	86	125	33	11	4.3	2.9	1.7
30	1.2	5.2	113	88	---	82	117	31	10	4.3	2.6	1.7
31	.92	---	82	83	---	95	---	30	---	4.3	2.6	---
TOTAL	17.97	539.35	3094.9	15585	10564	9272	5507	1782	517	201.4	108.2	72.7
MEAN	.58	18.0	99.8	503	377	299	184	57.5	17.2	6.50	3.49	2.42
MAX	1.2	255	540	2450	1040	885	573	109	30	10	4.3	7.5
MIN	.43	.73	4.5	54	94	82	117	30	10	4.3	2.6	1.7
AC-FT	36	1070	6140	30910	20950	18390	10920	3530	1030	399	215	144
(†)	2.80	4.76	10.91	24.43	9.72	8.52	4.82	.23	0	0	0	1.81

CAL YR 1977	TOTAL	4899.23	MEAN	13.4	MAX	540	MIN	0	AC-FT	9720
WTR YR 1978	TOTAL	47261.52	MEAN	129	MAX	2450	MIN	.43	AC-FT	93740

† Precipitation, in inches.

11451500 NORTH FORK CACHE CREEK NEAR LOWER LAKE, CA

LOCATION.--Lat 39°01'09", long 122°34'04", in NE¼ sec.31, T.14 N., R.6 W. (unsurveyed), Lake County, Hydrologic Unit 18020116, on right bank 500 ft (152 m) upstream from Sweet Hollow Creek, 5 mi (8 km) upstream from mouth, and 7 mi (11 km) northeast of Lower Lake.

DRAINAGE AREA.--197 mi² (510 km²).

PERIOD OF RECORD.--July 1930 to current year.

REVISED RECORDS.--WSP 831: 1932(M). WSP 1315-A: 1935(M), 1937-38(M).

GAGE.--Water-stage recorder. Datum of gage is 1,034.60 ft (315.346 m) National Geodetic Vertical Datum of 1929. Prior to June 15, 1939, at datum 2.00 ft (0.610 m) higher. June 15, 1939, to Mar. 17, 1976, at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records good. Flow regulated by Indian Valley Reservoir 8 mi (13 km) upstream beginning in June 1974, capacity, 296,000 acre-ft. (365 hm³). Several small diversions for irrigation of about 150 acres (607,000 m²) above station.

AVERAGE DISCHARGE (unadjusted).--44 years (1931-74), 199 ft³/s (5.636 m³/s), 144,200 acre-ft/yr (178 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,300 ft³/s (575 m³/s) Dec. 11, 1937, gage height, 14.98 ft (4.566 m) present datum, from floodmarks, from rating curve extended above 7,600 ft³/s (215 m³/s) on basis of slope-area measurement at gage height 14.9 ft (4.54 m), present datum for peak of Feb. 28, 1940; no flow at times in 1930-36, 1949-50, 1956-57, 1977. Maximum discharge since construction of Indian Valley Dam in 1974, 3,520 ft³/s (99.7 m³/s) Jan. 16, 1978, gage height, 7.85 ft (2.393 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,520 ft³/s (99.7 m³/s) Jan. 16, gage height, 7.85 ft (2.393 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	.66	2.0	25	58	65	99	59	31	104	51	25
2	0	.65	2.0	29	170	86	86	56	118	106	145	25
3	0	.64	2.0	34	109	168	75	52	117	108	145	24
4	0	.68	2.0	67	93	432	114	50	115	105	144	25
5	0	.93	2.0	766	487	390	94	47	111	105	143	26
6	0	.84	1.9	503	795	315	367	43	109	105	141	26
7	0	.78	1.9	205	1400	260	235	40	108	104	140	25
8	0	.69	2.0	130	939	510	168	37	107	105	139	24
9	0	.66	2.0	846	785	420	130	36	107	106	140	16
10	0	.66	2.0	382	522	330	108	35	107	107	139	14
11	0	.67	2.3	200	372	270	96	34	108	108	139	13
12	0	.70	3.7	185	554	230	88	33	109	108	139	13
13	0	.74	3.7	433	499	200	84	33	108	111	138	13
14	0	.74	197	1670	375	175	78	33	107	112	139	13
15	0	.72	290	2020	299	155	114	32	108	112	139	13
16	0	.73	42	2400	243	138	93	32	108	113	138	12
17	0	.73	156	1260	199	125	84	32	107	116	106	12
18	0	1.1	48	626	167	115	78	31	106	116	64	12
19	0	1.2	25	506	143	105	73	30	106	115	63	12
20	0	1.3	19	362	123	96	74	30	105	114	62	12
21	.05	65	19	259	108	90	81	30	104	115	63	12
22	.10	71	118	193	96	83	70	30	102	117	63	12
23	.15	12	301	149	89	77	65	30	103	120	52	12
24	.21	5.4	81	120	84	71	64	29	103	114	28	12
25	.24	3.7	46	103	77	65	105	29	103	113	27	12
26	.34	2.8	37	91	72	61	87	29	103	113	26	12
27	.42	2.5	50	80	66	58	79	29	104	111	26	12
28	.47	2.3	39	70	64	55	72	29	105	111	25	12
29	.57	2.2	32	62	---	53	67	28	105	111	25	12
30	.62	2.2	32	57	---	51	65	27	104	113	25	12
31	.67	---	28	51	---	74	---	27	---	89	25	---
TOTAL	3.84	184.92	1589.5	13884	8988	5323	3093	1092	3138	3407	2839	475
MEAN	.12	6.16	51.3	448	321	172	103	35.2	105	110	91.6	15.8
MAX	.67	71	301	2400	1400	510	367	59	118	120	145	26
MIN	0	.64	1.9	25	58	51	64	27	31	89	25	12
AC-FT	7.6	367	3150	27540	17830	10560	6130	2170	6220	6760	5630	942
CAL YR 1977 TOTAL	2322.40			MEAN 6.36	MAX 301	MIN 0	AC-FT 4610					
WTR YR 1978 TOTAL	44017.26			MEAN 121	MAX 2400	MIN 0	AC-FT 87310					

11451720 BEAR CREEK NEAR RUMSEY, CA

LOCATION.--Lat 38°56'47", long 122°20'48", in NE¼SW¼ sec.30, T.13 N., R.4 W., Colusa County, on left bank 0.3 mi (0.5 km) downstream from Brophy Canyon, 1.4 mi (2.3 km) upstream from mouth, and 7.3 mi (11.7 km) northwest of Rumsey.

DRAINAGE AREA.--100 mi² (259 km²).

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

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 750 ft (229 m), from topographic map.

REMARKS.--No regulation or diversion above station.

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

AVERAGE DISCHARGE.--20 years, 48.1 ft³/s (1.362 m³/s), 34,850 acre-ft/yr (43.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,720 ft³/s (275 m³/s) Jan. 5, 1965, gage height, 11.93 ft (3.636 m); no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since 1955, 12.33 ft (3.758 m) Feb. 24, 1958, discharge, 9,350 ft³/s (265 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,960 ft³/s (197 m³/s) Jan. 16, gage height, 10.14 ft (3.091 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	1.2	8.6	198	69	113	32	10	4.7	.70	.60
2		0	1.2	8.9	249	95	75	32	9.8	4.5	.60	.70
3		0	1.3	14	239	109	57	29	9.9	4.2	.60	.70
4		0	1.3	43	226	880	83	27	10	3.8	.50	.60
5		0	1.4	1530	596	485	58	25	10	3.6	.50	.60
6		0	1.5	373	1580	187	156	24	9.8	3.4	.50	.80
7		0	1.6	99	3690	144	98	22	9.2	3.1	.50	1.0
8		0	1.6	63	1000	586	69	22	8.5	3.0	.50	1.0
9		0	1.7	1110	1500	506	58	21	7.9	2.8	.40	1.4
10		0	1.8	228	311	237	54	21	7.5	2.5	.40	2.0
11		0	2.0	106	229	198	52	21	7.5	2.4	.40	2.7
12		0	2.5	160	909	209	50	20	7.1	2.3	.40	1.9
13		0	3.1	512	489	154	47	19	7.0	2.1	.40	1.4
14		.10	4.3	2700	281	141	45	18	6.7	2.0	.40	1.2
15		.40	185	2190	232	129	74	18	6.5	1.9	.40	1.2
16		.50	54	4030	203	121	81	18	6.3	1.8	.40	1.2
17		.50	157	2000	186	114	56	18	6.0	1.7	.40	1.1
18		.50	72	1200	172	110	48	17	5.8	1.6	.40	1.2
19		.50	19	1030	156	102	44	17	5.7	1.5	.40	1.1
20		.50	11	828	146	94	43	16	5.6	1.4	.40	1.2
21		4.2	9.5	702	137	96	42	16	5.6	1.4	.30	1.2
22		24	61	583	129	91	39	16	5.5	1.3	.40	1.3
23		8.0	305	503	115	84	36	15	5.5	1.2	.40	1.5
24		4.2	73	451	102	73	34	15	5.4	1.1	.50	1.4
25		2.9	25	386	91	68	54	15	5.4	1.1	.80	1.4
26		2.2	15	347	83	65	52	15	5.4	1.0	.90	1.4
27		1.8	26	309	76	62	43	14	5.4	1.0	.80	1.4
28		1.5	28	283	71	56	37	14	5.4	.90	.80	1.5
29		1.3	17	254	---	55	33	13	5.1	.80	.70	1.5
30		1.2	12	231	---	53	31	12	5.1	.80	.70	1.5
31		---	9.6	210	---	82	---	11	---	.70	.70	---
TOTAL	0	54.30	1105.6	22492.5	13396	5455	1762	593	210.6	65.60	16.20	37.70
MEAN	0	1.81	35.7	726	478	176	58.7	19.1	7.02	2.12	.52	1.26
MAX	0	24	305	4030	3690	880	156	32	10	4.7	.90	2.7
MIN	0	0	1.2	8.6	71	53	31	11	5.1	.70	.30	.60
AC-FT	0	108	2190	44610	26570	10820	3490	1180	418	130	32	75
CAL YR 1977	TOTAL	1401.00	MEAN	3.84	MAX	305	MIN	0	AC-FT	2780		
WTR YR 1978	TOTAL	45188.50	MEAN	124	MAX	4030	MIN	0	AC-FT	89630		

SACRAMENTO RIVER BASIN

11451760 CACHE CREEK AT RUMSEY, CA

LOCATION.--Lat 38°53'25", long 122°14'13", T.12 N., R.3 W., Yolo County, in Canada De Capay Grant, on downstream side of bridge on Arbuckle Road, 800 ft (244 m) north of Rumsey.

DRAINAGE AREA.--964 mi² (2,497 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1960 to September 1962, June 1965 to September 1973, December 1975 to current year. Prior to September 1973, published as "above Rumsey".

GAGE.--Water-stage recorder. Altitude of gage is 420 ft (128 m), from topographic map. Prior to September 1973, at site 3.0 mi (4.8 km) upstream at different datum.

REMARKS.--Flow partly regulated by Clear Lake (station 11450000) beginning in 1915. Flow also regulated by Indian Valley Reservoir beginning in June 1974, capacity, 296,000 acre-ft (365 hm³).

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

AVERAGE DISCHARGE.--12 years (water years 1961-62, 1966-78), 694 ft³/s (19.65 m³/s), 502,800 acre-ft/yr (620 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,400 ft³/s (1,230 m³/s), Jan. 24, 1970, gage height, 19.59 ft (5.971 m), from rating curve extended above 14,000 ft³/s (396 m³/s) on basis of slope-area measurement at gage height 21.42 ft (6.529 m); no flow for many days in 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 5, 1965, reached a stage of 21.42 ft (6.529 m) from flood-marks, discharge, 59,000 ft³/s (1,670 m³/s) by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,000 ft³/s (425 m³/s) Jan. 16, gage height, 20.37 ft (6.209 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	3.3	20	357	893	552	564	672	591	624	308
2		0	2.7	17	538	978	483	539	674	597	588	321
3		0	2.5	24	491	1190	428	522	744	644	581	318
4		0	2.4	57	418	2990	531	513	708	635	560	285
5		0	2.0	3150	1470	3070	468	506	651	603	512	305
6		0	1.8	1610	3020	3030	1930	521	637	583	508	330
7		0	1.8	614	4810	4030	3700	513	572	570	538	319
8		0	1.5	395	2950	5660	3580	536	586	579	563	284
9		0	1.4	3110	4890	5510	3450	531	585	553	577	251
10		0	1.6	1050	4410	4730	2210	544	663	585	565	215
11		0	1.5	535	3530	4480	1390	585	663	584	568	180
12		0	1.7	468	4880	4450	1310	613	666	583	579	148
13		0	1.9	1350	4750	4270	1250	648	684	580	563	144
14		0	6.3	6370	4080	4160	1230	699	673	589	539	143
15		0	688	7030	3870	4020	1440	716	668	653	482	133
16		0	225	9740	3710	3820	1420	703	648	669	479	118
17		0	363	4330	3580	3680	1960	677	650	668	474	110
18		0	252	2000	3440	3580	3100	673	661	664	467	125
19		0	82	1840	3320	3500	3100	674	666	656	451	130
20		0	39	1280	2580	2670	2370	666	689	626	422	132
21		2.1	26	1020	1040	925	380	662	685	657	419	135
22		135	177	857	952	865	285	676	674	666	422	129
23		81	804	736	865	576	260	679	681	654	456	128
24		32	271	639	877	524	247	677	676	637	454	127
25		18	110	576	872	491	311	686	658	649	445	127
26		13	62	526	876	470	356	686	629	647	417	146
27		7.8	72	480	873	454	338	684	637	646	384	181
28		6.2	92	443	876	435	316	681	656	651	369	139
29		4.7	53	413	---	420	541	663	654	638	379	134
30		3.8	35	391	---	404	570	657	640	618	345	119
31		---	28	371	---	431	---	654	---	613	327	---
TOTAL	0	303.6	3411.4	51442	68325	76706	39506	19348	19750	19288	15057	5634
MEAN	0	10.1	110	1659	2440	2474	1317	624	658	622	486	188
MAX	0	135	804	9740	4890	5660	3700	716	744	669	624	330
MIN	0	0	1.4	17	357	404	247	506	572	553	327	110
AC-FT	0	602	6770	102000	135500	152100	78360	38380	39170	38260	29870	11180
CAL YR 1977	TOTAL	4418.00	MEAN	12.1	MAX	804	MIN	0	AC-FT	8760		
WTR YR 1978	TOTAL	318771.00	MEAN	873	MAX	9740	MIN	0	AC-FT	632300		

11451760 CACHE CREEK AT RUMSEY, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-70, 1976 to current year.

CHEMICAL ANALYSES: December 1976 to current year.

WATER TEMPERATURES: Water years 1960-70, 1976.

SEDIMENT RECORDS: Water years 1960-63, 1965-70, 1976.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: January 1960 to September 1970, December 1975 to September 1976.

SEDIMENT RECORDS: January 1960 to September 1963, June 1965 to September 1970, December 1975 to September 1976.

COOPERATION.--Records furnished by 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 CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	SODIUM, DIS- SOLVED (MG/L AS NA)	ALKA- LITY (MG/L AS CAC03)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
DEC												
05...	1145	2.0	2800	8.4	13.0	--	12.0	--	--	--	--	--
27...	1115	64	974	7.9	9.0	--	10.9	--	--	--	--	--
JAN												
24...	0945	645	684	8.4	7.0	--	11.7	--	--	--	--	--
FEB												
24...	0950	885	537	8.4	13.0	--	10.2	--	--	--	--	--
MAR												
20...	1000	3450	353	8.1	13.0	--	10.1	--	--	--	--	--
APR												
14...	1030	1310	375	8.4	15.5	20	9.8	160	28	20	160	20
MAY												
11...	1000	582	393	8.2	18.0	--	9.6	--	--	--	--	--
JUN												
08...	1500	596	319	8.4	27.0	--	7.8	--	--	--	--	--
JUL												
10...	1210	587	291	8.5	--	--	8.8	--	--	--	--	--
AUG												
10...	1330	568	294	8.6	28.0	--	8.7	--	--	--	--	--
SEP												
07...	0945	324	315	8.3	20.0	8.0	10.5	140	25	17	140	11

DATE	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)	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, ORTH0, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTH0, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTH0, DIS- SOLVED (MG/L AS P04)
DEC											
05...	--	--	1.4	.07	.29	.60	.89	.05	--	.01	.03
27...	--	--	.77	.03	.11	.30	.41	.07	--	.02	.06
JAN											
24...	--	--	1.7	.01	.08	.10	.18	.03	--	.02	.06
FEB											
24...	--	--	.45	.03	.10	.40	.50	.06	--	.01	.03
MAR											
20...	--	--	.33	.03	.13	.60	.73	.10	--	.00	.00
APR											
14...	220	.30	.27	.04	.11	.80	.91	.11	--	.02	.06
MAY											
11...	--	--	.11	.01	.04	.96	1.0	.11	--	.03	.09
JUN											
08...	--	--	.42	.15	.04	.96	1.0	.10	--	.01	.03
JUL											
10...	--	--	.31	.05	.02	.90	.92	.14	--	.09	.28
AUG											
10...	--	--	.01	.00	.01	.80	.81	.09	--	.02	.06
SEP											
07...	194	.26	.05	.00	.00	1.1	1.1	--	.06	.02	.06

11452500 CACHE CREEK AT YOLO, CA

LOCATION.--Lat 38°43'38", long 121°48'22", in Rio Jesus Maria Grant, Yolo County, on left bank 35 ft (11 m) upstream from highway bridge, 0.5 mi (0.8 km) south of Yolo, and 7.3 mi (11.7 km) downstream from Moore Dam.

DRAINAGE AREA.--1,139 mi² (2,950 km²).

PERIOD OF RECORD.--January 1903 to current year. Records for water year 1903 incomplete, yearly estimate published in WSP 1315-A.

REVISED RECORDS.--WSP 1315-A: 1914(M). WSP 1345: 1906. WSP 1445: 1955. WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. See WSP 2131 for history of changes prior to Apr. 25, 1969. Apr. 25, 1969, to July 1976, at site 765 ft (233 m) upstream at same datum.

REMARKS.--Records good. Flow regulated by Clear Lake beginning in 1915 (station 11450000). Diversions for irrigation of about 30,000 acres (121 hm²) between Capay and Yolo, from data furnished by Clear Lake Water Co.

