

WATER RESOURCES DATA—CALIFORNIA, WATER YEAR 1999  
VOLUME 2—PACIFIC SLOPE BASINS FROM ARROYO GRANDE  
TO OREGON STATE LINE EXCEPT CENTRAL VALLEY

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## INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State and Federal agencies, obtains a large amount of data pertaining to the water resources of California each water year. These data, accumulated during many water years, constitute a valuable database for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the U.S. Geological Survey, the data are published annually in this report series entitled "Water Resources Data—California."

This volume of the report includes records on surface water in the State. Specifically, it contains (1) discharge records for 117 streamflow-gaging stations, 1 low-flow partial-record streamflow station, and 2 miscellaneous measurement stations; (2) gage-height records for 8 stations, (3) stage and contents records for 6 lakes and reservoirs; and (4) water-quality records for 20 streamflow-gaging stations and 12 water-quality partial-record stations. Records included for stream stages are only a small fraction of those obtained during the water year.

The series of annual reports for California began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format changed to include data on quantities of surface water, quality of surface and ground water, and ground-water levels. From the 1985 through the 1993 water years, a separate volume for ground-water levels and quality was published for California.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for California were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-Water Supply of the United States, Parts 10 and 11." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." These Water-Supply Papers may be consulted in public libraries of principal cities of the United States, or if not out of print, they may be purchased from U.S. Geological Survey, Information Services, Box 25286, Denver Federal Center, Denver, CO 80225-0046.

Publications similar to this report are published annually by the U.S. Geological Survey for all States. Each report has an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report CA-99-2." For archiving and general distribution, the reports for 1971–74 water years also are identified as water-data reports. These water-data reports are for sale, in paper copy or on microfiche, by the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. For further ordering information, the Customer Inquiries telephone number is (703) 487-4650, between 8:30 a.m. and 5:30 p.m. Eastern Standard Time.

Additional information for ordering specific reports may be obtained from the District Office at the address given on the back of the title page or by telephone at (916) 278-3100.

## 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:

Alameda County Flood Control and Water Conservation District, Robert Hale, Water Resources Manager.  
Alameda County Flood Control and Water Conservation District, Zone 7, Dale Myers, General Manager.  
Alameda County Water District, Paul Piraino, General Manager.  
California Department of Parks and Recreation, Henry R. Agonia, Director.  
California Department of Water Resources, David N. Kennedy, Director.  
Contra Costa County Flood Control and Water Conservation District, R. Mitch Avalon, Deputy Director.  
Hoopa Indian Tribe, Ken Norton, Tribal EPA Director.  
Humboldt Bay Municipal Water District, Arthur Bolli, General Manager.

Marin Municipal Water District, Pamela J. Nicolai, General Manager.  
 Monterey County Water Resources Agency, Michael D. Armstrong, General Manager.  
 Monterey Peninsula Water Management District, Darby W. Fuerst, General Manager.  
 San Benito County Water District, John S. Gregg, District Manager.  
 San Francisco Water Department, John P. Mullane, General Manager.  
 San Jose, city of, Carl W. Mosher, Director, Environmental Services Department.  
 San Luis Obispo County Engineering Department, Timothy P. Nanson, County Engineer.  
 San Mateo County Department of Public Works, Robert L. Frame, Senior Civil Engineer.  
 Santa Clara Valley Water District, Stanley M. Williams, General Manager.  
 Santa Cruz, city of, Water Department, Terry Tompkins, Deputy Director/Operations.  
 Santa Cruz County Flood Control and Water Conservation District, Planning Department, Bruce Laclergue, Water Resources Manager.  
 Santa Rosa, city of, Lynn M. Small, Environmental Services Superintendent.  
 Scotts Valley Water District, Jon P. Sansing, General Manager.  
 Sonoma County Permit and Resource Management Department, Sibohan McGregor, Geothermal Coordinator.  
 Sonoma County Water Agency, Randy O. Poole, General Manager.  
 Soquel Creek Water District, Laura D. Brown, General Manager.  
 Yurok Indian Tribe, Mike Belchek.

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

The following organizations aided in collecting records: Pacific Gas and Electric Company, PacifiCorp, STS Hydropower, and North Coast Hydroelectric.

## SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 50 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by human activities.

National Stream-Quality Accounting Network (NASQAN) monitors the water quality of large rivers within four of the Nation's largest river basins—the Mississippi, the Columbia, the Colorado, and the Rio Grande. The network consists of 39 stations. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and re-mobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals.

The National Atmospheric Deposition Program/National Trends Network (NADP/NTN) provides continuous measurement and assessment of the chemical climate of precipitation throughout the United States. As the lead Federal agency, the USGS works together with over 100 organizations to accomplish the following objectives: (1) provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of 191 precipitation chemistry monitoring sites; (2) provide the mechanism to evaluate the effectiveness of the significant reduction in SO<sub>2</sub> emissions that began in 1995 as implementation of the Clean Air Act Amendments (CAAA) occurred; (3) provide the scientific basis and nationwide evaluation mechanism for implementation of the Phase II CAAA emission reductions for SO<sub>2</sub> and NO<sub>x</sub> scheduled to begin in 2000.

Data from the network, as well as information about individual sites, are available through the world wide web at:

*<http://nadp.nrel.colostate.edu/NADP>*

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 53 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and Federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key Federal,

State, and local water resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies.

Additional information about the NAWQA Program is available through the world wide web at:

[http://wwwrvares.er.usgs.gov/nawqa/nawqa\\_home.html](http://wwwrvares.er.usgs.gov/nawqa/nawqa_home.html)

### EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1999 water year that began October 1, 1998, and ended September 30, 1999. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and contents data for lakes and reservoirs, and water-quality data for surface water. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

#### Station-Identification Numbers

Each streamsite data station in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations and for ground-water well sites differ, but both are based on geographic location. The "downstream-order" system is used for regular surface-water stations and the "latitude-longitude" system is used for surface-water stations in California where only miscellaneous measurements are made.

#### Downstream-Order System

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

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight-digit number for each station such as 11465350, which appears just to the left of the station name, includes the two-digit part number "11" plus the six-digit downstream-order number "465350." The part number designates the major river basin; for example, part "11" is the Pacific Slope Basins in California.

#### Latitude-Longitude System

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

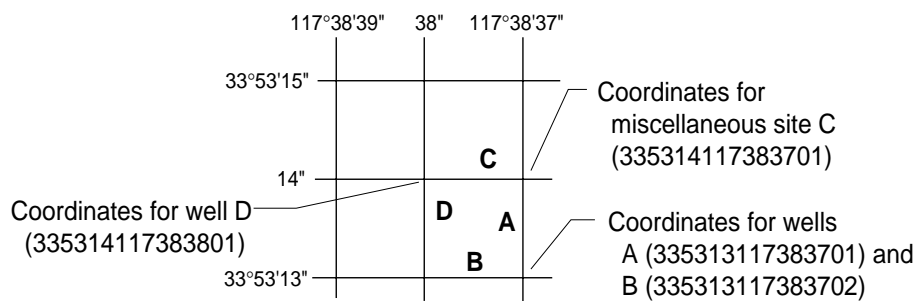


Figure 1. System for numbering miscellaneous sites (latitude and longitude).

## Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake and reservoir contents, similarly, are those for which stage or contents may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records" or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report. Location of all complete-record stations for which data are given in this report are shown, by county, in figures 2 through 19.

## Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relation between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relation between stage and lake contents. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with digital recorders, data-collection platforms, or data loggers that sample stage values at selected time intervals. Measurements of discharge are made with current meters using methods adapted by the U.S. Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in U.S. Geological Survey Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations (TWRI), Book 3, Chapters A1 through A19, and Book 8, Chapters A2 and B2. The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standards (ISO).

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge are prepared for any stage within the range of the measurements. If it is necessary to define extremes of discharge outside the range of current-meter measurements, the curves are extended using (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow-over-dam or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may so obscure the stage-discharge relations that daily mean discharges must be estimated from other information such as temperature and precipitation records, notes or observations, and records for other stations in the same or nearby basins for comparable periods.

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

At some gaging stations, acoustic-velocity meter (AVM) systems are used to compute discharge. The AVM system measures the stream's velocity at one or more paths in the cross section. Coefficients are developed to relate this path velocity to the mean velocity in the cross section. Because the AVM sensors are fixed in position, the adjustment coefficients generally vary with stage. Cross-sectional area curves are developed to relate stage, recorded as noted above, to cross-section area. Discharge is computed by multiplying path velocity by the appropriate stage-related coefficient and area.

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

For some gaging stations, there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following records, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

### Data Presentation

Streamflow data in this report are presented in a new format that is considerably different from the format in data reports prior to the 1991 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or station manuscript above the table. These changes represent the results of a pilot program to reformat the annual water-data report to meet current user needs and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consist of four parts, the manuscript or station description; the data table of daily mean values of discharge for the current water year with summary data; a tabular statistical summary of monthly mean flow data for a designated period, by water year; and a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration.

#### Station manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments follow to clarify information presented under the various headings of the station description.

**LOCATION.**—Information on locations is obtained from the most accurate maps available. The location of the gaging station is given with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name. River mileages, given for only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council, or were provided by the U.S. Army Corps of Engineers.

**DRAINAGE AREA.**—Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

**PERIOD OF RECORD.**—This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time when the present station was not, and whose location was such that records from it reasonably can be considered equivalent with records from the present station.

**REVISED RECORDS.**—Published records, because of new information, occasionally are incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report is given in which the most recently revised figure was published.

**GAGE.**—The type of gage currently in use, the datum of the current gage referred to sea level (see glossary), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

**REMARKS.**—All periods of estimated daily-discharge record will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily-discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a REMARKS paragraph is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph also is used to present information relative to the accuracy of the records, to special methods of computation, to conditions that affect natural flow at the station, and possibly to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

**COOPERATION.**—Records provided by a cooperating organization or obtained for the U.S. Geological Survey by a cooperating organization are identified.

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

separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

**EXTREMES OUTSIDE PERIOD OF RECORD.**—Included is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

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

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

Occasionally the records of a discontinued gaging station may need revision. Because for these stations there would be no current or, possibly, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District Office to determine if the published records were revised after the station was discontinued. If the data were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream-gaging stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

#### Data table of daily mean values

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

#### Statistics of monthly mean data

A tabular summary of the mean (line headed "MEAN"), maximum (line headed "MAX"), and minimum (line headed "MIN") of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those figures. The designated period will be expressed as "FOR WATER YEARS \_\_\_—\_\_\_, BY WATER YEAR (WY)," and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. It will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript.

#### Summary statistics

A table titled "SUMMARY STATISTICS" follows the statistics of monthly mean data tabulation for tables containing complex data for the current water year. This table consists of four columns, with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, "WATER YEARS \_\_\_—\_\_\_," will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (see line headings below), except for the "ANNUAL 7-DAY MINIMUM" statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When this occurs, it will be noted in the REMARKS paragraph or in footnotes.

Selected streamflow duration curve statistics and runoff data also are given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

The following summary statistics data, as appropriate, are provided with each continuous record of discharge. Comments follow to clarify information presented under the various line headings of the summary statistics table.

**ANNUAL TOTAL.**—The sum of the daily mean values of discharge for the year. At some stations the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

**ANNUAL MEAN.**—The arithmetic mean of the individual daily mean discharges for the year noted or for the designated period. At some stations the yearly mean discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

**HIGHEST ANNUAL MEAN.**—The maximum annual mean discharge occurring for the designated period.

**LOWEST ANNUAL MEAN.**—The minimum annual mean discharge occurring for the designated period.

**HIGHEST DAILY MEAN.**—The maximum daily mean discharge for the year or for the designated period.

**LOWEST DAILY MEAN.**—The minimum daily mean discharge for the year or for the designated period.

**INSTANTANEOUS PEAK FLOW.**—The maximum instantaneous discharge occurring for the water year or for the designated period. Note that secondary instantaneous peak discharges above a selected base discharge are stored in District computer files for stations meeting certain criteria. Those discharge values may be obtained by writing to the District Office. (See address on back of title page of this report.)

**INSTANTANEOUS PEAK STAGE.**—The maximum instantaneous stage occurring for the water year or for the designated period. If the dates of occurrence for the instantaneous peak flow and instantaneous peak stage differ, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

**INSTANTANEOUS LOW FLOW.**—The minimum instantaneous discharge occurring for the water year or for the designated period.

**ANNUAL RUNOFF.**—Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

Acre-foot (AC-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.

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

Inches (IN.) indicates the depth to which the drainage area would be covered if all the runoff for a given period were distributed on it uniformly.

**10 PERCENT EXCEEDS.**—The discharge that is exceeded 10 percent of the time for the designated period.

**50 PERCENT EXCEEDS.**—The discharge that is exceeded 50 percent of the time for the designated period.

**90 PERCENT EXCEEDS.**—The discharge that is exceeded 90 percent of the time for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements generally are made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

### Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified either by flagging individual daily values with the letter symbol "e" and printing the table footnote, "e Estimated," or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

### Accuracy of the Records

The accuracy of streamflow records depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of measurements of stage and discharge, and interpretation of records.

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of the true; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned, are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second ( $\text{ft}^3/\text{s}$ ) for values less than  $1 \text{ ft}^3/\text{s}$ , to the nearest tenth between  $1.0$  and  $10 \text{ ft}^3/\text{s}$ , to whole numbers between  $10$  and  $1,000 \text{ ft}^3/\text{s}$ , and to three significant figures

for more than 1,000 ft<sup>3</sup>/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the measured discharge.

### Other Records Available

The National Water Data Exchange (NAWDEX), U.S. Geological Survey, Reston, VA 20192, maintains an index of sites as well as an index of records of discharge collected by other agencies but not published by the U.S. Geological Survey. Information on records at specific sites can be obtained from that office upon request.

Information used in the preparation of the records in this publication, such as discharge measurement notes, gage-height records, temperature measurements, and rating tables are on file in the District Office. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the District Office.

### Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve various types of data and measurement frequencies.

### Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be one or more times daily, weekly, monthly, or quarterly. A partial-record station is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A miscellaneous sampling site is a location other than a continuing or partial-record station, where random samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape or stored electronically in a data logger. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figures 2 through 19.

### Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

### Onsite Measurements and Sample Collection

In obtaining water-quality data, a major concern is the assurance that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, are made onsite when samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures are followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in "Techniques of Water-Resources Investigations," Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. All these references are listed in the section "Publications on Techniques of Water-Resources Investigations." Also, detailed information on collecting, treating, and shipping samples may be obtained from the District Office.



One sample can adequately define the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream-Quality Accounting Network (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals depends on flow conditions and other factors which must be evaluated by the collector.

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

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

Historical and current (1999) dissolved trace-element concentrations are reported herein for water that was collected, processed, and analyzed by using either ultraclean or other than ultraclean techniques. If ultraclean techniques were used, then those concentrations are reported in nanograms per liter (ng/L). If other than ultraclean techniques were used, then those concentrations are reported in micrograms per liter ( $\mu\text{g/L}$ ) and could reflect contamination introduced during some phase of the procedure.

### Water Temperature

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

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District Office.

### Sediment

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

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations measured immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge. Methods used in the computation of sediment records are described in the TWRI Book 3, Chapters C1 and C3. These methods are consistent with the ASTM standards and generally follow ISO standards.

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

In addition to the records of suspended-sediment discharge, records of the periodic measurements of the particle-size distribution of suspended sediment, bed material, and bed load are included for some stations.

Estimates of bed-load and total-sediment discharge are included for some stations. Computations of monthly bed-load discharges are based on the relation between instantaneous water discharge and corresponding bed-load discharge for the station. Values of bed-load discharge used in defining this relation are based on samples obtained by use of the Helley-Smith or BL 84 bed-load samplers or by modified-Einstein or Meyer-Peter Muller computation procedures. Application of the bed-load-transport relation at a station was made on a daily basis or subdivided-day basis. The bed-load samplers are designed to collect time-weighted samples for the sediment moving within 0.25 ft of the streambed. Sediment moving in this portion of the flow cannot be sampled with standard suspended-sediment samplers. Calibration of the bed-load samplers has not been completed, and a trap efficiency of 1.0 has been assumed applicable to these devices. 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 bed-load discharge must be used with caution. They are estimates, at best, and are subject to revision.

### Cross-Sectional Data

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

### Laboratory Measurements

Sediment samples, biochemical-oxygen-demand (BOD) samples, indicator-bacteria samples, and daily specific-conductance samples are analyzed locally. All other samples are analyzed in the U.S. Geological Survey's National Water-Quality Laboratory in Arvada, Colorado. Methods used to analyze sediment samples and to compute sediment records are described in the Techniques of Water-Resources Investigations, Book 5, Chapter C1. Methods used by the U.S. Geological Survey laboratories are given in TWRI Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, A4, and A5. These methods are consistent with ASTM standards and generally follow ISO standards.

### Water Quality-Control Data

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental-sample data cannot be interpreted adequately because the errors associated with the sample data are unknown. The various types of QC samples collected by this District are described in the following section. Procedures have been established for the storage of water quality-control data within the U. S. Geological Survey. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples.

#### Blank Samples

Blank samples are collected and analyzed to ensure the environmental samples have not been contaminated by the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. There are many types of blank samples possible, each designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this District are:

**Field blank** is a blank solution that is subjected to all aspects of sample collection, field processing preservation, transportation, and laboratory handling as an environmental sample.

**Trip blank** is a blank solution that is put in the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

**Equipment blank** is a blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank but normally done in the more controlled conditions of the office).

**Sampler blank** is a blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

**Filter blank** is a blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

**Splitter blank** is a blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

**Preservation blank** is a blank solution that is treated with the sampler preservatives used for an environmental sample.

#### Reference Samples

Reference material is a solution or material prepared by a laboratory whose composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to ensure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

#### Replicate Samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and

analytical process. There are many types of replicate samples possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this District are:

**Sequential sample** is a type of replicate sample in which the samples are collected one after the other, typically over a short time.

**Split sample** is a type of replicate sample in which a sample is split into subsamples contemporaneous in time and space.

### Spike Samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

## Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and other data obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.—See Data Presentation under "Records of Stage and Water Discharge"; same comments apply.

DRAINAGE AREA.—See Data Presentation under "Records of Stage and Water Discharge"; same comments apply.

PERIOD OF RECORD.—This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the individual parameters.

INSTRUMENTATION.—Information on instrumentation is given only if a water-quality monitor, temperature recorder, sediment-pumping sampler, or other sampling device is in operation at a station.

REMARKS.—Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.—Records provided by a cooperating organization or obtained for the U.S. Geological Survey by a cooperating organization are identified here.

EXTREMES.—Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

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

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

## ACCESS TO USGS WATER DATA

The U.S. Geological Survey provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the world wide web (WWW). These data may be accessed at

*<http://water.usgs.gov>*.

Some water-quality and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on magnetic tape or 3-1/2 inch floppy disk. Information about the availability of specific types of additional data or products, and user charges, can be obtained locally from each of the Water Resources Division District Offices. (See address on the back of the title page.)

## DEFINITION OF TERMS

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

**Acid neutralizing capacity** (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an “unfiltered” sample (formerly reported as alkalinity).

**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, 325,851 gallons, or 1,233 cubic meters.

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

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

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

**Alkalinity** is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a “filtered” sample.

**Annual runoff** is the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

**Acre-foot** (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equal to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters.

**Cubic foot per second per square mile** [CFSM, (ft<sup>3</sup>/s)/mi<sup>2</sup>] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area.

**Inch** (IN., in.) as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were uniformly distributed on it.

**Aroclor** is the registered trademark for a group of polychlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type and the last two digits represent the weight percent of the hydrogen substituted chlorine.

**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, while others perform an essential role in nature in the recycling of materials; for example, by 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. This group includes coliforms that inhabit the intestines of warm-blooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 35°C. In the laboratory, these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35°C plus or minus 1.0°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. In the laboratory, they are defined as all the organisms that produce blue colonies within 24 hours when incubated at 44.5°C plus or minus 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

**Fecal streptococcal bacteria** are bacteria found in the intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35°C plus or minus 1.0°C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

**Enterococcus bacteria** are commonly found in the feces of humans and other warm-blooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies

with black or reddish-brown precipitate after incubation at 41°C on mE agar and subsequent transfer to EIA medium. Enterococci include *Streptococcus faecalis*, *Streptococcus faecium*, *Streptococcus avium*, and their variants.

*Escherichia coli* (*E. coli*) are bacteria present in the intestine and feces of warm-blooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5 °C on mTEC medium. Their concentrations are expressed as number of colonies per 100 mL of sample.

**Base flow** is flow in a channel sustained by ground-water discharge in the absence of direct runoff.

**Bed load** is the sediment which moves along in essentially continuous contact with the streambed by rolling, sliding, and making brief excursions into the flow a few diameters above the bed.

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

**Benthic organisms** (invertebrates) are the group of animals inhabiting 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. They are useful as indicators of water quality.

**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 ( $\text{g}/\text{m}^3$ ), and periphyton and benthic organisms in grams per square meter ( $\text{g}/\text{m}^2$ ).

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

**Organic mass** or volatile mass of the living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. 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.

**Biomass pigment ratio** is an indicator of the total proportion of periphyton which are autotrophic (plants). This is also called the Autotrophic Index.

**Bottom material:** See Bed material.

**Cells/volume** (cells per volume) refers to the number of plankton cells or natural units counted using a microscope and grid or counting cell. Results are generally reported as cells or units per milliliter.

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

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

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

**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 BOD 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 green pigments in plants.

**Colloid** is any substance with particles in such a fine state of subdivision dispersed in a medium (for example, water) that they do not settle out; but not in so fine a state of subdivision that they can be said to be truly dissolved.

**Color unit** is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

**Confined aquifer** is a term used to describe an aquifer containing water between two relatively impermeable boundaries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases the water level can rise above the ground surface, yielding a flowing well.

**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.

**Continuous-record station** is a site that meets either of the following conditions:

1. Stage or streamflow are recorded at some interval on a continuous basis. The recording interval is usually 15 minutes, but may be less or more frequent.
2. Water-quality, sediment, or other hydrologic measurements are recorded at least daily.

**Control** designates a feature in the channel downstream from a gaging station that physically influences the water-surface elevation and thereby determines the stage-discharge relation at the station. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, an artificial structure, or a uniform cross section over a long reach of the channel.

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

**Cubic foot per second** (CFS, cfs, ft<sup>3</sup>/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second, 448.8 gallons per minute, or 0.02832 cubic meters per second.

**Cubic foot per second per day** (CFS-DAY, cfs-day, cfs/d, or [(ft<sup>3</sup>/s)/d]) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.9835 acre-feet, 646,317 gallons, or 2,447 cubic meters.

**Daily record** is a summary of streamflow, sediment, or water-quality values computed from data collected with sufficient frequency to obtain reliable estimates of daily mean values.

**Daily record station** is a site for which daily records of streamflow, sediment, or water-quality values are computed.

**Datum**, as used in this report, is an elevation above mean sea level to which all gage height readings are referenced.

**Diel** is of or pertaining to a 24-hour period of time; a regular daily cycle.

**Discharge**, or flow, is the volume of water (or more broadly, volume of fluid including solid- and dissolved-phase material), that passes a given point in a given period of time.

**Annual 7-day minimum** is the lowest mean discharge for 7 consecutive days in a year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1–March 31). The date shown in the summary-statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

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

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

**Dissolved** refers to that material in a representative water sample which passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

**Dissolved oxygen** (DO) content of water in equilibrium with air is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved solids, with small temperature changes having the more significant offset. Photosynthesis and respiration may cause diurnal variations in dissolved-oxygen concentration in water from some streams.

**Dissolved-solids concentration** of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During that analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to reflect the change. Alternatively, alkalinity concentration (as mg/L CaCO<sub>3</sub>) can be converted to carbonate concentration by multiplying by 0.60.

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

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

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

**Drainage area** of a site on a stream is that area, measured in a horizontal plane, that has a common outlet at the site for its surface runoff. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

**Drainage basin** is a part of the Earth's surface that is occupied by a drainage system with a common outlet for its surface runoff (see "Drainage area").

**Dry weight** refers to the weight of animal tissue after it has been dried in an oven at 65°C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue.

**Extractable-organic halides (EOX)** are organic compounds which contain halogen atoms such as chlorine. These organic compounds are semi-volatile and extractable by ethyl acetate from air-dried stream-bottom sediments. The ethyl-acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the stream-bottom sediments.

**Flow-duration percentiles** are values on a scale of 100 that indicate the percentage of time for which a flow is not exceeded. For example, the 90th percentile of river flow is greater than or equal to 90 percent of all recorded flow rates.

**Gage datum** is the elevation of the zero point of the reference gage from which gage height is determined as compared to sea level (see "Datum"). This elevation is established by a system of levels from known benchmarks, by approximation from topographic maps, or by geographical positioning system.

**Gage height (G.H.)** is the water-surface elevation referenced to the 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 site on a stream, canal, lake, or reservoir where systematic observations of stage, discharge, or other hydrologic data are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

**Gas chromatography/flame ionization detector (GC/FID)** is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

**Ground-water level** is the elevation of the water table or another potentiometric surface at a particular location.

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

**High tide** is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. *See NOAA web site:*

*<http://www.co-ops.nos.noaa.gov/tideglos.html>*

**Hydrologic benchmark 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 benchmark station may be used to separate effects of natural from human-induced changes in other basins that have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped benchmark basin.

**Hydrologic unit** is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as defined by the former Office of Water Data Coordination and delineated on the State Hydrologic Unit Maps by the U.S. Geological Survey. Each hydrologic unit is identified by an 8-digit number.

**Land-surface datum (lsd)** is a datum plane that is approximately at land surface at each ground-water observation well.

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

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

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

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

**Lipid** is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

**Low tide** is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. *See NOAA web site:*

*<http://www.co-ops.nos.noaa.gov/tideglos.html>*

**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.

**Mean high tide** is the average of all high tides over a specified period.

**Mean low tide** is the average of all low tides over a specified period.

**Mean lower low water (MLLW)** is the average of the lower low water height of each tidal day observed over the National Tidal Datum Epoch. The National Tidal Datum Epoch is the specific 19-year period adopted by the National Ocean Service as the official time segment over which tide observations are taken and reduced to obtain mean values.

**Mean water level** is the average of all tides over a specified period.

**Measuring point (MP)** is an arbitrary permanent reference point from which the distance to water surface in a well is measured to obtain water level.

**Membrane filter** is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

**Metamorphic stage** refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental 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-adult or egg-nymph-adult.

**Methylene blue active substances (MBAS)** are apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

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

**Micrograms per kilogram (UG/KG,  $\mu\text{g/kg}$ )** is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

**Micrograms per liter (UG/L,  $\mu\text{g/L}$ )** is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter.

**Microsiemens per centimeter (US/CM,  $\mu\text{S/cm}$ )** is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of Units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

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

**Miscellaneous site**, or miscellaneous station, is a site where streamflow, sediment, and/or water-quality data are collected once, or more often on a random or discontinuous basis.

**Most probable number (MPN)** is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

**Multiple-plate samplers** are artificial substrates of known surface area used for obtaining benthic-invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

**Nanograms per liter (NG/L,  $\text{ng/L}$ )** is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

**National Geodetic Vertical Datum of 1929 (NGVD of 1929)** 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. *See NOAA web site:*

*<http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88>*

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

**Nephelometric turbidity unit (NTU)** is the measurement for reporting turbidity that is based on use of a standard suspension of Formazin. Turbidity measured in NTU uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample.

**Open or screened interval** is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

**Organic carbon (OC)** is a measure of organic matter present in aqueous solution, suspension, or bottom sediments. May be reported as dissolved organic carbon (DOC), suspended organic carbon (SOC), or total organic carbon (TOC).

**Organism** is any living entity.

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

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

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

**Organochlorine compounds** are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.



**Parameter Code** is a 5-digit number used in the U.S. Geological Survey's computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property.

**Partial-record station** is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

**Particle size** is the diameter, in millimeters (mm), of a particle determined by sieve or sedimentation methods. The sedimentation method utilizes the principle of Stokes Law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, Sedigraph) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

**Particle-size classification** used in this report agrees with the 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 .....     | .004–.062     | Sedimentation       |
| Sand .....     | .062–2.0      | Sedimentation/sieve |
| Gravel.....    | 2.0–64.0      | Sieve               |

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

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

**Periodic station** is a site where stage, discharge, sediment, chemical, or other hydrologic measurements are made one or more times during a year, but at a frequency insufficient to develop a daily record.

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

**Pesticides** are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

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

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

**Plankton** is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample.

**Phytoplankton** is the plant part of the plankton. They are usually microscopic, and their movement is subject to the 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 on the quality of the water. They are the primary food producers in the aquatic environment and are commonly known as algae.

**Blue-green algae** (*Cyanophyta*) are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

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

**Euglenoids** (*Euglenophyta*) are a group of algae that are usually free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark.

**Fire algae** (*Pyrrhophyta*) are a group of algae that are free-swimming unicells characterized by a red pigment spot.

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

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

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

**Polychlorinated naphthalenes (PCN's)** are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (PCB's) and have been identified in commercial PCB preparations.

**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 oxygen released (oxygen method) or the amount of carbon assimilated (carbon method) by the plants.

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

**Primary productivity (oxygen method)** is expressed as milligrams of oxygen per area per unit time [ $\text{mg O}/(\text{m}^2/\text{time})$ ] for periphyton and macrophytes or per volume [ $\text{mg O}/(\text{m}^3/\text{time})$ ] for phytoplankton. Oxygen method defines 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.

**Radioisotopes** are isotopic forms of an element that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight, but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

**Recoverable from bottom material** is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment 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.

**Recurrence interval**, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or non-exceedance of a specified low flow). The terms "return period" and "recurrence interval" do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day 10-year low flow ( $7Q_{10}$ ) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the non-exceedances of the  $7Q_{10}$  occur less than 10 years after the previous non-exceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous non-exceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the  $7Q_{10}$ .

**Replicate samples** are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

**Return period** is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. May also be called recurrence interval.

**River mile** is the distance of a point on a river measured in miles from the river's mouth along the low-water channel.

**River mileage** is the linear distance along the meandering path of a stream channel determined in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council.

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

**Sea level** refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929. *See:*

[http://www.co-ops.nos.noaa.gov/glossary/gloss\\_n.html#NGVD](http://www.co-ops.nos.noaa.gov/glossary/gloss_n.html#NGVD)

**Sediment** is solid material that is transported by, suspended in, or deposited from water. It originates mostly from disintegrated rocks; it also 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.

**Bed load** is the sediment that is transported in a stream by rolling, sliding, or skipping along or very close to the bed. In this report, bed load is considered to consist of particles in transit from the bed to an elevation equal to the top of the bed-load sampler nozzle (usually within 0.25 ft of the streambed).

**Bed-load discharge** (tons per day) is the quantity of sediment moving as bed load, reported as dry weight, that passes a cross section in a given time.

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

**Suspended-sediment concentration** is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The entire sample is used for the analysis.

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

**Suspended-sediment discharge** (tons/day) is the quantity of sediment moving in suspension, reported as dry weight, that passes a cross section in a given time. It is calculated in units of tons per day as follows:

$$\text{concentration (mg/L)} \times \text{discharge (ft}^3/\text{s)} \times 0.0027.$$

**Suspended-sediment load** is a term that refers to material in suspension. The term needs to be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It is not synonymous with either suspended-sediment discharge or concentration.

**Suspended total residue at 105°C concentration** is the concentration of suspended sediment in the sampled zone expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). A small aliquot of the sample is used for the analysis.

**Total sediment discharge** (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, reported as dry weight, that passes a cross section in a given time.

**Total sediment load** or total load is a term that refers to the total sediment (bed load plus suspended-sediment load) that is in transport. The term needs to be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It is not synonymous with total sediment discharge.

**Seven-day 10-year low flow** (7Q10, 7Q<sub>10</sub>) is the minimum flow averaged over 7 consecutive days that is expected to occur on average, once in any 10-year period. The 7Q10 has a 10-percent chance of occurring in any given year.

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

**Solute** is any substance that is dissolved in water.

**Specific conductance** is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

**Stable isotope ratio** (per MILL/MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific waters, to evaluate mixing of different waters, as an aid in determining reaction rates, and other chemical or hydrologic processes.

**Stage:** See “Gage height.”

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

**Streamflow** is the discharge that occurs in a natural channel. Although the term “discharge” can be applied to the flow of a canal, the word “streamflow” uniquely describes the discharge in a surface stream course. The term “streamflow” is more general than “runoff” as 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.

**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.

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

**Surface area** of a lake or impoundment is that area encompassed by the boundary of the lake or impoundment as shown on U.S. Geological Survey topographic maps, or on other available maps or photographs. The computed surface areas reflect the water levels of the lakes or impoundments at the times when the information for the maps or photographs was obtained.

**Surficial bed material** is the top 0.1 to 0.2 ft of the bed material that is sampled 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. It is associated with 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 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 are 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 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. 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.

**Synoptic Studies** are short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

**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 .....   | <i>Hexagenia</i>         |
| Species ..... | <i>Hexagenia limbata</i> |

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

**Time-weighted average** is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

**Tons per acre-foot** is the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

**Tons per day** (T/DAY, tons/d) is the rate representing a mass of 1 ton of a constituent in streamflow passing a cross section in 1 day. It is equivalent to 2,000 pounds per day, or 0.9072 metric tons per day.

**Total** is the total amount of a given constituent in a representative 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. 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 suspended-sediment mixture and that the analytical method determines all the constituent in the sample.)

**Total discharge** is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

**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. 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."

**Total length** (fish) is the straight-line distance from the anterior point of a fish specimen's snout, with the mouth closed, to the posterior end of the caudal (tail) fin, with the lobes of the caudal fin squeezed together.

**Total load** refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

**Total, recoverable** is the amount of a given constituent that is in solution after a representative 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 are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

**Turbidity** is a measurement of the collective optical properties of a water sample that cause light to be scattered and absorbed rather than transmitted in straight lines; the higher the intensity of scattered light, the higher the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU) or Formazin turbidity units (FTU) depending on the method and equipment used.

**Volatile organic compounds** (VOC's) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and subsequently analyzed by gas chromatography. Many VOC's are man-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They are often components of fuels, solvents, hydraulic fluids, paint thinners, and dry cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human health concern because many are toxic and are known or suspected human carcinogens (U.S. Environmental Protection Agency, 1996).

**Water level** is the water-surface elevation or stage of the free surface of a body of water above or below any datum (see "Gage height"), or the surface of water standing in a well, usually indicative of the position of the water table or other potentiometric surface.

**Water table** is the surface of a ground-water body at which the water is at atmospheric pressure.

**Water-table aquifer** is an unconfined aquifer within which is found the water table.

**Water year** in U.S. Geological Survey reports dealing with surface-water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1999, is called the "1999 water year."

**WDR** is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports. (WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976.)

**Weighted average** is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

**Well** is an excavation (pit, hole, tunnel), generally cylindrical in form and often walled in, drilled, dug, driven, bored, or jetted into the ground to such a depth as to penetrate water-yielding geologic material and allow the water to flow or to be pumped to the surface.

**Wet weight** refers to the weight of animal tissue or other substance including its contained water.

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



## PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Branch of Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

Book 1. Collection of Water Data by Direct Measurement

## Section D. Water Quality

- 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 p.
- 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 p.

Book 2. Collection of Environmental Data

## Section D. Surface Geophysical Methods

- 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 p.
- 2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F.P. Haeni: USGS–TWRI Book 2, Chapter D2. 1988. 86 p.

## Section E. Subsurface Geophysical Methods

- 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 p.
- 2-E2. *Borehole geophysics applied to ground-water investigations*, by W.S. Keys: USGS–TWRI Book 2, Chapter E2. 1990. 150 p.

## Section F. Drilling and Sampling Methods

- 2-F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and W.E. Teasdale: USGS–TWRI Book 2, Chapter F1. 1989. 97 p.

Book 3. Applications of Hydraulics

## Section A. Surface-Water Techniques

- 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 p.
- 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 p.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G.L. Bodhaine: USGS–TWRI Book 3, Chapter A3. 1968. 60 p.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H.F. Matthai: USGS–TWRI Book 3, Chapter A4. 1967. 44 p.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS–TWRI Book 3. Chapter A5. 1967. 29 p.
- 3-A6. *General procedure for gaging streams*, by R.W. Carter and Jacob Davidian: USGS–TWRI Book 3, Chapter A6. 1968. 13 p.

- 3-A7. *Stage measurement at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI Book 3, Chapter A7. 1968. 28 p.
- 3-A8. *Discharge measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI Book 3, Chapter A8. 1969. 65 p.
- 3-A9. *Measurement of time of travel in streams by dye tracing*, by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS–TWRI Book 3, Chapter A9. 1989. 27 p.
- 3-A10. *Discharge ratings at gaging stations*, by E.J. Kennedy: USGS–TWRI Book 3, Chapter A10. 1984. 59 p.
- 3-A11. *Measurement of discharge by the moving-boat method*, by G.F. Smoot and C.E. Novak: USGS–TWRI Book 3, Chapter A11. 1969. 22 p.
- 3-A12. *Fluorometric procedures for dye tracing, Revised*, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS–TWRI Book 3, Chapter A12. 1986. 41 p.
- 3-A13. *Computation of continuous records of streamflow*, by E.J. Kennedy: USGS–TWRI Book 3, Chapter A13. 1983. 53 p.
- 3-A14. *Use of flumes in measuring discharge*, by F.A. Kilpatrick and V.R. Schneider: USGS–TWRI Book 3, Chapter A14. 1983. 46 p.
- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS–TWRI Book 3, Chapter A15. 1984. 48 p.
- 3-A16. *Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS–TWRI Book 3, Chapter A16. 1985. 52 p.
- 3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS–TWRI Book 3, Chapter A17. 1985. 38 p.
- 3-A18. *Determination of stream reaeration coefficients by use of tracers*, by F.A. Kilpatrick, R.E. Rathbun, Nobuhiro Yotsukura, G.W. Parker, and L.L. DeLong: USGS–TWRI Book 3, Chapter A18. 1989. 52 p.
- 3-A19. *Levels at streamflow gaging stations*, by E.J. Kennedy: USGS–TWRI Book 3, Chapter A19. 1990. 31 p.
- 3-A20. *Simulation of soluble waste transport and buildup in surface waters using tracers*, by F.A. Kilpatrick: USGS–TWRI Book 3, Chapter A20. 1993. 38 p.
- 3-A21. *Stream-gaging cableways*, by C. Russell Wagner: USGS–TWRI Book 3, Chapter A21. 1995. 56 p.

#### Section B. Ground-Water Techniques

- 3-B1. *Aquifer-test design, observation, and data analysis*, by R.W. Stallman: USGS–TWRI Book 3, Chapter B1. 1971. 26 p.
- 3-B2. *Introduction to ground-water hydraulics, a programmed text for self-instruction*, by G.D. Bennett: USGS–TWRI Book 3, Chapter B2. 1976. 172 p.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J.E. Reed: USGS–TWRI Book 3, Chapter B3. 1980. 106 p.
- 3-B4. *Regression modeling of ground-water flow*, by R.L. Cooley and R.L. Naff: USGS–TWRI Book 3, Chapter B4. 1990. 232 p.
- 3-B4. *Supplement 1. Regression modeling of ground-water flow—Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems*, by R.L. Cooley: USGS–TWRI Book 3, Chapter B4. 1993. 8 p.
- 3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems—An introduction*, by O.L. Franke, T.E. Reilly, and G.D. Bennett: USGS–TWRI Book 3, Chapter B5. 1987. 15 p.
- 3-B6. *The principle of superposition and its application in ground-water hydraulics*, by T.E. Reilly, O.L. Franke, and G.D. Bennett: USGS–TWRI Book 3, Chapter B6. 1987. 28 p.
- 3-B7. *Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow*, by E.J. Wexler: USGS–TWRI Book 3, Chapter B7. 1992. 190 p.

#### Section C. Sedimentation and Erosion Techniques

- 3-C1. *Fluvial sediment concepts*, by H.P. Guy: USGS–TWRI Book 3, Chapter C1. 1970. 55 p.
- 3-C2. *Field methods for measurement of fluvial sediment*, by T.K. Edwards and G.D. Glysson: USGS–TWRI Book 3, Chapter C2. 1999. 89 p.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS–TWRI Book 3, Chapter C3. 1972. 66 p.



#### Book 4. Hydrologic Analysis and Interpretation

##### Section A. Statistical Analysis

4-A1. *Some statistical tools in hydrology*, by H.C. Riggs: USGS–TWRI Book 4, Chapter A1. 1968. 39 p.

4-A2. *Frequency curves*, by H.C. Riggs: USGS–TWRI Book 4, Chapter A2. 1968. 15 p.

##### Section B. Surface Water

4-B1. *Low-flow investigations*, by H.C. Riggs: USGS–TWRI Book 4, Chapter B1. 1972. 18 p.

4-B2. *Storage analyses for water supply*, by H.C. Riggs and C.H. Hardison: USGS–TWRI Book 4, Chapter B2. 1973. 20 p.

4-B3. *Regional analyses of streamflow characteristics*, by H.C. Riggs: USGS–TWRI Book 4, Chapter B3. 1973. 15 p.

##### Section D. Interrelated Phases of the Hydrologic Cycle

4-D1. *Computation of rate and volume of stream depletion by wells*, by C.T. Jenkins: USGS–TWRI Book 4, Chapter D1. 1970. 17 p.

#### Book 5. Laboratory Analysis

##### Section A. Water Analysis

5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M.J. Fishman and L.C. Friedman, editors: USGS–TWRI Book 5, Chapter A1. 1989. 545 p.

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 p.

5-A3. *Methods for the determination of organic substances in water and fluvial sediments*, edited by R.L. Wershaw, M.J. Fishman, R.R. Grabbe, and L.E. Lowe: USGS–TWRI Book 5, Chapter A3. 1987. 80 p.

5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, by L.J. Britton and P.E. Greeson, editors: USGS–TWRI Book 5, Chapter A4. 1989. 363 p.

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 p.

5-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L.C. Friedman and D.E. Erdmann: USGS–TWRI Book 5, Chapter A6. 1982. 181 p.

##### Section C. Sediment Analysis

5-C1. *Laboratory theory and methods for sediment analysis*, by H.P. Guy: USGS–TWRI Book 5, Chapter C1. 1969. 58 p.

#### Book 6. Modeling Techniques

##### Section A. Ground Water

6-A1. *A modular three-dimensional finite-difference ground-water flow model*, by M.G. McDonald and A.W. Harbaugh: USGS–TWRI Book 6, Chapter A1. 1988. 586 p.

6-A2. *Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model*, by S.A. Leake and D.E. Prudic: USGS–TWRI Book 6, Chapter A2. 1991. 68 p.

6-A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems*, Part 1: Model Description and User's Manual, by L.J. Torak: USGS–TWRI Book 6, Chapter A3. 1993. 136 p.

6-A4. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems*, Part 2: Derivation of finite-element equations and comparisons with analytical solutions, by R.L. Cooley: USGS–TWRI Book 6, Chapter A4. 1992. 108 p.

6-A5. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems*, Part 3: Design philosophy and programming details, by L.J. Torak: USGS–TWRI Book 6, Chapter A5, 1993. 243 p.

6-A6. *A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction*, by Eric D. Swain and Eliezer J. Wexler: USGS–TWRI Book 6, Chapter A6. 1996. 125 p.

Book 7. Automated Data Processing and Computations

## Section C. Computer Programs

- 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 p.
- 7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L.F. Konikow and J.D. Bredehoeft: USGS–TWRI Book 7, Chapter C2. 1978. 90 p.
- 7-C3. *A model for simulation of flow in singular and interconnected channels*, by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS–TWRI Book 7, Chapter C3. 1981. 110 p.

Book 8. Instrumentation

## Section A. Instruments for Measurement of Water Level

- 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 p.
- 8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS–TWRI Book 8, Chapter A2. 1983. 57 p.

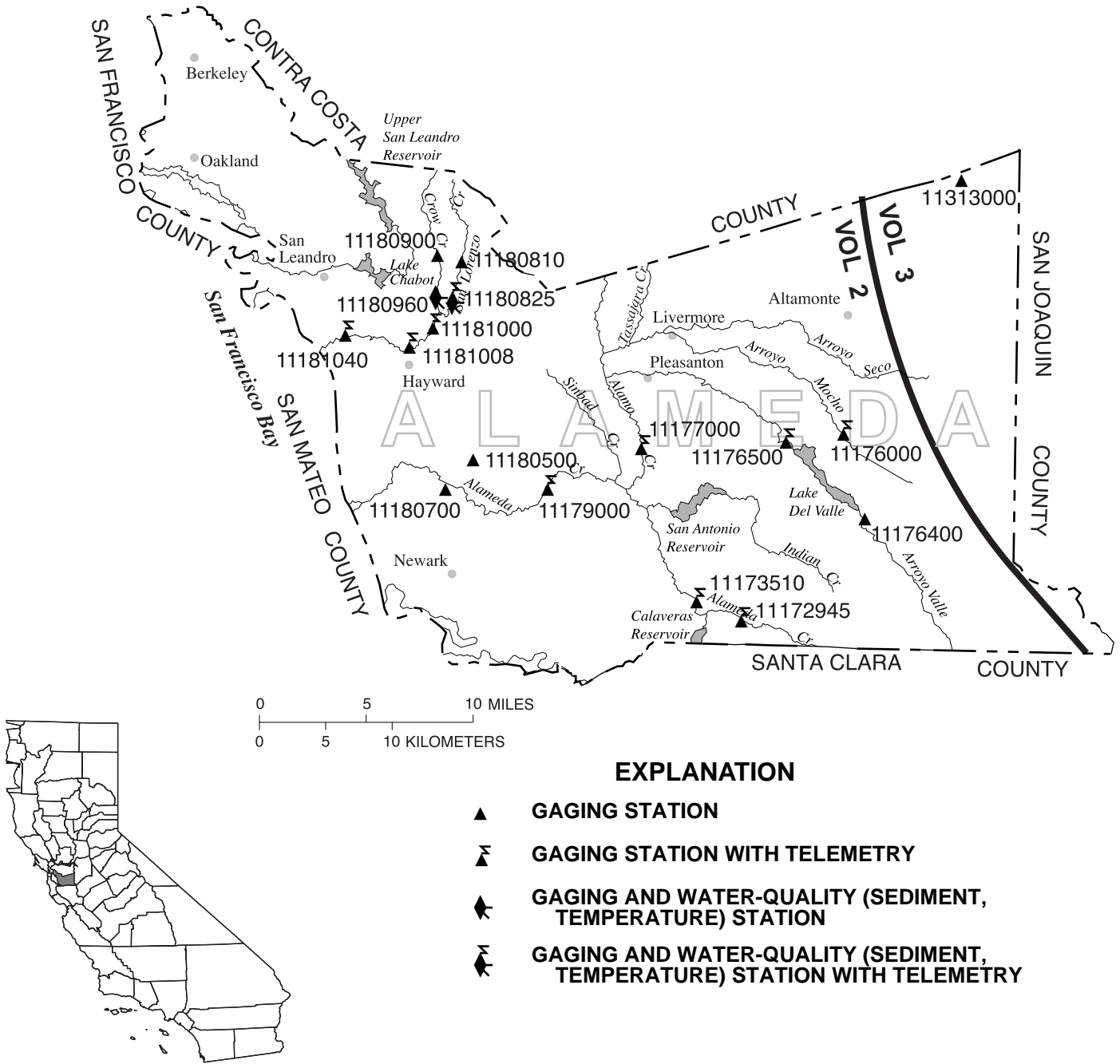
## Section B. Instruments for Measurement of Discharge

- 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 p.

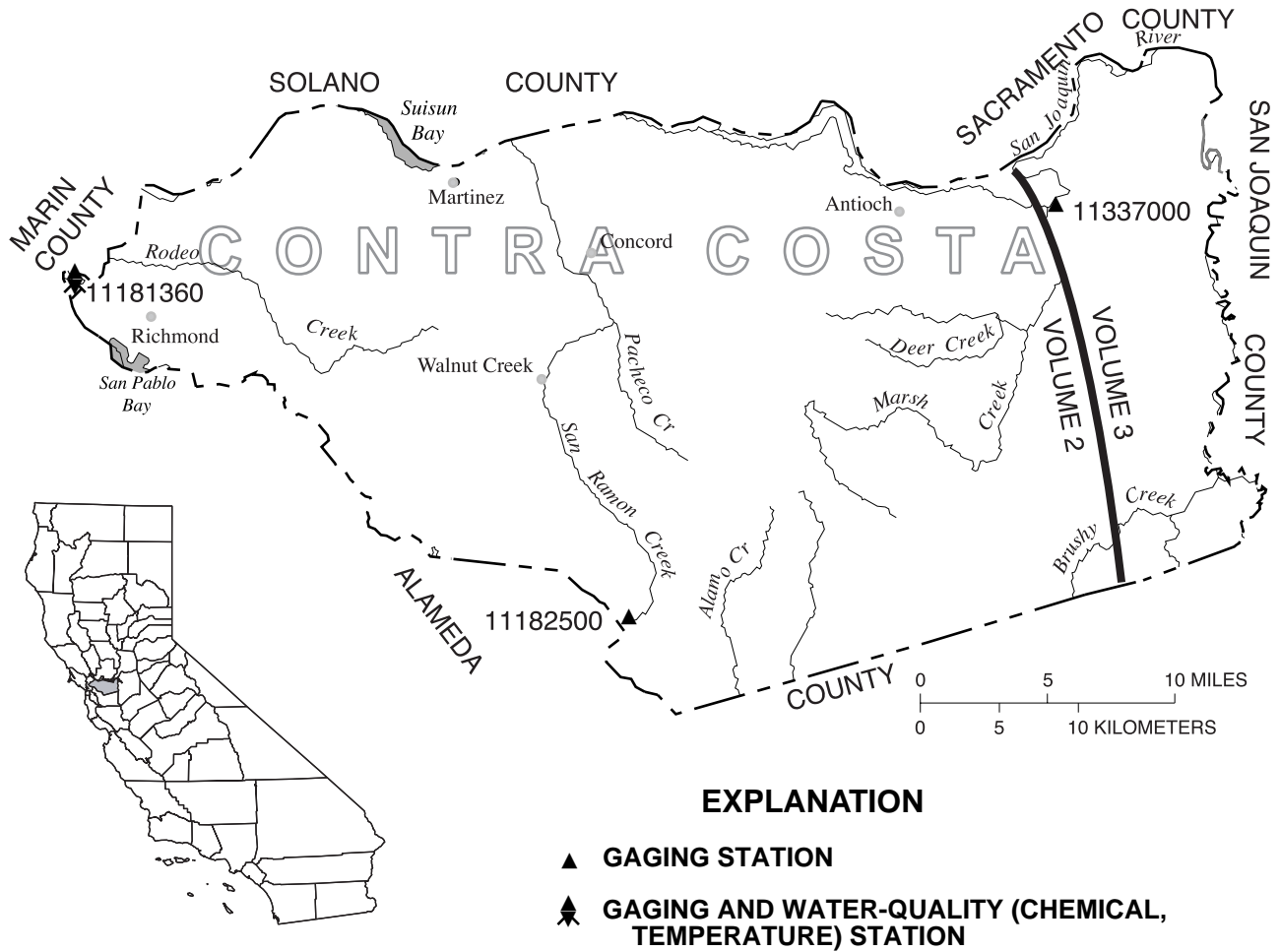
Book 9. Handbooks for Water-Resources Investigations

## Section A. National Field Manual for the Collection of Water-Quality Data

- 9-A1. *National Field Manual for the Collection of Water-Quality Data: Preparations for Water Sampling*, by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI Book 9, Chapter A1. 1998. 47 p.
- 9-A2. *National Field Manual for the Collection of Water-Quality Data: Selection of Equipment for Water Sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI Book 9, Chapter A2. 1998. 94 p.
- 9-A3. *National Field Manual for the Collection of Water-Quality Data: Cleaning of Equipment for Water Sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI Book 9, Chapter A3. 1998. 75 p.
- 9-A5. *National Field Manual for the Collection of Water-Quality Data: Processing of Water Samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI Book 9, Chapter A5. 1999. 149 p.
- 9-A6. *National Field Manual for the Collection of Water-Quality Data: Field Measurements*, edited by F.D. Wilde and D.B. Radtke: USGS–TWRI Book 9, Chapter A6. 1998. Variously paginated.
- 9-A7. *National Field Manual for the Collection of Water-Quality Data: Biological Indicators*, by D.N. Myers and F.D. Wilde: USGS–TWRI Book 9, Chapter A7.1. 1997. 49 p.
- 9-A7. *National Field Manual for the Collection of Water-Quality Data: Five-Day Biological Oxygen Demand*, by G.C. Delzer and S.W. McKenzie: USGS–TWRI Book 9, Chapter A7.2. 1999. 28 p.
- 9-A8. *National Field Manual for the Collection of Water-Quality Data: Bottom-Material Samples*, by D.B. Radtke: USGS–TWRI Book 9, Chapter A8. 1998. 48 p.
- 9-A9. *National Field Manual for the Collection of Water-Quality Data: Safety in Field Activities*, by S.L. Lane and R.G. Fay: USGS–TWRI Book 9, Chapter A9. 1998. 60 p.



**Figure 2.** Location of discharge and water-quality stations in Alameda County.  
 (NOTE: Record for station 11313000 published in volume 3.)



**Figure 3.** Location of discharge and water-quality stations in Contra Costa County.  
 (NOTE: Record for station 11337000 published in volume 3.)

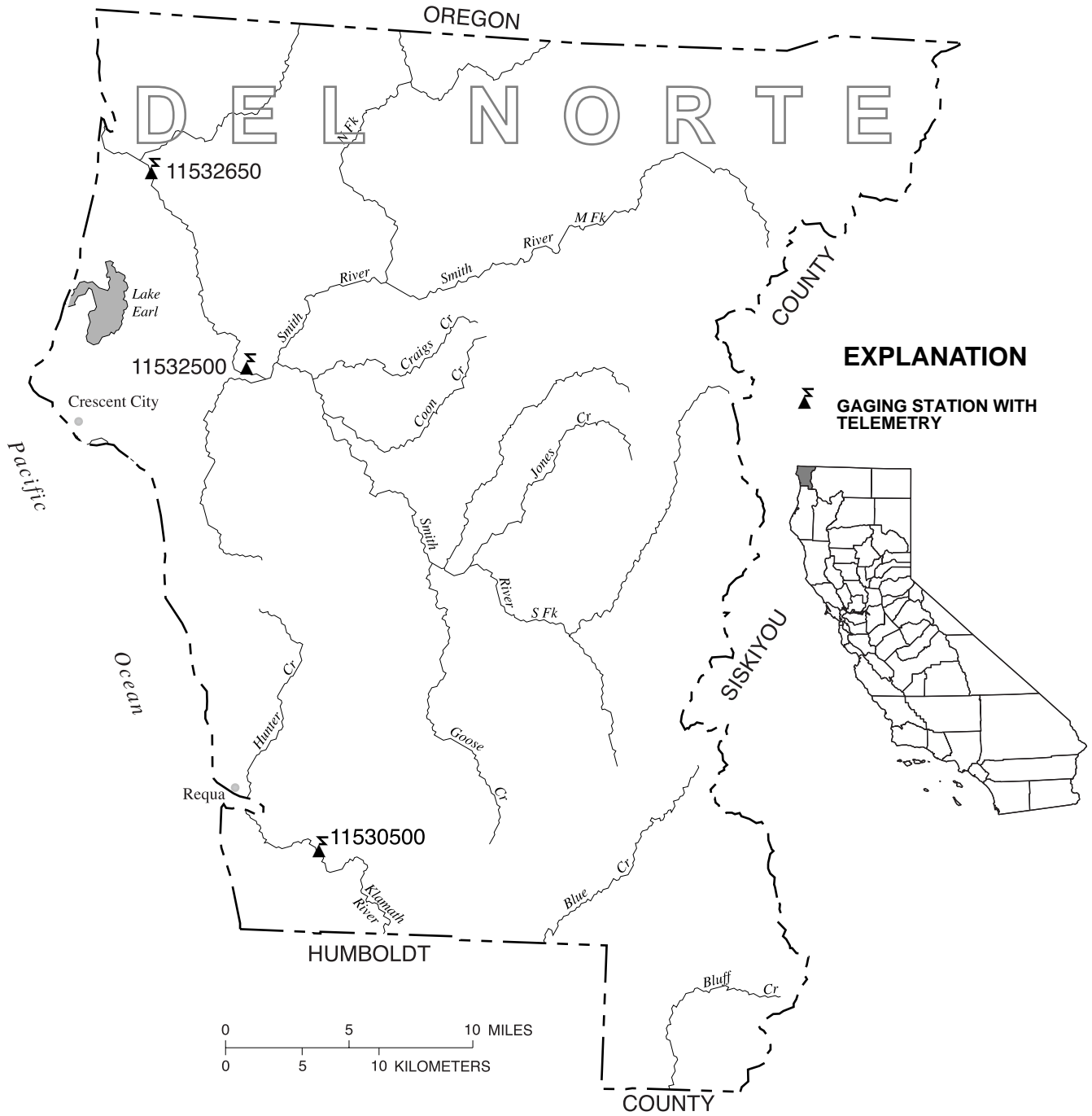


Figure 4. Location of discharge stations in Del Norte County.

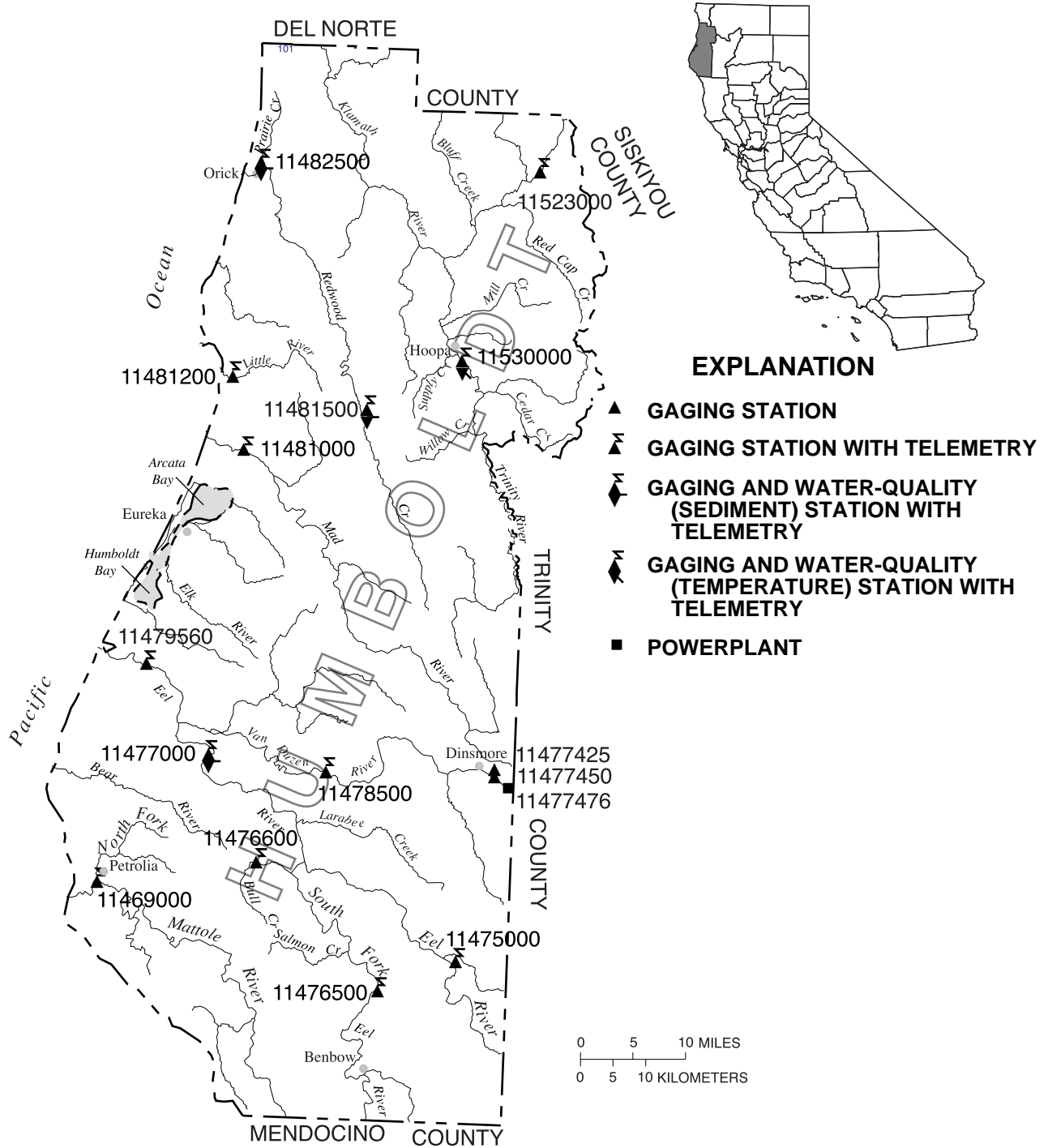
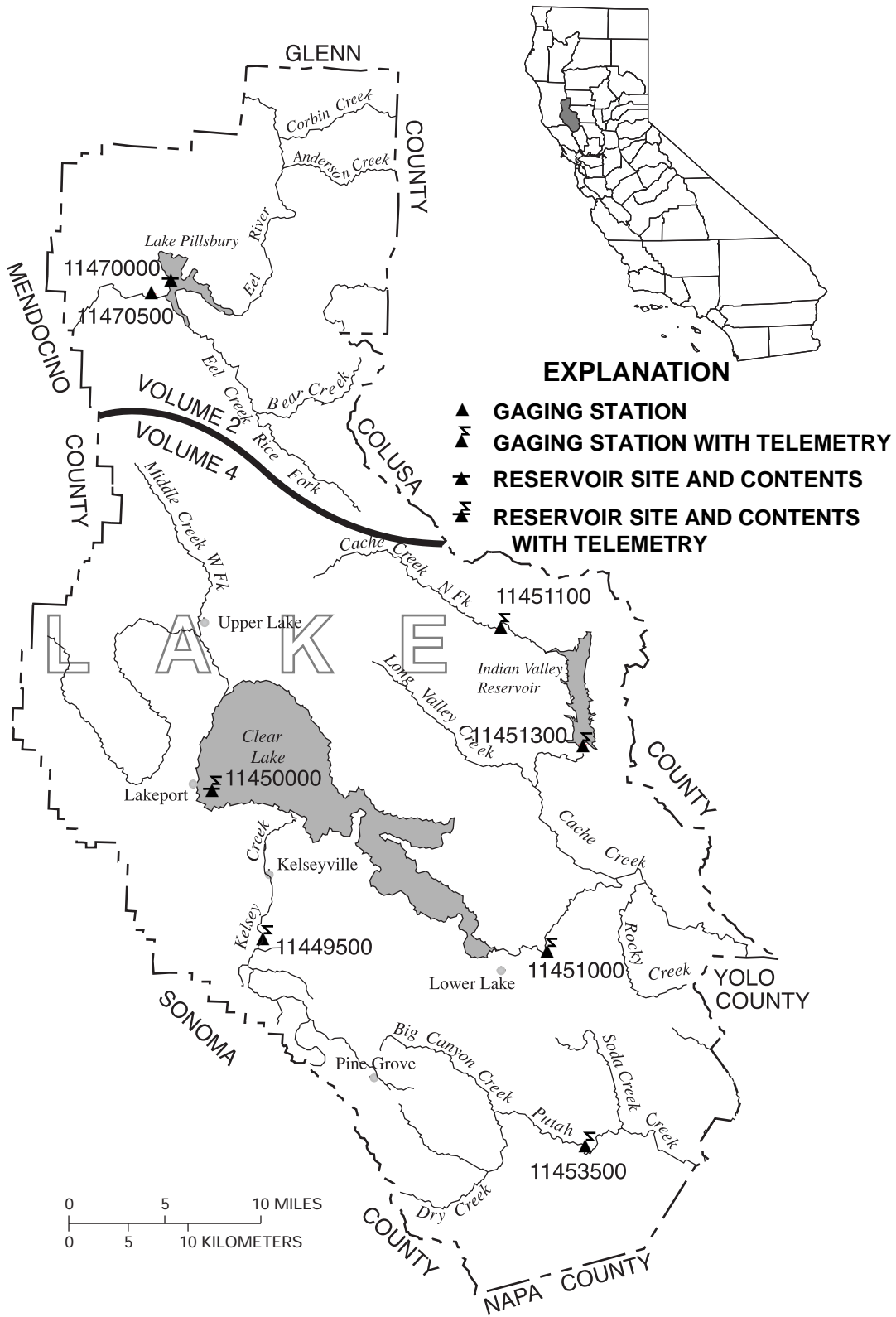


Figure 5. Location of discharge and water-quality stations in Humboldt County.



**Figure 6.** Location of discharge stations in Lake County.  
 (NOTE: Records for stations 11449500 through 11453500 published in volume 4.)

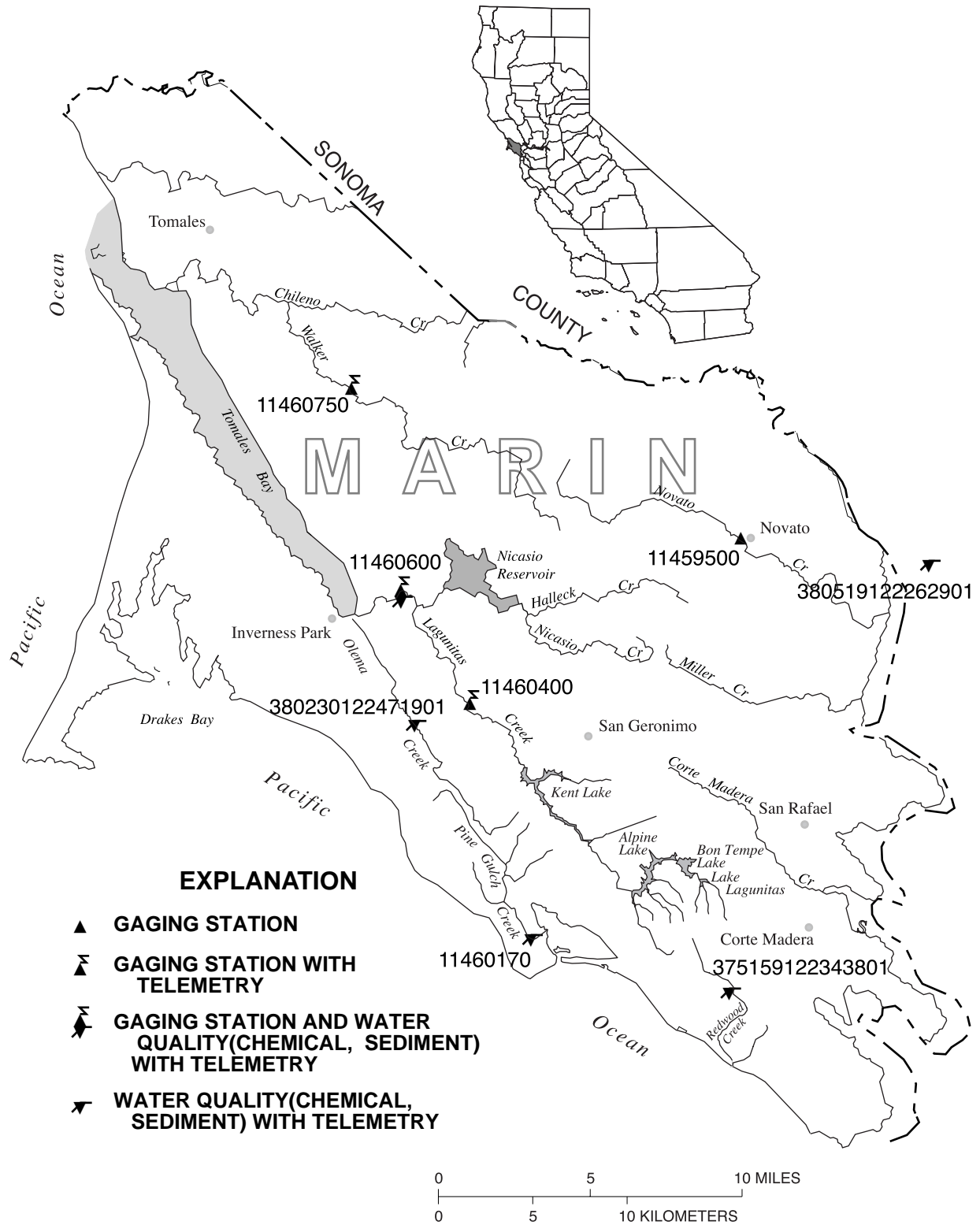


Figure 7. Location of discharge and water-quality stations in Marin County.



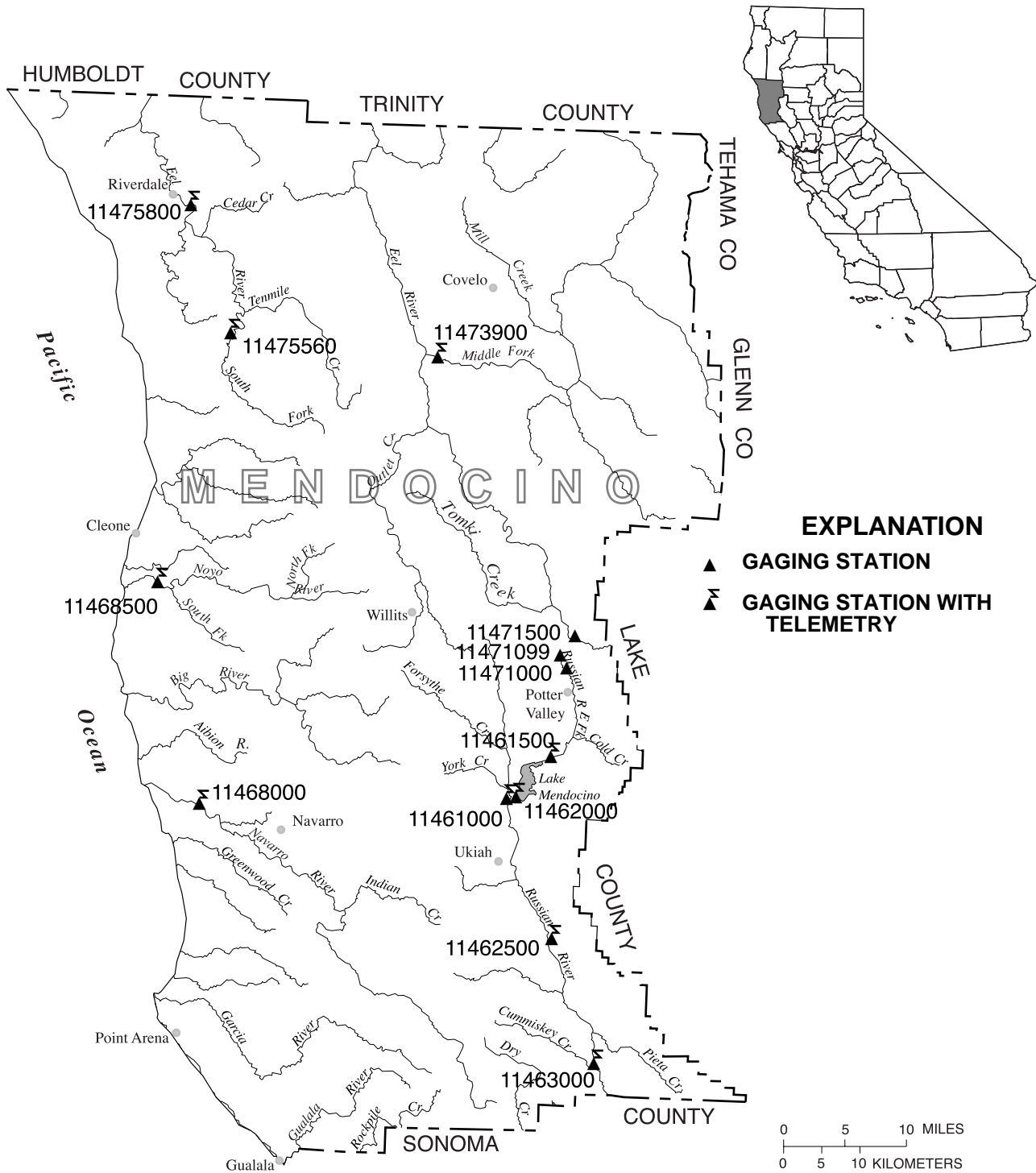
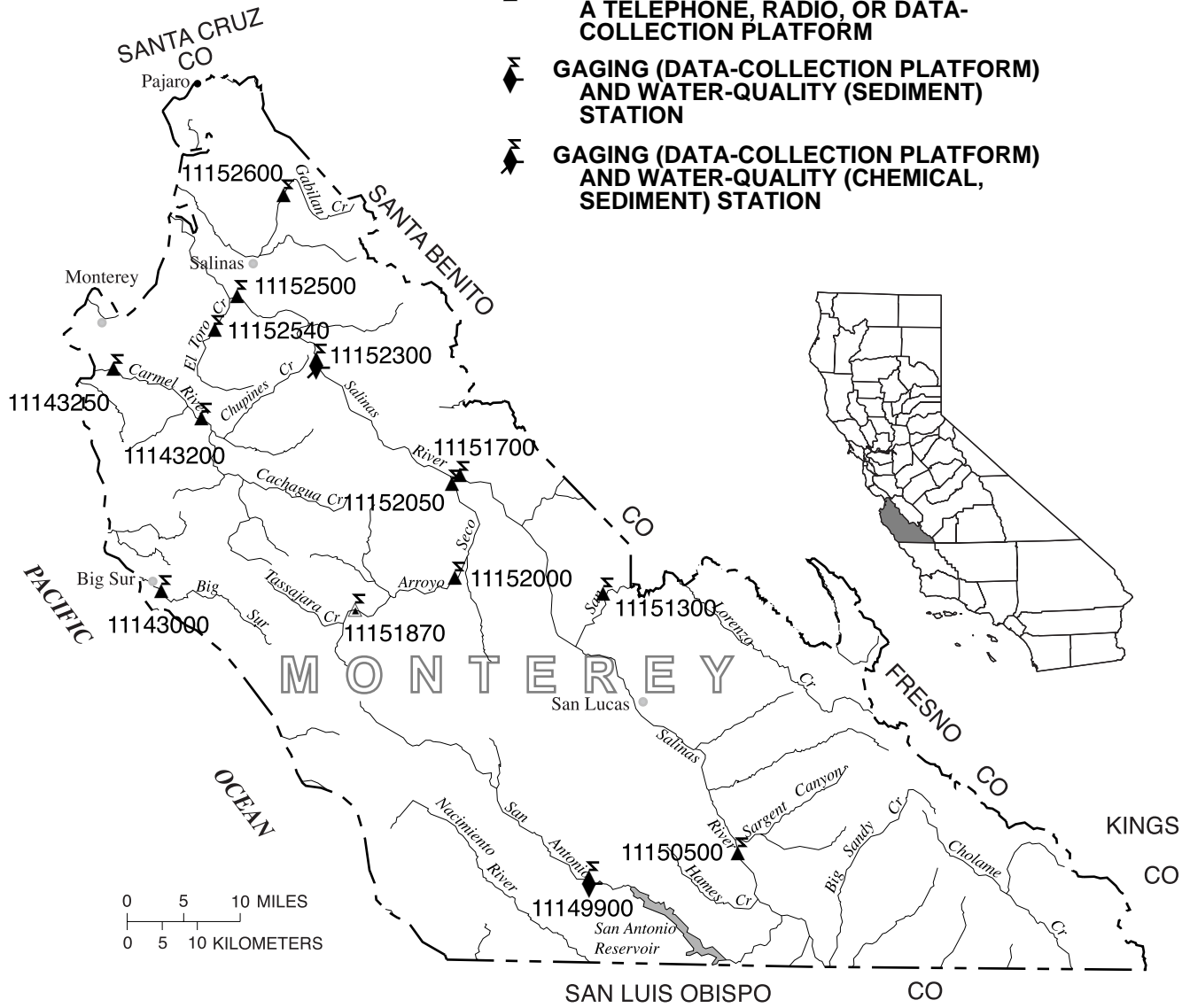


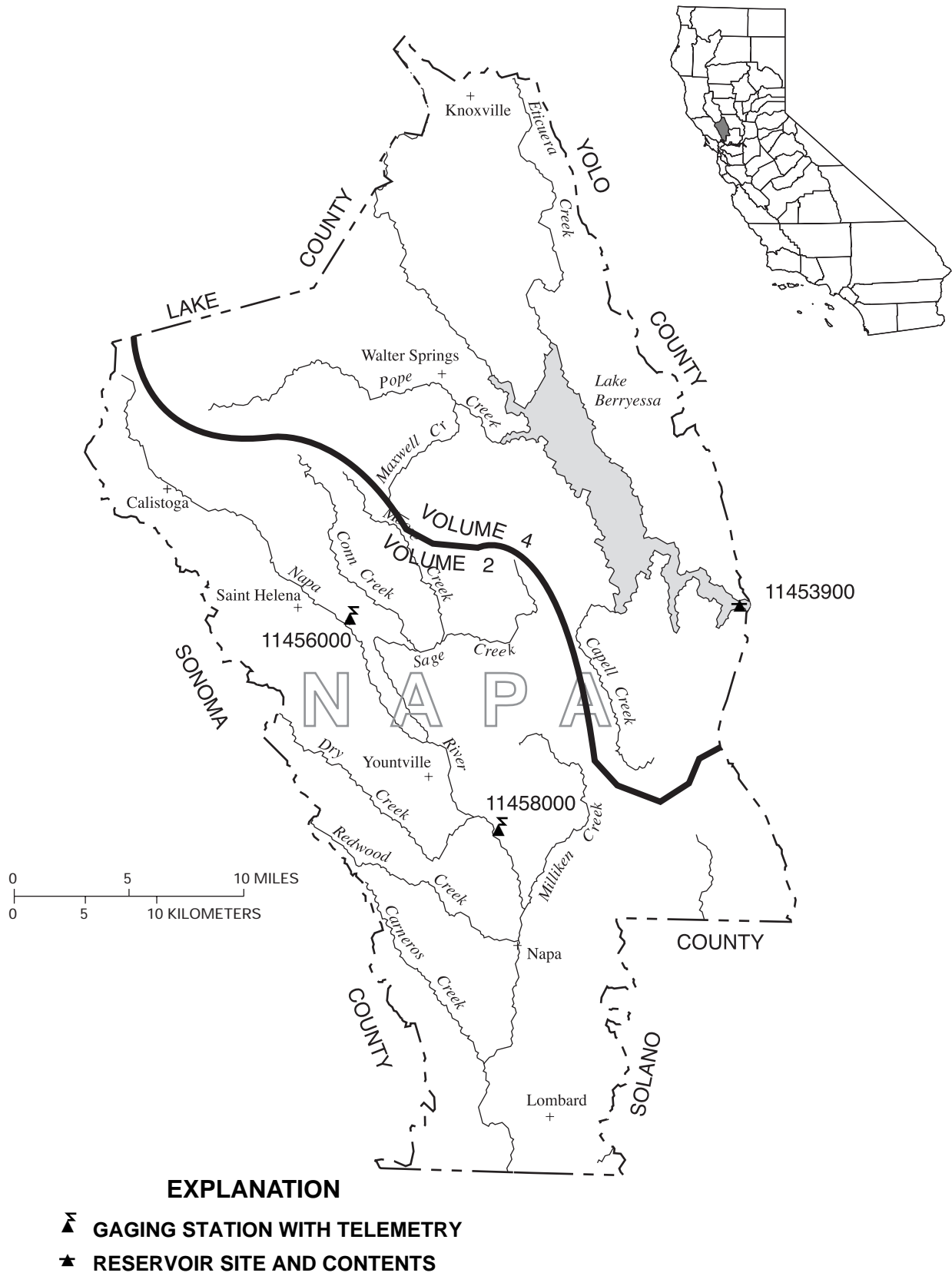
Figure 8. Location of discharge stations in Mendocino County.