AVERAGE DISCHARGE.--76 years, 518 ft³/s (14.67 m³/s), 375,300 acre-ft/yr (463 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,400 ft³/s (1,170 m³/s) Feb. 25, 1958, gage height, 85.35 ft (26.015 m) present datum; maximum stage observed, 88.44 ft (26.957 m) present datum, Mar. 10, 1904; no flow at times in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,800 ft³/s (532 m³/s) Jan. 16, gage height, 72.73 ft (22.168 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	0	231	683	234	104	27	4.2	20	2.1
2			0	0	227	719	267	109	21	5.9	46	3.6
3			0	0	317	836	225	99	23	2.0	11	1.2
4			0	0	279	2330	207	80	36	2.7	2.7	1.8
5			0	1570	285	3390	265	75	59	6.7	9.6	1.6
6			0	1980	2570	2140	258	55	30	6.9	18	1.7
7			0	813	5100	3520	2860	25	17	7.8	21	2.2
8			0	331	4290	4020	3000	9.2	8.7	5.7	12	2.7
9			0	708	5670	6220	2930	16	7.5	7.8	5.8	2.0
10			0	641	4390	4430	2650	8.8	1.1	12	6.0	6.1
11			0	420	3710	3980	1110	6.0	4.3	10	2.9	10
12			0	333	3330	3930	1040	13	10	3.9	.16	3.7
13			0	942	5920	3640	955	17	11	.95	1.3	.37
14			0	2550	3860	3450	826	14	23	.03	13	0
15			0	5100	3580	3310	971	17	23	.33	9.9	0
16			0	11900	3360	3200	1220	31	13	.13	7.3	0
17			0	9130	3210	3090	1060	44	4.4	3.4	5.2	0
18			0	2520	3110	3000	2400	33	8.4	4.6	4.5	0
19			0	2120	3000	2930	2550	36	9.6	4.2	13	0
20			0	1370	2890	2840	2540	53	14	7.2	15	0
21			0	961	1370	1110	864	52	3.1	6.6	9.9	0
22			0	740	1030	738	193	129	1.0	3.0	6.3	0
23			0	578	870	597	108	82	2.1	2.5	4.8	0
24			276	469	825	368	74	33	.14	7.8	6.2	0
25			109	399	783	311	50	31	7.2	10	16	0
26			48	352	748	277	28	24	18	6.3	17	0
27			20	318	721	254	26	25	14	3.8	9.4	0
28			0	295	698	235	8.4	31	10	3.9	13	0
29			0	275	---	218	1.9	43	11	4.6	8.8	0
30			0	257	---	204	80	37	5.5	16	4.8	0
31		---	0	243	---	203	---	27	---	17	1.3	---
TOTAL	0	0	453	47315	66374	66173	29001.3	1359.0	423.04	177.94	321.86	39.07
MEAN	0	0	14.6	1526	2371	2135	967	43.8	14.1	5.74	10.4	1.30
MAX	0	0	276	11900	5920	6220	3000	129	59	17	46	10
MIN	0	0	0	0	227	203	1.9	6.0	.14	.03	.16	0
AC-FT	0	0	899	93850	131700	131300	57520	2700	839	353	638	77

CAL YR 1977 TOTAL 453.00 MEAN 1.24 MAX 276 MIN 0 AC-FT 899
WTR YR 1978 TOTAL 211637.21 MEAN 580 MAX 11900 MIN 0 AC-FT 419800

11453000 YOLO BYPASS NEAR WOODLAND, CA

LOCATION.--Lat 38°40'40", long 121°38'35", unsurveyed, Yolo County, on left bank 300 ft (91 m) upstream from Sacramento and Woodland railroad bridge, 6 mi (10 km) upstream from Sacramento Bypass, 6 mi (10 km) downstream from Fremont weir, and 7 mi (11 km) east of Woodland.

PERIOD OF RECORD.--October 1939 to September 1977. October 1977 to September 1978 (high flows only). Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 3.41 ft (1.039 m) below National Geodetic Vertical Datum of 1929. Prior to Dec. 17, 1941, nonrecording gage, and Dec. 18-31, 1941, water-stage recorder, at datum 0.73 ft (0.222 m) higher. Prior to Sept. 30, 1977, a supplementary water-stage recorder 6 mi (10 km) downstream at different datum recorded low flow.

REMARKS.--Records good. Flow is from Cache Creek and Knights Landing Ridge Cut plus floodwater passing over Fremont weir. See PERIOD OF RECORD. Beginning October 1977, only flows above 1,000 ft³/s (28.3 m³/s) are computed.

AVERAGE DISCHARGE.--38 years (water years 1939-77), 3,765 ft³/s (106.6 m³/s), 2,728,000 acre-ft/yr (3.36 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 272,000 ft³/s (7,700 m³/s) Feb. 8, 1942, gage height, 32.00 ft (9.754 m); no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 85,600 ft³/s (2,420 m³/s) Jan. 18, gage height, 27.67 ft (8.434 m).

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				---	3160	---	---					
2				---	2200	1130	---					
3				---	1160	1180	---					
4				---	---	2850	---					
5				---	---	5730	---					
6				2630	---	10300	---					
7				3740	5630	46900	1860					
8				2620	7560	52700	3830					
9				2250	7760	49500	3860					
10				6150	17000	48400	3900					
11				5650	31800	52500	2940					
12				4530	26200	52000	2050					
13				4260	25100	47700	1780					
14				5550	20700	43700	1530					
15				18900	18200	38400	1380					
16				41900	12500	33700	1760					
17				77000	8750	28700	1990					
18				84400	7550	20800	2530					
19				80500	7240	9700	3440					
20				63900	7030	6010	3590					
21				49100	6480	4260	2980					
22				36200	5360	2770	1170					
23				24200	4590	2340	---					
24				11500	3910	1720	---					
25				7970	3200	1240	---					
26				7240	2310	---	---					
27				6560	1550	---	---					
28				5940	---	---	---					
29				5360	---	---	---					
30				4700	---	---	---					
31				3910	---	---	---					
TOTAL				---	---	---	---					
MEAN				---	---	---	---					
MAX				---	---	---	---					
MIN				---	---	---	---					
AC-FT				---	---	---	---					

SACRAMENTO RIVER BASIN

11453170 DRY CREEK ABOVE APPLETREE CREEK NEAR MIDDLETOWN, CA

LOCATION.--Lat 38°44'25", long 122°41'17", in NE&SE& sec.1, T.10 N., R.8 W., Lake County, Hydrologic Unit 18020117, on left bank 0.4 mi (0.6 km) upstream from Appletree Creek, 4.1 mi (6.6 km) west of Middletown.

DRAINAGE AREA.--0.83 mi² (2.15 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to June 1978 (seasonal records only).

GAGE.--Water-stage recorder. Altitude of gage is 2,390 ft (728 m), from topographic map.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s (8.5 m³/s) and maximum (*) from rating curve extended above 18 ft³/s (0.51 m³/s) on basis of field estimate:

Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage height (ft)	Gage height (m)
Nov. 21	unknown	471	13.3	5.17	1.576
Dec. 14	1930	*545	15.4	5.30	1.615
Jan. 16	0030	530	15.0	5.28	1.609

Minimum daily discharge, 0.07 ft³/s (0.002 m³/s) Oct. 2-13.

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	.08	.15	1.3	8.1	1.2	3.6	3.1	2.6	.27			
2	.07	.15	1.2	8.9	14	19	11	2.6	.24			
3	.07	.16	1.1	8.1	8.2	28	7.0	2.4	.22			
4	.07	.18	.95	9.8	6.6	47	14	2.1	.22			
5	.07	.25	.90	76	25	49	9.9	1.9	.22			
6	.07	.21	.84	16	42	14	6.8	1.3	.17			
7	.07	.20	.78	7.5	49	9.1	5.5	1.3	.17			
8	.07	.20	.74	15	30	44	4.5	1.3	.16			
9	.07	.20	.73	25	20	18	3.7	1.3	.15			
10	.07	.20	.70	8.4	12	9.5	3.1	1.2	.15			
11	.07	.20	.83	5.8	9.6	5.7	3.0	1.2	.14			
12	.07	.21	.80	12	22	2.9	2.6	1.1	.14			
13	.07	.21	.76	20	17	2.7	2.7	1.1	.15			
14	.08	.20	118	39	12	4.2	2.6	1.1	.15			
15	.08	.20	51	41	10	3.2	7.8	1.2	.15			
16	.08	.19	20	67	9.5	2.6	5.4	2.0	.14			
17	.09	.19	34	20	8.9	2.2	4.8	1.5	.14			
18	.09	.19	15	15	8.2	2.0	4.3	.52	.14			
19	.09	.19	11	15	7.8	1.4	4.8	.62	.14			
20	.09	.19	9.5	9.2	7.2	1.4	4.9	.62	.14			
21	.10	115	9.5	7.0	6.9	1.3	4.4	.55	.13			
22	.10	35	19	5.8	6.5	2.5	3.8	.51	.12			
23	.10	9.0	21	4.8	7.7	1.5	4.0	.48	.12			
24	.11	5.2	12	4.2	4.9	1.4	4.0	.42	.12			
25	.11	4.3	9.2	3.4	4.7	1.3	5.4	.42	.12			
26	.11	3.5	8.9	2.5	4.8	1.1	4.7	.40	.11			
27	.12	2.4	15	2.1	4.0	1.0	4.3	.30	.10			
28	.13	2.0	11	1.9	2.6	.96	3.8	.34	.10			
29	.18	1.7	18	1.9	---	.77	3.5	.34	.10			
30	.21	1.4	13	1.4	---	2.8	2.9	.34	.10			
31	.16	---	10	1.0	---	5.0	---	.33	---			
TOTAL	2.95	183.37	416.73	462.8	362.3	289.13	152.3	33.39	4.52			
MEAN	.095	6.11	13.4	14.9	12.9	9.33	5.08	1.08	.15			
MAX	.21	115	118	76	49	49	14	2.6	.27			
MIN	.07	.15	.70	1.0	1.2	.77	2.6	.30	.10			
AC-FT	5.9	364	827	918	719	573	302	66	9.0			

11453170 DRY CREEK ABOVE APPLETREE CREEK, NEAR MIDDLETOWN, CA

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1978.

CHEMICAL ANALYSES: Water year 1978.

SPECIFIC CONDUCTANCE: Water year 1978.

pH: Water year 1978.

WATER TEMPERATURES: Water year 1978.

SEDIMENT RECORDS: Water year 1978.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1977 to September 1978.

pH: October 1977 to September 1978.

WATER TEMPERATURES: October 1977 to September 1978.

INSTRUMENTATION.--Water-quality monitor since October 1977.

REMARKS.--Differences between unadjusted recorder and field measurement values exceeded ± 10 percent micromhos for specific conductance; ± 0.5 units for pH; and $\pm 1.0^\circ\text{C}$ for water temperature at times during calibration visits. Specific conductance table omitted for period of no record June 1 to Sept. 30.

WATER TEMPERATURES: Maximum 17.0°C May 13; minimum, 5.0°C Nov. 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)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOC- CI, 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)
DEC 09...	1515	.73	492	8.5	8.0	K1	K7	310	67	15
MAR 14...	1020	4.2	378	8.5	10.0	<1	<1	230	49	10
JUN 12...	1430	.17	661	8.6	17.5	--	--	410	120	15

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	ALKA- LINITY (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)
DEC 09...	67	3.1	2	.1	.2	300	0	250	65
MAR 14...	50	1.8	2	.1	.2	220	1	180	39
JUN 12...	91	3.2	2	.1	.2	340	10	300	110

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, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)
DEC 09...	6.3	.0	17	322	.44	.11	10	0	0
MAR 14...	2.9	.1	18	232	.32	.05	80	0	0
JUN 12...	5.5	.0	19	422	.57	.02	40	1	300

DATE	BORON, DIS- SOLVED (UG/L AS B)	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, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
DEC 09...	50	0	10	0	50	1	.0	10	0
MAR 14...	30	0	20	1	30	11	.0	24	10
JUN 12...	50	0	15	3	70	0	.1	15	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.

11453170 DRY CREEK ABOVE APPLETREE CREEK, NEAR MIDDLETOWN, CA---Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	610	592	601	---	---	---	342	334	339
2	---	---	---	616	610	613	---	---	---	346	332	340
3	---	---	---	626	618	619	---	---	---	350	338	345
4	---	---	---	636	404	602	---	---	---	352	306	343
5	---	---	---	518	412	486	---	---	---	282	220	240
6	---	---	---	552	520	536	---	---	---	296	250	274
7	---	---	---	572	554	561	---	---	---	318	298	308
8	---	---	---	600	574	580	---	---	---	322	266	309
9	---	---	---	600	582	591	---	---	---	276	222	252
10	---	---	---	602	588	596	566	552	560	310	278	295
11	---	---	---	610	590	598	562	416	511	320	312	317
12	---	---	---	612	590	599	528	488	513	326	274	306
13	---	---	---	610	594	601	538	530	535	292	258	276
14	---	---	---	616	598	607	528	156	308	254	210	239
15	---	---	---	624	604	612	286	210	250	254	216	237
16	---	---	---	626	606	617	316	290	305	246	194	219
17	---	---	---	634	614	622	294	266	279	270	234	251
18	---	---	---	636	622	630	318	294	305	286	270	280
19	---	---	---	640	636	639	338	318	327	290	274	281
20	---	---	---	642	594	637	350	338	344	308	292	299
21	736	714	727	---	---	---	358	330	352	328	310	317
22	742	718	732	---	---	---	324	268	310	340	326	332
23	744	730	735	---	---	---	308	270	289	350	338	343
24	742	728	734	---	---	---	330	308	319	358	344	352
25	750	736	740	---	---	---	342	330	336	366	356	361
26	758	736	749	---	---	---	348	336	344	374	362	369
27	764	750	756	---	---	---	336	306	315	378	368	374
28	764	650	734	---	---	---	332	322	327	384	372	379
29	672	386	578	---	---	---	328	294	304	390	378	385
30	540	404	493	---	---	---	320	306	312	396	382	391
31	590	544	570	---	---	---	334	322	327	402	396	399
MONTH	764	386	686	642	404	597	566	156	353	402	194	315
	FEBRUARY			MARCH			APRIL			MAY		
1	402	386	399	428	378	411	384	280	333	450	440	446
2	382	246	312	377	113	226	388	344	371	463	449	456
3	---	---	---	210	116	166	400	120	334	472	460	466
4	---	---	---	181	89	137	296	144	256	482	468	475
5	---	---	---	190	74	139	319	127	278	535	479	489
6	---	---	---	251	167	225	261	149	226	508	496	499
7	---	---	---	289	245	274	301	247	283	507	499	503
8	---	---	---	246	84	154	333	279	315	521	509	512
9	---	---	---	239	147	203	361	313	345	530	516	523
10	---	---	---	284	232	258	376	358	367	548	526	532
11	---	---	---	305	267	288	388	374	382	538	530	534
12	---	---	---	334	288	313	408	384	396	544	532	536
13	---	---	---	357	311	339	413	405	409	550	536	542
14	---	---	---	374	334	356	423	413	418	548	524	546
15	---	---	---	390	354	377	422	210	315	---	---	---
16	---	---	---	406	374	399	371	331	358	---	---	---
17	---	---	---	421	405	415	384	368	374	---	---	---
18	---	---	---	437	419	429	408	372	388	---	---	---
19	---	---	---	447	411	440	405	297	380	---	---	---
20	---	---	---	453	443	449	384	368	377	---	---	---
21	---	---	---	461	453	456	405	383	394	---	---	---
22	---	---	---	466	458	461	417	399	409	---	---	---
23	---	---	---	460	364	426	424	410	418	---	---	---
24	---	---	---	468	446	460	429	349	412	---	---	---
25	---	---	---	478	466	474	390	328	371	---	---	---
26	---	---	---	486	476	483	404	380	394	---	---	---
27	---	---	---	493	481	489	415	399	407	---	---	---
28	---	---	---	501	491	496	426	410	419	---	---	---
29	---	---	---	503	449	474	437	421	428	---	---	---
30	---	---	---	511	451	486	443	431	436	---	---	---
31	---	---	---	525	379	462	---	---	---	---	---	---
MONTH	402	246	356	525	74	360	443	120	366	550	440	504

11453170 DRY CREEK ABOVE APPLETREE CREEK, NEAR MIDDLETOWN, CA---Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	8.7	8.6					---	---	8.4	8.4
2	---	---	8.8	8.6					---	---	8.4	8.0
3	---	---	8.7	8.6					---	---	8.2	8.0
4	---	---	8.6	8.5					---	---	8.2	8.0
5	---	---	8.5	8.4					---	---	8.1	8.0
6	---	---	8.6	8.4					---	---	8.2	8.1
7	---	---	8.6	8.3					---	---	8.3	8.2
8	---	---	8.4	8.3					---	---	8.3	8.0
9	---	---	8.3	8.2					---	---	8.4	8.2
10	---	---	8.2	8.1					---	---	8.7	8.3
11	---	---	8.2	8.1					---	---	8.7	8.4
12	---	---	8.1	8.1					---	---	8.4	8.4
13	---	---	8.1	8.1					---	---	8.4	8.4
14	---	---	8.1	8.1					---	---	8.6	8.4
15	---	---	8.4	8.1					---	---	8.6	8.6
16	---	---	8.4	8.1					---	---	8.6	8.6
17	---	---	8.2	8.1					---	---	8.7	8.6
18	---	---	8.2	8.1					---	---	8.7	8.6
19	---	---	8.2	8.2					---	---	8.7	8.7
20	---	---	8.2	8.2					---	---	8.7	8.7
21	8.7	8.6	---	---					---	---	8.7	8.7
22	8.7	8.7	---	---					---	---	8.8	8.7
23	8.7	8.7	---	---					---	---	8.7	8.7
24	8.6	8.6	---	---					8.3	8.2	8.8	8.7
25	8.7	8.6	---	---					8.4	8.3	8.8	8.7
26	8.6	8.6	---	---					8.4	8.3	8.8	8.7
27	8.6	8.6	---	---					8.4	8.4	8.8	8.8
28	8.6	8.6	---	---					8.4	8.4	8.8	8.8
29	8.7	8.5	---	---					---	---	8.8	8.7
30	8.7	8.6	---	---					---	---	8.8	8.7
31	8.7	8.6	---	---					---	---	8.9	8.7
MONTH	8.7	8.5	8.8	8.1					8.4	8.2	8.9	8.0
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.7	8.6	8.5	8.4	---	---	8.5	8.5				
2	8.7	8.7	8.5	8.4	---	---	8.5	8.5				
3	8.7	8.3	8.5	8.4	---	---	---	---				
4	8.6	8.4	8.5	8.5	---	---	---	---				
5	8.6	8.3	8.5	8.5	---	---	---	---				
6	8.5	8.3	8.5	8.5	---	---	---	---				
7	8.6	8.5	8.6	8.5	---	---	---	---				
8	8.6	8.6	8.6	8.5	---	---	---	---				
9	8.6	8.5	8.7	8.5	---	---	---	---				
10	8.5	8.4	8.7	8.6	---	---	---	---				
11	8.4	8.4	8.7	8.6	---	---	---	---				
12	8.4	8.4	8.7	8.6	---	---	---	---				
13	8.4	8.4	8.7	8.7	8.6	8.5	---	---				
14	8.4	8.4	8.7	8.7	8.6	8.5	---	---				
15	8.4	8.1	---	---	8.6	8.5	---	---				
16	8.3	8.3	---	---	8.6	8.5	---	---				
17	8.4	8.3	---	---	8.6	8.5	---	---				
18	8.4	8.3	---	---	8.6	8.5	---	---				
19	8.4	8.3	---	---	8.6	8.5	---	---				
20	8.4	8.3	---	---	8.6	8.5	---	---				
21	8.4	8.3	---	---	8.5	8.5	---	---				
22	8.4	8.4	---	---	8.5	8.5	---	---				
23	8.4	8.4	---	---	8.5	8.5	---	---				
24	8.4	8.3	---	---	8.5	8.5	---	---				
25	8.4	8.3	---	---	8.5	8.5	---	---				
26	8.4	8.4	---	---	8.5	8.5	---	---				
27	8.4	8.4	---	---	8.5	8.5	---	---				
28	8.5	8.4	---	---	8.5	8.5	---	---				
29	8.5	8.4	---	---	8.5	8.5	---	---				
30	8.5	8.4	---	---	8.5	8.5	---	---				
31	---	---	---	---	---	---	---	---				
MONTH	8.7	8.1	8.7	8.4	8.6	8.5	8.5	8.5				

11453170 DRY CREEK ABOVE APPLETREE CREEK, NEAR MIDDLETOWN, CA---Continued

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

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

11453170 DRY CREEK ABOVE APPLETREE CREEK, NEAR MIDDLETOWN, 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)	TUR- BID- ITY (NTU)	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
DEC 09...	1515	8.0	.73	2	.00	.50	--	--	--	--	--
FEB 02...	1240	9.0	14	11	.42	5.2	--	--	--	--	--
08...	1500	9.0	18	46	2.2	18	80	90	93	96	100
APR 12...	1620	14.0	2.6	2	.01	1.2	--	--	--	--	--
MAY 09...	1525	16.0	1.3	3	.01	1.2	--	--	--	--	--

SACRAMENTO RIVER BASIN

11453600 POPE CREEK NEAR POPE VALLEY, CA

LOCATION.--Lat 38°37'48", long 122°19'52", in SW¼ sec.17, T.9 N., R.4 W., Napa County, Hydrologic Unit 18020117, on left bank 0.2 mi (0.3 km) upstream from Lake Berryessa, 0.7 mi (1.1 km) downstream from Maxwell Creek, and 5.2 mi (8.4 km) east of Pope Valley.

DRAINAGE AREA.--78.3 mi² (202.8 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 450 ft (137 m), from topographic map.

REMARKS.--Flow regulated by Dick Weeks Reservoir, increased to 2,000 acre-ft (2.47 hm³) of usable storage in December 1973, and several smaller reservoirs with additional storage of about 600 acre-ft (740,000 m³).

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

AVERAGE DISCHARGE.--17 years (water years 1961-78), 86.4 ft³/s (2.447 m³/s), 62,600 acre-ft/yr (77.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,000 ft³/s (510 m³/s) Jan. 31, 1963, gage height, 19.79 ft (6.032 m), from rating curve extended above 7,700 ft³/s (218 m³/s); no flow many days in 1960-68, 1971-73, 1976-77.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,500 ft³/s (326 m³/s) Jan. 16, gage height, 15.26 ft (4.651 m); 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	.40	36	68	76	89	48	8.3	4.5	7.6	7.0
2		0	.30	50	201	212	72	42	8.5	4.3	7.6	6.9
3		0	.30	65	109	406	59	39	9.0	5.1	7.6	6.9
4		0	.30	271	85	1780	180	36	8.7	5.8	7.8	7.1
5		0	.30	2640	571	1160	88	33	7.7	5.7	7.6	7.4
6		0	.30	644	1290	475	270	31	7.0	4.9	7.7	7.9
7		0	.90	243	2080	321	157	29	6.3	5.1	7.6	7.8
8		0	.80	162	1240	780	109	28	5.9	5.7	7.3	8.6
9		0	1.3	1460	1030	593	86	27	5.3	6.0	7.4	12
10		0	1.3	379	430	366	71	26	5.7	5.9	7.0	13
11		0	1.8	206	299	303	65	26	6.0	5.9	7.1	9.7
12		0	6.0	306	864	268	61	25	5.6	6.2	7.2	8.1
13		0	2.8	457	567	214	55	24	5.5	6.0	7.7	7.4
14		0	597	2580	354	184	51	24	5.7	6.9	7.5	7.3
15		0	906	1340	289	158	164	25	5.3	9.1	7.5	7.5
16		0	80	4710	235	142	138	23	4.7	9.2	7.6	8.3
17		0	329	1360	202	129	94	21	4.5	8.9	7.6	8.5
18		0	97	709	174	119	75	19	4.4	8.8	7.6	8.0
19		0	40	795	150	108	68	18	4.6	8.8	7.5	4.3
20		0	21	435	133	101	88	17	4.4	9.0	7.6	1.6
21		605	15	323	120	98	75	17	4.3	9.0	7.5	.80
22		353	239	257	109	101	63	16	4.0	8.8	7.5	.40
23		31	569	205	100	106	58	16	4.1	8.7	7.5	.30
24		7.0	120	166	94	91	58	15	5.1	8.2	7.7	2.1
25		3.9	58	141	88	80	90	15	3.5	8.0	7.8	3.3
26		1.6	43	123	85	73	95	14	3.1	8.3	7.6	3.4
27		1.0	129	107	78	68	70	14	3.1	8.2	7.5	3.5
28		.60	75	95	75	62	61	12	4.2	8.1	7.3	3.4
29		.50	73	84	---	58	55	11	4.5	8.0	7.2	3.3
30		.40	64	76	---	56	52	9.6	4.7	8.0	7.0	3.4
31		---	46	69	---	65	---	8.3	---	7.9	6.9	---
TOTAL	0	1004.00	3517.80	20494	11120	8753	2717	708.9	163.7	223.0	231.6	179.20
MEAN	0	33.5	113	661	397	282	90.6	22.9	5.46	7.19	7.47	5.97
MAX	0	605	906	4710	2080	1780	270	48	9.0	9.2	7.8	13
MIN	0	0	.30	36	68	56	51	8.3	3.1	4.3	6.9	.30
AC-FT	0	1990	6980	40650	22060	17360	5390	1410	325	442	459	355
CAL YR 1977	TOTAL	5044.50	MEAN	13.8	MAX	906	MIN	0	AC-FT	10010		
WTR YR 1978	TOTAL	49112.20	MEAN	135	MAX	4710	MIN	0	AC-FT	97410		

11453600 POPE CREEK NEAR POPE VALLEY, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: 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)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	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)
DEC 08...	1515	.68	613	8.6	9.5	1.0	10.8	--	--	--	--
JAN 25...	1215	.80	322	8.2	9.5	6.1	11.3	190	34	15	37
MAR 23...	1155	109	442	8.5	16.0	1.5	10.0	--	--	--	--
JUN 09...	1310	5.3	693	8.5	25.0	.20	11.5	--	--	--	--

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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)
DEC 08...	--	--	--	--	--	--	--	--	--	--
JAN 25...	9.7	10	.3	1.4	190	0	160	33	6.9	.1
MAR 23...	--	--	--	--	--	--	--	--	--	--
JUN 09...	--	--	--	--	--	--	--	--	--	--

DATE	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 DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, 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)
DEC 08...	--	--	--	.06	.06	.01	.76	.77	.83	.02
JAN 25...	31	232	.32	.81	.82	.01	.04	.05	.86	.04
MAR 23...	--	--	--	.26	.25	.00	.51	.51	.77	.03
JUN 09...	--	--	--	.01	.01	.01	.09	.10	.11	.01

DATE	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)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	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)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
DEC 08...	.00	.00	--	<10	<10	--	<100	8	.1	<10
JAN 25...	.02	.06	190	--	--	40	--	--	--	--
MAR 23...	.00	.00	--	--	--	--	--	--	--	--
JUN 09...	.00	.00	--	--	--	--	--	--	--	--

SACRAMENTO RIVER BASIN

11453900 LAKE BERRYESSA NEAR WINTERS, CA

LOCATION.--Lat 38°30'48", long 122°06'13", in SE¼NW¼ sec.29, T.8 N., R.2 W., Napa County, near center of Monticello Dam on Putah Creek, 7.4 mi (11.9 km) west of Winters.

DRAINAGE AREA.--566 mi² (1,466 km²).

WATER-CONTENTS RECORD

PERIOD OF RECORD.--January 1957 to current year.

REVISED RECORDS.--WSP 1735: 1958-60. WSP 1931: Drainage area.

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

REMARKS.--Reservoir is formed by concrete arch-gravity dam completed November 1956. Usable capacity, 1,592,000 acre-ft (1.96 km³) between elevations 253.25 ft (77.101 m) invert of outlet valves, and 440 ft (134.1 m) crest of glory-hole spillway. Dead storage, 10,340 acre-ft (12.7 hm³). Water is released down Putah Creek and is diverted into Putah South diversion canal for irrigation of about 46,000 acres (186 km²) in the lower Sacramento Valley. Total diverted during current year was 185,600 acre-ft (229 hm³). Releases for irrigation began in May 1959. Records, including extremes, show total contents at 2400 hours.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,733,000 acre-ft (2.14 km³) Jan. 24, 1970, elevation, 446.67 ft (136.415 m); minimum since irrigation pool first filled, 738,600 acre-ft (911 hm³) Nov. 20, 1977, elevation, 388.04 ft (118.275 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,339,200 acre-ft (1.65 km³) Apr. 28, elevation, 425.86 ft (129.802 m); minimum, 738,600 acre-ft (911 hm³) Nov. 20, elevation, 388.04 ft (118.275 m).

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

380	632400
390	765700
400	911200
410	1068000
420	1236000
430	1414000
450	1800000

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	758500	743800	751300	791000	1068800	1211000	1316300	1338600	1305500	1255600	1202900	1150700
2	757700	743600	751100	791600	1070900	1213400	1317200	1338500	1303700	1254000	1201000	1149400
3	757100	743400	751000	792500	1071500	1219600	1318300	1338300	1302300	1252300	1199200	1148000
4	756400	743400	750700	795300	1072700	1238600	1319700	1338100	1300700	1250900	1197300	1146900
5	756000	743400	750500	831800	1079900	1252100	1320800	1337600	1299000	1249500	1195600	1145900
6	755000	743000	750500	841400	1094300	1258000	1323800	1336500	1297200	1248100	1193900	1144900
7	754500	742300	750300	844600	1119000	1261700	1325200	1335800	1295400	1246400	1192200	1143700
8	754100	741800	750200	847200	1135300	1272500	1326300	1335400	1293800	1244600	1190500	1142500
9	753600	741400	749900	868500	1147400	1280100	1327000	1334500	1292100	1243100	1188800	1141700
10	752800	741100	749800	873600	1153200	1284800	1327700	1333600	1290300	1241200	1186900	1140800
11	752200	740800	749800	876400	1157100	1288700	1328800	1332700	1288500	1239300	1184800	1139500
12	751600	740800	749500	880400	1170600	1291700	1329200	1332200	1286800	1237700	1182800	1138700
13	751000	740800	749500	888300	1179200	1293700	1329500	1331300	1285200	1236100	1180900	1137700
14	750500	740500	753200	924900	1183600	1296100	1329700	1330400	1283600	1234400	1179400	1136700
15	750000	740400	764100	949400	1187600	1298100	1332400	1329300	1281900	1232500	1177400	1135700
16	749500	740400	764900	1011900	1190600	1300000	1333600	1327900	1280300	1230800	1175700	1134800
17	749100	740000	769200	1028700	1193500	1301400	1334200	1326700	1278700	1229100	1173800	1133300
18	748900	739600	770500	1036800	1195900	1302800	1334700	1325400	1277100	1227300	1172300	1132000
19	748100	739200	771100	1045700	1197800	1304300	1335400	1324200	1275500	1225400	1170800	1130500
20	747700	738600	771300	1050300	1199700	1305100	1336000	1322900	1274000	1223700	1169200	1129300
21	747300	746500	772200	1053500	1201200	1306600	1336300	1321500	1272400	1222000	1167200	1128300
22	747000	751600	776500	1056500	1202700	1307800	1336500	1320200	1270600	1220100	1165700	1127500
23	746600	751800	782300	1058400	1204300	1309000	1336700	1318600	1269000	1218000	1164400	1126700
24	746300	751800	783800	1059900	1205800	1309900	1337200	1317000	1267300	1216100	1162700	1125700
25	746000	752100	784400	1061500	1207000	1311000	1338100	1315600	1265500	1214400	1161300	1124700
26	745600	752100	785400	1063100	1208200	1311700	1338500	1314000	1263800	1212700	1159800	1123700
27	745200	751800	787200	1064400	1209100	1312600	1338800	1312800	1262400	1211000	1158300	1123000
28	744800	751700	788400	1065400	1210100	1313300	1339200	1311500	1260700	1209100	1156900	1122500
29	744700	751600	789100	1066000	---	1313800	1339000	1310300	1258900	1207400	1155600	1121800
30	744400	751300	789800	1067000	---	1314600	1339000	1308900	1257200	1205800	1154200	1121200
31	744100	---	790600	1067500	---	1315400	---	1307300	---	1204300	1152400	---
MAX	758500	752100	790600	1067500	1210100	1315400	1339200	1338600	1305500	1255600	1202900	1150700
MIN	744100	738600	749500	791000	1068800	1211000	1316300	1307300	1257200	1204300	1152400	1121200
†	388.44	388.96	391.77	409.96	418.50	424.53	425.85	424.07	421.22	418.16	415.10	413.23
‡	-14800	+7200	+39300	+276900	+142600	+105300	+23600	-31700	-50100	-52900	-51900	-31200
††	3780	1964	1045	1035	1466	3174	4515	10991	12103	12817	10901	7028

CAL YR 1977 ‡ -209800
WTR YR 1978 ‡ +362300

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

‡ Change in contents, in acre-feet.

†† Evaporation, in acre-feet.

11453900 LAKE BERRYESSA NEAR WINTERS, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL ANALYSES: Water years 1977 to current year.

AT PUTAH CREEK ARM (Lat 38°37'51", long 122°16'24", Las Putas Grant, Napa County,
Hydrologic Unit 18020117)

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)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	LIGHT TRANS- MISSION 1 METER PATH- LENGTH (%)	LIGHT, ATTENU- ATION COEFFI- CIENT (ALPHA/ METER)
DEC									
07...	1415	.50	358	8.5	14.3	--	9.7	8.5	2.46
07...	1416	1.0	358	8.5	14.3	--	9.7	8.5	2.46
07...	1417	2.0	358	8.5	14.3	--	9.7	8.5	2.46
07...	1418	3.0	359	8.5	14.1	--	9.5	8.5	2.46
07...	1419	4.0	358	8.5	14.0	--	9.4	8.5	2.46
07...	1420	5.0	358	8.5	14.0	--	9.3	8.5	2.46
07...	1421	6.0	358	8.5	14.0	--	9.2	9.2	2.39
07...	1422	7.0	357	8.4	13.9	--	8.9	9.2	2.39
07...	1423	8.0	357	8.4	13.9	--	8.5	7.3	2.62
07...	1424	9.0	357	8.4	13.9	--	8.5	7.3	2.62
07...	1425	10.0	357	8.4	13.9	--	8.2	1.2	4.44
07...	1426	11.0	357	8.4	13.8	--	7.9	.81	4.82
07...	1427	12.0	357	8.3	13.8	--	7.7	1.3	4.32
07...	1428	13.0	357	8.3	13.8	--	7.7	.71	4.95
07...	1429	14.0	357	8.3	13.8	--	7.3	.46	5.39
07...	1430	15.0	360	8.3	13.7	--	7.3	.05	7.59
07...	1431	16.0	360	8.3	13.7	--	7.2	.03	8.01
07...	1432	17.0	360	8.3	13.7	--	7.2	.00	14.76
07...	1433	18.0	360	8.3	13.7	--	7.2	.00	14.76
07...	1434	19.0	360	8.3	13.7	--	7.3	.00	14.03
07...	1435	20.0	361	8.3	13.5	--	8.1	.00	12.68
07...	1450	--	--	--	--	1.80	--	--	--
MAR									
22...	1445	.50	276	8.9	17.7	--	13.4	3.1	3.47
22...	1447	1.0	281	8.9	16.7	--	13.8	2.6	3.66
22...	1448	2.0	283	8.9	16.1	--	13.8	2.1	3.87
22...	1450	3.0	282	8.9	15.6	--	13.7	2.6	3.66
22...	1451	4.0	292	8.7	13.6	--	12.8	2.8	3.57
22...	1452	5.0	290	8.5	13.1	--	12.2	2.1	3.87
22...	1453	6.0	286	8.4	13.0	--	12.2	3.1	3.47
22...	1454	7.0	283	8.4	12.9	--	12.1	--	--
22...	1455	8.0	282	8.4	12.9	--	12.2	3.7	3.28
22...	1456	10.0	282	8.4	12.8	--	12.2	2.6	3.66
22...	1457	12.0	286	8.3	12.7	--	11.9	3.1	3.47
22...	1458	14.0	282	8.3	12.4	--	12.0	.10	4.56
22...	1459	16.0	280	8.3	12.3	--	11.9	.81	4.82
22...	1500	18.0	283	8.3	12.1	--	11.6	.46	5.39
22...	1501	20.0	285	8.2	11.8	--	11.9	.33	5.71
22...	1502	22.0	288	8.2	11.6	--	12.0	.19	6.24
22...	1503	24.0	292	8.2	11.5	--	11.6	.01	9.02
22...	1504	26.0	296	8.2	11.5	--	11.6	.00	10.64
22...	1505	28.0	298	8.1	11.5	--	11.4	.00	11.98
22...	1506	29.0	--	--	--	--	--	.00	12.49
22...	1507	30.0	301	8.1	11.5	--	11.1	.00	12.88
22...	1508	31.0	301	8.1	11.5	--	11.1	.00	13.90
JUN									
08...	1345	.50	328	8.5	26.5	--	9.1	30	1.20
08...	1347	1.0	324	8.5	26.1	--	9.1	21	1.54
08...	1349	2.0	325	8.6	24.8	--	9.2	21	1.54
08...	1350	3.0	326	8.5	24.1	--	9.3	25	1.37
08...	1351	4.0	324	8.6	23.2	--	9.6	28	1.26
08...	1352	5.0	322	8.5	22.4	--	9.6	27	1.31
08...	1353	6.0	322	8.5	21.7	--	9.2	41	.89
08...	1354	7.0	321	8.4	20.9	--	8.6	39	.94
08...	1355	8.0	324	8.3	20.2	--	7.7	41	.89
08...	1356	9.0	321	8.2	19.5	--	7.6	28	1.26
08...	1357	10.0	321	8.2	19.0	--	7.1	27	1.31
08...	1358	11.0	320	8.1	17.7	--	6.7	37	.99
08...	1359	12.0	319	8.1	16.9	--	6.7	30	1.20
08...	1400	13.0	318	8.0	16.1	--	6.4	23	1.48
08...	1401	14.0	311	7.8	15.3	--	6.6	21	1.54
08...	1402	15.0	311	7.8	14.9	--	6.6	15	1.91
08...	1403	16.0	312	7.8	14.4	--	6.5	9.8	2.32
08...	1404	17.0	310	7.7	13.9	--	6.3	9.8	2.32
08...	1405	18.0	310	7.7	13.7	--	6.3	11	2.25
08...	1406	20.0	309	7.7	13.0	--	6.0	7.9	2.54
08...	1407	22.0	312	7.7	12.7	--	5.1	1.2	4.44
08...	1408	24.0	308	7.7	12.4	--	4.8	.01	9.42
08...	1409	26.0	306	7.7	12.3	--	4.9	.01	9.86
08...	1410	28.0	307	7.7	12.2	--	4.9	.00	10.10
08...	1411	30.0	306	7.7	12.2	--	4.9	.00	10.10
08...	1415	--	--	--	--	4.6	--	--	--