**EXPLANATION**

- ▲ **GAGING STATION**
- ▲ **GAGING STATION EQUIPPED WITH A TELEPHONE, RADIO, OR DATA-COLLECTION PLATFORM (PARTIAL RECORD)**
- ▲ **GAGING STATION EQUIPPED WITH A TELEPHONE, RADIO, OR DATA-COLLECTION PLATFORM**
- ◆ **GAGING (DATA-COLLECTION PLATFORM) AND WATER-QUALITY (SEDIMENT) STATION**
- ◆ **GAGING (DATA-COLLECTION PLATFORM) AND WATER-QUALITY (CHEMICAL, SEDIMENT) STATION**



**Figure 9.** Location of discharge and water-quality stations in Monterey County.



**Figure 10.** Location of discharge stations in Napa County.  
 (NOTE: Record for station 11453900 published in volume 4.)

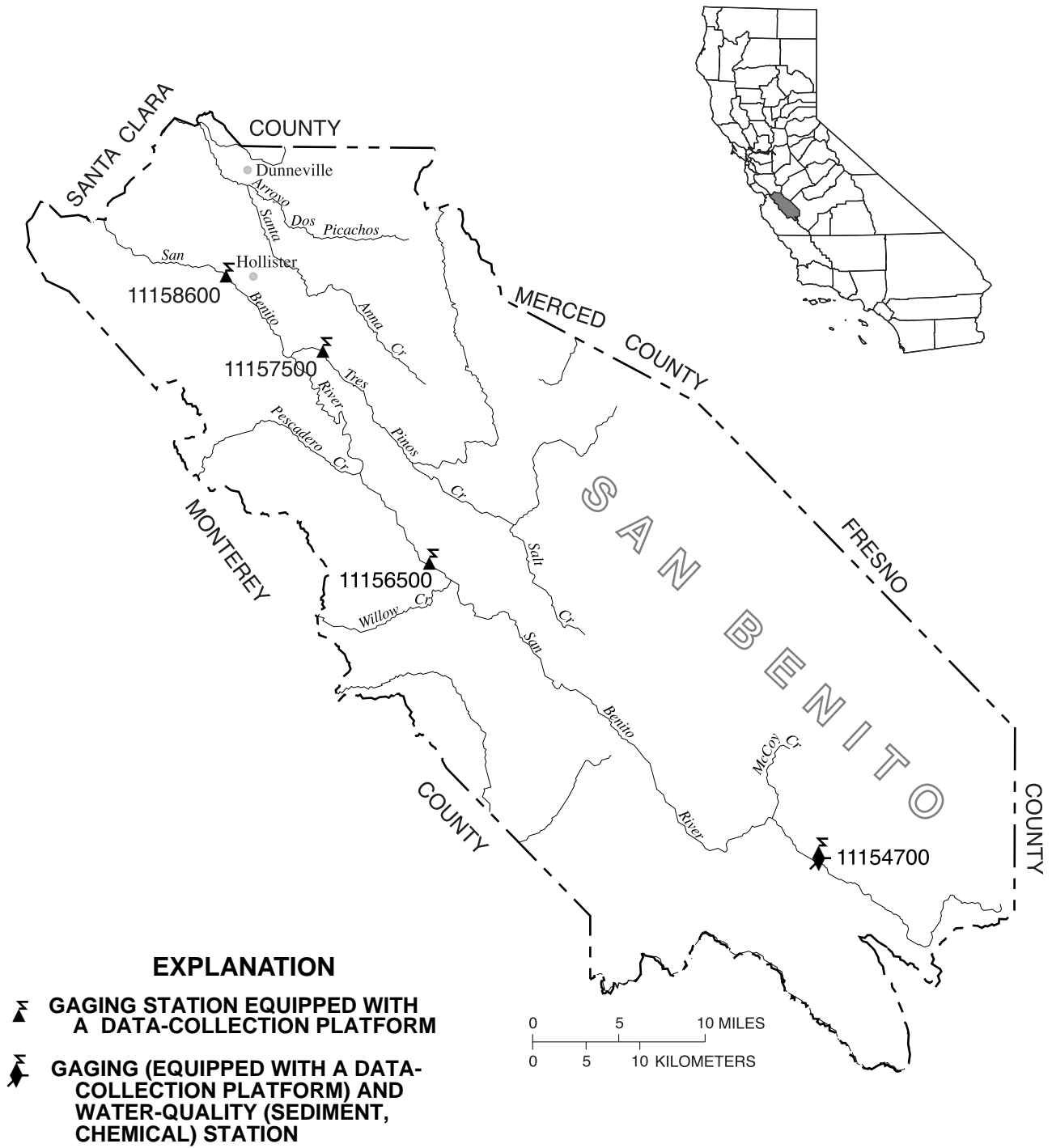


Figure 11. Location of discharge and water-quality stations in San Benito County.

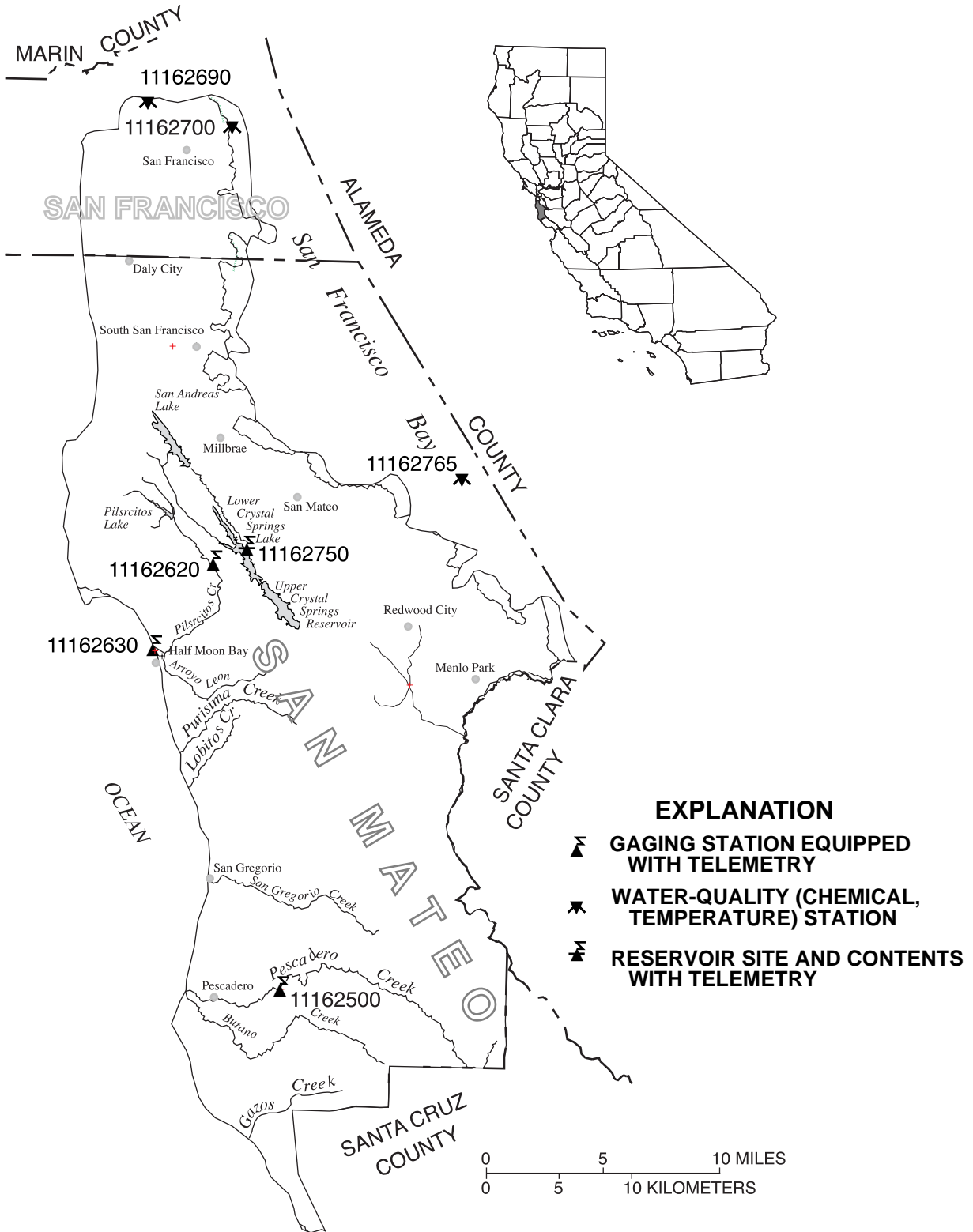


Figure 12. Location of discharge and water-quality stations in San Francisco and San Mateo Counties.

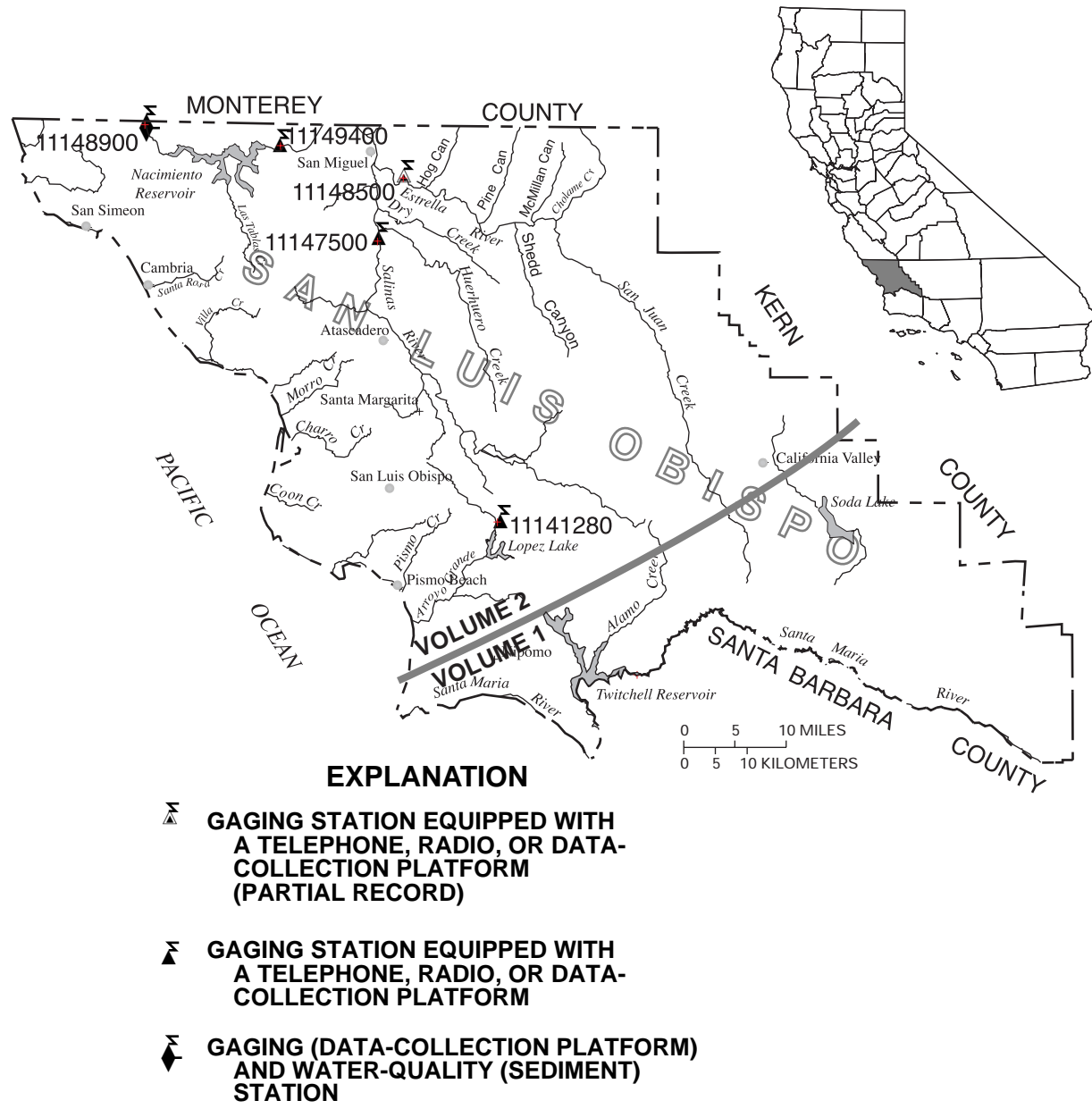
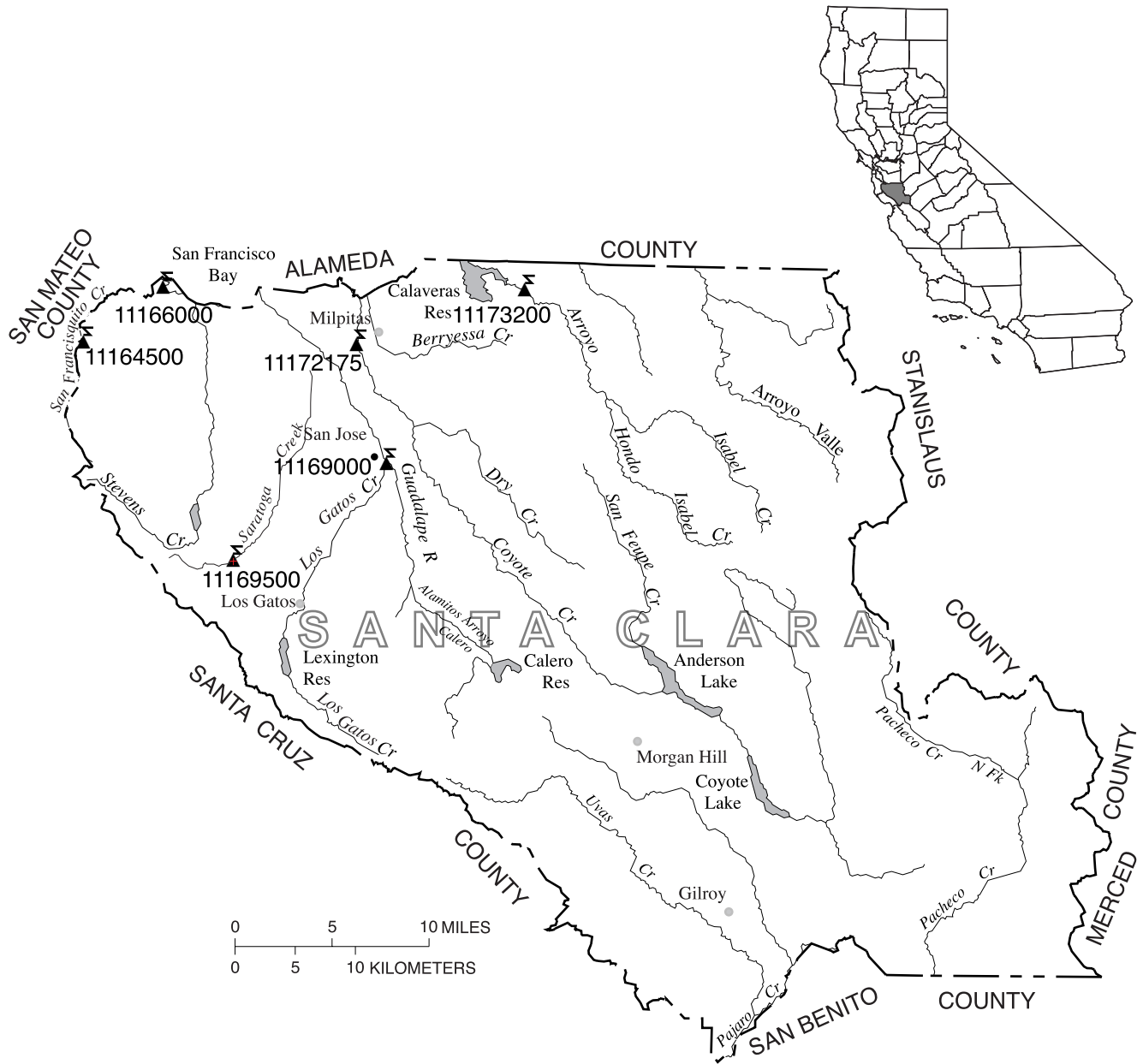


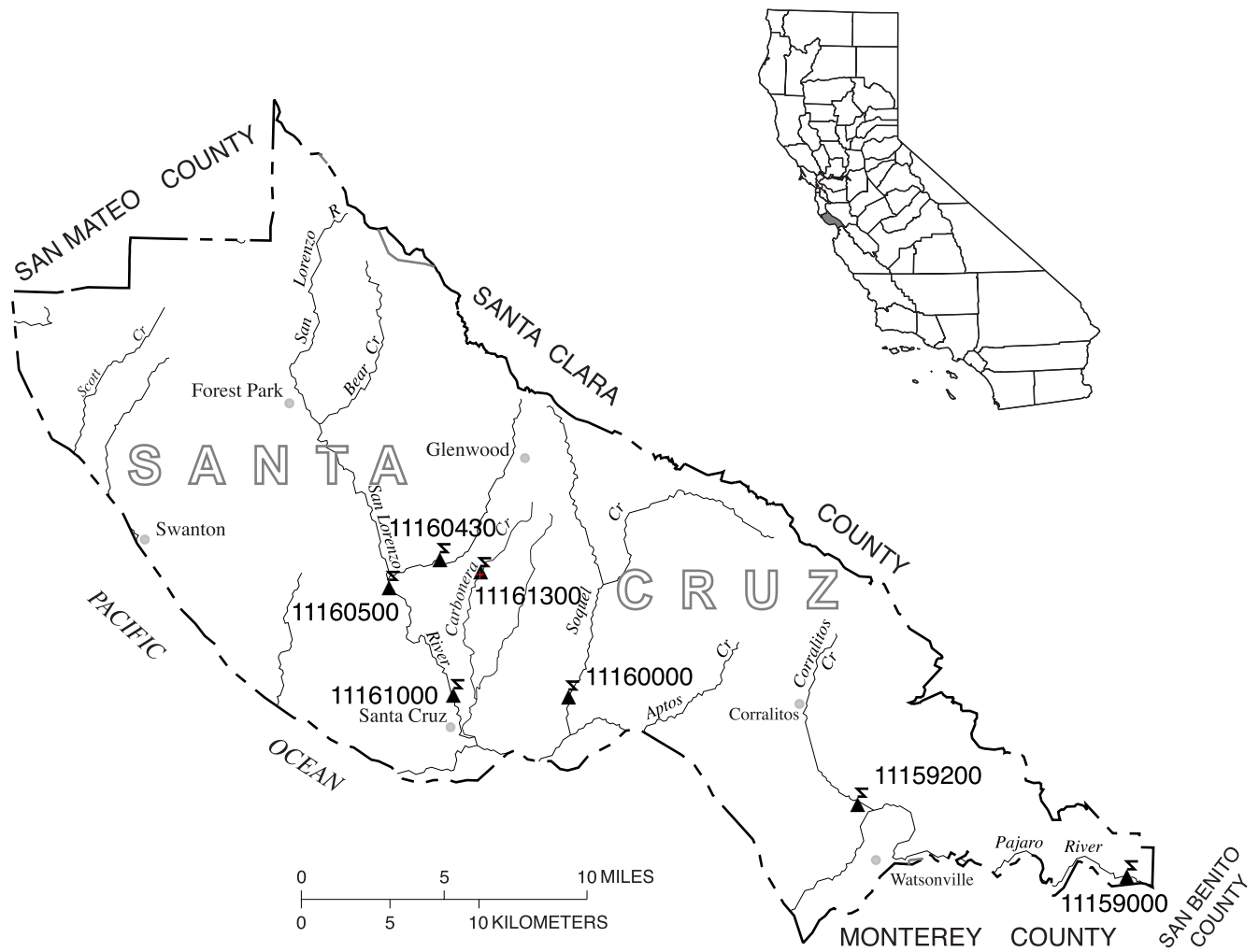
Figure 13. Location of discharge and water-quality stations in San Luis Obispo County.



**EXPLANATION**

- ▲ GAGING STATION
- ▲ GAGING STATION EQUIPPED WITH A TELEPHONE, RADIO, OR DATA-COLLECTION PLATFORM

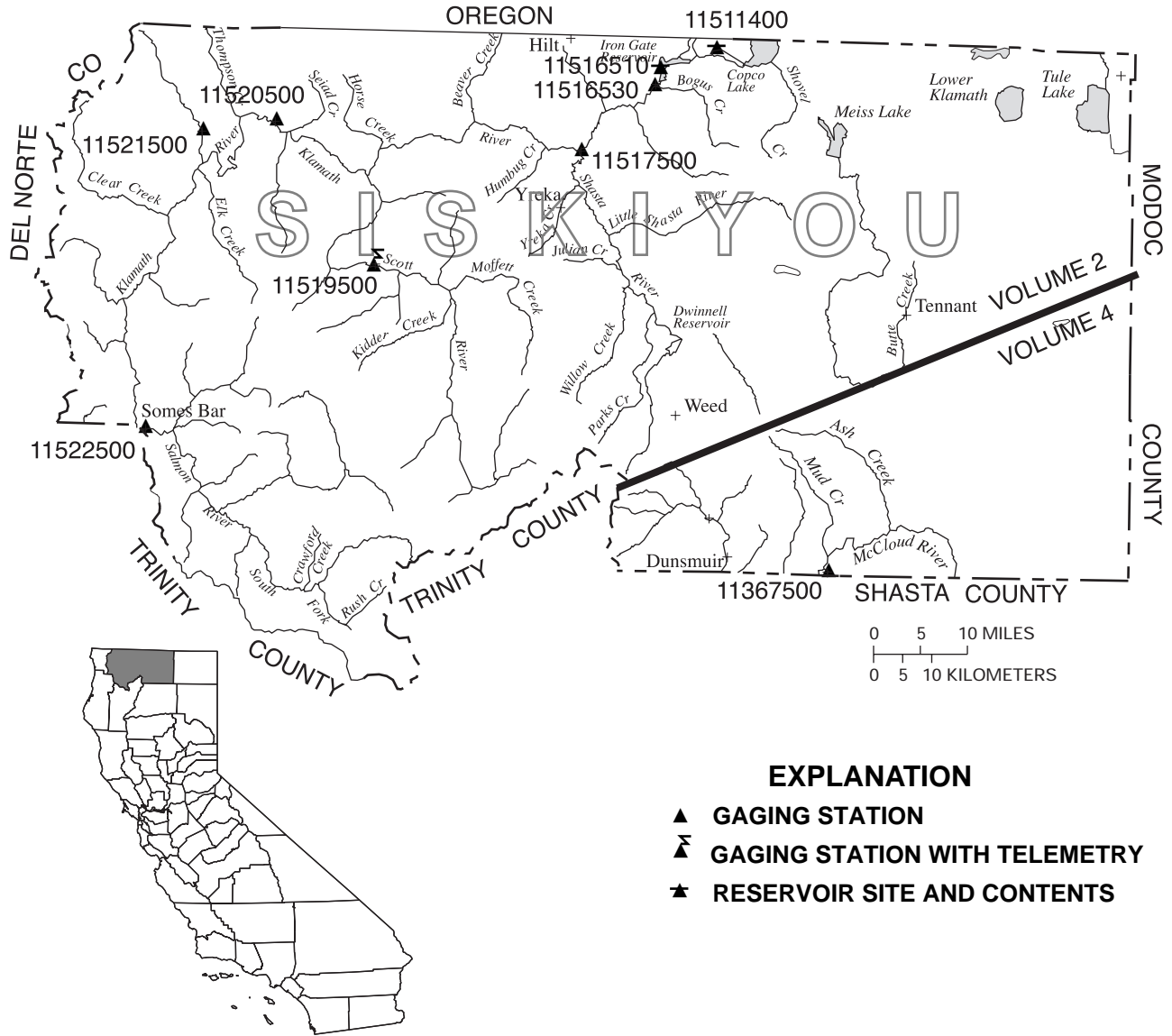
Figure 14. Location of discharge stations in Santa Clara County.



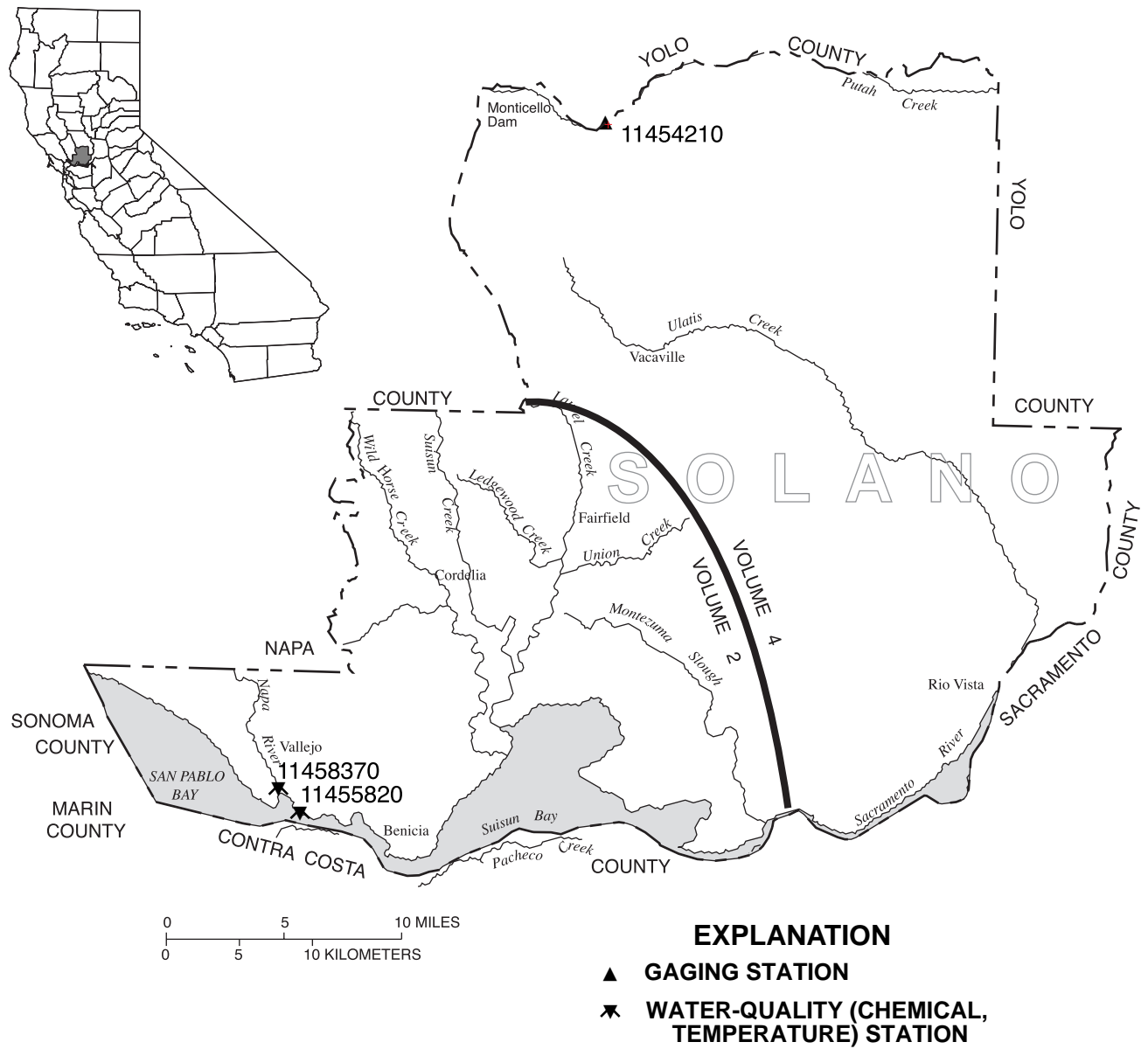
**EXPLANATION**  
 ▲ GAGING STATION EQUIPPED WITH A TELEPHONE, RADIO, OR DATA-COLLECTION PLATFORM

**Figure 15.** Location of discharge stations in Santa Cruz County.

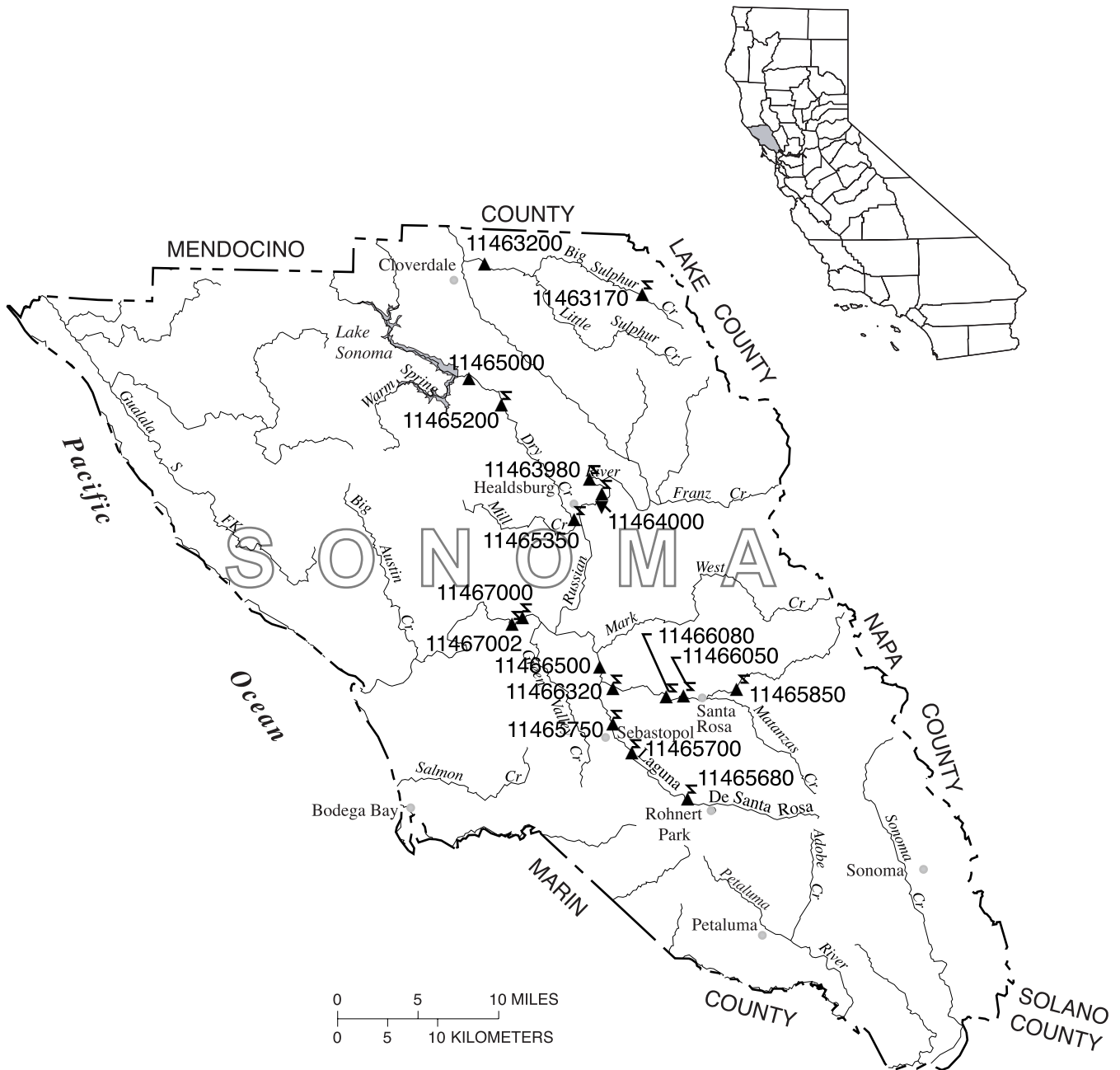




**Figure 16.** Location of discharge stations in Siskiyou County.  
 (NOTE: Records for station 11367500 published in volume 4.)



**Figure 17.** Location of discharge and water-quality stations in Solano County.  
 (NOTE: Records for station 11454210 published in volume 4.)



**EXPLANATION**

- ▲ GAGING STATION
- ▲ GAGING STATION WITH TELEMTRY
- ◆ GAGING AND WATER-QUALITY (TEMPERATURE) STATION WITH TELEMTRY

Figure 18. Location of discharge and water-quality stations in Sonoma County.

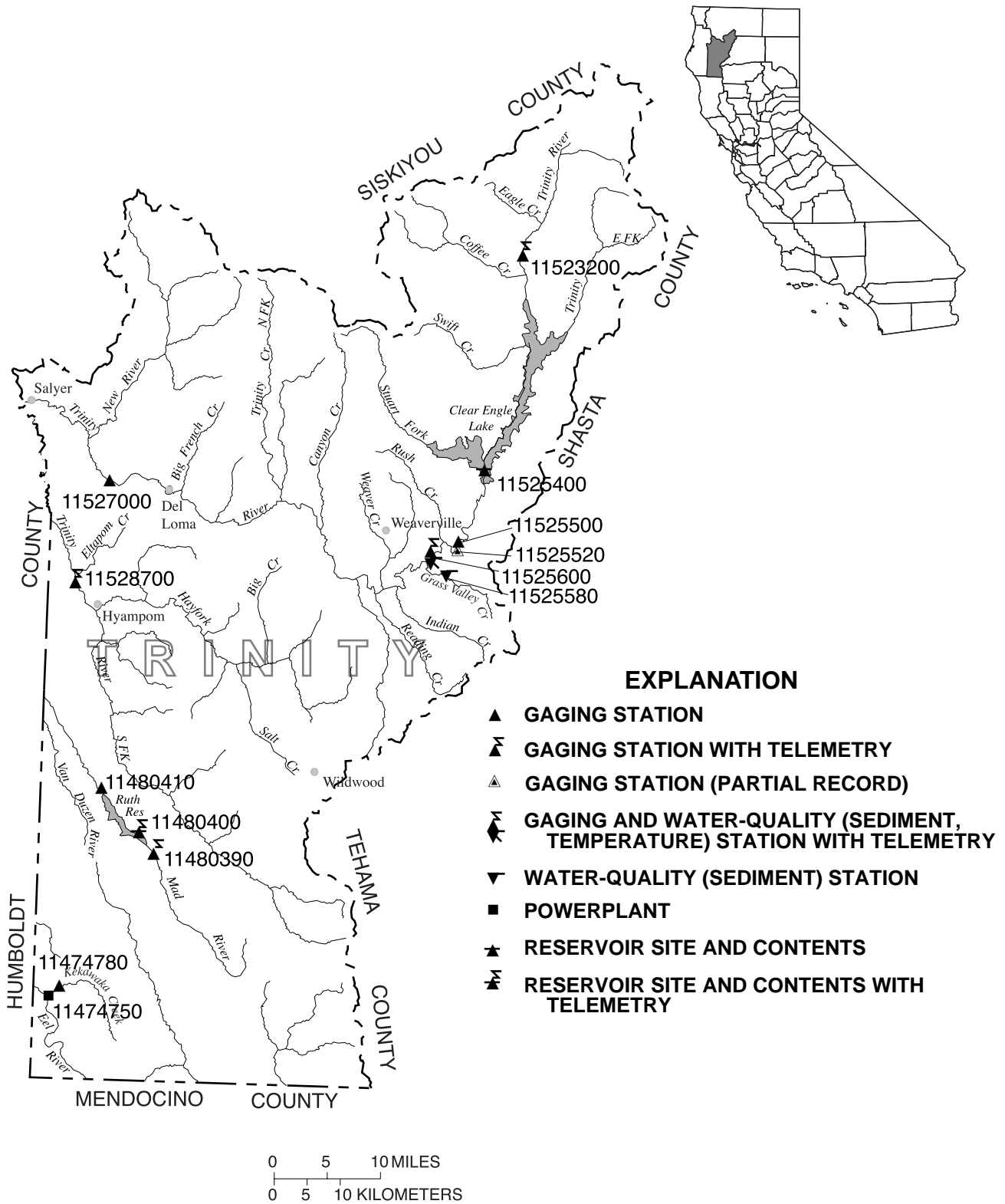


Figure 19. Location of discharge and water-quality stations in Trinity County.

## SURFACE-WATER-DISCHARGE AND SURFACE-WATER-QUALITY RECORDS

## Remark Codes

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

| <u>PRINTED OUTPUT</u> | <u>REMARK</u>  |
|-----------------------|--|
| e                     | Estimated value.   |
| >                     | Actual value is known to be greater than the value shown.  |
| <                     | Actual value is known to be less than the value shown.   |
| K                     | Results based on colony count outside the acceptable range (non-ideal colony count).   |
| L                     | Biological organism count less than 0.5 percent (organism may be observed rather than counted).  |
| D                     | Biological organism count equal to or greater than 15 percent (dominant).  |
| ND                    | Not detected.  |
| &                     | Biological organism estimated as dominant.   |
| *                     | Instantaneous streamflow at the time of cross-sectional measurements.  |
| **                    | Partial sampled width.   |
| 1                     | Laboratory value.  |
| 2                     | Laboratory fixed-end point titration.  |
| A                     | Samples collected by another agency.   |
| N                     | Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol. |
| V                     | Analyte was detected in both the environmental sample and the associated blanks.   |

## Dissolved Trace-Element Concentrations

NOTE: Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter ( $\mu\text{g/L}$ ) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter ( $\text{ng/L}$ ). Data above the  $\mu\text{g/L}$  level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols at some stations in water year 1994.

## Change in National Trends Network Procedures

NOTE: Sample handling procedures at all National Trends Network stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences, based on a special intercomparison study, is available from the NADP/NTN Coordination Office, Colorado State University, Fort Collins, CO 80523 (Telephone: 303-491-5643).



## ARROYO GRANDE BASIN

11141280 LOPEZ CREEK NEAR ARROYO GRANDE, CA

LOCATION.—Lat 35°14'08", long 120°28'17", in SE 1/4 sec.19, T.31 S., R.14 E., San Luis Obispo County, Hydrologic Unit 18060006, on left bank 3.4 mi north of Lopez Lake Spillway and 9.2 mi northeast of Arroyo Grande.

DRAINAGE AREA.—20.9 mi<sup>2</sup>.

PERIOD OF RECORD.—July 1967 to current year.

CHEMICAL DATA: Water year 1977.

WATER TEMPERATURE: Water years 1968–72.

SEDIMENT DATA: Water years 1968–72.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 580 ft above sea level, from topographic map. Prior to Oct. 31, 1984, at site 0.4 mi downstream at different datum.

REMARKS.—Records fair, except for estimated daily discharges, which are poor. Small diversions upstream from station for domestic use.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,830 ft<sup>3</sup>/s, Jan. 25, 1969, gage height, 9.26 ft in gage well, 10.8 ft from floodmarks, site and datum then in use, from rating curve extended above 300 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; maximum gage height, 10.12 ft, Feb. 3, 1998; minimum daily discharge, 0.30 ft<sup>3</sup>/s, Aug. 1, 1977.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 100 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 1345 | 236                               | 8.67                |      |      |                                   |                     |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG  | SEP  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 1     | e8.5  | 7.5   | 10    | 6.5   | e19   | 6.7   | 10    | 7.5   | 5.6   | 3.9   | 3.3  | 2.7  |
| 2     | e8.4  | 7.5   | 8.8   | 6.8   | e15   | 6.5   | 9.4   | 7.3   | 6.0   | 4.0   | 3.2  | 2.8  |
| 3     | e8.3  | 7.6   | 8.7   | 7.0   | e9.2  | 6.4   | 9.0   | 7.1   | 6.1   | 4.1   | 3.1  | 2.9  |
| 4     | e8.3  | 7.6   | 8.7   | 6.8   | e8.9  | 6.4   | 8.7   | 6.8   | 5.6   | 4.0   | 3.2  | 2.9  |
| 5     | e8.2  | 7.3   | 8.1   | 6.7   | e8.3  | 6.4   | 8.8   | 6.4   | 5.4   | 4.0   | 3.4  | 3.0  |
| 6     | e8.1  | 7.4   | 9.4   | e7.0  | e8.1  | 6.5   | 18    | 6.2   | 5.2   | 3.9   | 3.8  | 3.1  |
| 7     | e8.0  | 9.1   | 8.1   | e7.0  | e7.8  | 6.5   | 20    | 6.1   | 5.0   | 3.8   | 3.8  | 3.1  |
| 8     | e7.7  | 9.1   | 7.7   | e7.0  | e32   | 6.4   | 17    | 6.1   | 4.8   | 3.7   | 3.6  | 2.9  |
| 9     | 7.4   | 8.3   | 7.4   | e6.5  | e88   | 7.9   | 16    | 6.2   | 4.6   | 3.6   | 3.6  | 2.9  |
| 10    | 7.5   | 8.1   | 7.4   | e6.5  | 32    | 6.7   | 14    | 6.0   | 4.6   | 3.6   | 3.6  | 3.0  |
| 11    | 7.5   | 8.3   | 7.3   | e6.5  | 17    | 7.6   | 28    | 5.7   | 4.5   | 3.5   | 3.6  | 3.1  |
| 12    | 7.6   | 8.1   | 7.2   | e5.9  | 13    | 6.7   | 32    | 5.6   | 4.3   | 3.5   | 3.4  | 3.1  |
| 13    | 7.4   | 8.0   | 7.3   | e5.9  | 11    | 6.3   | 22    | 5.6   | 4.4   | 3.3   | 3.2  | 3.0  |
| 14    | 7.3   | 7.9   | 7.3   | e6.3  | 9.9   | 6.2   | 18    | 5.6   | 4.4   | 3.4   | 3.2  | 2.9  |
| 15    | 7.4   | 7.8   | 7.1   | e6.0  | 9.4   | 9.9   | 15    | 5.7   | 4.3   | 3.5   | 3.3  | 2.9  |
| 16    | 7.2   | 7.7   | 7.1   | e6.0  | 8.8   | 9.0   | 13    | 5.6   | 4.2   | 3.6   | 3.4  | 3.1  |
| 17    | 7.1   | 8.1   | 7.0   | e6.0  | 8.2   | 7.8   | 12    | 5.5   | 4.0   | 3.6   | 2.9  | 3.2  |
| 18    | 7.0   | 7.8   | 7.1   | e6.0  | 7.8   | 7.2   | 11    | 5.2   | 4.0   | 3.7   | 2.5  | 3.3  |
| 19    | 7.0   | 7.7   | 7.2   | e8.6  | 7.7   | 11    | 10    | 5.2   | 3.9   | 3.7   | 2.4  | 3.4  |
| 20    | 6.8   | 7.2   | 7.5   | e7.7  | 7.6   | 31    | 9.8   | 5.7   | 4.1   | 3.6   | 2.3  | 3.4  |
| 21    | 7.0   | 7.2   | 7.3   | e7.1  | 7.7   | 30    | 9.5   | 6.0   | 4.2   | 3.6   | 2.3  | 3.2  |
| 22    | 7.4   | 7.3   | 7.1   | e7.1  | 7.2   | 18    | 9.3   | 5.8   | 4.1   | 3.5   | 2.3  | 3.1  |
| 23    | 7.4   | 7.3   | 6.9   | e7.1  | 7.2   | 15    | 9.0   | 5.9   | 4.0   | 3.5   | 2.4  | 3.2  |
| 24    | 8.0   | 7.7   | 6.8   | e8.8  | 7.2   | 13    | 8.8   | 5.9   | 4.1   | 3.5   | 2.5  | 3.1  |
| 25    | 8.5   | 7.5   | 6.7   | e9.9  | 7.5   | 18    | 8.6   | 5.6   | 4.0   | 3.5   | 2.4  | 3.1  |
| 26    | 8.0   | 7.5   | 6.5   | e13   | 7.2   | 17    | 7.9   | 5.6   | 4.1   | 3.5   | 2.5  | 3.2  |
| 27    | 8.0   | 7.5   | 6.7   | e13   | 6.9   | 14    | 7.8   | 5.7   | 4.2   | 3.6   | 2.6  | 3.2  |
| 28    | 7.8   | 9.2   | 6.8   | e13   | 7.0   | 12    | 7.8   | 5.4   | 4.3   | 3.7   | 2.5  | 3.1  |
| 29    | 7.8   | 8.8   | 6.6   | e12   | ---   | 11    | 7.7   | 5.5   | 4.1   | 3.7   | 2.6  | 3.0  |
| 30    | 7.8   | 9.4   | 6.6   | e16   | ---   | 10    | 7.5   | 5.6   | 4.1   | 3.4   | 2.7  | 2.9  |
| 31    | 7.7   | ---   | 6.5   | e24   | ---   | 11    | ---   | 5.5   | ---   | 3.4   | 2.6  | ---  |
| TOTAL | 238.1 | 237.5 | 230.9 | 263.7 | 386.6 | 338.1 | 385.6 | 183.6 | 136.2 | 112.9 | 92.2 | 91.8 |
| MEAN  | 7.68  | 7.92  | 7.45  | 8.51  | 13.8  | 10.9  | 12.9  | 5.92  | 4.54  | 3.64  | 2.97 | 3.06 |
| MAX   | 8.5   | 9.4   | 10    | 24    | 88    | 31    | 32    | 7.5   | 6.1   | 4.1   | 3.8  | 3.4  |
| MIN   | 6.8   | 7.2   | 6.5   | 5.9   | 6.9   | 6.2   | 7.5   | 5.2   | 3.9   | 3.3   | 2.3  | 2.7  |
| AC-FT | 472   | 471   | 458   | 523   | 767   | 671   | 765   | 364   | 270   | 224   | 183  | 182  |

e Estimated.

## PACIFIC SLOPE BASINS IN CALIFORNIA

## ARROYO GRANDE BASIN

## 11141280 LOPEZ CREEK NEAR ARROYO GRANDE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 3.08 | 4.46 | 7.50 | 22.7 | 31.7 | 28.5 | 14.6 | 8.01 | 5.19 | 3.79 | 3.17 | 2.91 |
| MAX  | 9.12 | 13.6 | 34.2 | 145  | 169  | 133  | 65.2 | 46.1 | 21.3 | 14.7 | 10.2 | 9.40 |
| (WY) | 1984 | 1984 | 1997 | 1969 | 1998 | 1983 | 1983 | 1983 | 1998 | 1998 | 1998 | 1998 |
| MIN  | 1.03 | 1.23 | 1.58 | 2.00 | 2.00 | 2.46 | 2.08 | 1.75 | 1.38 | .72  | .44  | .82  |
| (WY) | 1978 | 1978 | 1991 | 1991 | 1991 | 1977 | 1977 | 1990 | 1972 | 1977 | 1977 | 1977 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1967 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 13114.8                |        | 2697.2              |        |                         |             |
| ANNUAL MEAN              | 35.9                   |        | 7.39                |        | 11.2                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 37.3                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 1.89                    |             |
| HIGHEST DAILY MEAN       | 362                    | Feb 3  | 88                  | Feb 9  | 1360                    | Jan 25 1969 |
| LOWEST DAILY MEAN        | 6.0                    | Jan 1  | 2.3                 | Aug 20 | .30                     | Aug 1 1977  |
| ANNUAL SEVEN-DAY MINIMUM | 6.6                    | Dec 25 | 2.4                 | Aug 19 | .34                     | Jul 28 1977 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 236                 | Feb 9  | 2830                    | Jan 25 1969 |
| INSTANTANEOUS PEAK STAGE |                        |        | 8.67                | Feb 9  | 10.12                   | Feb 3 1998  |
| ANNUAL RUNOFF (AC-FT)    | 26010                  |        | 5350                |        | 8110                    |             |
| 10 PERCENT EXCEEDS       | 82                     |        | 11                  |        | 19                      |             |
| 50 PERCENT EXCEEDS       | 15                     |        | 6.8                 |        | 4.0                     |             |
| 90 PERCENT EXCEEDS       | 7.3                    |        | 3.1                 |        | 1.6                     |             |



## 11143000 BIG SUR RIVER NEAR BIG SUR, CA

LOCATION.—Lat 36°14'45", long 121°46'20", in SW 1/4 SW 1/4 sec.29, T. 19 S., R. 2 E., Monterey County, Hydrologic Unit 18060006, on right bank at downstream side of bridge, 0.4 mi upstream from Post Creek, and 2.6 mi southeast of town of Big Sur.

DRAINAGE AREA.—46.5 mi<sup>2</sup>.

PERIOD OF RECORD.—March 1950 to current year. Prior to October 1959, published as Sur River at Big Sur.

CHEMICAL DATA: Water year 1977.

WATER TEMPERATURE: Water years 1966–79.

REVISED RECORDS.—WSP 1445: 1952(P), 1953(M). WSP 1715: 1951, drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 240 ft above sea level, from topographic map. Prior to Oct. 1, 1951, nonrecording gage at site 0.9 mi downstream at different datum.

REMARKS.—Records good except for estimated daily discharges, which are poor. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 10,700 ft<sup>3</sup>/s, Jan. 5, 1978, gage height, 14.30 ft, from rating curve extended above 6,800 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily, 2.6 ft<sup>3</sup>/s, Aug. 23, 1977, Sept. 9, Oct. 29, and Nov. 5, 1990.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,500 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 1015 | 2,180                             | 8.35                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN  | FEB   | MAR  | APR   | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|------|------|------|------|-------|------|-------|------|------|------|------|------|
| 1     | e31  | 22   | 137  | 27   | 154   | 93   | 178   | 100  | e37  | e28  | e24  | e21  |
| 2     | e30  | 22   | 80   | 26   | 134   | 90   | 164   | 97   | e36  | e28  | e24  | e21  |
| 3     | e29  | 22   | 72   | 26   | 119   | 94   | 153   | 95   | e35  | e28  | e23  | e21  |
| 4     | e29  | 22   | 66   | 26   | 107   | 87   | 145   | 92   | e35  | e28  | e23  | e21  |
| 5     | e28  | 22   | 54   | 26   | 97    | 82   | 170   | 88   | e35  | e27  | e23  | e21  |
| 6     | e27  | 22   | 72   | 26   | 96    | 80   | 187   | 85   | e35  | e27  | e23  | e21  |
| 7     | e27  | 38   | 54   | 25   | 237   | 78   | 170   | 82   | e34  | e27  | e23  | e21  |
| 8     | e26  | 32   | 49   | 25   | 282   | 87   | 181   | 80   | e34  | e27  | e23  | e20  |
| 9     | e26  | 26   | 43   | 25   | 1230  | 150  | 177   | 77   | e34  | e27  | e23  | e20  |
| 10    | e25  | 27   | 39   | 25   | 639   | 116  | 167   | 74   | e33  | e27  | e23  | e20  |
| 11    | e25  | 38   | 36   | 25   | 383   | 110  | 315   | 72   | e33  | e27  | e23  | e20  |
| 12    | e25  | 28   | 34   | 25   | 282   | 102  | 315   | 69   | e33  | e26  | e22  | e20  |
| 13    | e25  | 26   | 34   | 25   | 224   | 98   | 275   | 65   | e32  | e26  | e22  | e20  |
| 14    | e24  | 25   | 34   | 25   | 190   | 100  | 247   | 63   | e32  | e26  | e22  | e20  |
| 15    | e24  | 24   | 32   | 24   | 164   | 122  | 225   | 62   | e32  | e26  | e22  | e20  |
| 16    | e23  | 24   | 32   | 25   | 150   | 111  | 205   | 60   | e32  | e26  | e22  | e20  |
| 17    | e23  | 25   | 31   | 24   | 150   | 105  | 190   | 57   | e31  | e26  | e22  | e20  |
| 18    | e23  | 24   | 31   | 29   | 135   | 101  | 178   | 55   | e31  | e25  | e22  | e20  |
| 19    | e22  | 23   | 31   | 131  | 125   | 154  | 167   | 53   | e31  | e25  | e22  | e20  |
| 20    | e22  | 23   | 31   | 506  | 120   | 156  | 157   | 52   | e31  | e25  | e22  | e20  |
| 21    | e22  | 23   | 30   | 240  | 142   | 162  | 149   | 50   | e30  | e25  | e22  | e20  |
| 22    | e22  | 23   | 30   | 145  | 126   | 153  | 143   | 49   | e30  | e25  | e22  | e20  |
| 23    | e22  | 25   | 29   | 185  | 117   | 160  | 135   | 48   | e30  | e25  | e21  | e20  |
| 24    | 27   | 36   | 29   | 168  | 111   | 158  | 130   | 47   | e30  | e25  | e21  | e20  |
| 25    | 26   | 27   | 29   | 132  | 121   | 475  | 125   | 44   | e29  | e24  | e21  | e20  |
| 26    | 23   | 25   | 29   | 143  | 108   | 361  | 119   | 42   | e29  | e24  | e21  | e20  |
| 27    | 22   | 26   | 28   | 139  | 102   | 300  | 114   | 40   | e29  | e24  | e21  | e20  |
| 28    | 23   | 43   | 28   | 119  | 98    | 258  | 110   | 38   | e29  | e24  | e21  | e20  |
| 29    | 23   | 38   | 27   | 105  | ---   | 228  | 106   | 37   | e29  | e24  | e21  | e20  |
| 30    | 22   | 258  | 27   | 95   | ---   | 207  | 103   | 38   | e28  | e24  | e21  | e20  |
| 31    | 22   | ---  | 27   | 179  | ---   | 198  | ---   | 37   | ---  | e24  | e21  | ---  |
| TOTAL | 768  | 1039 | 1305 | 2746 | 5943  | 4776 | 5200  | 1948 | 959  | 800  | 686  | 607  |
| MEAN  | 24.8 | 34.6 | 42.1 | 88.6 | 212   | 154  | 173   | 62.8 | 32.0 | 25.8 | 22.1 | 20.2 |
| MAX   | 31   | 258  | 137  | 506  | 1230  | 475  | 315   | 100  | 37   | 28   | 24   | 21   |
| MIN   | 22   | 22   | 27   | 24   | 96    | 78   | 103   | 37   | 28   | 24   | 21   | 20   |
| AC-FT | 1520 | 2060 | 2590 | 5450 | 11790 | 9470 | 10310 | 3860 | 1900 | 1590 | 1360 | 1200 |

e Estimated.

## BIG SUR RIVER BASIN

## 11143000 BIG SUR RIVER NEAR BIG SUR, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 17.5 | 45.1 | 104  | 247  | 283  | 225  | 146  | 68.1 | 37.3 | 23.9 | 17.6 | 15.4 |
| MAX  | 86.8 | 302  | 449  | 1047 | 1329 | 964  | 843  | 333  | 119  | 71.4 | 43.0 | 39.4 |
| (WY) | 1963 | 1951 | 1956 | 1997 | 1998 | 1983 | 1958 | 1983 | 1998 | 1998 | 1998 | 1983 |
| MIN  | 5.08 | 4.97 | 7.52 | 8.27 | 11.4 | 16.8 | 9.15 | 8.70 | 6.17 | 4.94 | 3.80 | 4.52 |
| (WY) | 1991 | 1991 | 1991 | 1991 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1961 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |  | FOR 1999 WATER YEAR |  | WATER YEARS 1950 - 1999 |  |
|--------------------------|------------------------|--|---------------------|--|-------------------------|--|
| ANNUAL TOTAL             | 86024                  |  | 26777               |  |                         |  |
| ANNUAL MEAN              | 236                    |  | 73.4                |  | 102                     |  |
| HIGHEST ANNUAL MEAN      |                        |  |                     |  | 319                     |  |
| LOWEST ANNUAL MEAN       |                        |  |                     |  | 10.0                    |  |
| HIGHEST DAILY MEAN       | 3770                   |  | Feb 3               |  | 4150                    |  |
| LOWEST DAILY MEAN        | 22                     |  | Oct 19              |  | 2.6                     |  |
| ANNUAL SEVEN-DAY MINIMUM | 22                     |  | Oct 30              |  | 2.9                     |  |
| INSTANTANEOUS PEAK FLOW  |                        |  | 2180                |  | Feb 9                   |  |
| INSTANTANEOUS PEAK STAGE |                        |  | 8.35                |  | Feb 9                   |  |
| INSTANTANEOUS LOW FLOW   |                        |  |                     |  | 2.6                     |  |
| ANNUAL RUNOFF (AC-FT)    | 170600                 |  | 53110               |  | 73790                   |  |
| 10 PERCENT EXCEEDS       | 609                    |  | 167                 |  | 228                     |  |
| 50 PERCENT EXCEEDS       | 85                     |  | 30                  |  | 29                      |  |
| 90 PERCENT EXCEEDS       | 25                     |  | 21                  |  | 9.6                     |  |

## 11143200 CARMEL RIVER AT ROBLES DEL RIO, CA

LOCATION.—Lat 36°28'28", long 121°43'40", in Los Laureles Grant, Monterey County, Hydrologic Unit 18060012, on right bank, on downstream side of Rosie's Bridge, at Robles del Rio, 0.2 mi downstream from Hitchcock Canyon, and 11 mi southeast of town of Carmel.

DRAINAGE AREA.—193 mi<sup>2</sup>.

PERIOD OF RECORD.—August 1957 to current year.

REVISED RECORDS.—WSP 1715: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 268.57 ft above sea level (based on Monterey County benchmark). Prior to June 1981, at site 150 ft upstream at same datum.

REMARKS.—Records fair except for October to January and estimated daily discharges, which are poor. Low flow regulated by Los Padres Reservoir 11 mi upstream, usable capacity, 1,967 acre-ft, and San Clemente Reservoir 4 mi upstream, usable capacity, 76 acre-ft. There is diversion from San Clemente Reservoir for municipal supply.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 16,000 ft<sup>3</sup>/s, Mar. 10, 1995, gage height, 12.90 ft; no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 23, 1955, reached a stage of 11.7 ft from floodmarks, discharge, 6,930 ft<sup>3</sup>/s, from slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,200 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 1315 | 2,120                             | 4.20                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN  | FEB   | MAR  | APR   | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------|------|------|------|------|-------|------|-------|------|------|-------|-------|-------|
| 1     | 20   | 29   | 115  | e42  | 168   | 100  | 204   | 109  | 44   | 20    | 7.1   | e7.0  |
| 2     | 17   | 30   | 96   | e41  | 146   | 97   | 186   | 105  | 44   | 20    | 6.9   | e7.0  |
| 3     | 16   | 30   | 81   | e41  | 124   | 97   | 174   | 105  | 49   | 20    | 6.9   | e7.0  |
| 4     | 16   | 30   | 77   | e40  | 107   | 95   | 165   | 101  | 47   | 19    | 7.0   | e7.0  |
| 5     | 15   | 31   | 66   | e40  | 92    | 91   | 169   | 95   | 44   | 19    | 7.3   | e7.0  |
| 6     | 15   | 32   | 78   | e40  | 83    | 85   | 203   | 91   | 42   | 18    | 7.6   | e7.0  |
| 7     | 16   | 33   | 67   | e40  | 121   | 84   | 201   | 87   | 39   | 18    | 6.8   | e7.0  |
| 8     | 16   | 33   | 63   | e40  | 176   | 83   | 227   | 84   | 40   | 18    | 6.6   | e7.0  |
| 9     | 18   | 31   | 58   | e40  | 1080  | 130  | 239   | 81   | 38   | 17    | 6.6   | e7.5  |
| 10    | 20   | 36   | 54   | e40  | 872   | 109  | 215   | 79   | 37   | 16    | 6.6   | e7.2  |
| 11    | 20   | 47   | 50   | e40  | 494   | 100  | 385   | 76   | 36   | e14   | 6.3   | e7.2  |
| 12    | 24   | 41   | 49   | e40  | 358   | 95   | 426   | 73   | 35   | e13   | 6.1   | e7.2  |
| 13    | 22   | 37   | e48  | e40  | 294   | 91   | 358   | 71   | 34   | e12   | 6.1   | e7.2  |
| 14    | 22   | 37   | e47  | 40   | 248   | 90   | 317   | 69   | 33   | e12   | 6.1   | e7.3  |
| 15    | 23   | 37   | e46  | 39   | 210   | 120  | 289   | 68   | 32   | e11   | 6.9   | e7.4  |
| 16    | 28   | 37   | e45  | 43   | 180   | 107  | 248   | 66   | 31   | e11   | 6.8   | e7.4  |
| 17    | 28   | 37   | e46  | 42   | 181   | 100  | 238   | 63   | 30   | 11    | e6.7  | e7.4  |
| 18    | 27   | 36   | e46  | 41   | 163   | 97   | 221   | 62   | 29   | 11    | e6.7  | 7.5   |
| 19    | 25   | 34   | e45  | 47   | 152   | 121  | 201   | 61   | 28   | 11    | e6.8  | 7.7   |
| 20    | 25   | 34   | e45  | 173  | 138   | 133  | 190   | 62   | 27   | 12    | e6.8  | 7.3   |
| 21    | 25   | 36   | e45  | 194  | 195   | 136  | 178   | 62   | 27   | 11    | e6.8  | 7.6   |
| 22    | 25   | 35   | e44  | 131  | 160   | 130  | 171   | 58   | 26   | 12    | e6.8  | 7.8   |
| 23    | 25   | 35   | e44  | 131  | 144   | 154  | 161   | 54   | 25   | 12    | e6.8  | 8.0   |
| 24    | 28   | 36   | e43  | 185  | 131   | 145  | 151   | 53   | 24   | 11    | e6.8  | 7.8   |
| 25    | 28   | 36   | e43  | 131  | 139   | 437  | 143   | 52   | 24   | 10    | e6.8  | 7.2   |
| 26    | 30   | 37   | e42  | 140  | 124   | 399  | 137   | 50   | 23   | 10    | e6.8  | 6.8   |
| 27    | 32   | 41   | e43  | 141  | 114   | 319  | 130   | 48   | 23   | 9.7   | e6.9  | 6.6   |
| 28    | 32   | 59   | e43  | 119  | 107   | 277  | 126   | 47   | 22   | 9.4   | e6.9  | 6.8   |
| 29    | 32   | 45   | e42  | 103  | ---   | 251  | 120   | 45   | 20   | 8.8   | e6.9  | 6.8   |
| 30    | 31   | 67   | e42  | 90   | ---   | 227  | 114   | 46   | 20   | 8.2   | e6.9  | 7.1   |
| 31    | 30   | ---  | e42  | 189  | ---   | 233  | ---   | 45   | ---  | 7.3   | e6.9  | ---   |
| TOTAL | 731  | 1119 | 1695 | 2503 | 6501  | 4733 | 6287  | 2168 | 973  | 412.4 | 210.0 | 216.8 |
| MEAN  | 23.6 | 37.3 | 54.7 | 80.7 | 232   | 153  | 210   | 69.9 | 32.4 | 13.3  | 6.77  | 7.23  |
| MAX   | 32   | 67   | 115  | 194  | 1080  | 437  | 426   | 109  | 49   | 20    | 7.6   | 8.0   |
| MIN   | 15   | 29   | 42   | 39   | 83    | 83   | 114   | 45   | 20   | 7.3   | 6.1   | 6.6   |
| AC-FT | 1450 | 2220 | 3360 | 4960 | 12890 | 9390 | 12470 | 4300 | 1930 | 818   | 417   | 430   |

e Estimated.

## CARMEL RIVER BASIN

## 11143200 CARMEL RIVER AT ROBLES DEL RIO, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 2.90 | 14.2 | 59.5 | 209  | 337  | 276  | 169  | 58.8 | 20.8 | 7.39 | 2.80 | 2.41 |
| MAX  | 23.6 | 135  | 480  | 899  | 2308 | 1855 | 1071 | 410  | 130  | 62.5 | 31.1 | 20.0 |
| (WY) | 1999 | 1984 | 1984 | 1997 | 1998 | 1983 | 1958 | 1983 | 1998 | 1998 | 1998 | 1998 |
| MIN  | .000 | .000 | .000 | .26  | .000 | .011 | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1960 | 1960 | 1960 | 1991 | 1977 | 1977 | 1977 | 1977 | 1961 | 1959 | 1957 | 1957 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |       | FOR 1999 WATER YEAR |        | WATER YEARS 1957 - 1999 |             |
|--------------------------|------------------------|-------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 126306                 |       | 27549.2             |        |                         |             |
| ANNUAL MEAN              | 346                    |       | 75.5                |        | 95.4                    |             |
| HIGHEST ANNUAL MEAN      |                        |       |                     |        | 442                     |             |
| LOWEST ANNUAL MEAN       |                        |       |                     |        | .050                    |             |
| HIGHEST DAILY MEAN       | 9000                   | Feb 3 | 1080                | Feb 9  | 9000                    | Feb 3 1998  |
| LOWEST DAILY MEAN        | 15                     | Oct 5 | 6.1                 | Aug 12 | .00                     | Aug 1 1957  |
| ANNUAL SEVEN-DAY MINIMUM | 16                     | Oct 2 | 6.3                 | Aug 8  | .00                     | Aug 1 1957  |
| INSTANTANEOUS PEAK FLOW  |                        |       | 2120                | Feb 9  | 16000                   | Mar 10 1995 |
| INSTANTANEOUS PEAK STAGE |                        |       | 4.20                | Feb 9  | 12.90                   | Mar 10 1995 |
| ANNUAL RUNOFF (AC-FT)    | 250500                 |       | 54640               |        | 69140                   |             |
| 10 PERCENT EXCEEDS       | 660                    |       | 180                 |        | 229                     |             |
| 50 PERCENT EXCEEDS       | 95                     |       | 40                  |        | 6.8                     |             |
| 90 PERCENT EXCEEDS       | 22                     |       | 7.0                 |        | .00                     |             |

## 11143250 CARMEL RIVER NEAR CARMEL, CA

LOCATION.—Lat 36°32'21", long 121°52'46", in Canada de la Segunda Grant, Monterey County, Hydrologic Unit 18060012, on left bank, 0.6 mi downstream from Potrero Canyon, and about 3 mi east of Carmel (revised).

DRAINAGE AREA.—247.23 mi<sup>2</sup>.

PERIOD OF RECORD.—August 1962 to current year.

CHEMICAL DATA: Water years 1954–66.

SEDIMENT DATA: Water years 1990, 1991–97.

GAGE.—Water-stage recorder. Prior to Nov. 16, 1998, at site 1,650 ft. upstream at different datum. Elevation of gage is 40 ft above sea level (revised), from topographic map.

REMARKS.—Records poor, except February to June, which are fair. Low flow regulated by Los Padres Reservoir, usable capacity, 1,970 acre-ft, and San Clemente Reservoir, usable capacity, 76 acre-ft. There are diversions from San Clemente Reservoir for municipal supply.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 16,000 ft<sup>3</sup>/s, Mar. 10, 1995, gage height, 20.85 ft at datum then in use; no flow for many days most years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,200 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 1445 | 2,510                             | 12.03               |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN  | FEB   | MAR   | APR   | MAY  | JUN   | JUL   | AUG  | SEP  |
|-------|------|------|------|------|-------|-------|-------|------|-------|-------|------|------|
| 1     | 23   | 22   | e120 | 13   | 223   | 120   | 203   | 121  | 46    | 8.4   | .00  | .00  |
| 2     | 26   | 24   | e95  | 13   | 155   | 116   | 187   | 122  | 45    | e8.0  | .00  | .00  |
| 3     | 24   | 21   | e80  | 12   | 126   | 118   | 177   | 120  | 47    | e7.6  | .00  | .00  |
| 4     | 23   | 21   | e68  | e11  | 98    | 116   | 165   | 118  | 56    | e7.2  | .00  | .00  |
| 5     | 23   | 23   | e62  | e11  | 78    | 110   | 165   | 114  | 49    | e6.7  | .00  | .00  |
| 6     | 23   | 23   | e85  | e11  | 69    | 101   | 224   | 112  | 47    | e6.0  | .00  | .00  |
| 7     | 21   | 23   | e75  | e10  | 93    | 97    | 220   | 106  | 42    | e5.2  | .00  | .00  |
| 8     | 20   | 24   | e65  | e10  | 172   | 97    | 257   | 103  | 40    | e4.4  | .00  | .00  |
| 9     | 24   | 23   | e60  | e10  | 1220  | 162   | 299   | 100  | 39    | e3.5  | .00  | .00  |
| 10    | 27   | 24   | e54  | e10  | 864   | 149   | 258   | 95   | 37    | e3.0  | .00  | .00  |
| 11    | 26   | 31   | e48  | e10  | 499   | 138   | 513   | 91   | 37    | e2.2  | .00  | .00  |
| 12    | 23   | 26   | 43   | e10  | 361   | 128   | 526   | 88   | 34    | e1.8  | .00  | .00  |
| 13    | 21   | 24   | 41   | e10  | 277   | 119   | 440   | 81   | 35    | e1.4  | .00  | .00  |
| 14    | 21   | 22   | 38   | e10  | 231   | 123   | 381   | 81   | 32    | e.75  | .00  | .00  |
| 15    | 22   | e25  | 37   | e10  | 198   | 197   | 336   | 90   | 30    | e.46  | .00  | .00  |
| 16    | 20   | e25  | 34   | e10  | 171   | 173   | 286   | 91   | 28    | e.40  | .00  | .00  |
| 17    | 19   | e25  | 32   | e10  | 174   | 155   | 264   | 82   | 27    | e.30  | .00  | .00  |
| 18    | 19   | e24  | 30   | e10  | 161   | 147   | 246   | 72   | 26    | e.20  | .00  | .00  |
| 19    | 19   | e24  | 27   | e10  | 158   | 167   | 225   | 68   | 25    | e.10  | .00  | .00  |
| 20    | 18   | e24  | 26   | 71   | 146   | 206   | 211   | 67   | 22    | e.05  | .00  | .00  |
| 21    | 17   | e23  | 28   | 167  | 212   | 204   | 200   | 68   | 20    | e.00  | .00  | .00  |
| 22    | 16   | e22  | 26   | 113  | 178   | 194   | 191   | 65   | 18    | e.00  | .00  | .00  |
| 23    | 18   | e23  | 23   | 92   | 159   | 222   | 182   | 59   | 17    | e.00  | .00  | .00  |
| 24    | 22   | e25  | 22   | 142  | 154   | 219   | 166   | 60   | 17    | .00   | .00  | .00  |
| 25    | 25   | e25  | 20   | 113  | 162   | 557   | 160   | 64   | 17    | .00   | .00  | .00  |
| 26    | 23   | e25  | 20   | 123  | 148   | 436   | 155   | 55   | 16    | .00   | .00  | .00  |
| 27    | 22   | e27  | 18   | 147  | 137   | 341   | 145   | 53   | 15    | .00   | .00  | .00  |
| 28    | 23   | e37  | 17   | 105  | 128   | 281   | 140   | 49   | 13    | .00   | .00  | .00  |
| 29    | 25   | e31  | 17   | 80   | ---   | 251   | 135   | 46   | 11    | .00   | .00  | .00  |
| 30    | 24   | e45  | 16   | 61   | ---   | 227   | 130   | 48   | 9.2   | .00   | .00  | .00  |
| 31    | 22   | ---  | 15   | 189  | ---   | 230   | ---   | 48   | ---   | .00   | .00  | ---  |
| TOTAL | 679  | 761  | 1342 | 1604 | 6752  | 5901  | 7187  | 2537 | 897.2 | 67.66 | 0.00 | 0.00 |
| MEAN  | 21.9 | 25.4 | 43.3 | 51.7 | 241   | 190   | 240   | 81.8 | 29.9  | 2.18  | .000 | .000 |
| MAX   | 27   | 45   | 120  | 189  | 1220  | 557   | 526   | 122  | 56    | 8.4   | .00  | .00  |
| MIN   | 16   | 21   | 15   | 10   | 69    | 97    | 130   | 46   | 9.2   | .00   | .00  | .00  |
| AC-FT | 1350 | 1510 | 2660 | 3180 | 13390 | 11700 | 14260 | 5030 | 1780  | 134   | .00  | .00  |

e Estimated.