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

SACRAMENTO RIVER BASIN

11453900 LAKE BERRYESSA NEAR WINTERS, CA--Continued

AT PUTAH CREEK ARM--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMPLING DEPTH (M) ^{1/}	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARDNESS, (MG/L AS CaCO3)	HARDNESS, NONCARBONATE (MG/L AS CaCO3)	CALCIUM, DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM PERCENT
DEC 07...	1540	3.0	359	8.5	14.1	9.5	190	9	20	33	10	10
07...	1550	15.0	360	8.3	13.7	7.3	190	14	20	33	10	10
MAR 22...	1450	3.0	282	8.9	15.6	13.7	150	6	17	27	8.5	11
22...	1505	28.0	298	8.1	11.5	11.4	160	19	19	27	9.6	12
JUN 08...	1350	3.0	326	8.5	24.1	9.3	--	--	--	--	--	--
08...	1357	10.0	321	8.2	19.0	7.1	--	--	--	--	--	--
08...	1410	28.0	307	7.7	12.2	4.9	--	--	--	--	--	--
DATE		SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	ALKALINITY (MG/L AS CaCO3)	SULFATE, DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS CL)	FLUORIDE, 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)
DEC 07...		.3	1.5	210	3	180	22	6.2	.1	16	216	.29
07...		.3	1.5	210	0	170	23	6.3	.1	16	214	.29
MAR 22...		.3	1.3	160	10	150	19	5.3	.1	14	181	.25
22...		.3	1.3	170	0	140	23	5.9	.1	15	186	.25
JUN 08...		--	--	--	--	--	--	--	--	--	--	--
08...		--	--	--	--	--	--	--	--	--	--	--
08...		--	--	--	--	--	--	--	--	--	--	--
DATE		NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DIS-SOLVED (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, ORTHO, DIS-SOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	BORON, DIS-SOLVED (UG/L AS B)	IRON, DIS-SOLVED (UG/L AS FE)
DEC 07...		.01	.01	.00	.47	.47	.48	.02	.00	.00	190	10
07...		.06	.06	.00	.54	.54	.60	.02	.00	.00	190	20
MAR 22...		.02	.00	.01	1.1	1.1	1.1	.03	.00	.00	150	40
22...		.29	.27	.01	.34	.35	.64	.05	.01	.03	170	40
JUN 08...		.01	.04	.00	.21	.21	.22	.01	.01	.03	--	--
08...		.04	.06	.00	.85	.85	.89	.01	.00	.00	--	--
08...		.33	.37	.00	.15	.15	.48	.00	.02	.06	--	--

^{1/} To convert meters to feet, multiply by 3.281.

11453900 LAKE BERRYESSA NEAR WINTERS, CA--Continued

AT LAKE CENTER (Lat 38°33'32", long 122°12'24", Las Putas Grant, Napa County,
Hydrologic Unit 18020117)

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)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	LIGHT TRANSMISSION 1 METER PATH- LENGTH (%)	LIGHT, ATTENU- ATION COEFFI- CIENT (ALPHA/ METER)
DEC									
07...	1015	.50	356	8.4	14.0	--	--	9.2	2.39
07...	1016	1.0	357	8.4	14.0	--	7.8	9.2	2.39
07...	1017	2.0	357	8.4	14.0	--	8.1	9.2	2.39
07...	1018	3.0	357	8.4	14.0	--	8.2	9.2	2.39
07...	1019	4.0	357	8.4	14.0	--	7.6	9.2	2.39
07...	1020	5.0	357	8.4	14.0	--	7.6	9.2	2.39
07...	1021	6.0	357	8.4	14.0	--	7.6	9.8	2.32
07...	1022	7.0	357	8.4	14.0	--	7.6	9.8	2.32
07...	1023	8.0	357	8.3	14.0	--	7.6	9.8	2.32
07...	1024	9.0	357	8.3	14.0	--	7.6	9.8	2.32
07...	1025	10.0	357	8.3	14.0	--	7.6	9.8	2.32
07...	1026	11.0	354	8.3	14.0	--	7.6	9.2	2.39
07...	1027	12.0	354	8.3	14.0	--	7.6	9.8	2.32
07...	1028	13.0	354	8.3	14.0	--	7.6	9.8	2.32
07...	1029	14.0	354	8.3	14.0	--	7.6	9.2	2.39
07...	1030	15.0	354	8.3	14.0	--	7.3	9.2	2.39
07...	1031	16.0	354	8.3	14.0	--	7.0	8.5	2.46
07...	1032	17.0	353	8.3	14.0	--	7.0	7.9	2.54
07...	1033	18.0	353	8.3	14.0	--	7.1	3.4	3.38
07...	1034	19.0	352	8.3	13.9	--	6.8	1.5	4.20
07...	1035	20.0	352	8.3	13.9	--	6.7	.81	4.82
07...	1036	21.0	351	8.3	13.9	--	6.7	.46	5.39
07...	1037	22.0	349	8.2	13.8	--	6.3	.53	5.24
07...	1039	23.0	349	8.2	13.8	--	6.4	.19	6.24
07...	1040	24.0	349	8.2	13.8	--	6.4	.12	6.75
07...	1041	25.0	355	8.2	13.7	--	6.4	.09	6.97
07...	1042	26.0	352	8.2	13.7	--	6.2	.08	7.09
07...	1043	27.0	352	8.2	13.7	--	6.0	.06	7.46
07...	1044	28.0	351	8.2	13.6	--	5.6	.04	7.72
07...	1045	29.0	347	8.1	13.6	--	5.5	.03	8.01
07...	1046	30.0	343	8.1	13.6	--	5.6	.00	11.60
07...	1047	31.0	--	--	--	--	--	.00	12.88
07...	1048	32.0	--	--	--	--	--	.00	19.31
07...	1049	33.0	--	--	--	--	--	.00	21.19
07...	1050	34.0	--	--	--	--	--	.00	21.19
07...	1100	--	--	--	--	1.60	--	--	--
MAR									
22...	1010	.50	282	8.5	15.9	--	12.5	2.3	3.77
22...	1011	1.0	282	8.5	15.8	--	12.4	2.1	3.87
22...	1013	2.0	284	8.5	15.7	--	12.3	2.6	3.66
22...	1015	3.0	284	8.5	15.5	--	12.3	3.7	3.28
22...	1016	4.0	293	8.2	13.8	--	11.1	4.5	3.11
22...	1017	5.0	292	8.2	13.3	--	11.0	4.1	3.19
22...	1018	6.0	292	8.1	13.0	--	10.9	3.1	3.47
22...	1019	7.0	296	8.1	12.6	--	10.8	--	--
22...	1020	8.0	293	8.1	12.5	--	10.9	3.4	3.38
22...	1021	10.0	289	8.1	12.3	--	10.9	3.4	3.38
22...	1022	12.0	293	8.1	12.2	--	10.8	2.1	3.87
22...	1023	14.0	293	8.0	12.0	--	10.4	1.7	4.09
22...	1024	16.0	293	8.0	11.7	--	10.8	1.3	4.32
22...	1025	18.0	288	8.0	11.5	--	11.0	1.7	4.09
22...	1026	20.0	288	8.0	11.4	--	10.5	1.3	4.32
22...	1027	22.0	286	8.0	11.4	--	10.6	1.7	4.09
22...	1028	24.0	286	8.0	11.3	--	10.5	.81	4.82
22...	1029	26.0	289	8.0	11.2	--	10.2	.81	4.82
22...	1030	28.0	289	8.0	11.2	--	10.2	.81	4.82
22...	1031	30.0	288	8.0	11.2	--	10.2	.92	4.68
22...	1032	32.0	289	7.9	11.0	--	10.3	1.3	4.32
22...	1033	34.0	289	7.9	11.0	--	10.3	1.3	4.32
22...	1034	36.0	289	7.9	11.0	--	10.2	1.2	4.44
22...	1035	38.0	289	7.9	11.0	--	10.3	1.2	4.44
22...	1036	40.0	289	7.9	11.0	--	10.3	1.0	4.56
22...	1037	42.0	290	7.9	11.0	--	10.3	1.0	4.56
22...	1038	44.0	290	7.9	11.0	--	10.1	.92	4.68
22...	1039	45.0	290	7.5	11.0	--	10.0	.53	5.24
JUN									
08...	0940	.50	317	8.4	23.9	--	8.7	47	.74
08...	0942	1.0	319	8.5	23.7	--	9.0	43	.84
08...	0944	2.0	317	8.5	23.4	--	9.6	43	.84
08...	0945	3.0	316	8.5	23.3	--	10.1	43	.84
08...	0946	4.0	317	8.5	23.1	--	10.2	41	.89
08...	0947	5.0	318	8.5	22.2	--	10.4	39	.94
08...	0948	6.0	314	8.4	20.9	--	10.8	37	.99
08...	0949	7.0	315	8.4	20.6	--	10.6	41	.89
08...	0950	8.0	317	8.3	19.4	--	11.0	39	.94
08...	0951	9.0	314	8.2	18.3	--	10.5	35	1.04
08...	0952	10.0	313	8.2	17.6	--	10.2	30	1.20
08...	0953	11.0	313	8.1	17.1	--	9.7	28	1.26

^{1/} To convert meters to feet, multiply by 3.281.

SACRAMENTO RIVER BASIN

11453900 LAKE BERRYESSA NEAR WINTERS, CA--Continued

AT LAKE CENTER--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)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	LIGHT TRANSMISSION 1 METER PATH- LENGTH (%)	LIGHT, ATTENU- ATION COEFFI- CIENT (ALPHA/ METER)		
JUN											
08...	0954	12.0	312	8.0	16.5	--	9.6	28	1.26		
08...	0955	13.0	311	7.9	15.9	--	9.0	28	1.26		
08...	0956	14.0	309	7.8	15.3	--	8.9	23	1.48		
08...	0957	15.0	310	7.9	15.0	--	8.8	21	1.54		
08...	0958	16.0	308	7.9	14.8	--	8.8	21	1.54		
08...	0959	17.0	310	8.0	14.5	--	8.6	18	1.72		
08...	1000	18.0	309	8.0	13.9	--	8.3	16	1.85		
08...	1001	19.0	307	8.0	13.4	--	6.4	9.8	2.32		
08...	1002	20.0	309	8.0	13.2	--	6.4	6.2	2.77		
08...	1003	22.0	307	8.0	12.9	--	6.3	4.5	3.11		
08...	1004	24.0	306	8.0	12.5	--	6.4	4.5	3.11		
08...	1005	26.0	305	7.9	12.2	--	6.0	.71	4.95		
08...	1006	28.0	303	7.9	12.1	--	5.9	.33	5.71		
08...	1007	30.0	302	7.9	12.0	--	5.9	.16	6.44		
08...	1008	32.0	301	7.9	11.9	--	5.9	.08	7.09		
08...	1009	34.0	301	7.9	11.8	--	5.9	.07	7.33		
08...	1010	36.0	299	7.9	11.8	--	5.9	.07	7.33		
08...	1011	38.0	304	7.9	11.8	--	5.8	.03	8.16		
08...	1012	40.0	304	7.8	11.7	--	5.7	.02	8.48		
08...	1013	42.0	304	7.8	11.7	--	5.7	.01	9.21		
08...	1014	44.0	304	7.8	11.7	--	5.7	.02	8.48		
08...	1015	46.0	304	7.8	11.7	--	5.7	.02	8.48		
08...	1030	--	--	--	--	7.1	--	--	--		
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- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	
DEC											
07...	1230	3.0	357	8.4	14.0	8.2	180	0	19	33	
07...	1240	30.0	343	8.1	13.6	5.6	180	11	19	33	
MAR											
22...	1015	3.0	284	8.5	15.5	12.3	150	12	19	26	
22...	1036	40.0	289	7.9	11.0	10.3	160	17	18	27	
JUN											
08...	0945	3.0	316	8.5	23.3	10.1	--	--	--	--	
08...	0952	10.0	313	8.2	17.6	10.2	--	--	--	--	
08...	1012	40.0	304	7.8	11.7	5.7	--	--	--	--	
DATE		SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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)
DEC											
07...	10		11	.3	1.5	210	7	180	21	6.7	.1
07...	9.9		10	.3	1.5	210	0	170	21	6.4	.1
MAR											
22...	8.9		11	.3	1.3	160	7	140	20	5.5	.1
22...	8.8		11	.3	1.4	170	0	140	21	5.6	.1
JUN											
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--

^{1/} To convert meters to feet, multiply by 3.281.

11453900 LAKE BERRYESSA NEAR WINTERS, CA--Continued

AT LAKE CENTER--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	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)
DEC										
07...	16	218	.30	.01	.01	.00	1.1	1.1	1.1	.02
07...	16	211	.29	.17	.17	.00	.66	.66	.83	.04
MAR										
22...	13	180	.24	.05	.01	.03	.24	.27	.32	.03
22...	14	181	.25	.37	.25	.00	.29	.29	.66	.04
JUN										
08...	--	--	--	.02	.04	.00	.39	.39	.41	.03
08...	--	--	--	.08	.12	.00	.05	.05	.13	--
08...	--	--	--	.32	.35	.00	.04	.04	.36	.02
DATE	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)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	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)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
DEC										
07...	.00	.00	190	--	--	20	--	--	--	--
07...	.01	.03	200	<10	<10	30	<100	80	.0	<10
MAR										
22...	.00	.00	160	--	--	20	--	--	--	--
22...	.01	.03	160	--	--	50	--	--	--	--
JUN										
08...	.00	.00	--	--	--	--	--	--	--	--
08...	.00	.00	--	--	--	--	--	--	--	--
08...	.01	.03	--	--	--	--	--	--	--	--

SACRAMENTO RIVER BASIN

11453900 LAKE BERRYESSA NEAR WINTERS, CA--Continued

AT SPANISH FLAT ARM (Lat 38°30'46", long 122°12'29", in SE¼NE¼ sec.29, T.8 N., R.3 W., Napa County, Hydrologic Unit 18020117)

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMPLING DEPTH (M)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TRANSPAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	LIGHT TRANSMISSION 1 METER PATH-LENGTH (%)	LIGHT ATTENUATION COEFFICIENT (ALPHA/METER)
DEC									
08...	0915	.50	356	8.6	13.7	--	9.3	3.1	3.47
08...	0916	1.0	357	8.6	13.7	--	9.4	3.1	3.47
08...	0917	2.0	357	8.6	13.7	--	9.2	3.1	3.47
08...	0918	3.0	357	8.6	13.7	--	9.3	2.8	3.57
08...	0919	4.0	357	8.6	13.7	--	9.3	2.6	3.66
08...	0920	5.0	357	8.6	13.7	--	9.4	2.8	3.57
08...	0921	6.0	357	8.6	13.7	--	9.2	2.8	3.57
08...	0922	7.0	356	8.6	13.7	--	9.3	2.6	3.66
08...	0923	8.0	356	8.6	13.7	--	9.4	2.6	3.66
08...	0924	9.0	356	8.6	13.7	--	9.5	2.3	3.77
08...	0925	10.0	356	8.6	13.7	--	9.4	2.1	3.87
08...	0926	11.0	356	8.6	13.7	--	9.4	2.1	3.87
08...	0927	12.0	356	8.6	13.7	--	9.4	1.3	4.32
08...	0928	13.0	356	8.6	13.7	--	9.3	.16	6.44
08...	0929	14.0	356	8.6	13.7	--	9.1	.04	7.72
08...	0930	15.0	356	8.3	13.7	--	8.8	.00	21.19
08...	0931	16.0	356	7.8	13.7	--	8.6	--	--
08...	0945	--	--	--	--	1.40	--	--	--
MAR									
21...	1430	.50	289	8.5	16.0	--	12.0	1.5	4.20
21...	1431	1.0	289	8.5	16.0	--	12.0	1.5	4.20
21...	1433	2.0	289	8.5	15.9	--	12.0	2.6	3.66
21...	1435	3.0	296	8.4	14.8	--	11.1	2.1	3.87
21...	1436	4.0	301	8.4	14.4	--	11.0	3.4	3.38
21...	1437	5.0	298	8.3	13.7	--	10.9	3.7	3.28
21...	1438	6.0	293	8.3	13.5	--	10.7	3.4	3.38
21...	1439	7.0	294	8.2	13.2	--	10.7	--	--
21...	1440	8.0	291	8.2	13.0	--	10.7	3.1	3.47
21...	1441	10.0	293	8.2	12.7	--	10.6	1.7	4.09
21...	1442	12.0	292	8.2	12.6	--	10.7	.61	5.09
21...	1443	14.0	293	8.1	12.5	--	10.7	.33	5.71
21...	1444	16.0	306	8.0	12.1	--	10.4	.03	8.01
21...	1445	18.0	312	8.0	11.6	--	10.6	.08	7.09
21...	1446	20.0	300	8.0	11.5	--	10.4	.19	6.24
21...	1447	22.0	292	8.0	11.3	--	10.3	.26	5.97
21...	1448	24.0	288	8.0	11.3	--	10.3	.26	5.97
JUN									
09...	0845	.50	311	8.3	21.9	--	9.2	24	1.43
09...	0846	1.0	311	8.3	21.9	--	9.3	24	1.43
09...	0848	2.0	312	8.3	21.9	--	9.4	27	1.31
09...	0850	3.0	312	8.3	22.0	--	9.6	28	1.26
09...	0851	4.0	312	8.3	22.0	--	9.6	30	1.20
09...	0852	5.0	312	8.3	21.4	--	9.0	37	.99
09...	0853	6.0	310	8.2	20.9	--	8.7	27	1.31
09...	0854	7.0	315	8.2	20.2	--	8.4	35	1.04
09...	0855	8.0	313	8.2	20.1	--	8.1	33	1.10
09...	0856	9.0	315	8.1	19.7	--	7.8	32	1.15
09...	0857	10.0	315	8.1	19.2	--	7.4	32	1.15
09...	0858	11.0	315	8.0	18.6	--	7.2	32	1.15
09...	0859	12.0	313	8.0	18.1	--	7.0	35	1.04
09...	0900	13.0	309	8.0	17.3	--	6.6	28	1.26
09...	0901	14.0	312	8.0	16.7	--	6.5	27	1.31
09...	0902	15.0	311	7.9	16.1	--	6.3	16	1.85
09...	0903	16.0	309	8.0	15.6	--	6.3	20	1.60
09...	0904	17.0	308	7.9	15.0	--	6.2	23	1.48
09...	0905	18.0	307	7.9	14.5	--	6.0	.81	4.82
09...	0906	19.0	305	7.9	14.3	--	6.1	--	--