## CARMEL RIVER BASIN

## 11143250 CARMEL RIVER NEAR CARMEL, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 1.44 | 9.81 | 63.0 | 250  | 393  | 332  | 188  | 73.0 | 23.1 | 6.24 | 1.39 | .73  |
| MAX  | 22.3 | 110  | 479  | 1034 | 2360 | 2196 | 1006 | 533  | 161  | 75.2 | 27.3 | 15.9 |
| (WY) | 1984 | 1984 | 1983 | 1969 | 1998 | 1983 | 1982 | 1983 | 1998 | 1998 | 1998 | 1998 |
| MIN  | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1965 | 1965 | 1969 | 1977 | 1977 | 1977 | 1977 | 1977 | 1968 | 1966 | 1964 | 1964 |

## SUMMARY STATISTICS

|                          | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1962 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 132354                 |        | 27727.86            |        |                         |             |
| ANNUAL MEAN              | 363                    |        | 76.0                |        | 110                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 508                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | .000                    |             |
| HIGHEST DAILY MEAN       | 9050                   | Feb 3  | 1220                | Feb 9  | 9050                    | Feb 3 1998  |
| LOWEST DAILY MEAN        | 10                     | Jan 1  | .00                 | Jul 21 | .00                     | Oct 6 1962  |
| ANNUAL SEVEN-DAY MINIMUM | 14                     | Sep 19 | .00                 | Jul 21 | .00                     | Jul 9 1964  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 2510                | Feb 9  | 16000                   | Mar 10 1995 |
| INSTANTANEOUS PEAK STAGE |                        |        | 12.03               | Feb 9  | 20.85                   | Mar 10 1995 |
| ANNUAL RUNOFF (AC-FT)    | 262500                 |        | 55000               |        | 79970                   |             |
| 10 PERCENT EXCEEDS       | 825                    |        | 199                 |        | 278                     |             |
| 50 PERCENT EXCEEDS       | 107                    |        | 25                  |        | .88                     |             |
| 90 PERCENT EXCEEDS       | 19                     |        | .00                 |        | .00                     |             |

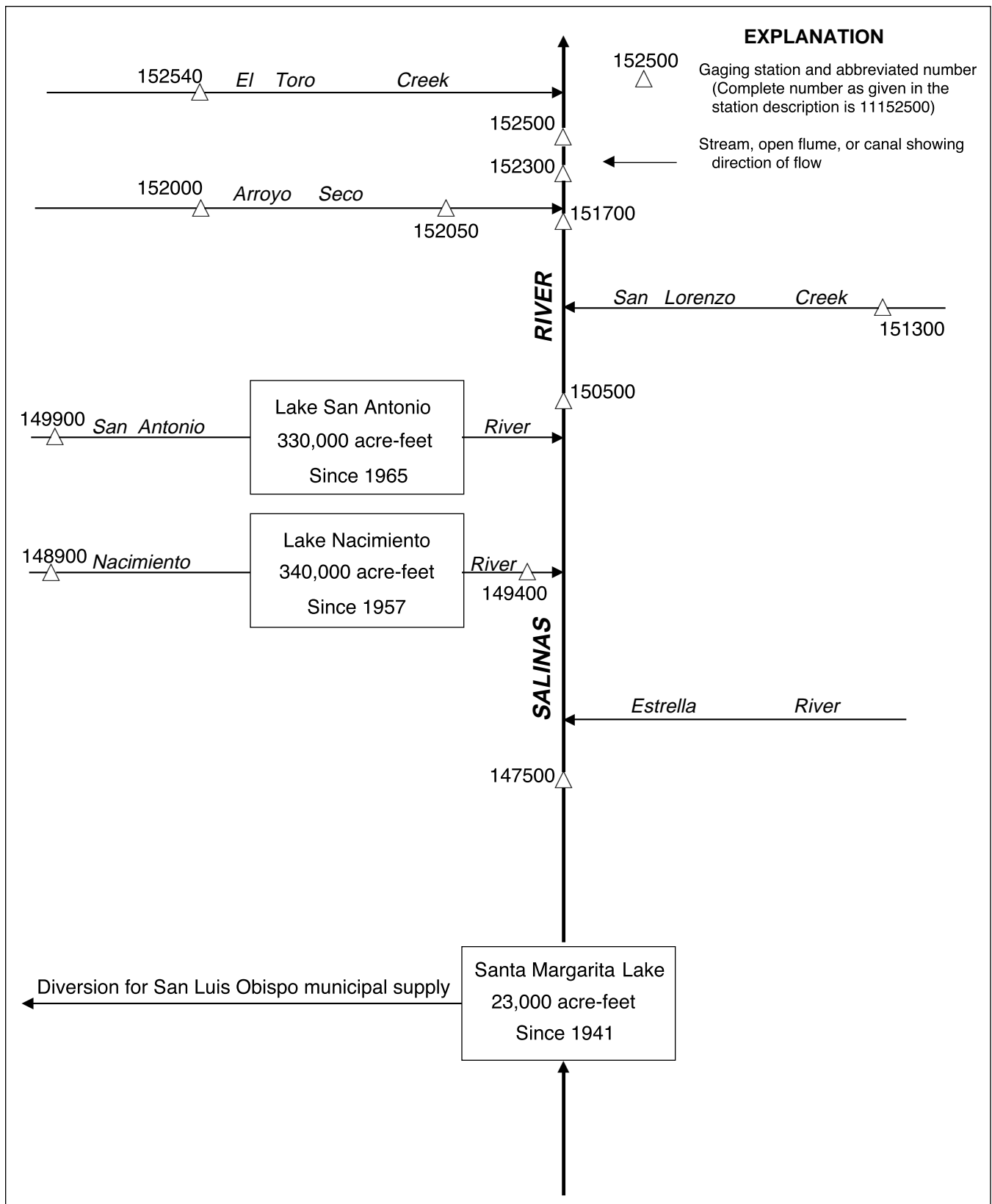


Figure 20. Diversions and storage in Salinas River Basin.

## 11147500 SALINAS RIVER AT PASO ROBLES, CA

LOCATION.—Lat 35°37'43", long 120°41'00", in Paso de Robles Grant, San Luis Obispo County, Hydrologic Unit 18060005, on left bank, at upstream side of 13th Street Bridge, in Paso Robles, and 3.5 mi upstream from Huerhuero Creek.

DRAINAGE AREA.—390 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1939 to September 1965, October 1969 to current year.

CHEMICAL DATA: Water years 1963–66.

SEDIMENT DATA: June 1990.

REVISED RECORDS.—WSP 981: 1942.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 670.61 ft above sea level. Prior to June 14, 1951, nonrecording gage at same site and datum.

REMARKS.—Records are poor. Low flows regulated by Santa Margarita Lake, 32 mi upstream, beginning in December 1941, usable capacity, 23,000 acre-ft. Small diversions for irrigation upstream from station. See schematic diagram of Salinas River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 28,400 ft<sup>3</sup>/s, Mar. 10, 1995, gage height, 22.99 ft; no flow for many days in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Jan. 25, 1969, reached a stage of 23.8 ft from floodmarks, discharge, 28,000 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 850 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 1815 | 2,090                             | 7.82                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV  | DEC    | JAN    | FEB  | MAR  | APR  | MAY    | JUN  | JUL  | AUG  | SEP  |
|-------|------|------|--------|--------|------|------|------|--------|------|------|------|------|
| 1     | .00  | .00  | .10    | 15     | 142  | 36   | 77   | 32     | .15  | .00  | .00  | .00  |
| 2     | .00  | .00  | .00    | 16     | 88   | 32   | 67   | 30     | .23  | .00  | .00  | .00  |
| 3     | .00  | .00  | .00    | 16     | 67   | 30   | 56   | 29     | .25  | .00  | .00  | .00  |
| 4     | .00  | .00  | .00    | 17     | 54   | 28   | 52   | 27     | .19  | .00  | .00  | .00  |
| 5     | .00  | .00  | .00    | 16     | 43   | 27   | 42   | 26     | .24  | .00  | .00  | .00  |
| 6     | .00  | .00  | .01    | 16     | 35   | 26   | 69   | 25     | .23  | .00  | .00  | .00  |
| 7     | .00  | .00  | .00    | 16     | 35   | 24   | 76   | 21     | .23  | .00  | .00  | .00  |
| 8     | .00  | .12  | .00    | 13     | 176  | 22   | 56   | 17     | .34  | .00  | .00  | .00  |
| 9     | .00  | .00  | .00    | 8.4    | 988  | 41   | 55   | 17     | .35  | .00  | .00  | .00  |
| 10    | .00  | .00  | .00    | 7.3    | 803  | 36   | 50   | 15     | .31  | .00  | .00  | .00  |
| 11    | .00  | .00  | .00    | 7.2    | 343  | 42   | 79   | 14     | .21  | .00  | .00  | .00  |
| 12    | .00  | .00  | .00    | 4.9    | 217  | 37   | 479  | 13     | .18  | .00  | .00  | .00  |
| 13    | .00  | .00  | .00    | 3.3    | 165  | 36   | 335  | 9.1    | .16  | .00  | .00  | .00  |
| 14    | .00  | .00  | .00    | 2.7    | 136  | 35   | 238  | 5.0    | .04  | .00  | .00  | .00  |
| 15    | .00  | .00  | .00    | 2.6    | 115  | 57   | 191  | 4.5    | .00  | .00  | .00  | .00  |
| 16    | .00  | .00  | .00    | 2.5    | 103  | 59   | 158  | 3.5    | .00  | .00  | .00  | .00  |
| 17    | .00  | .00  | .00    | 2.6    | 94   | 57   | 127  | 1.8    | .00  | .00  | .00  | .00  |
| 18    | .00  | .00  | .00    | 2.8    | 83   | 48   | 111  | .97    | .00  | .00  | .00  | .00  |
| 19    | .00  | .00  | .00    | 2.6    | 76   | 60   | 90   | .51    | .00  | .00  | .00  | .00  |
| 20    | .00  | .00  | .00    | 143    | 72   | 213  | 79   | .39    | .00  | .00  | .00  | .00  |
| 21    | .00  | .00  | 1.3    | 140    | 68   | 629  | 73   | .22    | .00  | .00  | .00  | .00  |
| 22    | .00  | .00  | 3.9    | 73     | 63   | 364  | 67   | .16    | .00  | e.00 | .00  | .00  |
| 23    | .00  | .00  | 5.6    | 49     | 56   | 247  | 61   | .14    | .00  | e.00 | .00  | .00  |
| 24    | .00  | .00  | 6.9    | 54     | 54   | 207  | 57   | .10    | .00  | e.00 | .00  | .00  |
| 25    | .00  | .00  | 9.2    | 53     | 53   | 321  | 52   | .08    | .00  | e.00 | .00  | .00  |
| 26    | .00  | .00  | 11     | 53     | 46   | 367  | 48   | .45    | .00  | e.00 | .00  | .00  |
| 27    | .00  | .00  | 13     | 82     | 41   | 229  | 44   | .57    | .00  | e.00 | .00  | .00  |
| 28    | .00  | .00  | 14     | 66     | 38   | 163  | 38   | .26    | .00  | e.00 | .00  | .00  |
| 29    | .00  | .00  | 14     | 50     | ---  | 125  | 36   | .15    | .00  | e.00 | .00  | .00  |
| 30    | .00  | .00  | 16     | 41     | ---  | 104  | 33   | .15    | .00  | .00  | .00  | .00  |
| 31    | .00  | ---  | 16     | 100    | ---  | 89   | ---  | .15    | ---  | .00  | .00  | ---  |
| TOTAL | 0.00 | 0.12 | 111.01 | 1075.9 | 4254 | 3791 | 2996 | 294.20 | 3.11 | 0.00 | 0.00 | 0.00 |
| MEAN  | .000 | .004 | 3.58   | 34.7   | 152  | 122  | 99.9 | 9.49   | .10  | .000 | .000 | .000 |
| MAX   | .00  | .12  | 16     | 143    | 988  | 629  | 479  | 32     | .35  | .00  | .00  | .00  |
| MIN   | .00  | .00  | .00    | 2.5    | 35   | 22   | 33   | .08    | .00  | .00  | .00  | .00  |
| AC-FT | .00  | .2   | 220    | 2130   | 8440 | 7520 | 5940 | 584    | 6.2  | .00  | .00  | .00  |

e Estimated.



## 11147500 SALINAS RIVER AT PASO ROBLES, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 2.53 | 5.53 | 53.1 | 251  | 412  | 372  | 164  | 27.6 | 3.55 | .29  | .056 | .90  |
| MAX  | 117  | 86.0 | 581  | 2138 | 2884 | 2410 | 1980 | 338  | 64.2 | 4.84 | 1.91 | 44.0 |
| (WY) | 1943 | 1983 | 1983 | 1997 | 1998 | 1995 | 1958 | 1998 | 1998 | 1941 | 1942 | 1942 |
| MIN  | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1941 | 1940 | 1940 | 1948 | 1948 | 1961 | 1961 | 1959 | 1947 | 1940 | 1940 | 1940 |

## SUMMARY STATISTICS

|                          | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |       | WATER YEARS 1940 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|-------|-------------------------|-------------|
| ANNUAL TOTAL             | 131843.35              |        | 12525.34            |       |                         |             |
| ANNUAL MEAN              | 361                    |        | 34.3                |       | 106                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |       | 526                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |       | .000                    |             |
| HIGHEST DAILY MEAN       | 6210                   | Feb 7  | 988                 | Feb 9 | 19600                   | Mar 10 1995 |
| LOWEST DAILY MEAN        | .00                    | Jan 1  | .00                 | Oct 1 | .00                     | Nov 1 1939  |
| ANNUAL SEVEN-DAY MINIMUM | .00                    | Jul 27 | .00                 | Oct 1 | .00                     | Nov 1 1939  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 2090                |       | 28400                   |             |
| INSTANTANEOUS PEAK STAGE |                        |        | 7.82                |       | 22.99                   |             |
| ANNUAL RUNOFF (AC-FT)    | 261500                 |        | 24840               |       | 76950                   |             |
| 10 PERCENT EXCEEDS       | 997                    |        | 82                  |       | 168                     |             |
| 50 PERCENT EXCEEDS       | 11                     |        | .00                 |       | .00                     |             |
| 90 PERCENT EXCEEDS       | .00                    |        | .00                 |       | .00                     |             |

## 11148900 NACIMIENTO RIVER BELOW SAPAQUE CREEK, NEAR BRYSON, CA

LOCATION.—Lat 35°47'19", long 121°05'34", in SW 1/4 NE 1/4 sec.3, T.25 S., R.8 E., San Luis Obispo County, Hydrologic Unit 18060005, on left bank, just downstream from Sapaque Creek, and 1.4 mi south of Bryson.

DRAINAGE AREA.—162 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1971 to current year.

REVISED RECORDS.—WDR CA-82-2: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 800 ft above sea level, from topographic map.

REMARKS.—Records fair. No storage or diversion upstream from station. See schematic diagram of Salinas River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 57,600 ft<sup>3</sup>/s, Jan. 14, 1993, gage height, 32.14 ft, from rating curve extended above 7,900 ft<sup>3</sup>/s on basis of slope-area measurement at 32.00 ft gage height, maximum gage height, 35.15 ft, Mar. 10, 1995; no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 10,000 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 1330 | 3,870                             | 14.92               |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC  | JAN  | FEB   | MAR   | APR   | MAY  | JUN   | JUL   | AUG  | SEP  |
|-------|-------|-------|------|------|-------|-------|-------|------|-------|-------|------|------|
| 1     | .70   | 3.0   | 296  | 15   | 328   | 75    | 215   | 80   | 25    | 4.4   | .00  | .00  |
| 2     | .70   | 3.0   | 101  | 15   | 225   | 71    | 190   | 76   | 25    | 3.8   | .00  | .00  |
| 3     | .47   | 3.0   | 60   | 14   | 173   | 69    | 168   | 75   | 25    | 3.2   | .00  | .00  |
| 4     | .38   | 3.0   | 56   | 14   | 141   | 69    | 154   | 71   | 26    | 3.0   | .00  | .00  |
| 5     | .38   | 3.0   | 47   | 13   | 117   | 64    | 152   | 68   | 25    | 2.8   | .00  | .00  |
| 6     | .35   | 2.8   | 70   | 13   | 100   | 62    | 340   | 63   | 23    | 2.5   | .00  | .00  |
| 7     | .32   | 3.0   | 69   | 13   | 405   | 60    | 265   | 59   | 21    | 2.1   | .00  | .00  |
| 8     | .32   | 4.6   | 50   | 13   | 625   | 59    | 247   | 56   | 20    | 1.8   | .00  | .00  |
| 9     | .35   | 6.8   | 41   | 13   | 2160  | 121   | 263   | 54   | 19    | 1.4   | .00  | .00  |
| 10    | .35   | 8.4   | 35   | 13   | 986   | 112   | 237   | 51   | 18    | 1.1   | .00  | .00  |
| 11    | .38   | 9.2   | 31   | 13   | 520   | 109   | 766   | 49   | 17    | .83   | .00  | .00  |
| 12    | .38   | 9.5   | 28   | 13   | 368   | 112   | 735   | 47   | 16    | .57   | .00  | .00  |
| 13    | .79   | 9.9   | 25   | 13   | 288   | 100   | 480   | 45   | 15    | .36   | .00  | .00  |
| 14    | 1.2   | 9.2   | 23   | 13   | 239   | 94    | 378   | 43   | 14    | .26   | .00  | .00  |
| 15    | 1.1   | 8.1   | 23   | 13   | 203   | 186   | 317   | 42   | 14    | .21   | .00  | .00  |
| 16    | 1.1   | 8.1   | 21   | 13   | 173   | 174   | 272   | 41   | 13    | .17   | .00  | .00  |
| 17    | 1.2   | 8.1   | 21   | 13   | 156   | 145   | 238   | 40   | 12    | .11   | .00  | .00  |
| 18    | 1.3   | 7.8   | 20   | 13   | 137   | 129   | 213   | 38   | 12    | .03   | .00  | .00  |
| 19    | 1.3   | e7.2  | 19   | 15   | 126   | 249   | 189   | 37   | 11    | .00   | .00  | .00  |
| 20    | 1.4   | e6.8  | 18   | 785  | 112   | 535   | 171   | 36   | 11    | .00   | .00  | .00  |
| 21    | 1.7   | e6.6  | 18   | 359  | 118   | 645   | 156   | 35   | 10    | .00   | .00  | .00  |
| 22    | 1.8   | 6.3   | 17   | 197  | 110   | 421   | 143   | 34   | 9.5   | .00   | .00  | .00  |
| 23    | 1.8   | 6.4   | 16   | 189  | 101   | 614   | 132   | 33   | 9.1   | .00   | .00  | .00  |
| 24    | 1.8   | 7.1   | 16   | 276  | 94    | 431   | 121   | 33   | 8.7   | .00   | .00  | .00  |
| 25    | 2.2   | 6.5   | 16   | 188  | 98    | 1370  | 112   | 31   | 8.2   | .00   | .00  | .00  |
| 26    | 2.3   | 9.5   | 15   | 225  | 94    | 706   | 106   | 29   | 7.7   | .00   | .00  | .00  |
| 27    | 2.7   | 10    | 15   | 325  | 84    | 478   | 99    | 28   | 7.3   | .00   | .00  | .00  |
| 28    | 2.3   | 22    | 15   | 212  | 79    | 369   | 93    | 27   | 6.8   | .00   | .00  | .00  |
| 29    | 2.7   | 44    | 15   | 158  | ---   | 305   | 89    | 26   | 6.2   | .00   | .00  | .00  |
| 30    | 2.7   | 224   | 15   | 128  | ---   | 263   | 84    | 25   | 5.4   | .00   | .00  | .00  |
| 31    | 2.8   | ---   | 15   | 420  | ---   | 244   | ---   | 26   | ---   | .00   | .00  | ---  |
| TOTAL | 39.27 | 466.9 | 1227 | 3717 | 8360  | 8441  | 7125  | 1398 | 440.9 | 28.64 | 0.00 | 0.00 |
| MEAN  | 1.27  | 15.6  | 39.6 | 120  | 299   | 272   | 238   | 45.1 | 14.7  | .92   | .000 | .000 |
| MAX   | 2.8   | 224   | 296  | 785  | 2160  | 1370  | 766   | 80   | 26    | 4.4   | .00  | .00  |
| MIN   | .32   | 2.8   | 15   | 13   | 79    | 59    | 84    | 25   | 5.4   | .00   | .00  | .00  |
| AC-FT | 78    | 926   | 2430 | 7370 | 16580 | 16740 | 14130 | 2770 | 875   | 57    | .00  | .00  |

e Estimated.

## 11148900 NACIMIENTO RIVER BELOW SAPAQUE CREEK, NEAR BRYSON, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .56  | 55.8 | 183  | 592  | 750  | 515  | 169  | 47.6 | 11.8 | 2.41 | .25  | .053 |
| MAX  | 4.90 | 413  | 911  | 2440 | 3545 | 2048 | 1142 | 318  | 63.3 | 17.7 | 3.03 | .77  |
| (WY) | 1973 | 1973 | 1983 | 1978 | 1998 | 1983 | 1982 | 1983 | 1998 | 1998 | 1998 | 1983 |
| MIN  | .000 | .000 | .000 | .000 | 3.82 | 16.0 | 4.20 | 1.61 | .11  | .000 | .000 | .000 |
| (WY) | 1972 | 1978 | 1991 | 1991 | 1991 | 1977 | 1977 | 1990 | 1977 | 1972 | 1972 | 1972 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1971 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 153360.50              |        | 31243.71            |        |                         |             |
| ANNUAL MEAN              | 420                    |        | 85.6                |        | 191                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 623                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 5.74                    |             |
| HIGHEST DAILY MEAN       | 17400                  | Feb 3  | 2160                | Feb 9  | 24400                   | Mar 10 1995 |
| LOWEST DAILY MEAN        | .15                    | Sep 18 | .00                 | Jul 19 | .00                     | Sep 16 1971 |
| ANNUAL SEVEN-DAY MINIMUM | .22                    | Sep 14 | .00                 | Jul 19 | .00                     | Sep 16 1971 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 3870                | Feb 9  | 57600                   | Jan 14 1993 |
| INSTANTANEOUS PEAK STAGE |                        |        | 14.92               | Feb 9  | 35.15                   | Mar 10 1995 |
| ANNUAL RUNOFF (AC-FT)    | 304200                 |        | 61970               |        | 138500                  |             |
| 10 PERCENT EXCEEDS       | 917                    |        | 245                 |        | 335                     |             |
| 50 PERCENT EXCEEDS       | 47                     |        | 14                  |        | 6.8                     |             |
| 90 PERCENT EXCEEDS       | .54                    |        | .00                 |        | .00                     |             |

11148900 NACIMIENTO RIVER BELOW SAPAQUE CREEK, NEAR BRYSON, CA—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1972 to current year. Published as station 11148800 "near Bryson" in water years 1958–59, 1961–71.

WATER TEMPERATURE: Water years 1972–73.

SEDIMENT DATA: Water years 1972 to current year.

PERIOD OF DAILY RECORD.—October 1971 to September 1973.

WATER TEMPERATURE: October 1971 to September 1973.

SUSPENDED-SEDIMENT DISCHARGE: October 1971 to September 1973.

REMARKS.—Zero bedload discharge observed for flows less than 316 ft<sup>3</sup>/s during current year.

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>SUS-<br>PENDE<br>(MG/L)<br>(80154) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>(T/DAY)<br>(80155) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) |
|-------|------|---|---|--|--|--|
| NOV   |      |   |   |  |  |  |
| 18... | 1130 | 7.8   | 10.5  | 3  | .06  | 86   |
| DEC   |      |   |   |  |  |  |
| 13... | 1200 | 26  | 6.0   | 1  | .07  | 71   |
| JAN   |      |   |   |  |  |  |
| 27... | 1155 | 316   | 8.0   | 5  | 4.3  | --   |
| MAR   |      |   |   |  |  |  |
| 03... | 0930 | 69  | --  | 10   | 1.9  | 57   |
| APR   |      |   |   |  |  |  |
| 22... | 1155 | 144   | 16.5  | 2  | .78  | --   |

## 11149400 NACIMIENTO RIVER BELOW NACIMIENTO DAM, NEAR BRADLEY, CA

LOCATION.—Lat 35°45'41", long 120°51'16", in NE 1/4 NE 1/4 sec.14, T.25 S., R.10 E., San Luis Obispo County, Hydrologic Unit 18060005, Camp Roberts Military Reservation, on left bank, 2.2 mi downstream from Nacimiento Dam, and 7.6 mi southwest of Bradley.

DRAINAGE AREA.—329 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1957 to current year.

CHEMICAL DATA: Water years 1963–66.

REVISED RECORDS.—WDR CA-84-2: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 597 ft above sea level, from topographic map.

REMARKS.—Records fair. Flow regulated by Lake Nacimiento (formerly Nacimiento Reservoir) beginning in February 1957, usable capacity, 340,000 acre-ft. No diversion upstream from station. See schematic diagram of Salinas River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 7,340 ft<sup>3</sup>/s, Feb. 25, 1969, gage height, 10.92 ft; no flow at times in 1958–63, 1965, 1977, 1990.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN  | FEB   | MAR  | APR  | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|------|-------|-------|------|-------|------|------|-------|-------|-------|-------|-------|
| 1     | 31   | e400  | e250  | e196 | 101   | e36  | e38  | e31   | 257   | 251   | 404   | 292   |
| 2     | e31  | e400  | e220  | e196 | 101   | e36  | e38  | e31   | 287   | 251   | 403   | 270   |
| 3     | e31  | e400  | e190  | e196 | 101   | e36  | e38  | e31   | 305   | 246   | 402   | 270   |
| 4     | e31  | e400  | e190  | 198  | 102   | e36  | e38  | e40   | 314   | 243   | 403   | 270   |
| 5     | e31  | e400  | e190  | 198  | 102   | e36  | e38  | e48   | 314   | 242   | 417   | 270   |
| 6     | e31  | e475  | e190  | 198  | 102   | e35  | e38  | e48   | 314   | 266   | 428   | 270   |
| 7     | e31  | e550  | e190  | 158  | 100   | e35  | e38  | e150  | 275   | 279   | 428   | 320   |
| 8     | e31  | e550  | e190  | 127  | 100   | e34  | e38  | e200  | 273   | 278   | 426   | 362   |
| 9     | e31  | e550  | e190  | 126  | 104   | e34  | e38  | e230  | 282   | 296   | 426   | 361   |
| 10    | e31  | e550  | e190  | 126  | 146   | e33  | e38  | e230  | 282   | 376   | 445   | 370   |
| 11    | e31  | e550  | e190  | 128  | 190   | e33  | e38  | e240  | 282   | 398   | 462   | 397   |
| 12    | e31  | e550  | e190  | 129  | 356   | e33  | e38  | 247   | 280   | 399   | 464   | 395   |
| 13    | e31  | e475  | e190  | 125  | 726   | e33  | e38  | 244   | 280   | 399   | 449   | 395   |
| 14    | e31  | e400  | e190  | 124  | 726   | e34  | e38  | 246   | 280   | 398   | 436   | 395   |
| 15    | e31  | e400  | e190  | 122  | 724   | e34  | e38  | 248   | 280   | 401   | 434   | 288   |
| 16    | e30  | e300  | e190  | 98   | 616   | e35  | e38  | 247   | 280   | 398   | 434   | 87    |
| 17    | e30  | e200  | e190  | 98   | 511   | e35  | e37  | 246   | 280   | 400   | 420   | 26    |
| 18    | e30  | e200  | e190  | 97   | 463   | e36  | e37  | 273   | 280   | 398   | 433   | 26    |
| 19    | e30  | e250  | e190  | 97   | 462   | e36  | e36  | 311   | 280   | 395   | 430   | 25    |
| 20    | e30  | e250  | e190  | 98   | 461   | e36  | e36  | 311   | 277   | 421   | 451   | 25    |
| 21    | e30  | e250  | e190  | 100  | 460   | e37  | e35  | 310   | 276   | 428   | 463   | 25    |
| 22    | e30  | e250  | e190  | 99   | 342   | e37  | e35  | 334   | 276   | 402   | 463   | 25    |
| 23    | e30  | e250  | e190  | 100  | 105   | e37  | e34  | 363   | 276   | 402   | 463   | 30    |
| 24    | e30  | e250  | e190  | 100  | e37   | e38  | e34  | 363   | 276   | 402   | 463   | 25    |
| 25    | e30  | e250  | e190  | 99   | e36   | e38  | e33  | 262   | 291   | 402   | 463   | 25    |
| 26    | e30  | e250  | e190  | 100  | e36   | e38  | e33  | 208   | 327   | 416   | 463   | 25    |
| 27    | e400 | e250  | e190  | 100  | e36   | e38  | e32  | 208   | 327   | 437   | 462   | 25    |
| 28    | e475 | e250  | e190  | 100  | e36   | e38  | e32  | 208   | 299   | 437   | 462   | 25    |
| 29    | e475 | e250  | e190  | 100  | ---   | e38  | e31  | 206   | 300   | 437   | 462   | 25    |
| 30    | e400 | e250  | e190  | 99   | ---   | e38  | e31  | 209   | 244   | 419   | 462   | 25    |
| 31    | e400 | ---   | e190  | 102  | ---   | e38  | ---  | 223   | ---   | 402   | 409   | ---   |
| TOTAL | 2945 | 10750 | 5980  | 3934 | 7382  | 1111 | 1084 | 6546  | 8594  | 11319 | 13630 | 5369  |
| MEAN  | 95.0 | 358   | 193   | 127  | 264   | 35.8 | 36.1 | 211   | 286   | 365   | 440   | 179   |
| MAX   | 475  | 550   | 250   | 198  | 726   | 38   | 38   | 363   | 327   | 437   | 464   | 397   |
| MIN   | 30   | 200   | 190   | 97   | 36    | 33   | 31   | 31    | 244   | 242   | 402   | 25    |
| AC-FT | 5840 | 21320 | 11860 | 7800 | 14640 | 2200 | 2150 | 12980 | 17050 | 22450 | 27040 | 10650 |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1999, BY WATER YEAR (WY)

|      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 233  | 119  | 116  | 282  | 592  | 294  | 148  | 209  | 298  | 379  | 397  | 354  |
| MAX  | 501  | 618  | 1629 | 3341 | 4830 | 3016 | 1501 | 1067 | 581  | 662  | 802  | 684  |
| (WY) | 1983 | 1983 | 1983 | 1997 | 1998 | 1969 | 1958 | 1983 | 1969 | 1958 | 1967 | 1995 |
| MIN  | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | 1.16 | 2.44 | .000 | .000 |
| (WY) | 1958 | 1958 | 1958 | 1962 | 1962 | 1961 | 1961 | 1961 | 1990 | 1990 | 1961 | 1961 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |       | FOR 1999 WATER YEAR |        | WATER YEARS 1958 - 1999 |             |
|--------------------------|------------------------|-------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 204399                 |       | 78644               |        |                         |             |
| ANNUAL MEAN              | 560                    |       | 215                 |        | 283                     |             |
| HIGHEST ANNUAL MEAN      |                        |       |                     |        | 1038                    |             |
| LOWEST ANNUAL MEAN       |                        |       |                     |        | 3.43                    |             |
| HIGHEST DAILY MEAN       | 5260                   | Feb 9 | 726                 | Feb 13 | 6770                    | Feb 26 1969 |
| LOWEST DAILY MEAN        | 18                     | Jan 7 | 25                  | Sep 19 | .00                     | Oct 1 1957  |
| ANNUAL SEVEN-DAY MINIMUM | 19                     | Jan 1 | 25                  | Sep 24 | .00                     | Oct 1 1957  |
| INSTANTANEOUS PEAK FLOW  |                        |       | 730                 |        | 7340                    |             |
| INSTANTANEOUS PEAK STAGE |                        |       | 4.24                |        | 10.92                   |             |
| ANNUAL RUNOFF (AC-FT)    | 405400                 |       | 156000              |        | 205300                  |             |
| 10 PERCENT EXCEEDS       | 550                    |       | 437                 |        | 507                     |             |
| 50 PERCENT EXCEEDS       | 190                    |       | 196                 |        | 127                     |             |
| 90 PERCENT EXCEEDS       | 30                     |       | 31                  |        | 1.9                     |             |

e Estimated.

## 11149900 SAN ANTONIO RIVER NEAR LOCKWOOD, CA

LOCATION.—Lat 35°53'48", long 121°05'14", in Los Ojitos Grant, Monterey County, Hydrologic Unit 18060005, on downstream side of highway bridge, 0.4 mi upstream from Tule Canyon, and 3.3 mi south of Lockwood.

DRAINAGE AREA.—217 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1965 to current year.

REVISED RECORDS.—WDR CA-82-2: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 795.00 ft above sea level. Prior to Aug. 28, 1975, at datum 5.00 ft higher.

REMARKS.—Records fair. No regulation; some pumping upstream from station. See schematic diagram of Salinas River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 23,600 ft<sup>3</sup>/s, Mar. 10, 1995, gage height, 14.25 ft, current datum, from rating curve extended above 8,000 ft<sup>3</sup>/s, on basis of contracted-opening measurement at gage height 12.6 ft; no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,500 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 1700 | 1,660                             | 7.98                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV    | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN    | JUL  | AUG  | SEP  |
|-------|------|--------|------|------|------|------|------|------|--------|------|------|------|
| 1     | .00  | .00    | 95   | 11   | 75   | 55   | 128  | 62   | 12     | .00  | .00  | .00  |
| 2     | .00  | .00    | 64   | 11   | 60   | 54   | 117  | 59   | 12     | .00  | .00  | .00  |
| 3     | .00  | .00    | 49   | 11   | 52   | 52   | 107  | 58   | 12     | .00  | .00  | .00  |
| 4     | .00  | .00    | 39   | 11   | 47   | 52   | 100  | 57   | 12     | .00  | .00  | .00  |
| 5     | .00  | .00    | 35   | 11   | 44   | 52   | 95   | 54   | 12     | .00  | .00  | .00  |
| 6     | .00  | .70    | 30   | 11   | 40   | 51   | 112  | 51   | 11     | .00  | .00  | .00  |
| 7     | .00  | 1.7    | 27   | 11   | 44   | 50   | 117  | 48   | 10     | .00  | .00  | .00  |
| 8     | .00  | 2.6    | 26   | 11   | 87   | 50   | 110  | 46   | 9.8    | .00  | .00  | .00  |
| 9     | .00  | 3.2    | 24   | 11   | 566  | 57   | 128  | 45   | 9.2    | .00  | .00  | .00  |
| 10    | .00  | 7.5    | 21   | 12   | 629  | 74   | 117  | 43   | 8.7    | .00  | .00  | .00  |
| 11    | .00  | 9.1    | 19   | 12   | 338  | 68   | 150  | 40   | 8.1    | .00  | .00  | .00  |
| 12    | .00  | 11     | 19   | 12   | 258  | 68   | 302  | 36   | 7.5    | .00  | .00  | .00  |
| 13    | .00  | 14     | 18   | 11   | 209  | 64   | 228  | 32   | 6.7    | .00  | .00  | .00  |
| 14    | .00  | 14     | 18   | 12   | 166  | 62   | 195  | 29   | 6.0    | .00  | .00  | .00  |
| 15    | .00  | 13     | 17   | 12   | 130  | 70   | 169  | 28   | 5.5    | .00  | .00  | .00  |
| 16    | .00  | 12     | 16   | 12   | 106  | 79   | 150  | 27   | 5.0    | .00  | .00  | .00  |
| 17    | .00  | 11     | 16   | 12   | 98   | 69   | 136  | 26   | 4.2    | .00  | .00  | .00  |
| 18    | .00  | 10     | 16   | 12   | 89   | 64   | 124  | 25   | 3.4    | .00  | .00  | .00  |
| 19    | .00  | 10     | 16   | 12   | 83   | 70   | 112  | 24   | 2.8    | .00  | .00  | .00  |
| 20    | .00  | 10     | 15   | 70   | 79   | 137  | 102  | 23   | 2.2    | .00  | .00  | .00  |
| 21    | .00  | 9.7    | 14   | 87   | 71   | 206  | 96   | 22   | 1.8    | .00  | .00  | .00  |
| 22    | .00  | 9.7    | 14   | 60   | 67   | 172  | 93   | 22   | 1.4    | .00  | .00  | .00  |
| 23    | .00  | 9.7    | 13   | 49   | 63   | 160  | 89   | 21   | .96    | .00  | .00  | .00  |
| 24    | .00  | 9.7    | 13   | 68   | 61   | 143  | 84   | 20   | .65    | .00  | .00  | .00  |
| 25    | .00  | 9.7    | 12   | 55   | 59   | 295  | 79   | 19   | .42    | .00  | .00  | .00  |
| 26    | .00  | 11     | 12   | 52   | 58   | 313  | 75   | 18   | .21    | .00  | .00  | .00  |
| 27    | .00  | 12     | 12   | 58   | 56   | 239  | 72   | 17   | .09    | .00  | .00  | .00  |
| 28    | .00  | 15     | 12   | 52   | 54   | 202  | 70   | 15   | .01    | .00  | .00  | .00  |
| 29    | .00  | 24     | 11   | 44   | ---  | 176  | 68   | 14   | .00    | .00  | .00  | .00  |
| 30    | .00  | 48     | 11   | 40   | ---  | 154  | 65   | 13   | .00    | .00  | .00  | .00  |
| 31    | .00  | ---    | 11   | 68   | ---  | 139  | ---  | 13   | ---    | .00  | .00  | ---  |
| TOTAL | 0.00 | 288.30 | 715  | 921  | 3689 | 3497 | 3590 | 1007 | 165.64 | 0.00 | 0.00 | 0.00 |
| MEAN  | .000 | 9.61   | 23.1 | 29.7 | 132  | 113  | 120  | 32.5 | 5.52   | .000 | .000 | .000 |
| MAX   | .00  | 48     | 95   | 87   | 629  | 313  | 302  | 62   | 12     | .00  | .00  | .00  |
| MIN   | .00  | .00    | 11   | 11   | 40   | 50   | 65   | 13   | .00    | .00  | .00  | .00  |
| AC-FT | .00  | 572    | 1420 | 1830 | 7320 | 6940 | 7120 | 2000 | 329    | .00  | .00  | .00  |

## 11149900 SAN ANTONIO RIVER NEAR LOCKWOOD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

|      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .34  | 14.2 | 84.6 | 313  | 422  | 344  | 130  | 45.0 | 14.5 | 3.65 | .42  | .056 |
| MAX  | 11.7 | 108  | 573  | 1515 | 2351 | 1856 | 637  | 167  | 94.0 | 35.7 | 6.90 | 1.91 |
| (WY) | 1984 | 1984 | 1967 | 1969 | 1998 | 1983 | 1982 | 1983 | 1998 | 1998 | 1998 | 1983 |
| MIN  | .000 | .000 | .000 | .000 | .000 | .058 | .005 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1966 | 1967 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1972 | 1966 | 1966 | 1966 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1966 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 102402.08              |        | 13872.94            |        |                         |             |
| ANNUAL MEAN              | 281                    |        | 38.0                |        | 113                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 455                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | .005                    |             |
| HIGHEST DAILY MEAN       | 11400                  | Feb 3  | 629                 | Feb 10 | 14000                   | Mar 10 1995 |
| LOWEST DAILY MEAN        | .00                    | Aug 31 | .00                 | Oct 1  | .00                     | Oct 1 1965  |
| ANNUAL SEVEN-DAY MINIMUM | .00                    | Aug 31 | .00                 | Oct 1  | .00                     | Oct 1 1965  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 1660                | Feb 9  | 23600                   | Mar 10 1995 |
| INSTANTANEOUS PEAK STAGE |                        |        | 7.98                | Feb 9  | 14.25                   | Mar 10 1995 |
| ANNUAL RUNOFF (AC-FT)    | 203100                 |        | 27520               |        | 81690                   |             |
| 10 PERCENT EXCEEDS       | 510                    |        | 106                 |        | 227                     |             |
| 50 PERCENT EXCEEDS       | 57                     |        | 11                  |        | 4.6                     |             |
| 90 PERCENT EXCEEDS       | .00                    |        | .00                 |        | .00                     |             |

## 11149900 SAN ANTONIO RIVER NEAR LOCKWOOD, CA—Continued

## WATER-QUALITY RECORDS

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

WATER TEMPERATURE: Water years 1966–73.

SEDIMENT DATA: Water years 1966 to current year.

PERIOD OF DAILY RECORD.—October 1965 to September 1973.

SUSPENDED-SEDIMENT DISCHARGE: October 1965 to September 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SEDIMENT CONCENTRATION: Maximum daily mean, 7,420 mg/L, Dec. 6, 1966; minimum daily mean, no flow on many days each year.

SEDIMENT LOAD: Maximum daily, 161,000 tons, Dec. 6, 1966; minimum daily, 0 ton, many days each year.

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>SUS-<br>PENDE<br>D<br>(MG/L)<br>(80154) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>D<br>(T/DAY)<br>(80155) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) |
|-------|------|---|---|---|---|--|
| FEB   |      |   |   |   |   |  |
| 21... | 1520 | 72  | 13.0  | 8   | 1.6   | 45   |
| MAR   |      |   |   |   |   |  |
| 23... | 1630 | 157   | 17.5  | 52  | 22  | 40   |
| APR   |      |   |   |   |   |  |
| 22... | 1520 | 93  | 21.5  | 21  | 5.3   | --   |
| MAY   |      |   |   |   |   |  |
| 11... | 1550 | 38  | 24.0  | 4   | .41   | --   |

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | NUMBER<br>OF<br>SAM-<br>PLING<br>POINTS<br>(COUNT)<br>(00063)          | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061)  | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010)                        | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(80164) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.125 MM<br>(80165) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.250 MM<br>(80166) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.500 MM<br>(80167) |
|-------|------|--|--|--|--|--|--|--|
| MAY   |      |  |  |  |  |  |  |  |
| 11... | 1624 | 1  | 39   | 24.0   | --   | 1  | 4  | 19   |
| 11... | 1625 | 1  | 39   | 24.0   | --   | --   | --   | 5  |
| 11... | 1626 | 1  | 39   | 24.0   | --   | 1  | 3  | 23   |
| 11... | 1627 | 1  | 39   | 24.0   | --   | 1  | 2  | 8  |
| 11... | 1628 | 1  | 39   | 24.0   | 1  | 3  | 6  | 12   |
| DATE  |      | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>1.00 MM<br>(80168) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>2.00 MM<br>(80169) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>4.00 MM<br>(80170) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>8.00 MM<br>(80171) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>16.0 MM<br>(80172) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>32.0 MM<br>(80173) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>64.0 MM<br>(80174) |
| MAY   |      |  |  |  |  |  |  |  |
| 11... | 46   | 66   | 79   | 86   | 94   | 100  | --   | --   |
| 11... | 26   | 54   | 74   | 86   | 93   | 100  | --   | --   |
| 11... | 42   | 55   | 66   | 76   | 90   | 98   | 100  | 100  |
| 11... | 38   | 78   | 93   | 96   | 98   | 100  | --   | --   |
| 11... | 39   | 64   | 72   | 77   | 81   | 88   | 100  | 100  |



11149900 SAN ANTONIO RIVER NEAR LOCKWOOD, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF BEDLOAD, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME   | SAM-<br>PLING<br>METHOD,<br>CODES<br>(82398)                          | SAMPLER<br>TYPE<br>(CODE)<br>(84164)   | BAG<br>MESH<br>SIZE<br>SAMPLER<br>(MM)<br>(30333)                                | TETHER<br>LINE<br>USED IN<br>SAMPLING<br>(YES=1)<br>(CODE)<br>(04117)    | START-<br>ING<br>TIME<br>(2400<br>HOURS)<br>(82073)                        | END-<br>ING<br>TIME<br>(2400<br>HOURS)<br>(82074)                          | TIME<br>ON BED<br>FOR<br>BED<br>LOAD<br>SAMPLE<br>(SEC)<br>(04120)         | HORI-<br>ZONTAL<br>WIDTH<br>OF<br>VER-<br>TICAL<br>(FEET)<br>(04121)       | COMPSTD<br>SAMPLES<br>IN<br>X-SEC<br>BEDLOAD<br>MEASMNT<br>(NUM)<br>(04118) | VER-<br>TICALS<br>IN<br>COM-<br>POSITE<br>SAMPLE<br>(NUM)<br>(04119)       | NUMBER<br>OF<br>SAM-<br>PLING<br>POINTS<br>(COUNT)<br>(00063)              |
|-------|--|---|--|--|--|--|--|--|--|---|--|--|
| MAR   |  |   |  |  |  |  |  |  |  |   |  |  |
| 23... | 1540   | 1000  | 1150   | .250   | 0  | 1530   | 1545   | 7  | 3.0  | 2   | 21   | 21   |
| 23... | 1600   | 1000  | 1150   | .250   | 0  | 1550   | 1605   | 6  | 3.0  | 2   | 21   | 21   |
| MAY   |  |   |  |  |  |  |  |  |  |   |  |  |
| 11... | 1555   | 1000  | 1150   | .250   | 0  | 1550   | 1600   | 30   | 2.0  | 2   | 20   | 20   |
| 11... | 1610   | 1000  | 1150   | .250   | 0  | 1605   | 1615   | 30   | 2.0  | 2   | 20   | 20   |
| DATE  | SAMPLE<br>LOC-<br>ATION,<br>CROSS<br>SECTION<br>(FT FM<br>L BANK)<br>(00009) | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | DISCH,<br>BEDLOAD<br>AV UNIT<br>FOR COM<br>POSITE<br>WATER<br>TEMPER-<br>ATURE<br>(DEG C)<br>(00010) | DISCH,<br>BEDLOAD<br>AV UNIT<br>FOR COM<br>POSITE<br>SAMPLE<br>T/D/FT<br>(04122) | SEDI-<br>MENT<br>DIS-<br>CHARGE,<br>BEDLOAD<br>(TONS/<br>DAY)<br>(80225) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.500 MM<br>(80229) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>1.00 MM<br>(80230) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>2.00 MM<br>(80231) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>4.00 MM<br>(80232) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>8.00 MM<br>(80233)  | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>16.0 MM<br>(80234) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>32.0 MM<br>(80235) |
| MAR   |  |   |  |  |  |  |  |  |  |   |  |  |
| 23... | 22.0   | 149   | 17.5   | 4.82   | 259  | 8  | 43   | 76   | 90   | 95  | 98   | 100  |
| 23... | 22.0   | 154   | 17.5   | 3.39   | 259  | 16   | 64   | 90   | 96   | 98  | 99   | 100  |
| MAY   |  |   |  |  |  |  |  |  |  |   |  |  |
| 11... | 4.00   | 39  | 24.0   | 1.28   | 47   | 6  | 46   | 82   | 94   | 97  | 99   | 100  |
| 11... | 4.00   | 39  | 24.0   | 1.06   | 47   | 11   | 58   | 89   | 97   | 98  | 100  | --   |

## 11150500 SALINAS RIVER NEAR BRADLEY, CA

LOCATION.—Lat 35°55'49", long 120°52'04", in SW 1/4 NW 1/4 sec.14, T.23 S., R.10 E., Monterey County, Hydrologic Unit 18060005, on left bank, 6 mi northwest of Bradley, and 7 mi downstream from San Antonio River.

DRAINAGE AREA.—2,535 mi<sup>2</sup>.

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

CHEMICAL DATA: Water years 1958, 1962–66, 1972–75, 1977, 1980, 1981.

SEDIMENT DATA: Water years 1950, 1990.

REVISED RECORDS.—WSP 1285: 1950. WDR CA-84-2: 1978.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 442.69 ft above sea level (levels by U.S. Army Corps of Engineers).

REMARKS.—Records poor. Flow regulated by Santa Margarita Lake beginning in December 1941, usable capacity, 23,000 acre-ft; Lake Nacimiento (formerly Nacimiento Reservoir) beginning in February 1957, usable capacity, 340,000 acre-ft; and Lake San Antonio beginning in December 1965, usable capacity, 330,000 acre-ft. Several small diversions upstream from station. See schematic diagram of Salinas River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 120,000 ft<sup>3</sup>/s, Mar. 11, 1995, gage height, 23.44 ft, from rating curve extended above 50,000 ft<sup>3</sup>/s; no flow at times in 1951, 1954–55, 1957.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1     | 94   | 426   | 279   | 217   | 212   | 113   | 214   | 83    | 487   | 468   | 622   | 584   |
| 2     | 94   | 411   | 262   | 228   | 237   | 113   | 193   | 79    | 462   | 477   | 556   | 569   |
| 3     | 91   | 400   | 181   | 251   | 219   | 117   | 175   | 76    | 463   | 456   | 524   | 600   |
| 4     | 88   | 452   | 167   | 264   | 215   | 133   | 165   | 78    | 483   | 418   | 511   | 608   |
| 5     | 86   | 491   | 183   | 247   | 197   | 124   | 149   | 78    | 530   | 414   | 512   | 615   |
| 6     | 84   | 487   | 208   | 249   | 186   | 124   | 146   | 80    | 491   | 428   | 551   | 602   |
| 7     | 85   | 475   | 205   | 245   | 182   | 120   | 185   | 189   | 492   | 412   | 537   | 574   |
| 8     | 88   | 593   | 191   | 186   | 168   | 105   | 175   | 241   | 376   | 411   | 505   | 550   |
| 9     | 86   | 640   | 186   | 160   | 278   | 96    | 166   | 233   | 389   | 440   | 581   | 554   |
| 10    | 91   | 670   | 214   | 204   | 1130  | 87    | 177   | 242   | 354   | 447   | 627   | 559   |
| 11    | 87   | 551   | 232   | 221   | 805   | 101   | 194   | 243   | 353   | 479   | 644   | 563   |
| 12    | 92   | 567   | 237   | 211   | 594   | 96    | 282   | 228   | 347   | 471   | e620  | 587   |
| 13    | 93   | 484   | 223   | 195   | 991   | 92    | 478   | 261   | 329   | 462   | e600  | 585   |
| 14    | 90   | 385   | 203   | 193   | 1020  | 94    | 399   | 291   | 334   | 457   | e580  | 578   |
| 15    | 87   | 389   | 174   | 206   | 1010  | 125   | 317   | 323   | 332   | 474   | e580  | 577   |
| 16    | 87   | 393   | 171   | 192   | 987   | 136   | 265   | 322   | 336   | 486   | e580  | 403   |
| 17    | 89   | 376   | 204   | 164   | 760   | 132   | 282   | 304   | 370   | 497   | e570  | 252   |
| 18    | 95   | 348   | 209   | 141   | 671   | 122   | 210   | 311   | 360   | 451   | e560  | 172   |
| 19    | 93   | 325   | 213   | 129   | 670   | 141   | 174   | 413   | 345   | 475   | e560  | 127   |
| 20    | 93   | 304   | 201   | 163   | 665   | 160   | 191   | 427   | 330   | 479   | e560  | 93    |
| 21    | 94   | 290   | 176   | 217   | 657   | 252   | 175   | 411   | 335   | 597   | e560  | 66    |
| 22    | 93   | 278   | 170   | 312   | 600   | 627   | 146   | 412   | 344   | 589   | e560  | 54    |
| 23    | 93   | 267   | 183   | 183   | 403   | 396   | 127   | 478   | 349   | 554   | e560  | 53    |
| 24    | 96   | 271   | 229   | 157   | 218   | 343   | 106   | 474   | 351   | 536   | e560  | 52    |
| 25    | 100  | 309   | 242   | 156   | 174   | 318   | 103   | 464   | 338   | 539   | e555  | 47    |
| 26    | 97   | 321   | 246   | 167   | 152   | 439   | 117   | 359   | 339   | 545   | e555  | 46    |
| 27    | 92   | 259   | 218   | 165   | 139   | 435   | 107   | 340   | 376   | 575   | e555  | 44    |
| 28    | 378  | 249   | 230   | 177   | 115   | 360   | 90    | 319   | 354   | 552   | e555  | 45    |
| 29    | 578  | 254   | 242   | 169   | ---   | 298   | 87    | 300   | 358   | 562   | e555  | 43    |
| 30    | 542  | 258   | 234   | 159   | ---   | 244   | 85    | 304   | 428   | 639   | e555  | 43    |
| 31    | 435  | ---   | 224   | 183   | ---   | 226   | ---   | 445   | ---   | 591   | e565  | ---   |
| TOTAL | 4391 | 11923 | 6537  | 6111  | 13655 | 6269  | 5680  | 8808  | 11535 | 15381 | 17515 | 10245 |
| MEAN  | 142  | 397   | 211   | 197   | 488   | 202   | 189   | 284   | 384   | 496   | 565   | 342   |
| MAX   | 578  | 670   | 279   | 312   | 1130  | 627   | 478   | 478   | 530   | 639   | 644   | 615   |
| MIN   | 84   | 249   | 167   | 129   | 115   | 87    | 85    | 76    | 329   | 411   | 505   | 43    |
| AC-FT | 8710 | 23650 | 12970 | 12120 | 27080 | 12430 | 11270 | 17470 | 22880 | 30510 | 34740 | 20320 |

e Estimated.

## 11150500 SALINAS RIVER NEAR BRADLEY, CA—Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1956, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 3.23 | 100  | 752  | 1457 | 685  | 878  | 310  | 139  | 21.1 | 3.41 | 2.03 | 1.74 |
| MAX  | 4.04 | 742  | 2319 | 5372 | 1449 | 2724 | 580  | 249  | 55.3 | 6.26 | 4.16 | 4.46 |
| (WY) | 1951 | 1951 | 1956 | 1952 | 1950 | 1952 | 1952 | 1955 | 1956 | 1953 | 1952 | 1952 |
| MIN  | 1.64 | 4.40 | 11.0 | 140  | 238  | 293  | 87.4 | 40.7 | 7.87 | 1.64 | .000 | .000 |
| (WY) | 1955 | 1956 | 1954 | 1949 | 1953 | 1950 | 1951 | 1949 | 1950 | 1951 | 1955 | 1955 |

## SUMMARY STATISTICS

## WATER YEARS 1949 - 1956

|                          |        |
|--------------------------|--------|
| ANNUAL MEAN              | 363    |
| HIGHEST ANNUAL MEAN      | 945    |
| LOWEST ANNUAL MEAN       | 152    |
| HIGHEST DAILY MEAN       | 22000  |
| LOWEST DAILY MEAN        | .00    |
| ANNUAL SEVEN-DAY MINIMUM | .00    |
| INSTANTANEOUS PEAK FLOW  | 26800  |
| INSTANTANEOUS PEAK STAGE | 12.35  |
| ANNUAL RUNOFF (AC-FT)    | 263100 |
| 10 PERCENT EXCEEDS       | 745    |
| 50 PERCENT EXCEEDS       | 16     |
| 90 PERCENT EXCEEDS       | 1.6    |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB   | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|-------|------|------|------|------|------|------|------|
| MEAN | 278  | 164  | 216  | 752  | 1552  | 1019 | 477  | 317  | 393  | 471  | 504  | 432  |
| MAX  | 632  | 559  | 2152 | 7066 | 10180 | 7044 | 5642 | 1792 | 845  | 683  | 770  | 743  |
| (WY) | 1970 | 1983 | 1983 | 1997 | 1998  | 1995 | 1958 | 1983 | 1994 | 1994 | 1991 | 1969 |
| MIN  | 3.00 | 5.00 | 7.58 | 9.26 | 10.6  | 16.3 | 12.1 | 4.50 | 2.98 | .84  | .37  | 1.47 |
| (WY) | 1962 | 1962 | 1991 | 1991 | 1991  | 1990 | 1990 | 1961 | 1990 | 1990 | 1990 | 1990 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1958 - 1999

|                          |        |        |        |
|--------------------------|--------|--------|--------|
| ANNUAL TOTAL             | 445960 | 118050 |        |
| ANNUAL MEAN              | 1222   | 323    | 542    |
| HIGHEST ANNUAL MEAN      |        |        | 1997   |
| LOWEST ANNUAL MEAN       |        |        | 9.39   |
| HIGHEST DAILY MEAN       | 22000  | Feb 8  | 1130   |
| LOWEST DAILY MEAN        | 52     | Jan 1  | 43     |
| ANNUAL SEVEN-DAY MINIMUM | 80     | Jan 1  | 46     |
| INSTANTANEOUS PEAK FLOW  |        |        | 1890   |
| INSTANTANEOUS PEAK STAGE |        |        | 6.05   |
| ANNUAL RUNOFF (AC-FT)    | 884600 | 234200 | 393000 |
| 10 PERCENT EXCEEDS       | 1540   | 580    | 670    |
| 50 PERCENT EXCEEDS       | 411    | 278    | 310    |
| 90 PERCENT EXCEEDS       | 96     | 93     | 23     |

## 11151300 SAN LORENZO CREEK BELOW BITTERWATER CREEK, NEAR KING CITY, CA

LOCATION.—Lat 36°16'05", long 121°03'55", in NE 1/4 sec.23, T.19 S., R.8 E., Monterey County, Hydrologic Unit 18060005, on left bank, 1.3 mi downstream from Bitterwater Creek, 5 mi northeast of King City, and 10 mi upstream from mouth.

DRAINAGE AREA.—233 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1958 to current year.

CHEMICAL DATA: Water year 1977.

REVISED RECORDS.—WDR CA-85-2: 1969–84(M).

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 431.48 ft above sea level. October 1958 to Apr. 24, 1967, at site 500 ft upstream at datum 5.00 ft higher. Apr. 25, 1967, to July 12, 1981, at site 200 ft upstream.

REMARKS.—Records poor. No regulation; small diversions upstream from station by ranchers and sand-processing plant. See schematic diagram of Salinas River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 11,500 ft<sup>3</sup>/s, Jan. 25, 1969, gage height, 15.33 ft, in gage well, 16.2 ft, from floodmarks, from rating curve extended above 7,100 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow for many days in 1961 and 1973.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 250 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Apr. 12 | 0545 | 392                               | 4.47                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN  | JUL  | AUG  | SEP  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|
| 1     | 6.0   | 5.8   | 17    | 8.9   | 16    | 8.0   | 13    | 6.8   | 2.9  | 2.2  | 1.8  | 2.2  |
| 2     | 5.9   | 5.9   | 14    | 9.0   | 12    | 7.8   | 13    | 6.8   | 3.0  | 2.5  | 1.8  | 2.3  |
| 3     | 5.9   | 6.0   | 11    | 8.9   | 11    | 7.7   | 12    | 7.0   | 3.2  | 2.8  | 1.8  | 2.3  |
| 4     | 7.0   | 6.1   | 11    | 9.0   | 10    | 7.9   | 13    | 6.7   | 3.2  | 2.8  | 1.8  | 2.3  |
| 5     | 6.3   | 6.2   | 10    | 9.1   | 9.8   | 7.8   | 13    | 6.4   | 3.3  | 2.8  | 2.0  | 2.4  |
| 6     | 6.4   | 6.2   | 11    | 9.3   | 9.8   | 7.9   | 30    | 5.7   | 3.2  | 2.8  | 2.0  | 2.4  |
| 7     | 6.0   | 6.7   | 11    | 9.5   | 11    | 7.9   | 49    | 5.2   | 3.1  | 2.8  | 2.3  | 2.3  |
| 8     | 6.0   | 7.4   | 10    | 9.6   | 12    | 7.9   | 38    | 5.1   | 3.1  | 2.9  | 2.3  | 2.3  |
| 9     | 5.7   | 7.7   | 9.6   | 9.6   | 36    | 9.5   | 45    | 4.9   | 3.1  | 2.8  | 2.3  | 2.3  |
| 10    | 5.8   | 8.6   | 9.4   | 9.4   | 58    | 10    | 29    | 4.7   | 3.2  | 2.8  | 2.5  | 2.3  |
| 11    | 6.0   | 12    | 9.3   | 9.4   | 15    | 9.4   | 28    | 4.5   | 3.0  | 2.8  | 2.3  | 2.3  |
| 12    | 7.8   | 11    | 9.2   | 9.8   | 11    | 8.7   | 177   | 4.5   | 2.9  | 2.6  | 2.3  | 2.3  |
| 13    | 7.8   | 8.8   | 9.5   | 9.9   | 9.4   | 7.3   | 70    | 4.4   | 2.8  | 2.3  | 2.2  | 2.4  |
| 14    | 6.4   | 7.6   | 9.8   | 9.9   | 9.2   | 6.6   | 33    | 4.3   | 2.8  | 2.3  | 2.2  | 2.4  |
| 15    | 6.4   | 7.2   | 9.7   | 9.7   | 9.2   | 9.5   | 19    | 4.2   | 2.7  | 2.2  | 2.3  | 2.4  |
| 16    | 6.5   | 7.7   | 9.4   | 9.9   | 9.2   | 14    | 14    | 4.3   | 2.4  | 1.9  | 2.3  | 2.3  |
| 17    | 7.6   | 8.6   | 9.3   | 9.6   | 9.2   | 11    | 11    | 4.4   | 2.5  | 1.9  | 2.2  | 2.3  |
| 18    | 6.5   | 9.4   | 9.1   | 9.3   | 8.9   | 8.4   | 10    | 4.4   | 2.4  | 1.9  | 2.2  | 2.3  |
| 19    | 8.2   | 9.2   | 9.0   | 9.6   | 8.3   | 9.8   | 9.4   | 4.4   | 2.4  | 2.0  | 2.4  | 2.3  |
| 20    | 6.8   | 8.9   | 9.5   | 12    | 8.3   | 30    | 8.6   | 4.4   | 2.3  | 2.1  | 2.2  | 2.3  |
| 21    | 6.4   | 8.6   | 9.3   | 13    | 15    | 48    | 8.2   | 3.5   | 2.2  | 2.1  | 2.2  | 2.4  |
| 22    | 6.1   | 8.7   | 8.4   | 12    | 12    | 38    | 8.0   | 3.7   | 2.3  | 2.0  | 2.2  | 2.5  |
| 23    | 6.2   | 8.6   | 8.1   | 11    | 9.0   | 20    | 7.8   | 3.8   | 2.2  | 1.8  | 2.3  | 2.6  |
| 24    | 9.7   | 8.8   | 8.2   | 13    | 8.1   | 14    | 7.4   | 4.7   | 2.2  | 1.9  | 2.3  | 2.8  |
| 25    | 14    | 8.7   | 8.6   | 14    | 8.1   | 17    | 7.1   | 4.7   | 2.0  | 2.0  | 2.3  | 2.9  |
| 26    | 9.8   | 8.6   | 8.8   | 16    | 8.4   | 20    | 6.9   | 4.3   | 2.0  | 1.8  | 2.3  | 2.8  |
| 27    | 8.1   | 9.0   | 9.0   | 15    | 8.3   | 15    | 6.7   | 4.2   | 2.1  | 1.7  | 2.4  | 2.5  |
| 28    | 7.2   | 11    | 9.4   | 13    | 8.1   | 12    | 6.7   | 3.6   | 2.1  | 1.7  | 2.4  | 2.4  |
| 29    | 6.0   | 10    | 9.1   | 11    | ---   | 11    | 6.8   | 3.2   | 2.0  | 1.7  | 2.4  | 2.5  |
| 30    | 5.8   | 11    | 9.1   | 10    | ---   | 11    | 7.0   | 3.0   | 2.0  | 1.7  | 2.3  | 2.5  |
| 31    | 5.9   | ---   | 9.1   | 15    | ---   | 11    | ---   | 2.9   | ---  | 1.7  | 2.3  | ---  |
| TOTAL | 216.2 | 250.0 | 304.9 | 334.4 | 360.3 | 414.1 | 707.6 | 144.7 | 78.6 | 69.3 | 68.6 | 72.3 |
| MEAN  | 6.97  | 8.33  | 9.84  | 10.8  | 12.9  | 13.4  | 23.6  | 4.67  | 2.62 | 2.24 | 2.21 | 2.41 |
| MAX   | 14    | 12    | 17    | 16    | 58    | 48    | 177   | 7.0   | 3.3  | 2.9  | 2.5  | 2.9  |
| MIN   | 5.7   | 5.8   | 8.1   | 8.9   | 8.1   | 6.6   | 6.7   | 2.9   | 2.0  | 1.7  | 1.8  | 2.2  |
| AC-FT | 429   | 496   | 605   | 663   | 715   | 821   | 1400  | 287   | 156  | 137  | 136  | 143  |

## 11151300 SAN LORENZO CREEK BELOW BITTERWATER CREEK, NEAR KING CITY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 1.88 | 4.12 | 11.0 | 43.0 | 60.4 | 45.8 | 16.7 | 6.44 | 2.67 | 1.28 | .82  | 1.28 |
| MAX  | 20.0 | 34.7 | 62.6 | 401  | 583  | 422  | 113  | 90.1 | 33.9 | 15.0 | 7.26 | 17.9 |
| (WY) | 1977 | 1966 | 1967 | 1969 | 1998 | 1995 | 1983 | 1998 | 1998 | 1983 | 1983 | 1976 |
| MIN  | .053 | .058 | .073 | .065 | .25  | .59  | .19  | .070 | .040 | .050 | .000 | .030 |
| (WY) | 1991 | 1991 | 1991 | 1991 | 1991 | 1964 | 1964 | 1992 | 1961 | 1992 | 1973 | 1992 |

## SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1959 - 1999

|                          |         |        |       |             |
|--------------------------|---------|--------|-------|-------------|
| ANNUAL TOTAL             | 29110.4 | 3021.0 |       |             |
| ANNUAL MEAN              | 79.8    | 8.28   | 16.1  |             |
| HIGHEST ANNUAL MEAN      |         |        | 81.4  | 1998        |
| LOWEST ANNUAL MEAN       |         |        | .66   | 1968        |
| HIGHEST DAILY MEAN       | 2760    | Feb 3  | 5860  | Mar 10 1995 |
| LOWEST DAILY MEAN        | 3.1     | Aug 13 | .00   | Jun 12 1961 |
| ANNUAL SEVEN-DAY MINIMUM | 3.4     | Sep 8  | .00   | Jun 12 1961 |
| INSTANTANEOUS PEAK FLOW  |         |        | 392   | Apr 12      |
| INSTANTANEOUS PEAK STAGE |         |        | 4.47  | Apr 12      |
| ANNUAL RUNOFF (AC-FT)    | 57740   | 5990   | 11640 |             |
| 10 PERCENT EXCEEDS       | 146     | 13     | 20    |             |
| 50 PERCENT EXCEEDS       | 21      | 6.8    | 1.4   |             |
| 90 PERCENT EXCEEDS       | 5.7     | 2.2    | .10   |             |

## 11151700 SALINAS RIVER AT SOLEDAD, CA

LOCATION.—Lat 36°24'40", long 121°19'06", on boundary between San Vicente and Los Coches Grants, Monterey County, Hydrologic Unit 18060005, near right bank, on upstream end of pier on U.S. Highway 101, 0.9 mi south of Soledad, and 1 mi upstream from Arroyo Seco.

DRAINAGE AREA.—3,563 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1968 to September 1978, October 1983 to current year.

CHEMICAL DATA: Water years 1972–75, 1977.

SEDIMENT DATA: Water years 1990, 1992.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 150.61 ft above sea level.

REMARKS.—Records poor. Flow regulated by Santa Margarita Lake beginning in December 1941, usable capacity, 23,000 acre-ft; Lake Nacimiento (formerly Nacimiento Reservoir) beginning in February 1957, usable capacity, 340,000 acre-ft; and by Lake San Antonio beginning in December 1965, usable capacity, 330,000 acre-ft. Several small diversions for irrigation upstream from station. See schematic diagram of Salinas River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 106,000 ft<sup>3</sup>/s, Feb. 25, 1969, gage height, 23.31 ft; maximum gage height, 26.49 ft, Mar. 11, 1995; no flow at times in some years.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

## DAILY MEAN VALUES (Not previously published)

| DAY   | OCT   | NOV   | DEC    | JAN   | FEB    | MAR    | APR   | MAY   | JUN   | JUL   | AUG   | SEP  |
|-------|-------|-------|--------|-------|--------|--------|-------|-------|-------|-------|-------|------|
| 1     | e7.0  | e3.2  | e3.9   | e25   | e700   | e6700  | 1740  | 129   | 346   | e600  | e340  | e117 |
| 2     | e6.3  | e3.3  | e3.9   | e23   | e1400  | e6000  | e1800 | 113   | 293   | e590  | e320  | e110 |
| 3     | e5.7  | e3.5  | e3.9   | e22   | e7900  | e5500  | e2000 | 108   | 260   | e600  | e315  | e106 |
| 4     | e5.2  | e3.7  | e60    | e27   | e16200 | e4700  | e2400 | 109   | 221   | e590  | e270  | e104 |
| 5     | e4.9  | e3.9  | 32     | e38   | e9250  | e3800  | e2300 | 143   | 192   | e590  | e220  | e102 |
| 6     | e4.6  | e4.1  | 14     | e64   | e9500  | e3000  | e2100 | 947   | 177   | e580  | e190  | e100 |
| 7     | e4.4  | e4.0  | 5.2    | e105  | e17200 | e2400  | 2060  | 1500  | 170   | e550  | e185  | e100 |
| 8     | e4.2  | e4.1  | 8.9    | e104  | e27000 | e2000  | 1660  | 1430  | 173   | e500  | e180  | e101 |
| 9     | e4.1  | e4.1  | 304    | e130  | e18600 | e1750  | 1380  | 1000  | 152   | e450  | e175  | e110 |
| 10    | e4.0  | e4.0  | 291    | e155  | e11000 | e1600  | 1170  | 737   | 136   | e420  | e180  | e125 |
| 11    | e3.9  | e4.0  | 272    | e135  | e9400  | e1000  | 1140  | 563   | 123   | e400  | e180  | e145 |
| 12    | e3.8  | e3.9  | e220   | e110  | e8000  | 510    | 1080  | 470   | 112   | e385  | e180  | e145 |
| 13    | e3.7  | e3.9  | e185   | e210  | e7500  | 426    | 1150  | 409   | 98    | e385  | e181  | e140 |
| 14    | e3.6  | e3.9  | e150   | e375  | e8300  | 349    | 1220  | 364   | 95    | e390  | e182  | e138 |
| 15    | e3.6  | e3.8  | e130   | e500  | e13000 | 308    | 1060  | 491   | 76    | e370  | e181  | e135 |
| 16    | e3.5  | e3.8  | e120   | e1000 | e11500 | 283    | 917   | 406   | 59    | e360  | e181  | e130 |
| 17    | e3.5  | e3.8  | e105   | e700  | e11000 | 241    | 774   | 306   | 56    | e350  | e180  | e128 |
| 18    | e3.4  | e3.8  | e96    | e350  | e11500 | 203    | 583   | 244   | 125   | e340  | e179  | e120 |
| 19    | e3.4  | e4.0  | e88    | e950  | e9900  | 206    | 519   | 188   | e200  | e320  | e177  | e105 |
| 20    | e3.3  | e4.2  | e75    | e1200 | e11000 | 198    | 474   | 166   | e240  | e320  | e160  | e90  |
| 21    | e3.3  | e4.3  | e66    | e850  | e10000 | 177    | 420   | 147   | e260  | e330  | e155  | e70  |
| 22    | e3.3  | e4.3  | e59    | e550  | e15500 | 155    | 364   | 133   | e290  | e320  | e148  | e50  |
| 23    | e3.2  | e4.2  | e52    | e400  | e15000 | 136    | 300   | 114   | e310  | e320  | e139  | e40  |
| 24    | e3.3  | e4.1  | e47    | e340  | e15500 | 145    | 258   | 103   | e305  | e330  | e133  | e33  |
| 25    | e3.2  | e4.1  | e43    | e310  | e12000 | 297    | 229   | 90    | e280  | e350  | e130  | e28  |
| 26    | e3.2  | e4.3  | e40    | e295  | e9600  | 1310   | 207   | 173   | e290  | e340  | e128  | e26  |
| 27    | e3.2  | e4.2  | e36    | e280  | e8000  | 2100   | 191   | 506   | e300  | e330  | e130  | e25  |
| 28    | e3.2  | e4.0  | e33    | e270  | e7200  | 1590   | 170   | 669   | e410  | e350  | e131  | e23  |
| 29    | e3.1  | e4.0  | e31    | e290  | ---    | 1400   | 153   | 575   | e560  | e340  | e132  | e21  |
| 30    | e3.1  | e3.9  | e29    | e340  | ---    | 1370   | 139   | 471   | e600  | e340  | e127  | e20  |
| 31    | e3.2  | ---   | e27    | e330  | ---    | 1180   | ---   | 370   | ---   | e340  | e120  | ---  |
| TOTAL | 121.4 | 118.4 | 2630.8 | 10478 | 312650 | 51034  | 29958 | 13174 | 6909  | 12780 | 5629  | 2687 |
| MEAN  | 3.92  | 3.95  | 84.9   | 338   | 11170  | 1646   | 999   | 425   | 230   | 412   | 182   | 89.6 |
| MAX   | 7.0   | 4.3   | 304    | 1200  | 27000  | 6700   | 2400  | 1500  | 600   | 600   | 340   | 145  |
| MIN   | 3.1   | 3.2   | 3.9    | 22    | 700    | 136    | 139   | 90    | 56    | 320   | 120   | 20   |
| AC-FT | 241   | 235   | 5220   | 20780 | 620100 | 101200 | 59420 | 26130 | 13700 | 25350 | 11170 | 5330 |

e Estimated.