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

11453900 LAKE BERRYESSA NEAR WINTERS, CA--Continued

AT SPANISH FLAT ARM--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMPLING DEPTH (M) ^{1/}	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARDNESS (MG/L AS CAC03)	HARDNESS, NONCARBONATE (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNESIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT
DEC 08...	1015	2.0	357	8.6	13.7	9.2	190	7	20	33	10	10
08...	1035	12.0	356	8.6	13.7	9.4	190	10	20	33	10	10
MAR 21...	1435	3.0	296	8.4	14.8	11.1	160	17	18	27	9.1	11
21...	1448	24.0	288	8.0	11.3	10.3	160	19	19	27	9.0	11
JUN 09...	0850	3.0	312	8.3	22.0	9.6	--	--	--	--	--	--
09...	0857	10.0	315	8.1	19.2	7.4	--	--	--	--	--	--
09...	0903	16.0	309	8.0	15.6	6.3	--	--	--	--	--	--

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HC03)	CARBONATE (MG/L AS C03)	ALKALINITY (MG/L AS CAC03)	SULFATE DIS-SOLVED (MG/L AS S04)	CHLORIDE, DIS-SOLVED (MG/L AS CL)	FLUORIDE, 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)
DEC 08...	.3	1.5	210	4	180	21	6.6	.1	16	216	.29
08...	.3	1.5	210	2	180	21	6.5	.1	16	214	.29
MAR 21...	.3	1.4	170	0	140	21	5.6	.1	14	181	.25
21...	.3	1.3	170	0	140	21	5.5	.1	15	183	.25
JUN 09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--

DATE	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DIS-SOLVED (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, ORTHO, DIS-SOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DIS-SOLVED (MG/L AS P04)	BORON, DIS-SOLVED (UG/L AS B)	IRON, DIS-SOLVED (UG/L AS FE)
DEC 08...	.01	.01	.00	.52	.52	.53	.03	.00	.00	190	20
08...	.01	.01	.00	.49	.49	.50	.02	.00	.00	190	20
MAR 21...	.08	.08	.05	.19	.24	.32	.04	.00	.00	160	20
21...	.29	.26	.00	.84	.84	1.1	.04	.01	.03	150	30
JUN 09...	.02	.04	.00	.10	.10	.12	.03	.00	.00	--	--
09...	.05	.08	.00	.09	.09	.14	.00	.00	.00	--	--
09...	.17	.21	.00	.16	.16	.33	.01	.00	.00	--	--

^{1/} To convert meters to feet, multiply by 3.281.

SACRAMENTO RIVER BASIN

11453900 LAKE BERRYESSA NEAR WINTERS, CA--Continued

AT WRAGG CANYON ARM (Lat 38°30'49", long 122°09'48", SE¼NW¼ sec.26, T.8 N., R.3 W., Napa County, Hydrologic Unit 18020117)

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAM- PLING DEPTH (M) ¹ / ₂	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	LIGHT TRANSMISSION 1 METER PATH- LENGTH (%)	LIGHT ATTENU- ATION COEFFI- CIENT (ALPHA/ METER)
DEC									
06...	1530	.50	--	--	--	--	--	3.1	3.47
06...	1531	1.0	349	8.4	14.5	--	8.6	3.1	3.47
06...	1532	2.0	351	8.4	14.0	--	8.5	2.6	3.66
06...	1533	3.0	349	8.4	14.0	--	8.4	2.1	3.87
06...	1534	4.0	349	8.4	14.0	--	8.3	1.5	4.20
06...	1535	5.0	348	8.3	14.0	--	8.3	1.5	4.20
06...	1536	6.0	348	8.4	14.0	--	8.2	1.3	4.32
06...	1537	7.0	348	8.4	14.0	--	8.2	1.2	4.44
06...	1538	8.0	347	8.5	14.0	--	8.2	1.3	4.32
06...	1539	9.0	347	8.5	14.0	--	8.2	1.3	4.32
06...	1540	10.0	347	8.5	14.0	--	8.2	1.3	4.32
06...	1541	11.0	347	8.5	14.0	--	8.2	1.0	4.56
06...	1542	12.0	347	8.5	14.0	--	8.2	1.3	4.32
06...	1543	13.0	345	8.5	14.0	--	8.2	2.6	3.66
06...	1544	14.0	345	8.5	14.0	--	8.2	2.6	3.66
06...	1545	15.0	345	8.5	14.0	--	8.2	1.3	4.32
06...	1546	16.0	345	8.5	14.0	--	8.2	.16	6.44
06...	1547	17.0	345	8.5	14.0	--	8.2	.05	7.59
06...	1548	18.0	344	8.5	14.0	--	8.1	.01	9.63
06...	1549	19.0	344	8.5	14.0	--	8.0	.00	12.49
06...	1600	--	--	--	--	1.30	--	--	--
MAR									
21...	1045	.50	294	8.6	15.5	--	12.1	8.5	2.46
21...	1046	1.0	294	8.6	15.4	--	12.6	7.9	2.54
21...	1048	2.0	299	8.6	15.2	--	12.7	9.8	2.32
21...	1050	3.0	305	8.6	14.6	--	12.6	.11	2.18
21...	1051	4.0	303	8.4	13.7	--	11.6	.11	2.18
21...	1052	5.0	297	8.4	13.3	--	11.8	6.8	2.69
21...	1053	6.0	298	8.3	13.0	--	11.8	7.9	2.54
21...	1054	7.0	298	8.3	12.7	--	11.4	7.3	2.62
21...	1055	8.0	296	8.2	12.6	--	11.5	7.3	2.62
21...	1056	10.0	294	8.2	12.5	--	11.8	5.3	2.94
21...	1057	12.0	294	8.2	12.4	--	11.7	3.7	3.28
21...	1058	14.0	296	8.2	12.4	--	11.7	2.6	3.66
21...	1059	16.0	301	8.1	12.2	--	11.7	1.0	4.56
21...	1100	18.0	307	8.1	11.8	--	11.4	.71	4.95
21...	1101	20.0	304	8.0	11.4	--	11.7	.81	4.82
21...	1102	22.0	298	8.0	11.3	--	12.6	1.2	4.44
21...	1103	24.0	300	8.0	11.2	--	12.3	1.3	4.32
21...	1104	26.0	299	8.0	11.2	--	12.2	1.9	3.98
21...	1105	28.0	297	8.0	11.1	--	12.2	1.7	4.09
21...	1106	30.0	297	8.0	11.1	--	12.0	--	--
21...	1115	--	--	--	--	2.20	--	--	--
JUN									
07...	1557	.50	312	8.5	25.7	--	8.8	24	1.43
07...	1558	1.0	312	8.5	25.7	--	8.8	24	1.43
07...	1559	2.0	311	8.5	25.0	--	8.9	24	1.43
07...	1600	3.0	308	8.5	24.3	--	9.1	18	1.72
07...	1601	4.0	310	8.5	23.6	--	9.1	15	1.91
07...	1602	5.0	307	8.5	23.0	--	9.1	19	1.66
07...	1603	6.0	307	8.5	21.4	--	9.0	23	1.48
07...	1604	7.0	311	8.5	20.9	--	8.8	21	1.54
07...	1605	8.0	304	8.4	20.4	--	8.6	20	1.60
07...	1606	9.0	306	8.3	19.9	--	7.8	20	1.60
07...	1607	10.0	304	8.3	18.8	--	7.3	19	1.66
07...	1608	12.0	304	8.2	17.9	--	6.9	21	1.54
07...	1609	13.0	306	8.1	16.7	--	6.5	11	2.18
07...	1610	14.0	304	8.0	15.8	--	6.4	2.6	3.66
07...	1611	15.0	308	8.0	15.2	--	6.3	2.1	3.87
07...	1612	16.0	305	8.0	14.6	--	6.4	3.1	3.47
07...	1613	17.0	298	7.9	13.9	--	6.3	2.6	3.66
07...	1614	18.0	298	7.9	13.4	--	6.3	4.5	3.11
07...	1615	19.0	298	7.9	13.0	--	6.3	2.6	3.66
07...	1616	20.0	302	7.9	12.8	--	6.3	3.4	3.38
07...	1617	21.0	300	7.9	12.6	--	6.2	3.1	3.47
07...	1618	22.0	--	--	--	--	--	2.3	3.77
07...	1619	23.0	297	7.9	12.4	--	6.3	2.6	3.66
07...	1620	24.0	--	--	--	--	--	2.3	3.77
07...	1621	25.0	298	7.8	12.2	--	6.3	2.3	3.77
07...	1622	26.0	--	--	--	--	--	1.9	3.98
07...	1623	27.0	297	7.8	12.1	--	6.3	1.7	4.09
07...	1624	28.0	--	--	--	--	--	2.1	3.87
07...	1625	29.0	295	7.8	11.9	--	6.3	2.8	3.57
07...	1626	30.0	--	--	--	--	--	2.1	3.87
07...	1627	31.0	295	7.8	11.9	--	6.3	2.1	3.87
07...	1628	32.0	--	--	--	--	--	1.0	4.56
07...	1629	33.0	297	7.5	11.9	--	6.3	.81	4.82
07...	1630	--	--	--	--	--	--	.28	5.88
07...	1635	34.0	--	--	--	3.3	--	--	--

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

11453900 LAKE BERRYESSA NEAR WINTERS, CA--Continued

AT WRAGG CANYON ARM--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 CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT
DEC												
06...	1635	3.0	349	8.4	14.0	8.4	190	14	20	33	10	10
06...	1645	15.0	345	8.5	14.0	8.2	190	14	20	33	10	10
MAR												
21...	1050	3.0	305	8.6	14.6	12.6	160	10	20	27	9.8	12
21...	1103	24.0	300	8.0	11.2	12.3	160	19	19	27	9.5	11
JUN												
07...	1600	3.0	308	8.5	24.3	9.1	--	--	--	--	--	--
07...	1607	10.0	304	8.3	18.8	7.3	--	--	--	--	--	--
07...	1625	29.0	295	7.8	11.9	6.3	--	--	--	--	--	--

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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)
DEC											
06...	.3	1.5	210	0	170	21	6.3	.1	16	212	.29
06...	.3	1.5	210	0	170	21	6.2	.1	16	212	.29
MAR											
21...	.3	1.4	170	7	150	23	5.8	.1	13	191	.26
21...	.3	1.4	170	0	140	22	5.7	.1	14	184	.25
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--

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)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
DEC											
06...	.04	.03	.00	.52	.52	.56	.02	.00	.00	190	90
06...	.05	.03	.00	.58	.58	.63	.02	.00	.00	190	10
MAR											
21...	.02	.01	.08	.26	.34	.36	.04	.00	.00	170	20
21...	.27	.28	.00	.41	.41	.68	.04	.01	.03	170	20
JUN											
07...	.02	.05	.00	.27	.27	.29	.00	.00	.00	--	--
07...	.04	.05	.01	.36	.37	.41	.00	.00	.00	--	--
07...	.29	.32	.00	.11	.11	.40	.00	.01	.03	--	--

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

11453900 LAKE BERRYESSA NEAR WINTERS, CA--Continued

AT DAM (Lat 38°30'48", long 122°06'16", Napa County, Hydrologic Unit 18020117)

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)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	LIGHT TRANS- MISSION 1 METER PATH- LENGTH (%)	LIGHT, ATTENU- ATION COEFFI- CIENT (ALPHA/ METER)
DEC									
06...	0945	.50	--	--	--	--	--	7.3	2.62
06...	0946	1.0	346	8.1	13.5	--	7.5	7.3	2.62
06...	0947	2.0	346	8.1	13.5	--	7.5	7.3	2.62
06...	0948	3.0	346	8.1	13.5	--	7.5	7.3	2.62
06...	0949	4.0	346	8.1	13.5	--	7.5	7.3	2.62
06...	0950	5.0	346	8.1	13.5	--	7.4	7.3	2.62
06...	0951	6.0	346	8.1	13.5	--	7.4	7.3	2.62
06...	0952	7.0	346	8.1	13.5	--	7.4	7.3	2.62
06...	0953	8.0	346	8.1	13.5	--	7.4	7.3	2.62
06...	0954	9.0	346	8.1	13.5	--	7.4	7.3	2.62
06...	0955	10.0	346	8.1	13.5	--	7.3	7.3	2.62
06...	0956	11.0	346	8.1	13.5	--	7.3	7.3	2.62
06...	0957	12.0	346	8.1	13.5	--	7.3	7.3	2.62
06...	0958	13.0	346	8.1	13.5	--	7.3	7.3	2.62
06...	0959	14.0	346	8.1	13.5	--	7.3	7.3	2.62
06...	1000	15.0	346	8.1	13.5	--	7.3	7.3	2.62
06...	1001	16.0	346	8.1	13.5	--	7.3	7.3	2.62
06...	1002	17.0	346	8.1	13.5	--	7.3	7.3	2.62
06...	1003	18.0	346	8.1	13.5	--	7.3	7.3	2.62
06...	1004	19.0	346	8.1	13.5	--	7.3	7.3	2.62
06...	1005	20.0	346	8.1	13.5	--	7.3	7.3	2.62
06...	1006	22.0	346	8.1	13.5	--	7.3	7.3	2.62
06...	1007	24.0	346	8.0	13.5	--	6.9	6.2	2.77
06...	1008	26.0	346	7.9	13.5	--	5.0	5.3	2.94
06...	1009	28.0	338	7.7	13.0	--	3.2	1.5	4.20
06...	1010	30.0	338	7.6	13.0	--	2.2	.53	5.24
06...	1011	32.0	338	7.6	13.0	--	1.9	.28	5.88
06...	1012	34.0	338	7.6	13.0	--	1.4	.23	6.06
06...	1013	36.0	338	7.6	13.0	--	1.3	.26	5.97
06...	1014	38.0	338	7.6	13.0	--	1.1	.14	6.54
06...	1015	40.0	343	7.5	12.5	--	1.1	.00	11.98
06...	1016	42.0	343	7.5	12.5	--	1.0	.02	8.83
06...	1017	44.0	337	7.5	12.5	--	1.0	.01	9.21
06...	1018	46.0	337	7.4	12.5	--	.7	.00	10.10
06...	1019	48.0	343	7.4	12.5	--	.6	.01	9.63
06...	1020	50.0	343	7.4	12.5	--	.5	.01	9.21
06...	1021	52.0	343	7.4	12.5	--	.4	.01	9.21
06...	1022	54.0	343	7.4	12.5	--	.4	.01	9.02
06...	1023	56.0	343	7.4	12.5	--	.4	.02	8.83
06...	1024	58.0	343	7.4	12.5	--	.4	.02	8.83
06...	1025	60.0	343	7.4	12.5	--	.4	.02	8.83
06...	1030	--	--	--	--	1.70	--	--	--
MAR									
20...	1435	.50	348	8.8	16.1	--	12.3	--	--
20...	1436	1.0	354	8.8	15.6	--	12.5	--	--
20...	1438	2.0	353	8.9	15.4	--	12.6	--	--
20...	1440	3.0	357	8.8	15.0	--	12.8	--	--
20...	1441	4.0	360	8.7	14.4	--	12.9	--	--
20...	1442	5.0	367	8.7	13.1	--	12.6	--	--
20...	1443	6.0	360	8.5	12.9	--	10.7	--	--
20...	1444	7.0	362	8.5	12.7	--	10.3	--	--
20...	1445	8.0	359	8.4	12.6	--	10.1	--	--
20...	1446	9.0	358	8.4	12.5	--	10.0	--	--
20...	1447	10.0	356	8.4	12.5	--	10.0	--	--
20...	1448	11.0	355	8.4	12.4	--	9.9	--	--
20...	1449	12.0	355	8.3	12.4	--	9.9	--	--
20...	1450	14.0	355	8.3	12.3	--	9.7	--	--
20...	1451	16.0	358	8.3	12.2	--	9.5	--	--
20...	1452	18.0	359	8.2	12.0	--	9.2	--	--
20...	1453	20.0	359	8.2	11.9	--	9.0	--	--
20...	1454	22.0	363	8.1	11.7	--	8.8	--	--
20...	1455	24.0	362	8.1	11.5	--	8.7	--	--
20...	1456	26.0	360	8.0	11.3	--	8.7	--	--
20...	1457	28.0	363	8.0	11.2	--	8.8	--	--
20...	1458	30.0	362	8.0	11.2	--	8.8	--	--
20...	1459	32.0	362	8.0	11.2	--	8.9	--	--
20...	1500	34.0	362	8.0	11.1	--	9.0	--	--
20...	1501	36.0	362	8.1	11.1	--	9.1	--	--
20...	1502	38.0	362	8.0	11.1	--	9.1	--	--
20...	1503	40.0	360	8.1	11.1	--	9.1	--	--
20...	1504	42.0	360	8.1	11.1	--	9.2	--	--
20...	1505	44.0	358	8.1	11.1	--	9.3	--	--
20...	1506	46.0	356	8.1	11.0	--	9.3	--	--
20...	1507	48.0	355	8.1	11.0	--	9.3	--	--
20...	1508	50.0	353	8.1	11.0	--	10.1	--	--
20...	1509	52.0	352	8.1	11.0	--	10.3	--	--
20...	1510	54.0	349	8.1	10.9	--	10.6	--	--

^{1/} To convert meters to feet, multiply by 3.281.

11453900 LAKE BERRYESSA NEAR WINTERS, CA--Continued

AT DAM--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)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	LIGHT TRANS- MISSION 1 METER PATH- LENGTH (%)	LIGHT, ATTENU- ATION COEFFI- CIENT (ALPHA/ METER)
MAR									
20...	1511	56.0	348	8.1	10.9	--	10.6	--	--
20...	1512	58.0	344	8.0	10.9	--	10.1	--	--
20...	1513	60.0	342	8.0	10.9	--	10.2	--	--
20...	1514	62.0	342	8.0	10.9	--	10.4	--	--
20...	1515	64.0	342	8.0	10.9	--	10.4	--	--
20...	1516	66.0	341	8.0	10.9	--	9.3	--	--
20...	1517	67.0	345	7.6	10.9	--	9.0	--	--
20...	1530	--	--	--	--	1.90	--	--	--
21...	0955	.50	--	--	--	--	--	9.2	2.39
21...	0956	1.0	--	--	--	--	--	9.2	2.39
21...	0957	2.0	--	--	--	--	--	8.5	2.46
21...	0958	3.0	--	--	--	--	--	8.5	2.46
21...	0959	4.0	--	--	--	--	--	9.2	2.39
21...	1000	5.0	--	--	--	--	--	9.2	2.39
21...	1001	6.0	--	--	--	--	--	9.2	2.39
21...	1002	8.0	--	--	--	--	--	8.5	2.46
21...	1003	10.0	--	--	--	--	--	8.5	2.46
21...	1004	12.0	--	--	--	--	--	7.9	2.54
21...	1005	14.0	--	--	--	--	--	8.5	2.46
21...	1006	16.0	--	--	--	--	--	8.5	2.46
21...	1007	18.0	--	--	--	--	--	8.5	2.46
21...	1008	20.0	--	--	--	--	--	6.2	2.77
21...	1009	22.0	--	--	--	--	--	6.2	2.77
21...	1010	24.0	--	--	--	--	--	5.8	2.85
21...	1011	26.0	--	--	--	--	--	5.3	2.94
21...	1012	28.0	--	--	--	--	--	5.3	2.94
21...	1013	30.0	--	--	--	--	--	4.5	3.11
21...	1014	32.0	--	--	--	--	--	4.1	3.19
21...	1015	34.0	--	--	--	--	--	3.1	3.47
21...	1016	36.0	--	--	--	--	--	3.4	3.38
21...	1017	38.0	--	--	--	--	--	3.4	3.38
21...	1018	40.0	--	--	--	--	--	3.4	3.38
21...	1019	42.0	--	--	--	--	--	3.1	3.47
21...	1020	44.0	--	--	--	--	--	2.6	3.66
21...	1021	46.0	--	--	--	--	--	2.6	3.66
21...	1022	48.0	--	--	--	--	--	2.3	3.77
21...	1023	50.0	--	--	--	--	--	2.1	3.87
21...	1024	52.0	--	--	--	--	--	1.7	4.09
21...	1025	54.0	--	--	--	--	--	1.0	4.56
21...	1026	56.0	--	--	--	--	--	.92	4.68
21...	1027	58.0	--	--	--	--	--	.71	4.95
21...	1028	60.0	--	--	--	--	--	.61	5.09
21...	1029	62.0	--	--	--	--	--	.61	5.09
21...	1030	64.0	--	--	--	--	--	.33	5.71
21...	1031	66.0	--	--	--	--	--	.08	7.09
JUN									
07...	1305	.50	310	8.6	26.3	--	8.2	32	1.15
07...	1306	1.0	310	8.6	26.3	--	8.2	30	1.20
07...	1308	2.0	314	8.6	26.2	--	8.2	30	1.20
07...	1310	3.0	313	8.6	26.0	--	8.2	30	1.20
07...	1311	4.0	315	8.6	25.0	--	8.3	39	.94
07...	1312	5.0	314	8.5	23.4	--	8.3	39	.94
07...	1313	6.0	311	8.5	21.9	--	8.1	39	.94
07...	1314	7.0	305	8.4	20.8	--	7.9	37	.99
07...	1315	8.0	304	8.4	20.5	--	7.8	37	.99
07...	1316	9.0	306	8.4	19.3	--	7.5	35	1.04
07...	1317	10.0	306	8.3	18.7	--	7.0	32	1.15
07...	1318	11.0	301	8.2	17.8	--	6.6	32	1.15
07...	1319	12.0	303	8.1	17.0	--	6.3	30	1.20
07...	1320	13.0	301	8.1	16.4	--	6.4	28	1.26
07...	1321	14.0	301	8.0	16.0	--	6.5	28	1.26
07...	1322	15.0	305	8.0	15.2	--	6.5	27	1.31
07...	1323	16.0	301	8.0	14.4	--	6.6	25	1.37
07...	1324	17.0	301	8.0	13.6	--	6.6	20	1.60
07...	1325	18.0	299	7.9	13.1	--	6.6	18	1.72
07...	1326	19.0	302	7.9	12.7	--	6.6	17	1.78
07...	1327	20.0	300	8.0	12.5	--	6.7	15	1.91
07...	1328	21.0	297	8.0	12.4	--	6.7	15	1.91
07...	1329	22.0	297	8.0	12.3	--	6.7	15	1.91
07...	1330	24.0	298	8.0	12.1	--	6.8	13	2.04
07...	1331	26.0	297	8.0	12.0	--	6.8	11	2.18
07...	1332	28.0	295	8.0	11.9	--	6.8	12	2.11
07...	1333	30.0	295	8.0	11.8	--	6.8	11	2.25
07...	1334	32.0	293	8.0	11.8	--	6.8	8.5	2.46
07...	1335	34.0	297	8.0	11.7	--	6.8	6.8	2.69
07...	1336	38.0	296	8.0	11.7	--	6.8	5.8	2.85
07...	1337	42.0	296	8.0	11.6	--	6.7	3.4	3.38
07...	1338	46.0	294	8.0	11.6	--	6.7	3.7	3.28
07...	1339	50.0	294	8.0	11.5	--	6.6	2.3	3.77

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

SACRAMENTO RIVER BASIN

11453900 LAKE BERRYESSA NEAR WINTERS, CA--Continued

AT DAM--Continued

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)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	LIGHT TRANS- MISSION 1 METER PATH- LENGTH (%)	LIGHT, ATTENU- ATION COEFFI- CIENT (ALPHA/ METER)				
JUN													
	07...	1340	54.0	293	8.0	11.5	--	6.6	1.9	3.98			
	07...	1341	58.0	293	7.9	11.4	--	6.5	1.5	4.20			
	07...	1342	62.0	293	7.9	11.3	--	6.2	.61	5.09			
	07...	1343	66.0	301	7.8	11.2	--	5.2	.02	8.48			
	07...	1345	70.0	303	7.4	11.2	--	5.0	--	--			
	07...	1400	--	--	--	--	4.4	--	--	--			
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)	SODIUM PERCENT	
DEC													
	06...	1150	3.0	346	8.1	13.5	7.5	180	9	20	32	9.8	10
	06...	1200	30.0	338	7.6	13.0	2.2	210	45	31	32	9.5	--
MAR													
	20...	1440	3.0	357	8.8	15.0	12.8	170	19	23	27	9.6	11
	20...	1505	44.0	358	8.1	11.1	9.3	160	19	19	27	9.5	11
JUN													
	07...	1310	3.0	313	8.6	26.0	8.2	--	--	--	--	--	--
	07...	1319	12.0	303	8.1	17.0	6.3	--	--	--	--	--	--
	07...	1338	46.0	294	8.0	11.6	6.7	--	--	--	--	--	--
DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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)		
DEC													
	06...	.3	1.4	210	0	170	21	6.2	.1	16	211	.29	
	06...	.3	--	200	0	160	21	6.0	.1	17	--	.31	
MAR													
	20...	.3	1.4	160	11	150	22	6.3	.1	12	191	.26	
	20...	.3	1.5	170	0	140	21	6.2	.1	14	183	.25	
JUN													
	07...	--	--	--	--	--	--	--	--	--	--	--	
	07...	--	--	--	--	--	--	--	--	--	--	--	
	07...	--	--	--	--	--	--	--	--	--	--	--	
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)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)		
DEC													
	06...	.01	.06	.01	1.1	1.1	1.1	.01	.00	.00	190	60	
	06...	.08	.07	.00	.91	.91	.99	.02	.00	.00	180	50	
MAR													
	20...	.02	.00	.01	.56	.57	.59	.03	.00	.00	170	40	
	20...	.29	.26	.00	.34	.34	.63	.03	.01	.03	170	20	
JUN													
	07...	.01	.04	.00	.09	.09	.10	.02	.00	.00	--	--	
	07...	.05	.08	.00	.13	.13	.18	.00	.00	.00	--	--	
	07...	.29	.31	.00	.20	.20	.49	.00	.01	.03	--	--	

^{1/} To convert meters to feet, multiply by 3.281.

11454000 PUTAH CREEK NEAR WINTERS, CA

LOCATION.--Lat 38°30'55", long 122°04'51", in NE¼NE¼ sec.28, T.8 N., R.2 W., Yolo County, on left bank 1 mi (2 km) downstream from Cold Canyon, 1.3 mi (2.1 km) downstream from Monticello Dam, and 6 mi (10 km) west of Winters.

DRAINAGE AREA.--574 mi² (1,487 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1930 to current year.

REVISED RECORDS.--WSP 901: 1937-38(M). WSP 1285: 1932(M), 1935-36(M), 1940(M), 1942-43(M), 1951, 1952(M). WSP 1565: 1957. WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 160.75 ft (48.997 m) National Geodetic Vertical Datum of 1929 (river-profile survey). June 28, 1930, to Feb. 29, 1940, at datum about 1 ft (0.3 m) higher.

REMARKS.--Records good. Flow regulated by Lake Berryessa (station 11453900) beginning January 1957.

AVERAGE DISCHARGE (adjusted for change in contents and evaporation from Lake Berryessa).--48 years, 515 ft³/s (14.58 m³/s), 373,100 acre-ft/yr (460 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 81,000 ft³/s (2,290 m³/s) Feb. 27, 1940, gage height, 30.5 ft (9.30 m) present datum, from rating curve extended above 30,000 ft³/s (850 m³/s); no flow Sept. 6-15, 1950, July 26 to Sept. 1, Sept. 6-9, 1955. Maximum discharge since construction of Monticello Dam in 1957, 16,300 ft³/s (462 m³/s) Jan. 24, 1970, gage height, 18.85 ft (5.745 m); minimum daily, 6.1 ft³/s (0.17 m³/s) Dec. 19, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1905, that of Feb. 27, 1940, on basis of records for station at Winters.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,130 ft³/s (32.0 m³/s) Jan. 14, gage height, 9.34 ft (2.847 m); minimum daily, 9.2 ft³/s (0.261 m³/s) Dec. 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	226	47	58	66	47	46	117	284	691	624	647	559
2	223	51	58	66	38	35	83	247	719	611	710	537
3	239	68	58	65	50	26	49	304	695	631	742	492
4	249	85	59	64	60	98	43	403	707	633	708	477
5	230	85	54	128	61	101	93	406	707	617	676	493
6	244	73	31	41	60	59	139	385	721	649	683	493
7	257	69	42	47	129	47	104	414	714	670	718	481
8	246	71	98	61	102	48	73	446	698	670	722	474
9	262	85	110	138	131	59	73	463	682	663	708	547
10	285	64	88	35	78	45	78	497	663	688	730	495
11	266	63	88	25	59	42	86	482	641	713	755	379
12	230	53	82	37	121	40	118	482	651	688	729	347
13	234	62	70	44	92	35	137	508	669	667	703	331
14	222	67	58	369	69	32	137	534	689	704	661	320
15	199	64	61	182	57	33	110	554	693	728	682	336
16	191	60	51	465	49	35	74	542	693	729	661	367
17	179	61	42	165	42	26	90	550	661	729	632	389
18	149	73	9.2	87	45	32	125	596	642	722	625	412
19	133	70	13	82	53	56	147	629	669	735	622	436
20	133	61	72	57	30	68	153	650	668	739	634	464
21	133	60	103	46	28	62	166	669	694	726	649	464
22	136	39	101	39	26	61	187	666	672	742	606	464
23	154	34	86	47	25	60	205	671	680	739	577	477
24	147	51	50	57	22	58	233	659	697	736	621	448
25	122	55	75	54	21	58	206	631	680	710	608	404
26	151	58	74	56	20	57	155	638	632	684	613	346
27	168	63	77	59	27	49	137	653	658	680	618	302
28	138	65	80	67	41	35	195	656	703	697	599	302
29	124	62	81	65	---	16	289	646	686	673	591	268
30	117	58	78	58	---	15	308	670	657	613	594	253
31	97	---	72	58	---	64	---	680	---	598	578	---
TOTAL	5884	1877	2079.2	2830	1583	1498	4110	16615	20432	21208	20402	12557
MEAN	190	62.6	67.1	91.3	56.5	48.3	137	536	681	684	658	419
MAX	285	85	110	465	131	101	308	680	721	742	755	559
MIN	97	34	9.2	25	20	15	43	247	632	598	577	253
AC-FT	11670	3720	4120	5610	3140	2970	8150	32960	40530	42070	40470	24910

CAL YR 1977 TOTAL 111879.2 MEAN 307 MAX 763 MIN 9.2 AC-FT 221900 MEAN ‡ 112 AC-FT ‡ 81200
WTR YR 1978 TOTAL 111075.2 MEAN 304 MAX 755 MIN 9.2 AC-FT 220300 MEAN ‡ 903 AC-FT ‡ 653400

‡ Adjusted for change in contents and evaporation from Lake Berryessa.

WATER-QUALITY RECORDS

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

CHEMICAL ANALYSES: Water years 1952-66, 1973 to current year.

WATER TEMPERATURES: Water years 1966 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: November 1965 to current year.

INSTRUMENTATION.--Temperature recorder since Nov. 19, 1965.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 22.0°C May 21, 1967; minimum recorded, 6.5°C on several days in 1967, 1968, and 1973.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 16.5°C Mar. 29, 30; minimum recorded, 9.0°C Dec. 20, Feb. 12.

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)	HARD- NESS AS CAC03
DEC 28...	1250	80	377	7.8	12.0	15	9.9	--	--	180
APR 13...	0845	137	324	7.9	12.0	5.0	10.4	4	1.1	160
JUL 10...	0945	702	304	8.0	13.0	7.0	10.6	--	--	150
SEP 08...	0945	479	308	7.9	13.0	7.0	11.6	4	.8	150

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 AD- SORP- TION RATIO	ALKA- LINITY (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 PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)
DEC 28...	16	20	--	11	--	160	--	180	.24	--
APR 13...	--	20	.0	12	.7	140	7.4	205	.28	14
JUL 10...	--	16	.0	8.7	.6	140	5.9	186	.25	--
SEP 08...	--	16	.0	10	.7	140	4.7	179	.24	9

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	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, PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)
DEC 28...	.09	.00	.05	.20	.25	.08	.03	0	100	0
APR 13...	.21	.01	.00	.20	.20	.02	.02	0	0	0
JUL 10...	.29	.02	.01	.20	.21	.04	.03	0	100	0
SEP 08...	.34	.00	.01	.70	.71	.08	.03	0	0	0

DATE	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
DEC 28...	0	0	10	0	20	.1	0	--	--
APR 13...	0	0	20	10	20	.0	0	3.1	.00
JUL 10...	0	10	40	10	0	.0	0	--	--
SEP 08...	0	10	40	10	10	.0	0	2.6	.00

11454000 PUTAH CREEK NEAR WINTERS, 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	13.5	14.0	13.0	13.0	12.5	11.5	11.0	11.5	11.0	12.5	12.0
2	15.0	13.5	14.0	13.5	12.5	12.0	11.5	11.5	12.0	11.5	13.0	12.0
3	15.0	13.5	14.0	13.0	13.0	12.0	12.0	11.5	12.5	11.5	13.0	12.5
4	15.0	13.5	13.5	12.5	13.0	12.5	12.0	11.0	12.0	11.5	13.0	12.0
5	15.0	13.5	13.5	13.0	13.0	12.0	11.0	10.0	12.0	11.5	13.5	11.5
6	14.5	13.5	13.5	12.5	13.0	12.5	10.5	10.0	12.0	11.5	13.5	11.5
7	15.0	13.5	13.5	13.0	12.5	12.5	11.5	10.0	12.0	11.0	---	---
8	15.0	13.5	13.5	12.5	12.5	12.0	12.0	11.5	11.5	10.5	---	---
9	14.5	13.5	13.5	12.5	12.5	12.0	12.0	11.0	11.5	10.5	---	---
10	15.0	13.5	13.5	12.5	12.5	12.0	12.0	11.5	11.5	10.5	---	---
11	15.0	13.5	13.5	12.5	13.0	12.0	11.5	11.5	11.0	10.5	---	---
12	14.5	13.5	14.0	13.5	12.5	12.5	11.5	11.5	11.0	9.0	---	---
13	14.5	13.5	13.5	12.5	12.5	12.0	11.5	11.0	12.0	9.5	---	---
14	14.5	13.5	13.5	12.5	12.5	12.0	11.5	11.0	12.0	10.5	---	---
15	14.5	13.5	13.5	13.0	13.0	12.0	11.5	11.5	12.0	11.0	---	---
16	15.0	13.5	13.5	12.5	12.0	11.5	12.5	11.0	11.5	10.5	---	---
17	15.0	13.5	13.5	12.5	12.5	12.0	13.0	11.5	12.0	11.0	---	---
18	14.5	13.5	13.0	12.5	12.0	11.0	12.5	11.5	13.0	11.5	---	---
19	14.5	13.5	12.5	12.0	11.0	9.5	12.5	11.5	13.0	11.5	---	---
20	14.5	13.0	12.5	12.0	11.5	9.0	12.0	11.5	13.5	12.0	---	---
21	14.5	13.0	12.5	12.0	12.0	12.0	12.0	11.5	14.0	12.5	---	---
22	14.5	13.0	12.5	11.5	12.5	12.0	11.5	10.5	14.5	12.5	---	---
23	14.0	13.0	13.0	12.0	12.0	11.5	10.5	10.0	14.5	13.0	---	---
24	15.0	13.5	13.5	12.5	12.0	11.0	10.5	9.5	14.0	13.0	---	---
25	15.0	13.5	13.5	12.5	12.5	12.0	11.0	10.0	13.5	13.0	---	---
26	14.5	13.5	13.5	13.0	12.5	12.0	11.5	10.0	14.5	13.0	---	---
27	14.0	13.0	13.5	13.0	12.5	12.0	11.5	10.5	13.5	12.5	---	---
28	14.0	13.0	13.0	12.5	12.5	12.0	12.0	11.0	13.0	11.5	---	---
29	14.0	13.5	13.0	12.5	12.5	12.0	11.5	11.0	---	---	16.5	15.0
30	14.5	13.5	13.0	12.5	12.0	11.5	11.5	11.0	---	---	16.5	15.0
31	14.0	13.0	---	---	12.0	11.5	11.0	11.0	---	---	16.0	12.0
MONTH	15.0	13.0	14.0	11.5	13.0	9.0	13.0	9.5	14.5	9.0	---	---