## 11151700 SALINAS RIVER AT SOLEDAD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1998, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB   | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|-------|------|------|------|------|------|------|------|
| MEAN | 174  | 118  | 153  | 944  | 1833  | 1231 | 307  | 138  | 148  | 160  | 159  | 189  |
| MAX  | 488  | 336  | 876  | 6383 | 11170 | 8695 | 1834 | 661  | 456  | 412  | 327  | 478  |
| (WY) | 1970 | 1970 | 1984 | 1997 | 1998  | 1995 | 1969 | 1969 | 1969 | 1998 | 1969 | 1969 |
| MIN  | .000 | .000 | .000 | .000 | .000  | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1990 | 1990 | 1990 | 1990 | 1990  | 1990 | 1990 | 1990 | 1990 | 1990 | 1990 | 1990 |

| SUMMARY STATISTICS       | FOR 1997 CALENDAR YEAR |        | FOR 1998 WATER YEAR |        | WATER YEARS 1969 - 1998 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 317775.1               |        | 448169.6            |        |                         |             |
| ANNUAL MEAN              | 871                    |        | 1228                |        | 456                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 1981                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | .000                    |             |
| HIGHEST DAILY MEAN       | 17800                  | Jan 27 | 27000               | Feb 8  | 68300                   | Feb 25 1969 |
| LOWEST DAILY MEAN        | 3.1                    | Oct 29 | 3.1                 | Oct 29 | .00                     | Mar 9 1977  |
| ANNUAL SEVEN-DAY MINIMUM | 3.2                    | Oct 25 | 3.2                 | Oct 25 | .00                     | Mar 9 1977  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 35600               | Feb 8  | 106000                  | Feb 25 1969 |
| INSTANTANEOUS PEAK STAGE |                        |        | 17.87               | Feb 8  | 26.49                   | Mar 11 1995 |
| ANNUAL RUNOFF (AC-FT)    | 630300                 |        | 888900              |        | 330000                  |             |
| 10 PERCENT EXCEEDS       | 2480                   |        | 2100                |        | 540                     |             |
| 50 PERCENT EXCEEDS       | 180                    |        | 181                 |        | 130                     |             |
| 90 PERCENT EXCEEDS       | 3.9                    |        | 3.9                 |        | .00                     |             |

SALINAS RIVER BASIN  
11151700 SALINAS RIVER AT SOLEDAD, CA—Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR  | MAY  | JUN   | JUL   | AUG   | SEP    |
|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|--------|
| 1     | e17   | e180  | e275  | e192  | e210  | e210  | 167  | 47   | 201   | 126   | 211   | 249    |
| 2     | e14   | e320  | e235  | e188  | e235  | e195  | 145  | 45   | 220   | 156   | 209   | 239    |
| 3     | e11   | e320  | e215  | e183  | e214  | 183   | 129  | 44   | 219   | 174   | 195   | 239    |
| 4     | e8.5  | e320  | e195  | e208  | e210  | 172   | 123  | 39   | 215   | 196   | 186   | 250    |
| 5     | e7.0  | e330  | e185  | e210  | e195  | 165   | 124  | 36   | 222   | 208   | 173   | 270    |
| 6     | e6.0  | e340  | e160  | e203  | e180  | 159   | 122  | 31   | 239   | 198   | 172   | 294    |
| 7     | e5.4  | e350  | e180  | e175  | e162  | 149   | 115  | 28   | 249   | 187   | 192   | 299    |
| 8     | e4.8  | e350  | e181  | e160  | e125  | 147   | 125  | 26   | 244   | 166   | 223   | 290    |
| 9     | e4.4  | e340  | e173  | e153  | e300  | 146   | 137  | 25   | 222   | 150   | 251   | 254    |
| 10    | e4.0  | e370  | e160  | e160  | e1100 | 142   | 136  | 24   | 173   | 141   | 259   | 239    |
| 11    | e3.6  | e400  | e165  | e170  | e800  | 139   | 140  | 28   | 160   | 146   | 250   | 231    |
| 12    | e3.3  | e425  | e180  | e171  | e590  | 135   | 142  | 34   | 153   | 163   | 251   | 234    |
| 13    | e3.1  | e420  | e190  | e171  | e510  | 133   | 250  | 39   | 159   | 164   | 247   | 258    |
| 14    | e2.9  | e380  | e180  | e160  | e444  | 133   | 243  | 46   | 172   | 152   | 243   | 257    |
| 15    | e2.7  | e365  | e171  | e158  | e587  | 156   | 262  | 59   | 174   | 146   | 228   | 252    |
| 16    | e2.6  | e355  | e171  | e145  | e644  | 157   | 223  | 74   | 166   | 147   | 206   | 239    |
| 17    | e2.5  | e340  | e180  | e135  | e665  | 153   | 179  | 87   | 163   | 146   | 194   | 182    |
| 18    | e2.5  | e320  | e190  | e130  | e643  | 151   | 155  | 89   | 157   | 155   | 181   | 87     |
| 19    | e2.4  | e295  | e194  | e122  | e554  | 160   | 140  | 94   | 155   | 176   | 157   | 41     |
| 20    | e2.3  | e275  | e190  | e118  | e505  | 175   | 122  | 108  | 152   | 175   | 154   | 21     |
| 21    | e2.2  | e265  | e180  | e230  | e501  | 178   | 109  | 145  | 160   | 164   | 152   | 15     |
| 22    | e2.2  | e250  | e180  | e210  | e503  | 167   | 101  | 162  | 159   | 175   | 167   | 13     |
| 23    | e2.1  | e240  | e180  | e170  | e498  | 228   | 91   | 173  | 147   | 190   | 195   | 12     |
| 24    | e2.1  | e230  | e190  | e130  | e474  | 295   | 81   | 199  | 133   | 183   | 192   | 11     |
| 25    | e2.1  | e230  | e198  | e200  | e389  | 294   | 74   | 234  | 122   | 193   | 181   | 9.2    |
| 26    | e2.0  | e250  | e202  | e180  | e292  | 289   | 71   | 249  | 119   | 212   | 175   | 9.6    |
| 27    | e2.0  | e250  | e201  | e150  | e247  | 269   | 65   | 227  | 126   | 208   | 177   | 9.8    |
| 28    | e2.0  | e250  | e183  | e170  | e230  | 299   | 61   | 196  | 149   | 204   | 187   | 6.4    |
| 29    | e1.9  | e250  | e190  | e160  | ---   | 267   | 59   | 183  | 148   | 214   | 208   | 4.1    |
| 30    | e1.9  | e250  | e200  | e150  | ---   | 222   | 53   | 178  | 126   | 209   | 241   | 2.4    |
| 31    | e10   | ---   | e209  | e185  | ---   | 192   | ---  | 190  | ---   | 203   | 248   | ---    |
| TOTAL | 140.5 | 9260  | 5883  | 5247  | 12007 | 5860  | 3944 | 3139 | 5204  | 5427  | 6305  | 4517.5 |
| MEAN  | 4.53  | 309   | 190   | 169   | 429   | 189   | 131  | 101  | 173   | 175   | 203   | 151    |
| MAX   | 17    | 425   | 275   | 230   | 1100  | 299   | 262  | 249  | 249   | 214   | 259   | 299    |
| MIN   | 1.9   | 180   | 160   | 118   | 125   | 133   | 53   | 24   | 119   | 126   | 152   | 2.4    |
| AC-FT | 279   | 18370 | 11670 | 10410 | 23820 | 11620 | 7820 | 6230 | 10320 | 10760 | 12510 | 8960   |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB   | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|-------|------|------|------|------|------|------|------|
| MEAN | 168  | 126  | 154  | 914  | 1780  | 1191 | 300  | 137  | 149  | 160  | 160  | 188  |
| MAX  | 488  | 336  | 876  | 6383 | 11170 | 8695 | 1834 | 661  | 456  | 412  | 327  | 478  |
| (WY) | 1970 | 1970 | 1984 | 1997 | 1998  | 1995 | 1969 | 1969 | 1969 | 1998 | 1969 | 1969 |
| MIN  | .000 | .000 | .000 | .000 | .000  | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1990 | 1990 | 1990 | 1990 | 1990  | 1990 | 1990 | 1990 | 1990 | 1990 | 1990 | 1990 |

SUMMARY STATISTICS

|                          | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1969 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 460582.5               |        | 66934.0             |        |                         |             |
| ANNUAL MEAN              | 1262                   |        | 183                 |        | 445                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 1981                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | .000                    |             |
| HIGHEST DAILY MEAN       | 27000                  | Feb 8  | 1100                | Feb 10 | 68300                   | Feb 25 1969 |
| LOWEST DAILY MEAN        | 1.9                    | Oct 29 | 1.9                 | Oct 29 | .00                     | Mar 9 1977  |
| ANNUAL SEVEN-DAY MINIMUM | 2.0                    | Oct 24 | 2.0                 | Oct 24 | .00                     | Mar 9 1977  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 1700                |        | 106000                  |             |
| INSTANTANEOUS PEAK STAGE |                        |        |                     |        | 26.49                   |             |
| ANNUAL RUNOFF (AC-FT)    | 913600                 |        | 132800              |        | 322400                  |             |
| 10 PERCENT EXCEEDS       | 2100                   |        | 297                 |        | 516                     |             |
| 50 PERCENT EXCEEDS       | 250                    |        | 175                 |        | 133                     |             |
| 90 PERCENT EXCEEDS       | 24                     |        | 12                  |        | .00                     |             |

e Estimated.



## 11152000 ARROYO SECO NEAR SOLEDAD, CA

LOCATION.—Lat 36°16'50", long 121°19'18", in SW 1/4 NE 1/4 sec.16, T.19 S., R.6 E., Monterey County, Hydrologic Unit 18060005, on right bank, under county road bridge, 1.5 mi downstream from Vaquero Creek, and 10 mi south of Soledad.

DRAINAGE AREA.—244 mi<sup>2</sup>.

PERIOD OF RECORD.—November 1901 to current year. Records for water year 1902 incomplete; yearly estimate published in WSP 1315-B.

REVISED RECORDS.—WSP 881: 1902–9 (yearly summary only). WSP 1565: 1916–19, 1920–21(M), 1922, 1926–27, 1928–30(M), 1932, 1934, 1936(M). WSP 1715: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 339.20 ft above sea level. Prior to June 16, 1929, nonrecording gage, and June 16, 1929, to Dec. 2, 1941, water-stage recorder at site 1 mi upstream at different datum. Dec. 3, 1941, to Sept. 30, 1959, water-stage recorder at datum 2.00 ft higher. Jan. 30 to Mar. 26, 1969, nonrecording gage at bridge at same datum.

REMARKS.—Records fair. No regulation or large diversion upstream from station. Low flows affected by upstream gravel mining and irrigation during summer months. See schematic diagram of Salinas River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 28,300 ft<sup>3</sup>/s, Apr. 3, 1958, gage height, 16.40 ft, datum then in use, from rating curve extended above 12,000 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 16.30 ft, maximum gage height, 16.44 ft, Mar. 10, 1995; no flow at times during several years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 2,500 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 1245 | 5,820                             | 7.22                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN  | FEB   | MAR   | APR   | MAY  | JUN  | JUL   | AUG    | SEP   |
|-------|------|------|------|------|-------|-------|-------|------|------|-------|--------|-------|
| 1     | 36   | 35   | 404  | 36   | 396   | 107   | 217   | 105  | 48   | 12    | 1.7    | .34   |
| 2     | 36   | 35   | 121  | 36   | 255   | 104   | 195   | 102  | 46   | 11    | 1.4    | .05   |
| 3     | 33   | 36   | 81   | 35   | 196   | 102   | 173   | 101  | 48   | 10    | 1.1    | .00   |
| 4     | 28   | 36   | 80   | 29   | 163   | 101   | 166   | 99   | 51   | 11    | 2.6    | .00   |
| 5     | 23   | 35   | 68   | 29   | 141   | 96    | 153   | 95   | 48   | 12    | 2.5    | 1.5   |
| 6     | 23   | 36   | 74   | 30   | 125   | 93    | 253   | 92   | 45   | 12    | 1.7    | 1.8   |
| 7     | 21   | 37   | 73   | 30   | 348   | 90    | 220   | 88   | 39   | 11    | 2.0    | 2.0   |
| 8     | 21   | 54   | 63   | 30   | 582   | 88    | 227   | 84   | 38   | 8.6   | 2.7    | .98   |
| 9     | 22   | 54   | 59   | 30   | 2360  | 166   | 267   | 77   | 36   | 8.2   | 4.7    | 1.2   |
| 10    | 24   | 48   | 57   | 30   | 1130  | 143   | 227   | 70   | 35   | 7.9   | 6.4    | 1.7   |
| 11    | 25   | 61   | 56   | 30   | 575   | 130   | 611   | 70   | 33   | 7.8   | 6.9    | 1.1   |
| 12    | 25   | 66   | 52   | 30   | 382   | 124   | 616   | 68   | 32   | 5.9   | 7.4    | 2.0   |
| 13    | 25   | 55   | 50   | 30   | 294   | 115   | 439   | 65   | 31   | 4.5   | 7.6    | 2.0   |
| 14    | 25   | 50   | 48   | 30   | 242   | 109   | 366   | 62   | 29   | 5.1   | 6.3    | 1.3   |
| 15    | 28   | 48   | 47   | 30   | 209   | 145   | 314   | 60   | 27   | 4.3   | 5.4    | 1.6   |
| 16    | 27   | 47   | 47   | 32   | 184   | 139   | 267   | 64   | 26   | 4.1   | 4.1    | 1.6   |
| 17    | 27   | 45   | 45   | 33   | 172   | 128   | 234   | 68   | 27   | 4.7   | 4.5    | .66   |
| 18    | 27   | 45   | 44   | 34   | 154   | 121   | 216   | 65   | 25   | 4.2   | 3.6    | .30   |
| 19    | 27   | 46   | 42   | 53   | 144   | 162   | 198   | 62   | 24   | 3.1   | 3.4    | .62   |
| 20    | 26   | 46   | 42   | 868  | 134   | 252   | 180   | 60   | 23   | 2.7   | 3.0    | 2.1   |
| 21    | 26   | 45   | 43   | 457  | 161   | 320   | 166   | 59   | 21   | 2.5   | 2.0    | 2.1   |
| 22    | 26   | 44   | 41   | 205  | 145   | 258   | 158   | 58   | 20   | 4.0   | 2.4    | 3.1   |
| 23    | 26   | 43   | 40   | 221  | 134   | 265   | 150   | 55   | 20   | 3.8   | 1.6    | 4.3   |
| 24    | 27   | 46   | 40   | 314  | 128   | 237   | 143   | 54   | 19   | 4.3   | 1.8    | 4.4   |
| 25    | 37   | 60   | 40   | 194  | 129   | 962   | 132   | 53   | 18   | 4.0   | 3.2    | 5.2   |
| 26    | 40   | 56   | 39   | 181  | 125   | 633   | 128   | 52   | 17   | 3.5   | 2.4    | 5.7   |
| 27    | 37   | 56   | 39   | 245  | 118   | 461   | 121   | 51   | 15   | 3.9   | 1.9    | 4.2   |
| 28    | 36   | 105  | 39   | 170  | 111   | 364   | 117   | 50   | 14   | 4.0   | 1.3    | 2.5   |
| 29    | 36   | 98   | 39   | 139  | ---   | 300   | 115   | 47   | 13   | 3.5   | 1.9    | 3.4   |
| 30    | 36   | 275  | 38   | 123  | ---   | 257   | 110   | 50   | 12   | 2.1   | 2.0    | 3.4   |
| 31    | 36   | ---  | 37   | 516  | ---   | 247   | ---   | 49   | ---  | 1.5   | .56    | ---   |
| TOTAL | 892  | 1743 | 1988 | 4250 | 9237  | 6819  | 6879  | 2135 | 880  | 187.2 | 100.06 | 61.15 |
| MEAN  | 28.8 | 58.1 | 64.1 | 137  | 330   | 220   | 229   | 68.9 | 29.3 | 6.04  | 3.23   | 2.04  |
| MAX   | 40   | 275  | 404  | 868  | 2360  | 962   | 616   | 105  | 51   | 12    | 7.6    | 5.7   |
| MIN   | 21   | 35   | 37   | 29   | 111   | 88    | 110   | 47   | 12   | 1.5   | .56    | .00   |
| AC-FT | 1770 | 3460 | 3940 | 8430 | 18320 | 13530 | 13640 | 4230 | 1750 | 371   | 198    | 121   |

## SALINAS RIVER BASIN

## 11152000 ARROYO SECO NEAR SOLEDAD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1902 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 9.40 | 54.0 | 167  | 396  | 584  | 453  | 255  | 95.2 | 40.1 | 15.1 | 6.02 | 4.89 |
| MAX  | 75.5 | 650  | 1161 | 2425 | 2697 | 2344 | 2043 | 644  | 208  | 97.4 | 54.5 | 38.8 |
| (WY) | 1905 | 1927 | 1956 | 1914 | 1998 | 1983 | 1958 | 1983 | 1998 | 1998 | 1983 | 1978 |
| MIN  | .000 | .000 | 2.87 | 5.95 | 8.98 | 18.5 | 7.82 | 4.14 | .66  | .000 | .000 | .000 |
| (WY) | 1914 | 1991 | 1991 | 1991 | 1991 | 1977 | 1977 | 1977 | 1924 | 1924 | 1913 | 1913 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1902 - 1999

|                          |        |        |          |  |  |  |  |  |       |       |        |             |
|--------------------------|--------|--------|----------|--|--|--|--|--|-------|-------|--------|-------------|
| ANNUAL TOTAL             | 158820 |        | 35171.41 |  |  |  |  |  |       |       |        |             |
| ANNUAL MEAN              | 435    |        | 96.4     |  |  |  |  |  | 171   |       |        |             |
| HIGHEST ANNUAL MEAN      |        |        |          |  |  |  |  |  | 709   |       |        | 1983        |
| LOWEST ANNUAL MEAN       |        |        |          |  |  |  |  |  | 6.97  |       |        | 1977        |
| HIGHEST DAILY MEAN       | 9490   | Feb 3  |          |  |  |  |  |  | 16500 |       | Dec 23 | 1955        |
| LOWEST DAILY MEAN        | 21     | Sep 4  |          |  |  |  |  |  | .00   |       | Aug 27 | 1904        |
| ANNUAL SEVEN-DAY MINIMUM | 23     | Aug 31 |          |  |  |  |  |  | .00   |       | Aug 27 | 1904        |
| INSTANTANEOUS PEAK FLOW  |        |        |          |  |  |  |  |  | 5820  | Feb 9 | 28300  | Apr 3 1958  |
| INSTANTANEOUS PEAK STAGE |        |        |          |  |  |  |  |  | 7.22  | Feb 9 | 16.44  | Mar 10 1995 |
| ANNUAL RUNOFF (AC-FT)    | 315000 |        |          |  |  |  |  |  | 69760 |       | 124000 |             |
| 10 PERCENT EXCEEDS       | 992    |        |          |  |  |  |  |  | 239   |       | 366    |             |
| 50 PERCENT EXCEEDS       | 134    |        |          |  |  |  |  |  | 42    |       | 28     |             |
| 90 PERCENT EXCEEDS       | 27     |        |          |  |  |  |  |  | 2.3   |       | .02    |             |

## 11152050 ARROYO SECO BELOW RELIZ CREEK, NEAR SOLEDAD, CA

LOCATION.—Lat 36°23'59", long 121°19'23", in Los Conches Grant, Monterey County, Hydrologic Unit 18060005, on right bank, at county road bridge, 1.7 mi south of Soledad, and 7.4 mi downstream from Reliz Creek.

DRAINAGE AREA.—304 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1994 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 167.93 ft above sea level (levels by Monterey County).

REMARKS.—Records poor. No regulation or large diversion upstream from station. Low flows affected by upstream gravel mining and irrigation during summer months. See schematic diagram of Salinas River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 31,000 ft<sup>3</sup>/s, Mar. 10, 1995, gage height, 9.62 ft, rating affected by backwater from Salinas River. Discharge estimated by routing peak. No flow for many days.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 2,500 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 1530 | 4,350                             | 4.89                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV  | DEC    | JAN     | FEB     | MAR     | APR     | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|------|------|--------|---------|---------|---------|---------|------|------|------|------|------|
| 1     | e.00 | e.00 | 108    | e.00    | 133     | .00     | 92      | e.00 | .00  | .00  | .00  | e.00 |
| 2     | e.00 | e.00 | 18     | e.00    | 58      | .00     | 63      | e.00 | .00  | .00  | .00  | e.00 |
| 3     | e.00 | e.00 | e.00   | e.00    | 35      | .00     | 56      | e.00 | .00  | .00  | .00  | e.00 |
| 4     | e.00 | e.00 | e.00   | e.00    | 21      | .00     | 49      | e.00 | .00  | .00  | .00  | e.00 |
| 5     | e.00 | e.00 | e.00   | e.00    | 15      | .00     | 35      | .00  | .00  | .00  | .00  | e.00 |
| 6     | e.00 | e.00 | e.00   | e.00    | 8.7     | .00     | 108     | .00  | .00  | .00  | .00  | e.00 |
| 7     | e.00 | e.00 | e.00   | e.00    | 27      | .00     | 93      | .00  | .00  | .00  | .00  | e.00 |
| 8     | e.00 | e.00 | e.00   | e.00    | 341     | .00     | 78      | .00  | .00  | .00  | .00  | e.00 |
| 9     | e.00 | e.00 | e.00   | e.00    | 1870    | .00     | 145     | .00  | .00  | .00  | .00  | e.00 |
| 10    | e.00 | e.00 | e.00   | e.00    | e1000   | .03     | 108     | .00  | .00  | .00  | .00  | e.00 |
| 11    | e.00 | e.00 | e.00   | e.00    | 484     | .00     | 257     | .00  | .00  | .00  | .00  | e.00 |
| 12    | e.00 | e.00 | e.00   | e.00    | 276     | .00     | 458     | .00  | .00  | .00  | .00  | e.00 |
| 13    | e.00 | e.00 | e.00   | e.00    | 171     | .00     | e300    | .00  | .00  | .00  | .00  | e.00 |
| 14    | e.00 | e.00 | e.00   | e.00    | 112     | .00     | e240    | .00  | .00  | .00  | .00  | e.00 |
| 15    | e.00 | e.00 | e.00   | e.00    | 77      | 1.9     | e185    | .00  | .00  | .00  | .00  | e.00 |
| 16    | e.00 | e.00 | e.00   | e.00    | 53      | 6.7     | e170    | .00  | .00  | .00  | .00  | e.00 |
| 17    | e.00 | e.00 | e.00   | e.00    | 39      | .07     | e125    | .00  | .00  | .00  | .00  | e.00 |
| 18    | e.00 | e.00 | e.00   | e2.0    | 26      | .00     | e95     | .00  | .00  | .00  | .00  | e.00 |
| 19    | e.00 | e.00 | e.00   | e20     | 12      | .35     | e75     | .00  | .00  | .00  | .00  | e.00 |
| 20    | e.00 | e.00 | e.00   | e550    | .06     | 43      | e55     | .00  | .00  | .00  | .00  | e.00 |
| 21    | e.00 | e.00 | e.00   | 139     | 4.7     | 102     | e35     | .00  | .00  | .00  | .00  | e.00 |
| 22    | e.00 | e.00 | e.00   | 42      | 7.0     | 92      | e22     | .00  | .00  | .00  | .00  | .00  |
| 23    | e.00 | e.00 | e.00   | 17      | 1.2     | 116     | e10     | .00  | .00  | .00  | .00  | .11  |
| 24    | e.00 | e.00 | e.00   | 90      | .00     | 111     | e.00    | .00  | .00  | .00  | .00  | .00  |
| 25    | e.00 | e.00 | e.00   | 37      | .00     | 528     | e.00    | .00  | .00  | .00  | .00  | .01  |
| 26    | e.00 | e.00 | e.00   | 22      | .07     | 445     | e.00    | .00  | .00  | .00  | e.00 | .00  |
| 27    | e.00 | e.00 | e.00   | 48      | .00     | 301     | e.00    | .00  | .00  | .00  | e.00 | .17  |
| 28    | e.00 | e.00 | e.00   | 27      | .00     | 217     | e.00    | .00  | .00  | .00  | e.00 | .00  |
| 29    | e.00 | e.00 | e.00   | 17      | ---     | 174     | e.00    | .00  | .00  | .00  | e.00 | .13  |
| 30    | e.00 | e.00 | e.00   | 8.3     | ---     | 145     | e.00    | .00  | .00  | .00  | e.00 | .15  |
| 31    | e.00 | ---  | e.00   | 107     | ---     | 122     | ---     | .00  | ---  | .00  | e.00 | ---  |
| TOTAL | 0.00 | 0.00 | 126.00 | 1126.30 | 4771.73 | 2405.05 | 2854.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.57 |
| MEAN  | .000 | .000 | 4.06   | 36.3    | 170     | 77.6    | 95.1    | .000 | .000 | .000 | .000 | .019 |
| MAX   | .00  | .00  | 108    | 550     | 1870    | 528     | 458     | .00  | .00  | .00  | .00  | .17  |
| MIN   | .00  | .00  | .00    | .00     | .00     | .00     | .00     | .00  | .00  | .00  | .00  | .00  |
| AC-FT | .00  | .00  | 250    | 2230    | 9460    | 4770    | 5660    | .00  | .00  | .00  | .00  | 1.1  |

e Estimated.

## 11152050 ARROYO SECO BELOW RELIZ CREEK, NEAR SOLEDAD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .000 | 4.58 | 90.8 | 820  | 878  | 636  | 184  | 38.9 | 2.06 | .000 | .000 | .004 |
| MAX  | .000 | 14.3 | 392  | 1975 | 2806 | 1944 | 448  | 111  | 8.67 | .000 | .000 | .019 |
| (WY) | 1995 | 1997 | 1997 | 1997 | 1998 | 1995 | 1998 | 1995 | 1998 | 1995 | 1995 | 1999 |
| MIN  | .000 | .000 | .000 | 36.3 | 170  | 49.2 | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1995 | 1995 | 1995 | 1999 | 1999 | 1997 | 1997 | 1997 | 1996 | 1995 | 1995 | 1995 |

## SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1995 - 1999

|                          |           |  |  |          |  |  |             |  |  |
|--------------------------|-----------|--|--|----------|--|--|-------------|--|--|
| ANNUAL TOTAL             | 126238.13 |  |  | 11283.65 |  |  |             |  |  |
| ANNUAL MEAN              | 346       |  |  | 30.9     |  |  | 218         |  |  |
| HIGHEST ANNUAL MEAN      |           |  |  |          |  |  | 354         |  |  |
| LOWEST ANNUAL MEAN       |           |  |  |          |  |  | 30.9        |  |  |
| HIGHEST DAILY MEAN       | 9510      |  |  | Feb 3    |  |  | 1870        |  |  |
| LOWEST DAILY MEAN        | .00       |  |  | Jan 1    |  |  | .00         |  |  |
| ANNUAL SEVEN-DAY MINIMUM | .00       |  |  | Jun 25   |  |  | .00         |  |  |
| INSTANTANEOUS PEAK FLOW  |           |  |  |          |  |  | 4350        |  |  |
| INSTANTANEOUS PEAK STAGE |           |  |  |          |  |  | 4.89        |  |  |
| ANNUAL RUNOFF (AC-FT)    | 250400    |  |  |          |  |  | 22380       |  |  |
| 10 PERCENT EXCEEDS       | 881       |  |  |          |  |  | 91          |  |  |
| 50 PERCENT EXCEEDS       | .00       |  |  |          |  |  | .00         |  |  |
| 90 PERCENT EXCEEDS       | .00       |  |  |          |  |  | .00         |  |  |
|                          |           |  |  |          |  |  | 17000       |  |  |
|                          |           |  |  |          |  |  | .00         |  |  |
|                          |           |  |  |          |  |  | .00         |  |  |
|                          |           |  |  |          |  |  | 31000       |  |  |
|                          |           |  |  |          |  |  | 9.62        |  |  |
|                          |           |  |  |          |  |  | 158000      |  |  |
|                          |           |  |  |          |  |  | 547         |  |  |
|                          |           |  |  |          |  |  | .00         |  |  |
|                          |           |  |  |          |  |  | .00         |  |  |
|                          |           |  |  |          |  |  | .00         |  |  |
|                          |           |  |  |          |  |  | Mar 10 1995 |  |  |
|                          |           |  |  |          |  |  | Oct 1 1994  |  |  |
|                          |           |  |  |          |  |  | Oct 1 1994  |  |  |
|                          |           |  |  |          |  |  | Oct 1 1994  |  |  |
|                          |           |  |  |          |  |  | Mar 10 1995 |  |  |
|                          |           |  |  |          |  |  | Mar 10 1995 |  |  |

## 11152300 SALINAS RIVER NEAR CHUALAR, CA

LOCATION.—Lat 36°33'20", long 121°32'55", in Guadalupe y Llanitos de Los Correos Grant, Monterey County, Hydrologic Unit 18060005, near left bank, on upstream side of bridge, on Chualar-River Road, and 2 mi southwest of Chualar.

DRAINAGE AREA.—4,042 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1976 to current year.

REVISED RECORDS.—WDR CA-85-2: 1983–84(M).

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 68.00 ft above sea level. Prior to January 1979, nonrecording gage at same site and datum. Prior to Aug. 19, 1991, at site 0.2 mi upstream at same datum.

REMARKS.—Records fair except for estimated daily discharges, which are poor. Daily discharges prior to January 1979 determined by discharge measurements at this site correlated to streamflow for Salinas River at Soledad (station 11151700) and Salinas River near Spreckels (station 11152500). Flow regulated by Santa Margarita Lake beginning in December 1941, usable capacity, 23,000 acre-ft; Lake Nacimiento (formerly Nacimiento Reservoir) beginning in February 1957, usable capacity, 340,000 acre-ft; and Lake San Antonio beginning in December 1965, usable capacity, 330,000 acre-ft. Large withdrawals from ground water and small surface-water diversions for municipal use and for irrigation upstream from station. See schematic diagram of Salinas River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 92,000 ft<sup>3</sup>/s, estimated, Mar. 11, 1995, gage height, 19.70 ft, from rating curve extended above 18,000 ft<sup>3</sup>/s; peak flow includes an estimate of 8,800 ft<sup>3</sup>/s bypassing the gage; no flow at times during most years.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV     | DEC   | JAN   | FEB   | MAR   | APR   | MAY     | JUN  | JUL  | AUG  | SEP     |
|-------|------|---------|-------|-------|-------|-------|-------|---------|------|------|------|---------|
| 1     | .00  | .00     | e260  | 173   | 321   | e210  | 290   | 33      | 89   | 18   | e63  | 84      |
| 2     | .00  | .00     | e270  | 173   | 271   | e190  | 242   | e19     | 95   | 17   | e63  | 83      |
| 3     | .00  | .00     | e230  | 173   | 226   | e170  | 209   | e10     | 108  | 35   | e62  | 84      |
| 4     | .00  | .00     | 225   | 172   | 214   | e155  | 200   | e6.0    | 105  | 50   | e62  | 82      |
| 5     | .00  | .00     | 206   | 170   | 197   | 148   | 184   | e2.5    | 127  | 66   | e62  | 86      |
| 6     | .00  | .00     | 193   | 171   | 174   | 140   | 182   | e1.0    | 137  | 72   | e62  | 93      |
| 7     | .00  | .00     | 181   | 173   | 163   | 130   | 211   | e.00    | 159  | 67   | e63  | 103     |
| 8     | .00  | .00     | 173   | 173   | 239   | 119   | 189   | e.00    | 149  | 60   | e63  | 112     |
| 9     | .00  | .00     | 173   | 173   | 632   | 121   | 205   | e.00    | 131  | 45   | e64  | 124     |
| 10    | .00  | 78      | 173   | 164   | 1640  | 111   | 213   | e.00    | 108  | 34   | e64  | 133     |
| 11    | .00  | 263     | 170   | 151   | 776   | 109   | 212   | e.00    | 89   | 28   | e65  | 127     |
| 12    | .00  | 275     | 171   | 140   | 813   | 100   | 523   | e.00    | 76   | 34   | e66  | 124     |
| 13    | .00  | 289     | 173   | 130   | 653   | 93    | 538   | e.00    | 67   | 42   | e68  | 128     |
| 14    | .00  | 300     | 173   | 126   | 535   | 90    | 498   | e.00    | 72   | 38   | e70  | 128     |
| 15    | .00  | 289     | 173   | 124   | 650   | 106   | 481   | e.00    | 75   | 32   | e75  | 133     |
| 16    | .00  | 264     | 174   | 124   | 689   | 109   | 428   | e.00    | 73   | 28   | e80  | 130     |
| 17    | .00  | 255     | 173   | 121   | 699   | 107   | 357   | e.00    | 69   | 27   | e82  | 129     |
| 18    | .00  | e240    | 173   | 116   | 668   | 100   | 298   | e.00    | 63   | 25   | e88  | 112     |
| 19    | .00  | e220    | 174   | 115   | 572   | 96    | 263   | e1.0    | 58   | 34   | e88  | 73      |
| 20    | .00  | e210    | 181   | 114   | 515   | 134   | 227   | e18     | 55   | 45   | e76  | 41      |
| 21    | .00  | e200    | 182   | 303   | 513   | 212   | 194   | 29      | 55   | 42   | 76   | 34      |
| 22    | .00  | e190    | 178   | 218   | 515   | 232   | 170   | 58      | 57   | 34   | 75   | e1.0    |
| 23    | .00  | e185    | 180   | 153   | 503   | 222   | 146   | 73      | 51   | 40   | 74   | e.00    |
| 24    | .00  | e185    | 179   | 188   | 476   | 302   | 118   | 88      | 41   | 48   | 78   | e.00    |
| 25    | .00  | e190    | 175   | 234   | 390   | 393   | 96    | 104     | 32   | 45   | 85   | e.00    |
| 26    | .00  | e200    | 175   | 203   | 293   | 839   | 78    | 123     | 25   | e56  | 85   | e.00    |
| 27    | .00  | e240    | 177   | 184   | 247   | 558   | 66    | 130     | 20   | e66  | 83   | e.00    |
| 28    | .00  | e250    | 178   | 195   | e230  | 491   | 55    | 108     | 25   | e65  | 80   | e.00    |
| 29    | .00  | e250    | 178   | 172   | ---   | 465   | 48    | 98      | 37   | e65  | 75   | e.00    |
| 30    | .00  | e245    | 178   | 164   | ---   | 400   | 44    | 88      | 34   | e64  | 73   | e.00    |
| 31    | .00  | ---     | 176   | 181   | ---   | 344   | ---   | 85      | ---  | e64  | 81   | ---     |
| TOTAL | 0.00 | 4818.00 | 5775  | 5171  | 13814 | 6996  | 6965  | 1074.50 | 2282 | 1386 | 2251 | 2144.00 |
| MEAN  | .000 | 161     | 186   | 167   | 493   | 226   | 232   | 34.7    | 76.1 | 44.7 | 72.6 | 71.5    |
| MAX   | .00  | 300     | 270   | 303   | 1640  | 839   | 538   | 130     | 159  | 72   | 88   | 133     |
| MIN   | .00  | .00     | 170   | 114   | 163   | 90    | 44    | .00     | 20   | 17   | 62   | .00     |
| AC-FT | .00  | 9560    | 11450 | 10260 | 27400 | 13880 | 13820 | 2130    | 4530 | 2750 | 4460 | 4250    |

e Estimated.

## SALINAS RIVER BASIN

## 11152300 SALINAS RIVER NEAR CHUALAR, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB   | MAR   | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|-------|-------|------|------|------|------|------|------|
| MEAN | 57.3 | 75.6 | 291  | 1195 | 2203  | 1728  | 475  | 195  | 74.4 | 64.4 | 57.9 | 77.1 |
| MAX  | 286  | 474  | 2757 | 8328 | 14350 | 10690 | 2793 | 2418 | 767  | 462  | 381  | 425  |
| (WY) | 1983 | 1983 | 1983 | 1997 | 1998  | 1983  | 1982 | 1983 | 1983 | 1983 | 1983 | 1983 |
| MIN  | .000 | .000 | .000 | .000 | .000  | .000  | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1990 | 1981 | 1990 | 1990 | 1989  | 1977  | 1989 | 1990 | 1990 | 1990 | 1990 | 1990 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |       | FOR 1999 WATER YEAR |        | WATER YEARS 1977 - 1999 |             |
|--------------------------|------------------------|-------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 596290.00              |       | 52676.50            |        |                         |             |
| ANNUAL MEAN              | 1634                   |       | 144                 |        | 532                     |             |
| HIGHEST ANNUAL MEAN      |                        |       |                     |        | 2796                    |             |
| LOWEST ANNUAL MEAN       |                        |       |                     |        | .000                    |             |
| HIGHEST DAILY MEAN       | 36900                  | Feb 8 | 1640                | Feb 10 | 68000                   | Mar 12 1995 |
| LOWEST DAILY MEAN        | .00                    | Jan 1 | .00                 | Oct 1  | .00                     | Jan 27 1977 |
| ANNUAL SEVEN-DAY MINIMUM | .00                    | Jan 1 | .00                 | Oct 1  | .00                     | Feb 3 1977  |
| INSTANTANEOUS PEAK FLOW  |                        |       | 2900                |        | 92000                   |             |
| INSTANTANEOUS PEAK STAGE |                        |       | 7.90                |        | 19.70                   |             |
| ANNUAL RUNOFF (AC-FT)    | 1183000                |       | 104500              |        | 385800                  |             |
| 10 PERCENT EXCEEDS       | 3140                   |       | 291                 |        | 890                     |             |
| 50 PERCENT EXCEEDS       | 245                    |       | 104                 |        | 45                      |             |
| 90 PERCENT EXCEEDS       | .00                    |       | .00                 |        | .00                     |             |

11152300 SALINAS RIVER NEAR CHUALAR, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1977 to current year.

CHEMICAL DATA: Water years 1977 to current year.

BIOLOGICAL DATA: Water years 1977–81.

SPECIFIC CONDUCTANCE: Water years 1977–81.

WATER TEMPERATURE: Water years 1967–69, 1977–81.

SEDIMENT DATA: December 1966 to September 1969, January 1977 to May 1995, June 1997 to current year.

PERIOD OF DAILY RECORD.—January 1977 to September 1981.

SPECIFIC CONDUCTANCE: January 1977 to September 1981.

WATER TEMPERATURE: January 1977 to September 1981.

SUSPENDED-SEDIMENT DISCHARGE: December 1966 to September 1969.

INSTRUMENTATION.—Water-quality monitor from January 1977 to September 1981.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE | TIME  | DIS-CHARGE, | SPE-CIFIC | PH      | TEMPER- | TUR-    | BARO-   | OXYGEN, | OXYGEN, | HARD-   | HARD-   | CALCIUM |      |
|------|-------|-------------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|
|      |       | INST.       | CON-      | WATER   |         |         | METRIC  |         | (PER-   |         |         |         | NESS |
|      |       | CUBIC       | DUCT-     | FIELD   | ATURE   | BID-    | SURE    | OXYGEN, | (PER-   | TOTAL   | DISSOLV | DIS-    |      |
|      |       | FEET        | ANCE      | (STAND- | WATER   | ITY     | (MM     | DIS-    | SATUR-  | (MG/L   | FLD. AS | SOLVED  |      |
|      |       | PER         |           | ARD     | (DEG C) | (NTU)   | OF      | SOLVED  | ATION)  | AS      | CACO3   | (MG/L   |      |
|      |       | SECOND      | (US/CM)   | UNITS)  |         |         | HG)     | (MG/L)  |         | CACO3)  | (MG/L)  | AS CA)  |      |
|      |       | (00061)     | (00095)   | (00400) | (00010) | (00076) | (00025) | (00300) | (00301) | (00900) | (00904) | (00915) |      |
| MAR  | 18... | 1115        | 99        | 975     | 8.6     | 14.0    | 12      | 763     | 11.2    | 109     | 380     | 190     | 90   |
| MAY  | 24... | 1230        | 91        | 616     | 8.6     | 16.5    | 5.4     | 763     | 10.8    | 111     | 230     | 79      | 51   |
| JUL  | 21... | 1100        | 44        | 469     | 8.7     | 20.0    | 1.6     | 763     | 10.2    | 112     | 190     | 65      | 45   |
| SEP  | 09... | 1300        | 127       | 428     | 8.6     | 21.5    | 14      | 761     | 10.4    | 118     | 170     | 48      | 40   |
| DATE |       | MAGNE-      | SODIUM,   | SODIUM  | POTAS-  | BICAR-  | CAR-    | ALKA-   | SULFATE | CHLO-   | FLUO-   |         |      |
|      |       | SIUM,       | DIS-      | AD-     | SIUM,   | BONATE  | BONATE  | LINITY  |         |         |         |         |      |
|      |       | DIS-        | DIS-      | SORP-   | DIS-    | WATER   | WATER   | WAT DIS | DIS-    | RIDE,   | RIDE,   |         |      |
|      |       | SOLVED      | SOLVED    | TION    | SOLVED  | FIELD   | FIELD   | TOT IT  | DIS-    | DIS-    | DIS-    |         |      |
|      |       | (MG/L       | (MG/L     | RATIO   | (MG/L   | MG/L AS | MG/L AS | MG/L AS | (MG/L   | (MG/L   | (MG/L   |         |      |
|      |       | AS MG)      | AS NA)    | PERCENT | AS K)   | HCO3    | CO3     | CACO3   | AS SO4) | AS CL)  | AS F)   |         |      |
|      |       | (00925)     | (00930)   | (00932) | (00931) | (00935) | (00453) | (00452) | (39086) | (00945) | (00940) | (00950) |      |
| MAR  | 18... | 37          | 70        | 28      | 2       | 3.3     | 211     | 10      | 189     | 220     | 66      | .2      |      |
| MAY  | 24... | 24          | 37        | 26      | 1       | 2.4     | 169     | 6       | 150     | 110     | 33      | .2      |      |
| JUL  | 21... | 20          | 27        | 23      | .8      | 1.7     | 142     | 7       | 128     | 75      | 21      | .2      |      |
| SEP  | 09... | 17          | 22        | 21      | .7      | 1.6     | 137     | 7       | 124     | 61      | 16      | .2      |      |
| DATE |       | SILICA,     | SOLIDS,   | SOLIDS, | NITRO-  | NITRO-  | NITRO-  | NITRO-  | PHOS-   | PHOS-   | PHOS-   |         |      |
|      |       | DIS-        | RESIDUE   | SUM OF  | GEN,    | GEN,    | GEN,    | GEN,AM- |         |         |         |         |      |
|      |       | SOLVED      | AT 180    | CONSTI- | DIS-    | NO2+NO3 | AMMONIA | MONIA + | PHOS-   | PHORUS  | PHOS-   |         |      |
|      |       | (MG/L       | DEG. C    | DIS-    | SOLVED  | DIS-    | DIS-    | ORGANIC | PHORUS  | DIS-    | DIS-    |         |      |
|      |       | AS          | SOLVED    | SOLVED  | PER     | (MG/L   | (MG/L   | (MG/L   | TOTAL   | TOTAL   | SOLVED  |         |      |
|      |       | SIO2)       | (MG/L)    | (MG/L)  | AC-FT)  | AS N)   | AS N)   | AS N)   | AS P)   | AS P)   | AS P)   |         |      |
|      |       | (00955)     | (70300)   | (70301) | (70303) | (00613) | (00631) | (00608) | (00625) | (00665) | (00666) | (00671) |      |
| MAR  | 18... | 18          | 680       | 647     | .92     | .09     | 6.6     | <.02    | .4      | .13     | .08     | .09     |      |
| MAY  | 24... | 17          | 406       | 374     | .55     | .04     | 1.9     | .03     | .6      | .06     | <.05    | <.01    |      |
| JUL  | 21... | 13          | 296       | 280     | .40     | <.01    | .24     | <.02    | .5      | .09     | <.05    | <.01    |      |
| SEP  | 09... | 14          | 266       | 248     | .36     | <.01    | .23     | <.02    | .5      | .12     | .05     | .02     |      |

< Actual value is known to be less than the value shown.

## SALINAS RIVER BASIN

11152300 SALINAS RIVER NEAR CHUALAR, CA—Continued

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L)<br>(80154) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDED<br>(T/DAY)<br>(80155) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) |
|-------|------|---|---|---|---|--|
| MAR   |      |   |   |   |   |  |
| 18... | 1220 | 99  | 14.0  | 30  | 8.0   | 76   |
| MAY   |      |   |   |   |   |  |
| 24... | 1310 | 91  | 16.5  | 49  | 12  | 51   |
| JUL   |      |   |   |   |   |  |
| 21... | 1215 | 44  | 25.0  | 64  | 7.6   | 94   |
| SEP   |      |   |   |   |   |  |
| 09... | 1420 | 129   | 21.5  | 135   | 47  | 38   |



## 11152500 SALINAS RIVER NEAR SPRECKELS, CA

LOCATION.—Lat 36°37'52", long 121°40'17", in Nacional Grant, Monterey County, Hydrologic Unit 18060005, on right bank, on downstream side of bridge on Salinas–Monterey Highway (68), 0.8 mi upstream from El Toro Creek, 1.6 mi northwest of Spreckels, and 2 mi south of Salinas.

DRAINAGE AREA.—4,156 mi<sup>2</sup>.

PERIOD OF RECORD.—January 1900 to August 1901, October 1929 to current year. Records for water year 1930 incomplete; yearly estimate published in WSP 1315-B. Published as "near Salinas" 1900–01.

CHEMICAL DATA: Water years 1952–54, 1958–70, 1972–79. Published incorrectly as station 11152300 "near Chualar" in 1967.

BIOLOGICAL DATA: Water years 1975–77.

SPECIFIC CONDUCTANCE: Water years 1975 to January 1977, daily.

WATER TEMPERATURE: Water years 1967–79, daily. Published incorrectly as station 11152300 "near Chualar" in 1967–69.

SEDIMENT DATA: Water years 1950–51; 1967–79, daily; 1986, monthly; August 1990. Published incorrectly as station 11152300 "near Chualar" in 1967–69.

TURBIDITY: Water year 1973.

REVISED RECORDS.—WSP 1565: 1930, 1935, 1945. WSP 1715: 1959. WSP 1929: Drainage area. WDR CA-85-2: 1983.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 20.56 ft above sea level. 1900–01, May 10 to July 29, 1940, nonrecording gages at site 0.3 mi downstream at different datum. July 29, 1940, to May 22, 1969, water-stage recorder at site 0.3 mi downstream at datum 0.69 ft lower. May 23, 1969, to Jan. 13, 1970, nonrecording gage at same site and datum. Mar. 17, 1941, to June 30, 1961, supplementary nonrecording gages.

REMARKS.—Records poor. Flow regulated by Santa Margarita Lake (formerly Salinas Reservoir) beginning in 1941, usable capacity, 23,000 acre-ft; Lake Nacimiento (formerly Nacimiento Reservoir) beginning in February 1957, usable capacity, 340,000 acre-ft; and by Lake San Antonio beginning in December 1965, usable capacity, 330,000 acre-ft. Large withdrawals from ground water and small surface-water diversions for municipal use and for irrigation upstream from station. See schematic diagram of Salinas River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 95,000 ft<sup>3</sup>/s, Mar. 12, 1995, gage height, 30.29 ft, from rating extended above 30,000 ft<sup>3</sup>/s, peak includes estimate of 9,800 ft<sup>3</sup>/s bypassing gage; no flow at times in 1929–40, many days in 1990–99.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV     | DEC   | JAN   | FEB   | MAR   | APR    | MAY    | JUN    | JUL  | AUG    | SEP    |
|-------|------|---------|-------|-------|-------|-------|--------|--------|--------|------|--------|--------|
| 1     | e.00 | e.00    | 271   | e180  | e350  | 200   | 315    | e5.0   | 25     | .00  | .00    | 16     |
| 2     | e.00 | e.00    | 295   | e180  | e290  | 185   | 275    | e3.3   | 32     | .00  | .00    | 19     |
| 3     | e.00 | e.00    | 279   | e180  | e220  | 170   | 238    | e2.2   | 58     | .00  | .00    | 16     |
| 4     | e.00 | e.00    | 273   | e180  | e205  | 148   | 214    | e1.5   | 62     | .00  | .00    | 12     |
| 5     | e.00 | e.00    | 261   | e180  | e195  | 130   | 206    | e1.1   | 66     | .00  | .00    | 14     |
| 6     | e.00 | e.00    | 258   | e180  | e160  | 116   | 193    | e.75   | 65     | .00  | .00    | 15     |
| 7     | e.00 | e.00    | 236   | e180  | e150  | 105   | 211    | e.47   | 75     | .00  | .00    | 24     |
| 8     | e.00 | e.00    | 226   | e180  | e350  | 90    | 219    | e.34   | 97     | .00  | .00    | 37     |
| 9     | e.00 | e.00    | 229   | e175  | e700  | 100   | 209    | e2.9   | 103    | .00  | .00    | 44     |
| 10    | e.00 | e.00    | 228   | e170  | e1500 | 83    | 241    | e.17   | 95     | .00  | .00    | 42     |
| 11    | e.00 | e.00    | 231   | e160  | e850  | 73    | 245    | .12    | 55     | .00  | .04    | 26     |
| 12    | e.00 | 128     | e230  | e150  | e700  | 64    | 326    | .09    | 34     | .00  | 8.8    | 18     |
| 13    | e.00 | 237     | 227   | e140  | e840  | 56    | 452    | .09    | 20     | .00  | 10     | 16     |
| 14    | e.00 | 263     | 232   | e135  | e500  | 53    | 436    | .06    | 15     | .00  | 13     | 24     |
| 15    | e.00 | 285     | e225  | e132  | e580  | 83    | 399    | .09    | 21     | .00  | 15     | 31     |
| 16    | e.00 | 280     | e222  | e130  | e640  | 74    | 374    | .06    | 22     | .00  | 18     | 34     |
| 17    | e.00 | 273     | e225  | e128  | e700  | 70    | 324    | .06    | 19     | .00  | 22     | 29     |
| 18    | e.00 | 266     | e220  | e125  | e620  | 66    | 270    | e.00   | 15     | .00  | 21     | 21     |
| 19    | e.00 | 260     | e220  | e122  | e530  | 62    | 230    | e.00   | 9.3    | .00  | 17     | 3.0    |
| 20    | e.00 | 235     | 239   | e120  | e460  | 67    | 196    | e.00   | 6.3    | .00  | 13     | .04    |
| 21    | e.00 | 226     | e230  | e300  | e490  | 135   | 166    | e.00   | 4.1    | .00  | 7.8    | .00    |
| 22    | e.00 | 217     | e220  | e200  | e520  | 200   | 139    | e.00   | 4.0    | .00  | 4.3    | .00    |
| 23    | e.00 | 207     | e210  | e160  | e480  | 199   | 116    | e.00   | 4.4    | .00  | 3.1    | .00    |
| 24    | e.00 | 222     | e200  | e200  | e460  | 221   | 87     | e.00   | 2.3    | .00  | 8.7    | .00    |
| 25    | e.00 | 220     | e195  | e250  | 393   | 295   | 61     | e.00   | .29    | .00  | 17     | .00    |
| 26    | e.00 | 222     | e190  | e210  | 330   | 632   | 40     | .21    | .06    | .00  | 15     | .00    |
| 27    | e.00 | 224     | e188  | e185  | 269   | 567   | 25     | 24     | .04    | .00  | 12     | .00    |
| 28    | e.00 | 264     | e185  | e210  | 228   | 475   | e15    | 42     | .02    | .00  | 6.7    | .00    |
| 29    | e.00 | 277     | e182  | e190  | ---   | 455   | e10    | 34     | .02    | .00  | 4.5    | .00    |
| 30    | e.00 | 267     | e182  | e155  | ---   | 408   | e7.0   | 31     | .01    | .00  | 4.2    | .00    |
| 31    | e.00 | ---     | e180  | e200  | ---   | 361   | ---    | 22     | ---    | .00  | 9.2    | ---    |
| TOTAL | 0.00 | 4573.00 | 6989  | 5387  | 13710 | 5943  | 6239.0 | 171.51 | 909.84 | 0.00 | 230.34 | 441.04 |
| MEAN  | .000 | 152     | 225   | 174   | 490   | 192   | 208    | 5.53   | 30.3   | .000 | 7.43   | 14.7   |
| MAX   | .00  | 285     | 295   | 300   | 1500  | 632   | 452    | 42     | 103    | .00  | 22     | 44     |
| MIN   | .00  | .00     | 180   | 120   | 150   | 53    | 7.0    | .00    | .01    | .00  | .00    | .00    |
| AC-FT | .00  | 9070    | 13860 | 10690 | 27190 | 11790 | 12380  | 340    | 1800   | .00  | 457    | 875    |

e Estimated.

## SALINAS RIVER BASIN

## 11152500 SALINAS RIVER NEAR SPRECKELS, CA—Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1940, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB   | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|-------|------|------|------|------|------|------|------|
| MEAN | 3.24 | 5.04 | 378  | 491  | 3003  | 1656 | 520  | 75.7 | 7.80 | 1.53 | .81  | 1.82 |
| MAX  | 12.0 | 12.0 | 3215 | 1742 | 11940 | 9543 | 2019 | 340  | 49.3 | 9.00 | 5.00 | 6.10 |
| (WY) | 1939 | 1939 | 1932 | 1940 | 1938  | 1938 | 1935 | 1938 | 1938 | 1938 | 1938 | 1932 |
| MIN  | .000 | .000 | .000 | 6.33 | 9.23  | 3.86 | .70  | .10  | .10  | .000 | .000 | .000 |
| (WY) | 1940 | 1940 | 1940 | 1931 | 1931  | 1931 | 1931 | 1931 | 1931 | 1931 | 1931 | 1931 |

## SUMMARY STATISTICS

## WATER YEARS 1930 - 1940

|                          |                   |
|--------------------------|-------------------|
| ANNUAL TOTAL             |                   |
| ANNUAL MEAN              | 497               |
| HIGHEST ANNUAL MEAN      | 1931 1938         |
| LOWEST ANNUAL MEAN       | 2.66 1931         |
| HIGHEST DAILY MEAN       | 69900 Feb 12 1938 |
| LOWEST DAILY MEAN        | .00 Jul 1 1931    |
| ANNUAL SEVEN-DAY MINIMUM | .00 Jul 1 1931    |
| INSTANTANEOUS PEAK FLOW  | 75000 Feb 12 1938 |
| INSTANTANEOUS PEAK STAGE | 25.00 Feb 12 1938 |
| ANNUAL RUNOFF (AC-FT)    | 360400            |
| 10 PERCENT EXCEEDS       | 727               |
| 50 PERCENT EXCEEDS       | 4.7               |
| 90 PERCENT EXCEEDS       | .00               |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB   | MAR   | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|-------|-------|------|------|------|------|------|------|
| MEAN | 25.9 | 35.7 | 224  | 943  | 1576  | 1273  | 511  | 129  | 35.1 | 21.2 | 20.1 | 30.1 |
| MAX  | 402  | 389  | 2511 | 6993 | 16260 | 12640 | 6714 | 2839 | 767  | 403  | 354  | 394  |
| (WY) | 1970 | 1983 | 1983 | 1997 | 1998  | 1983  | 1958 | 1983 | 1983 | 1983 | 1983 | 1983 |
| MIN  | .000 | .000 | .000 | .000 | .000  | .000  | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1991 | 1991 | 1991 | 1991 | 1990  | 1990  | 1990 | 1990 | 1990 | 1990 | 1990 | 1990 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1942 - 1999

|                          |             |             |                   |
|--------------------------|-------------|-------------|-------------------|
| ANNUAL TOTAL             | 652079.60   | 44593.73    |                   |
| ANNUAL MEAN              | 1787        | 122         | 396               |
| HIGHEST ANNUAL MEAN      |             |             | 2997 1983         |
| LOWEST ANNUAL MEAN       |             |             | .81 1990          |
| HIGHEST DAILY MEAN       | 41000 Feb 8 | 1500 Feb 10 | 64800 Feb 26 1969 |
| LOWEST DAILY MEAN        | .00 Jan 1   | .00 Oct 1   | .00 Jan 31 1990   |
| ANNUAL SEVEN-DAY MINIMUM | .00 Jan 1   | .00 Oct 1   | .00 Jan 31 1990   |
| INSTANTANEOUS PEAK FLOW  |             | 2500 Feb 10 | 95000 Mar 12 1995 |
| INSTANTANEOUS PEAK STAGE |             |             | 30.29 Mar 12 1995 |
| ANNUAL RUNOFF (AC-FT)    | 1293000     | 88450       | 286700            |
| 10 PERCENT EXCEEDS       | 2770        | 292         | 624               |
| 50 PERCENT EXCEEDS       | 229         | 32          | 3.2               |
| 90 PERCENT EXCEEDS       | .00         | .00         | .00               |

## 11152540 EL TORO CREEK NEAR SPRECKELS, CA

LOCATION.—Lat 36°35'00", long 121°42'50", in El Toro Grant, Monterey County, Hydrologic Unit 18060005, on right bank, 0.3 mi downstream from San Benancio Gulch, and 4.7 mi southwest of Spreckels.

DRAINAGE AREA.—31.9 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1961 to current year.

SEDIMENT DATA: Water years 1986, 1990.

GAGE.—Water-stage recorder, crest-stage gage, and concrete weir control from Oct. 1, 1992, to Feb. 3, 1998.. Elevation of gage is 210 ft above sea level, from topographic map. Prior to Sept. 16, 1983, gage was at site 700 ft upstream at different datum.

REMARKS.—Records poor. No regulation or diversion upstream from station except for small stock ponds. Low flow at times affected by irrigation runoff from upstream golf course and residences. See schematic diagram of Salinas River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 669 ft<sup>3</sup>/s, Feb. 3, 1998, gage height, 7.11 ft, from rating curve extended above 240 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 20 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Oct. 24 | 1145 | 32                                | 2.79                | Feb. 21 | 0130 | 123                               | 3.20                |
| Nov. 28 | 0135 | 48                                | 2.78                | Mar. 9  | 0515 | 50                                | 3.10                |
| Jan. 26 | 1430 | 25                                | 2.61                | Mar. 15 | 0530 | 84                                | 3.23                |
| Jan. 31 | 0800 | 110                               | 3.12                | Mar. 25 | 0545 | 190                               | 3.69                |
| Feb. 9  | 1300 | 320                               | 4.58                | Apr. 11 | 1415 | 152                               | 3.47                |
| Feb. 17 | 0600 | 56                                | 2.74                |         |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB    | MAR    | APR    | MAY   | JUN  | JUL  | AUG  | SEP   |
|-------|-------|-------|-------|-------|--------|--------|--------|-------|------|------|------|-------|
| 1     | .38   | .18   | .70   | .25   | e1.0   | e2.4   | e.45   | 1.3   | .14  | .23  | .13  | .23   |
| 2     | .34   | .24   | .13   | .24   | e.70   | e1.9   | e.40   | 1.2   | .13  | .26  | .14  | .22   |
| 3     | .32   | .19   | 1.5   | .25   | e.54   | e3.2   | e.30   | 1.0   | .35  | .21  | .13  | .29   |
| 4     | .36   | .20   | .15   | .27   | e.40   | e2.2   | e.28   | 1.0   | .29  | .17  | .14  | .26   |
| 5     | .34   | .19   | .46   | .28   | e.35   | e1.7   | e10    | .99   | .29  | .19  | .17  | .32   |
| 6     | .40   | .21   | .27   | .31   | 1.4    | e1.4   | 22     | .93   | .39  | .20  | .17  | .33   |
| 7     | .41   | .24   | .14   | .31   | 3.0    | e1.7   | 20     | .74   | .52  | .17  | .16  | .35   |
| 8     | .35   | .25   | .20   | .35   | .32    | e3.0   | 39     | .67   | .55  | .19  | .16  | .31   |
| 9     | .41   | .28   | .25   | .33   | 118    | 9.3    | 23     | .61   | .62  | .19  | .17  | .39   |
| 10    | .46   | 1.2   | .27   | .34   | 36     | 2.1    | 20     | .43   | .64  | .21  | .17  | .41   |
| 11    | .47   | .64   | .17   | .38   | 3.5    | e1.4   | 67     | .43   | .49  | .24  | .14  | .34   |
| 12    | .47   | .63   | .15   | .38   | 1.7    | e.90   | 8.5    | .47   | .30  | .24  | .15  | .37   |
| 13    | .48   | .57   | .64   | .39   | e1.4   | e.75   | 4.2    | .51   | .16  | .21  | .15  | .40   |
| 14    | .49   | .57   | .24   | .37   | e1.0   | 8.4    | 3.5    | .59   | .19  | .22  | .17  | .29   |
| 15    | .54   | .62   | .16   | .38   | e.80   | 22     | 3.5    | .50   | .16  | .25  | .19  | .31   |
| 16    | .48   | .70   | .17   | 1.1   | 8.5    | .55    | 3.2    | .45   | .14  | .26  | .20  | .35   |
| 17    | .48   | .69   | .20   | .31   | 24     | .41    | 3.0    | .45   | .18  | .23  | .22  | .36   |
| 18    | .48   | .73   | .25   | .32   | 13     | .60    | 2.8    | .44   | .21  | .23  | .18  | .43   |
| 19    | .54   | .69   | .25   | .40   | 17     | 1.1    | 2.9    | .43   | .16  | .24  | .18  | .41   |
| 20    | .51   | .70   | 1.2   | 1.0   | 26     | .95    | 2.5    | .45   | .18  | .26  | .18  | .40   |
| 21    | .63   | .70   | .20   | .33   | 44     | 1.3    | 2.1    | .40   | .22  | .19  | .20  | .36   |
| 22    | .71   | .82   | .21   | .31   | 11     | 1.3    | 2.2    | .39   | .21  | .18  | .21  | .36   |
| 23    | .73   | .84   | .20   | 1.0   | 9.2    | e1.2   | 1.8    | .43   | .18  | .18  | .19  | .45   |
| 24    | 2.6   | .76   | .21   | .25   | e8.7   | e1.2   | 2.1    | .33   | .18  | .16  | .18  | .47   |
| 25    | .43   | .62   | .24   | .27   | e6.0   | 36     | 1.8    | .31   | .18  | .16  | .16  | .40   |
| 26    | .42   | .66   | .25   | 3.8   | e4.5   | .50    | 1.9    | .34   | .21  | .17  | .18  | .34   |
| 27    | .42   | 6.2   | .27   | e1.0  | e3.4   | 1.1    | 1.7    | .26   | .26  | .16  | .23  | .40   |
| 28    | .39   | 4.2   | .26   | e.45  | e2.9   | e.70   | 1.7    | .25   | .25  | .14  | .23  | .35   |
| 29    | .28   | .12   | .27   | e.30  | ---    | e.45   | 1.4    | .28   | .29  | .14  | .25  | .32   |
| 30    | .20   | .78   | .25   | e.25  | ---    | e.40   | 1.5    | .19   | .27  | .14  | .22  | .38   |
| 31    | .18   | ---   | .27   | 22    | ---    | e.60   | ---    | .12   | ---  | .13  | .21  | ---   |
| TOTAL | 15.70 | 25.42 | 10.13 | 37.92 | 348.31 | 110.71 | 254.73 | 16.89 | 8.34 | 6.15 | 5.56 | 10.60 |
| MEAN  | .51   | .85   | .33   | 1.22  | 12.4   | 3.57   | 8.49   | .54   | .28  | .20  | .18  | .35   |
| MAX   | 2.6   | 6.2   | 1.5   | 22    | 118    | 36     | 67     | 1.3   | .64  | .26  | .25  | .47   |
| MIN   | .18   | .12   | .13   | .24   | .32    | .40    | .28    | .12   | .13  | .13  | .13  | .22   |
| AC-FT | 31    | 50    | 20    | 75    | 691    | 220    | 505    | 34    | 17   | 12   | 11   | 21    |

e Estimated.

## SALINAS RIVER BASIN

## 11152540 EL TORO CREEK NEAR SPRECKELS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .11  | .26  | .76  | 5.55 | 9.38 | 6.92 | 2.79 | .48  | .15  | .089 | .063 | .060 |
| MAX  | 1.52 | 2.23 | 7.08 | 31.9 | 89.9 | 62.2 | 21.6 | 5.61 | 1.37 | .58  | .43  | .35  |
| (WY) | 1980 | 1983 | 1983 | 1998 | 1998 | 1983 | 1998 | 1998 | 1998 | 1998 | 1998 | 1999 |
| MIN  | .000 | .000 | .000 | .000 | .000 | .058 | .022 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1965 | 1989 | 1990 | 1991 | 1991 | 1966 | 1990 | 1966 | 1966 | 1965 | 1962 | 1964 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1962 - 1999

|                          |         |        |      |            |
|--------------------------|---------|--------|------|------------|
| ANNUAL TOTAL             | 5186.30 | 850.46 |      |            |
| ANNUAL MEAN              | 14.2    | 2.33   |      |            |
| HIGHEST ANNUAL MEAN      |         |        | 2.18 |            |
| LOWEST ANNUAL MEAN       |         |        | 14.4 | 1998       |
| HIGHEST DAILY MEAN       | 250     | Feb 3  | .034 | 1990       |
| LOWEST DAILY MEAN        | .12     | Nov 29 | 390  | Mar 2 1983 |
| ANNUAL SEVEN-DAY MINIMUM | .18     | Sep 2  | .00  | Oct 1 1961 |
| INSTANTANEOUS PEAK FLOW  |         |        | .00  | Oct 6 1961 |
| INSTANTANEOUS PEAK STAGE |         |        | 320  | Feb 3 1998 |
| ANNUAL RUNOFF (AC-FT)    | 10290   |        | 4.58 | Feb 9 1998 |
| 10 PERCENT EXCEEDS       | 45      |        | 7.11 |            |
| 50 PERCENT EXCEEDS       | .66     |        | 1580 |            |
| 90 PERCENT EXCEEDS       | .23     |        | 3.1  |            |
|                          |         |        | .38  |            |
|                          |         |        | .17  |            |
|                          |         |        | .10  |            |
|                          |         |        | .00  |            |

11152600 GABILAN CREEK NEAR SALINAS, CA

LOCATION.—Lat 36°45'21", long 121°36'34", in La Natividad Grant, Monterey County, Hydrologic Unit 18060011, on left bank, at downstream side of county road bridge, 0.3 mi downstream from small left-bank tributary, and 6.2 mi northeast of Salinas.

DRAINAGE AREA.—36.7 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1970 to current year. January 1959 to September 1970 in reports of Monterey County Water Resources Agency.

REVISED RECORDS.—WDR CA-84-2: 1974(M), 1978(P), 1980–83(P).

GAGE.—Water-stage recorder and crest-stage gage. Concrete control since Oct. 9, 1975. Elevation of gage is 200 ft above sea level, from topographic map. Prior to Oct. 9, 1975, on right bank at different datum.

REMARKS.—Records fair except for discharges greater than 200 ft<sup>3</sup>/s or less than 1 ft<sup>3</sup>/s, which are poor. Natural flow of stream affected by small diversions, storage reservoirs, and return flow from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,030 ft<sup>3</sup>/s, Feb. 3, 1998, gage height, 5.17 ft from rating curve extended above 260 ft<sup>3</sup>/s; maximum gage height, 11.13 ft, April 1, 1974, at datum then in use; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 60 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|--------|------|--------------------------------|------------------|---------|------|--------------------------------|------------------|
| Feb. 9 | 1300 | 187                            | 3.38             | Feb. 21 | 0100 | 101                            | 2.95             |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN    | FEB    | MAR  | APR   | MAY   | JUN    | JUL  | AUG  | SEP  |
|-------|------|-------|-------|--------|--------|------|-------|-------|--------|------|------|------|
| 1     | .81  | .00   | 3.7   | .00    | 21     | 28   | 16    | 8.3   | 2.5    | e.06 | .00  | .00  |
| 2     | .56  | .09   | 1.8   | .06    | 15     | 26   | 15    | 7.7   | 3.3    | e.00 | .00  | .00  |
| 3     | .40  | .06   | 5.6   | .02    | 11     | 30   | 14    | 7.9   | 4.1    | e.00 | .00  | .00  |
| 4     | .41  | .00   | 2.1   | .00    | 9.2    | 28   | 14    | 8.0   | 4.3    | e.00 | .00  | .00  |
| 5     | .28  | .00   | 2.5   | .00    | 7.5    | 25   | 16    | 7.6   | 3.6    | e.00 | .00  | .00  |
| 6     | .02  | .02   | 3.8   | .01    | 9.1    | 24   | 21    | 6.7   | 3.7    | .00  | .00  | .00  |
| 7     | .00  | .67   | 1.4   | .04    | 77     | 22   | 18    | 7.2   | 3.5    | .00  | .00  | .00  |
| 8     | .00  | .60   | 1.1   | .00    | 68     | 21   | 24    | 6.5   | 2.6    | .00  | .00  | .00  |
| 9     | .01  | .59   | .88   | .00    | 106    | 34   | 21    | 6.4   | 3.3    | .00  | .00  | .00  |
| 10    | .00  | .89   | .52   | .00    | 77     | 27   | 18    | 6.6   | 2.8    | .00  | .00  | .00  |
| 11    | .00  | .81   | .39   | .01    | 55     | 24   | 22    | 5.8   | 4.2    | .00  | .00  | .00  |
| 12    | .00  | .36   | .36   | .00    | 44     | 21   | 19    | 6.2   | 5.0    | .00  | .00  | .00  |
| 13    | .00  | .27   | .46   | .00    | 37     | 20   | 17    | 6.0   | 4.3    | .00  | .00  | .00  |
| 14    | .00  | .29   | .66   | .00    | 32     | 20   | 15    | 5.5   | 6.0    | .00  | .00  | .00  |
| 15    | .00  | .20   | .52   | .01    | 29     | 31   | 15    | 5.5   | 8.5    | .00  | .00  | .00  |
| 16    | .00  | .00   | .53   | .31    | 27     | 25   | 13    | 5.1   | 7.2    | .00  | .00  | .00  |
| 17    | .00  | .50   | .29   | .12    | 41     | 22   | 13    | 5.3   | 4.6    | .00  | .00  | .00  |
| 18    | .00  | .16   | .28   | 1.1    | 35     | 22   | 11    | 5.0   | 4.2    | .00  | .00  | .00  |
| 19    | .00  | .18   | .26   | 8.2    | 39     | 22   | 12    | 5.7   | 4.1    | .00  | .00  | .00  |
| 20    | .00  | .55   | .30   | 9.1    | 40     | 23   | 11    | 5.6   | 4.1    | .00  | .00  | .00  |
| 21    | .00  | .53   | .31   | 6.5    | 80     | 21   | 10    | 5.3   | 7.3    | .00  | .00  | .00  |
| 22    | .00  | .72   | .33   | 3.8    | 52     | 21   | 10    | 5.4   | 7.3    | .00  | .00  | .00  |
| 23    | .00  | .65   | .25   | 13     | 44     | 24   | 9.2   | 4.9   | 5.8    | .00  | .00  | .00  |
| 24    | .74  | 1.1   | .22   | 10     | 39     | 21   | 8.9   | 4.3   | 5.7    | .00  | .00  | .00  |
| 25    | .26  | .39   | .22   | 6.4    | 44     | 20   | 8.9   | 5.5   | 5.0    | .00  | .00  | .00  |
| 26    | .20  | .42   | .23   | 14     | 36     | 19   | 9.2   | 4.9   | 3.0    | .00  | .00  | .00  |
| 27    | .21  | 4.4   | .20   | 12     | 32     | 17   | 9.0   | 4.4   | .85    | .00  | .00  | .00  |
| 28    | .16  | 13    | .17   | 8.3    | 30     | 17   | 8.8   | 3.5   | 2.4    | .00  | .00  | .00  |
| 29    | .21  | 4.7   | .17   | 7.1    | ---    | 16   | 8.6   | 3.8   | .05    | .00  | .00  | .00  |
| 30    | .01  | 14    | .08   | 6.5    | ---    | 16   | 8.9   | 3.5   | .59    | .00  | .00  | .00  |
| 31    | .08  | ---   | .00   | 32     | ---    | 17   | ---   | 3.5   | ---    | .00  | .00  | ---  |
| TOTAL | 4.36 | 46.15 | 29.63 | 138.58 | 1136.8 | 704  | 416.5 | 177.6 | 123.89 | 0.06 | 0.00 | 0.00 |
| MEAN  | .14  | 1.54  | .96   | 4.47   | 40.6   | 22.7 | 13.9  | 5.73  | 4.13   | .002 | .000 | .000 |
| MAX   | .81  | 14    | 5.6   | 32     | 106    | 34   | 24    | 8.3   | 8.5    | .06  | .00  | .00  |
| MIN   | .00  | .00   | .00   | .00    | 7.5    | 16   | 8.6   | 3.5   | .05    | .00  | .00  | .00  |
| AC-FT | 8.6  | 92    | 59    | 275    | 2250   | 1400 | 826   | 352   | 246    | .1   | .00  | .00  |

e Estimated.

## TEMLADERO SLOUGH BASIN

## 11152600 GABILAN CREEK NEAR SALINAS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .038 | .62  | 3.97 | 11.4 | 21.6 | 16.5 | 9.46 | 2.91 | 1.37 | .52  | .19  | .042 |
| MAX  | .50  | 6.20 | 55.0 | 99.5 | 239  | 124  | 58.7 | 25.2 | 14.8 | 8.24 | 2.85 | .58  |
| (WY) | 1984 | 1983 | 1997 | 1997 | 1998 | 1983 | 1974 | 1998 | 1998 | 1998 | 1983 | 1983 |
| MIN  | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1971 | 1971 | 1972 | 1972 | 1972 | 1972 | 1972 | 1971 | 1971 | 1971 | 1971 | 1971 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1971 - 1999

|                          |  |          |  |         |  |      |  |        |  |       |  |            |
|--------------------------|--|----------|--|---------|--|------|--|--------|--|-------|--|------------|
| ANNUAL TOTAL             |  | 12862.57 |  | 2777.57 |  |      |  |        |  |       |  |            |
| ANNUAL MEAN              |  | 35.2     |  | 7.61    |  |      |  |        |  | 5.63  |  |            |
| HIGHEST ANNUAL MEAN      |  |          |  |         |  |      |  |        |  | 35.4  |  | 1998       |
| LOWEST ANNUAL MEAN       |  |          |  |         |  |      |  |        |  | .000  |  | 1972       |
| HIGHEST DAILY MEAN       |  | 646      |  | Feb 3   |  | 106  |  | Feb 9  |  | 646   |  | Feb 3 1998 |
| LOWEST DAILY MEAN        |  | .00      |  | Jan 1   |  | .00  |  | Oct 7  |  | .00   |  | Oct 1 1970 |
| ANNUAL SEVEN-DAY MINIMUM |  | .00      |  | Oct 10  |  | .00  |  | Oct 10 |  | .00   |  | Oct 1 1970 |
| INSTANTANEOUS PEAK FLOW  |  |          |  |         |  | 187  |  | Feb 9  |  | 1030  |  | Feb 3 1998 |
| INSTANTANEOUS PEAK STAGE |  |          |  |         |  | 3.38 |  | Feb 9  |  | 11.13 |  | Apr 1 1974 |
| ANNUAL RUNOFF (AC-FT)    |  | 25510    |  |         |  | 5510 |  |        |  | 4080  |  |            |
| 10 PERCENT EXCEEDS       |  | 84       |  |         |  | 23   |  |        |  | 11    |  |            |
| 50 PERCENT EXCEEDS       |  | 8.7      |  |         |  | .66  |  |        |  | .00   |  |            |
| 90 PERCENT EXCEEDS       |  | .12      |  |         |  | .00  |  |        |  | .00   |  |            |

## 11154700 CLEAR CREEK NEAR IDRIA, CA

LOCATION.—Lat 36°21'53", long 120°45'19", in SE 1/4 sec.15, T.18 S., R.11 E., San Benito County, Hydrologic Unit 18060002, on right bank, in Clear Creek Management Area, 1.7 mi upstream from San Benito River, and 5.8 mi southwest of Idria.

DRAINAGE AREA.—14.1 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1993 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 2,600 ft above sea level, from topographic map.