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	13.0	11.5	13.0	11.5	12.5	12.0	13.0	12.0	13.5	12.5	14.0	13.0
2	14.0	11.0	13.0	11.5	13.0	12.0	13.0	12.0	13.5	12.5	14.0	13.0
3	12.5	11.5	---	---	13.0	12.0	13.0	12.0	13.5	12.5	14.0	13.0
4	14.0	11.5	---	---	13.0	12.0	13.0	12.0	13.5	12.5	14.0	13.0
5	13.0	11.5	---	---	13.0	12.0	13.5	12.0	13.5	12.5	13.5	13.0
6	12.5	11.0	---	---	13.0	12.0	13.5	12.5	13.5	12.5	13.5	12.5
7	12.5	11.0	---	---	13.0	12.0	13.5	12.5	13.5	12.5	13.5	12.5
8	14.5	11.0	---	---	13.0	12.0	13.5	12.5	13.5	12.5	13.5	12.5
9	15.0	11.5	---	---	13.0	12.0	13.5	12.5	13.5	12.5	13.0	13.0
10	15.0	11.5	13.0	11.5	13.0	12.0	13.0	12.0	13.5	12.5	13.5	13.0
11	14.5	11.5	13.0	11.5	13.0	12.0	13.0	12.0	13.5	12.5	14.0	13.0
12	13.5	12.0	13.0	11.5	13.0	12.0	13.5	12.5	13.5	12.5	14.0	12.5
13	14.0	11.5	13.0	11.5	13.0	12.0	13.5	12.5	13.5	12.5	14.0	12.5
14	12.5	11.0	12.5	11.5	13.0	12.0	13.0	12.5	13.5	12.5	14.5	13.0
15	11.5	11.0	12.5	11.5	13.0	12.0	13.5	12.5	13.5	12.5	14.0	13.0
16	13.5	10.5	12.5	11.5	13.0	12.0	13.0	12.5	13.5	12.5	14.0	13.0
17	13.0	11.0	12.5	11.5	13.0	12.0	13.5	12.5	13.5	12.5	14.0	12.5
18	13.5	11.0	12.5	11.5	13.0	12.0	13.5	12.5	13.5	12.5	14.0	12.5
19	12.5	11.0	12.5	11.5	13.0	12.0	13.5	12.5	13.5	12.5	13.5	12.5
20	13.0	11.0	12.5	11.5	13.0	12.0	13.5	12.5	13.5	12.5	14.0	12.5
21	13.5	11.0	12.5	11.5	13.0	12.0	13.5	12.5	13.5	12.5	14.0	12.5
22	13.5	11.0	12.5	11.5	13.0	12.0	13.5	12.5	13.5	12.5	14.0	13.0
23	13.0	11.5	12.5	11.5	13.0	12.0	13.5	12.5	13.5	12.5	14.0	13.0
24	12.0	11.5	12.5	11.5	13.0	12.0	13.5	12.5	13.5	12.5	14.0	13.0
25	13.0	11.5	12.5	11.5	13.0	12.0	13.5	12.5	14.0	12.5	14.0	13.0
26	14.0	11.5	12.5	11.5	13.0	12.0	13.5	12.5	13.5	12.5	14.0	13.0
27	14.5	11.5	13.0	12.0	13.0	12.0	13.5	12.5	13.5	12.5	14.5	13.0
28	13.5	11.5	13.0	12.0	13.0	12.0	13.5	12.5	14.0	12.5	14.5	13.0
29	13.0	11.5	13.0	12.0	13.0	12.0	13.5	12.5	14.0	13.0	14.5	13.0
30	12.5	11.5	12.5	12.0	13.0	12.0	13.5	12.5	13.5	13.0	14.5	13.0
31	---	---	13.0	12.0	---	---	13.5	12.5	14.0	13.0	---	---
MONTH	15.0	10.5	---	---	13.0	12.0	13.5	12.0	14.0	12.5	14.5	12.5

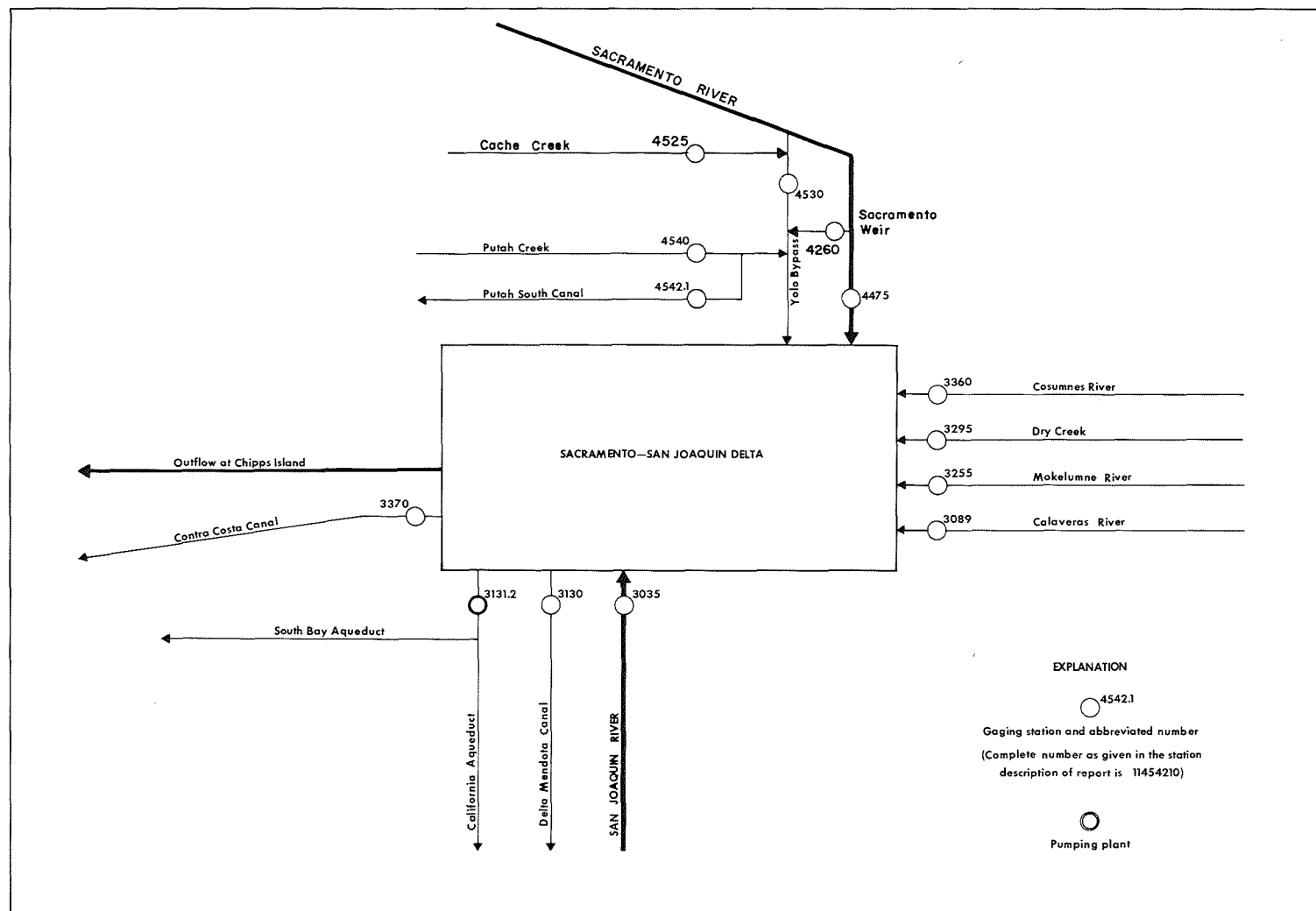


FIGURE 12.--Schematic diagram showing principal inflows and diversions, Sacramento-San Joaquin Delta.

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 mi² (102,820 km²).

PERIOD OF RECORD.--October 1971 to current year. Data for periods prior to October 1971, can be obtained from published records for stations tabulated below.

COOPERATION.--Records for Delta-Mendota, Contra Costa, and Putah South Canals 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 ^{1/}													
--	--	--	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 ft³/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

				Measurements		
Station No.	Station name		Drainage area (mi ²)	Period of record	Date	Discharge (ft ³ /s)
Eagle Lake basin						
*10359250	Pine Creek near Westwood, CA	Lat 40°34'26", long 121°06'18", in NE¼SW¼ sec.5, T.31 N., R.8 E., Lassen County, 1.3 mi (2.1 km) southwest of Bogard Guard Station and 19 mi (31 km) north of Westwood.	24.8	1951-61†, 1964, 1967-75a, 1976-78	10-18-77 6-26-78 9-12-78	0 7.00 1.10
Sacramento River basin						
11341900	Dog Creek at Delta, CA	Lat 40°56'17", long 122°25'13", in SE¼NE¼ sec.34, T.36 N., R.5 W., Shasta County, 0.1 mi (0.2 km) upstream from mouth, 0.5 mi (0.8 km) southwest of Delta, and 25 mi (40 km) north of Redding.	17.3	1975-78	10-3-77 12-8-77 12-30-77 1-5-78 1-16-78 1-17-78 3-6-78 5-31-78	b 4.45 5.95 71.8 583 2290 740 376 22.8
11348600	Turner Creek near Canby, CA	Lat 41°25'49", long 121°00'26", in SE¼SE¼ sec.35, T.42 N., R.8 E., Modoc County, Modoc National Forest, 1.2 mi (1.9 km) upstream from mouth and 7.3 mi (11.7 km) southwest of Canby.	69.1	1977-78	10-14-77	b .34
11350000	Rush Creek near Adin, CA	Lat 41°15'47", long 120°53'36", in NE¼SE¼ sec.35, T.40 N., R.9 E., Modoc County, at bridge on U.S. Highway 299, 5.6 mi (9.0 km) northeast of Adin.	33.4	1930†, 1977-78	10-12-77	b 3.24
11350990	Willow Creek below Preston Canyon, CA	Lat 41°05'01", long 120°54'05", in SW¼SE¼ sec.35, T.38 N., R.9 E., Modoc County, 2.2 mi (3.5 km) downstream from Preston Canyon and 7.8 mi (12.6 km) south of Adin.	56.4	1977-78	10-14-77	b 6.24
11352500	Horse Creek at Little Valley, near Pittville, CA	Lat 40°53'56", long 121°10'23", in NE¼ sec.15, T.35 N., R.7 E., Lassen County, 100 ft (30 m) downstream from railroad bridge, 0.5 mi (0.8 km) northeast of Little Valley, and 13 mi (21 km) southeast of Pittville.	c 237	1929-31†, 1960-67†, 1968-75a, 1976-78	10-12-77 8-17-78	b 4.29 b 4.82
11353700	Fall River near Dana, CA	Lat 41°06'20", long 121°33'00", in NE¼ sec.30, T.38 N., R.4 E., Shasta County, 0.7 mi (1.1 km) southeast of Dana and 1 mi (2 km) downstream from large springs downstream from Bear Creek.	c 123	1959-67†, 1968-75a, 1976-78	10-14-77 8-17-78	b 380 b 426
*11365500	Squaw Creek above Shasta Lake, CA	Lat 40°51'25", long 122°05'08", in SE¼ sec.29, T.35 N., R.2 W., Shasta County, 1.3 mi (2.1 km) upstream from Salt Creek, 2 mi (3 km) upstream from Shasta Lake, and 10 mi (16 km) west of town of Montgomery Creek.	64.0	1945-66†, 1967-75a, 1976-78	11-10-77 9-11-78	b 23.1 b 31.5

See footnotes at end of table.

Discharge measurements made at low-flow partial-record stations during water year 1978--Continued

Station No.	Station name		Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
Sacramento River basin--Continued						
11367100	McCloud River above Lower Falls, near McCloud, CA	Lat 41°14'36", long 122°01'25", in SW¼NE¼ sec.12, T.39 N., R.2 W., Siskiyou County, 500 ft (152 m) upstream from Lower Falls and 6 mi (10 km) south- east of McCloud.	285	1964, 1968, 1970, 1972-75a, 1976-78	10-3-77 9-20-78	b 18.4 b 36.0
11373200	Oak Run Creek near Oak Run, CA	Lat 40°41'25", long 122°02'35", in SE¼NW¼ sec.25, T.33 N., R.2 W., Shasta County, 800 ft (244 m) downstream from road bridge, 1.1 mi (1.8 km) north- west of town of Oak run, 3.2 mi (5.1 km) upstream from Tracy Creek, and 12.2 mi (19.6 km) northeast of Millville.	11.0	1957-66‡, 1967-75a, 1976-78	10-17-77 9-29-78	b .48 b 4.30
11373300	Little Cow Creek near Ingot, CA	Lat 40°44'45", long 122°03'40", in SE¼NW¼ sec.2, T.33 N., R.2 W., Shasta County, 1.8 mi (2.9 km) northeast of Ingot and 7 mi (11 km) southwest of Round Mountain.	60.8	1957-65‡, 1977-78	10-17-77	b 8.50
11374100	Bear Creek near Millville, CA	Lat 40°31'50", long 122°06'30", in SE¼NE¼ sec.20, T.31 N., R.2 W., Shasta County, 10 ft (3 m) downstream from bridge on State Highway 44 and 3.8 mi (6.1 km) southeast of Millville.	75.7	1960-67‡, 1968a, 1977-78	10-17-77	b 13.7
11376400	South Fork Battle Creek near Mineral, CA	Lat 40°21'03", long 121°39'45", in NW¼NW¼ sec.28, T.29 N., R.3 E., Tehama County, Lassen National Forest, at campground 3.6 mi (5.8 km) west of Mineral.	32.6	1977-78	10-7-77	b 2.44
11382550	Deer Creek below Slate Creek, near Deer Creek Meadows, CA	Lat 40°14'02", long 121°27'50", in NE¼NE¼ sec.1, T.27 N., R.4 E., Tehama County, Lassen National Forest, 0.4 mi (0.6 km) down- stream from Slate Creek, 3.2 mi (5.2 km) southwest of Deer Creek Meadows, and 15 mi (24 km) south- west of Chester.	69.4	1961-70‡, 1977-78	10-18-77	b 34.1
11389700	Butte Creek at Butte Meadows, CA	Lat 40°04'06", long 121°34'25", in SW¼NW¼ sec.31, T.26 N., R.4 E., Tehama County, 1.0 mi (1.6 km) downstream from small tributary, 1.5 mi (2.4 km) southwest of Butte Meadows, and 15 mi (24 km) northeast of Forest Ranch.	44.4	1960-74‡, 1977-78	10-18-77	b 41.0
11390410	Sacramento River at Reclamation Dis- trict 70 pumping plant, near Grimes, CA	Lat 39°04'05", long 121°51'43", in NW¼NE¼ sec.16, T.14 N., R.1 E., Sutter County, on left bank at Reclamation District 70 pumping plant, 1.7 mi (2.7 km) southeast of Grimes, and at mile 123.6 (198.9 km).	--	1977-78	10-19-77	2920
11390610	Sacramento River at Reclamation District 108 Rough and Ready pumping plant, near Knights Landing, CA	Lat 38°51'47", long 121°47'30", in NW¼NE¼ sec.30, T.12 N., R.2 E., Yolo County, at Reclamation District 108 Rough and Ready pumping plant, 5.8 mi (9.3 km) northwest of Knights Landing, and at mile 98.0 (157.7 km).	--	1977-78	10-19-77	2890
11391020	Sacramento River at Fremont Weir west end, near Knights Landing, CA	Lat 38°45'34", long 121°39'59", in Rio Jesus Maria Land Grant, Sutter County, at west end of Fremont Weir, 3.9 mi (6.3 km) southeast of Knights Landing, and at mile 84.1 (135.3 km).	--	1977-78	10-5-77	3580
11395300	Lost Creek above Sly Creek Reservoir, near Strawberry Valley, CA	Lat 39°37'05", long 121°05'19", in NE¼SW¼ sec.4, T.20 N., R.8 E., Plumas County, Plumas National Forest, 0.4 mi (0.6 km) upstream from French Creek and 3.8 mi (6.1 km) north of Strawberry Valley.	14.1	1961-70‡, 1977-78	10-3-77	b 4.23

See footnotes at end of table.

Station No.	Station name		Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
Sacramento River basin--Continued						
11401150	Red Clover Creek near Genesee, CA	Lat 40°02'50", long 120°39'37", in NW¼SW¼ sec.5, T.25 N., R.12 E., Plumas County, Plumas National Forest, 0.3 mi (0.5 km) downstream from Rock Creek, 4.5 mi (7.2 km) east of Genesee, and 9.5 mi (15.3 km) east of Taylorsville.	122	1959-65†, 1977-78	10-12-77	b 7.79
11401300	Lights Creek near Taylorsville, CA	Lat 40°10'00", long 120°47'35", in SW¼SW¼ sec.30, T.27 N., R.11 E., Plumas County, Plumas National Forest, 0.4 mi (0.6 km) downstream from Moonlight Creek and 6.7 mi (10.8 km) north of Taylorsville.	57.6	1957-63†, 1977-78	10-12-77	b 1.06
11408700	Middle Yuba River near Alleghany, CA	Lat 39°26'19", long 120°48'40", in NW¼SW¼ sec.12, T.18 N., R.10 E., Nevada County, Tahoe National Forest, 0.5 mi (0.8 km) downstream from Wolf Creek and 2.8 mi (4.5 km) southeast of Alleghany.	96.6	1958-66†, 1968a, 1977-78	10-4-77	b 15.4
11410500	North Yuba River near Sierra City, CA	Lat 39°33'45", long 120°39'15", in NE¼NW¼ sec.32, T.20 N., R.12 E., Sierra County, Tahoe National Forest, 0.2 mi (0.3 km) upstream from Big Avalanche Ravine and 1.0 mi (1.6 km) west of Sierra City.	94.7	1924-44†, 1956a, 1971a, 1977-78	10-12-77	b 26.4
11411000	Downie River at Downieville, CA	Lat 39°33'47", long 120°49'26", in NE¼NW¼ sec.35, T.20 N., R.10 E., Sierra County, Tahoe National Forest, at bridge in Downieville, 0.3 mi (0.5 km) upstream from mouth.	72.7	1911-26†, 1966-68a, 1977-78	10-12-77	b 24.5
11412000	Rock Creek at Goodyears Bar, CA	Lat 39°32'14", long 120°53'06", in SW¼SW¼ sec.5, T.19 N., R.10 E., Sierra County, Tahoe National Forest, 600 ft (183 m) upstream from mouth, 0.2 mi (0.3 km) southwest of Goodyears Bar.	8.98	1911-33†, 1960-68a, 1977-78	10-12-77	b .90
11412500	Goodyears Creek at Goodyears Bar, CA	Lat 39°32'30", long 120°53'13", in NW¼SW¼ sec.5, T.19 N., R.10 E., Sierra County, Tahoe National Forest, 300 ft (91 m) upstream from mouth, and 0.5 mi (0.8 km) north of Goodyears Bar.	12.9	1911-33†, 1960-68a, 1977-78	10-12-77	b 2.44
*11417100	Poorman Creek near Washington, CA	Lat 39°21'36", long 120°48'24", in SW¼ sec.1, T.17 N., R.19 E., Nevada County, Tahoe National Forest, just downstream from U.S. Forest Service bridge, 0.4 mi (0.6 km) west of Washington, and 1.4 mi (2.3 km) downstream from Deadman Creek.	23.1	1961-71†, 1975a, 1976-78	10-4-77 8-15-78	b 3.76 b 11.6
11423150	Wolf Creek near Wolf, CA	Lat 39°03'03", long 121°06'26", in NW¼SE¼ sec.20, T.14 N., R.8 E., Nevada County, 1.0 mi (1.6 km) north of Higgins Corner and 1.8 mi (2.9 km) southeast of Wolf Post Office.	74.8	1977-78	11-18-77	b 1.30
11426500	North Fork American River near Colfax, CA	Lat 39°02'25", long 120°54'06", in SE¼NW¼ sec.19, T.14 N., R.10 E., Placer County, 400 ft (122 m) downstream from Shirt-tail Canyon and 5.0 mi (8.0 km) southeast of Colfax.	308	1911-41†, 1977-78	11-18-77	b 23.3
*11433430	Buckeye Canyon Creek tributary near Greenwood, CA	Lat 38°55'18", long 120°57'46", in SE¼NW¼ sec.3, T.12 N., R.9 E., El Dorado County, 3.3 mi (5.3 km) northwest of Greenwood, and 3.5 mi (5.6 km) northeast of Cool.	0.08	1972-78	10-20-77 12-7-77 12-16-77 2-1-78 3-3-78 4-12-78 7-13-78	0 0 0 0 .86 0 0

See footnotes at end of table.