REMARKS.—Records fair. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,100 ft<sup>3</sup>/s, Mar. 10, 1995, gage height, 6.75 ft, from rating curve extended above 18 ft<sup>3</sup>/s on basis of slope-area measurements at gage heights of 4.44 ft and 6.75 ft; minimum daily, 0.07 ft<sup>3</sup>/s, Sept. 7, 8, 1994.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 30 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 1130 | 37                                | 2.34                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN   | FEB  | MAR   | APR   | MAY   | JUN  | JUL   | AUG   | SEP   |
|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|
| 1     | 2.7  | 2.1   | 2.4   | .93   | 3.2  | 3.1   | 5.5   | 4.7   | 3.3  | 1.8   | .93   | .61   |
| 2     | 2.7  | 2.1   | 1.6   | .93   | 2.6  | 3.0   | 5.4   | 5.0   | 3.5  | 1.7   | .87   | .62   |
| 3     | 2.7  | 2.1   | 2.0   | .93   | 2.4  | 3.1   | 5.5   | 4.9   | 3.7  | 1.8   | .84   | .63   |
| 4     | 2.7  | 2.1   | 1.7   | .91   | 2.5  | 3.0   | 5.3   | 4.6   | 3.7  | 1.7   | .82   | .61   |
| 5     | 2.6  | 2.1   | 1.4   | .89   | 2.5  | 3.0   | 6.0   | 4.5   | 3.6  | 1.7   | .81   | .60   |
| 6     | 2.5  | 2.1   | 1.5   | .87   | 2.5  | 3.1   | 6.3   | 4.4   | 3.5  | 1.7   | .87   | .57   |
| 7     | 2.4  | 2.7   | 1.2   | .86   | 2.8  | 3.1   | 6.2   | 4.4   | 3.4  | 1.6   | .96   | .53   |
| 8     | 2.4  | 2.6   | 1.2   | .85   | 3.2  | 3.1   | 7.2   | 4.3   | 3.4  | 1.7   | .99   | .52   |
| 9     | 2.4  | 2.4   | 1.2   | .83   | 9.9  | 3.3   | 6.7   | 4.5   | 3.4  | 1.7   | .97   | .52   |
| 10    | 2.4  | 4.3   | 1.1   | .84   | 4.6  | 3.1   | 6.7   | 4.4   | 3.5  | 1.7   | .92   | .52   |
| 11    | 2.3  | 2.3   | 1.1   | .83   | 3.6  | 3.1   | 13    | 4.4   | 3.2  | 1.6   | .87   | .53   |
| 12    | 2.2  | 1.3   | 1.0   | .75   | 3.9  | 3.0   | 11    | 4.4   | 3.2  | 1.6   | .85   | .53   |
| 13    | 2.2  | 1.2   | 1.1   | .74   | 3.6  | 2.9   | 7.7   | 4.3   | 3.1  | 1.7   | .82   | .53   |
| 14    | 2.3  | 1.1   | 1.1   | .73   | 3.5  | 2.4   | 6.9   | 4.2   | 3.0  | 1.6   | .79   | .52   |
| 15    | 2.3  | 1.1   | 1.1   | .73   | 3.5  | 2.3   | 6.7   | 4.2   | 2.9  | 1.3   | .77   | .51   |
| 16    | 2.3  | 1.0   | 1.0   | .90   | 3.5  | 2.1   | 6.4   | 4.2   | 2.9  | 1.2   | .75   | .50   |
| 17    | 2.2  | 1.1   | .99   | 1.2   | 3.4  | 1.9   | 7.1   | 4.1   | 2.8  | 1.1   | .72   | .49   |
| 18    | 2.2  | .97   | .99   | 1.5   | 3.4  | 1.9   | 6.4   | 4.0   | 2.7  | 1.1   | .71   | .50   |
| 19    | 2.2  | .94   | 1.0   | 1.6   | 3.3  | 2.8   | 6.1   | 4.0   | 2.6  | 1.1   | .69   | .51   |
| 20    | 2.1  | .91   | 1.1   | 2.4   | 3.3  | 4.2   | 5.7   | 4.0   | 2.7  | 1.1   | .67   | .51   |
| 21    | 2.1  | .88   | 1.6   | 2.1   | 3.5  | 3.5   | 5.5   | 3.8   | 2.7  | 1.1   | .66   | .50   |
| 22    | 2.1  | .89   | 1.6   | 1.8   | 3.3  | 3.3   | 5.3   | 3.8   | 2.6  | 1.1   | .65   | .58   |
| 23    | 2.1  | .91   | 1.6   | 2.3   | 3.3  | 3.1   | 5.2   | 3.8   | 2.5  | 1.1   | .63   | .73   |
| 24    | 3.0  | .93   | 1.5   | 2.2   | 3.2  | 3.0   | 5.4   | 3.7   | 2.5  | 1.1   | .62   | .66   |
| 25    | 2.6  | .90   | 1.6   | 2.2   | 3.3  | 9.3   | 5.0   | 3.6   | 2.2  | 1.1   | .60   | .59   |
| 26    | 2.4  | .86   | .96   | 2.4   | 3.1  | 6.9   | 4.9   | 3.6   | 2.2  | 1.0   | .62   | .52   |
| 27    | 2.3  | .89   | .93   | 2.3   | 3.1  | 6.4   | 5.2   | 3.5   | 2.1  | 1.0   | .61   | .51   |
| 28    | 2.3  | 1.3   | .88   | 2.2   | 3.1  | 6.1   | 5.1   | 3.5   | 2.0  | .98   | .60   | .51   |
| 29    | 2.2  | 1.0   | .85   | 2.4   | ---  | 5.7   | 4.9   | 3.5   | 1.9  | .96   | .59   | .50   |
| 30    | 2.1  | 3.1   | .83   | 2.4   | ---  | 5.6   | 4.8   | 3.5   | 1.9  | .94   | .59   | .51   |
| 31    | 2.1  | ---   | .86   | 3.3   | ---  | 5.8   | ---   | 3.5   | ---  | .93   | .61   | ---   |
| TOTAL | 73.1 | 48.18 | 38.99 | 45.82 | 97.1 | 116.2 | 189.1 | 127.3 | 86.7 | 41.81 | 23.40 | 16.47 |
| MEAN  | 2.36 | 1.61  | 1.26  | 1.48  | 3.47 | 3.75  | 6.30  | 4.11  | 2.89 | 1.35  | .75   | .55   |
| MAX   | 3.0  | 4.3   | 2.4   | 3.3   | 9.9  | 9.3   | 13    | 5.0   | 3.7  | 1.8   | .99   | .73   |
| MIN   | 2.1  | .86   | .83   | .73   | 2.4  | 1.9   | 4.8   | 3.5   | 1.9  | .93   | .59   | .49   |
| AC-FT | 145  | 96    | 77    | 91    | 193  | 230   | 375   | 252   | 172  | 83    | 46    | 33    |

## 11154700 CLEAR CREEK NEAR IDRIA, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 1.17 | 1.17 | 2.34 | 8.06 | 14.0 | 16.7 | 9.76 | 7.43 | 5.01 | 2.56 | 1.48 | 1.16 |
| MAX  | 2.36 | 1.61 | 5.90 | 24.6 | 46.7 | 49.4 | 20.9 | 21.6 | 14.5 | 6.84 | 3.86 | 2.91 |
| (WY) | 1999 | 1999 | 1997 | 1995 | 1998 | 1995 | 1998 | 1998 | 1998 | 1998 | 1998 | 1998 |
| MIN  | .23  | .36  | .43  | 1.25 | 2.87 | 1.79 | 1.35 | 1.11 | .62  | .27  | .10  | .11  |
| (WY) | 1995 | 1995 | 1995 | 1994 | 1994 | 1994 | 1994 | 1994 | 1994 | 1994 | 1994 | 1994 |

## SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1994 - 1999

|                          |         |        |        |        |       |        |      |
|--------------------------|---------|--------|--------|--------|-------|--------|------|
| ANNUAL TOTAL             | 4616.77 |        | 904.17 |        | 5.86  |        |      |
| ANNUAL MEAN              | 12.6    |        | 2.48   |        | 12.7  |        |      |
| HIGHEST ANNUAL MEAN      |         |        |        |        | 1998  |        |      |
| LOWEST ANNUAL MEAN       |         |        |        |        | 1.06  |        |      |
| HIGHEST DAILY MEAN       | 98      | Feb 9  | 13     | Apr 11 | 464   | Mar 10 | 1995 |
| LOWEST DAILY MEAN        | .83     | Dec 30 | .49    | Sep 17 | .07   | Sep 7  | 1994 |
| ANNUAL SEVEN-DAY MINIMUM | .89     | Nov 21 | .50    | Sep 15 | .08   | Sep 2  | 1994 |
| INSTANTANEOUS PEAK FLOW  |         |        | 37     |        | Feb 9 |        | 1100 |
| INSTANTANEOUS PEAK STAGE |         |        | 2.34   |        | Feb 9 |        | 6.75 |
| ANNUAL RUNOFF (AC-FT)    | 9160    |        | 1790   |        | 4250  |        |      |
| 10 PERCENT EXCEEDS       | 27      |        | 4.9    |        | 16    |        |      |
| 50 PERCENT EXCEEDS       | 5.5     |        | 2.2    |        | 2.0   |        |      |
| 90 PERCENT EXCEEDS       | 1.3     |        | .63    |        | .60   |        |      |



## 11154700 CLEAR CREEK NEAR IDRIA, CA—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.—October 1993 to current year.

CHEMICAL DATA: November 1993 to current year.

WATER TEMPERATURE: October 1993 to September 1996.

SEDIMENT DATA: November 1993 to current year.

PERIOD OF DAILY RECORD.—October 1993 to September 1996.

WATER TEMPERATURE: October 1993 to September 1996.

REMARKS.—Zero bed-load discharge observed for flows less than 4.0 ft<sup>3</sup>/s during current year.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 35.5°C, Aug. 13–15, 1994; minimum recorded, 0.0°C, several days during water year 1994, and Jan. 23, 1996.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061)     | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)<br>(00095)                   | PH<br>WATER<br>WHOLE<br>FIELD<br>(STAND-<br>ARD<br>UNITS)<br>(00400) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010)                 | TUR-<br>BID-<br>ITY<br>(NTU)<br>(00076)                       | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG)<br>(00025)      | OXYGEN,<br>OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)<br>(00300)                     | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION)<br>(00301)      |  |
|-------|------|---|--|--|---|---|--|---|--|--|
| JAN   |      |   |  |  |   |   |  |   |  |  |
| 21... | 1315 | 2.5   | 1070   | 9.4  | 8.0   | .32   | 703  | 11.0  | 101  |  |
| FEB   |      |   |  |  |   |   |  |   |  |  |
| 11... | 1310 | 4.0   | 1060   | 8.9  | 3.5   | 4.3   | 705  | --  | --   |  |
| MAR   |      |   |  |  |   |   |  |   |  |  |
| 25... | 1415 | 8.7   | 986  | 9.2  | 15.0  | 56  | 692  | 9.0   | 99   |  |
|       |      |   |  |  |   |   |  |   |  |  |
| DATE  |      | HARD-<br>NESS<br>TOTAL<br>(MG/L<br>AS<br>CACO3)<br>(00900)                | HARD-<br>NESS<br>NONCARB<br>DISSOLV<br>FLD. AS<br>CACO3<br>(MG/L)<br>(00904)   | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)<br>(00915)              | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG)<br>(00925) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)<br>(00930)       | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO<br>(MG/L<br>AS K)<br>(00932) | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K)<br>(00935)                | BICAR-<br>BONATE<br>WATER<br>DIS IT<br>FIELD<br>(MG/L AS<br>CO3)<br>(00452)    |  |
| JAN   |      |   |  |  |   |   |  |   |  |  |
| ...   | 750  | 88  | 2.8  | 180  | 9.5   | 3   | .2   | 1.1   | 683  |  |
| FEB   |      |   |  |  |   |   |  |   |  |  |
| 11... | 720  | 1   | 2.7  | 173  | 7.9   | 2   | .1   | 1.0   | 652  |  |
| MAR   |      |   |  |  |   |   |  |   |  |  |
| 25... | 650  | 15  | 3.2  | 157  | 8.4   | 3   | .1   | 1.0   | 588  |  |
|       |      |   |  |  |   |   |  |   |  |  |
| DATE  |      | CAR-<br>BONATE<br>WATER<br>DIS IT<br>FIELD<br>(MG/L AS<br>CO3)<br>(00452) | ALKA-<br>LINITY<br>WAT DIS<br>TOT IT<br>FIELD<br>(MG/L AS<br>CACO3)<br>(39086) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)<br>(00945)             | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)<br>(00940)  | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)<br>(00950) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2)<br>(00955)         | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L)<br>(70300) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L)<br>(70301) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT)<br>(70303) |
| JAN   |      |   |  |  |   |   |  |   |  |  |
| 21... | 60   | 660   | 8.1  | 20   | <.1   | 3.6   | 740  | 621   | 1.01   |  |
| FEB   |      |   |  |  |   |   |  |   |  |  |
| 11... | 110  | 718   | 7.4  | 18   | <.1   | 3.9   | 702  | 645   | .95  |  |
| MAR   |      |   |  |  |   |   |  |   |  |  |
| 25... | 94   | 638   | 9.2  | 17   | <.1   | 4.8   | 589  | 584   | .80  |  |

&lt; Actual value is known to be less than the value shown.

## PAJARO RIVER BASIN

11154700 CLEAR CREEK NEAR IDRIA, CA—Continued

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-<br>HARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>SUS-<br>PENDE<br>(MG/L)<br>(80154) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>(T/DAY)<br>(80155) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) |
|-------|------|--|---|--|--|--|
| JAN   |      |  |   |  |  |  |
| 21... | 1315 | 2.5  | 8.0   | 2  | .01  | 70   |
| FEB   |      |  |   |  |  |  |
| 11... | 1215 | 3.4  | 3.5   | 18   | .17  | 86   |
| MAR   |      |  |   |  |  |  |
| 25... | 1320 | 9.0  | 15.0  | 162  | 3.9  | 96   |

## 11156500 SAN BENITO RIVER NEAR WILLOW CREEK SCHOOL, CA

LOCATION.—Lat 36°36'34", long 121°12'07", in SE 1/4 SE 1/4 sec.21, T.15 S., R.7 E., San Benito County, Hydrologic Unit 18060002, on left bank, 0.9 mi northwest of Willow Creek School, 1.3 mi downstream from Willow Creek, and 10 mi northwest of San Benito.

DRAINAGE AREA.—249 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1939 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

REVISED RECORDS.—WSP 1565: 1948(M), 1949. WSP 1315-B: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 925.52 ft above sea level. Prior to Jan. 28, 1948, and Nov. 11, 1955, to Sept. 30, 1965, at site 0.9 mi downstream at different datum. Jan. 28, 1948, to Nov. 10, 1955, and Oct. 1, 1965, to Oct. 22, 1970, at present site at datum 2.37 ft higher.

REMARKS.—Records are poor. Medium and low flows frequently regulated by Hernandez Reservoir 40 mi upstream beginning in December 1961, capacity, 18,500 acre-ft. Small diversions upstream from station for irrigation.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 9,660 ft<sup>3</sup>/s, Mar. 10, 1995, gage height, 14.55 ft, from flood marks, from rating curve extended above 2,100 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 12.94 ft; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of February 1938 reached a stage of about 9.0 ft, from floodmarks at former site 0.9 mi downstream, referenced to datum used at that site, flow estimated at 9,000 ft<sup>3</sup>/s based on 1941 peak and rating extrapolation.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 500 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 0900 | 185                               | 6.53                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB  | MAR   | APR   | MAY   | JUN   | JUL    | AUG   | SEP   |
|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|--------|-------|-------|
| 1     | 6.1   | 10    | 26    | 8.5   | 39   | 9.8   | 11    | 14    | 3.6   | 4.6    | e5.6  | e50   |
| 2     | 5.7   | 9.6   | 18    | 8.5   | 30   | 9.1   | 12    | 9.6   | 4.3   | e1.1   | e5.6  | e45   |
| 3     | 5.5   | 10    | 17    | 8.5   | 25   | 9.4   | 10    | 10    | 6.1   | e1.0   | e5.6  | e41   |
| 4     | 5.4   | 9.6   | 20    | 8.7   | 24   | 9.9   | 13    | 11    | 6.0   | e.90   | e5.6  | e41   |
| 5     | 5.4   | 9.6   | 16    | 9.0   | 23   | 10    | 14    | 9.7   | 13    | 1.8    | e5.6  | e40   |
| 6     | 5.3   | 9.7   | 20    | 9.0   | 26   | 11    | 22    | 8.9   | 12    | 2.0    | e5.6  | e45   |
| 7     | 13    | 12    | 16    | 9.0   | 29   | 9.5   | 20    | 7.3   | 3.2   | 2.2    | e5.6  | e47   |
| 8     | 17    | 14    | 15    | 9.0   | 30   | 9.9   | 19    | 8.5   | 2.4   | 3.0    | e5.6  | e42   |
| 9     | 20    | 13    | 14    | 9.0   | 85   | 18    | 23    | 7.4   | 2.6   | 3.0    | e6.8  | e38   |
| 10    | 21    | 15    | 12    | 9.0   | 89   | 13    | 28    | 7.1   | 2.5   | 3.0    | e8.0  | e40   |
| 11    | 19    | 24    | 12    | 9.0   | 78   | 13    | 31    | 7.3   | 2.6   | 3.9    | e9.0  | e36   |
| 12    | 19    | 19    | 12    | 9.0   | 58   | 9.7   | 30    | 6.9   | 2.4   | 2.4    | e10   | e32   |
| 13    | 18    | 16    | 12    | 9.0   | 40   | 8.5   | 29    | 6.4   | 2.4   | 2.5    | e13   | e30   |
| 14    | 18    | 15    | 12    | 8.9   | 32   | 10    | 21    | 7.7   | 2.5   | 4.8    | e15   | e30   |
| 15    | 19    | 15    | 12    | 8.5   | 26   | 11    | 20    | 8.3   | 2.3   | 6.0    | e14   | e30   |
| 16    | 19    | 14    | 11    | 8.3   | 24   | 12    | 18    | 6.4   | 2.2   | 3.7    | e13   | e23   |
| 17    | 19    | 15    | 11    | 8.0   | 23   | 10    | 16    | 8.4   | 2.3   | 4.0    | e14   | e17   |
| 18    | 19    | 15    | 10    | 8.0   | 18   | 8.7   | 13    | 7.3   | 2.3   | 4.8    | e15   | e13   |
| 19    | 20    | 14    | 10    | 8.2   | 14   | 13    | 11    | 6.0   | e1.3  | 4.8    | e13   | e10   |
| 20    | 19    | 13    | 10    | 12    | 14   | 30    | 9.7   | 7.0   | e1.2  | 4.9    | e25   | e9.5  |
| 21    | 19    | 12    | 11    | 12    | 39   | 24    | 9.7   | 6.6   | e1.0  | 5.2    | e70   | e8.5  |
| 22    | 18    | 12    | 11    | 11    | 25   | 19    | 12    | 5.8   | 1.6   | 5.7    | e70   | e8.0  |
| 23    | 14    | 12    | 10    | 13    | 19   | 17    | 13    | 5.9   | 1.6   | 6.9    | e70   | e8.0  |
| 24    | 14    | 12    | 10    | 15    | 17   | 16    | 12    | 5.6   | 1.4   | 8.4    | e70   | e8.5  |
| 25    | 16    | 12    | 9.0   | 14    | 28   | 22    | 11    | 4.5   | 1.5   | 9.1    | e70   | e7.0  |
| 26    | 14    | 12    | 9.0   | 18    | 18   | 18    | 11    | 3.1   | e1.3  | 8.7    | e70   | e7.0  |
| 27    | 12    | 13    | 9.3   | 24    | 12   | 16    | 11    | 3.7   | e1.0  | 8.3    | e60   | e6.8  |
| 28    | 12    | 22    | 9.6   | 23    | 13   | 12    | 8.9   | 3.7   | e.90  | 8.5    | e60   | e6.8  |
| 29    | 11    | 14    | 9.6   | 19    | ---  | 13    | 9.8   | 3.0   | e.80  | e8.0   | e60   | e6.5  |
| 30    | 11    | 16    | 9.6   | 18    | ---  | 11    | 10    | 5.7   | e.90  | e7.0   | e55   | e6.0  |
| 31    | 11    | ---   | 9.3   | 57    | ---  | 13    | ---   | 3.3   | ---   | e6.5   | e50   | ---   |
| TOTAL | 445.4 | 409.5 | 393.4 | 401.1 | 898  | 416.5 | 479.1 | 216.1 | 89.20 | 146.70 | 905.6 | 732.6 |
| MEAN  | 14.4  | 13.6  | 12.7  | 12.9  | 32.1 | 13.4  | 16.0  | 6.97  | 2.97  | 4.73   | 29.2  | 24.4  |
| MAX   | 21    | 24    | 26    | 57    | 89   | 30    | 31    | 14    | 13    | 9.1    | 70    | 50    |
| MIN   | 5.3   | 9.6   | 9.0   | 8.0   | 12   | 8.5   | 8.9   | 3.0   | .80   | .90    | 5.6   | 6.0   |
| AC-FT | 883   | 812   | 780   | 796   | 1780 | 826   | 950   | 429   | 177   | 291    | 1800  | 1450  |

e Estimated.

## 11156500 SAN BENITO RIVER NEAR WILLOW CREEK SCHOOL, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 6.64 | 5.85 | 15.7 | 33.8 | 73.7 | 80.2 | 44.3 | 22.5 | 19.8 | 14.3 | 13.9 | 11.0 |
| MAX  | 53.4 | 51.6 | 181  | 238  | 869  | 655  | 532  | 130  | 88.5 | 79.2 | 71.0 | 67.2 |
| (WY) | 1996 | 1996 | 1956 | 1952 | 1998 | 1983 | 1958 | 1983 | 1962 | 1967 | 1967 | 1978 |
| MIN  | .013 | .069 | .095 | .081 | .11  | .23  | .21  | .15  | .078 | .019 | .000 | .000 |
| (WY) | 1962 | 1990 | 1991 | 1990 | 1991 | 1977 | 1990 | 1961 | 1989 | 1961 | 1961 | 1961 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |  |  | FOR 1999 WATER YEAR |  |  | WATER YEARS 1940 - 1999 |  |  |
|--------------------------|------------------------|--|--|---------------------|--|--|-------------------------|--|--|
| ANNUAL TOTAL             | 45884.2                |  |  | 5533.20             |  |  |                         |  |  |
| ANNUAL MEAN              | 126                    |  |  | 15.2                |  |  | 28.2                    |  |  |
| HIGHEST ANNUAL MEAN      |                        |  |  |                     |  |  | 126                     |  |  |
| LOWEST ANNUAL MEAN       |                        |  |  |                     |  |  | .15                     |  |  |
| HIGHEST DAILY MEAN       | 2700                   |  |  | 89                  |  |  | 5000                    |  |  |
| LOWEST DAILY MEAN        | 1.2                    |  |  | .80                 |  |  | .00                     |  |  |
| ANNUAL SEVEN-DAY MINIMUM | 1.7                    |  |  | 1.1                 |  |  | .00                     |  |  |
| INSTANTANEOUS PEAK FLOW  |                        |  |  | 185                 |  |  | 9660                    |  |  |
| INSTANTANEOUS PEAK STAGE |                        |  |  | 6.53                |  |  | 14.55                   |  |  |
| ANNUAL RUNOFF (AC-FT)    | 91010                  |  |  | 10980               |  |  | 20460                   |  |  |
| 10 PERCENT EXCEEDS       | 324                    |  |  | 30                  |  |  | 58                      |  |  |
| 50 PERCENT EXCEEDS       | 28                     |  |  | 11                  |  |  | 3.7                     |  |  |
| 90 PERCENT EXCEEDS       | 7.0                    |  |  | 3.2                 |  |  | .19                     |  |  |

## 11157500 TRES PINOS CREEK NEAR TRES PINOS, CA

LOCATION.—Lat 36°45'53", long 121°17'45", in NW 1/4 NE 1/4 sec.34, T.13 S., R.6 E., in Santa Ana y Quien Sabe Grant, San Benito County, Hydrologic Unit 18060002, on right bank, 2.0 mi southeast of Tres Pinos, and 4.7 mi upstream from mouth.

DRAINAGE AREA.—208 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1939 to September 1983, October 1996 to current year. Yearly estimate only for 1940 and monthly discharge only for some periods, published in WSP 1315-B.

GAGE.—Water-stage recorder and crest-stage gage. Altitude of gage is 515 ft above sea level, from topographic map. From 1939–83, located 1.5 mi upstream at different datum.

REMARKS.—Records poor. No regulation. Diversions above station for irrigation can divert total flow in summer months, and since 1962, diversions into basin above station from San Benito River (via Paicines Reservoir) for ground-water recharge and irrigation.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 27,200 ft<sup>3</sup>/s, Feb. 3, 1998, gage height, 16.00 ft, from floodmarks, from rating curve extended above 9,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow at times in 1952, 1957–61, 1965, 1998, 1999.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood in February 1938 reached a stage of about 9.0 ft, from floodmarks at datum then in use.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 450 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 1600 | 505                               | 3.33                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB  | MAR   | APR   | MAY   | JUN  | JUL   | AUG    | SEP   |
|-------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|--------|-------|
| 1     | 5.3   | 6.1   | 51    | 9.5   | 98   | e17   | e7.0  | e5.0  | 1.7  | 5.3   | 3.6    | 11    |
| 2     | 5.4   | 6.1   | 33    | 9.6   | 64   | e17   | e6.5  | e4.8  | 1.7  | 3.9   | 3.4    | 11    |
| 3     | 5.7   | 6.2   | 21    | 9.5   | 48   | e17   | e6.5  | e4.7  | 1.8  | 2.9   | 1.9    | 10    |
| 4     | 5.9   | 6.0   | 33    | 9.4   | 41   | e17   | e6.2  | e4.5  | 2.6  | 2.9   | .00    | 10    |
| 5     | 5.9   | 5.7   | 26    | 9.6   | 33   | e16   | e6.2  | 4.3   | 3.4  | 3.0   | .00    | 9.7   |
| 6     | 5.9   | 5.8   | 29    | 9.6   | 27   | e16   | e6.5  | 4.1   | 1.3  | 3.2   | .00    | 10    |
| 7     | 6.2   | 6.5   | 26    | 9.4   | 28   | e15   | e6.8  | 4.1   | 1.3  | 3.3   | .00    | 10    |
| 8     | 6.4   | 6.0   | 19    | 9.2   | 70   | e14   | e7.0  | 4.1   | 1.4  | 3.2   | .00    | 11    |
| 9     | 6.7   | 5.8   | 18    | 9.2   | e110 | e13   | e7.5  | 4.1   | 1.4  | 3.3   | .01    | 9.9   |
| 10    | 7.2   | 7.1   | 17    | 9.1   | e80  | e13   | e8.0  | 4.1   | 1.4  | 3.4   | .34    | 10    |
| 11    | 7.5   | 6.4   | 16    | 9.2   | e60  | e12   | e8.5  | 4.1   | 1.5  | 3.5   | .64    | 9.3   |
| 12    | 7.9   | 5.7   | 14    | 9.4   | e50  | e12   | e9.0  | 4.1   | 1.6  | 3.0   | .88    | 8.8   |
| 13    | 8.1   | 5.7   | 13    | 9.5   | e42  | e12   | e9.0  | 4.1   | 1.6  | 3.0   | 2.7    | 8.5   |
| 14    | 8.4   | 5.8   | 14    | 9.5   | e35  | e12   | e8.5  | 4.1   | 1.7  | 3.9   | 7.3    | 8.7   |
| 15    | 8.6   | 5.9   | 16    | 8.6   | e32  | e16   | e8.0  | 4.0   | 1.8  | 5.2   | 9.4    | 8.6   |
| 16    | 8.5   | 6.0   | 14    | 8.7   | e30  | e15   | e7.8  | 4.0   | 1.8  | 5.5   | 8.9    | 7.5   |
| 17    | 8.4   | 6.5   | 13    | 8.5   | e28  | e14   | e7.5  | 4.0   | 1.7  | 6.2   | 9.3    | 6.5   |
| 18    | 8.4   | 6.0   | 13    | 8.6   | e26  | e14   | e7.3  | 4.0   | 1.8  | 5.9   | 9.2    | 5.4   |
| 19    | 8.3   | 6.2   | 12    | 9.0   | e24  | e14   | e7.0  | 4.2   | 1.9  | 5.9   | 8.7    | 5.2   |
| 20    | 8.0   | 6.3   | 13    | 11    | e22  | e17   | e6.8  | 4.5   | 1.9  | 5.7   | 8.4    | 4.8   |
| 21    | 7.9   | 6.5   | 11    | 14    | e32  | e16   | e6.6  | 4.6   | 1.9  | 5.4   | 10     | 4.4   |
| 22    | 8.0   | 6.7   | 10    | 15    | e30  | e15   | e6.4  | 3.9   | 1.8  | 5.7   | 14     | 4.3   |
| 23    | 8.2   | 6.7   | 8.6   | 18    | e26  | e15   | e6.0  | 2.3   | 1.7  | 5.1   | 14     | 4.3   |
| 24    | 10    | 6.8   | 8.4   | 23    | e23  | e17   | e5.8  | 2.3   | 2.0  | 4.7   | 14     | 4.5   |
| 25    | 7.6   | 6.1   | 9.4   | 25    | e21  | e18   | e5.7  | 2.3   | 2.2  | 4.1   | 14     | 4.2   |
| 26    | 6.8   | 6.1   | 9.7   | 34    | e20  | e15   | e5.5  | 2.3   | 3.7  | 4.3   | 13     | 4.2   |
| 27    | 6.3   | 9.4   | 10    | 52    | e19  | e13   | e5.4  | 2.3   | 3.6  | 4.3   | 13     | 4.2   |
| 28    | 6.4   | 32    | 10    | 42    | e18  | e11   | e5.3  | 2.3   | 3.8  | 4.6   | 13     | 4.1   |
| 29    | 6.2   | 30    | 9.5   | 30    | ---  | e9.0  | e5.2  | 2.8   | 4.5  | 4.9   | 13     | 4.1   |
| 30    | 6.2   | 29    | 9.6   | 26    | ---  | e8.0  | e5.1  | 4.2   | 4.9  | 4.2   | 13     | 3.7   |
| 31    | 6.0   | ---   | 9.5   | 64    | ---  | e7.5  | ---   | 3.1   | ---  | 4.0   | 11     | ---   |
| TOTAL | 222.3 | 261.1 | 516.7 | 529.1 | 1137 | 437.5 | 204.6 | 117.3 | 65.4 | 133.5 | 216.67 | 217.9 |
| MEAN  | 7.17  | 8.70  | 16.7  | 17.1  | 40.6 | 14.1  | 6.82  | 3.78  | 2.18 | 4.31  | 6.99   | 7.26  |
| MAX   | 10    | 32    | 51    | 64    | 110  | 18    | 9.0   | 5.0   | 4.9  | 6.2   | 14     | 11    |
| MIN   | 5.3   | 5.7   | 8.4   | 8.5   | 18   | 7.5   | 5.1   | 2.3   | 1.3  | 2.9   | .00    | 3.7   |
| AC-FT | 441   | 518   | 1020  | 1050  | 2260 | 868   | 406   | 233   | 130  | 265   | 430    | 432   |

e Estimated.

## 11157500 TRES PINOS CREEK NEAR TRES PINOS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 2.75 | 4.25 | 16.1 | 40.9 | 67.7 | 40.7 | 26.3 | 7.10 | 5.06 | 4.63 | 4.25 | 3.42 |
| MAX  | 7.40 | 23.0 | 205  | 313  | 835  | 391  | 327  | 76.1 | 29.8 | 18.9 | 20.6 | 14.1 |
| (WY) | 1970 | 1997 | 1956 | 1997 | 1998 | 1983 | 1958 | 1998 | 1998 | 1979 | 1978 | 1983 |
| MIN  | .22  | .19  | .64  | 1.06 | .88  | .52  | .18  | .22  | .21  | .14  | .15  | .12  |
| (WY) | 1965 | 1965 | 1978 | 1961 | 1961 | 1948 | 1964 | 1964 | 1950 | 1966 | 1965 | 1964 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |  |  | FOR 1999 WATER YEAR |  |  | WATER YEARS 1941 - 1999 |  |  |
|--------------------------|------------------------|--|--|---------------------|--|--|-------------------------|--|--|
| ANNUAL TOTAL             | 36789.8                |  |  | 4059.07             |  |  |                         |  |  |
| ANNUAL MEAN              | 101                    |  |  | 11.1                |  |  | 18.3                    |  |  |
| HIGHEST ANNUAL MEAN      |                        |  |  |                     |  |  | 98.9                    |  |  |
| LOWEST ANNUAL MEAN       |                        |  |  |                     |  |  | .69                     |  |  |
| HIGHEST DAILY MEAN       | 9000                   |  |  | 110                 |  |  | 9000                    |  |  |
| LOWEST DAILY MEAN        | 2.0                    |  |  | .00                 |  |  | .00                     |  |  |
| ANNUAL SEVEN-DAY MINIMUM | 2.1                    |  |  | .05                 |  |  | .05                     |  |  |
| INSTANTANEOUS PEAK FLOW  |                        |  |  | 505                 |  |  | 27200                   |  |  |
| INSTANTANEOUS PEAK STAGE |                        |  |  | 3.33                |  |  | 16.00                   |  |  |
| ANNUAL RUNOFF (AC-FT)    | 72970                  |  |  | 8050                |  |  | 13270                   |  |  |
| 10 PERCENT EXCEEDS       | 212                    |  |  | 25                  |  |  | 18                      |  |  |
| 50 PERCENT EXCEEDS       | 14                     |  |  | 7.3                 |  |  | 2.9                     |  |  |
| 90 PERCENT EXCEEDS       | 5.1                    |  |  | 2.3                 |  |  | .46                     |  |  |

## 11158600 SAN BENITO RIVER AT STATE HIGHWAY 156, NEAR HOLLISTER, CA

LOCATION.—Lat 36°51'07", long 121°25'44", in San Justo Grant, San Benito County, Hydrologic Unit 18060002, on right bank, at downstream side of bridge on State Highway 156, and 1.6 mi west of Hollister.

DRAINAGE AREA.—607 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1970 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 260 ft above sea level, from topographic map.

REMARKS.—Records poor. Low flows regulated by Hernandez Reservoir 73 mi upstream, capacity, 18,500 acre-ft. Some diversions upstream from station for irrigation, and interbasin transfer to Tres Pinos Creek for ground-water recharge. Percolation ponds are constructed upstream from station during summer months.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 34,500 ft<sup>3</sup>/s, Feb. 3, 1998, gage height, 13.48 ft, from rating curve extended above 3,200 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 500 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 2230 | 1,640                             | 3.06                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN  | FEB    | MAR  | APR  | MAY   | JUN   | JUL  | AUG   | SEP   |
|-------|-------|-------|-------|------|--------|------|------|-------|-------|------|-------|-------|
| 1     | 6.6   | 11    | 17    | 18   | 34     | 44   | 43   | e9.4  | .67   | e.00 | e.00  | e.50  |
| 2     | 5.9   | 11    | 14    | 18   | 34     | 44   | 52   | e8.4  | 1.3   | e.00 | e.00  | e.43  |
| 3     | 5.5   | 11    | 16    | 18   | 25     | 31   | 59   | e7.6  | 2.0   | e.00 | e.00  | e.51  |
| 4     | 5.5   | 9.4   | 12    | 18   | 23     | 30   | 47   | e7.0  | 1.4   | e.00 | e.00  | e.52  |
| 5     | 5.4   | 8.9   | 12    | 18   | 21     | 79   | 54   | e6.3  | 2.2   | e.00 | e.00  | e.52  |
| 6     | 4.7   | 8.9   | 16    | 18   | 21     | 121  | 48   | e5.8  | 6.5   | e.00 | e.23  | e.51  |
| 7     | 4.6   | 10    | 11    | 19   | 23     | 91   | 70   | e5.2  | .48   | e.00 | e.44  | e.51  |
| 8     | 4.3   | 11    | 16    | 19   | 92     | 52   | 56   | e4.8  | .56   | e.00 | e.43  | e.51  |
| 9     | 4.7   | 11    | 13    | 19   | 491    | 44   | 29   | e4.5  | .51   | e.00 | e.44  | e.61  |
| 10    | 5.1   | 12    | 13    | 19   | 735    | 46   | 30   | e4.2  | e.25  | e.00 | e.43  | e.53  |
| 11    | 5.5   | 11    | 13    | 20   | 164    | 47   | 35   | e4.0  | e.00  | e.00 | e.43  | e.52  |
| 12    | 5.5   | 11    | 14    | 20   | 16     | 35   | 36   | e3.6  | e.00  | e.00 | e.43  | e.61  |
| 13    | 5.5   | 11    | 14    | 20   | 2.5    | 21   | 30   | e3.3  | e.00  | e.00 | e.43  | e.61  |
| 14    | 5.5   | 11    | 16    | 20   | 1.8    | 50   | 42   | e3.2  | e.00  | e.00 | e.43  | e.55  |
| 15    | 5.5   | 11    | 18    | 20   | 2.0    | 81   | 36   | 1.4   | e.00  | e.00 | e.44  | e.61  |
| 16    | 6.3   | 11    | 18    | 22   | 2.4    | 73   | 49   | 1.2   | e.00  | e.00 | e.43  | e.61  |
| 17    | 7.0   | 11    | 19    | 21   | 3.7    | 67   | 58   | .81   | e.00  | e.00 | e.43  | e.57  |
| 18    | 7.9   | 8.9   | 18    | 22   | 4.1    | 61   | 32   | .55   | e.00  | e.00 | e.43  | e.79  |
| 19    | 8.9   | 8.9   | 16    | 24   | 6.3    | 61   | 55   | .34   | e.00  | e.00 | e.44  | e.57  |
| 20    | 8.9   | 9.5   | 4.7   | 25   | 7.7    | 58   | 56   | .42   | e.00  | e.00 | e.43  | e.54  |
| 21    | 8.0   | 11    | 3.5   | 22   | 116    | 53   | 42   | .28   | e.00  | e.00 | e.44  | e.58  |
| 22    | 7.0   | 11    | 5.3   | 22   | 82     | 51   | 31   | .31   | e.00  | e.00 | e.44  | e.52  |
| 23    | 7.0   | 12    | 7.0   | 24   | 33     | 49   | 26   | .33   | e.00  | e.00 | e.44  | e.51  |
| 24    | 10    | 11    | 11    | 23   | 22     | 45   | 23   | .31   | e.00  | e.00 | e.44  | e.51  |
| 25    | 7.0   | 11    | 12    | 23   | 21     | 43   | e20  | .36   | e.00  | e.00 | e.44  | e.51  |
| 26    | 7.0   | 11    | 11    | 23   | 26     | 41   | e17  | .36   | e.00  | e.00 | e.44  | e.47  |
| 27    | 7.0   | 14    | 11    | 22   | 37     | 43   | e15  | .36   | e.00  | e.00 | e.43  | e.51  |
| 28    | 8.3   | 19    | 11    | 23   | 40     | 44   | e13  | .50   | e.00  | e.00 | e.48  | e.44  |
| 29    | 8.9   | 17    | 15    | 24   | ---    | 47   | e12  | .74   | e.00  | e.00 | e.43  | e.48  |
| 30    | 8.9   | 17    | 18    | 24   | ---    | 46   | e11  | .51   | e.00  | e.00 | e.44  | e.44  |
| 31    | 10    | ---   | 19    | 26   | ---    | 27   | ---  | .50   | ---   | e.00 | e.52  | ---   |
| TOTAL | 207.9 | 342.5 | 414.5 | 654  | 2086.5 | 1625 | 1127 | 86.58 | 15.87 | 0.00 | 11.23 | 16.10 |
| MEAN  | 6.71  | 11.4  | 13.4  | 21.1 | 74.5   | 52.4 | 37.6 | 2.79  | .53   | .000 | .36   | .54   |
| MAX   | 10    | 19    | 19    | 26   | 735    | 121  | 70   | 9.4   | 6.5   | .00  | .52   | .79   |
| MIN   | 4.3   | 8.9   | 3.5   | 18   | 1.8    | 21   | 11   | .28   | .00   | .00  | .00   | .43   |
| AC-FT | 412   | 679   | 822   | 1300 | 4140   | 3220 | 2240 | 172   | 31    | .00  | 22    | 32    |

e Estimated.

## 11158600 SAN BENITO RIVER AT STATE HIGHWAY 156, NEAR HOLLISTER, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 3.05 | 7.00 | 20.6 | 77.0 | 181  | 152  | 45.1 | 18.0 | 8.17 | 5.68 | 5.47 | 5.15 |
| MAX  | 10.4 | 54.4 | 175  | 581  | 2350 | 1545 | 381  | 233  | 76.3 | 28.3 | 19.5 | 16.3 |
| (WY) | 1996 | 1997 | 1997 | 1997 | 1998 | 1983 | 1998 | 1998 | 1998 | 1998 | 1995 | 1973 |
| MIN  | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1973 | 1975 | 1977 | 1977 | 1977 | 1977 | 1977 | 1976 | 1972 | 1972 | 1972 | 1972 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1971 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 104884.77              |        | 6587.18             |        |                         |             |
| ANNUAL MEAN              | 287                    |        | 18.0                |        | 43.3                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 287                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | .000                    |             |
| HIGHEST DAILY MEAN       | 19800                  | Feb 3  | 735                 | Feb 10 | 19800                   | Feb 3 1998  |
| LOWEST DAILY MEAN        | .02                    | Aug 13 | .00                 | Jun 11 | .00                     | Feb 1 1971  |
| ANNUAL SEVEN-DAY MINIMUM | .04                    | Aug 10 | .00                 | Jun 11 | .00                     | Oct 11 1971 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 1640                | Feb 9  | 34500                   | Feb 3 1998  |
| INSTANTANEOUS PEAK STAGE |                        |        | 3.06                | Feb 9  | 13.48                   | Feb 3 1998  |
| ANNUAL RUNOFF (AC-FT)    | 208000                 |        | 13070               |        | 31350                   |             |
| 10 PERCENT EXCEEDS       | 508                    |        | 44                  |        | 41                      |             |
| 50 PERCENT EXCEEDS       | 31                     |        | 7.0                 |        | 1.9                     |             |
| 90 PERCENT EXCEEDS       | 4.5                    |        | .00                 |        | .00                     |             |



## 11159000 PAJARO RIVER AT CHITTENDEN, CA

LOCATION.—Lat 36°54'01", long 121°35'48", in Salspuedes Grant, Santa Cruz County, Hydrologic Unit 18060002, on left bank, at downstream side of bridge on State Highway 129, 0.6 mi downstream from Pescadero Creek, 0.6 mi southeast of Chittenden, and 2.3 mi downstream from San Benito River.

DRAINAGE AREA.—1,186 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1939 to current year. Monthly discharge only for some periods, published in WSP 1315-B. Prior to October 1954, published as "near Chittenden."

CHEMICAL DATA: Water years 1952–92.

BIOLOGICAL DATA: Water years 1978–81.

SPECIFIC CONDUCTANCE: Water years 1978–81, daily.

WATER TEMPERATURE: Water years 1978–81, daily.

SEDIMENT DATA: Water years 1978–92.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 81.89 ft above sea level. Prior to May 13, 1949, nonrecording gage on former bridge 100 ft downstream at same datum except for periods in 1947 and 1948 when a water-stage recorder was in use.

REMARKS.—Records fair except those for estimated daily discharges, which are poor. Low flows regulated by Hernandez Reservoir, capacity, 18,500 acre-ft; Pacheco Lake, capacity, 6,140 acre-ft; Chesbro Reservoir, capacity, 8,090 acre-ft; Uvas Reservoir, capacity, 9,950 acre-ft; and San Felipe Lake. Many diversions upstream from station for irrigation.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 25,100 ft<sup>3</sup>/s, Feb. 3, 1998, gage height, 33.73 ft, from rating curve extended above 8,300 ft<sup>3</sup>/s on basis of slope-conveyance study; no flow at times in July and August 1948.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood in February 1938 reached a stage of 31.3 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 500 ft<sup>3</sup>/s, or maximum:

| Date    | Time    | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|---------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Jan. 20 | 1245    | 3,370                             | 15.28               | Feb. 21 | 1930 | 1,560                             | 11.45               |
| Feb. 9  | Unknown | 4,300                             | 16.99               | Apr. 13 | 1145 | 656                               | 9.07                |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV  | DEC  | JAN   | FEB   | MAR   | APR   | MAY  | JUN  | JUL  | AUG   | SEP   |
|-------|-------|------|------|-------|-------|-------|-------|------|------|------|-------|-------|
| 1     | 13    | 14   | 256  | 63    | 334   | 393   | 225   | 103  | 29   | e20  | 13    | 8.3   |
| 2     | 14    | 13   | 206  | 56    | 222   | 381   | 205   | 100  | 29   | e20  | 12    | 7.5   |
| 3     | 14    | 13   | 132  | 58    | 156   | 317   | 189   | 100  | 28   | e20  | 10    | 7.0   |
| 4     | 16    | 20   | 175  | 57    | 108   | 266   | 184   | 101  | 28   | e19  | 11    | 7.3   |
| 5     | 15    | 22   | 123  | 60    | 67    | 242   | 210   | 98   | 28   | e19  | 13    | 8.7   |
| 6     | 15    | 24   | 172  | 56    | 59    | 230   | 380   | 95   | 28   | e19  | 13    | 8.0   |
| 7     | 12    | 31   | 121  | 55    | 964   | 217   | 420   | 92   | 27   | e19  | 12    | 8.8   |
| 8     | 11    | 43   | 110  | 54    | 1810  | 209   | 446   | 87   | 27   | e19  | 13    | 7.6   |
| 9     | 11    | 39   | 99   | 55    | e3600 | 389   | 469   | 83   | 27   | e18  | 12    | 7.6   |
| 10    | 9.8   | 36   | 91   | 47    | e3800 | 388   | 430   | 72   | 27   | e18  | 12    | 7.8   |
| 11    | 9.8   | 38   | 89   | 54    | 2670  | 338   | 462   | 61   | 27   | e18  | 12    | 8.1   |
| 12    | 9.9   | 40   | 83   | 52    | 1850  | 315   | 563   | 56   | 26   | e18  | 13    | 8.0   |
| 13    | 11    | 42   | 82   | 56    | 1350  | 297   | 577   | 52   | 26   | 14   | 11    | 8.0   |
| 14    | 10    | 39   | 77   | 48    | 1020  | 281   | 463   | 49   | 26   | 13   | 8.8   | 7.3   |
| 15    | 10    | 42   | 73   | 49    | 795   | 367   | 392   | 46   | 26   | 13   | 12    | 8.1   |
| 16    | 11    | 43   | 71   | 51    | 602   | 375   | 315   | 44   | 26   | 13   | 9.9   | 9.1   |
| 17    | 11    | 45   | 80   | 45    | 572   | 339   | 253   | 43   | 26   | 12   | 9.9   | 10    |
| 18    | 10    | 46   | 77   | 59    | 607   | 317   | 222   | 43   | e25  | 14   | 11    | 9.5   |
| 19    | 10    | 47   | 89   | 1420  | 566   | 282   | 203   | 43   | e25  | 13   | 11    | 9.9   |
| 20    | 10    | 47   | 72   | 2590  | 558   | 290   | 186   | 41   | e25  | 12   | 9.6   | 9.3   |
| 21    | 11    | 50   | 68   | 1200  | 1130  | 270   | 174   | 39   | e24  | 13   | 9.4   | 8.7   |
| 22    | 9.3   | 49   | 73   | 573   | 1110  | 243   | 170   | 35   | e24  | 14   | 10    | 9.5   |
| 23    | 9.2   | 51   | 82   | 546   | 903   | 244   | 162   | 33   | e23  | 15   | 11    | 9.7   |
| 24    | 12    | 53   | 71   | 650   | 770   | 233   | 149   | 31   | e23  | 15   | 11    | 9.8   |
| 25    | 17    | 54   | 76   | 431   | 720   | 241   | 136   | 31   | e22  | 14   | 14    | 9.5   |
| 26    | 18    | 58   | 72   | 398   | 622   | 302   | 132   | 30   | e22  | 13   | 13    | 9.3   |
| 27    | 16    | 64   | 71   | 549   | 549   | 322   | 126   | 30   | e22  | 13   | 13    | 8.1   |
| 28    | 16    | 167  | 62   | 462   | 487   | 291   | 116   | 30   | e21  | 13   | 12    | 8.5   |
| 29    | 18    | 136  | 65   | 308   | ---   | 259   | 111   | 30   | e21  | 13   | 11    | 9.2   |
| 30    | 14    | 149  | 66   | 239   | ---   | 233   | 107   | 29   | e21  | 12   | 9.9   | 9.1   |
| 31    | 14    | ---  | 68   | 383   | ---   | 245   | ---   | 29   | ---  | 12   | 8.1   | ---   |
| TOTAL | 388.0 | 1515 | 3052 | 10724 | 28001 | 9116  | 8177  | 1756 | 759  | 478  | 351.6 | 257.3 |
| MEAN  | 12.5  | 50.5 | 98.5 | 346   | 1000  | 294   | 273   | 56.6 | 25.3 | 15.4 | 11.3  | 8.58  |
| MAX   | 18    | 167  | 256  | 2590  | 3800  | 393   | 577   | 103  | 29   | 20   | 14    | 10    |
| MIN   | 9.2   | 13   | 62   | 45    | 59    | 209   | 107   | 29   | 21   | 12   | 8.1   | 7.0   |
| AC-FT | 770   | 3010 | 6050 | 21270 | 55540 | 18080 | 16220 | 3480 | 1510 | 948  | 697   | 510   |

e Estimated.

## PAJARO RIVER BASIN

## 11159000 PAJARO RIVER AT CHITTENDEN, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 5.32 | 32.2 | 148  | 446  | 642  | 475  | 258  | 54.3 | 16.9 | 8.19 | 6.39 | 6.51 |
| MAX  | 22.7 | 843  | 1990 | 3779 | 6978 | 4227 | 3165 | 646  | 162  | 32.1 | 22.8 | 93.3 |
| (WY) | 1984 | 1951 | 1956 | 1997 | 1998 | 1983 | 1958 | 1983 | 1998 | 1998 | 1998 | 1959 |
| MIN  | .10  | .27  | .60  | 1.22 | 1.28 | 1.50 | .97  | .75  | .66  | .37  | .37  | .24  |
| (WY) | 1962 | 1993 | 1962 | 1991 | 1991 | 1977 | 1977 | 1977 | 1977 | 1961 | 1948 | 1961 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1940 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 312689.1               |        | 64574.9             |        |                         |             |
| ANNUAL MEAN              | 857                    |        | 177                 |        | 172                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 905                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 1.06                    |             |
| HIGHEST DAILY MEAN       | 18300                  | Feb 3  | 3800                | Feb 10 | 21700                   | Dec 24 1955 |
| LOWEST DAILY MEAN        | 7.2                    | Sep 2  | 7.0                 | Sep 3  | .00                     | Jul 11 1948 |
| ANNUAL SEVEN-DAY MINIMUM | 10                     | Oct 17 | 7.8                 | Sep 8  | .00                     | Aug 16 1948 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 4300                | Feb 9  | 25100                   | Feb 3 1998  |
| INSTANTANEOUS PEAK STAGE |                        |        | 16.99               | Feb 9  | 33.73                   | Feb 3 1998  |
| INSTANTANEOUS LOW FLOW   |                        |        | 7.0                 | Sep 3  | .00                     | Jul 11 1948 |
| ANNUAL RUNOFF (AC-FT)    | 620200                 |        | 128100              |        | 124900                  |             |
| 10 PERCENT EXCEEDS       | 1820                   |        | 437                 |        | 266                     |             |
| 50 PERCENT EXCEEDS       | 93                     |        | 43                  |        | 12                      |             |
| 90 PERCENT EXCEEDS       | 14                     |        | 9.9                 |        | 1.2                     |             |

## 11159200 CORRALITOS CREEK AT FREEDOM, CA

LOCATION.—Lat 36°56'22", long 121°46'10", in Los Corralitos Grant, Santa Cruz County, Hydrologic Unit 18060002, on right bank, just upstream from Green Valley Road Bridge, 0.2 mi north of Freedom, and 2.3 mi north of Watsonville.

DRAINAGE AREA.—27.8 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1956 to current year.

SEDIMENT DATA: Water years 1976–77, 1980–81.

GAGE.—Water-stage recorder. Datum of gage is 89.43 ft above sea level.

REMARKS.—Records fair except those for estimated daily discharges and those less than 1 ft<sup>3</sup>/s, which are poor. No regulation; Watsonville Water Works can divert up to 8.0 ft<sup>3</sup>/s upstream from station for municipal supply, domestic use, and irrigation.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,610 ft<sup>3</sup>/s, Jan. 4, 1982, gage height, 16.66 ft, from rating curve extended above 1,400 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 22, 1955, reached a stage of 15.6 ft, from floodmarks, discharge, 3,620 ft<sup>3</sup>/s based on contracted-opening measurement of peak flow.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 600 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| Jan. 20 | 0100 | 2,250                             | 10.47               | Feb. 7 | 1445 | 1,020                             | 7.34                |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV    | DEC   | JAN     | FEB  | MAR  | APR  | MAY   | JUN  | JUL   | AUG   | SEP  |
|-------|-------|--------|-------|---------|------|------|------|-------|------|-------|-------|------|
| 1     | .36   | .23    | 43    | 2.1     | 65   | 42   | 25   | 15    | 4.6  | e1.8  | .50   | .37  |
| 2     | .35   | .76    | 13    | 2.1     | 48   | 39   | 23   | 14    | 4.7  | e1.7  | .47   | .33  |
| 3     | .28   | 1.2    | 44    | 2.4     | 41   | 42   | 21   | 15    | 4.8  | e1.6  | .48   | .34  |
| 4     | .31   | 1.3    | 22    | 2.6     | 36   | 36   | 20   | 14    | 4.4  | e1.5  | .52   | .35  |
| 5     | .27   | 1.1    | 17    | 1.9     | 31   | 33   | 55   | 13    | 4.4  | e1.5  | .53   | .35  |
| 6     | .23   | 1.4    | 32    | 1.9     | 64   | 31   | 78   | 12    | 4.3  | e1.4  | .52   | .33  |
| 7     | .22   | 15     | 14    | 1.4     | 617  | 29   | 55   | 11    | 4.0  | e1.3  | .47   | .33  |
| 8     | .27   | 5.1    | 11    | 1.4     | 396  | 41   | 63   | 11    | 3.8  | e1.3  | .44   | .34  |
| 9     | .27   | 2.2    | 8.6   | 1.3     | 558  | 70   | 51   | 11    | 3.8  | e1.2  | .44   | .34  |
| 10    | .24   | 1.7    | 6.8   | 1.6     | 259  | 45   | 44   | 12    | 3.5  | e1.2  | .45   | .31  |
| 11    | .24   | 1.8    | 5.2   | 2.1     | 160  | 39   | 81   | 11    | 3.4  | e1.1  | .61   | .32  |
| 12    | .23   | 1.1    | 4.1   | 1.4     | 117  | 35   | 66   | 11    | 3.2  | e1.1  | .42   | .38  |
| 13    | .24   | .64    | 3.6   | 1.1     | 93   | 32   | 52   | 10    | 3.0  | e1.0  | .45   | .31  |
| 14    | .25   | .48    | 4.8   | .60     | 80   | 32   | 46   | 10    | 3.0  | e1.0  | .86   | .34  |
| 15    | .26   | .39    | 3.1   | .53     | 66   | 46   | 40   | 9.5   | 2.8  | e1.0  | .74   | .34  |
| 16    | .22   | .41    | 2.9   | .69     | 67   | 35   | 35   | 9.4   | 2.8  | e.95  | .46   | .32  |
| 17    | .20   | .82    | 2.6   | .60     | 127  | 31   | 32   | 9.3   | 2.8  | .92   | .46   | .32  |
| 18    | .21   | .80    | 2.4   | 247     | 96   | 29   | 28   | 8.7   | 2.8  | .85   | .44   | .34  |
| 19    | .22   | .55    | 2.5   | 629     | 81   | 30   | 27   | 8.5   | 2.7  | .77   | .42   | .31  |
| 20    | .19   | .36    | 2.7   | 890     | 96   | 29   | 25   | 7.9   | 2.8  | .68   | .45   | .30  |
| 21    | .19   | .35    | 3.3   | 248     | 145  | 27   | 25   | 7.1   | 2.8  | .67   | .45   | .31  |
| 22    | .20   | .38    | 3.1   | 121     | 94   | 26   | 23   | 6.9   | 2.6  | e.70  | .47   | .37  |
| 23    | .25   | .56    | 3.4   | 240     | 77   | 29   | 21   | 6.6   | 2.5  | .74   | .41   | .33  |
| 24    | 1.7   | 8.8    | 3.0   | 132     | 68   | 27   | 19   | 6.3   | 2.4  | .79   | .43   | .32  |
| 25    | 1.9   | 2.8    | 2.8   | 87      | 75   | 60   | 19   | 6.2   | 2.3  | .72   | .39   | .35  |
| 26    | 1.3   | 1.1    | 2.8   | 130     | 63   | 40   | 19   | 5.9   | 2.2  | .65   | .39   | .30  |
| 27    | .70   | 1.1    | 2.7   | 103     | 54   | 34   | 18   | 6.3   | e2.1 | .72   | .41   | .28  |
| 28    | .33   | 4.9    | 2.6   | 70      | 47   | 30   | 16   | 5.5   | e2.0 | .59   | .63   | .26  |
| 29    | .31   | 4.5    | 2.5   | 55      | ---  | 28   | 16   | 5.4   | e1.9 | .58   | .41   | .27  |
| 30    | .28   | 83     | 2.4   | 45      | ---  | 26   | 15   | 5.2   | e1.8 | .58   | .38   | .30  |
| 31    | .23   | ---    | 2.3   | 122     | ---  | 30   | ---  | 6.1   | ---  | .51   | .36   | ---  |
| TOTAL | 12.45 | 144.83 | 276.2 | 3144.72 | 3721 | 1103 | 1058 | 290.8 | 94.2 | 31.12 | 14.86 | 9.76 |
| MEAN  | .40   | 4.83   | 8.91  | 101     | 133  | 35.6 | 35.3 | 9.38  | 3.14 | 1.00  | .48   | .33  |
| MAX   | 1.9   | 83     | 44    | 890     | 617  | 70   | 81   | 15    | 4.8  | 1.8   | .86   | .38  |
| MIN   | .19   | .23    | 2.3   | .53     | 31   | 26   | 15   | 5.2   | 1.8  | .51   | .36   | .26  |
| AC-FT | 25    | 287    | 548   | 6240    | 7380 | 2190 | 2100 | 577   | 187  | 62    | 29    | 19   |

e Estimated.

## 11159200 CORRALITOS CREEK AT FREEDOM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .79  | 5.18 | 17.3 | 51.8 | 59.0 | 37.7 | 22.6 | 5.43 | 1.16 | .42  | .18  | .61  |
| MAX  | 17.4 | 37.3 | 208  | 248  | 263  | 209  | 166  | 39.1 | 9.10 | 4.77 | 1.15 | 20.8 |
| (WY) | 1963 | 1984 | 1997 | 1997 | 1998 | 1983 | 1958 | 1983 | 1983 | 1983 | 1983 | 1959 |
| MIN  | .000 | .000 | .000 | .000 | .003 | .076 | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1962 | 1981 | 1991 | 1991 | 1991 | 1988 | 1977 | 1977 | 1962 | 1961 | 1961 | 1961 |

## SUMMARY STATISTICS

|                          | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1957 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 14618.77               |        | 9900.94             |        |                         |             |
| ANNUAL MEAN              | 40.1                   |        | 27.1                |        | 16.6                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 56.4                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | .17                     |             |
| HIGHEST DAILY MEAN       | 929                    | Feb 3  | 890                 | Jan 20 | 2290                    | Jan 4 1982  |
| LOWEST DAILY MEAN        | .19                    | Oct 20 | .19                 | Oct 20 | .00                     | Jun 12 1957 |
| ANNUAL SEVEN-DAY MINIMUM | .20                    | Oct 16 | .20                 | Oct 16 | .00                     | Jun 12 1957 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 2250                |        | 5610                    | Jan 4 1982  |
| INSTANTANEOUS PEAK STAGE |                        |        | 10.47               |        | 16.66                   | Jan 4 1982  |
| ANNUAL RUNOFF (AC-FT)    | 29000                  |        | 19640               |        | 12050                   |             |
| 10 PERCENT EXCEEDS       | 104                    |        | 65                  |        | 35                      |             |
| 50 PERCENT EXCEEDS       | 4.9                    |        | 2.8                 |        | .40                     |             |
| 90 PERCENT EXCEEDS       | .40                    |        | .32                 |        | .00                     |             |

## 11160000 SOQUEL CREEK AT SOQUEL, CA

LOCATION.—Lat 36°59'29", long 121°57'17", in NE 1/4 sec.10, T.11 S., R.1 W., Santa Cruz County, Hydrologic Unit 18060001, on left bank, 0.2 mi upstream from highway bridge in town of Soquel, and 0.4 mi downstream from Bates Creek.

DRAINAGE AREA.—40.2 mi<sup>2</sup>.

PERIOD OF RECORD.—May 1951 to current year.

CHEMICAL DATA: Water years 1952–66, 1977.

WATER TEMPERATURE: Water years 1966–79.

SEDIMENT DATA: Water years 1976–77, 1990–93.

REVISED RECORDS.—WSP 1715: Drainage area. WSP 2129: 1958, 1959–60(P).

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 21.38 ft above sea level.

REMARKS.—Records good. No regulation; many diversions upstream from station for irrigation.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 15,800 ft<sup>3</sup>/s, Dec. 23, 1955, gage height, 22.33 ft, from rating curve extended above 2,900 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow at times in 1977, 1988, 1992–1995.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Feb. 13, 1937, reached a discharge of 5,950 ft<sup>3</sup>/s, gage height 12.6 ft, from floodmarks, from precipitation records and comparison with nearby streams. Flood of Nov. 18, 1950, reached a discharge of about 7,800 ft<sup>3</sup>/s, gage height about 15.33 ft, from rating curve extended above 2,900 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow at gage height 22.33 ft.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| Jan. 20 | 0145 | 1,910                             | 8.48                | Feb. 9 | 0945 | 1,550                             | 7.71                |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC  | JAN    | FEB   | MAR  | APR  | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------|-------|-------|------|--------|-------|------|------|------|------|-------|-------|-------|
| 1     | 7.2   | 6.8   | 108  | 12     | 118   | 76   | 58   | 30   | 16   | 10    | 7.4   | 5.3   |
| 2     | 7.3   | 6.7   | 35   | 11     | 97    | 71   | 52   | 30   | 17   | 10    | 7.2   | 6.0   |
| 3     | 7.2   | 6.8   | 58   | 11     | 86    | 75   | 49   | 30   | 18   | 10    | 7.1   | 5.9   |
| 4     | 7.0   | 6.9   | 41   | 11     | 79    | 65   | 46   | 28   | 17   | 10    | 7.0   | 5.3   |
| 5     | 6.8   | 7.1   | 35   | 11     | 73    | 61   | 95   | 27   | 17   | 9.9   | 7.0   | 5.3   |
| 6     | 6.6   | 8.3   | 47   | 11     | 134   | 58   | 169  | 26   | 16   | 9.7   | 7.3   | 5.2   |
| 7     | 6.3   | 35    | 27   | 10     | 778   | 55   | 102  | 25   | 15   | 9.6   | 7.3   | 5.2   |
| 8     | 6.2   | 16    | 23   | 11     | 545   | 67   | 106  | 25   | 15   | 9.5   | 7.1   | 5.2   |
| 9     | 6.7   | 8.9   | 20   | 9.9    | 972   | 120  | 88   | 24   | 15   | 9.3   | 6.9   | 5.7   |
| 10    | 6.9   | 8.7   | 17   | 10     | 357   | 80   | 76   | 23   | 15   | 9.0   | 7.1   | 5.5   |
| 11    | 6.8   | 11    | 16   | 9.9    | 231   | 69   | 182  | 23   | 15   | 9.0   | 7.4   | 5.4   |
| 12    | 6.9   | 8.1   | 15   | 9.9    | 176   | 62   | 138  | 22   | 14   | 8.7   | 7.1   | 5.5   |
| 13    | 6.8   | 7.4   | 15   | 9.9    | 144   | 58   | 103  | 22   | 14   | 8.5   | 6.8   | 5.4   |
| 14    | 7.0   | 7.2   | 17   | 9.6    | 125   | 63   | 88   | 21   | 14   | 8.3   | 6.5   | 5.4   |
| 15    | 7.0   | 7.1   | 15   | 9.8    | 106   | 97   | 78   | 21   | 13   | 8.4   | 6.4   | 5.3   |
| 16    | 6.7   | 7.1   | 14   | 11     | 113   | 71   | 68   | 21   | 13   | 8.3   | 6.4   | 5.3   |
| 17    | 6.7   | 9.8   | 13   | 11     | 180   | 63   | 60   | 20   | 13   | 8.5   | 6.3   | 5.3   |
| 18    | 6.7   | 8.9   | 13   | 335    | 139   | 59   | 55   | 20   | 13   | 8.6   | 6.2   | 5.5   |
| 19    | 6.7   | 8.1   | 13   | 637    | 122   | 81   | 51   | 20   | 13   | 8.4   | 6.1   | 5.6   |
| 20    | 6.5   | 7.7   | 14   | 816    | 128   | 71   | 47   | 20   | 12   | 8.3   | 6.2   | 5.6   |
| 21    | 6.3   | 7.7   | 14   | 261    | 213   | 66   | 45   | 20   | 12   | 8.3   | 6.1   | 5.5   |
| 22    | 6.5   | 8.9   | 14   | 139    | 142   | 62   | 43   | 19   | 12   | 8.0   | 6.0   | 5.3   |
| 23    | 6.8   | 16    | 13   | 366    | 118   | 77   | 41   | 19   | 12   | 8.1   | 5.9   | 5.3   |
| 24    | 13    | 26    | 12   | 191    | 104   | 80   | 39   | 19   | 12   | 8.1   | 5.7   | 5.2   |
| 25    | 11    | 12    | 12   | 133    | 128   | 250  | 38   | 19   | 12   | 8.1   | 5.6   | 5.0   |
| 26    | 8.2   | 10    | 12   | 163    | 104   | 140  | 37   | 18   | 12   | 8.1   | 5.7   | 5.0   |
| 27    | 7.6   | 11    | 12   | 138    | 92    | 101  | 35   | 18   | 11   | 8.1   | 5.8   | 4.7   |
| 28    | 7.5   | 17    | 12   | 107    | 83    | 83   | 34   | 18   | 11   | 7.9   | 5.6   | 4.3   |
| 29    | 7.5   | 19    | 12   | 92     | ---   | 73   | 33   | 17   | 11   | 7.7   | 5.7   | 4.4   |
| 30    | 7.5   | 203   | 12   | 83     | ---   | 66   | 31   | 17   | 11   | 7.5   | 5.5   | 4.4   |
| 31    | 7.2   | ---   | 12   | 192    | ---   | 69   | ---  | 17   | ---  | 7.4   | 5.4   | ---   |
| TOTAL | 225.1 | 524.2 | 693  | 3832.0 | 5687  | 2489 | 2087 | 679  | 411  | 269.3 | 199.8 | 158.0 |
| MEAN  | 7.26  | 17.5  | 22.4 | 124    | 203   | 80.3 | 69.6 | 21.9 | 13.7 | 8.69  | 6.45  | 5.27  |
| MAX   | 13    | 203   | 108  | 816    | 972   | 250  | 182  | 30   | 18   | 10    | 7.4   | 6.0   |
| MIN   | 6.2   | 6.7   | 12   | 9.6    | 73    | 55   | 31   | 17   | 11   | 7.4   | 5.4   | 4.3   |
| AC-FT | 446   | 1040  | 1370 | 7600   | 11280 | 4940 | 4140 | 1350 | 815  | 534   | 396   | 313   |

## SOQUEL CREEK BASIN

## 11160000 SOQUEL CREEK AT SOQUEL, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 6.37 | 16.5 | 60.3 | 125  | 128  | 96.9 | 55.3 | 20.4 | 9.69 | 5.43 | 3.40 | 3.26 |
| MAX  | 111  | 78.5 | 625  | 437  | 596  | 577  | 324  | 95.9 | 34.9 | 17.8 | 10.9 | 22.4 |
| (WY) | 1963 | 1973 | 1956 | 1997 | 1986 | 1983 | 1982 | 1983 | 1998 | 1998 | 1998 | 1959 |
| MIN  | .65  | 1.36 | 2.74 | 2.57 | 3.96 | 3.97 | 2.81 | 2.26 | .91  | .26  | .17  | .058 |
| (WY) | 1989 | 1991 | 1991 | 1991 | 1977 | 1988 | 1977 | 1977 | 1977 | 1977 | 1977 | 1994 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1951 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 32179.3                |        | 17254.4             |        |                         |             |
| ANNUAL MEAN              | 88.2                   |        | 47.3                |        | 43.8                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 169                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 2.89                    |             |
| HIGHEST DAILY MEAN       | 1840                   | Feb 3  | 972                 | Feb 9  | 8800                    | Dec 23 1955 |
| LOWEST DAILY MEAN        | 6.2                    | Oct 8  | 4.3                 | Sep 28 | .00                     | Jul 30 1977 |
| ANNUAL SEVEN-DAY MINIMUM | 6.6                    | Oct 16 | 4.7                 | Sep 24 | .00                     | Aug 15 1992 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 1910                | Jan 20 | 15800                   | Dec 23 1955 |
| INSTANTANEOUS PEAK STAGE |                        |        | 8.48                | Jan 20 | 22.33                   | Dec 23 1955 |
| INSTANTANEOUS LOW FLOW   |                        |        |                     |        | .00                     | Jul 30 1977 |
| ANNUAL RUNOFF (AC-FT)    | 63830                  |        | 34220               |        | 31700                   |             |
| 10 PERCENT EXCEEDS       | 221                    |        | 115                 |        | 86                      |             |
| 50 PERCENT EXCEEDS       | 27                     |        | 13                  |        | 7.8                     |             |
| 90 PERCENT EXCEEDS       | 7.6                    |        | 5.9                 |        | 1.5                     |             |

## 11160430 BEAN CREEK NEAR SCOTTS VALLEY, CA

LOCATION.—Lat 37°03'19", long 122°02'25", in San Augustine Grant, Santa Cruz County, Hydrologic Unit 18060001, on right bank, 0.3 mi downstream from unnamed left bank tributary, 100 ft northeast of Mt. Hermon Road, 1.2 mi northwest of Scotts Valley Post Office, and 1.8 mi east of Felton.

DRAINAGE AREA.—8.81 mi<sup>2</sup>.

PERIOD OF RECORD.—January 1989 to current year.

REVISED RECORDS.—WDR CA-93-2: 1989–92 (P).

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 320 ft above sea level, from topographic map.

REMARKS.—Records fair except for estimated daily discharges, which are poor. No regulation; small diversions upstream from station for domestic use.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,710 ft<sup>3</sup>/s, Feb. 3, 1998, gage height, 10.85 ft, from rating curve extended above 310 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 9.29 ft; minimum daily, 0.94 ft<sup>3</sup>/s, Jan. 31, 1992.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 200 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| Jan. 20 | 0015 | 221                               | 5.97                | Feb. 7 | 1030 | 276                               | 6.18                |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN   | FEB  | MAR   | APR   | MAY   | JUN  | JUL  | AUG  | SEP  |
|-------|------|-------|-------|-------|------|-------|-------|-------|------|------|------|------|
| 1     | 2.7  | 3.0   | 18    | 3.3   | 31   | 16    | 17    | 5.4   | 3.5  | 2.7  | 2.2  | 2.0  |
| 2     | 2.6  | 3.0   | 6.5   | 3.2   | 24   | 17    | 17    | 5.3   | 3.5  | 2.7  | 2.2  | 2.0  |
| 3     | 2.6  | 3.1   | 8.9   | 3.2   | e18  | 17    | 15    | 5.2   | 4.0  | 2.6  | 2.2  | 2.0  |
| 4     | 2.6  | 3.0   | 5.8   | 3.2   | e15  | 13    | 13    | 5.0   | 3.5  | 2.6  | 2.2  | 2.0  |
| 5     | 2.6  | 3.0   | 9.3   | 3.1   | e13  | 11    | 21    | 4.9   | 3.5  | 2.5  | 2.3  | 2.1  |
| 6     | 2.6  | 3.3   | 7.4   | 3.2   | 38   | 9.4   | 25    | 4.7   | 3.4  | 2.6  | 2.3  | 2.1  |
| 7     | 2.6  | 16    | 5.3   | 3.1   | 195  | 8.5   | 20    | 4.7   | 3.3  | 2.5  | 2.2  | 2.1  |
| 8     | 2.7  | 4.0   | 4.8   | 3.1   | 132  | 14    | 23    | 4.6   | 3.3  | 2.4  | 2.2  | 2.1  |
| 9     | 2.7  | 3.2   | 4.4   | 3.1   | 198  | 16    | 20    | 4.5   | 3.2  | 2.4  | 2.2  | 2.2  |
| 10    | 2.7  | 3.8   | 4.1   | 3.1   | 95   | 12    | 20    | 4.4   | 3.2  | 2.3  | 2.3  | 2.1  |
| 11    | 2.8  | 4.2   | 4.0   | 3.1   | 53   | 10    | 49    | 4.3   | 3.2  | 2.3  | 2.2  | 2.2  |
| 12    | 2.8  | 3.1   | 3.9   | 3.1   | 53   | 9.1   | 43    | 4.2   | 3.2  | 2.3  | 2.2  | 2.1  |
| 13    | 2.8  | 3.0   | 4.8   | 3.0   | 38   | 8.3   | 31    | 4.2   | 3.2  | 2.4  | 2.2  | 2.1  |
| 14    | 2.8  | 3.0   | 4.0   | 3.0   | 31   | 12    | 27    | 4.1   | 3.2  | 2.4  | 2.2  | 2.0  |
| 15    | 2.9  | 3.0   | 3.6   | 3.1   | 25   | 16    | 23    | 4.0   | 3.0  | 2.4  | 2.3  | 2.1  |
| 16    | 2.8  | 3.0   | 3.7   | 3.2   | 27   | 12    | 20    | 4.0   | 3.0  | 2.4  | 2.3  | 2.1  |
| 17    | 2.8  | 3.5   | 3.5   | 4.0   | 31   | 11    | e17   | 4.0   | 3.0  | 2.4  | 2.3  | 2.2  |
| 18    | 2.8  | 3.0   | 3.5   | e46   | 32   | 10    | e15   | 3.9   | 2.9  | 2.4  | 2.3  | 2.2  |
| 19    | 2.8  | 2.9   | 3.4   | 90    | 31   | 16    | e13   | 3.8   | 2.9  | 2.4  | 2.3  | 2.2  |
| 20    | 2.8  | 2.8   | 3.5   | 109   | 30   | 13    | e12   | 3.9   | 2.9  | 2.4  | 2.2  | 2.2  |
| 21    | 2.8  | 2.8   | 3.4   | 59    | 37   | 13    | e10   | 3.8   | 2.8  | 2.3  | 2.2  | 2.1  |
| 22    | 2.9  | e2.8  | 3.3   | 38    | 31   | 13    | 9.4   | 3.8   | 2.8  | 2.4  | 2.1  | 2.1  |
| 23    | 2.9  | e2.8  | 3.2   | 66    | 27   | 16    | 7.9   | 3.8   | 2.8  | 2.3  | 2.1  | 2.1  |
| 24    | 7.0  | e2.8  | 3.3   | 48    | 24   | 24    | 7.3   | 3.7   | 2.9  | 2.3  | 2.0  | 2.2  |
| 25    | 3.0  | e3.0  | 3.3   | 38    | 31   | 80    | 7.0   | 3.6   | 2.9  | 2.3  | 2.0  | 2.1  |
| 26    | 2.8  | 3.1   | 3.3   | 48    | 21   | 45    | 6.5   | 3.6   | 2.9  | 2.3  | 2.1  | 2.1  |
| 27    | 2.8  | 3.8   | 3.4   | e25   | 22   | 35    | 6.3   | 3.6   | 2.8  | 2.3  | 2.0  | 2.0  |
| 28    | 2.8  | 4.3   | 3.3   | e20   | 18   | 28    | 6.1   | 3.5   | 2.8  | 2.3  | 2.0  | 1.9  |
| 29    | 2.9  | 11    | 3.3   | e17   | ---  | e22   | 5.8   | 3.5   | 2.7  | 2.2  | 2.0  | 1.9  |
| 30    | 3.0  | 37    | 3.3   | e15   | ---  | e20   | 5.6   | 3.5   | 2.7  | 2.2  | 1.9  | 1.9  |
| 31    | 3.0  | ---   | 3.3   | 49    | ---  | e18   | ---   | 3.4   | ---  | 2.2  | 2.0  | ---  |
| TOTAL | 90.4 | 150.3 | 148.8 | 722.1 | 1321 | 565.3 | 512.9 | 128.9 | 93.0 | 74.2 | 67.2 | 62.5 |
| MEAN  | 2.92 | 5.01  | 4.80  | 23.3  | 47.2 | 18.2  | 17.1  | 4.16  | 3.10 | 2.39 | 2.17 | 2.08 |
| MAX   | 7.0  | 37    | 18    | 109   | 198  | 80    | 49    | 5.4   | 4.0  | 2.7  | 2.3  | 2.2  |
| MIN   | 2.6  | 2.8   | 3.2   | 3.0   | 13   | 8.3   | 5.6   | 3.4   | 2.7  | 2.2  | 1.9  | 1.9  |
| AC-FT | 179  | 298   | 295   | 1430  | 2620 | 1120  | 1020  | 256   | 184  | 147  | 133  | 124  |

e Estimated.

## SAN LORENZO RIVER BASIN

## 11160430 BEAN CREEK NEAR SCOTTS VALLEY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 2.43 | 3.59 | 12.3 | 39.7 | 40.3 | 23.6 | 8.40 | 5.38 | 3.44 | 2.49 | 2.19 | 2.08 |
| MAX  | 3.14 | 5.89 | 72.5 | 99.7 | 167  | 71.8 | 21.7 | 12.2 | 9.41 | 4.89 | 3.31 | 2.63 |
| (WY) | 1995 | 1998 | 1997 | 1995 | 1998 | 1995 | 1998 | 1998 | 1998 | 1998 | 1998 | 1998 |
| MIN  | 1.96 | 1.96 | 2.16 | 2.11 | 2.42 | 3.81 | 2.62 | 2.33 | 1.79 | 1.71 | 1.84 | 1.76 |
| (WY) | 1991 | 1993 | 1991 | 1991 | 1991 | 1994 | 1990 | 1989 | 1994 | 1991 | 1989 | 1990 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |  | FOR 1999 WATER YEAR |  | WATER YEARS 1989 - 1999 |  |
|--------------------------|------------------------|--|---------------------|--|-------------------------|--|
| ANNUAL TOTAL             | 9401.1                 |  | 3936.6              |  |                         |  |
| ANNUAL MEAN              | 25.8                   |  | 10.8                |  | 12.5                    |  |
| HIGHEST ANNUAL MEAN      |                        |  |                     |  | 26.0                    |  |
| LOWEST ANNUAL MEAN       |                        |  |                     |  | 3.00                    |  |
| HIGHEST DAILY MEAN       | 622                    |  | 198                 |  | 900                     |  |
| LOWEST DAILY MEAN        | 2.5                    |  | 1.9                 |  | .94                     |  |
| ANNUAL SEVEN-DAY MINIMUM | 2.5                    |  | 2.0                 |  | 1.0                     |  |
| INSTANTANEOUS PEAK FLOW  |                        |  | 276                 |  | 1710                    |  |
| INSTANTANEOUS PEAK STAGE |                        |  | 6.18                |  | 10.85                   |  |
| ANNUAL RUNOFF (AC-FT)    | 18650                  |  | 7810                |  | 9020                    |  |
| 10 PERCENT EXCEEDS       | 57                     |  | 27                  |  | 24                      |  |
| 50 PERCENT EXCEEDS       | 6.3                    |  | 3.3                 |  | 2.8                     |  |
| 90 PERCENT EXCEEDS       | 2.7                    |  | 2.2                 |  | 1.9                     |  |



## 11160500 SAN LORENZO RIVER AT BIG TREES, CA

LOCATION.—Lat 37°02'40", long 122°04'17", in Zayante Grant, Santa Cruz County, Hydrologic Unit 18060001, on right bank, 20 ft upstream from bridge on Henry Cowell State Park Road, 200 ft upstream from Shingle Mill Creek, 0.3 mi downstream from Zayante Creek, 0.9 mi northwest of Big Trees Station on Southern Pacific Railroad, and 5.3 mi northwest of Santa Cruz.

DRAINAGE AREA.—106 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1936 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

CHEMICAL DATA: Water years 1906–7, 1952–67, 1969–70, 1973–75, 1977, 1980–81.

WATER TEMPERATURE: Water years 1966–82, daily.

SEDIMENT DISCHARGE: Water years 1973–82, daily; 1986, 1990–93, monthly.

REVISED RECORDS.—WSP 1315-B: 1938(M). WSP 1715: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 227.00 ft above sea level. Prior to Oct. 6, 1972, at site 1.3 mi downstream at different datum.

REMARKS.—Records good. Low flow partially regulated by Loch Lomond Reservoir since 1961, capacity, 8,820 acre-ft, and by an inflatable fiber dam located 500 ft upstream from gage. Many small diversions upstream from station for domestic supply.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 30,400 ft<sup>3</sup>/s, Dec. 23, 1955, gage height, 22.55 ft, site and datum then in use, from rating curve extended above 11,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; maximum gage height, 28.85 ft, Jan. 5, 1982; minimum daily discharge, 5.6 ft<sup>3</sup>/s, July 27, 28, 1977.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,800 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 0915 | 3,200                             | 10.70               |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN   | FEB   | MAR   | APR   | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|------|------|------|-------|-------|-------|-------|------|------|------|------|------|
| 1     | 31   | 27   | 192  | 37    | 235   | 215   | 220   | 117  | 68   | 42   | 31   | 24   |
| 2     | 30   | 27   | e100 | 37    | 196   | 202   | 201   | 115  | 69   | 41   | 31   | 24   |
| 3     | 30   | 28   | e85  | 36    | 176   | 227   | 188   | 115  | 76   | 41   | 31   | 24   |
| 4     | 29   | 28   | 72   | 36    | 161   | 190   | 177   | 112  | 71   | 40   | 30   | 24   |
| 5     | 28   | 28   | 73   | 36    | 149   | 179   | 257   | 108  | 68   | 39   | 30   | 24   |
| 6     | 28   | 29   | 95   | 35    | 316   | 171   | 281   | 104  | 65   | 39   | 32   | 24   |
| 7     | 27   | 125  | 60   | 35    | 1620  | 162   | 213   | 99   | 62   | 38   | 32   | 23   |
| 8     | 26   | 52   | 54   | 35    | 1000  | 228   | 272   | 104  | 60   | 38   | 31   | 29   |
| 9     | 27   | 35   | 50   | 34    | 2000  | 290   | 233   | 97   | 59   | 37   | 30   | 24   |
| 10    | 26   | 36   | 47   | 36    | 839   | 215   | 214   | 93   | 59   | 36   | 30   | 23   |
| 11    | 28   | 42   | 44   | 34    | 532   | 194   | 625   | 90   | 57   | 35   | 31   | 23   |
| 12    | 27   | 34   | 43   | 34    | 415   | 176   | 422   | 88   | 54   | 34   | 31   | 22   |
| 13    | 26   | 32   | 49   | 34    | 340   | 167   | 320   | 85   | 54   | 34   | 29   | 22   |
| 14    | 27   | 31   | 48   | 34    | 299   | 184   | 277   | 88   | 54   | 33   | 28   | 22   |
| 15    | 27   | 31   | 43   | 34    | 254   | 265   | 251   | 90   | 53   | 34   | 28   | 22   |
| 16    | 26   | 30   | 41   | 41    | 334   | 188   | 228   | 89   | 52   | 34   | 28   | 21   |
| 17    | 26   | 38   | 40   | 43    | 475   | 181   | 209   | 87   | 52   | 34   | 28   | 22   |
| 18    | 26   | 33   | 40   | 332   | 364   | 170   | 194   | 78   | 52   | 35   | 27   | 21   |
| 19    | 26   | 31   | 39   | 524   | 315   | 199   | 179   | 84   | 50   | 34   | 27   | 22   |
| 20    | 26   | 31   | 42   | 936   | 313   | 177   | 174   | 83   | 50   | 35   | 27   | 22   |
| 21    | 25   | 31   | 42   | 367   | 418   | 179   | 187   | 82   | 49   | 35   | 26   | 22   |
| 22    | 25   | 34   | 39   | 230   | 329   | 182   | 164   | 80   | 49   | 34   | 26   | 21   |
| 23    | 25   | 70   | 39   | 562   | 293   | 212   | 153   | 79   | 48   | 34   | 25   | 22   |
| 24    | 58   | 70   | 38   | 303   | 269   | 274   | 146   | 78   | 48   | 34   | 25   | 21   |
| 25    | 40   | 42   | 38   | 224   | 345   | 967   | 143   | 77   | 47   | 33   | 25   | 21   |
| 26    | 30   | 37   | 38   | 313   | 270   | 506   | 138   | 76   | 45   | 33   | 25   | 21   |
| 27    | 28   | 40   | 38   | 255   | 246   | 377   | 132   | 74   | 44   | 33   | 25   | 20   |
| 28    | 28   | 54   | 37   | 203   | 229   | 308   | 129   | 69   | 44   | 32   | 24   | 20   |
| 29    | 27   | 86   | 38   | 177   | ---   | 259   | 125   | 71   | 43   | 32   | 25   | 20   |
| 30    | 29   | 398  | 38   | 162   | ---   | 248   | 120   | 71   | 42   | 32   | 24   | 20   |
| 31    | 28   | ---  | 37   | 351   | ---   | 261   | ---   | 69   | ---  | 32   | 24   | ---  |
| TOTAL | 890  | 1610 | 1679 | 5550  | 12732 | 7753  | 6572  | 2752 | 1644 | 1097 | 866  | 670  |
| MEAN  | 28.7 | 53.7 | 54.2 | 179   | 455   | 250   | 219   | 88.8 | 54.8 | 35.4 | 27.9 | 22.3 |
| MAX   | 58   | 398  | 192  | 936   | 2000  | 967   | 625   | 117  | 76   | 42   | 32   | 29   |
| MIN   | 25   | 27   | 37   | 34    | 149   | 162   | 120   | 69   | 42   | 32   | 24   | 20   |
| AC-FT | 1770 | 3190 | 3330 | 11010 | 25250 | 15380 | 13040 | 5460 | 3260 | 2180 | 1720 | 1330 |

e Estimated.

## SAN LORENZO RIVER BASIN

## 11160500 SAN LORENZO RIVER AT BIG TREES, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 23.1 | 54.0 | 152  | 325  | 413  | 302  | 177  | 74.0 | 42.0 | 27.2 | 20.3 | 18.3 |
| MAX  | 176  | 461  | 1319 | 1242 | 1853 | 1483 | 1005 | 322  | 131  | 65.8 | 44.0 | 52.1 |
| (WY) | 1963 | 1951 | 1956 | 1952 | 1998 | 1983 | 1958 | 1983 | 1998 | 1983 | 1983 | 1959 |
| MIN  | 8.26 | 11.4 | 14.7 | 13.8 | 16.6 | 21.4 | 12.3 | 11.6 | 9.37 | 6.66 | 6.50 | 8.28 |
| (WY) | 1978 | 1991 | 1991 | 1991 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1991 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1937 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 102085                 |        | 43815               |        |                         |             |
| ANNUAL MEAN              | 280                    |        | 120                 |        | 134                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 391                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 13.2                    |             |
| HIGHEST DAILY MEAN       | 7330                   | Feb 3  | 2000                | Feb 9  | 17000                   | Dec 23 1955 |
| LOWEST DAILY MEAN        | 25                     | Oct 21 | 20                  | Sep 27 | 5.6                     | Jul 27 1977 |
| ANNUAL SEVEN-DAY MINIMUM | 26                     | Oct 17 | 20                  | Sep 24 | 5.8                     | Jul 26 1977 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 3200                | Feb 9  | 30400                   | Dec 23 1955 |
| INSTANTANEOUS PEAK STAGE |                        |        | 10.70               | Feb 9  | 28.85                   | Jan 5 1982  |
| INSTANTANEOUS LOW FLOW   |                        |        |                     |        | 5.6                     | Jul 27 1977 |
| ANNUAL RUNOFF (AC-FT)    | 202500                 |        | 86910               |        | 97240                   |             |
| 10 PERCENT EXCEEDS       | 566                    |        | 279                 |        | 280                     |             |
| 50 PERCENT EXCEEDS       | 90                     |        | 44                  |        | 34                      |             |
| 90 PERCENT EXCEEDS       | 30                     |        | 25                  |        | 13                      |             |

## 11161000 SAN LORENZO RIVER AT SANTA CRUZ, CA

LOCATION.—Lat 36°59'27", long 122°01'51", in La Carbonera Grant, Santa Cruz County, Hydrologic Unit 18060001, on right bank, in city of Santa Cruz Water Meter Repair compound, 0.3 mi upstream from intersection of State Highways 1 and 9, 1.0 mi north of Santa Cruz, and 2.4 mi upstream from mouth.

DRAINAGE AREA.—115 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1952 to September 1960, October 1987 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 5.84 ft above sea level (levels by city of Santa Cruz Water Department). October 1952 to September 1960, water-stage recorder at site 0.1 mi downstream at different datum.

REMARKS.—Records good. Low flow partially regulated by Loch Lomond Reservoir since 1961, capacity, 8,820 acre-ft, and by an inflatable fiber dam located 6.8 mi upstream from gage. Water is diverted 50 ft upstream from station by city of Santa Cruz for municipal supply; many small diversions upstream from station for domestic supply.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 30,400 ft<sup>3</sup>/s, Dec. 23, 1955, gage height, 23.10 ft, site and datum then in use, from rating curve extended above 4,500 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow for several days in 1955 and many days in 1960.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,800 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Jan. 20 | 0330 | 2,780                             | 8.86                | Mar. 25 | 0715 | 1,930                             | 7.91                |
| Feb. 9  | 1030 | 5,060                             | 10.82               |         |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN   | FEB   | MAR   | APR   | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|------|------|------|-------|-------|-------|-------|------|------|------|------|------|
| 1     | 26   | 23   | 267  | 32    | 250   | 233   | 234   | 134  | 66   | 37   | 25   | 18   |
| 2     | 27   | 22   | 80   | 32    | 195   | 217   | 215   | 131  | 68   | 37   | 25   | 18   |
| 3     | 22   | 20   | 81   | 31    | 172   | 245   | 197   | 129  | 72   | 36   | 25   | 18   |
| 4     | 21   | 21   | 75   | 31    | 157   | 203   | 188   | 128  | 69   | 35   | 24   | 18   |
| 5     | 20   | 20   | 62   | 31    | 146   | 188   | 266   | 119  | 64   | 35   | 24   | 18   |
| 6     | 19   | 22   | 116  | 31    | 409   | 179   | 335   | 115  | 63   | 34   | 26   | 18   |
| 7     | 17   | 110  | 62   | 31    | 2940  | 171   | 240   | 111  | 60   | 33   | 26   | 17   |
| 8     | 16   | 57   | 58   | 31    | 1620  | 213   | 301   | 114  | 59   | 33   | 25   | 21   |
| 9     | 16   | 30   | 50   | 29    | 3270  | 321   | 264   | 111  | 57   | 32   | 23   | 20   |
| 10    | 16   | 29   | 44   | 30    | 1360  | 226   | 228   | 105  | 56   | 32   | 25   | 18   |
| 11    | 17   | 38   | 41   | 28    | 787   | 203   | 803   | 101  | 55   | 31   | 25   | 18   |
| 12    | 17   | 29   | 40   | 29    | 572   | 183   | 557   | 98   | 57   | 31   | 24   | 18   |
| 13    | 16   | 24   | 42   | 28    | 452   | 173   | 418   | 96   | 51   | 31   | 26   | 17   |
| 14    | 16   | 23   | 48   | 28    | 390   | 184   | 351   | 93   | 54   | 30   | 22   | 18   |
| 15    | 16   | 22   | 39   | 28    | 321   | 281   | 311   | 92   | 59   | 30   | 22   | 17   |
| 16    | 17   | 23   | 37   | 32    | 423   | 199   | 281   | 91   | 58   | 30   | 22   | 17   |
| 17    | 16   | 30   | 37   | 36    | 700   | 187   | 254   | 87   | 54   | 29   | 22   | 17   |
| 18    | 15   | 25   | 36   | 448   | 479   | 176   | 235   | 81   | 48   | 29   | 26   | 17   |
| 19    | 14   | 23   | 36   | 785   | 403   | 205   | 215   | 80   | 46   | 29   | 22   | 18   |
| 20    | 14   | 23   | 38   | 1610  | 370   | 188   | 212   | 79   | 45   | 29   | 20   | 17   |
| 21    | 14   | 21   | 39   | 587   | 545   | 187   | 214   | 79   | 44   | 29   | 21   | 17   |
| 22    | 14   | 23   | 36   | 291   | 400   | 189   | 191   | 77   | 45   | 28   | 20   | 16   |
| 23    | 14   | 44   | 35   | 768   | 348   | 224   | 176   | 76   | 44   | 28   | 20   | 17   |
| 24    | 43   | 73   | 35   | 401   | 315   | 248   | 171   | 75   | 43   | 28   | 19   | 16   |
| 25    | 44   | 38   | 34   | 257   | 397   | 1330  | 165   | 74   | 41   | 27   | 19   | 16   |
| 26    | 27   | 28   | 33   | 362   | 312   | 680   | 161   | 73   | 40   | 27   | 19   | 16   |
| 27    | 24   | 29   | 32   | 295   | 279   | 468   | 154   | 73   | 40   | 28   | 19   | 15   |
| 28    | 23   | 43   | 33   | 212   | 254   | 367   | 150   | 67   | 39   | 27   | 19   | 14   |
| 29    | 23   | 63   | 33   | 180   | ---   | 296   | 143   | 70   | 38   | 27   | 19   | 14   |
| 30    | 24   | 435  | 32   | 161   | ---   | 266   | 138   | 70   | 37   | 26   | 19   | 14   |
| 31    | 25   | ---  | 32   | 406   | ---   | 277   | ---   | 67   | ---  | 25   | 18   | ---  |
| TOTAL | 633  | 1411 | 1663 | 7281  | 18266 | 8707  | 7768  | 2896 | 1572 | 943  | 691  | 513  |
| MEAN  | 20.4 | 47.0 | 53.6 | 235   | 652   | 281   | 259   | 93.4 | 52.4 | 30.4 | 22.3 | 17.1 |
| MAX   | 44   | 435  | 267  | 1610  | 3270  | 1330  | 803   | 134  | 72   | 37   | 26   | 21   |
| MIN   | 14   | 20   | 32   | 28    | 146   | 171   | 138   | 67   | 37   | 25   | 18   | 14   |
| AC-FT | 1260 | 2800 | 3300 | 14440 | 36230 | 17270 | 15410 | 5740 | 3120 | 1870 | 1370 | 1020 |

## SAN LORENZO RIVER BASIN

## 11161000 SAN LORENZO RIVER AT SANTA CRUZ, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 13.2 | 28.6 | 168  | 349  | 452  | 240  | 149  | 72.8 | 36.9 | 19.4 | 11.5 | 10.6 |
| MAX  | 28.9 | 86.1 | 1366 | 1391 | 2652 | 999  | 1017 | 212  | 137  | 67.2 | 39.9 | 40.4 |
| (WY) | 1990 | 1998 | 1956 | 1997 | 1998 | 1995 | 1958 | 1998 | 1998 | 1998 | 1998 | 1959 |
| MIN  | 1.83 | 3.45 | 7.30 | 5.60 | 15.3 | 16.8 | 15.9 | 13.7 | 4.64 | 1.48 | .27  | .17  |
| (WY) | 1989 | 1991 | 1991 | 1991 | 1991 | 1988 | 1990 | 1988 | 1988 | 1988 | 1960 | 1960 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1953 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 137790                 |        | 52344               |        |                         |             |
| ANNUAL MEAN              | 378                    |        | 143                 |        | 128                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 384                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 21.5                    |             |
| HIGHEST DAILY MEAN       | 9800                   | Feb 3  | 3270                | Feb 9  | 17400                   | Dec 23 1955 |
| LOWEST DAILY MEAN        | 14                     | Oct 19 | 14                  | Oct 19 | .00                     | Sep 3 1955  |
| ANNUAL SEVEN-DAY MINIMUM | 14                     | Oct 17 | 14                  | Oct 17 | .00                     | Sep 20 1960 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 5060                |        | 30400                   |             |
| INSTANTANEOUS PEAK STAGE |                        |        | 10.82               |        | 23.10                   |             |
| ANNUAL RUNOFF (AC-FT)    | 273300                 |        | 103800              |        | 92460                   |             |
| 10 PERCENT EXCEEDS       | 777                    |        | 327                 |        | 267                     |             |
| 50 PERCENT EXCEEDS       | 91                     |        | 40                  |        | 25                      |             |
| 90 PERCENT EXCEEDS       | 24                     |        | 18                  |        | 2.9                     |             |

## 11161300 CARBONERA CREEK AT SCOTTS VALLEY, CA

LOCATION.—Lat 37°03'02", long 122°00'45" in San Augustine Grant, Santa Cruz County, Hydrologic Unit 18060001, on right bank, at east city limits of Scotts Valley, 1.1 mi upstream from Glen Canyon Road, 3.3 mi east of Felton, and 4.1 mi upstream from Branciforte Creek.

DRAINAGE AREA.—3.60 mi<sup>2</sup>.

PERIOD OF RECORD.—February 1985 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 550 ft above sea level, from topographic map.

REMARKS.—Records fair. No regulation or diversion upstream from station. Low flows affected by return flow from urban irrigation and by periodic flushing of upstream county well.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,620 ft<sup>3</sup>/s, Dec. 10, 1996, gage height, 11.89 ft, from rating curve extended above slope-area measurement made at gage height 9.48 ft; no flow for many days in several years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 500 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Jan. 19 | 2230 | 288                               | 5.72                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV    | DEC   | JAN    | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|--------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1     | .30   | .36    | 12    | .56    | 11    | 4.5   | 4.5   | 1.2   | .51   | .47   | .58   | .05   |
| 2     | .27   | .39    | 3.4   | .57    | 8.3   | 4.1   | 3.8   | 1.2   | .60   | .47   | .49   | .06   |
| 3     | .32   | .39    | 10    | .62    | 7.1   | 7.3   | 3.5   | 1.5   | 2.0   | .38   | .49   | .26   |
| 4     | .75   | .39    | 2.3   | .62    | 5.7   | 3.5   | 3.4   | 1.1   | .27   | .43   | .45   | .27   |
| 5     | .52   | .51    | 12    | .69    | 4.3   | 3.0   | 16    | .81   | .22   | .37   | .47   | .28   |
| 6     | .26   | .95    | 4.5   | .76    | 56    | 2.7   | 18    | .67   | .23   | .44   | 1.1   | .24   |
| 7     | .24   | 28     | 1.4   | .67    | 140   | 2.3   | 7.0   | .63   | .32   | .57   | .31   | .37   |
| 8     | .21   | 1.6    | .92   | .76    | 88    | 13    | 12    | .74   | .39   | .38   | .30   | .50   |
| 9     | .23   | .59    | .64   | .83    | 104   | 8.6   | 6.5   | .79   | .45   | .37   | .53   | 1.1   |
| 10    | .24   | 2.5    | .51   | .81    | 28    | 5.0   | 7.8   | .75   | .48   | .31   | .65   | .14   |
| 11    | .28   | 2.6    | .47   | .96    | 15    | 4.3   | 41    | .95   | .55   | .68   | .47   | .14   |
| 12    | .21   | .52    | .44   | .85    | 11    | 3.5   | 12    | .62   | .43   | .22   | .26   | .26   |
| 13    | .21   | .67    | 3.1   | .85    | 9.9   | 3.0   | 9.0   | .62   | .39   | .26   | .34   | .13   |
| 14    | .27   | .39    | .42   | .82    | 8.0   | 9.4   | 7.3   | .70   | .40   | .28   | .38   | .16   |
| 15    | .32   | .46    | .31   | 1.4    | 6.7   | 9.9   | 5.9   | .73   | .48   | .33   | .41   | .58   |
| 16    | .18   | .85    | .30   | .99    | 17    | 5.0   | 4.4   | .70   | .53   | .51   | .55   | .47   |
| 17    | .17   | 2.1    | .26   | 4.1    | 14    | 4.2   | 3.5   | .61   | .50   | .72   | .36   | .41   |
| 18    | .21   | .36    | .54   | 92     | 13    | 3.5   | 2.7   | .58   | .60   | .41   | .37   | .46   |
| 19    | .15   | .49    | .37   | 79     | 8.6   | 11    | 2.1   | .57   | .37   | .65   | .30   | .57   |
| 20    | .28   | .57    | 1.5   | 82     | 22    | 5.0   | 1.8   | .58   | .38   | .45   | .36   | .34   |
| 21    | .47   | .74    | .32   | 21     | 23    | 5.6   | 1.6   | .57   | .33   | .53   | .31   | .32   |
| 22    | .46   | 1.3    | .47   | 14     | 11    | 5.3   | 1.5   | .47   | .35   | .57   | .27   | .38   |
| 23    | .24   | 15     | .52   | 42     | 9.3   | 10    | 1.8   | .36   | .34   | .70   | .60   | .40   |
| 24    | 9.3   | 1.5    | .58   | 13     | 8.0   | 26    | 2.1   | .36   | .31   | .43   | .22   | .46   |
| 25    | .22   | .58    | .85   | 9.5    | 13    | 52    | 1.7   | .37   | .39   | .43   | .18   | .46   |
| 26    | .15   | .87    | .38   | 23     | 7.3   | 15    | 1.4   | .39   | .33   | .42   | .12   | .45   |
| 27    | .18   | 4.1    | .39   | 10     | 6.3   | 10    | 1.4   | .33   | .35   | .95   | .20   | .28   |
| 28    | .26   | 4.1    | .46   | 8.0    | 5.3   | 8.2   | 1.4   | .30   | .32   | 1.2   | .17   | .41   |
| 29    | .30   | 28     | .40   | 6.7    | ---   | 7.2   | 1.4   | .29   | .50   | .50   | .21   | .44   |
| 30    | .47   | 67     | .46   | 6.4    | ---   | 7.2   | 1.4   | .32   | .46   | .89   | .15   | .43   |
| 31    | .30   | ---    | .54   | 43     | ---   | 6.2   | ---   | .28   | ---   | .59   | .17   | ---   |
| TOTAL | 17.97 | 167.88 | 60.75 | 466.46 | 660.8 | 265.5 | 187.9 | 20.09 | 13.78 | 15.91 | 11.77 | 10.82 |
| MEAN  | .58   | 5.60   | 1.96  | 15.0   | 23.6  | 8.56  | 6.26  | .65   | .46   | .51   | .38   | .36   |
| MAX   | 9.3   | 67     | 12    | 92     | 140   | 52    | 41    | 1.5   | 2.0   | 1.2   | 1.1   | 1.1   |
| MIN   | .15   | .36    | .26   | .56    | 4.3   | 2.3   | 1.4   | .28   | .22   | .22   | .12   | .05   |
| AC-FT | 36    | 333    | 120   | 925    | 1310  | 527   | 373   | 40    | 27    | 32    | 23    | 21    |

## 11161300 CARBONERA CREEK AT SCOTTS VALLEY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .67  | 2.55 | 6.83 | 14.5 | 18.9 | 10.8 | 2.23 | 1.51 | .40  | .18  | .21  | .22  |
| MAX  | 3.01 | 6.24 | 38.3 | 41.0 | 68.1 | 32.0 | 7.42 | 5.63 | 1.95 | .59  | .91  | .68  |
| (WY) | 1990 | 1997 | 1997 | 1995 | 1998 | 1986 | 1998 | 1998 | 1998 | 1998 | 1989 | 1989 |
| MIN  | .039 | .002 | .51  | .35  | .95  | .25  | .41  | .099 | .002 | .005 | .000 | .000 |
| (WY) | 1987 | 1987 | 1987 | 1991 | 1988 | 1988 | 1987 | 1987 | 1987 | 1990 | 1985 | 1992 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1985 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 3720.77                |        | 1899.63             |        |                         |             |
| ANNUAL MEAN              | 10.2                   |        | 5.20                |        | 4.89                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 10.5                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 1.33                    |             |
| HIGHEST DAILY MEAN       | 239                    | Feb 2  | 140                 | Feb 7  | 370                     | Dec 10 1996 |
| LOWEST DAILY MEAN        | .15                    | Aug 31 | .05                 | Sep 1  | .00                     | Jun 28 1985 |
| ANNUAL SEVEN-DAY MINIMUM | .19                    | Aug 30 | .14                 | Aug 27 | .00                     | Jun 28 1985 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 288                 |        | 1620                    |             |
| INSTANTANEOUS PEAK STAGE |                        |        | 5.72                |        | 11.89                   |             |
| ANNUAL RUNOFF (AC-FT)    | 7380                   |        | 3770                |        | 3540                    |             |
| 10 PERCENT EXCEEDS       | 25                     |        | 11                  |        | 8.3                     |             |
| 50 PERCENT EXCEEDS       | 1.4                    |        | .58                 |        | .43                     |             |
| 90 PERCENT EXCEEDS       | .27                    |        | .26                 |        | .00                     |             |

## 11162500 PESCADERO CREEK NEAR PESCADERO, CA

LOCATION.—Lat 37°15'39", long 122°19'40", in SW 1/4 sec.5, T.8 S., R.4 W., San Mateo County, Hydrologic Unit 18050006, on left bank, at downstream side of highway bridge, 3.0 mi east of Pescadero, and 5.3 mi upstream from mouth.

DRAINAGE AREA.—45.9 mi<sup>2</sup>.

PERIOD OF RECORD.—April 1951 to current year.

CHEMICAL DATA: Water year 1977.

WATER TEMPERATURE: Water years 1965–80.

SEDIMENT DATA: Water years 1971, 1973, 1980, 1986, 1990–93.

REVISED RECORDS.—WSP 1445: 1952–53(M). WSP 1715: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 62.3 ft above sea level.

REMARKS.—Records fair except for estimated daily discharges, which are poor. Small diversions upstream from station by pumping.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 10,600 ft<sup>3</sup>/s, Feb. 3, 1998, gage height, 22.47 ft, from rating curve extended above 2,700 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 700 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Jan. 20 | 0315 | 1,210                             | 7.38                | Mar. 25 | 0645 | 722                               | 5.54                |
| Feb. 9  | 1100 | 2,700                             | 10.56               |         |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC  | JAN    | FEB   | MAR  | APR  | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------|-------|-------|------|--------|-------|------|------|------|------|-------|-------|-------|
| 1     | 10    | 7.9   | e22  | 11     | 93    | 92   | 78   | 35   | 14   | 11    | 6.4   | 5.5   |
| 2     | 9.9   | 7.8   | e24  | 11     | 72    | 83   | 70   | 34   | 16   | 11    | 6.4   | 5.5   |
| 3     | 10    | 7.6   | e26  | 11     | 60    | 85   | 64   | 35   | 16   | 11    | 6.4   | 5.6   |
| 4     | 9.3   | 7.4   | e24  | 10     | 52    | 73   | 60   | 34   | 16   | 11    | 6.4   | 5.5   |
| 5     | 8.6   | 7.6   | e21  | 9.9    | 47    | 66   | 73   | 32   | 15   | 11    | 6.8   | 5.6   |
| 6     | 8.6   | 7.5   | e22  | 9.9    | 51    | 67   | 98   | 31   | 15   | 11    | 8.1   | 5.5   |
| 7     | 8.1   | 13    | e21  | 9.7    | 1070  | 62   | 80   | 30   | 14   | 11    | 8.2   | 5.5   |
| 8     | 7.5   | 17    | e20  | 9.5    | 553   | 64   | 115  | 29   | 14   | 10    | 6.8   | 5.7   |
| 9     | 7.5   | 10    | 19   | 9.6    | 1390  | 87   | 110  | 29   | 14   | 10    | 6.3   | 7.1   |
| 10    | 7.6   | 9.1   | 17   | 9.7    | 496   | 71   | 91   | 28   | 14   | 9.9   | 6.3   | 7.4   |
| 11    | 7.4   | 9.5   | 16   | 9.6    | 263   | 64   | 283  | 27   | 13   | 9.7   | 6.6   | 6.4   |
| 12    | 7.4   | 9.4   | 15   | 9.4    | 184   | 59   | 194  | 27   | 13   | 9.4   | 7.0   | 6.2   |
| 13    | 7.5   | 8.4   | 16   | 9.6    | 144   | 55   | 138  | 26   | 13   | 8.8   | 6.7   | 5.9   |
| 14    | 7.6   | 8.1   | 19   | 9.4    | 126   | 62   | 114  | 25   | 14   | 8.5   | 6.4   | 5.8   |
| 15    | 7.3   | 8.0   | 16   | 9.7    | 106   | 86   | 95   | 24   | 14   | 8.3   | 6.0   | 5.7   |
| 16    | 7.1   | 8.0   | 14   | 15     | 113   | 73   | 84   | 24   | 15   | 8.4   | 5.7   | 5.6   |
| 17    | 6.7   | 8.6   | 13   | 13     | 308   | 64   | 75   | 23   | 16   | 8.6   | 5.6   | 5.6   |
| 18    | 6.7   | 8.6   | 13   | 92     | 198   | 59   | 68   | 22   | 15   | 8.5   | 5.5   | 5.5   |
| 19    | 6.9   | e7.6  | 13   | 222    | 168   | 60   | 62   | 22   | 15   | 8.6   | 5.4   | 5.5   |
| 20    | 6.8   | e7.8  | 14   | 583    | 149   | 61   | 58   | 22   | 15   | 8.5   | 5.6   | 5.7   |
| 21    | 6.9   | e8.4  | 14   | 199    | 271   | 59   | 55   | 21   | 15   | 8.2   | 5.3   | 5.7   |
| 22    | 6.6   | e9.0  | 12   | 94     | 192   | 56   | 53   | 20   | 14   | 8.0   | 5.4   | 5.6   |
| 23    | 6.5   | e9.0  | 12   | 302    | 153   | 77   | 49   | 19   | 14   | 7.8   | 5.2   | 5.6   |
| 24    | 11    | e8.0  | 12   | 169    | 129   | 84   | 46   | 19   | 14   | 7.8   | 4.9   | 5.5   |
| 25    | 15    | e7.6  | 12   | 100    | 176   | 461  | 44   | 18   | 13   | 8.0   | 4.8   | 6.2   |
| 26    | 9.0   | e9.0  | 12   | 110    | 135   | 209  | 42   | 18   | 13   | 7.9   | 4.8   | 6.8   |
| 27    | 8.4   | e9.3  | 12   | 103    | 118   | 142  | 41   | 18   | 13   | 7.6   | 4.8   | 6.6   |
| 28    | 8.1   | e9.3  | 12   | 75     | 102   | 112  | 39   | 17   | 12   | 7.7   | 5.3   | 6.2   |
| 29    | 10    | e11   | 11   | 63     | ---   | 94   | 37   | 17   | 12   | 7.5   | 5.8   | 5.8   |
| 30    | 8.2   | e28   | 11   | 54     | ---   | 85   | 36   | 17   | 11   | 7.3   | 5.7   | 5.7   |
| 31    | 8.0   | ---   | 11   | 122    | ---   | 92   | ---  | 16   | ---  | 7.1   | 5.6   | ---   |
| TOTAL | 256.2 | 287.5 | 496  | 2465.0 | 6919  | 2864 | 2452 | 759  | 422  | 279.1 | 186.2 | 176.5 |
| MEAN  | 8.26  | 9.58  | 16.0 | 79.5   | 247   | 92.4 | 81.7 | 24.5 | 14.1 | 9.00  | 6.01  | 5.88  |
| MAX   | 15    | 28    | 26   | 583    | 1390  | 461  | 283  | 35   | 16   | 11    | 8.2   | 7.4   |
| MIN   | 6.5   | 7.4   | 11   | 9.4    | 47    | 55   | 36   | 16   | 11   | 7.1   | 4.8   | 5.5   |
| AC-FT | 508   | 570   | 984  | 4890   | 13720 | 5680 | 4860 | 1510 | 837  | 554   | 369   | 350   |

e Estimated.

## PESCADERO CREEK BASIN

## 11162500 PESCADERO CREEK NEAR PESCADERO, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 5.50 | 13.3 | 56.7 | 124  | 136  | 95.4 | 55.8 | 19.2 | 9.14 | 5.19 | 3.56 | 2.77 |
| MAX  | 92.8 | 85.9 | 469  | 435  | 865  | 540  | 398  | 93.8 | 32.5 | 17.5 | 11.6 | 8.64 |
| (WY) | 1963 | 1984 | 1956 | 1997 | 1998 | 1983 | 1958 | 1983 | 1998 | 1998 | 1998 | 1998 |
| MIN  | .38  | 1.61 | 2.30 | 2.75 | 2.92 | 4.25 | 1.93 | 2.00 | .78  | .20  | .012 | .083 |
| (WY) | 1962 | 1992 | 1977 | 1991 | 1977 | 1988 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1951 - 1999

|                          |         |        |         |        |       |  |             |  |
|--------------------------|---------|--------|---------|--------|-------|--|-------------|--|
| ANNUAL TOTAL             | 43275.2 |        | 17562.5 |        | 43.4  |  | 1983        |  |
| ANNUAL MEAN              | 119     |        | 48.1    |        | 164   |  | 1977        |  |
| HIGHEST ANNUAL MEAN      |         |        |         |        | 1.72  |  | 1977        |  |
| LOWEST ANNUAL MEAN       |         |        |         |        | 5560  |  | Dec 23 1955 |  |
| HIGHEST DAILY MEAN       | 4060    | Feb 3  | 1390    | Feb 9  | .00   |  | Sep 9 1961  |  |
| LOWEST DAILY MEAN        | 6.5     | Oct 23 | 4.8     | Aug 25 | .00   |  | Aug 17 1977 |  |
| ANNUAL SEVEN-DAY MINIMUM | 6.7     | Oct 17 | 5.0     | Aug 21 | 22.47 |  | Feb 3 1998  |  |
| INSTANTANEOUS PEAK FLOW  |         |        | 2700    |        | 10600 |  | Feb 3 1998  |  |
| INSTANTANEOUS PEAK STAGE |         |        | 10.56   |        | 22.47 |  | Feb 3 1998  |  |
| ANNUAL RUNOFF (AC-FT)    | 85840   |        | 34840   |        | 31430 |  |             |  |
| 10 PERCENT EXCEEDS       | 301     |        | 110     |        | 90    |  |             |  |
| 50 PERCENT EXCEEDS       | 21      |        | 13      |        | 7.1   |  |             |  |
| 90 PERCENT EXCEEDS       | 8.0     |        | 5.8     |        | 1.4   |  |             |  |



11162620 PILARCITOS CREEK BELOW STONE DAM, NEAR HILLSBOROUGH, CA

LOCATION.—Lat 37°31'29", long 122°23'54", NE 1/4 SW 1/4 Sec.3, T.5 S., R.5W., in San Mateo County, Hydrologic Unit 18050006, on left bank, 50 ft downstream of unnamed tributary, 0.2 mi downstream of Stone Dam, and 2.4 mi southwest of Hillsborough.

DRAINAGE AREA.—6.54 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1997 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 500 ft above sea level, from topographic map.

REMARKS.—Records good except for estimated daily discharges, which are poor. Flow regulated by storage in Pilarcitos Lake, 2.6 mi upstream, capacity, 3,100 acre-ft. Water is diverted by city of San Francisco water system at Pilarcitos Lake and Stone Dam..

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 279 ft<sup>3</sup>/s, Feb. 7, 1999, gage height, 7.46 ft, from rating curve extended above 90 ft<sup>3</sup>/s; minimum daily, 0.03 ft<sup>3</sup>/s, Oct. 13, 1997.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN   | FEB    | MAR   | APR   | MAY   | JUN  | JUL  | AUG  | SEP  |
|-------|------|-------|-------|-------|--------|-------|-------|-------|------|------|------|------|
| 1     | .23  | .47   | 1.0   | .26   | .98    | 14    | 1.1   | .55   | .36  | .23  | .17  | .16  |
| 2     | .23  | .47   | .77   | .25   | .93    | 12    | 1.1   | .55   | .38  | .23  | .17  | .16  |
| 3     | .22  | .49   | 1.1   | .25   | .89    | 12    | 1.0   | .56   | .39  | .24  | .17  | .16  |
| 4     | .25  | .54   | .73   | .25   | .86    | 7.8   | 1.0   | .52   | .38  | .23  | .18  | .16  |
| 5     | .26  | .50   | .71   | .24   | .83    | 4.0   | 1.4   | .50   | .37  | .23  | .18  | .16  |
| 6     | .30  | .49   | .75   | .22   | 1.1    | 2.5   | 1.6   | .48   | .36  | .23  | .23  | .16  |
| 7     | .27  | 1.0   | .61   | .21   | 55     | 1.9   | 1.3   | .46   | .35  | .23  | .19  | .15  |
| 8     | .23  | .65   | .52   | .21   | 8.5    | 1.5   | 2.2   | .44   | .35  | .22  | .18  | .16  |
| 9     | .24  | .51   | .46   | .20   | 19     | 1.5   | 2.3   | .43   | .35  | .22  | .18  | .18  |
| 10    | .25  | .63   | .42   | .20   | 5.0    | 1.3   | 1.8   | .42   | .35  | .22  | .19  | .17  |
| 11    | .25  | .70   | .39   | .20   | 32     | 1.2   | 5.5   | .42   | .34  | .21  | .20  | .17  |
| 12    | .23  | .57   | .36   | .20   | 59     | 1.1   | 4.3   | .40   | .33  | .20  | .19  | .18  |
| 13    | .25  | .48   | .44   | .20   | 21     | 1.1   | 3.5   | .39   | .32  | .20  | .19  | .17  |
| 14    | .25  | .44   | .41   | .20   | 2.3    | 1.3   | 2.9   | .39   | .32  | .20  | .19  | .17  |
| 15    | .27  | .41   | .39   | .26   | 2.0    | 1.3   | 2.2   | .39   | .31  | .21  | .19  | .17  |
| 16    | .25  | .86   | .39   | .39   | 11     | 1.2   | .99   | .39   | .31  | .22  | .19  | .15  |
| 17    | .24  | 4.2   | .38   | .42   | 41     | 1.1   | .88   | .39   | .29  | .23  | .20  | .13  |
| 18    | e.25 | 2.8   | .36   | 2.8   | 39     | 1.1   | .80   | .38   | .28  | .23  | .20  | .12  |
| 19    | e.23 | .28   | .40   | 2.7   | 57     | 1.1   | .74   | .37   | .28  | .23  | .18  | .13  |
| 20    | e.25 | .25   | .45   | 9.9   | 37     | 1.0   | .70   | .35   | .28  | .22  | .17  | .12  |
| 21    | e.27 | .28   | .43   | 2.7   | e49    | .74   | .69   | .35   | .28  | .21  | .17  | .13  |
| 22    | e.26 | .30   | .43   | 1.9   | e28    | e.69  | .67   | .35   | .26  | .19  | .17  | .13  |
| 23    | .23  | .41   | .35   | 2.2   | e26    | e1.4  | .66   | .35   | .25  | .20  | .17  | .13  |
| 24    | .90  | .38   | .35   | 1.9   | e23    | e2.8  | .63   | .37   | .26  | .20  | .17  | .13  |
| 25    | .57  | .31   | .35   | 1.6   | 21     | e5.5  | .63   | .38   | .26  | .20  | .17  | .13  |
| 26    | .47  | .33   | .35   | 1.4   | 42     | e2.0  | .61   | .38   | .26  | .19  | .16  | .13  |
| 27    | .46  | .33   | .34   | 1.2   | 37     | e1.0  | .61   | .38   | .26  | .19  | .17  | .14  |
| 28    | .47  | .35   | .32   | 1.1   | 24     | e.75  | .60   | .37   | .25  | .18  | .17  | .14  |
| 29    | .45  | .53   | .29   | 1.0   | ---    | e.63  | .60   | .37   | .25  | .18  | .17  | .15  |
| 30    | .39  | 1.5   | .28   | .95   | ---    | .60   | .58   | .36   | .24  | .18  | .17  | .15  |
| 31    | .41  | ---   | .28   | 1.2   | ---    | 1.2   | ---   | .35   | ---  | .18  | .16  | ---  |
| TOTAL | 9.83 | 21.46 | 14.81 | 36.71 | 644.39 | 87.31 | 43.59 | 12.79 | 9.27 | 6.53 | 5.59 | 4.49 |
| MEAN  | .32  | .72   | .48   | 1.18  | 23.0   | 2.82  | 1.45  | .41   | .31  | .21  | .18  | .15  |
| MAX   | .90  | 4.2   | 1.1   | 9.9   | 59     | 14    | 5.5   | .56   | .39  | .24  | .23  | .18  |
| MIN   | .22  | .25   | .28   | .20   | .83    | .60   | .58   | .35   | .24  | .18  | .16  | .12  |
| AC-FT | 19   | 43    | 29    | 73    | 1280   | 173   | 86    | 25    | 18   | 13   | 11   | 8.9  |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .18  | .53  | .45  | 14.7 | 41.7 | 3.13 | 1.22 | .50  | .39  | .30  | .22  | .19  |
| MAX  | .32  | .72  | .48  | 28.2 | 60.4 | 3.44 | 1.45 | .59  | .46  | .38  | .26  | .22  |
| (WY) | 1999 | 1999 | 1999 | 1998 | 1998 | 1998 | 1999 | 1998 | 1998 | 1998 | 1998 | 1998 |
| MIN  | .047 | .35  | .43  | 1.18 | 23.0 | 2.82 | .99  | .41  | .31  | .21  | .18  | .15  |
| (WY) | 1998 | 1998 | 1998 | 1999 | 1999 | 1999 | 1998 | 1999 | 1999 | 1999 | 1999 | 1999 |

SUMMARY STATISTICS

|                          | FOR 1998 CALENDAR YEAR | FOR 1999 WATER YEAR | WATER YEARS 1998 - 1999 |
|--------------------------|------------------------|---------------------|-------------------------|
| ANNUAL TOTAL             | 2805.81                | 896.77              |                         |
| ANNUAL MEAN              | 7.69                   | 2.46                | 5.04                    |
| HIGHEST ANNUAL MEAN      |                        |                     | 7.63                    |
| LOWEST ANNUAL MEAN       |                        |                     | 2.46                    |
| HIGHEST DAILY MEAN       | 102                    | Feb 7               | 102                     |
| LOWEST DAILY MEAN        | .18                    | Sep 4               | .03                     |
| ANNUAL SEVEN-DAY MINIMUM | .20                    | Sep 1               | .03                     |
| INSTANTANEOUS PEAK FLOW  |                        | 279                 | 279                     |
| INSTANTANEOUS PEAK STAGE |                        | 7.46                | 7.46                    |
| ANNUAL RUNOFF (AC-FT)    | 5570                   | 1780                | 3650                    |
| 10 PERCENT EXCEEDS       | 36                     | 2.7                 | 6.8                     |
| 50 PERCENT EXCEEDS       | .47                    | .37                 | .39                     |
| 90 PERCENT EXCEEDS       | .23                    | .17                 | .16                     |

e Estimated.

## 11162630 PILARCITOS CREEK AT HALF MOON BAY, CA

LOCATION.—Lat 37°28'00", long 122°25'59", on north boundary of Miramontes Grant, San Mateo County, Hydrologic Unit 18050006, on left bank, 50 ft downstream from State Highway 1, 0.3 mi northwest of town of Half Moon Bay, and 1.0 mi upstream from mouth.

DRAINAGE AREA.—27.1 mi<sup>2</sup>.

PERIOD OF RECORD.—July 1966 to current year.

SEDIMENT DATA: June 1990.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 31.51 ft above sea level. Prior to Nov. 17, 1983, at site 800 ft downstream at different datum.

REMARKS.—Records fair except for discharges less than 1 ft<sup>3</sup>/s, which are poor. Flow slightly regulated by storage in Pilarcitos Lake 10 mi upstream, capacity, 3,100 acre-ft. Water is diverted to city of San Francisco water system; small diversions for irrigation upstream from station by pumping.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 4,750 ft<sup>3</sup>/s, Jan. 4, 1982, gage height, 13.08 ft, site and datum then in use, from rating curve extended above 1,000 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 200 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Jan. 19 | 2400 | 423                               | 6.33                | Mar. 14 | 1415 | 287                               | 6.08                |
| Feb. 9  | 0900 | 729                               | 8.53                | Mar. 25 | 0015 | 361                               | 6.57                |
| Feb. 17 | 0145 | 620                               | 8.01                | Apr. 11 | 0700 | 343                               | 6.45                |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN    | FEB  | MAR  | APR  | MAY   | JUN   | JUL  | AUG  | SEP   |
|-------|-------|-------|-------|--------|------|------|------|-------|-------|------|------|-------|
| 1     | e1.6  | 1.1   | 18    | 7.3    | 37   | 71   | 36   | 14    | 6.1   | 2.8  | 1.7  | 2.1   |
| 2     | e1.6  | 1.4   | 10    | 6.8    | 32   | 65   | 33   | 15    | 6.6   | 2.6  | 1.5  | 2.1   |
| 3     | e1.6  | 3.1   | 25    | 6.4    | 29   | 67   | 31   | 16    | 9.0   | 2.4  | 1.2  | 1.7   |
| 4     | e1.5  | 5.5   | 13    | 6.1    | 27   | 56   | 31   | 15    | 7.7   | 2.8  | 1.3  | 1.8   |
| 5     | e1.5  | 4.7   | 15    | 5.4    | 25   | 46   | 50   | 14    | 7.7   | 2.8  | 2.7  | 2.1   |
| 6     | e1.4  | 3.9   | 17    | 5.0    | 42   | 40   | 45   | 13    | 7.9   | 2.9  | 3.8  | 2.0   |
| 7     | e1.4  | 9.6   | 11    | 6.1    | 396  | 36   | 39   | 13    | 6.6   | 2.8  | 3.5  | 2.2   |
| 8     | e1.4  | 7.3   | 7.5   | 5.7    | 181  | 36   | 61   | 13    | 6.0   | 2.7  | 3.1  | 2.2   |
| 9     | .94   | 4.8   | 6.0   | 4.3    | 300  | 51   | 49   | 12    | 5.6   | 2.6  | 2.9  | 3.2   |
| 10    | 1.8   | 4.6   | 5.3   | 4.6    | 154  | 40   | 45   | 13    | 5.7   | 2.6  | 2.8  | 2.5   |
| 11    | 5.6   | 5.2   | 5.4   | 3.5    | 112  | 36   | 152  | 12    | 5.8   | 3.0  | 2.9  | 1.7   |
| 12    | 2.9   | 4.1   | 10    | 2.8    | 123  | 32   | 82   | 12    | 5.4   | 2.4  | 3.4  | 2.3   |
| 13    | .87   | 4.1   | 23    | 2.5    | 96   | 30   | 61   | 11    | 5.9   | 1.8  | 3.1  | 2.0   |
| 14    | 1.8   | 3.7   | 18    | 3.6    | 59   | 100  | 49   | 11    | 6.0   | 1.7  | 2.7  | 1.7   |
| 15    | 2.1   | 3.6   | 7.2   | 6.0    | 54   | 88   | 43   | 9.0   | 6.2   | 2.4  | 3.0  | 1.8   |
| 16    | 2.2   | 4.0   | 8.3   | 15     | 107  | 66   | 37   | 7.9   | 6.0   | 2.4  | 2.6  | 1.9   |
| 17    | 1.4   | 7.8   | 16    | 9.3    | 400  | 57   | 33   | 7.6   | 5.4   | 2.7  | 2.8  | 2.1   |
| 18    | 1.8   | 10    | 16    | 135    | 199  | 51   | 30   | 6.9   | 5.0   | 3.1  | 2.7  | 2.4   |
| 19    | 1.7   | 4.7   | 17    | 149    | 170  | 48   | 28   | 6.5   | 4.9   | 2.7  | 2.6  | 2.4   |
| 20    | 1.1   | 2.7   | 19    | 182    | 181  | 44   | 26   | 6.4   | 5.4   | 1.8  | 2.4  | 1.8   |
| 21    | 1.1   | 2.6   | 16    | 85     | 196  | 42   | 24   | 6.5   | 5.6   | 1.9  | 2.4  | 1.5   |
| 22    | 1.7   | 4.4   | 16    | 49     | 159  | 39   | 21   | 6.2   | 5.4   | 1.6  | 2.5  | 2.0   |
| 23    | 2.4   | 6.5   | 15    | 111    | 133  | 55   | 19   | 6.3   | 4.6   | 1.5  | 2.3  | 2.1   |
| 24    | 11    | 6.5   | 14    | 61     | 119  | 68   | 18   | 6.3   | 4.6   | 1.7  | 2.0  | 1.7   |
| 25    | 3.8   | 3.9   | 10    | 44     | 156  | 160  | 18   | 5.9   | 4.4   | 2.6  | 1.7  | 2.0   |
| 26    | 5.0   | 4.2   | 9.7   | 42     | 114  | 75   | 17   | 6.0   | 3.3   | 2.9  | 1.9  | 1.5   |
| 27    | 6.0   | 5.8   | 9.8   | 33     | 100  | 57   | 16   | 6.2   | 3.2   | 2.3  | 1.8  | 1.3   |
| 28    | 2.0   | 7.1   | 10    | 28     | 85   | 47   | 16   | 6.1   | 3.0   | 1.7  | 1.7  | .88   |
| 29    | 1.5   | 7.2   | 9.7   | 24     | ---  | 43   | 15   | 6.3   | 2.7   | 1.5  | 2.0  | .86   |
| 30    | 1.1   | 46    | 8.9   | 22     | ---  | 41   | 14   | 6.7   | 2.8   | 1.3  | 2.1  | .77   |
| 31    | .95   | ---   | 9.0   | 70     | ---  | 41   | ---  | 5.8   | ---   | 1.2  | 1.7  | ---   |
| TOTAL | 72.76 | 190.1 | 395.8 | 1135.4 | 3786 | 1728 | 1139 | 296.6 | 164.5 | 71.2 | 74.8 | 56.61 |
| MEAN  | 2.35  | 6.34  | 12.8  | 36.6   | 135  | 55.7 | 38.0 | 9.57  | 5.48  | 2.30 | 2.41 | 1.89  |
| MAX   | 11    | 46    | 25    | 182    | 400  | 160  | 152  | 16    | 9.0   | 3.1  | 3.8  | 3.2   |
| MIN   | .87   | 1.1   | 5.3   | 2.5    | 25   | 30   | 14   | 5.8   | 2.7   | 1.2  | 1.2  | .77   |
| AC-FT | 144   | 377   | 785   | 2250   | 7510 | 3430 | 2260 | 588   | 326   | 141  | 148  | 112   |

e Estimated.

11162630 PILARCITOS CREEK AT HALF MOON BAY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 1.15 | 5.63 | 16.3 | 49.4 | 52.7 | 39.1 | 19.3 | 6.21 | 2.54 | 1.04 | .64  | .40  |
| MAX  | 4.44 | 32.5 | 92.1 | 164  | 329  | 278  | 127  | 37.2 | 15.8 | 5.35 | 2.41 | 1.89 |
| (WY) | 1983 | 1983 | 1971 | 1982 | 1998 | 1983 | 1982 | 1983 | 1998 | 1998 | 1999 | 1999 |
| MIN  | .000 | .000 | .59  | .48  | .66  | 1.44 | .073 | .009 | .000 | .000 | .000 | .000 |
| (WY) | 1967 | 1991 | 1991 | 1991 | 1977 | 1988 | 1977 | 1977 | 1972 | 1966 | 1966 | 1966 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1966 - 1999 |            |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|------------|
| ANNUAL TOTAL             | 18319.82               |        | 9110.77             |        |                         |            |
| ANNUAL MEAN              | 50.2                   |        | 25.0                |        | 16.0                    |            |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 73.9                    |            |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | .51                     |            |
| HIGHEST DAILY MEAN       | 1150                   | Feb 3  | 400                 | Feb 17 | 2150                    | Jan 4 1982 |
| LOWEST DAILY MEAN        | .34                    | Sep 12 | .77                 | Sep 30 | .00                     | Jul 1 1966 |
| ANNUAL SEVEN-DAY MINIMUM | .61                    | Sep 7  | 1.3                 | Sep 24 | .00                     | Jul 1 1966 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 729                 |        | 4750                    | Jan 4 1982 |
| INSTANTANEOUS PEAK STAGE |                        |        | 8.53                |        | 13.08                   | Jan 4 1982 |
| ANNUAL RUNOFF (AC-FT)    | 36340                  |        | 18070               |        | 11620                   |            |
| 10 PERCENT EXCEEDS       | 148                    |        | 65                  |        | 32                      |            |
| 50 PERCENT EXCEEDS       | 11                     |        | 6.1                 |        | 2.0                     |            |
| 90 PERCENT EXCEEDS       | 1.5                    |        | 1.7                 |        | .00                     |            |

## 11162690 SAN FRANCISCO BAY AT PRESIDIO MILITARY RESERVATION, CA

LOCATION.—Lat 37°48'24", long 122°27'54", in NE 1/4 NE 1/4 sec.36, T.1 S., R.6 W., in San Miguel Grant, San Francisco County, Hydrologic Unit 18050002, at end of Coast Guard dock at Presidio Military Reservation.

PERIOD OF RECORD.—October 1990 to current year.

SPECIFIC CONDUCTANCE: October 1990 to current year.

WATER TEMPERATURE: October 1990 to current year.

PERIOD OF DAILY RECORD.—October 1990 to current year.

SPECIFIC CONDUCTANCE: October 1990 to current year.

WATER TEMPERATURE: October 1990 to current year.

INSTRUMENTATION.—Water-quality monitor since October 1990.

REMARKS.—Interruptions in record were due to malfunction of the sensing and (or) recording instruments. The probe is set at 4.0 ft below Mean Lower Low Water (MLLW). Daily maximums and minimums sometimes differ from tidal cycle (24.8 hours) maximums and minimums.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: Maximum recorded, 50,900 microsiemens, May 26, June 30, and July 1, 1991; minimum recorded, 4,250 microsiemens, Feb. 18, 1998.

WATER TEMPERATURE: Maximum recorded, 19.0°C, several days during August and September 1997; minimum recorded, 8.0°C, several days during December 1990 and January 1991.

EXTREMES FOR CURRENT YEAR.—

SPECIFIC CONDUCTANCE: Maximum recorded, 50,500 microsiemens, June 8; minimum recorded, 18,900 microsiemens, Feb. 24.

WATER TEMPERATURE: Maximum recorded, 16.5°C, several days in October, August, and September; minimum recorded, 8.5°C, Dec. 26, Jan. 10, 11.

## SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY   | MAX     | MIN   | MAX      | MIN   | MAX      | MIN   | MAX     | MIN   | MAX      | MIN   | MAX   | MIN   |
|-------|---------|-------|----------|-------|----------|-------|---------|-------|----------|-------|-------|-------|
|       | OCTOBER |       | NOVEMBER |       | DECEMBER |       | JANUARY |       | FEBRUARY |       | MARCH |       |
| 1     | 47500   | 41600 | 48000    | 44600 | 46500    | 41500 | 46200   | 40200 | 46400    | 36600 | 41700 | 27000 |
| 2     | 47200   | 42500 | 47700    | 44400 | 45900    | 41700 | 46000   | 40700 | 46300    | 36000 | 43100 | 29800 |
| 3     | 47200   | 43500 | 47600    | 44900 | 45500    | 41300 | 46100   | 41000 | 46400    | 37700 | 43000 | 28300 |
| 4     | 47600   | 43300 | 47600    | 45000 | 45500    | 39400 | 46300   | 41500 | 46100    | 37200 | 42000 | 26500 |
| 5     | 47200   | 43600 | 47600    | 45000 | 45600    | 39200 | 46400   | 41500 | 46700    | 33300 | 43600 | 24900 |
| 6     | 46900   | 43300 | 48500    | 45200 | 45500    | 37200 | 46000   | 40500 | 46200    | 33800 | 44800 | 24300 |
| 7     | 46700   | 43400 | ---      | ---   | 46000    | 36500 | 46000   | 39600 | 47300    | 29800 | 45600 | 22900 |
| 8     | 46700   | 43600 | 48100    | 45300 | ---      | ---   | 46300   | 38700 | 45900    | 30200 | 41900 | 23400 |
| 9     | 47600   | 43800 | 48100    | 44800 | 44800    | 32500 | 44500   | 37700 | 47100    | 31600 | 41300 | 19800 |
| 10    | 47800   | 43700 | 47800    | 44700 | 44600    | 31800 | 45400   | 38700 | 43900    | 26600 | 37000 | 19400 |
| 11    | 48000   | 43700 | 47500    | 45400 | 44200    | 31500 | 46900   | 39300 | 46500    | 21700 | 39000 | 21000 |
| 12    | 47600   | 43200 | 47600    | 43100 | 44200    | 31300 | 46700   | 40500 | 46200    | 25800 | 43700 | 21600 |
| 13    | 47400   | 43200 | 47300    | 42900 | 45400    | 32600 | 46500   | 41600 | 46000    | 30300 | 44600 | 23300 |
| 14    | 47600   | 42900 | 47200    | 44500 | 44000    | 33400 | 46600   | 41600 | 45700    | 31500 | 44600 | 31700 |
| 15    | 48000   | 43200 | 47000    | 44400 | 45400    | 36200 | 46800   | 42200 | 45200    | 31800 | 43700 | 33000 |
| 16    | 47900   | 43900 | 46900    | 44300 | 45400    | 36400 | 46400   | 42400 | 45000    | 32000 | 43900 | 33100 |
| 17    | 48100   | 44100 | 47300    | 44700 | 45700    | 36900 | 46500   | 42800 | 44000    | 28500 | 45200 | 33700 |
| 18    | 47700   | 44700 | 47300    | 44500 | 45600    | 38100 | 46300   | 42800 | 44500    | 29600 | 45100 | 35700 |
| 19    | 47600   | 44500 | 47800    | 44400 | 45400    | 38400 | 46300   | 42900 | 43300    | 26500 | 43800 | 35800 |
| 20    | 47700   | 44600 | 47500    | 44100 | 46100    | 38200 | 46200   | 43000 | 44000    | 27000 | 44300 | 34300 |
| 21    | 47600   | 44700 | 47400    | 44000 | 46800    | 37400 | 46300   | 42000 | 43000    | 22900 | 44100 | 34800 |
| 22    | 47200   | 44500 | 47100    | 43600 | 46600    | 37600 | 46600   | 42000 | 42000    | 22800 | 44300 | 33000 |
| 23    | 47500   | 44400 | 47400    | 43600 | 46000    | 36000 | 46500   | 38300 | 41500    | 20200 | 44500 | 32700 |
| 24    | 47100   | 44300 | 47300    | 42900 | 45500    | 35900 | 46600   | 37200 | 43100    | 18900 | 45100 | 35300 |
| 25    | 47000   | 43900 | 47100    | 41600 | 46300    | 35600 | 46800   | 35900 | 42100    | 25000 | 44800 | 29900 |
| 26    | 47800   | 43300 | 46900    | 40900 | 45500    | 33900 | 46200   | 38000 | 42400    | 26400 | 44800 | 32200 |
| 27    | 48000   | 43300 | 46400    | 40500 | 45700    | 33700 | 45600   | 36100 | 43200    | 26400 | 44700 | 34700 |
| 28    | 47400   | 43500 | 46500    | 38800 | 45800    | 37300 | 45800   | 36500 | 42000    | 27700 | 46100 | 36300 |
| 29    | 47900   | 42000 | 46700    | 41400 | 45600    | 40200 | 46000   | 36400 | ---      | ---   | 46600 | 37100 |
| 30    | 48200   | 43100 | 47700    | 43400 | 45500    | 40500 | 46000   | 37700 | ---      | ---   | 46200 | 38500 |
| 31    | 48100   | 44100 | ---      | ---   | 45900    | 40300 | 46400   | 37200 | ---      | ---   | 45900 | 38200 |
| MONTH | 48200   | 41600 | ---      | ---   | ---      | ---   | 46900   | 35900 | 47300    | 18900 | 46600 | 19400 |

## 11162690 SAN FRANCISCO BAY AT PRESIDIO MILITARY RESERVATION, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY   | MAX   | MIN   | MAX   | MIN   | MAX   | MIN   | MAX   | MIN   | MAX    | MIN   | MAX       | MIN   |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-----------|-------|
|       | APRIL |       | MAY   |       | JUNE  |       | JULY  |       | AUGUST |       | SEPTEMBER |       |
| 1     | 46000 | 37500 | 48300 | 42400 | 49300 | 44800 | 50300 | 44100 | 48200  | 45600 | 49500     | 47400 |
| 2     | 46100 | 38000 | 48100 | 41300 | 49300 | 45100 | 50300 | 46600 | 47800  | 45600 | 49500     | 47500 |
| 3     | 46100 | 36800 | 47900 | 41900 | 48900 | 44900 | 50000 | 45400 | 48000  | 45900 | 49500     | 47600 |
| 4     | 46300 | 36300 | 47400 | 41800 | 49200 | 44600 | 49500 | 46000 | 48400  | 46000 | 49500     | 47700 |
| 5     | 47700 | 36000 | 47700 | 39500 | 49500 | 44100 | 49400 | 45200 | 49000  | 46000 | 49400     | 47500 |
| 6     | 47300 | 34200 | 48800 | 38700 | 49700 | 42400 | 49800 | 45900 | 48700  | 46400 | 49400     | 47400 |
| 7     | 47200 | 33700 | 47700 | 37500 | 50200 | 42100 | 50200 | 46700 | 48500  | 46100 | 49500     | 47500 |
| 8     | 46200 | 34500 | 48000 | 38000 | 50500 | 43800 | 50000 | 46800 | 48500  | 46100 | 49500     | 47400 |
| 9     | 46500 | 34900 | 48100 | 37300 | 50100 | 45500 | 49900 | 46400 | 48800  | 46100 | 49300     | 47600 |
| 10    | 47100 | 34900 | 48100 | 39500 | 49600 | 45800 | 49600 | 46800 | 48700  | 46100 | 49400     | 47800 |
| 11    | 46800 | 34500 | 47900 | 42100 | 49600 | 45300 | 49600 | 46500 | 48600  | 46000 | 49400     | 48100 |
| 12    | 46800 | 39000 | 48700 | 42900 | 49200 | 45300 | 49700 | 46700 | 48400  | 46100 | 49500     | 48300 |
| 13    | 46000 | 39600 | 49000 | 42400 | 49100 | 45200 | 49800 | 46800 | 48400  | 46200 | 49600     | 48400 |
| 14    | 45800 | 40300 | 49100 | 42300 | 49500 | 45400 | 49700 | 47000 | 48300  | 46300 | 49600     | 48400 |
| 15    | 45900 | 40600 | 49600 | 42900 | 49800 | 46100 | 49900 | 47200 | 48500  | 46400 | 49800     | 48600 |
| 16    | 46300 | 40100 | 48600 | 43200 | 49900 | 46400 | 49800 | 47400 | 48300  | 46700 | 50000     | 48600 |
| 17    | 46200 | 40000 | 48000 | 43700 | 50200 | 46400 | 49700 | 47100 | 48500  | 46800 | 50100     | 48700 |
| 18    | 46400 | 40200 | 48100 | 44000 | 50300 | 46600 | 49600 | 47400 | 48500  | 46800 | 50100     | 48500 |
| 19    | 46700 | 39800 | 48100 | 44200 | 50000 | 46800 | 49500 | 47700 | 48800  | 46200 | 50200     | 48600 |
| 20    | 47300 | 39900 | 48200 | 44200 | 50300 | 46700 | 49500 | 47200 | 48800  | 46500 | 50100     | 48500 |
| 21    | 47400 | 39800 | 48400 | 43700 | 50300 | 47100 | 49400 | 46800 | 49100  | 46200 | 50200     | 48200 |
| 22    | 48400 | 39900 | 48800 | 44100 | 50100 | 47500 | 49400 | 46400 | 49200  | 46400 | 50100     | 48300 |
| 23    | 49400 | 36500 | 48800 | 44200 | 50000 | 46800 | 49400 | 46400 | 49300  | 46600 | 49800     | 48200 |
| 24    | 49000 | 39400 | 48400 | 44600 | 49700 | 47000 | 49200 | 46400 | 49100  | 46200 | 49700     | 48300 |
| 25    | 48500 | 39400 | 48500 | 44900 | 49900 | 46500 | 49000 | 46500 | 49000  | 46600 | 49600     | 48200 |
| 26    | 47600 | 40600 | 48700 | 45000 | 49700 | 46500 | 49300 | 46800 | 48900  | 46800 | 49700     | 48300 |
| 27    | 48000 | 41000 | 49000 | 44800 | 50100 | 46300 | 49300 | 46900 | 48900  | 46900 | 49900     | 48400 |
| 28    | 48300 | 41000 | 49000 | 44800 | 50200 | 46300 | 49200 | 46700 | 48800  | 46900 | 49900     | 48500 |
| 29    | 49200 | 41000 | 48900 | 44300 | ---   | ---   | 49000 | 46600 | 48600  | 47000 | 49900     | 48500 |
| 30    | 49000 | 41900 | 49200 | 44900 | 50000 | 46400 | 48300 | 45800 | 48700  | 47200 | 50000     | 48500 |
| 31    | ---   | ---   | 49200 | 45000 | ---   | ---   | 48200 | 45600 | 49300  | 47000 | ---       | ---   |
| MONTH | 49400 | 33700 | 49600 | 37300 | ---   | ---   | 50300 | 44100 | 49300  | 45600 | 50200     | 47400 |

## 11162690 SAN FRANCISCO BAY AT PRESIDIO MILITARY RESERVATION, CA—Continued

## TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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

## 11162700 SAN FRANCISCO BAY AT PIER 24, AT SAN FRANCISCO, CA

LOCATION.—Lat 37°47'27", long 122°23'05", in SE 1/4 NW 1/4 sec.2, T.2 S., R.5 W., in San Miguel Grant, San Francisco County, Hydrologic Unit 18050002, at end of Pier 24 and directly under the west end of the San Francisco–Oakland Bay Bridge.

PERIOD OF RECORD.—October 1989 to current year.

SPECIFIC CONDUCTANCE: October 1989 to current year.

WATER TEMPERATURE: October 1989 to current year.

PERIOD OF DAILY RECORD.—October 1989 to current year.

SPECIFIC CONDUCTANCE: October 1989 to current year.

WATER TEMPERATURE: October 1989 to current year.

INSTRUMENTATION.—Water-quality monitor since October 1989.

REMARKS.—Interruptions in record were due to malfunction of the sensing and (or) recording instruments and seismic work on the bridge. Upper probe is set at 9.0 ft below Mean Lower Low Water (MLLW). Lower probe is set at 30.0 ft below MLLW. Daily maximums and minimums sometimes differ from tidal-cycle (24.8 hours) maximums and minimums.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: (Upper probe) Maximum recorded, 50,700 microsiemens, Aug. 13, 1991; minimum recorded, 4,630 microsiemens, Feb. 22, 1998.

(Lower probe) Maximum recorded, 50,300 microsiemens, Sept. 6, 9–12, 1991; minimum recorded, 3,040 microsiemens, Mar. 18, 1995.

WATER TEMPERATURE: (Upper probe) Maximum recorded, 20.5°C, July 23, 1992, Sept. 1, 1997; minimum recorded, 7.5°C, Dec. 26, 30, 1990, Jan. 1–3, 1991.

(Lower probe) Maximum recorded, 20.5°C, Sept. 1, 1997; minimum recorded, 7.5°C, Jan. 2, 3, 1991.

EXTREMES FOR CURRENT YEAR.—

SPECIFIC CONDUCTANCE: (Upper probe) Maximum recorded, 48,800 microsiemens, Sept. 16, 28–30; minimum recorded, 14,300 microsiemens, Feb. 19.

(Lower probe) Maximum recorded, 49,300 microsiemens, Sept. 28; minimum recorded, 16,800 microsiemens, Feb. 23.

WATER TEMPERATURE: (Upper probe) Maximum recorded, 18.5°C, July 14; minimum recorded, 8.0°C, Jan. 11.

(Lower probe) Maximum recorded, 18.0°C, several days in July and August; minimum recorded, 8.0°C, Jan. 8, 10, 11.

## SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

(UPPER PROBE)

| DAY   | MAX     | MIN   | MAX      | MIN   | MAX      | MIN   | MAX     | MIN   | MAX      | MIN   | MAX   | MIN   |
|-------|---------|-------|----------|-------|----------|-------|---------|-------|----------|-------|-------|-------|
|       | OCTOBER |       | NOVEMBER |       | DECEMBER |       | JANUARY |       | FEBRUARY |       | MARCH |       |
| 1     | ---     | ---   | ---      | ---   | ---      | ---   | 44100   | 37300 | 40200    | 29400 | 36200 | 19500 |
| 2     | ---     | ---   | 46400    | 43300 | ---      | ---   | 44600   | 37400 | 40900    | 29400 | 38000 | 20700 |
| 3     | ---     | ---   | 46800    | 42700 | ---      | ---   | 44600   | 37800 | 40900    | 28900 | 38000 | 22000 |
| 4     | ---     | ---   | 46700    | 43000 | ---      | ---   | 43600   | 36800 | 39100    | 28700 | 36200 | 17800 |
| 5     | ---     | ---   | 46700    | 42900 | ---      | ---   | 43600   | 37100 | 40700    | 28200 | 36300 | 19400 |
| 6     | ---     | ---   | 46900    | 43200 | ---      | ---   | 43200   | 36700 | 41700    | 28700 | 33700 | 20800 |
| 7     | 46200   | 41400 | 47100    | 42800 | ---      | ---   | 42500   | 36300 | 42400    | 27200 | 34000 | 20100 |
| 8     | 46200   | 41000 | 46600    | 42800 | ---      | ---   | 41700   | 33900 | 40400    | 26200 | 35300 | 22200 |
| 9     | 46000   | 41700 | 46200    | 41900 | ---      | ---   | 42400   | 34400 | 42200    | 28900 | 34300 | 18100 |
| 10    | 45300   | 41300 | 46100    | 41800 | ---      | ---   | 43200   | 35900 | 38000    | 20000 | 37300 | 17500 |
| 11    | 45400   | 39600 | 45000    | 41900 | ---      | ---   | 43400   | 35200 | 38800    | 18500 | 35300 | 17400 |
| 12    | 45100   | 39500 | 44800    | 40200 | ---      | ---   | 43100   | 36200 | 38200    | 19800 | 40200 | 18900 |
| 13    | 44900   | 38900 | 44400    | 40900 | ---      | ---   | 43600   | 37500 | 37900    | 21200 | 38500 | 21200 |
| 14    | 44700   | 40300 | 44500    | 41000 | ---      | ---   | 43600   | 38500 | 39800    | 21100 | 37800 | 24500 |
| 15    | 44700   | 41200 | 44800    | 41300 | ---      | ---   | 44000   | 39300 | 39200    | 22400 | 38100 | 25900 |
| 16    | 44300   | 41100 | ---      | ---   | ---      | ---   | 45000   | 39600 | 38400    | 23400 | 38000 | 27300 |
| 17    | 44800   | 40900 | 45800    | 42800 | 41600    | 30800 | 44800   | 39800 | 37200    | 16800 | 39000 | 26700 |
| 18    | 45300   | 41000 | ---      | ---   | 42100    | 32700 | 44900   | 39300 | 37500    | 19200 | 39700 | 27100 |
| 19    | 45100   | 41100 | 45100    | 40000 | 41800    | 33300 | 44600   | 40400 | 36400    | 14300 | 39000 | 27600 |
| 20    | 45100   | 41300 | ---      | ---   | 41500    | 34600 | 44700   | 40400 | 37100    | 18700 | 38700 | 26400 |
| 21    | 45100   | 41700 | ---      | ---   | 42000    | 28400 | 44700   | 38500 | 37700    | 16300 | 38800 | 25600 |
| 22    | 45100   | 41200 | 44600    | 38800 | 41500    | 28700 | 44000   | 38200 | 34800    | 15000 | 40100 | 25700 |
| 23    | 44800   | 41200 | ---      | ---   | 40400    | 28700 | 44400   | 34900 | 30700    | 14700 | 40400 | 25700 |
| 24    | 44800   | 41400 | ---      | ---   | 40000    | 28600 | 43100   | 31900 | 31100    | 16600 | 40400 | 29400 |
| 25    | 44600   | 40800 | ---      | ---   | 41900    | 29100 | 43000   | 30900 | 35700    | 17400 | 40600 | 23600 |
| 26    | 45000   | 39800 | ---      | ---   | 41400    | 30200 | 43200   | 28400 | 35000    | 15900 | 39700 | 26800 |
| 27    | ---     | ---   | 43600    | 34000 | 42500    | 31700 | 41900   | 27800 | 38100    | 16800 | 40000 | 25900 |
| 28    | ---     | ---   | 43000    | 33800 | 42700    | 33600 | 41800   | 27900 | 37600    | 20600 | 40700 | 26500 |
| 29    | ---     | ---   | ---      | ---   | 42800    | 34400 | 42000   | 30300 | ---      | ---   | 41000 | 30200 |
| 30    | ---     | ---   | ---      | ---   | 43100    | 36900 | 44400   | 30400 | ---      | ---   | 40200 | 31100 |
| 31    | ---     | ---   | ---      | ---   | 44100    | 36500 | 42000   | 29200 | ---      | ---   | 40700 | 30800 |
| MONTH | ---     | ---   | ---      | ---   | ---      | ---   | 45000   | 27800 | 42400    | 14300 | 41000 | 17400 |







## 11162700 SAN FRANCISCO BAY AT PIER 24, AT SAN FRANCISCO, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

(UPPER PROBE)

| DAY   | MAX     | MIN  | MAX      | MIN  | MAX      | MIN  | MAX     | MIN  | MAX      | MIN  | MAX       | MIN  |
|-------|---------|------|----------|------|----------|------|---------|------|----------|------|-----------|------|
|       | OCTOBER |      | NOVEMBER |      | DECEMBER |      | JANUARY |      | FEBRUARY |      | MARCH     |      |
| 1     | ---     | ---  | ---      | ---  | ---      | ---  | 10.0    | 9.5  | 10.5     | 10.0 | 11.5      | 11.0 |
| 2     | ---     | ---  | 14.5     | 13.0 | ---      | ---  | 10.0    | 9.5  | 10.5     | 10.0 | 11.5      | 11.0 |
| 3     | ---     | ---  | 14.5     | 12.5 | ---      | ---  | 10.0    | 9.5  | 10.5     | 10.5 | 11.5      | 11.0 |
| 4     | ---     | ---  | 14.5     | 12.5 | ---      | ---  | 10.0    | 9.0  | 11.0     | 10.5 | 11.5      | 11.0 |
| 5     | ---     | ---  | 14.5     | 12.5 | ---      | ---  | 10.0    | 9.0  | 11.0     | 10.0 | 12.0      | 11.0 |
| 6     | ---     | ---  | 14.0     | 12.5 | ---      | ---  | 9.5     | 9.0  | 10.5     | 10.0 | 11.5      | 11.0 |
| 7     | 16.5    | 14.5 | 14.0     | 12.0 | ---      | ---  | 9.5     | 9.0  | 11.0     | 10.5 | 11.5      | 11.0 |
| 8     | 17.0    | 14.5 | 14.0     | 12.5 | ---      | ---  | 9.5     | 8.5  | 10.5     | 10.5 | 11.5      | 11.0 |
| 9     | 17.0    | 14.5 | 13.5     | 12.5 | ---      | ---  | 9.5     | 8.5  | 11.0     | 10.5 | 11.5      | 11.0 |
| 10    | 16.5    | 15.0 | 13.5     | 12.5 | ---      | ---  | 9.5     | 8.5  | 10.5     | 10.0 | 11.5      | 10.5 |
| 11    | 16.5    | 15.0 | 13.0     | 12.5 | ---      | ---  | 9.5     | 8.0  | 10.5     | 9.5  | 12.0      | 10.5 |
| 12    | 16.5    | 15.0 | 13.0     | 12.5 | ---      | ---  | 9.0     | 8.5  | 10.5     | 9.5  | 12.0      | 10.5 |
| 13    | 16.0    | 15.0 | 12.5     | 12.0 | ---      | ---  | 9.5     | 8.5  | 10.5     | 9.5  | 12.0      | 10.5 |
| 14    | 16.0    | 15.0 | 12.5     | 12.0 | ---      | ---  | 9.5     | 9.0  | 10.5     | 10.0 | 11.5      | 11.0 |
| 15    | 16.0    | 15.0 | 12.5     | 12.0 | ---      | ---  | 9.5     | 9.0  | 10.5     | 10.0 | 11.5      | 11.0 |
| 16    | 16.0    | 14.5 | 12.5     | 12.0 | ---      | ---  | 9.5     | 9.5  | 10.5     | 10.0 | 11.5      | 11.0 |
| 17    | 15.5    | 14.5 | 13.0     | 12.0 | 11.5     | 10.5 | 10.0    | 9.5  | 11.0     | 10.0 | 11.5      | 11.0 |
| 18    | 15.5    | 14.0 | ---      | ---  | 11.5     | 11.0 | 10.0    | 9.5  | 10.5     | 10.0 | 11.5      | 11.0 |
| 19    | 15.5    | 14.0 | 13.0     | 12.0 | 11.0     | 10.5 | 10.0    | 10.0 | 11.0     | 10.0 | 11.5      | 11.0 |
| 20    | 16.0    | 14.0 | ---      | ---  | 11.0     | 10.0 | 10.5    | 10.0 | 10.5     | 10.0 | 12.0      | 11.0 |
| 21    | 16.0    | 14.0 | 13.0     | 12.0 | 10.5     | 9.0  | 10.5    | 10.0 | 10.5     | 10.0 | 12.0      | 11.0 |
| 22    | 15.5    | 14.0 | 13.0     | 12.5 | 10.5     | 9.0  | 10.5    | 10.0 | 10.5     | 10.0 | 12.0      | 11.0 |
| 23    | 15.5    | 14.0 | ---      | ---  | 10.0     | 9.0  | 10.5    | 10.0 | 10.5     | 10.0 | 12.0      | 11.5 |
| 24    | 15.5    | 14.0 | ---      | ---  | 9.5      | 8.5  | 10.5    | 10.0 | 10.5     | 10.5 | 12.0      | 11.5 |
| 25    | 15.5    | 14.0 | ---      | ---  | 9.5      | 8.5  | 10.5    | 10.0 | 11.5     | 10.5 | 13.0      | 11.5 |
| 26    | 15.0    | 14.0 | ---      | ---  | 9.5      | 8.5  | 10.5    | 10.0 | 11.5     | 10.5 | 12.5      | 11.5 |
| 27    | ---     | ---  | 13.0     | 12.5 | 9.5      | 8.5  | 10.5    | 9.5  | 11.5     | 10.5 | 12.5      | 11.5 |
| 28    | ---     | ---  | 13.0     | 12.5 | 9.5      | 9.0  | 10.5    | 9.5  | 11.5     | 11.0 | 12.5      | 11.5 |
| 29    | ---     | ---  | ---      | ---  | 9.5      | 9.0  | 10.5    | 10.0 | ---      | ---  | 12.5      | 11.5 |
| 30    | ---     | ---  | ---      | ---  | 10.0     | 9.0  | 10.5    | 10.0 | ---      | ---  | 12.5      | 11.5 |
| 31    | ---     | ---  | ---      | ---  | 10.0     | 9.5  | 10.5    | 10.0 | ---      | ---  | 12.0      | 11.5 |
| MONTH | ---     | ---  | ---      | ---  | ---      | ---  | 10.5    | 8.0  | 11.5     | 9.5  | 13.0      | 10.5 |
| DAY   | MAX     | MIN  | MAX      | MIN  | MAX      | MIN  | MAX     | MIN  | MAX      | MIN  | MAX       | MIN  |
|       | APRIL   |      | MAY      |      | JUNE     |      | JULY    |      | AUGUST   |      | SEPTEMBER |      |
| 1     | 12.0    | 11.5 | 13.5     | 11.0 | 14.5     | 12.5 | 18.0    | 14.0 | ---      | ---  | 17.5      | 14.5 |
| 2     | 12.5    | 11.0 | 13.0     | 11.0 | 14.5     | 12.5 | 17.5    | 14.0 | ---      | ---  | 17.0      | 14.0 |
| 3     | 12.0    | 11.0 | 13.0     | 11.0 | 15.0     | 12.5 | 17.5    | 14.0 | 17.0     | 15.0 | 17.0      | 14.0 |
| 4     | 12.0    | 11.0 | 13.5     | 11.5 | 15.0     | 13.0 | 17.5    | 14.5 | 17.0     | 15.0 | 17.5      | 14.0 |
| 5     | 12.0    | 10.5 | 14.0     | 11.5 | 15.5     | 13.0 | 17.0    | 14.5 | 17.0     | 14.5 | 17.5      | 14.0 |
| 6     | 12.0    | 10.5 | 13.5     | 11.5 | 15.0     | 13.0 | 17.0    | 14.0 | 17.0     | 14.5 | 17.5      | 14.0 |
| 7     | 12.0    | 10.5 | 14.0     | 11.5 | 15.0     | 13.0 | 17.5    | 14.5 | 17.5     | 14.5 | 17.0      | 14.0 |
| 8     | 11.5    | 10.5 | 14.0     | 11.5 | 15.0     | 12.5 | 17.5    | 13.0 | 17.5     | 14.0 | 17.0      | 14.0 |
| 9     | 12.0    | 10.5 | 14.0     | 11.0 | ---      | ---  | 17.5    | 13.0 | ---      | ---  | 17.5      | 14.0 |
| 10    | 11.0    | 10.0 | 13.5     | 11.0 | ---      | ---  | 18.0    | 13.0 | ---      | ---  | 16.5      | 14.5 |
| 11    | 11.5    | 10.0 | 15.0     | 11.5 | ---      | ---  | 18.0    | 13.0 | ---      | ---  | 16.5      | 14.5 |
| 12    | 12.0    | 10.0 | 13.5     | 11.0 | ---      | ---  | 18.0    | 13.5 | ---      | ---  | 16.5      | 14.5 |
| 13    | 11.5    | 10.5 | 14.0     | 11.0 | ---      | ---  | 18.0    | 13.5 | ---      | ---  | 16.5      | 15.0 |
| 14    | 12.5    | 10.5 | 13.5     | 10.5 | ---      | ---  | 18.5    | 13.5 | ---      | ---  | 16.5      | 15.0 |
| 15    | 13.0    | 11.0 | 13.5     | 10.5 | ---      | ---  | 18.0    | 13.5 | ---      | ---  | 16.5      | 15.0 |
| 16    | 13.0    | 11.0 | 13.5     | 10.0 | ---      | ---  | 17.5    | 14.0 | ---      | ---  | 17.0      | 15.0 |
| 17    | 13.5    | 11.5 | 14.0     | 10.0 | 16.0     | 12.5 | 17.0    | 14.5 | ---      | ---  | 16.5      | 15.5 |
| 18    | 13.5    | 11.5 | ---      | ---  | 16.0     | 13.0 | 17.0    | 14.5 | ---      | ---  | 16.5      | 15.0 |
| 19    | 14.0    | 11.5 | 14.0     | 10.5 | 16.0     | 12.5 | 16.5    | 15.0 | ---      | ---  | 16.5      | 15.0 |
| 20    | 14.0    | 12.0 | 13.5     | 11.5 | 16.0     | 12.5 | 16.5    | 14.0 | ---      | ---  | 16.5      | 15.0 |
| 21    | 14.5    | 12.0 | 14.5     | 11.5 | 16.0     | 13.5 | ---     | ---  | ---      | ---  | 17.0      | 15.0 |
| 22    | 14.0    | 12.0 | 14.0     | 11.0 | 16.5     | 13.5 | ---     | ---  | ---      | ---  | 17.0      | 15.0 |
| 23    | 14.5    | 11.5 | 14.5     | 12.0 | 15.5     | 13.5 | ---     | ---  | ---      | ---  | 17.0      | 15.0 |
| 24    | 14.5    | 11.5 | 14.5     | 12.0 | 16.0     | 13.5 | ---     | ---  | 17.5     | 14.5 | 16.5      | 15.0 |
| 25    | 14.0    | 12.0 | 14.5     | 12.5 | 16.5     | 13.5 | ---     | ---  | 18.0     | 14.5 | 16.5      | 15.0 |
| 26    | 13.5    | 12.0 | 14.5     | 12.5 | 16.5     | 14.0 | ---     | ---  | 18.0     | 14.5 | 17.0      | 15.0 |
| 27    | 13.0    | 12.0 | 15.0     | 12.5 | 17.0     | 14.0 | ---     | ---  | 17.5     | 14.5 | 17.0      | 15.0 |
| 28    | 13.0    | 11.5 | 14.5     | 12.5 | 17.0     | 13.5 | ---     | ---  | 18.0     | 14.5 | 17.5      | 15.0 |
| 29    | 13.0    | 11.0 | 14.5     | 12.5 | 17.0     | 13.5 | ---     | ---  | 18.0     | 15.0 | 17.5      | 15.0 |
| 30    | 13.5    | 11.0 | 14.5     | 12.5 | 17.5     | 14.0 | ---     | ---  | 18.0     | 15.0 | 17.5      | 15.0 |
| 31    | ---     | ---  | 14.5     | 12.5 | ---      | ---  | ---     | ---  | 17.5     | 15.0 | ---       | ---  |

## 11162700 SAN FRANCISCO BAY AT PIER 24, AT SAN FRANCISCO, CA—Continued

## TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## (LOWER PROBE)

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

## 11162750 CRYSTAL SPRINGS RESERVOIR AT DAM, NEAR SAN MATEO, CA

LOCATION.—Lat 37°31'47", long 122°21'43", in Pulgas Grant, San Mateo County, Hydrologic Unit 18050004, at north end of Crystal Springs Reservoir Dam, 0.6 mi upstream of Polhemus Creek, and 0.2 mi west of Hillsborough City boundary.

DRAINAGE AREA.—Indeterminate.

PERIOD OF RECORD.—October 1998 to September 1999.

GAGE.—Water-stage recorder. Datum of gage is sea level.

REMARKS.—Interruptions in record were due to malfunction of the sensing and (or) recording instruments. Lake is formed by gravity type, interlocking concrete blocks. Storage began in 1888. Dam was raised in 1890 and 1911. Capacity is 58,500 acre-ft, spillway at crest is 283.9 ft, capacity can be increased by addition of 4 ft flash boards up to 8 ft. Stores water from Hetch-Hetchy Aqueduct for municipal use.

## GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY   | MAX     | MIN    | MAX      | MIN    | MAX      | MIN    | MAX     | MIN | MAX      | MIN    | MAX    | MIN    |
|-------|---------|--------|----------|--------|----------|--------|---------|-----|----------|--------|--------|--------|
|       | OCTOBER |        | NOVEMBER |        | DECEMBER |        | JANUARY |     | FEBRUARY |        | MARCH  |        |
| 1     | ---     | ---    | 272.00   | 271.88 | 271.13   | 271.04 | ---     | --- | ---      | ---    | 280.13 | 279.79 |
| 2     | ---     | ---    | 271.88   | 271.79 | 271.11   | 271.04 | ---     | --- | ---      | ---    | 279.79 | 279.48 |
| 3     | 275.67  | 275.56 | 271.84   | 271.77 | 271.18   | 271.04 | ---     | --- | ---      | ---    | 279.49 | 279.11 |
| 4     | 275.56  | 275.42 | 271.81   | 271.68 | 271.15   | 271.14 | ---     | --- | ---      | ---    | 279.11 | 278.87 |
| 5     | 275.42  | 275.24 | 271.71   | 271.65 | 271.33   | 271.16 | ---     | --- | ---      | ---    | 278.87 | 278.45 |
| 6     | ---     | ---    | 271.68   | 271.55 | 271.32   | 271.24 | ---     | --- | ---      | ---    | 278.45 | 278.14 |
| 7     | ---     | ---    | 271.68   | 271.55 | 271.30   | 271.24 | ---     | --- | ---      | ---    | 278.14 | 277.81 |
| 8     | ---     | ---    | 271.60   | 271.58 | 271.44   | 271.30 | ---     | --- | ---      | ---    | 277.81 | 277.56 |
| 9     | ---     | ---    | 271.59   | 271.55 | 271.39   | 271.37 | ---     | --- | ---      | ---    | 277.70 | 277.62 |
| 10    | ---     | ---    | 271.60   | 271.53 | 271.40   | 271.33 | ---     | --- | ---      | ---    | 277.67 | 277.60 |
| 11    | ---     | ---    | 271.58   | 271.49 | 271.29   | 271.22 | ---     | --- | ---      | ---    | 277.64 | 277.59 |
| 12    | ---     | ---    | 271.55   | 271.50 | 271.14   | 271.14 | ---     | --- | ---      | ---    | 277.57 | 277.50 |
| 13    | ---     | ---    | 271.46   | 271.43 | 271.14   | 271.07 | ---     | --- | ---      | ---    | 277.61 | 277.54 |
| 14    | ---     | ---    | 271.49   | 271.43 | 271.12   | 271.01 | ---     | --- | ---      | ---    | 277.60 | 277.55 |
| 15    | ---     | ---    | 271.46   | 271.34 | 271.06   | 273.99 | ---     | --- | ---      | ---    | 277.61 | 277.59 |
| 16    | ---     | ---    | 271.34   | 271.24 | 271.03   | 270.96 | ---     | --- | ---      | ---    | 277.60 | 277.56 |
| 17    | ---     | ---    | 271.25   | 271.11 | 271.01   | 270.94 | ---     | --- | ---      | ---    | 277.56 | 277.51 |
| 18    | ---     | ---    | 271.11   | 270.96 | 270.98   | 270.85 | ---     | --- | ---      | ---    | 277.52 | 277.47 |
| 19    | ---     | ---    | 270.96   | 270.84 | 270.86   | 270.76 | ---     | --- | ---      | ---    | 277.47 | 277.42 |
| 20    | ---     | ---    | 270.79   | 270.71 | 270.73   | 270.67 | ---     | --- | ---      | ---    | 277.45 | 277.41 |
| 21    | ---     | ---    | 270.71   | 270.61 | 270.61   | 270.58 | ---     | --- | ---      | ---    | 277.44 | 277.40 |
| 22    | ---     | ---    | 270.63   | 270.53 | 270.51   | 270.48 | ---     | --- | ---      | ---    | 277.37 | 277.34 |
| 23    | 272.52  | 272.45 | 270.56   | 270.43 | 270.40   | ---    | ---     | --- | ---      | ---    | 277.37 | 277.34 |
| 24    | 272.57  | 272.43 | 270.58   | 270.49 | ---      | ---    | ---     | --- | ---      | ---    | 277.38 | 277.31 |
| 25    | 272.52  | 272.49 | 270.55   | 270.48 | ---      | ---    | ---     | --- | 280.99   | 280.97 | 277.59 | 277.38 |
| 26    | 272.50  | 272.43 | 270.53   | 270.46 | ---      | ---    | ---     | --- | 280.98   | 280.77 | 277.63 | 277.55 |
| 27    | 272.43  | 272.38 | 270.60   | 270.52 | ---      | ---    | ---     | --- | 280.77   | 280.45 | 277.58 | 277.54 |
| 28    | 272.38  | 272.23 | 270.68   | 270.60 | ---      | ---    | ---     | --- | 280.45   | 280.13 | 277.57 | 277.54 |
| 29    | 272.24  | 272.18 | 270.78   | 270.62 | ---      | ---    | ---     | --- | ---      | ---    | 277.57 | 277.52 |
| 30    | 272.18  | 272.03 | 271.05   | 270.75 | ---      | ---    | ---     | --- | ---      | ---    | 277.57 | 277.51 |
| 31    | 272.04  | 272.00 | ---      | ---    | ---      | ---    | ---     | --- | ---      | ---    | 277.56 | 277.47 |
| MONTH | ---     | ---    | 272.00   | 270.43 | ---      | ---    | ---     | --- | ---      | ---    | 280.13 | 277.31 |



## 11162765 SAN FRANCISCO BAY AT SAN MATEO BRIDGE, NEAR FOSTER CITY, CA

LOCATION.—Lat 37°35'04", long 122°14'59", unsurveyed, T.4 S., R.4 W., in San Mateo County, Hydrologic Unit 18050004, on Pier 20 of the San Mateo Bridge.

PERIOD OF RECORD.—October 1989 to current year.

SPECIFIC CONDUCTANCE: October 1989 to current year.

WATER TEMPERATURE: October 1989 to current year.

PERIOD OF DAILY RECORD.—October 1989 to current year.

SPECIFIC CONDUCTANCE: October 1989 to current year.

WATER TEMPERATURE: October 1989 to current year.

INSTRUMENTATION.—Water-quality monitor since October 1989.

REMARKS.—Interruptions in record were usually due to malfunction of the sensing and (or) recording instruments. Upper probe is set at 3.5 ft below Mean Lower Low Water (MLLW). Lower probe is set at 38.0 ft below MLLW. Daily maximums and minimums sometimes differ from tidal-cycle (24.8 hours) maximums and minimums. On Mar. 9, 1999, the station was temporarily shut down for seismic retrofit of the bridge and data was not collected through Sept. 30, 1999.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: (Upper probe) Maximum recorded, 50,200 microsiemens, Sept. 5, 1990; minimum recorded, 11,500 microsiemens, Mar. 17, 1996.

(Lower probe) Maximum recorded, 50,300 microsiemens, Oct. 31, Nov. 4, 9, 1990; minimum recorded, 14,900 microsiemens, Mar. 5, 1998.

WATER TEMPERATURE: (Upper probe) Maximum recorded, 23.5°C, Aug. 1, 2, 28, 1993, Aug. 8, 1995; minimum recorded, 6.5°C, on several days in December 1990 and January 1991.

(Lower probe) Maximum recorded, 23.0°C, on several days in August 1990, July 16, 17, 1992, Aug. 2–6, 1993, July 16, 31, and several days in August 1995; minimum recorded, 6.5°C, Dec. 30, 1990, to Jan. 2, 1991.

EXTREMES FOR CURRENT YEAR.—

SPECIFIC CONDUCTANCE: (Upper probe) Maximum recorded, 42,000 microsiemens, Nov. 25; minimum recorded, 23,900 microsiemens, Feb. 24.

(Lower probe) Maximum recorded, 42,300 microsiemens, Nov. 7, 8, 23; minimum recorded, 25,100 microsiemens, Mar. 3.

WATER TEMPERATURE: (Upper probe) Maximum recorded, 18.5°C, Oct. 1, 2; minimum recorded, 8.5°C, several days in December.

(Lower probe) Maximum recorded, 18.5°C, Oct. 1, 2; minimum recorded, 8.5°C, several days in December.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
(UPPER PROBE)

| DAY   | MAX     | MIN   | MAX      | MIN   | MAX      | MIN   | MAX     | MIN   | MAX      | MIN   | MAX   | MIN   |
|-------|---------|-------|----------|-------|----------|-------|---------|-------|----------|-------|-------|-------|
|       | OCTOBER |       | NOVEMBER |       | DECEMBER |       | JANUARY |       | FEBRUARY |       | MARCH |       |
| 1     | 40400   | 39200 | 41200    | 39500 | 41600    | 39800 | 36200   | 35200 | 36900    | 34100 | 26700 | 25500 |
| 2     | 40400   | 39000 | 41600    | 39700 | 41300    | 39100 | 36200   | 34300 | 36900    | 34000 | 26600 | 25500 |
| 3     | 40300   | 39200 | 41800    | 39200 | 41100    | 38900 | 36300   | 34000 | 36600    | 34100 | 26300 | 24600 |
| 4     | 40400   | 39300 | 41800    | 39100 | 41100    | 38500 | 36400   | 34300 | 36400    | 34800 | ---   | ---   |
| 5     | 40400   | 39000 | 41900    | 38600 | 41100    | 39700 | 36600   | 34800 | 36500    | 35100 | ---   | ---   |
| 6     | ---     | ---   | 41700    | 39800 | 41100    | 37600 | 36500   | 34900 | 36300    | 35300 | ---   | ---   |
| 7     | 40500   | 38800 | 41600    | 40200 | 41100    | 37400 | 36600   | 35200 | 35900    | 34400 | ---   | ---   |
| 8     | 40300   | 38900 | 41900    | 40500 | 41000    | 38500 | 36600   | 35100 | 35400    | 33800 | ---   | ---   |
| 9     | 40400   | 38700 | 41600    | 40400 | 40900    | 38300 | 36600   | 35300 | 35600    | 34400 | ---   | ---   |
| 10    | 40300   | 39000 | 41800    | 40400 | 40600    | 38100 | 36600   | 35300 | 35300    | 32900 | ---   | ---   |
| 11    | 40400   | 39000 | 41500    | 40400 | 39400    | 35700 | 36800   | 34900 | 34900    | 31100 | ---   | ---   |
| 12    | 40400   | 39000 | 41500    | 40200 | 38900    | 34700 | 36600   | 34500 | 33600    | 30600 | ---   | ---   |
| 13    | 40300   | 39100 | 41400    | 40100 | 38100    | 33200 | 36700   | 34700 | 32900    | 29400 | ---   | ---   |
| 14    | ---     | ---   | 41100    | 39900 | 37600    | 35500 | 37000   | 34300 | 31800    | 29300 | ---   | ---   |
| 15    | 40600   | 39400 | 41100    | 39800 | ---      | ---   | 36700   | 35000 | 31500    | 30000 | ---   | ---   |
| 16    | 40700   | 39000 | 41100    | 39500 | 37200    | 36100 | 36400   | 34900 | 31300    | 30000 | ---   | ---   |
| 17    | 40800   | 38800 | 41100    | 39800 | 37000    | 36200 | 36800   | 34900 | 31000    | 29500 | ---   | ---   |
| 18    | 40900   | 39400 | ---      | ---   | 36900    | 35800 | 36900   | 35000 | 30900    | 29400 | ---   | ---   |
| 19    | 40800   | 39300 | ---      | ---   | 37100    | 35600 | 36900   | 34700 | 30800    | 29600 | ---   | ---   |
| 20    | 40800   | 39400 | 41600    | 38200 | 37200    | 35800 | 36900   | 34500 | 30500    | 29400 | ---   | ---   |
| 21    | 41000   | 39300 | 41500    | 39300 | 37100    | 36200 | 37100   | 34700 | 30300    | 28700 | ---   | ---   |
| 22    | 40800   | 39500 | 41100    | 39800 | 37100    | 35900 | 37100   | 34900 | 30200    | 28500 | ---   | ---   |
| 23    | 40900   | 39100 | 41300    | 40400 | 37000    | 35700 | 37000   | 35200 | 29900    | 26700 | ---   | ---   |
| 24    | 40800   | 39600 | 41500    | 40100 | 37000    | 35800 | 37200   | 35500 | 28900    | 23900 | ---   | ---   |
| 25    | 40500   | 39400 | 42000    | 40100 | 36900    | 36000 | 37500   | 35000 | 27700    | 24100 | ---   | ---   |
| 26    | 40500   | 39200 | 41800    | 40100 | 36800    | 36000 | 37300   | 35400 | 27300    | 25800 | ---   | ---   |
| 27    | 40800   | 39500 | 41400    | 39900 | 36700    | 35800 | 37600   | 34400 | 27200    | 25600 | ---   | ---   |
| 28    | 40900   | 39500 | 41400    | 40400 | 36700    | 35500 | 37700   | 34200 | 26900    | 25400 | ---   | ---   |
| 29    | 41400   | 39500 | 41400    | 40600 | 36500    | 35200 | 37700   | 33800 | ---      | ---   | ---   | ---   |
| 30    | 41500   | 39300 | 41500    | 39500 | 36300    | 35300 | 37500   | 33700 | ---      | ---   | ---   | ---   |
| 31    | 41700   | 39300 | ---      | ---   | 36300    | 35200 | 37000   | 34300 | ---      | ---   | ---   | ---   |
| MONTH | ---     | ---   | ---      | ---   | ---      | ---   | 37700   | 33700 | 36900    | 23900 | ---   | ---   |

## 11162765 SAN FRANCISCO BAY AT SAN MATEO BRIDGE, NEAR FOSTER CITY, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
(LOWER PROBE)

| DAY   | MAX     | MIN   | MAX      | MIN   | MAX      | MIN   | MAX     | MIN   | MAX      | MIN   | MAX   | MIN   |
|-------|---------|-------|----------|-------|----------|-------|---------|-------|----------|-------|-------|-------|
|       | OCTOBER |       | NOVEMBER |       | DECEMBER |       | JANUARY |       | FEBRUARY |       | MARCH |       |
| 1     | ---     | ---   | 41700    | 39600 | 41600    | 40600 | 36300   | 35400 | 37300    | 35400 | 26500 | 25200 |
| 2     | ---     | ---   | 42000    | 39600 | 41500    | 40400 | 36300   | 35400 | 37000    | 35500 | 26300 | 25200 |
| 3     | ---     | ---   | 42100    | 39500 | 41700    | 39600 | 36600   | 35300 | 36900    | 35600 | 26200 | 25100 |
| 4     | ---     | ---   | 42100    | 39300 | 41700    | 39900 | 36700   | 35400 | 36700    | 35600 | ---   | ---   |
| 5     | ---     | ---   | 41900    | 39000 | 41300    | 39900 | 36800   | 35500 | 36600    | 35700 | ---   | ---   |
| 6     | ---     | ---   | 42100    | 39300 | 41200    | 39700 | 36700   | 35500 | 36400    | 35800 | ---   | ---   |
| 7     | 40500   | 38700 | 42300    | 39800 | 41100    | 39800 | 36800   | 35600 | 36200    | 35400 | ---   | ---   |
| 8     | 40500   | 38700 | 42300    | 40200 | 41000    | 39900 | 36700   | 35700 | 35800    | 34900 | ---   | ---   |
| 9     | 40500   | 38500 | 42100    | 40200 | 40700    | 40100 | 36700   | 35700 | 35900    | 34700 | ---   | ---   |
| 10    | 40400   | 38700 | 42100    | 40300 | 40600    | 39400 | 36700   | 35700 | 35300    | 34000 | ---   | ---   |
| 11    | 40500   | 38800 | 42000    | 41000 | 40300    | 39200 | 36700   | 35900 | 35100    | 33700 | ---   | ---   |
| 12    | 40600   | 38800 | 41800    | 40500 | 39700    | 38300 | 37100   | 35700 | 34500    | 32400 | ---   | ---   |
| 13    | 40700   | 39100 | 41700    | 40700 | 39100    | 37200 | 37300   | 35600 | 33400    | 31500 | ---   | ---   |
| 14    | ---     | ---   | 41600    | 40500 | 37800    | 36500 | 37400   | 35700 | 32300    | 30800 | ---   | ---   |
| 15    | 40700   | 38800 | 41700    | 40400 | 37600    | 36300 | 37500   | 35800 | 31400    | 30400 | ---   | ---   |
| 16    | 40800   | 39100 | 41900    | 40400 | 37600    | 36500 | 37500   | 35700 | 31200    | 30300 | ---   | ---   |
| 17    | 40900   | 39100 | 41900    | 40200 | 37400    | 36400 | 37900   | 35700 | 30900    | 30000 | ---   | ---   |
| 18    | 41000   | 39200 | ---      | ---   | 37400    | 36100 | 38400   | 35700 | 30700    | 29800 | ---   | ---   |
| 19    | 41000   | 39500 | ---      | ---   | 37300    | 36300 | 38300   | 35800 | 30500    | 29800 | ---   | ---   |
| 20    | 41200   | 39300 | 42100    | 40200 | 37300    | 36300 | 38400   | 35800 | 30200    | 29600 | ---   | ---   |
| 21    | 41200   | 39500 | 42100    | 40200 | 37100    | 36400 | 38200   | 35800 | 30100    | 29100 | ---   | ---   |
| 22    | 41300   | 39600 | 42100    | 40600 | 37100    | 36500 | 38300   | 35800 | 29900    | 29000 | ---   | ---   |
| 23    | 41100   | 39600 | 42300    | 40900 | 36900    | 36400 | 38200   | 35900 | 29600    | 28700 | ---   | ---   |
| 24    | 41300   | 39600 | 42200    | 41100 | 36800    | 36400 | 38000   | 36200 | 29300    | 28000 | ---   | ---   |
| 25    | 41100   | 39500 | 42000    | 40900 | 36800    | 36300 | 38100   | 36000 | 28600    | 26200 | ---   | ---   |
| 26    | 41100   | 39700 | 42000    | 41100 | 36700    | 36000 | 38600   | 35900 | 27200    | 26100 | ---   | ---   |
| 27    | 41300   | 39700 | 42000    | 40900 | 36600    | 36100 | 38400   | 35700 | 27000    | 25500 | ---   | ---   |
| 28    | 41300   | 39800 | 42100    | 40600 | 36600    | 36100 | 38300   | 35800 | 26700    | 25300 | ---   | ---   |
| 29    | 41200   | 39400 | 42200    | 40800 | 36500    | 35900 | 38000   | 35700 | ---      | ---   | ---   | ---   |
| 30    | 41600   | 39500 | 41900    | 41200 | 36500    | 35800 | 37700   | 35600 | ---      | ---   | ---   | ---   |
| 31    | 41600   | 39700 | ---      | ---   | 36400    | 35500 | 37600   | 35300 | ---      | ---   | ---   | ---   |
| MONTH | ---     | ---   | ---      | ---   | 41700    | 35500 | 38600   | 35300 | 37300    | 25300 | ---   | ---   |

## 11162765 SAN FRANCISCO BAY AT SAN MATEO BRIDGE, NEAR FOSTER CITY, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
(UPPER PROBE)

| DAY   | MAX     | MIN  | MAX      | MIN | MAX      | MIN  | MAX     | MIN  | MAX      | MIN  | MAX   | MIN  |
|-------|---------|------|----------|-----|----------|------|---------|------|----------|------|-------|------|
|       | OCTOBER |      | NOVEMBER |     | DECEMBER |      | JANUARY |      | FEBRUARY |      | MARCH |      |
| 1     | 18.5    | 18.0 | ---      | --- | ---      | ---  | 9.5     | 9.0  | 10.5     | 10.0 | 13.0  | 11.5 |
| 2     | 18.5    | 17.5 | ---      | --- | ---      | ---  | 9.5     | 9.0  | 10.5     | 10.0 | 13.0  | 12.0 |
| 3     | 18.0    | 17.5 | ---      | --- | ---      | ---  | 9.5     | 9.0  | 10.5     | 10.0 | 13.5  | 12.0 |
| 4     | 18.0    | 17.0 | ---      | --- | ---      | ---  | 9.5     | 9.0  | 11.0     | 10.5 | 13.0  | 12.0 |
| 5     | 18.0    | 17.0 | ---      | --- | ---      | ---  | 9.5     | 9.0  | 11.0     | 10.5 | 13.5  | 12.0 |
| 6     | ---     | ---  | ---      | --- | ---      | ---  | 9.5     | 9.5  | 10.5     | 10.5 | 13.5  | 12.0 |
| 7     | ---     | ---  | ---      | --- | ---      | ---  | ---     | ---  | ---      | ---  | 12.5  | 12.0 |
| 8     | ---     | ---  | ---      | --- | ---      | ---  | 9.5     | 9.0  | 11.0     | 10.5 | 12.5  | 12.0 |
| 9     | ---     | ---  | ---      | --- | ---      | ---  | 9.5     | 9.0  | 11.0     | 10.5 | ---   | ---  |
| 10    | ---     | ---  | ---      | --- | ---      | ---  | 9.5     | 9.0  | 11.0     | 10.5 | ---   | ---  |
| 11    | ---     | ---  | ---      | --- | ---      | ---  | 9.5     | 9.0  | 10.5     | 10.0 | ---   | ---  |
| 12    | ---     | ---  | ---      | --- | ---      | ---  | 9.5     | 9.0  | 10.5     | 10.0 | ---   | ---  |
| 13    | ---     | ---  | ---      | --- | ---      | ---  | 9.5     | 9.5  | 10.5     | 10.0 | ---   | ---  |
| 14    | ---     | ---  | ---      | --- | ---      | ---  | 9.5     | 9.5  | 10.5     | 10.0 | ---   | ---  |
| 15    | ---     | ---  | ---      | --- | ---      | ---  | 10.0    | 9.5  | 11.0     | 10.0 | ---   | ---  |
| 16    | ---     | ---  | ---      | --- | 11.0     | 11.0 | 10.0    | 9.5  | 11.0     | 10.5 | ---   | ---  |
| 17    | ---     | ---  | ---      | --- | 11.5     | 11.0 | 10.5    | 10.0 | 11.5     | 10.5 | ---   | ---  |
| 18    | ---     | ---  | ---      | --- | 11.5     | 11.0 | 11.0    | 10.0 | 11.0     | 10.5 | ---   | ---  |
| 19    | ---     | ---  | ---      | --- | 11.5     | 11.0 | 11.0    | 10.0 | 11.5     | 10.5 | ---   | ---  |
| 20    | ---     | ---  | ---      | --- | 11.0     | 10.0 | 11.0    | 10.5 | 11.0     | 10.5 | ---   | ---  |
| 21    | ---     | ---  | ---      | --- | 10.5     | 9.0  | 11.0    | 10.5 | 11.0     | 10.5 | ---   | ---  |
| 22    | ---     | ---  | ---      | --- | 10.0     | 9.0  | 11.0    | 10.5 | 11.5     | 11.0 | ---   | ---  |
| 23    | ---     | ---  | ---      | --- | 10.0     | 8.5  | 11.0    | 11.0 | 12.0     | 10.5 | ---   | ---  |
| 24    | ---     | ---  | ---      | --- | 9.5      | 8.5  | 11.0    | 10.5 | 12.0     | 11.0 | ---   | ---  |
| 25    | ---     | ---  | ---      | --- | 9.5      | 8.5  | 11.0    | 10.5 | 12.0     | 11.0 | ---   | ---  |
| 26    | ---     | ---  | ---      | --- | 9.0      | 8.5  | 11.0    | 10.5 | 12.0     | 11.0 | ---   | ---  |
| 27    | ---     | ---  | ---      | --- | 9.0      | 8.5  | 11.0    | 10.0 | 12.0     | 11.0 | ---   | ---  |
| 28    | 17.0    | 17.0 | ---      | --- | 9.0      | 8.5  | 10.5    | 10.0 | 12.5     | 11.5 | ---   | ---  |
| 29    | 17.0    | 16.5 | ---      | --- | 9.0      | 8.5  | 10.5    | 10.0 | ---      | ---  | ---   | ---  |
| 30    | 17.0    | 16.5 | ---      | --- | 9.0      | 8.5  | 10.5    | 10.0 | ---      | ---  | ---   | ---  |
| 31    | ---     | ---  | ---      | --- | 9.5      | 9.0  | 10.5    | 10.0 | ---      | ---  | ---   | ---  |
| MONTH | ---     | ---  | ---      | --- | ---      | ---  | ---     | ---  | ---      | ---  | ---   | ---  |

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
(LOWER PROBE)

| DAY   | MAX     | MIN  | MAX      | MIN  | MAX      | MIN  | MAX     | MIN  | MAX      | MIN  | MAX   | MIN  |
|-------|---------|------|----------|------|----------|------|---------|------|----------|------|-------|------|
|       | OCTOBER |      | NOVEMBER |      | DECEMBER |      | JANUARY |      | FEBRUARY |      | MARCH |      |
| 1     | 18.5    | 18.0 | 16.5     | 16.0 | 13.0     | 13.0 | 9.0     | 9.0  | 10.5     | 10.0 | 13.0  | 12.0 |
| 2     | 18.5    | 17.5 | 16.5     | 16.0 | 13.0     | 13.0 | 9.5     | 9.0  | 10.5     | 10.0 | 13.5  | 12.0 |
| 3     | 18.0    | 17.0 | 16.0     | 15.5 | 13.0     | 12.5 | 9.5     | 9.0  | 10.5     | 10.0 | 13.5  | 12.0 |
| 4     | 17.5    | 17.0 | 16.0     | 15.5 | 12.5     | 12.5 | 9.5     | 9.0  | 10.5     | 10.5 | 13.0  | 12.5 |
| 5     | 18.0    | 17.0 | 16.0     | 15.5 | 12.5     | 12.0 | 9.5     | 9.0  | 11.0     | 10.5 | 13.0  | 12.5 |
| 6     | ---     | ---  | 15.5     | 15.0 | 12.0     | 11.5 | 9.5     | 9.5  | 10.5     | 10.5 | 13.5  | 12.5 |
| 7     | 18.0    | 17.5 | 15.5     | 15.0 | 12.0     | 11.0 | ---     | ---  | ---      | ---  | 12.5  | 12.5 |
| 8     | 18.0    | 17.5 | 15.0     | 14.5 | 11.5     | 11.0 | 9.5     | 9.0  | 11.0     | 10.5 | 12.5  | 12.0 |
| 9     | 18.0    | 17.5 | 14.5     | 14.5 | 11.5     | 11.0 | 9.5     | 9.5  | 11.0     | 10.5 | ---   | ---  |
| 10    | 17.5    | 17.0 | 14.5     | 14.0 | 11.0     | 11.0 | 9.5     | 9.0  | 11.0     | 10.5 | ---   | ---  |
| 11    | 17.5    | 17.5 | 14.0     | 14.0 | 11.0     | 11.0 | 9.5     | 9.0  | 10.5     | 10.5 | ---   | ---  |
| 12    | 17.5    | 17.0 | 14.0     | 13.5 | 11.0     | 11.0 | 9.5     | 9.0  | 10.5     | 10.5 | ---   | ---  |
| 13    | 17.5    | 17.0 | 14.0     | 13.5 | 11.0     | 11.0 | 9.5     | 9.5  | 10.5     | 10.5 | ---   | ---  |
| 14    | 17.5    | 17.0 | 14.0     | 13.5 | 11.0     | 11.0 | 9.5     | 9.5  | 10.5     | 10.5 | ---   | ---  |
| 15    | 17.5    | 17.0 | 14.0     | 13.5 | 11.0     | 10.5 | 10.0    | 9.5  | 11.0     | 10.0 | ---   | ---  |
| 16    | 17.5    | 16.5 | 14.0     | 13.5 | 11.0     | 11.0 | 10.0    | 9.5  | 11.0     | 10.5 | ---   | ---  |
| 17    | 17.5    | 16.5 | 14.0     | 13.5 | 11.0     | 11.0 | 10.5    | 10.0 | 11.0     | 10.5 | ---   | ---  |
| 18    | 17.0    | 16.5 | ---      | ---  | 11.5     | 11.0 | 10.5    | 10.0 | 11.0     | 10.5 | ---   | ---  |
| 19    | 17.5    | 16.5 | ---      | ---  | 11.0     | 11.0 | 11.0    | 10.0 | 11.5     | 10.5 | ---   | ---  |
| 20    | 17.5    | 17.0 | 13.5     | 13.0 | 11.0     | 10.0 | 11.0    | 10.5 | 11.0     | 11.0 | ---   | ---  |
| 21    | 17.5    | 17.0 | 13.5     | 13.0 | 10.5     | 9.5  | 11.0    | 10.5 | 11.0     | 10.5 | ---   | ---  |
| 22    | 17.5    | 17.0 | 13.5     | 13.5 | 10.0     | 9.0  | 11.0    | 10.5 | 11.5     | 11.0 | ---   | ---  |
| 23    | 17.5    | 16.5 | 13.5     | 13.5 | 9.5      | 9.0  | 11.0    | 11.0 | 12.0     | 11.0 | ---   | ---  |
| 24    | 17.0    | 16.5 | 13.5     | 13.5 | 9.5      | 9.0  | 11.0    | 11.0 | 11.5     | 11.5 | ---   | ---  |
| 25    | 17.0    | 16.5 | 13.5     | 13.5 | 9.0      | 8.5  | 11.0    | 11.0 | 12.0     | 11.5 | ---   | ---  |
| 26    | 17.0    | 16.5 | 13.5     | 13.5 | 9.0      | 8.5  | 11.0    | 10.5 | 12.0     | 11.0 | ---   | ---  |
| 27    | 17.0    | 16.5 | 13.5     | 13.5 | 9.0      | 8.5  | 11.0    | 10.5 | 12.0     | 11.5 | ---   | ---  |
| 28    | 17.0    | 16.5 | 13.5     | 13.5 | 9.0      | 8.5  | 10.5    | 10.0 | 12.5     | 11.5 | ---   | ---  |
| 29    | 17.0    | 16.5 | 13.5     | 13.0 | 9.0      | 8.5  | 10.5    | 10.0 | ---      | ---  | ---   | ---  |
| 30    | 16.5    | 16.0 | 13.0     | 13.0 | 9.0      | 8.5  | 10.5    | 10.0 | ---      | ---  | ---   | ---  |
| 31    | 16.5    | 16.0 | ---      | ---  | 9.0      | 9.0  | 10.5    | 10.0 | ---      | ---  | ---   | ---  |
| MONTH | ---     | ---  | ---      | ---  | 13.0     | 8.5  | ---     | ---  | ---      | ---  | ---   | ---  |



## 11164500 SAN FRANCISQUITO CREEK AT STANFORD UNIVERSITY, CA

LOCATION.—Lat 37°25'24", long 122°11'18", in San Francisquito Grant, Santa Clara County, Hydrologic Unit 18050003, at golf course, on right bank, 1.1 mi downstream from Los Trancos Creek, 1.1 mi west of Stanford University Post Office, and 5 mi downstream from Searsville Lake.

DRAINAGE AREA.—37.4 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1930 to September 1941, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

GAGE.—Water-stage recorder and concrete control. Datum of gage is 115.75 ft above sea level. Recording rain gage (station 372724122101201) at 345 Middlefield Road in Menlo Park, 2.5 mi northeast of gage (discontinued Sept. 30, 1995).

REMARKS.—Records good. Flow slightly regulated by Searsville Lake, capacity, 952 acre-ft. Diversions of about 800 acre-ft each year upstream from station to Los Trancos and Lagunita Canals for irrigation on Stanford University Campus downstream from station. Low flow affected by wastewater from Stanford Linear Accelerator.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 7,200 ft<sup>3</sup>/s, Feb. 2, 1998; maximum gage height, 13.60 ft, Dec. 22, 1955; no flow at times.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 700 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Jan. 20 | 0130 | 1,210                             | 4.68                | Feb. 17 | 0300 | 832                               | 4.06                |
| Feb. 7  | 1245 | 2,640                             | 6.93                |         |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV    | DEC   | JAN    | FEB   | MAR  | APR  | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|--------|-------|--------|-------|------|------|-------|-------|-------|-------|-------|
| 1     | .94   | .75    | 50    | 4.2    | 44    | 55   | 35   | 14    | 7.3   | 1.9   | .87   | .39   |
| 2     | .93   | .75    | 15    | 4.2    | 30    | 43   | 30   | 14    | 7.8   | 1.6   | .84   | .43   |
| 3     | .82   | .75    | 23    | 4.0    | 25    | 56   | 26   | 15    | 7.5   | 1.8   | .84   | .60   |
| 4     | .75   | .75    | 17    | 3.9    | 21    | 45   | 25   | 14    | 8.8   | 1.5   | .80   | .61   |
| 5     | .69   | .75    | 14    | 3.8    | 19    | 41   | 88   | 13    | 7.9   | 1.4   | .76   | .58   |
| 6     | .66   | .76    | 27    | 3.8    | 62    | 38   | 162  | 13    | 7.8   | 1.4   | .91   | .45   |
| 7     | .64   | 6.9    | 12    | 3.9    | 1260  | 37   | 74   | 12    | 7.4   | 1.5   | .91   | .45   |
| 8     | .74   | 4.2    | 9.2   | 3.8    | 391   | 40   | 147  | 12    | 7.1   | 1.2   | .88   | .48   |
| 9     | .78   | 2.5    | 7.9   | 3.8    | 1010  | 136  | 94   | 12    | 7.1   | 1.3   | .84   | .81   |
| 10    | .84   | 2.1    | 7.0   | 3.6    | 269   | 63   | 63   | 11    | 6.9   | 1.2   | .88   | .66   |
| 11    | .81   | 2.4    | 6.5   | 3.6    | 123   | 47   | 183  | 11    | 6.9   | 1.2   | .89   | .65   |
| 12    | .66   | 2.0    | 6.1   | 3.6    | 84    | 37   | 98   | 11    | 6.8   | 1.3   | .95   | .51   |
| 13    | .66   | 1.9    | 6.5   | 3.6    | 65    | 33   | 68   | 11    | 6.8   | .97   | .84   | .45   |
| 14    | .63   | 1.8    | 8.9   | 3.4    | 58    | 43   | 59   | 10    | 6.7   | 1.1   | .78   | .45   |
| 15    | .66   | 2.3    | 6.7   | 3.5    | 46    | 88   | 50   | 9.3   | 6.1   | 1.1   | .71   | .45   |
| 16    | .64   | 2.1    | 6.1   | 6.4    | 183   | 48   | 41   | 9.2   | 5.7   | 1.1   | .69   | .45   |
| 17    | .58   | 2.1    | 5.5   | 5.3    | 485   | 37   | 35   | 8.7   | 5.4   | 1.1   | .69   | .45   |
| 18    | .58   | 2.3    | 5.1   | 172    | 195   | 34   | 33   | 8.3   | 5.1   | .99   | .70   | .45   |
| 19    | .58   | 2.0    | 4.9   | 208    | 143   | 38   | 30   | 8.4   | 4.8   | 1.1   | .78   | .45   |
| 20    | .58   | 1.9    | 6.2   | 579    | 154   | 36   | 29   | 8.5   | 4.6   | 1.1   | .69   | .45   |
| 21    | .52   | 1.8    | 6.0   | 138    | 341   | 34   | 25   | 8.6   | 4.5   | 1.1   | .68   | .45   |
| 22    | .51   | 3.0    | 5.0   | 46     | 130   | 31   | 20   | 8.1   | 4.1   | 1.1   | .62   | .52   |
| 23    | .56   | 9.9    | 4.9   | 203    | 95    | 41   | 19   | 7.7   | 4.0   | 1.0   | .52   | .63   |
| 24    | 5.3   | 9.7    | 4.8   | 70     | 82    | 34   | 18   | 7.0   | 3.8   | 1.0   | .57   | .52   |
| 25    | 2.3   | 4.7    | 4.7   | 40     | 172   | 129  | 17   | 6.4   | 3.3   | 1.0   | .62   | .45   |
| 26    | 1.2   | 3.6    | 4.7   | 56     | 91    | 61   | 17   | 6.4   | 3.1   | 1.0   | .62   | .41   |
| 27    | 1.0   | 4.5    | 4.7   | 42     | 73    | 44   | 15   | 6.4   | 2.9   | 1.0   | .65   | .33   |
| 28    | .84   | 12     | 4.7   | 29     | 63    | 36   | 15   | 6.7   | 2.7   | 1.0   | .51   | .29   |
| 29    | .83   | 6.1    | 4.5   | 23     | ---   | 33   | 14   | 6.9   | 2.3   | 1.0   | .47   | .26   |
| 30    | .75   | 111    | 4.5   | 21     | ---   | 32   | 15   | 7.3   | 2.1   | 1.0   | .43   | .49   |
| 31    | .75   | ---    | 4.4   | 106    | ---   | 52   | ---  | 7.1   | ---   | .84   | .39   | ---   |
| TOTAL | 28.73 | 207.31 | 297.5 | 1801.4 | 5714  | 1522 | 1545 | 304.0 | 167.3 | 36.90 | 22.33 | 14.57 |
| MEAN  | .93   | 6.91   | 9.60  | 58.1   | 204   | 49.1 | 51.5 | 9.81  | 5.58  | 1.19  | .72   | .49   |
| MAX   | 5.3   | 111    | 50    | 579    | 1260  | 136  | 183  | 15    | 8.8   | 1.9   | .95   | .81   |
| MIN   | .51   | .75    | 4.4   | 3.4    | 19    | 31   | 14   | 6.4   | 2.1   | .84   | .39   | .26   |
| AC-FT | 57    | 411    | 590   | 3570   | 11330 | 3020 | 3060 | 603   | 332   | 73    | 44    | 29    |

## SAN FRANCISQUITO CREEK BASIN

## 11164500 SAN FRANCISQUITO CREEK AT STANFORD UNIVERSITY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .92  | 6.03 | 24.5 | 63.9 | 79.1 | 53.5 | 25.8 | 3.76 | 1.15 | .47  | .26  | .30  |
| MAX  | 28.2 | 91.9 | 220  | 301  | 549  | 315  | 232  | 39.5 | 11.4 | 4.20 | 1.61 | 2.11 |
| (WY) | 1963 | 1951 | 1956 | 1997 | 1998 | 1983 | 1958 | 1983 | 1998 | 1998 | 1983 | 1973 |
| MIN  | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1931 | 1931 | 1931 | 1931 | 1931 | 1931 | 1931 | 1931 | 1931 | 1931 | 1931 | 1931 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |       | FOR 1999 WATER YEAR |        | WATER YEARS 1931 - 1999 |             |
|--------------------------|------------------------|-------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 29101.43               |       | 11661.04            |        |                         |             |
| ANNUAL MEAN              | 79.7                   |       | 31.9                |        | 21.4                    |             |
| HIGHEST ANNUAL MEAN      |                        |       |                     |        | 83.4                    |             |
| LOWEST ANNUAL MEAN       |                        |       |                     |        | .000                    |             |
| HIGHEST DAILY MEAN       | 2610                   | Feb 3 | 1260                | Feb 7  | 2650                    | Dec 23 1955 |
| LOWEST DAILY MEAN        | .45                    | Sep 8 | .26                 | Sep 29 | .00                     | Oct 1 1930  |
| ANNUAL SEVEN-DAY MINIMUM | .53                    | Sep 7 | .39                 | Sep 24 | .00                     | Oct 1 1930  |
| INSTANTANEOUS PEAK FLOW  |                        |       | 2640                | Feb 7  | 7200                    | Feb 3 1998  |
| INSTANTANEOUS PEAK STAGE |                        |       | 6.93                | Feb 7  | 13.60                   | Dec 22 1955 |
| ANNUAL RUNOFF (AC-FT)    | 57720                  |       | 23130               |        | 15470                   |             |
| 10 PERCENT EXCEEDS       | 189                    |       | 69                  |        | 36                      |             |
| 50 PERCENT EXCEEDS       | 9.3                    |       | 4.9                 |        | .43                     |             |
| 90 PERCENT EXCEEDS       | .69                    |       | .58                 |        | .00                     |             |

## 11166000 MATADERO CREEK AT PALO ALTO, CA

LOCATION.—Lat 37°25'18", long 122°08'04", in Rincon de San Francisquito Grant, Santa Clara County, Hydrologic Unit 18050003, on right bank, on Ash Street, 150 ft upstream from Lambert Avenue Bridge, and 2.1 mi southeast of Palo Alto Post Office.

DRAINAGE AREA.—7.26 mi<sup>2</sup>.

PERIOD OF RECORD.—July 1952 to April 1991, June 1992 to current year.

REVISED RECORDS.—WDR CA-80-2: 1971, 1973–74, 1978, 1971–75(P). WDR CA-82-2: 1973–74(P), 1978(P).

GAGE.—Water-stage recorder. Datum of gage is 17.01 ft above sea level. Prior to Sept. 25, 1958, at site 150 ft downstream at different datum. Prior to Apr. 9, 1991, at same site, different datum.

REMARKS.—Records good. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,560 ft<sup>3</sup>/s, Feb. 2, 1998, gage height, 10.00 ft, from rating curve extended above 300 ft<sup>3</sup>/s on basis of step-backwater computation; no flow at times.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 200 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 0800 | 374                               | 4.93                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN    | FEB   | MAR   | APR   | MAY   | JUN   | JUL  | AUG  | SEP   |
|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|------|-------|
| 1     | .39   | .44   | 3.5   | .74    | 2.1   | 2.4   | 1.9   | 1.6   | .48   | .42  | .30  | .35   |
| 2     | .41   | .46   | 1.1   | .79    | 1.6   | 2.3   | 1.8   | 2.0   | .58   | .27  | .31  | .32   |
| 3     | .41   | .38   | 4.9   | .79    | 1.4   | 5.6   | 1.7   | 2.4   | 2.4   | .20  | .30  | .26   |
| 4     | .34   | .47   | 1.0   | .79    | 1.3   | 4.5   | 1.6   | 2.3   | .80   | .19  | .36  | .26   |
| 5     | .36   | .44   | 5.0   | .78    | 1.2   | 3.5   | 11    | 2.1   | .86   | .26  | .41  | .27   |
| 6     | .24   | .43   | 2.2   | .73    | 12    | 2.0   | 15    | 1.7   | .78   | .21  | .48  | .24   |
| 7     | .31   | 4.2   | .74   | 1.5    | 58    | 1.9   | 3.0   | 1.4   | .65   | .35  | .38  | .24   |
| 8     | .85   | .80   | .71   | 2.2    | 24    | 3.6   | 14    | 1.1   | .57   | .28  | .28  | .34   |
| 9     | 1.2   | .57   | .83   | 2.0    | 114   | 13    | 3.8   | .89   | .61   | .31  | .27  | .69   |
| 10    | .34   | .76   | .75   | 1.5    | 16    | 2.8   | 2.5   | 1.0   | .60   | .35  | .32  | .34   |
| 11    | .31   | .58   | .62   | .76    | 6.6   | 3.5   | 19    | 1.2   | .58   | .32  | .36  | .38   |
| 12    | .36   | .57   | .77   | .71    | 3.5   | 2.1   | 5.7   | 1.2   | .58   | .29  | .34  | .35   |
| 13    | .37   | .57   | 1.7   | .72    | 5.9   | 2.0   | 2.9   | .71   | .54   | .27  | .25  | .32   |
| 14    | .36   | .55   | 1.0   | .73    | 3.4   | 16    | 2.3   | .70   | .54   | .28  | .29  | .30   |
| 15    | .39   | .54   | .71   | 1.1    | 2.2   | 19    | 2.0   | .78   | .48   | .26  | .23  | .34   |
| 16    | .38   | .54   | .81   | 1.4    | 6.9   | 4.6   | 1.6   | .81   | .77   | .42  | .18  | .37   |
| 17    | .41   | .64   | .79   | .82    | 16    | 2.8   | 1.3   | .70   | .52   | .44  | .29  | .38   |
| 18    | .35   | .51   | .77   | 30     | 9.9   | 2.4   | 1.4   | .71   | .51   | .45  | .28  | .39   |
| 19    | .39   | .51   | .75   | 26     | 4.3   | 2.3   | 1.4   | .71   | .49   | .40  | .24  | .39   |
| 20    | .25   | .47   | 2.4   | 24     | 14    | 2.1   | 1.4   | .68   | .45   | .32  | .21  | .34   |
| 21    | .35   | .65   | .87   | 5.0    | 16    | 2.2   | 1.4   | .74   | .44   | .31  | .25  | .30   |
| 22    | .33   | 1.9   | .82   | 2.0    | 5.0   | 1.9   | 1.4   | .75   | .44   | .27  | .24  | .57   |
| 23    | .38   | 3.1   | .83   | 16     | 3.2   | 5.7   | 1.3   | .69   | .47   | .35  | .16  | .48   |
| 24    | 10    | 1.1   | .93   | 2.7    | 4.2   | 4.8   | 1.3   | .68   | .43   | .30  | .24  | 1.1   |
| 25    | .60   | .59   | 1.0   | 1.9    | 26    | 11    | 1.3   | .62   | .28   | .33  | .33  | .39   |
| 26    | .48   | .54   | 1.1   | 5.9    | 5.5   | 2.8   | 1.4   | .60   | .42   | .34  | .31  | .35   |
| 27    | .43   | 5.5   | 1.1   | 1.7    | 3.3   | 2.2   | 1.3   | .60   | .40   | .36  | .31  | .30   |
| 28    | .46   | 4.5   | .95   | 1.4    | 2.7   | 1.9   | 1.4   | .55   | .27   | .41  | .31  | .21   |
| 29    | .45   | .74   | .88   | 1.3    | ---   | 1.9   | 1.4   | .56   | .21   | .36  | .34  | .31   |
| 30    | .42   | 34    | .91   | 1.2    | ---   | 3.4   | 1.6   | .57   | .30   | .30  | .28  | .27   |
| 31    | .46   | ---   | .85   | 16     | ---   | 3.9   | ---   | .48   | ---   | .32  | .82  | ---   |
| TOTAL | 22.78 | 67.05 | 41.29 | 153.16 | 370.2 | 140.1 | 109.1 | 31.53 | 17.45 | 9.94 | 9.67 | 11.15 |
| MEAN  | .73   | 2.24  | 1.33  | 4.94   | 13.2  | 4.52  | 3.64  | 1.02  | .58   | .32  | .31  | .37   |
| MAX   | 10    | 34    | 5.0   | 30     | 114   | 19    | 19    | 2.4   | 2.4   | .45  | .82  | 1.1   |
| MIN   | .24   | .38   | .62   | .71    | 1.2   | 1.9   | 1.3   | .48   | .21   | .19  | .16  | .21   |
| AC-FT | 45    | 133   | 82    | 304    | 734   | 278   | 216   | 63    | 35    | 20   | 19   | 22    |

## MATADERO CREEK BASIN

## 11166000 MATADERO CREEK AT PALO ALTO, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .42  | 1.65 | 3.54 | 8.72 | 8.90 | 5.50 | 2.17 | .61  | .27  | .17  | .16  | .17  |
| MAX  | 2.95 | 9.82 | 24.3 | 32.3 | 77.7 | 37.8 | 25.2 | 4.54 | 1.90 | .74  | .70  | .66  |
| (WY) | 1973 | 1973 | 1956 | 1983 | 1998 | 1983 | 1958 | 1998 | 1983 | 1998 | 1983 | 1983 |
| MIN  | .000 | .000 | .000 | .016 | .014 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1953 | 1953 | 1954 | 1954 | 1964 | 1959 | 1954 | 1953 | 1953 | 1953 | 1953 | 1953 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |       | FOR 1999 WATER YEAR |        | WATER YEARS 1953 - 1999 |            |
|--------------------------|------------------------|-------|---------------------|--------|-------------------------|------------|
| ANNUAL TOTAL             | 3694.03                |       | 983.42              |        |                         |            |
| ANNUAL MEAN              | 10.1                   |       | 2.69                |        | 2.69                    |            |
| HIGHEST ANNUAL MEAN      |                        |       |                     |        | 10.9                    |            |
| LOWEST ANNUAL MEAN       |                        |       |                     |        | .062                    |            |
| HIGHEST DAILY MEAN       | 437                    | Feb 3 | 114                 | Feb 9  | 437                     | Feb 3 1998 |
| LOWEST DAILY MEAN        | .24                    | Oct 6 | .16                 | Aug 23 | .00                     | Oct 1 1952 |
| ANNUAL SEVEN-DAY MINIMUM | .35                    | Oct 1 | .23                 | Aug 18 | .00                     | Oct 1 1952 |
| INSTANTANEOUS PEAK FLOW  |                        |       | 374                 |        | 2560                    |            |
| INSTANTANEOUS PEAK STAGE |                        |       | 4.93                |        | 10.00                   |            |
| ANNUAL RUNOFF (AC-FT)    | 7330                   |       | 1950                |        | 1950                    |            |
| 10 PERCENT EXCEEDS       | 16                     |       | 5.0                 |        | 3.4                     |            |
| 50 PERCENT EXCEEDS       | 1.1                    |       | .72                 |        | .15                     |            |
| 90 PERCENT EXCEEDS       | .43                    |       | .29                 |        | .00                     |            |

11169000 GUADALUPE RIVER AT SAN JOSE, CA

LOCATION.—Lat 37°20'04", long 121°53'54", Santa Clara County, Hydrologic Unit 18050003, on right bank, 150 ft upstream from St. John Street Bridge, 1 block below Santa Clara Avenue, and 100 ft downstream from Los Gatos Creek.

DRAINAGE AREA.—146 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1929 to current year. Monthly discharge only for some periods, published in WSP 1315-B. Prior to 1945, published as Guadalupe Creek at San Jose.

CHEMICAL DATA: Water years 1979–91.

SEDIMENT DATA: Water years 1985–89.

REVISED RECORDS.—WSP 1315-B: 1943(M), 1945(M), 1949(M). WSP 1929: Drainage area.

GAGE.—Water-stage recorder and concrete control. Datum of gage is 72.00 ft above sea level.

REMARKS.—Records good except for estimated daily discharges, which are fair. Flow regulated by Lexington Reservoir 12 mi upstream and by Calero, Almaden, and Guadalupe Reservoirs, and Lake Elsmar (combined usable capacity, about 42,000 acre-ft), with water released during summer for percolation in spreading basins on tributaries. Diversions into the above impoundments come from San Luis Reservoir (part of the San Felipe Project), from the South Bay Aqueduct, and from the Hetch Hetchy Aqueduct. There are also upstream diversions by the San Jose Water Works for urban use.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 11,000 ft<sup>3</sup>/s, Mar. 10, 1995, gage height, 17.4 ft, from rating curve extended above 2,500 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow several days in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1     | e15  | 15   | 74   | 18   | 49   | 27   | 31   | 29   | 33   | 19   | 21   | 14   |
| 2     | e15  | 16   | 32   | 18   | 37   | 28   | 29   | 28   | 30   | 18   | 21   | 14   |
| 3     | e16  | 16   | 126  | 17   | 27   | 44   | 34   | 28   | 51   | 19   | 19   | 14   |
| 4     | e19  | 14   | 27   | 18   | 24   | 29   | 37   | 30   | 29   | 18   | 19   | 14   |
| 5     | e19  | 15   | 40   | 16   | 23   | 27   | 136  | 29   | 29   | 18   | 25   | 14   |
| 6     | e19  | 23   | 61   | 16   | 74   | 28   | 247  | 29   | 27   | 18   | 20   | 16   |
| 7     | e18  | 44   | 22   | 14   | 166  | 26   | 55   | 32   | 28   | 18   | 19   | 16   |
| 8     | e17  | 31   | 21   | 14   | 92   | 38   | 208  | 32   | 31   | 19   | 19   | 16   |
| 9     | e15  | 26   | 20   | 13   | 665  | 104  | 64   | 33   | 34   | 20   | 20   | 14   |
| 10    | e15  | 28   | 18   | 14   | 175  | 34   | 51   | 33   | 30   | 21   | 21   | 13   |
| 11    | e16  | 22   | 16   | 15   | 93   | 46   | 196  | 34   | 24   | 21   | 19   | 14   |
| 12    | e16  | 16   | 16   | 15   | 57   | 32   | 93   | 29   | 24   | 21   | 18   | 14   |
| 13    | e16  | 14   | 22   | 16   | 55   | 31   | 56   | 28   | 25   | 22   | 16   | 14   |
| 14    | e12  | 15   | 18   | 16   | 54   | 145  | 50   | 28   | 23   | 20   | 16   | 16   |
| 15    | e12  | 16   | 21   | 21   | 34   | 219  | 47   | 27   | 27   | 19   | 16   | 15   |
| 16    | 11   | 18   | 22   | 59   | 35   | 47   | 45   | 27   | 25   | 25   | 16   | 16   |
| 17    | 13   | 23   | 16   | 21   | 57   | 37   | 48   | 27   | 22   | 24   | 15   | 15   |
| 18    | 12   | 18   | 17   | 153  | 94   | 35   | 58   | 27   | 21   | 25   | 15   | 16   |
| 19    | 12   | 15   | 16   | 154  | 67   | 52   | 59   | 28   | 21   | 25   | 13   | 16   |
| 20    | 12   | 15   | 26   | 185  | 124  | 39   | 49   | 23   | 22   | 22   | 13   | 16   |
| 21    | 11   | 16   | 17   | 60   | 124  | 35   | 46   | 29   | 23   | 19   | 13   | 17   |
| 22    | 11   | 27   | 16   | 33   | 44   | 36   | 41   | 28   | 23   | 18   | 11   | 17   |
| 23    | 12   | 18   | 16   | 295  | 36   | 56   | 40   | 29   | 29   | 17   | 12   | 17   |
| 24    | 147  | 16   | 18   | 69   | 32   | 51   | 39   | 26   | 25   | 17   | 12   | 16   |
| 25    | 25   | 16   | 20   | 53   | 80   | 134  | 37   | 26   | 23   | 20   | 12   | 17   |
| 26    | 18   | 23   | 20   | 284  | 31   | 47   | 37   | 126  | 19   | 20   | 14   | 16   |
| 27    | 16   | 54   | 19   | 70   | 28   | 39   | 35   | 26   | 19   | 20   | 14   | 15   |
| 28    | 16   | 159  | 16   | 47   | 27   | 36   | 31   | 23   | 19   | 20   | 14   | 15   |
| 29    | 18   | 24   | 16   | 26   | ---  | 35   | 26   | 24   | 22   | 18   | 25   | 15   |
| 30    | 19   | 492  | 17   | 25   | ---  | 33   | 30   | 29   | 20   | 19   | 17   | 15   |
| 31    | 17   | ---  | 16   | 315  | ---  | 54   | ---  | 32   | ---  | 20   | 15   | ---  |
| TOTAL | 610  | 1245 | 822  | 2090 | 2404 | 1624 | 1955 | 979  | 778  | 620  | 520  | 457  |
| MEAN  | 19.7 | 41.5 | 26.5 | 67.4 | 85.9 | 52.4 | 65.2 | 31.6 | 25.9 | 20.0 | 16.8 | 15.2 |
| MAX   | 147  | 492  | 126  | 315  | 665  | 219  | 247  | 126  | 51   | 25   | 25   | 17   |
| MIN   | 11   | 14   | 16   | 13   | 23   | 26   | 26   | 23   | 19   | 17   | 11   | 13   |
| AC-FT | 1210 | 2470 | 1630 | 4150 | 4770 | 3220 | 3880 | 1940 | 1540 | 1230 | 1030 | 906  |

e Estimated.

## GUADALUPE RIVER BASIN

## 11169000 GUADALUPE RIVER AT SAN JOSE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 6.33 | 15.7 | 40.0 | 104  | 162  | 136  | 66.3 | 11.6 | 4.28 | 3.50 | 3.22 | 3.36 |
| MAX  | 129  | 123  | 311  | 998  | 1157 | 1165 | 847  | 219  | 43.5 | 24.8 | 22.4 | 31.0 |
| (WY) | 1963 | 1984 | 1932 | 1997 | 1998 | 1983 | 1982 | 1983 | 1998 | 1998 | 1998 | 1983 |
| MIN  | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1930 | 1930 | 1930 | 1931 | 1930 | 1931 | 1930 | 1930 | 1930 | 1930 | 1930 | 1930 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1930 - 1999

|                          |        |        |       |        |
|--------------------------|--------|--------|-------|--------|
| ANNUAL TOTAL             | 57216  | 14104  |       |        |
| ANNUAL MEAN              | 157    | 38.6   | 45.7  |        |
| HIGHEST ANNUAL MEAN      |        |        | 270   | 1983   |
| LOWEST ANNUAL MEAN       |        |        | .000  | 1931   |
| HIGHEST DAILY MEAN       | 3010   | Feb 3  | 665   | Feb 9  |
| LOWEST DAILY MEAN        | 10     | Jan 1  | 11    | Oct 16 |
| ANNUAL SEVEN-DAY MINIMUM | 12     | Oct 16 | 12    | Oct 16 |
| INSTANTANEOUS PEAK FLOW  |        |        | 1300  | Nov 30 |
| INSTANTANEOUS PEAK STAGE |        |        | 3.95  | Nov 30 |
| ANNUAL RUNOFF (AC-FT)    | 113500 | 27980  | 33130 |        |
| 10 PERCENT EXCEEDS       | 374    | 60     | 55    |        |
| 50 PERCENT EXCEEDS       | 28     | 23     | .61   |        |
| 90 PERCENT EXCEEDS       | 16     | 15     | .00   |        |

11169500 SARATOGA CREEK AT SARATOGA, CA

LOCATION.—Lat 37°15'16", long 122°02'18", in Quito Grant, Santa Clara County, Hydrologic Unit 18050003, on right bank, on upstream side of private road bridge, 0.5 mi southwest of Saratoga, and 0.7 mi downstream from diversion dam.

DRAINAGE AREA.—9.22 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1933 to current year. Prior to October 1951, published as Campbell Creek at Saratoga.

CHEMICAL DATA: Water years 1972 to December 1972.

REVISED RECORDS.—WSP 1445: 1940, 1952(M). WSP 1929: Drainage area.

GAGE.—Water-stage recorder, crest-stage gage, and concrete control. Elevation of gage is 500 ft above sea level, from topographic map. Prior to Dec. 6, 1968, at site 40 ft downstream at different datum.

REMARKS.—Records fair except for estimated daily discharges, which are poor. Water is diverted for municipal use by San Jose Water Works at diversion dam upstream from station. Low flows partially regulated by Lake McKenzie 8 mi upstream, usable capacity, 184 acre-ft.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,730 ft<sup>3</sup>/s, Dec. 22, 1955, from rating curve extended above 510 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow, site and datum then in use. Maximum gage height, 7.80 ft, Feb. 3, 1998; no flow at times.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 110 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|--------|------|--------------------------------|------------------|
| Nov. 30 | 1045 | 138                            | 3.64             | Feb. 9 | 0545 | 383                            | 4.47             |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN   | JUL   | AUG   | SEP   |
|-------|------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|
| 1     | 2.2  | 2.1   | 14    | 1.3   | 7.2   | 7.8   | 14    | 1.9  | 1.2   | 1.0   | e.88  | e.84  |
| 2     | 2.3  | 2.2   | 2.7   | 1.6   | 5.7   | 5.3   | 11    | 1.7  | 1.4   | 1.1   | e.88  | e.85  |
| 3     | 2.2  | 2.2   | 4.0   | 1.6   | 3.8   | 6.2   | 7.2   | 2.6  | 1.3   | .99   | e.91  | e.85  |
| 4     | 2.1  | 2.3   | 2.3   | 1.5   | 2.9   | 6.1   | 5.7   | 3.5  | 4.0   | .96   | e.95  | e.86  |
| 5     | 2.1  | 2.4   | 2.3   | 2.0   | 3.0   | 4.3   | 18    | 2.7  | 1.2   | .95   | e.97  | e.87  |
| 6     | 2.0  | 2.6   | 3.7   | 1.1   | 11    | 3.7   | 17    | 2.3  | 1.1   | .92   | e.94  | e.88  |
| 7     | 2.0  | 6.3   | e.91  | 1.2   | 57    | 3.3   | 11    | 1.7  | 1.2   | .91   | e.91  | e.87  |
| 8     | 2.1  | 3.3   | e.87  | 1.6   | 52    | 10    | 22    | 1.5  | 1.1   | 1.1   | e.88  | e.86  |
| 9     | 2.1  | 3.0   | e.61  | 1.2   | 179   | 15    | 15    | 1.4  | 1.0   | .82   | e.88  | e.85  |
| 10    | 2.2  | 2.9   | e.97  | 1.2   | 67    | 6.3   | 13    | 1.6  | .99   | .75   | e.90  | e.85  |
| 11    | 2.1  | 3.1   | e.61  | 1.1   | 38    | 5.8   | 38    | 5.0  | 1.6   | .78   | e.94  | e.86  |
| 12    | 2.2  | 3.1   | e.61  | 1.0   | 29    | 5.2   | 25    | 5.6  | 1.2   | .92   | e.96  | e.87  |
| 13    | 2.2  | 3.0   | e1.4  | 1.0   | 21    | 4.5   | 21    | 1.6  | 1.4   | .76   | e.92  | e.88  |
| 14    | 2.3  | 3.0   | 1.8   | 1.0   | 17    | 9.4   | 18    | 1.7  | 1.0   | 1.3   | e.89  | e.89  |
| 15    | 2.2  | 3.0   | 1.4   | 1.0   | 13    | 13    | 15    | 1.3  | 1.1   | 1.1   | e.86  | e.91  |
| 16    | 2.2  | 3.1   | e1.2  | 1.5   | 14    | 7.4   | 14    | 1.3  | .99   | 1.1   | e.90  | e.93  |
| 17    | 2.1  | 3.1   | 1.7   | 1.2   | 18    | 6.4   | 12    | 1.5  | .92   | 1.2   | e.94  | e1.0  |
| 18    | 2.1  | 3.1   | 1.8   | 8.0   | 15    | 5.6   | 10    | 1.4  | 1.1   | 1.2   | e.94  | 1.1   |
| 19    | 2.1  | 3.0   | 1.8   | 18    | 11    | 8.0   | 9.2   | 1.6  | 1.0   | 1.2   | e.90  | 1.1   |
| 20    | 2.1  | 2.9   | 3.0   | 47    | 15    | 6.1   | 8.4   | 1.8  | 1.0   | 1.2   | e.88  | 1.1   |
| 21    | 1.8  | 3.2   | 3.5   | 14    | 23    | 5.8   | 7.4   | 1.6  | .99   | 1.2   | e.85  | 1.1   |
| 22    | 1.8  | 3.6   | 3.4   | 6.6   | 16    | 5.2   | 6.8   | 1.5  | 1.0   | 1.1   | e.84  | 1.1   |
| 23    | 1.9  | 5.7   | 3.3   | 30    | 16    | 9.2   | 6.3   | 4.1  | 1.1   | 1.0   | e.85  | 1.1   |
| 24    | 3.5  | 3.8   | 3.3   | 13    | 16    | 14    | 5.7   | 2.1  | 1.1   | 1.0   | e.87  | 1.1   |
| 25    | 2.5  | 1.8   | 3.1   | 6.0   | 18    | 40    | 4.7   | 1.2  | .98   | 1.0   | e.90  | 1.0   |
| 26    | 2.2  | 1.6   | 3.1   | 20    | 9.7   | 26    | 4.5   | 1.3  | 1.0   | .94   | e.89  | .96   |
| 27    | 2.1  | 2.1   | 2.4   | 12    | 8.1   | 19    | 3.5   | 1.3  | .90   | .91   | e.87  | .92   |
| 28    | 2.1  | 3.1   | 1.4   | 6.2   | 7.0   | 15    | 3.7   | 2.8  | .89   | .86   | e.85  | .87   |
| 29    | 2.2  | 2.1   | 1.6   | 4.1   | ---   | 14    | 3.8   | 1.7  | .89   | .80   | e.84  | .85   |
| 30    | 2.2  | 46    | 1.6   | 3.0   | ---   | 14    | 2.2   | 2.4  | 1.2   | e.84  | e.84  | .79   |
| 31    | 1.9  | ---   | 1.9   | 25    | ---   | 18    | ---   | 1.6  | ---   | e.87  | e.84  | ---   |
| TOTAL | 67.1 | 132.7 | 76.28 | 235.0 | 693.4 | 319.6 | 353.1 | 65.3 | 35.85 | 30.78 | 27.67 | 28.01 |
| MEAN  | 2.16 | 4.42  | 2.46  | 7.58  | 24.8  | 10.3  | 11.8  | 2.11 | 1.19  | .99   | .89   | .93   |
| MAX   | 3.5  | 46    | 14    | 47    | 179   | 40    | 38    | 5.6  | 4.0   | 1.3   | .97   | 1.1   |
| MIN   | 1.8  | 1.6   | .61   | 1.0   | 2.9   | 3.3   | 2.2   | 1.2  | .89   | .75   | .84   | .79   |
| AC-FT | 133  | 263   | 151   | 466   | 1380  | 634   | 700   | 130  | 71    | 61    | 55    | 56    |

e Estimated.