Discharge measurements made at low-flow partial-record stations during water year 1978--Continued

					Measurements	
Station No.	Station name		Drainage area (mi ²)	Period of record	Date	Discharge (ft ³ /s)
Sacramento River basin--Continued						
*11433440	Wildcat Canyon Creek near Cool, CA	Lat 38°55'11", long 120°58'11", in NE¼SE¼ sec.4, T.12 N., R.9 E., El Dorado County, 3.3 mi (5.3 km) northeast of Cool and 3.5 mi (5.6 km) northwest of Greenwood.	0.30	1972-78	10-20-77	0
					12-7-77	0
					12-16-77	.01
					3-3-78	1.82
					4-13-78	.23
					7-13-78	0
*11433450	Browns Bar Canyon Creek near Cool, CA	Lat 38°54'52", long 120°58'42", in SE¼SW¼ sec.4, T.12 N., R.9 E., El Dorado County, 2.7 mi (4.3 km) northeast of Cool and 3.8 mi (6.1 km) northwest of Greenwood.	0.75	1972-78	10-20-77	0
					12-7-77	0
					12-16-77	.26
					3-3-78	9.09
					4-13-78	.90
					7-13-78	0
*11433900	Paymaster Creek near Cool, CA	Lat 38°53'33", long 120°59'58", in SE¼NW¼ sec.17, T.12 N., R.9 E., El Dorado County, 400 ft (122 m) upstream from culvert on Pay- master Trail, 0.9 mi (1.4 km) northeast of Cool.	--	1972-78	10-20-77	0
					12-7-77	0
					12-16-77	.26
					1-5-78	7.53
					4-12-78	.23
					7-13-78	0
11440500	Plum Creek near Riverton, CA	Lat 38°45'24", long 120°25'41", in SE¼SE¼ sec.32, T.11 N., R.14 E., El Dorado County, Eldorado National Forest, 1.5 mi (2.4 km) upstream from mouth and 1.6 mi (2.6 km) southeast of Riverton.	7.32	1923-40†, 1956a, 1977-78	10-19-77	b .07
11440700	Tells Creek near Kyburz, CA	Lat 38°54'09", long 120°22'05", in SE¼NE¼ sec.11, T.12 N., R.14 E., El Dorado County, at Loon Lake road crossing, 10 mi (16 km) northeast of Riverton.	8.66	1964-68a, 1969-71a, 1974-75a, 1976-78	10-20-77 8-13-78	b .29 b .71

*Also a crest-stage partial-record station.

† Operated as a continuous-record gaging station.

a Published as a miscellaneous measurement.

b Base flow.

c Hydrologic drainage boundary uncertain due to ground-water exchange.

DISCHARGE AT PARTIAL-RECORD STATIONS

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	Drainage area (mi ²)	Period of record	Date	Gage height (feet)	Discharge (ft ³ /s)
Eagle Lake basin							
*10359250	Pine Creek near Westwood, CA	Lat 40°34'26", long 121°06'18", in NE¼SE¼ sec.5, T.31 N., R.8 E., Lassen County, 1.3 mi (2.1 km) southwest of Bogard Guard Station and 19 mi (31 km) north of Westwood.	24.8	1950-61†, 1966-78	3-5-78	3.52	70
10359270	Aspen Creek near Westwood, CA	Lat 40°42'47", long 121°04'36", in NE¼NE¼ sec.21, T.33 N., R.8 E., Lassen County, in Lassen National Forest, at culvert on Forest Service Road 34N28, 3.7 mi (6.0 km) northwest of Harvey Valley Ranger Station, and 27.5 mi (44.2 km) north of Westwood.	4.70	1970-73a, 1974-78	--	--	0
10359290	Pine Creek tributary near Susanville, CA	Lat 40°43'44", long 120°52'44", in NW¼NW¼ sec.17, T.33 N., R.10 E., Lassen County, in Lassen National Forest, at culvert on Forest Service Road 35N5, 28 mi (45 km) north of Susanville.	4.70 (low flow) 16.8 (extreme flood flow)	1971-73a, 1974-78	3-5-78	5.10	84
Sacramento River basin							
11352000	Pit River near Bieber, CA	Lat 41°00'55", long 121°09'13", in NE¼SW¼ sec.27, T.37 N., R.7 E., Modoc County, 2.2 mi (3.5 km) upstream from Spring Gulch and 7.4 mi (11.9 km) south of Bieber.	2,475	1904-8†, 1913-14†, 1921-26†, 1928-31†, 1951-75†, 1976-78	4-29-78	5.98	1910
11352900	Beaver Creek near Hat Creek, CA	Lat 40°49'47", long 121°14'54", in NE¼NE¼ sec.12, T.34N., R.6 E., Lassen County, in Lassen National Forest, at culvert on Forest Service Road 35N10, 13.6 mi (21.9 km) east of Hat Creek, and 15 mi (24 km) south of Pittville.	23.2	1970-73†, 1974-78	12-15-77	2.54	79
11355400	Bunchgrass Creek near Manzanita Lake, CA	Lat 40°39'10", long 121°37'36", in NE¼SW¼ sec.3, T.32 N., R.3 E., Shasta County, in Lassen National Forest, at culvert on Forest Service Road 32N46, 8.7 mi (14.0 km) northwest of town of Manzanita Lake.	.62	1970-73a, 1974-78	12-15-77	4.19	41
*11365500	Squaw Creek above Shasta Lake, CA	Lat 40°51'25", long 122°05'08", in SE¼ sec.29, T.35 N., R.2 W., Shasta County, 1.3 mi (2.1 km) upstream from Salt Creek, 2 mi (3 km) upstream from Shasta Lake, and 10 mi (16 km) west of town of Montgomery Creek.	64.0	1944-66†, 1969-78	2-7-78	17.18	8230
11376100	South Fork Bailey Creek near Manzanita Lake, CA	Lat 40°28'45", long 121°35'46", unsurveyed, Shasta County, in Lassen National Forest, at culvert on Forest Service Road 31N12F, 4.4 mi (7.1 km) southwest of town of Manzanita Lake, and 5.2 mi (8.4 km) southeast of Viola.	3.67	1970-73a, 1974-78	6-29-78	8.10	99
11377500	Paynes Creek near Red Bluff, CA	Lat 40°15'50", long 122°11'10", in SE¼ sec.22, T.28 N., R.3 W., Tehama County, 0.4 mi (0.6 km) upstream from mouth and 6.5 mi (10.5 km) northeast of Red Bluff.	92.8	1950-66†, 1967-70, 1972-78	1-16-78	8.33	4320

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 ²)	Period of record	Date	Gage height (feet)	Discharge (ft ³ /s)
Sacramento River basin--Continued							
11381810	Snake Creek near Pas- kenta, CA	Lat 39°59'38", long 122°47'25", in SE¼NW¼ sec.29, T.25 N., R.8 W., Tehama County, in Mendocino National Forest, at culvert on Forest Service Road 23N01, 14.5 mi (23.3 km) northwest of Paskenta.	2.45	1972-73a, 1974-78	1-14-78	77.19	94
11382950	North Fork Calf Creek near Butte Meadows, CA	Lat 40°09'44", long 121°31'58", in SW¼SW¼ sec.28, T.27 N., R.4 E., Tehama County, in Lassen National Forest, at culvert on Forest Service Road 27N12, 1.8 mi (2.9 km) upstream from Deer Creek, 5.6 mi (9.0 km) north of Butte Meadows, and 11.2 mi (18.0 km) south of town of Mill Creek.	1.26	1970-73a, 1974-78	3-5-78	13.18	13
11384400	South Fork Stony Creek near Stony- ford, CA	Lat 39°17'46", long 122°45'07" in NW¼SW¼ sec.27, T.17 N., R.8 W., Colusa County, in Mendocino National Forest, at culvert on Forest Service Road 18N1, 12.5 mi (20.1 km) southwest of Stonyford.	2.52	1970-73a, 1974-78	1-16-78	25.11	245
11386200	South Fork Elk Creek near Elk Creek, CA	Lat 39°34'12", long 122°40'37", in SW¼SW¼ sec.20, T.19 N., R.7 W., Glenn County, Mendocino National Forest, at culvert on Forest Service Road 20N1, 7.8 mi (12.6 km) southwest of town of Elk Creek.	2.56 (revised)	1970-73a, 1974-78	1-16-78	21.90	161
11386250	Grindstone Creek tribu- tary at Government Flat, near Covelo, CA	Lat 39°51'06", long 122°55'58", in SW¼NE¼ sec.14, T.23 N., R.10 W., Tehama County, Mendocino National Forest, on left bank at culvert on Forest Service Road 23N23, 0.5 mi (0.8 km) upstream from Grindstone Creek, 0.8 mi (1.3 km) southeast of Government Flat, and 17.2 mi (27.7 km) east of Covelo.	.74	1974-78	1-16-78	14.82	92
11387800	North Fork Stony Creek near New- ville, CA	Lat 39°47'05", long 122°28'34", in SW¼SW¼ sec.6, T.22 N., R.5 W., Glenn County, on right bank 150 ft (46 m) downstream from Bedford Creek and 2.7 mi (4.3 km) east of Newville.	63.4	1963-73†, 1974-78	1-16-78	8.07	5860
11389650	Scotts John Creek near Stirling City, CA	Lat 40°06'33", long 121°25'33", in SE¼NE¼ sec.17, T.26 N., R.5 E., Butte County, in Lassen National Forest, at culvert on Forest Service Road 26N27, 15 mi (24 km) northeast of Stirling City.	3.76	1970-73a, 1974-78	6-6-78	3.71	46
11397900	Benner Creek near Chester, CA	Lat 40°23'02", long 121°16'24", in SE¼SE¼ sec.11, T.29 N., R.6 E., Plumas County, in Lassen National Forest, at culvert on Forest Service Road 29N12, 5.6 mi (9.0 km) northwest of Chester.	7.67	1970-73a, 1974-78	6-5-78	3.77	50
*11417100	Poorman Creek near Washing- ton, CA	Lat 39°21'36", long 120°48'24", in SW¼ sec.1, T.17 N., R.10 E., Nevada County, Tahoe National Forest, just downstream from U.S. Forest Service bridge, 0.4 mi (0.6 km) west of Washing- ton, and 1.4 mi (2.3 km) down- stream from Deadman Creek.	23.1	1961-71†, 1972, 1974-78	1-16-78	5.71	668
*11433430	Buckeye Canyon Creek tribu- tary near Greenwood, CA	Lat 38°55'18", long 120°57'46", in SE¼NW¼ sec.3, T.12 N., R.9 E., El Dorado County, 3.3 mi (5.3 km) northwest of Green- wood and 3.5 mi (5.6 km) northeast of Cool.	.08	1972-73b, 1974-78	1-16-78	.72	3.5

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 ²)	Period of record	Date	Gage height (feet)	Discharge (ft ³ /s)
Sacramento River basin--Continued							
*11433440	Wildcat Canyon Creek near Cool, CA	Lat 38°55'11", long 120°58'11", in NE¼SE¼ sec.4, T.12N., R.9 E., El Dorado County, 3.3 mi (5.3 km) northeast of Cool and 3.5 mi (5.6 km) northeast of Greenwood.	0.30	1972-73b, 1974-78	1-16-78	0.99	15
*11433450	Browns Bar Canyon Creek near Cool, CA	Lat 38°54'52", long 120°58'42", in in SE¼SW¼ sec.4, T.12 N., R.9 E., El Dorado County, 2.7 mi (4.3 km) northeast of Cool and 3.8 mi (6.1 km) northwest of Greenwood.	.75	1972-73b, 1974-78	1-16-78	2.02	48
*11433900	Paymaster Creek near Cool, CA	Lat 38°53'33", long 120°59'58", in SE¼NW¼ sec.17, T.12 N., R.9 E., El Dorado County, 0.9 mi (1.4 km) northeast of Cool.	--	1972-73b, 1974-78	1-16-78	1.36	16
11449350	Burns Valley Creek near Clearlake Highlands, CA	Lat 38°58'33", long 122°36'42", in SE¼ sec.15, T.13 N., R.7 W., Lake County, on right bank 500 ft (152 m) downstream from small right-bank tributary and 2.7 mi (4.3 km) northeast of Clearlake Highlands.	4.37	1963-69†, 1970-78	1-16-78	7.14	852

* Also a low-flow partial-record station.

† Operated as a continuous-record gaging station.

a Data for water years prior to 1973 published in Floods from Small Drainage Areas, Compilation, October 1958 to September 1973.

b Published as miscellaneous measurement.

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

SACRAMENTO RIVER BASIN
11453500 PUTAH CREEK NEAR GUENOC, CA

LOCATION.--Lat 38°46'44", long 122°30'59", in Guenoc Grant, Lake County, Hydrologic Unit 18020117, just upstream from Coyote Valley damsite, 2.8 mi (4.5 km) upstream from Soda Creek, and 3.2 mi (5.1 km) downstream from highway bridge at Guenoc.

DRAINAGE AREA.--113 mi² (293 km²).

PERIOD OF RECORD.--Water years 1960-73, 1978.

CHEMICAL ANALYSES: Water year 1978.

WATER TEMPERATURES: Water years 1960-73.

SEDIMENT RECORDS: Water years 1962-73.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: March 1960 to September 1973.

SEDIMENT RECORDS: December 1964 to March 1965.

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)	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)
JAN 24...	1345	376	219	7.8	10.0	2.4	10.8	130	14	12	24	5.6
DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 PER AC-FT)
JAN 24...	9	.2	.9	140	0	110	16	4.1	.1	26	162	.22
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)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	
JAN 24...	.94	.94	.01	.04	.05	.99	.03	.01	.03	130	20	

11453555 PUTAH CREEK ABOVE LAKE BERRYESSA, CA

LOCATION.--Lat 38°42'15", long 122°22'50", in NE¼NW¼ sec.23, T.10 N., R.5 W., Napa County, Hydrologic Unit 18020117, at inflow to Lake Berryessa.

DRAINAGE AREA.--236 mi² (611 km²).

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)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	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)
DEC 09...	1110	13	422	8.9	9.5	.80	11.8	.16	.21	.01	.58
MAR 23...	1440	340	428	8.6	16.5	.50	10.1	.21	.20	.00	.53
JUN 09...	1440	33	488	8.8	28.0	.40	9.2	.01	.01	.01	.10
DATE	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)	PHOS- PHATE, ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P04)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	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)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
DEC 09...	.59	.75	.01	.01	.03	<10	10	<100	0	.1	<10
MAR 23...	.53	.74	.02	.00	.00	--	--	--	--	--	--
JUN 09...	.11	.12	.05	.00	.00	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

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

SACRAMENTO RIVER BASIN--Continued
11453565 ETICUERA CREEK NEAR KNOXVILLE, CALOCATION.--Lat 38°42'52", long 122°15'36", in sec.14, T.10 N., R.4 W., Napa County, Hydrologic Unit 18020117,
0.3 mi (0.5 km) upstream from Toll Canyon, 8.9 mi (14.3 km) southeast of Knoxville.DRAINAGE AREA.--29.3 mi² (75.9 km²).

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)	TUR- BID- ITY (NTU)	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)
JAN 25...	1025	27	944	8.5	6.5	17	11.8	520	210	73	83	58
MAR 23...	0950	31	1020	8.5	13.0	.50	10.6	--	--	--	--	--
JUN 09...	1210	1.2	1200	8.3	23.0	.30	9.2	--	--	--	--	--
DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	ALKA- LINITY (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)
JAN 25...	19	1.1	2.3	360	10	310	270	30	.2	22	732	1.00
MAR 23...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 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,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)	
JAN 25...	1.0	1.1	.02	.03	.05	1.1	.05	.03	.09	1200	30	
MAR 23...	.15	.14	.00	1.4	1.4	1.6	.01	.00	.00	--	--	
JUN 09...	.01	.01	.01	.29	.30	.31	.16	.00	.00	--	--	

Lake County

Lower Lake-Middletown Area

384739122335201. Local number 11N/6W-19G1 M.

LOCATION.--Lat 38°47'39", long 122°33'52", Hydrologic Unit 18020117, about 4 mi (6 km) northeast of Middletown in Coyote Valley. Owner: Zolezzi Arabian Horse Ranch.

AQUIFER.--Alluvium of Quaternary age.

WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 8 in (0.20 m), depth 50 ft (15.2 m), casing information not available.

DATUM.--Altitude of land-surface datum is 960 ft (292.6 m).

COOPERATION.--Measurements were furnished by California Department of Water Resources.

PERIOD OF RECORD.--Water years 1950-54, 1956-78 (discontinued).

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.54 ft (0.469 m) below land-surface datum, Mar. 6, 1963; lowest measured, 18.43 ft (5.617 m) below land-surface datum, Oct. 4, 1961.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 11, 1977	N	MAR. 14, 1978	11.6				

N No measurement.

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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)	2.54×10^1 2.54×10^{-2}	millimeters (mm) meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^0	kilometers (km)
<i>Area</i>		
acres	4.047×10^3 4.047×10^{-1} 4.047×10^{-3}	square meters (m ²) square hectometers (hm ²) square kilometers (km ²)
square miles (mi ²)	2.590×10^0	square kilometers (km ²)
<i>Volume</i>		
gallons (gal)	3.785×10^0 3.785×10^0 3.785×10^{-3}	liters (L) cubic decimeters (dm ³) cubic meters (m ³)
million gallons	3.785×10^3 3.785×10^{-3}	cubic meters (m ³) cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1 2.832×10^{-2}	cubic decimeters (dm ³) cubic meters (m ³)
cfs-days	2.447×10^3 2.447×10^{-3}	cubic meters (m ³) cubic hectometers (hm ³)
acre-feet (acre-ft)	1.233×10^3 1.233×10^{-3} 1.233×10^{-6}	cubic meters (m ³) cubic hectometers (hm ³) cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1 2.832×10^1 2.832×10^{-2}	liters per second (L/s) cubic decimeters per second (dm ³ /s) cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2} 6.309×10^{-2} 6.309×10^{-5}	liters per second (L/s) cubic decimeters per second (dm ³ /s) cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1 4.381×10^{-2}	cubic decimeters per second (dm ³ /s) cubic meters per second (m ³ /s)
<i>Mass</i>		
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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