## 11169500 SARATOGA CREEK AT SARATOGA, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .91  | 2.75 | 9.20 | 23.0 | 31.1 | 23.2 | 13.6 | 3.90 | 1.36 | .58  | .38  | .40  |
| MAX  | 17.5 | 25.5 | 83.2 | 104  | 157  | 114  | 131  | 35.7 | 6.97 | 2.95 | 1.66 | 2.42 |
| (WY) | 1963 | 1951 | 1956 | 1997 | 1998 | 1983 | 1982 | 1983 | 1941 | 1941 | 1998 | 1998 |
| MIN  | .000 | .037 | .25  | .31  | .086 | .32  | .24  | .065 | .000 | .000 | .000 | .000 |
| (WY) | 1950 | 1949 | 1957 | 1976 | 1964 | 1972 | 1972 | 1959 | 1950 | 1947 | 1934 | 1934 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |       | FOR 1999 WATER YEAR |        | WATER YEARS 1934 - 1999 |             |
|--------------------------|------------------------|-------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 8188.81                |       | 2064.79             |        |                         |             |
| ANNUAL MEAN              | 22.4                   |       | 5.66                |        | 9.09                    |             |
| HIGHEST ANNUAL MEAN      |                        |       |                     |        | 32.5                    |             |
| LOWEST ANNUAL MEAN       |                        |       |                     |        | .54                     |             |
| HIGHEST DAILY MEAN       | 699                    | Feb 3 | 179                 | Feb 9  | 1260                    | Feb 27 1940 |
| LOWEST DAILY MEAN        | .61                    | Dec 9 | .61                 | Dec 9  | .00                     | Oct 1 1933  |
| ANNUAL SEVEN-DAY MINIMUM | .85                    | Dec 7 | .84                 | Aug 28 | .00                     | Oct 1 1933  |
| INSTANTANEOUS PEAK FLOW  |                        |       | 383                 |        | 2730                    | Dec 22 1955 |
| INSTANTANEOUS PEAK STAGE |                        |       | 4.47                |        | 7.80                    | Feb 3 1998  |
| ANNUAL RUNOFF (AC-FT)    | 16240                  |       | 4100                |        | 6590                    |             |
| 10 PERCENT EXCEEDS       | 59                     |       | 15                  |        | 20                      |             |
| 50 PERCENT EXCEEDS       | 3.3                    |       | 2.0                 |        | .90                     |             |
| 90 PERCENT EXCEEDS       | 1.6                    |       | .88                 |        | .00                     |             |



## 11172175 COYOTE CREEK ABOVE HIGHWAY 237, AT MILPITAS, CA

LOCATION.—Lat 37°25'20", long 121°55'35", in Rincon de los Esteras Grant, Santa Clara County, Hydrologic Unit 18050003, on right bank, 500 ft upstream from Highway 237 bridge, 1 mi west of Interstate Highway 880, and 2.3 mi upstream from lower Penitencia Creek.

DRAINAGE AREA.—319 mi<sup>2</sup>.

PERIOD OF RECORD.—January 1999 to September 1999.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 10 ft above sea level, from topographic map.

REMARKS.—Records poor. Flow regulated by Leroy Andersen Reservoir, total capacity, 91,280 acre-ft, and Coyote Reservoir, total capacity, 26,666 acre-ft, with water diverted for percolation in spreading basins adjacent to Coyote Creek.

EXTREMES FOR CURRENT YEAR.—Maximum discharge from January to September, 1,420 ft<sup>3</sup>/s, Feb. 9, 1999, gage height, 10.33 ft, from rating curve extended above 330 ft<sup>3</sup>/s on basis of step-backwater computations.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|------|------|------|------|------|------|------|------|------|
| 1     | --- | --- | --- | e19  | 71   | 46   | 33   | e23  | 17   | 14   | 17   | 13   |
| 2     | --- | --- | --- | e19  | 54   | 44   | 29   | e23  | 19   | 16   | 17   | 14   |
| 3     | --- | --- | --- | e18  | 45   | 82   | 36   | e22  | 52   | 18   | 17   | 14   |
| 4     | --- | --- | --- | e17  | 41   | 45   | 31   | e22  | 26   | 18   | 16   | 14   |
| 5     | --- | --- | --- | e18  | 38   | 40   | 141  | e21  | 21   | 18   | 20   | 15   |
| 6     | --- | --- | --- | e18  | 81   | 39   | 163  | e21  | 19   | 18   | 17   | 14   |
| 7     | --- | --- | --- | e18  | 206  | 37   | 68   | e20  | 16   | 15   | 17   | 15   |
| 8     | --- | --- | --- | e17  | 123  | 45   | 242  | e20  | 15   | 16   | 17   | 16   |
| 9     | --- | --- | --- | 18   | 623  | 94   | 112  | e19  | 15   | 15   | 17   | 22   |
| 10    | --- | --- | --- | 18   | 238  | 49   | 76   | 19   | 15   | 14   | 18   | 18   |
| 11    | --- | --- | --- | 19   | 113  | 55   | 132  | 19   | 15   | 15   | 18   | 16   |
| 12    | --- | --- | --- | 17   | 83   | 42   | 96   | 19   | 15   | 15   | 17   | 15   |
| 13    | --- | --- | --- | 18   | 71   | 39   | 72   | 18   | 15   | 15   | 17   | 14   |
| 14    | --- | --- | --- | 18   | 69   | 80   | 57   | 18   | 15   | 15   | 17   | 15   |
| 15    | --- | --- | --- | 22   | 53   | 261  | 49   | 18   | 15   | 15   | 17   | 17   |
| 16    | --- | --- | --- | 71   | 55   | 61   | 43   | 17   | 15   | 14   | 17   | 18   |
| 17    | --- | --- | --- | 22   | 110  | 49   | 38   | 17   | 15   | 14   | 17   | 17   |
| 18    | --- | --- | --- | 129  | 98   | 44   | 35   | 17   | 15   | 14   | 16   | 16   |
| 19    | --- | --- | --- | 229  | 93   | 84   | 32   | 16   | 14   | 14   | 17   | 16   |
| 20    | --- | --- | --- | 205  | 110  | 52   | e30  | 16   | 14   | 15   | 16   | 16   |
| 21    | --- | --- | --- | 87   | 334  | 38   | e29  | 17   | 14   | 18   | 15   | 16   |
| 22    | --- | --- | --- | 47   | 104  | 36   | e29  | 17   | 16   | 17   | 15   | 18   |
| 23    | --- | --- | --- | 210  | 79   | 67   | e28  | 18   | 16   | 17   | 13   | 20   |
| 24    | --- | --- | --- | 83   | 67   | 39   | e28  | 17   | 15   | 17   | 12   | 17   |
| 25    | --- | --- | --- | 56   | 112  | 65   | e27  | 16   | 15   | 18   | 16   | 16   |
| 26    | --- | --- | --- | 228  | 52   | 43   | e26  | 16   | 15   | 21   | 15   | 16   |
| 27    | --- | --- | --- | 102  | 54   | 35   | e26  | 16   | 14   | 17   | 15   | 15   |
| 28    | --- | --- | --- | 56   | 49   | 32   | e25  | 16   | 14   | 17   | 13   | 16   |
| 29    | --- | --- | --- | 45   | ---  | 31   | e25  | 17   | 13   | 17   | 13   | 14   |
| 30    | --- | --- | --- | 39   | ---  | 32   | e24  | 19   | 13   | 17   | 13   | 14   |
| 31    | --- | --- | --- | 237  | ---  | 62   | ---  | 20   | ---  | 17   | 12   | ---  |
| TOTAL | --- | --- | --- | 2120 | 3226 | 1768 | 1782 | 574  | 508  | 501  | 494  | 477  |
| MEAN  | --- | --- | --- | 68.4 | 115  | 57.0 | 59.4 | 18.5 | 16.9 | 16.2 | 15.9 | 15.9 |
| MAX   | --- | --- | --- | 237  | 623  | 261  | 242  | 23   | 52   | 21   | 20   | 22   |
| MIN   | --- | --- | --- | 17   | 38   | 31   | 24   | 16   | 13   | 14   | 12   | 13   |
| AC-FT | --- | --- | --- | 4210 | 6400 | 3510 | 3530 | 1140 | 1010 | 994  | 980  | 946  |

e Estimated.

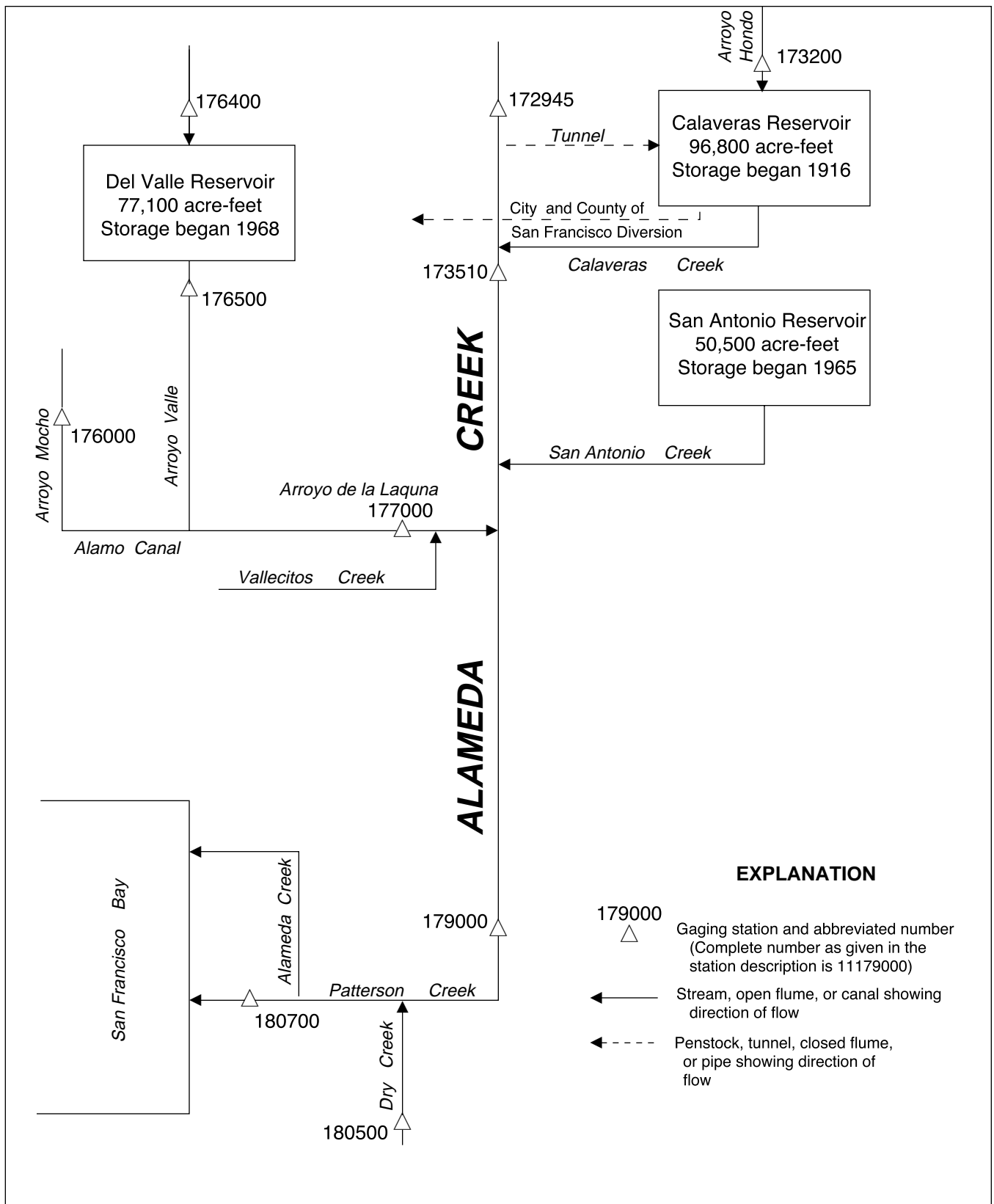


Figure 21. Diversions and storage in Alameda Creek Basin.

## 11172945 ALAMEDA CREEK ABOVE DIVERSION DAM, NEAR SUNOL, CA

LOCATION.—Lat 37°29'51", long 121°46'21", in SE 1/4 NE 1/4 sec.17, T.5 S., R.2 E., Alameda County, Hydrologic Unit 18050004, on right bank, 700 ft upstream from diversion dam, and 9.3 mi southeast of Sunol.

DRAINAGE AREA.—33.3 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1994 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 930 ft above sea level, from topographic map.

REMARKS.—Records fair except for estimated daily discharges, which are poor. No regulation or diversion upstream from gage. See schematic diagram of Alameda Creek Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,390 ft<sup>3</sup>/s, Jan. 9, 1995, gage height, 7.96 ft from rating curve extended above 100 ft<sup>3</sup>/s on basis of flow over dam computation; no flow several days in 1994.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,200 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 0915 | 1,450                             | 5.62                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN    | FEB  | MAR  | APR  | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|-------|--------|------|------|------|-------|-------|-------|-------|-------|
| 1     | .74   | e.83  | e18   | 2.3    | 70   | 42   | 34   | 15    | 5.4   | 1.9   | .72   | .46   |
| 2     | .99   | e.82  | e8.3  | 2.3    | 52   | 38   | 29   | 14    | 5.6   | 1.9   | .71   | .46   |
| 3     | .97   | e.83  | e4.4  | 2.3    | 45   | 44   | e28  | 15    | 6.4   | 1.9   | .67   | .46   |
| 4     | .92   | e.84  | e10   | 2.2    | 40   | 38   | e27  | 15    | 6.2   | 1.8   | .64   | .42   |
| 5     | .88   | e.84  | e7.0  | 2.0    | 35   | 34   | e28  | 14    | 5.7   | 1.7   | .72   | .37   |
| 6     | .78   | e.84  | e5.2  | 2.0    | 35   | 32   | e67  | 13    | 5.4   | 1.6   | .82   | .33   |
| 7     | .62   | e1.0  | e6.0  | 2.0    | 334  | 30   | e74  | 13    | 5.2   | 1.6   | .80   | .31   |
| 8     | e.64  | e2.0  | e5.0  | 1.7    | 206  | 29   | e110 | 12    | 5.0   | 1.5   | .83   | .34   |
| 9     | e.64  | e1.6  | e4.7  | 2.0    | 628  | 51   | e135 | 12    | 4.8   | 1.4   | .82   | .54   |
| 10    | e.64  | e1.3  | e4.3  | 1.8    | 229  | 43   | e80  | 11    | 4.6   | 1.4   | .82   | .55   |
| 11    | e.81  | e1.6  | e4.1  | 1.7    | 109  | 36   | e225 | 11    | 4.5   | 1.3   | .91   | .53   |
| 12    | e.92  | e1.5  | 4.0   | 1.8    | 70   | 33   | e180 | 10    | 4.3   | 1.2   | .90   | .50   |
| 13    | e.80  | e1.4  | 4.0   | 1.7    | 53   | 31   | e91  | 9.9   | 4.2   | 1.2   | .80   | .48   |
| 14    | e.80  | e1.3  | 4.1   | 1.7    | 45   | 32   | e62  | 9.8   | 4.1   | 1.2   | .76   | .47   |
| 15    | e.80  | e1.1  | 4.1   | 1.7    | 35   | 42   | 50   | 9.5   | 4.0   | 1.2   | .72   | .49   |
| 16    | e.80  | e1.0  | 4.2   | 3.2    | 33   | 35   | 44   | 9.3   | 3.9   | 1.2   | .65   | .45   |
| 17    | e.71  | e1.0  | 4.1   | 5.5    | 131  | 32   | 39   | 8.8   | 3.8   | 1.2   | .65   | .45   |
| 18    | e.76  | e1.1  | 4.1   | 70     | 79   | 30   | 35   | 8.3   | 3.6   | 1.1   | .65   | .46   |
| 19    | e.77  | e1.1  | 3.9   | 286    | 68   | 31   | 31   | 8.2   | 3.4   | 1.1   | .67   | .46   |
| 20    | e.81  | e1.1  | 3.7   | 479    | 82   | 37   | 29   | 8.0   | 3.3   | 1.1   | .59   | .46   |
| 21    | e.75  | e1.1  | 3.6   | 160    | 283  | 31   | 27   | 7.9   | 3.2   | 1.0   | .56   | .43   |
| 22    | e.76  | e1.2  | 3.4   | 74     | 123  | 28   | 25   | 7.3   | 3.1   | 1.0   | .51   | .52   |
| 23    | e.77  | e1.2  | 3.4   | 133    | 88   | 30   | 23   | 7.1   | 3.0   | 1.0   | .48   | .54   |
| 24    | e.80  | e1.3  | 3.3   | 95     | 72   | 28   | 21   | 6.9   | 2.8   | 1.0   | .47   | .44   |
| 25    | e1.5  | e1.3  | 3.1   | 65     | 75   | 63   | 20   | 6.7   | 2.6   | .96   | .42   | .39   |
| 26    | e1.0  | e1.3  | 2.9   | 83     | 61   | 46   | 19   | 6.4   | 2.5   | .90   | .41   | .43   |
| 27    | e.92  | e2.0  | 2.8   | 81     | 52   | 37   | 18   | 5.9   | 2.3   | .87   | .42   | .47   |
| 28    | e.92  | e2.7  | 2.7   | 62     | 46   | 32   | 17   | 5.8   | 2.2   | .85   | .42   | .58   |
| 29    | e.90  | e3.1  | 2.6   | 49     | ---  | 30   | 16   | 5.7   | 2.1   | .83   | .41   | .62   |
| 30    | e.90  | e6.0  | 2.6   | 42     | ---  | 29   | 15   | 5.7   | 2.0   | .77   | .45   | .64   |
| 31    | e.82  | ---   | 2.3   | 108    | ---  | 43   | ---  | 5.5   | ---   | .74   | .47   | ---   |
| TOTAL | 25.84 | 44.30 | 145.9 | 1824.9 | 3179 | 1117 | 1599 | 297.7 | 119.2 | 38.42 | 19.87 | 14.05 |
| MEAN  | .83   | 1.48  | 4.71  | 58.9   | 114  | 36.0 | 53.3 | 9.60  | 3.97  | 1.24  | .64   | .47   |
| MAX   | 1.5   | 6.0   | 18    | 479    | 628  | 63   | 225  | 15    | 6.4   | 1.9   | .91   | .64   |
| MIN   | .62   | .82   | 2.3   | 1.7    | 33   | 28   | 15   | 5.5   | 2.0   | .74   | .41   | .31   |
| AC-FT | 51    | 88    | 289   | 3620   | 6310 | 2220 | 3170 | 590   | 236   | 76    | 39    | 28    |

e Estimated.

## 11172945 ALAMEDA CREEK ABOVE DIVERSION DAM, NEAR SUNOL, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .32  | 5.81 | 33.6 | 168  | 143  | 87.1 | 30.5 | 13.4 | 5.44 | 1.89 | .76  | .49  |
| MAX  | .83  | 22.7 | 125  | 237  | 306  | 211  | 55.2 | 27.3 | 9.79 | 3.76 | 1.81 | 1.22 |
| (WY) | 1999 | 1997 | 1997 | 1997 | 1998 | 1995 | 1998 | 1995 | 1995 | 1998 | 1998 | 1998 |
| MIN  | .009 | .17  | 4.71 | 58.9 | 16.7 | 10.7 | 5.58 | 2.76 | 1.30 | .54  | .28  | .16  |
| (WY) | 1995 | 1996 | 1999 | 1999 | 1995 | 1997 | 1997 | 1997 | 1997 | 1997 | 1997 | 1997 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |  |  | FOR 1999 WATER YEAR |  |  | WATER YEARS 1995 - 1999 |  |  |
|--------------------------|------------------------|--|--|---------------------|--|--|-------------------------|--|--|
| ANNUAL TOTAL             | 17712.98               |  |  | 8425.18             |  |  |                         |  |  |
| ANNUAL MEAN              | 48.5                   |  |  | 23.1                |  |  | 40.4                    |  |  |
| HIGHEST ANNUAL MEAN      |                        |  |  |                     |  |  | 49.8                    |  |  |
| LOWEST ANNUAL MEAN       |                        |  |  |                     |  |  | 23.1                    |  |  |
| HIGHEST DAILY MEAN       | 1120                   |  |  | 628                 |  |  | 1200                    |  |  |
| LOWEST DAILY MEAN        | .62                    |  |  | .31                 |  |  | .00                     |  |  |
| ANNUAL SEVEN-DAY MINIMUM | .72                    |  |  | .38                 |  |  | .00                     |  |  |
| INSTANTANEOUS PEAK FLOW  |                        |  |  | 1450                |  |  | 3390                    |  |  |
| INSTANTANEOUS PEAK STAGE |                        |  |  | 5.62                |  |  | 7.96                    |  |  |
| ANNUAL RUNOFF (AC-FT)    | 35130                  |  |  | 16710               |  |  | 29270                   |  |  |
| 10 PERCENT EXCEEDS       | 116                    |  |  | 62                  |  |  | 91                      |  |  |
| 50 PERCENT EXCEEDS       | 6.0                    |  |  | 3.1                 |  |  | 4.0                     |  |  |
| 90 PERCENT EXCEEDS       | .92                    |  |  | .55                 |  |  | .21                     |  |  |

## 11173200 ARROYO HONDO NEAR SAN JOSE, CA

LOCATION.—Lat 37°27'42", long 121°46'06", in NE 1/4 NE 1/4 sec.32, T.5 S., R.2 E., Santa Clara County, Hydrologic Unit 18050004, on right bank, 150 ft upstream from road bridge, 3.5 mi southeast of Calaveras Dam, 3.5 mi northeast of city limits of San Jose.

DRAINAGE AREA.—77.1 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1968 to September 1981, October 1994 to current year.

GAGE.—Water-stage recorder. Datum of gage is 783.86 ft above sea level.

REMARKS.—Records good. No regulation or diversion upstream from station. See schematic diagram of Alameda Creek Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 7,340 ft<sup>3</sup>/s, Feb. 3, 1998, gage height, 15.85 ft; minimum daily, 0.11 ft<sup>3</sup>/s, July 28–30, 1972.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 800 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| Jan. 20 | 0400 | 1,080                             | 8.25                | Feb. 9 | 1130 | 3,860                             | 12.29               |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN    | FEB   | MAR  | APR  | MAY  | JUN   | JUL   | AUG  | SEP  |
|-------|-------|-------|-------|--------|-------|------|------|------|-------|-------|------|------|
| 1     | 5.1   | 4.4   | 67    | 7.6    | 149   | 70   | 70   | 37   | 18    | 5.5   | 3.2  | 1.5  |
| 2     | 5.0   | 4.2   | 27    | 7.5    | 89    | 64   | 63   | 36   | 18    | 5.5   | 3.1  | 1.4  |
| 3     | 5.0   | 4.2   | 21    | 7.1    | 65    | 70   | 58   | 37   | 21    | 5.4   | 2.7  | 1.4  |
| 4     | 5.0   | 4.2   | 46    | 6.8    | 53    | 65   | 57   | 35   | 21    | 5.5   | 3.0  | 1.8  |
| 5     | 4.8   | 4.3   | 27    | 6.5    | 45    | 59   | 61   | 34   | 18    | 5.6   | 3.3  | 1.4  |
| 6     | 4.6   | 4.5   | 22    | 6.3    | 40    | 57   | 108  | 32   | 17    | 5.4   | 3.8  | 1.3  |
| 7     | 4.4   | 6.8   | 23    | 6.3    | 345   | 54   | 116  | 31   | 16    | 5.2   | 4.3  | 1.3  |
| 8     | 4.3   | 9.4   | 18    | 6.3    | 365   | 52   | 176  | 30   | 15    | 4.8   | 4.8  | 1.4  |
| 9     | 4.4   | 6.7   | 16    | 6.2    | 1490  | 96   | 203  | 29   | 16    | 4.5   | 4.5  | 1.5  |
| 10    | 4.3   | 5.7   | 14    | 6.0    | 423   | 89   | 167  | 28   | 15    | 4.5   | 3.8  | 1.5  |
| 11    | 4.5   | 6.1   | 12    | 6.0    | 220   | 71   | 329  | 29   | 15    | 4.7   | 3.7  | 1.5  |
| 12    | 5.4   | 6.5   | 10    | 6.0    | 149   | 62   | 302  | 29   | 14    | 4.6   | 4.0  | 1.4  |
| 13    | 4.9   | 5.5   | 11    | 6.0    | 115   | 58   | 202  | 27   | 14    | 4.4   | 3.9  | 1.4  |
| 14    | 4.6   | 5.0   | 14    | 6.0    | 97    | 57   | 159  | 27   | 13    | 3.7   | 3.6  | 1.3  |
| 15    | 4.6   | 4.8   | 14    | 6.3    | 82    | 65   | 127  | 28   | 14    | 3.4   | 3.3  | 1.3  |
| 16    | 4.6   | 4.7   | 12    | 10     | 77    | 59   | 109  | 25   | 13    | 3.1   | 3.0  | 1.2  |
| 17    | 4.4   | 4.7   | 11    | 12     | 209   | 52   | 95   | 24   | 13    | 3.2   | 2.8  | 1.2  |
| 18    | 4.0   | 4.9   | 9.7   | 23     | 167   | 43   | 85   | 24   | 12    | 3.5   | 2.7  | 1.2  |
| 19    | 4.0   | 4.8   | 9.4   | 355    | 146   | 43   | 77   | 24   | 11    | 3.7   | 2.6  | 1.2  |
| 20    | 4.3   | 4.6   | 9.7   | 488    | 132   | 52   | 71   | 24   | 12    | 3.7   | 2.5  | 1.1  |
| 21    | 4.0   | 4.5   | 11    | 225    | 388   | 49   | 68   | 25   | 12    | 3.8   | 2.4  | 1.1  |
| 22    | 4.0   | 4.9   | 9.4   | 96     | 227   | 45   | 65   | 23   | 12    | 4.3   | 2.3  | 1.2  |
| 23    | 3.9   | 4.9   | 8.7   | 123    | 164   | 48   | 60   | 20   | 11    | 4.3   | 1.9  | 1.2  |
| 24    | 5.3   | 5.8   | 8.0   | 136    | 129   | 49   | 57   | 22   | 9.1   | 4.1   | 1.7  | 1.2  |
| 25    | 8.9   | 6.3   | 8.4   | 82     | 118   | 169  | 54   | 22   | 8.2   | 4.3   | 1.7  | 1.2  |
| 26    | 6.0   | 6.1   | 8.0   | 95     | 99    | 131  | 52   | 20   | 8.0   | 4.0   | 1.5  | 1.1  |
| 27    | 4.7   | 6.4   | 8.3   | 127    | 85    | 94   | 49   | 20   | 7.5   | 3.8   | 1.5  | 1.1  |
| 28    | 4.5   | 12    | 8.2   | 90     | 75    | 78   | 40   | 20   | 7.2   | 3.7   | 1.4  | 1.1  |
| 29    | 4.5   | 13    | 8.0   | 65     | ---   | 70   | 38   | 20   | 6.6   | 3.6   | 1.4  | 1.1  |
| 30    | 4.6   | 27    | 7.7   | 52     | ---   | 65   | 37   | 21   | 5.8   | 3.5   | 1.6  | 1.0  |
| 31    | 4.4   | ---   | 7.6   | 196    | ---   | 78   | ---  | 19   | ---   | 3.3   | 1.6  | ---  |
| TOTAL | 147.0 | 196.9 | 487.1 | 2271.9 | 5743  | 2114 | 3155 | 822  | 393.4 | 132.6 | 87.6 | 38.6 |
| MEAN  | 4.74  | 6.56  | 15.7  | 73.3   | 205   | 68.2 | 105  | 26.5 | 13.1  | 4.28  | 2.83 | 1.29 |
| MAX   | 8.9   | 27    | 67    | 488    | 1490  | 169  | 329  | 37   | 21    | 5.6   | 4.8  | 1.8  |
| MIN   | 3.9   | 4.2   | 7.6   | 6.0    | 40    | 43   | 37   | 19   | 5.8   | 3.1   | 1.4  | 1.0  |
| AC-FT | 292   | 391   | 966   | 4510   | 11390 | 4190 | 6260 | 1630 | 780   | 263   | 174  | 77   |

## 11173200 ARROYO HONDO NEAR SAN JOSE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 1.70 | 14.0 | 53.3 | 198  | 222  | 141  | 53.8 | 16.7 | 7.48 | 3.16 | 1.60 | 1.22 |
| MAX  | 4.74 | 69.4 | 312  | 595  | 888  | 523  | 178  | 55.0 | 27.0 | 12.7 | 6.09 | 3.98 |
| (WY) | 1999 | 1973 | 1997 | 1997 | 1998 | 1995 | 1974 | 1998 | 1998 | 1998 | 1998 | 1998 |
| MIN  | .24  | .67  | 1.42 | 3.35 | 2.98 | 5.58 | 2.93 | 1.67 | .74  | .33  | .18  | .25  |
| (WY) | 1978 | 1978 | 1977 | 1976 | 1977 | 1977 | 1977 | 1976 | 1976 | 1977 | 1972 | 1977 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |       | FOR 1999 WATER YEAR |        | WATER YEARS 1969 - 1999 |             |
|--------------------------|------------------------|-------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 47486.3                |       | 15589.1             |        |                         |             |
| ANNUAL MEAN              | 130                    |       | 42.7                |        | 58.8                    |             |
| HIGHEST ANNUAL MEAN      |                        |       |                     |        | 132                     |             |
| LOWEST ANNUAL MEAN       |                        |       |                     |        | 2.12                    |             |
| HIGHEST DAILY MEAN       | 3410                   | Feb 3 | 1490                | Feb 9  | 3580                    | Jan 10 1995 |
| LOWEST DAILY MEAN        | 3.2                    | Sep 4 | 1.0                 | Sep 30 | .11                     | Jul 28 1972 |
| ANNUAL SEVEN-DAY MINIMUM | 3.5                    | Sep 1 | 1.1                 | Sep 24 | .13                     | Jul 27 1972 |
| INSTANTANEOUS PEAK FLOW  |                        |       | 3860                |        | 7340                    | Feb 3 1998  |
| INSTANTANEOUS PEAK STAGE |                        |       | 12.29               |        | 15.85                   | Feb 3 1998  |
| ANNUAL RUNOFF (AC-FT)    | 94190                  |       | 30920               |        | 42590                   |             |
| 10 PERCENT EXCEEDS       | 340                    |       | 108                 |        | 126                     |             |
| 50 PERCENT EXCEEDS       | 18                     |       | 9.4                 |        | 4.9                     |             |
| 90 PERCENT EXCEEDS       | 4.3                    |       | 1.7                 |        | .72                     |             |

## 11173510 ALAMEDA CREEK BELOW CALAVERAS CREEK, NEAR SUNOL, CA

LOCATION.—Lat 37°30'13", long 121°49'25", in NE 1/4 NE 1/4 sec.13, T.5 S., R.1 E., Alameda County, Hydrologic Unit 18050004, on right bank, 0.2 mi downstream from Calaveras Creek, 1.1 mi downstream from Calaveras Dam, and 7.3 mi southeast of Sunol.

DRAINAGE AREA.—135 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1995 to current year (low-flow records only).

GAGE.—Water-stage recorder. Elevation of gage is 430 ft above sea level, from topographic map.

REMARKS.—Records good including estimated daily discharges. No records computed above 200 ft<sup>3</sup>/s. Flow regulated by Calaveras Reservoir, capacity, 100,000 acre-ft, 1.1 mi upstream from gage and by diversion dam on Alameda Creek, 2.9 mi upstream. Flow is diverted out of basin from Calaveras Reservoir by city and county of San Francisco for domestic use. See schematic diagram of Alameda Creek Basin.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN | FEB | MAR  | APR  | MAY  | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|-------|-----|-----|------|------|------|-------|-------|-------|-------|
| 1     | .17   | .53   | 14    | 2.3 | 68  | 42   | 11   | 26   | 11    | 2.9   | .98   | .71   |
| 2     | .29   | .52   | 6.1   | 2.1 | 47  | 39   | 10   | 27   | 12    | 4.5   | .97   | .68   |
| 3     | .34   | .53   | 4.6   | 2.1 | 39  | 45   | 10   | 26   | 17    | 2.9   | .97   | .67   |
| 4     | .58   | .52   | 10    | 2.4 | 34  | 40   | 10   | 27   | 14    | 2.9   | .98   | .66   |
| 5     | .63   | .53   | 5.8   | 2.4 | 30  | 36   | 12   | 22   | 13    | 2.4   | .99   | .65   |
| 6     | .65   | .55   | 7.8   | 2.5 | 31  | 34   | 11   | 26   | 9.9   | 1.6   | .94   | .64   |
| 7     | .66   | .64   | 6.9   | 2.8 | --- | 33   | 10   | 18   | 15    | 1.5   | .85   | .64   |
| 8     | .78   | .59   | 4.6   | 2.9 | --- | 32   | 18   | 17   | 9.7   | 2.5   | .99   | .64   |
| 9     | .76   | .52   | 3.7   | 2.1 | --- | 56   | 16   | 19   | 7.4   | 2.8   | 1.2   | .65   |
| 10    | .65   | .59   | 3.4   | 1.7 | --- | 47   | 13   | 19   | 10    | 1.8   | 1.2   | .63   |
| 11    | .88   | .70   | 3.3   | 1.8 | 158 | 40   | 16   | 18   | 9.6   | 1.6   | 1.2   | .63   |
| 12    | .61   | .73   | 3.0   | 1.8 | 110 | 37   | 12   | 18   | 8.6   | 1.6   | 1.2   | .65   |
| 13    | .60   | .85   | 3.5   | 1.8 | 79  | 35   | 46   | 18   | 7.5   | e1.5  | 1.2   | .67   |
| 14    | .64   | .81   | 4.1   | 1.8 | 68  | 36   | 103  | 15   | e9.5  | 1.4   | 1.2   | .66   |
| 15    | .67   | .86   | 3.9   | 1.8 | 57  | 49   | 141  | 16   | e11   | 1.4   | 1.1   | .67   |
| 16    | .73   | .87   | 4.1   | 2.4 | 58  | 40   | 151  | 15   | 7.6   | 1.4   | .92   | .60   |
| 17    | .80   | .96   | 4.6   | 2.6 | 176 | 35   | 117  | 15   | e6.7  | 1.4   | .92   | .51   |
| 18    | .69   | .97   | 4.3   | 57  | 119 | 33   | 89   | 14   | 7.5   | 1.3   | .94   | .51   |
| 19    | .46   | 1.0   | 3.6   | --- | 108 | 35   | 70   | 15   | 7.7   | 1.0   | .91   | .51   |
| 20    | .45   | .98   | 3.6   | --- | 116 | 41   | 56   | 14   | 6.4   | 1.0   | .90   | .50   |
| 21    | .44   | .99   | 3.4   | 124 | --- | 35   | 54   | 12   | 5.8   | .97   | .89   | .47   |
| 22    | .43   | 1.1   | 3.3   | 53  | 165 | 32   | 52   | 12   | 4.2   | .92   | .84   | .54   |
| 23    | .43   | 1.3   | 3.2   | 123 | 122 | 34   | 43   | 12   | 3.6   | .94   | .79   | .48   |
| 24    | .55   | 1.2   | 3.0   | 95  | 97  | 32   | 39   | 13   | 5.6   | .93   | .79   | .48   |
| 25    | .47   | .99   | 3.0   | 57  | 100 | 66   | 34   | 13   | 5.0   | .98   | .77   | .48   |
| 26    | .43   | 1.1   | 3.0   | 72  | 82  | 40   | 30   | 13   | 4.7   | 1.1   | .75   | .49   |
| 27    | .42   | 1.1   | 3.1   | 72  | 53  | 12   | 26   | 13   | 3.7   | 1.1   | .75   | .46   |
| 28    | .44   | 1.2   | 3.3   | 52  | 46  | 11   | 25   | 11   | 3.6   | 1.1   | .74   | .47   |
| 29    | .46   | 1.2   | 2.9   | 39  | --- | 11   | 31   | 11   | 3.4   | 1.0   | .74   | .47   |
| 30    | .49   | 3.2   | 2.4   | 33  | --- | 11   | 27   | 11   | 3.4   | 1.0   | .72   | .47   |
| 31    | .50   | ---   | 2.5   | 103 | --- | 12   | ---  | 13   | ---   | 1.0   | .72   | ---   |
| TOTAL | 17.10 | 27.63 | 138.0 | --- | --- | 1081 | 1283 | 519  | 244.1 | 50.44 | 29.06 | 17.29 |
| MEAN  | .55   | .92   | 4.45  | --- | --- | 34.9 | 42.8 | 16.7 | 8.14  | 1.63  | .94   | .58   |
| MAX   | .88   | 3.2   | 14    | --- | --- | 66   | 151  | 27   | 17    | 4.5   | 1.2   | .71   |
| MIN   | .17   | .52   | 2.4   | --- | --- | 11   | 10   | 11   | 3.4   | .92   | .72   | .46   |
| AC-FT | 34    | 55    | 274   | --- | --- | 2140 | 2540 | 1030 | 484   | 100   | 58    | 34    |

e Estimated.

## 11176000 ARROYO MOCHO NEAR LIVERMORE, CA

LOCATION.—Lat 37°37'35", long 121°42'13", in NW 1/4 SE 1/4 sec.36, T.3 S., R.2 E., Alameda County, Hydrologic Unit 18050004, on right bank, 40 ft downstream from Mines Road Bridge, 2.4 mi upstream from small right-bank tributary, and 5.2 mi southeast of Livermore.

DRAINAGE AREA.—38.2 mi<sup>2</sup>.

PERIOD OF RECORD.—January 1912 to September 1930, October 1963 to current year. Records for water year 1914 incomplete; yearly estimate and monthly discharge only for some months, published in WSP 1315-B.

GAGE.—Water-stage recorder. Datum of gage is 746.49 ft above sea level. January 1912 to October 1914, at present site at different datum. November 1914 to Sept. 30, 1930, at site 1 mi upstream at different datum.

REMARKS.—Records fair except for estimated daily discharges, which are poor. No regulation or diversion upstream from station. See schematic diagram of Alameda Creek Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge recorded, 2,250 ft<sup>3</sup>/s, Jan. 24, 1983, gage height, 8.80 ft, from rating curve extended above 600 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; maximum gage height, 10.44 ft, Feb. 19, 1986, from floodmarks; no flow for parts of most years.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 23, 1955, reached a discharge of 1,880 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 90 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 1300 | 68.0                              | 4.71                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC  | JAN  | FEB   | MAR   | APR   | MAY  | JUN   | JUL  | AUG  | SEP  |
|-------|-------|-------|------|------|-------|-------|-------|------|-------|------|------|------|
| 1     | e. 79 | e. 93 | 1.9  | 1.3  | 2.3   | 4.2   | 6.1   | 3.2  | 1.1   | .15  | .07  | .06  |
| 2     | e. 78 | e. 93 | 1.5  | 1.3  | 1.7   | 4.0   | 5.5   | 3.1  | 1.1   | .15  | .07  | .06  |
| 3     | .77   | e. 94 | 1.6  | 1.3  | 1.6   | 4.1   | 5.2   | 3.1  | 1.3   | .13  | .07  | .06  |
| 4     | .76   | e. 94 | 1.7  | 1.3  | 1.5   | 4.0   | 5.2   | 3.1  | 1.2   | .11  | .07  | .06  |
| 5     | .75   | e. 95 | 1.6  | 1.2  | 1.4   | 3.8   | 5.2   | 3.0  | 1.1   | .11  | .07  | .06  |
| 6     | .74   | e. 98 | 1.7  | 1.1  | 1.4   | 3.7   | 6.3   | 2.9  | .97   | .10  | .07  | .06  |
| 7     | e. 72 | 1.1   | 1.6  | 1.1  | 4.2   | 3.7   | 6.0   | 2.7  | .87   | .09  | .07  | .06  |
| 8     | e. 70 | 1.4   | 1.5  | 1.1  | 5.1   | 3.6   | 7.3   | 2.7  | .85   | .09  | .07  | .06  |
| 9     | e. 68 | 1.3   | 1.4  | 1.1  | 23    | 4.7   | 8.8   | 2.6  | .74   | .09  | .07  | .06  |
| 10    | e. 65 | 1.3   | 1.3  | 1.1  | 8.0   | 4.6   | 7.3   | 2.5  | .72   | .09  | .07  | .06  |
| 11    | e. 67 | 1.3   | 1.3  | 1.1  | 4.3   | 4.1   | 15    | 2.4  | .71   | .08  | .07  | .06  |
| 12    | e. 68 | 1.3   | 1.3  | 1.1  | 3.5   | 3.8   | 15    | 2.3  | .69   | .07  | .07  | .06  |
| 13    | e. 69 | 1.2   | 1.3  | 1.1  | 3.3   | 3.7   | 10    | 2.3  | .62   | .07  | .07  | .06  |
| 14    | e. 71 | 1.2   | 1.3  | 1.1  | 3.3   | 4.0   | 8.4   | 2.3  | .54   | .07  | .07  | .06  |
| 15    | e. 73 | 1.2   | 1.3  | 1.1  | 3.9   | 4.1   | 7.3   | 2.3  | .53   | .07  | .07  | .06  |
| 16    | e. 75 | 1.2   | 1.3  | 1.3  | 4.4   | 3.9   | 6.5   | 2.1  | .53   | .07  | .07  | .06  |
| 17    | e. 77 | 1.2   | 1.3  | 1.2  | 5.1   | 3.8   | 6.0   | 1.9  | .55   | .07  | .07  | .06  |
| 18    | e. 79 | 1.2   | 1.3  | 1.4  | 5.3   | 3.7   | 5.5   | 1.9  | .48   | .06  | .07  | .06  |
| 19    | e. 80 | 1.2   | 1.3  | 3.3  | 5.0   | 3.9   | 5.2   | 1.9  | .44   | .07  | .07  | .06  |
| 20    | e. 80 | 1.1   | 1.3  | 5.0  | 4.9   | 6.1   | 4.9   | 1.9  | .37   | .07  | .07  | .06  |
| 21    | e. 81 | 1.1   | 1.3  | 2.7  | 11    | 5.6   | 4.5   | 1.8  | .32   | .07  | .07  | .06  |
| 22    | e. 82 | 1.2   | 1.3  | 1.9  | 7.5   | 5.1   | 4.1   | 1.7  | .30   | .07  | .07  | .06  |
| 23    | e. 86 | 1.2   | 1.2  | 1.8  | 6.2   | 4.9   | 3.7   | 1.6  | .27   | .08  | .07  | .06  |
| 24    | e. 93 | 1.3   | 1.1  | 1.9  | 5.4   | 4.7   | 3.6   | 1.5  | .24   | .07  | .07  | .06  |
| 25    | e 1.1 | 1.2   | 1.2  | 1.6  | 5.4   | 6.5   | 3.4   | 1.4  | .22   | .07  | .07  | .07  |
| 26    | e. 97 | 1.1   | 1.2  | 1.7  | 5.1   | 7.3   | 3.2   | 1.3  | .21   | .08  | .06  | .07  |
| 27    | e. 93 | 1.2   | 1.2  | 2.1  | 4.6   | 6.3   | 3.0   | 1.3  | .19   | .08  | .06  | .07  |
| 28    | e. 90 | 1.5   | 1.2  | 1.8  | 4.4   | 5.8   | 2.8   | 1.3  | .16   | .07  | .07  | .07  |
| 29    | e. 91 | 1.4   | 1.1  | 1.5  | ---   | 5.3   | 2.7   | 1.2  | .16   | .07  | .07  | .07  |
| 30    | e. 92 | 1.5   | 1.2  | 1.4  | ---   | 5.1   | 3.2   | 1.2  | .15   | .07  | .06  | .07  |
| 31    | e. 92 | ---   | 1.3  | 2.0  | ---   | 6.1   | ---   | 1.1  | ---   | .07  | .06  | ---  |
| TOTAL | 24.80 | 35.57 | 42.1 | 50.0 | 142.8 | 144.2 | 180.9 | 65.6 | 17.63 | 2.61 | 2.13 | 1.86 |
| MEAN  | .80   | 1.19  | 1.36 | 1.61 | 5.10  | 4.65  | 6.03  | 2.12 | .59   | .084 | .069 | .062 |
| MAX   | 1.1   | 1.5   | 1.9  | 5.0  | 23    | 7.3   | 15    | 3.2  | 1.3   | .15  | .07  | .07  |
| MIN   | .65   | .93   | 1.1  | 1.1  | 1.4   | 3.6   | 2.7   | 1.1  | .15   | .06  | .06  | .06  |
| AC-FT | 49    | 71    | 84   | 99   | 283   | 286   | 359   | 130  | 35    | 5.2  | 4.2  | 3.7  |

e Estimated.



## 11176000 ARROYO MOCHO NEAR LIVERMORE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 1999, BY WATER YEAR (WY)

|      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .11  | .88  | 4.04 | 14.4 | 23.5 | 14.3 | 5.05 | 1.75 | .67  | .23  | .10  | .083 |
| MAX  | 1.55 | 11.6 | 33.2 | 122  | 166  | 155  | 41.8 | 21.5 | 6.96 | 4.04 | 2.57 | 2.47 |
| (WY) | 1984 | 1984 | 1984 | 1983 | 1998 | 1983 | 1982 | 1983 | 1983 | 1983 | 1983 | 1983 |
| MIN  | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1913 | 1915 | 1919 | 1991 | 1991 | 1924 | 1924 | 1920 | 1913 | 1913 | 1913 | 1913 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |     |     |     | FOR 1999 WATER YEAR |        |     |        | WATER YEARS 1913 - 1999 |     |       |             |
|--------------------------|------------------------|-----|-----|-----|---------------------|--------|-----|--------|-------------------------|-----|-------|-------------|
|                          | OCT                    | NOV | DEC | JAN | FEB                 | MAR    | APR | MAY    | JUN                     | JUL | AUG   | SEP         |
| ANNUAL TOTAL             |                        |     |     |     | 6831.71             |        |     | 710.20 |                         |     |       |             |
| ANNUAL MEAN              |                        |     |     |     | 18.7                |        |     | 1.95   |                         |     | 5.42  |             |
| HIGHEST ANNUAL MEAN      |                        |     |     |     |                     |        |     |        |                         |     | 38.8  | 1983        |
| LOWEST ANNUAL MEAN       |                        |     |     |     |                     |        |     |        |                         |     | .035  | 1924        |
| HIGHEST DAILY MEAN       |                        |     |     |     | 769                 | Feb 3  |     | 23     | Feb 9                   |     | 1510  | Mar 1 1983  |
| LOWEST DAILY MEAN        |                        |     |     |     | .19                 | Sep 20 |     | .06    | Jul 18                  |     | .00   | Oct 1 1912  |
| ANNUAL SEVEN-DAY MINIMUM |                        |     |     |     | .21                 | Sep 18 |     | .06    | Aug 30                  |     | .00   | Oct 1 1912  |
| INSTANTANEOUS PEAK FLOW  |                        |     |     |     |                     |        |     | 68     | Feb 9                   |     | 2250  | Jan 24 1983 |
| INSTANTANEOUS PEAK STAGE |                        |     |     |     |                     |        |     | 4.71   | Feb 9                   |     | 10.44 | Feb 19 1986 |
| ANNUAL RUNOFF (AC-FT)    |                        |     |     |     | 13550               |        |     | 1410   |                         |     | 3930  |             |
| 10 PERCENT EXCEEDS       |                        |     |     |     | 28                  |        |     | 5.1    |                         |     | 7.0   |             |
| 50 PERCENT EXCEEDS       |                        |     |     |     | 2.1                 |        |     | 1.2    |                         |     | .27   |             |
| 90 PERCENT EXCEEDS       |                        |     |     |     | .51                 |        |     | .07    |                         |     | .00   |             |

## 11176400 ARROYO VALLE BELOW LANG CANYON, NEAR LIVERMORE, CA

LOCATION.—Lat 37°33'41", long 121°40'58", in NE 1/4 NE 1/4 sec.30, T.4 S., R.3 E., Alameda County, Hydrologic Unit 18050004, on left bank, 100 ft upstream from small left-bank tributary, 1.2 mi downstream from Lang Canyon, and 9.5 mi southeast of Livermore.

DRAINAGE AREA.—130 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1963 to current year. Prior to October 1974, published as "above Lang Canyon, near Livermore."

GAGE.—Water-stage recorder. Concrete control since June 19, 1975. Elevation of gage is 750 ft above sea level, from topographic map. Prior to June 19, 1975, at site 1.4 mi upstream at different datum.

REMARKS.—Records fair except for flows below 5 ft<sup>3</sup>/s and estimated daily discharges, which are poor. No regulation or diversion upstream from station. See schematic diagram of Alameda Creek Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 8,790 ft<sup>3</sup>/s, Feb. 17, 1986, gage height, 7.36 ft, from rating curve extended above 1,000 ft<sup>3</sup>/s on basis of slope-area measurements at gage heights 4.13, 5.40, and 7.36 ft; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 500 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 1630 | 1,570                             | 3.01                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB  | MAR  | APR  | MAY   | JUN   | JUL   | AUG  | SEP  |
|-------|-------|-------|-------|-------|------|------|------|-------|-------|-------|------|------|
| 1     | .34   | e.65  | e35   | e3.5  | 43   | 25   | 36   | 17    | 5.6   | 2.5   | .00  | .00  |
| 2     | .43   | e.65  | e12   | e3.5  | 30   | 23   | 32   | 17    | 5.2   | 2.2   | .00  | .00  |
| 3     | .52   | e.65  | e15   | e3.4  | 22   | 24   | 29   | 17    | 5.4   | 1.9   | .00  | .00  |
| 4     | .52   | e.68  | e25   | e3.3  | 17   | 23   | 27   | 17    | 5.5   | 1.9   | .00  | .00  |
| 5     | .60   | e.70  | e13   | e3.2  | 14   | 21   | 28   | 18    | 4.6   | 1.8   | .00  | .00  |
| 6     | .67   | e.80  | e12   | e3.1  | 12   | 19   | 37   | 16    | 5.0   | 1.5   | .00  | .00  |
| 7     | .46   | e1.5  | e11   | e3.0  | 190  | 19   | 36   | 15    | 4.6   | 1.5   | .00  | .00  |
| 8     | .34   | e3.1  | e9.0  | e3.0  | 200  | 19   | 50   | 14    | 4.6   | 1.4   | .00  | .00  |
| 9     | .34   | e2.1  | e8.0  | e3.0  | 857  | 29   | 78   | 13    | 4.4   | 1.7   | .00  | .00  |
| 10    | .43   | e1.7  | e7.0  | e3.0  | 355  | 33   | 68   | 13    | 3.8   | 1.9   | .00  | .00  |
| 11    | .52   | e1.8  | e6.0  | e3.0  | 126  | 31   | 109  | 12    | 3.8   | 1.7   | .00  | .00  |
| 12    | .52   | e2.0  | e5.5  | e3.0  | 66   | 28   | 215  | 11    | 3.7   | 1.4   | .00  | .00  |
| 13    | .52   | e2.1  | e6.0  | e3.0  | 44   | 28   | 129  | 10    | 3.1   | .86   | .00  | .00  |
| 14    | .52   | e2.0  | e7.0  | 3.1   | 34   | 28   | 91   | 9.5   | 3.1   | .38   | .00  | .00  |
| 15    | .52   | e1.9  | e6.5  | 3.5   | 26   | 31   | 74   | 9.1   | 3.1   | .04   | .00  | .00  |
| 16    | .52   | e1.9  | e6.0  | 4.4   | 22   | 29   | 64   | 10    | 2.8   | .00   | .00  | .00  |
| 17    | .52   | e1.8  | e5.5  | 4.6   | 62   | 28   | 60   | 9.4   | 2.8   | .00   | .00  | .00  |
| 18    | .52   | e2.2  | e5.2  | 18    | 49   | 26   | 54   | 8.8   | 3.0   | .00   | .00  | .00  |
| 19    | .52   | e2.0  | e4.8  | 89    | 38   | 25   | 47   | 8.8   | 2.6   | .11   | .00  | .00  |
| 20    | .52   | e2.0  | e4.5  | 155   | 32   | 33   | 42   | 8.2   | 2.5   | .31   | .00  | .00  |
| 21    | .58   | e1.9  | e5.0  | 63    | 206  | 32   | 41   | 7.6   | 2.5   | .49   | .00  | .00  |
| 22    | .52   | e2.0  | e4.5  | 31    | 121  | 29   | 39   | 7.5   | 2.5   | .85   | .00  | .00  |
| 23    | .52   | e2.2  | e4.0  | 32    | 71   | 28   | 38   | 6.6   | 2.5   | 1.1   | .00  | .00  |
| 24    | 1.3   | e2.3  | e3.9  | 36    | 51   | 28   | 36   | 6.6   | 2.3   | 1.1   | .00  | .00  |
| 25    | e1.9  | e2.4  | e3.8  | 23    | 47   | 48   | 34   | 6.6   | 1.9   | 1.0   | .00  | .00  |
| 26    | e.90  | e3.2  | e3.8  | 21    | 38   | 105  | 33   | 6.6   | 1.9   | 1.0   | .00  | .00  |
| 27    | e.80  | e5.0  | e3.8  | 31    | 32   | 60   | 31   | 6.6   | 1.9   | .87   | .00  | .00  |
| 28    | e.70  | e10   | e3.8  | 30    | 28   | 43   | 30   | 6.2   | 2.3   | .72   | .00  | .00  |
| 29    | e.65  | e13   | e3.7  | 23    | ---  | 36   | 22   | 5.6   | 2.5   | .72   | .00  | .00  |
| 30    | e.65  | e22   | e3.7  | 17    | ---  | 31   | 17   | 5.6   | 2.5   | .45   | .00  | .00  |
| 31    | e.65  | ---   | e3.6  | 37    | ---  | 36   | ---  | 5.6   | ---   | .07   | .00  | ---  |
| TOTAL | 19.02 | 96.23 | 247.6 | 662.6 | 2833 | 998  | 1627 | 324.9 | 102.0 | 31.47 | 0.00 | 0.00 |
| MEAN  | .61   | 3.21  | 7.99  | 21.4  | 101  | 32.2 | 54.2 | 10.5  | 3.40  | 1.02  | .000 | .000 |
| MAX   | 1.9   | 22    | 35    | 155   | 857  | 105  | 215  | 18    | 5.6   | 2.5   | .00  | .00  |
| MIN   | .34   | .65   | 3.6   | 3.0   | 12   | 19   | 17   | 5.6   | 1.9   | .00   | .00  | .00  |
| AC-FT | 38    | 191   | 491   | 1310  | 5620 | 1980 | 3230 | 644   | 202   | 62    | .00  | .00  |

e Estimated.

## 11176400 ARROYO VALLE BELOW LANG CANYON, NEAR LIVERMORE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .24  | 7.27 | 33.3 | 122  | 157  | 104  | 40.1 | 9.70 | 3.07 | .78  | .19  | .11  |
| MAX  | 3.12 | 79.2 | 216  | 588  | 986  | 625  | 322  | 71.5 | 18.9 | 7.43 | 3.67 | 2.00 |
| (WY) | 1984 | 1983 | 1984 | 1997 | 1998 | 1983 | 1982 | 1983 | 1998 | 1983 | 1983 | 1983 |
| MIN  | .000 | .000 | .000 | .000 | .24  | .82  | .14  | .001 | .000 | .000 | .000 | .000 |
| (WY) | 1965 | 1977 | 1990 | 1991 | 1991 | 1977 | 1977 | 1977 | 1976 | 1964 | 1964 | 1964 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1964 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 42799.47               |        | 6941.82             |        |                         |             |
| ANNUAL MEAN              | 117                    |        | 19.0                |        | 39.2                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 174                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | .24                     |             |
| HIGHEST DAILY MEAN       | 4920                   | Feb 3  | 857                 | Feb 9  | 4920                    | Feb 3 1998  |
| LOWEST DAILY MEAN        | .13                    | Sep 16 | .00                 | Jul 16 | .00                     | Oct 1 1963  |
| ANNUAL SEVEN-DAY MINIMUM | .22                    | Sep 11 | .00                 | Aug 1  | .00                     | Oct 1 1963  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 1570                | Feb 9  | 8790                    | Feb 17 1986 |
| INSTANTANEOUS PEAK STAGE |                        |        | 3.01                | Feb 9  | 7.36                    | Feb 17 1986 |
| ANNUAL RUNOFF (AC-FT)    | 84890                  |        | 13770               |        | 28420                   |             |
| 10 PERCENT EXCEEDS       | 256                    |        | 40                  |        | 60                      |             |
| 50 PERCENT EXCEEDS       | 11                     |        | 3.6                 |        | 1.4                     |             |
| 90 PERCENT EXCEEDS       | .47                    |        | .00                 |        | .00                     |             |

## 11176500 ARROYO VALLE NEAR LIVERMORE, CA

LOCATION.—Lat 37°37'24", long 121°45'28", in Valle de San Jose Grant, Alameda County, Hydrologic Unit 18050004, on right bank, 900 ft downstream from highway bridge, 1.1 mi upstream from Dry Creek, 1.3 mi downstream from Del Valle Dam, 4.1 mi south of Livermore, and 6.9 mi southeast of Pleasanton.

DRAINAGE AREA.—147 mi<sup>2</sup>.

PERIOD OF RECORD.—January 1912 to September 1930, October 1957 to current year. Monthly discharge only for some periods, published in WSP 1315-B. Published as Arroyo del Valle near Livermore, 1912–29.

GAGE.—Water-stage recorder and concrete control. Datum of gage is 510.44 ft above sea level. Prior to November 1914, at site 900 ft upstream at different datum. Nov. 1, 1914, to Sept. 30, 1930, at site 300 ft upstream at different datum.

REMARKS.—Records poor. Flow regulated by Del Valle Reservoir 1.3 mi upstream beginning in September 1968, capacity, 77,100 acre-ft. Water from Sacramento–San Joaquin Delta imported through South Bay Aqueduct can be pumped into Del Valle Reservoir for storage and later released into the channel for downstream percolation or returned to the South Bay Aqueduct. See schematic diagram of Alameda Creek Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 12,200 ft<sup>3</sup>/s, Apr. 2, 1958, gage height, 10.91 ft; no flow at times. Maximum discharge since construction of Del Valle Dam in 1968, 2,980 ft<sup>3</sup>/s, Feb. 4, 1998, gage height, 9.17 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 23, 1955, reached a stage of 13.9 ft from floodmarks, discharge, 18,200 ft<sup>3</sup>/s, on basis of contracted-opening and slope-area measurement of peak flow.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|
| 1     | .29  | .40   | .86   | 1.7   | .33   | 1.5   | .20   | .37  | .21  | .03  | .03  | .05  |
| 2     | .27  | .35   | .64   | 1.7   | .28   | 1.0   | .20   | .39  | .21  | .03  | .03  | .06  |
| 3     | .24  | .35   | .81   | 1.7   | .29   | .42   | .43   | .45  | .23  | .03  | .03  | .06  |
| 4     | .24  | .36   | .73   | 1.7   | .27   | .44   | .86   | .45  | .14  | .04  | .03  | .06  |
| 5     | .24  | .35   | .69   | 1.0   | .27   | .50   | 1.3   | .45  | .12  | .03  | .04  | .06  |
| 6     | .22  | .36   | .85   | .20   | .36   | .55   | .78   | .42  | .10  | .03  | .05  | .06  |
| 7     | .21  | .45   | .81   | .20   | .74   | .55   | .20   | .39  | .10  | .03  | .04  | .07  |
| 8     | .23  | .51   | .81   | .20   | .21   | .61   | .59   | .40  | .10  | .03  | .04  | .09  |
| 9     | .23  | .49   | .81   | .21   | 4.3   | .69   | .30   | .36  | .08  | .03  | .04  | .12  |
| 10    | .23  | .52   | .81   | .23   | .74   | .41   | .23   | .33  | .08  | .03  | .04  | .13  |
| 11    | .22  | .60   | .84   | .23   | .33   | .36   | .26   | .28  | .08  | .02  | .05  | .13  |
| 12    | .24  | .52   | .85   | .26   | .27   | .33   | .23   | .28  | .08  | .02  | .05  | .13  |
| 13    | .25  | .48   | .98   | .32   | .35   | .32   | .23   | .27  | .07  | .02  | .05  | .13  |
| 14    | .26  | .51   | .96   | .35   | .49   | .45   | .22   | .29  | .08  | .02  | .05  | .15  |
| 15    | .28  | .40   | .92   | .37   | .61   | .69   | .22   | .28  | .07  | .02  | .05  | .17  |
| 16    | .25  | .21   | .92   | .45   | .80   | .51   | .21   | .19  | .07  | .02  | .05  | .16  |
| 17    | .25  | .26   | .97   | .42   | 1.2   | .44   | .21   | .18  | .07  | .03  | .04  | .16  |
| 18    | .25  | .27   | 1.0   | .55   | 1.4   | .36   | .20   | .20  | .05  | .03  | .04  | .16  |
| 19    | .27  | .27   | 1.1   | .51   | 1.4   | .58   | .21   | .18  | .06  | .03  | .05  | .18  |
| 20    | .28  | .27   | 1.3   | .43   | 1.7   | .65   | .23   | .18  | .05  | .03  | .04  | .18  |
| 21    | .25  | .27   | 1.3   | .24   | 1.8   | .63   | .28   | .16  | .06  | .03  | .04  | .19  |
| 22    | .28  | .40   | 1.3   | .16   | .78   | .63   | .27   | .13  | .05  | .03  | .04  | .20  |
| 23    | .30  | .43   | 1.3   | .35   | .72   | .58   | .27   | .12  | .04  | .03  | .04  | .20  |
| 24    | .47  | .49   | 1.3   | .26   | .72   | .35   | .28   | .13  | .05  | .03  | .04  | .20  |
| 25    | .41  | .55   | 1.3   | .25   | 1.4   | .43   | .28   | .14  | .05  | .03  | .04  | .18  |
| 26    | .37  | .61   | 1.3   | .35   | 1.2   | .35   | .32   | .17  | .04  | .03  | .05  | .16  |
| 27    | .36  | .80   | 1.3   | .33   | 1.2   | .30   | .33   | .16  | .04  | .03  | .05  | .16  |
| 28    | .36  | 1.1   | 1.5   | .26   | 1.3   | .28   | .33   | .16  | .03  | .03  | .05  | .17  |
| 29    | .36  | 1.1   | 1.5   | .23   | ---   | .31   | .30   | .23  | .03  | .03  | .05  | .18  |
| 30    | .36  | 2.2   | 1.5   | .23   | ---   | .33   | .31   | .25  | .03  | .03  | .05  | .18  |
| 31    | .35  | ---   | 1.7   | .49   | ---   | .42   | ---   | .24  | ---  | .03  | .05  | ---  |
| TOTAL | 8.82 | 15.88 | 32.96 | 15.88 | 25.46 | 15.97 | 10.28 | 8.23 | 2.47 | 0.88 | 1.34 | 4.13 |
| MEAN  | .28  | .53   | 1.06  | .51   | .91   | .52   | .34   | .27  | .082 | .028 | .043 | .14  |
| MAX   | .47  | 2.2   | 1.7   | 1.7   | 4.3   | 1.5   | 1.3   | .45  | .23  | .04  | .05  | .20  |
| MIN   | .21  | .21   | .64   | .16   | .21   | .28   | .20   | .12  | .03  | .02  | .03  | .05  |
| AC-FT | 17   | 31    | 65    | 31    | 50    | 32    | 20    | 16   | 4.9  | 1.7  | 2.7  | 8.2  |

## 11176500 ARROYO VALLE NEAR LIVERMORE, CA—Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1968, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .016 | 2.63 | 18.0 | 87.6 | 146  | 51.4 | 47.2 | 7.37 | 1.83 | .32  | .089 | .021 |
| MAX  | .15  | 69.2 | 125  | 851  | 522  | 280  | 620  | 57.8 | 9.47 | 2.28 | .83  | .24  |
| (WY) | 1967 | 1927 | 1965 | 1914 | 1915 | 1958 | 1958 | 1915 | 1967 | 1967 | 1958 | 1958 |
| MIN  | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .094 | .000 | .000 | .000 | .000 |
| (WY) | 1914 | 1914 | 1918 | 1918 | 1920 | 1924 | 1924 | 1924 | 1918 | 1914 | 1913 | 1913 |

## SUMMARY STATISTICS

## WATER YEARS 1912 - 1968

|                          |                  |
|--------------------------|------------------|
| ANNUAL MEAN              | 29.6             |
| HIGHEST ANNUAL MEAN      | 118 1914         |
| LOWEST ANNUAL MEAN       | .008 1924        |
| HIGHEST DAILY MEAN       | 5930 Jan 25 1914 |
| LOWEST DAILY MEAN        | .00 Sep 22 1912  |
| ANNUAL SEVEN-DAY MINIMUM | .00 Sep 22 1912  |
| INSTANTANEOUS PEAK FLOW  | 12200 Apr 2 1958 |
| INSTANTANEOUS PEAK STAGE | 10.91 Apr 2 1958 |
| ANNUAL RUNOFF (AC-FT)    | 21460            |
| 10 PERCENT EXCEEDS       | 35               |
| 50 PERCENT EXCEEDS       | .20              |
| 90 PERCENT EXCEEDS       | .00              |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 8.55 | 8.03 | 7.40 | 49.7 | 114  | 70.9 | 20.6 | 5.72 | 8.54 | 12.9 | 11.6 | 9.60 |
| MAX  | 43.2 | 39.4 | 35.9 | 544  | 928  | 653  | 334  | 30.8 | 51.7 | 46.0 | 54.3 | 48.1 |
| (WY) | 1971 | 1981 | 1981 | 1997 | 1998 | 1983 | 1982 | 1970 | 1980 | 1980 | 1981 | 1981 |
| MIN  | .17  | .30  | .36  | .35  | .30  | .36  | .22  | .23  | .082 | .028 | .043 | .14  |
| (WY) | 1987 | 1987 | 1989 | 1990 | 1991 | 1994 | 1990 | 1990 | 1999 | 1999 | 1999 | 1999 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1970 - 1999

|                          |             |            |                 |
|--------------------------|-------------|------------|-----------------|
| ANNUAL TOTAL             | 31016.45    | 142.30     |                 |
| ANNUAL MEAN              | 85.0        | .39        | 26.8            |
| HIGHEST ANNUAL MEAN      |             |            | 131 1983        |
| LOWEST ANNUAL MEAN       |             |            | .39 1999        |
| HIGHEST DAILY MEAN       | 2210 Feb 10 | 4.3 Feb 9  | 2370 Mar 3 1983 |
| LOWEST DAILY MEAN        | .21 Oct 7   | .02 Jul 11 | .00 Jun 25 1983 |
| ANNUAL SEVEN-DAY MINIMUM | .23 Oct 5   | .02 Jul 10 | .02 Jul 10 1999 |
| INSTANTANEOUS PEAK FLOW  |             | 18 Feb 9   | 2980 Feb 4 1998 |
| INSTANTANEOUS PEAK STAGE |             | 2.94 Feb 9 | 9.17 Feb 4 1998 |
| ANNUAL RUNOFF (AC-FT)    | 61520       | 282        | 19430           |
| 10 PERCENT EXCEEDS       | 87          | .97        | 34              |
| 50 PERCENT EXCEEDS       | 1.5         | .26        | 1.2             |
| 90 PERCENT EXCEEDS       | .27         | .03        | .23             |

## 11177000 ARROYO DE LA LAGUNA NEAR PLEASANTON, CA

LOCATION.—Lat 37°36'55", long 121°52'50", in Valle de San Jose Grant, Alameda County, Hydrologic Unit 18050004, on right bank, 0.3 mi upstream from small left-bank tributary, 0.8 mi downstream from highway bridge, and 3.2 mi south of Pleasanton.

DRAINAGE AREA.—405 mi<sup>2</sup>.

PERIOD OF RECORD.—January 1912 to September 1930, October 1969 to September 1983, October 1987 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 248.40 ft above sea level. January 1912 to September 1917, at site 3.0 mi upstream at different datum. October 1917 to September 1930, at site 0.8 mi downstream at different datum. October 1969 to September 1983, at datum 3.00 ft higher.

REMARKS.—Records fair. Flow partly regulated by Del Valle Reservoir 15 mi upstream, beginning in September 1968, capacity, 77,100 acre-ft. Water imported from Sacramento–San Joaquin Delta (see REMARKS for station 11176500). See schematic diagram of Alameda Creek Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 11,400 ft<sup>3</sup>/s, Jan. 5, 1982, gage height, 22.61 ft, present datum; no flow at times.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN  | FEB   | MAR  | APR  | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------|------|------|------|------|-------|------|------|------|------|-------|-------|-------|
| 1     | 28   | 26   | 156  | 34   | 51    | 59   | 53   | 37   | 31   | 11    | 21    | 16    |
| 2     | 31   | 26   | 62   | 34   | 35    | 52   | 50   | 43   | 24   | 17    | 19    | 17    |
| 3     | 31   | 30   | 119  | 34   | 28    | 79   | 46   | 49   | 28   | 10    | 28    | 17    |
| 4     | 31   | 32   | 68   | 33   | 26    | 49   | 45   | 40   | 25   | 12    | 28    | 18    |
| 5     | 31   | 33   | 100  | 27   | 21    | 48   | 188  | 38   | 28   | 10    | 29    | 15    |
| 6     | 29   | 41   | 168  | 19   | 109   | 46   | 115  | 31   | 29   | 13    | 30    | 12    |
| 7     | 28   | 118  | 57   | 20   | 1200  | 45   | 67   | 33   | 27   | 20    | 30    | 12    |
| 8     | 25   | 64   | 49   | 20   | 315   | 55   | 318  | 33   | 27   | 25    | 28    | 15    |
| 9     | 19   | 47   | 43   | 23   | 1530  | 337  | 97   | 34   | 27   | 20    | 27    | 56    |
| 10    | 23   | 37   | 40   | 27   | 367   | 70   | 67   | 36   | 27   | 23    | 29    | 24    |
| 11    | 22   | 51   | 40   | 30   | 156   | 66   | 246  | 37   | 27   | 22    | 28    | 16    |
| 12    | 22   | 31   | 41   | 29   | 110   | 59   | 149  | 37   | 26   | 22    | 26    | 12    |
| 13    | 23   | 25   | 75   | 29   | 109   | 55   | 69   | 36   | 26   | 24    | 22    | 9.5   |
| 14    | 22   | 25   | 73   | 27   | 112   | 59   | 56   | 32   | 26   | 19    | 23    | 9.8   |
| 15    | 22   | 33   | 54   | 48   | 80    | 127  | 49   | 31   | 22   | 14    | 26    | 9.0   |
| 16    | 21   | 32   | 42   | 111  | 122   | 63   | 47   | 29   | 20   | 9.3   | 26    | 11    |
| 17    | 14   | 36   | 35   | 44   | 401   | 61   | 47   | 32   | 19   | 12    | 27    | 16    |
| 18    | 16   | 31   | 33   | 261  | 197   | 57   | 40   | 36   | 16   | 11    | 27    | 19    |
| 19    | 19   | 31   | 40   | 484  | 147   | 77   | 40   | 36   | 18   | 14    | 29    | 20    |
| 20    | 17   | 34   | 46   | 629  | 242   | 102  | 44   | 37   | 24   | 15    | 28    | 19    |
| 21    | 17   | 30   | 39   | 96   | 624   | 68   | 34   | 35   | 25   | 18    | 25    | 21    |
| 22    | 17   | 79   | 38   | 42   | 184   | 56   | 26   | 32   | 24   | 19    | 25    | 35    |
| 23    | 20   | 168  | 29   | 133  | 112   | 57   | 24   | 30   | 20   | 23    | 26    | 24    |
| 24    | 181  | 101  | 28   | 61   | 79    | 58   | 23   | 30   | 12   | 26    | 16    | 18    |
| 25    | 70   | 36   | 31   | 41   | 246   | 128  | 22   | 30   | 10   | 26    | 12    | 21    |
| 26    | 33   | 39   | 29   | 208  | 95    | 63   | 27   | 28   | 10   | 26    | 9.7   | 21    |
| 27    | 30   | 80   | 28   | 84   | 69    | 57   | 41   | 28   | 13   | 25    | 10    | 20    |
| 28    | 26   | 194  | 29   | 46   | 60    | 54   | 44   | 31   | 14   | 21    | 11    | 20    |
| 29    | 28   | 90   | 31   | 39   | ---   | 51   | 43   | 31   | 14   | 19    | 16    | 16    |
| 30    | 21   | 482  | 29   | 36   | ---   | 61   | 40   | 31   | 14   | 17    | 16    | 13    |
| 31    | 26   | ---  | 32   | 241  | ---   | 154  | ---  | 31   | ---  | 22    | 16    | ---   |
| TOTAL | 943  | 2082 | 1684 | 2990 | 6827  | 2373 | 2157 | 1054 | 653  | 565.3 | 713.7 | 552.3 |
| MEAN  | 30.4 | 69.4 | 54.3 | 96.5 | 244   | 76.5 | 71.9 | 34.0 | 21.8 | 18.2  | 23.0  | 18.4  |
| MAX   | 181  | 482  | 168  | 629  | 1530  | 337  | 318  | 49   | 31   | 26    | 30    | 56    |
| MIN   | 14   | 25   | 28   | 19   | 21    | 45   | 22   | 28   | 10   | 9.3   | 9.7   | 9.0   |
| AC-FT | 1870 | 4130 | 3340 | 5930 | 13540 | 4710 | 4280 | 2090 | 1300 | 1120  | 1420  | 1100  |

## 11177000 ARROYO DE LA LAGUNA NEAR PLEASANTON, CA—Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1930, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 1.43 | 1.96 | 15.9 | 174  | 234  | 59.5 | 18.5 | 8.67 | 3.52 | 2.06 | 1.36 | 1.19 |
| MAX  | 9.90 | 13.4 | 105  | 1349 | 728  | 207  | 59.8 | 74.0 | 13.9 | 13.1 | 8.76 | 6.98 |
| (WY) | 1917 | 1927 | 1914 | 1914 | 1915 | 1919 | 1926 | 1915 | 1916 | 1916 | 1916 | 1916 |
| MIN  | .000 | .000 | .000 | .000 | .84  | .53  | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1914 | 1914 | 1919 | 1925 | 1924 | 1924 | 1929 | 1924 | 1918 | 1913 | 1913 | 1913 |

## SUMMARY STATISTICS

## WATER YEARS 1912 - 1930

|                          |                  |
|--------------------------|------------------|
| ANNUAL MEAN              | 42.5             |
| HIGHEST ANNUAL MEAN      | 180 1914         |
| LOWEST ANNUAL MEAN       | .69 1913         |
| HIGHEST DAILY MEAN       | 9810 Jan 25 1914 |
| LOWEST DAILY MEAN        | .00 Jun 30 1913  |
| ANNUAL SEVEN-DAY MINIMUM | .00 Jun 30 1913  |
| ANNUAL RUNOFF (AC-FT)    | 30800            |
| 10 PERCENT EXCEEDS       | 33               |
| 50 PERCENT EXCEEDS       | .90              |
| 90 PERCENT EXCEEDS       | .00              |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 21.2 | 37.3 | 58.9 | 203  | 273  | 197  | 72.3 | 27.8 | 19.7 | 19.5 | 18.1 | 16.8 |
| MAX  | 42.3 | 92.3 | 185  | 991  | 2138 | 1510 | 517  | 116  | 59.9 | 40.6 | 43.5 | 41.1 |
| (WY) | 1971 | 1983 | 1997 | 1997 | 1998 | 1983 | 1982 | 1983 | 1998 | 1975 | 1981 | 1981 |
| MIN  | 3.34 | 2.59 | 6.46 | 6.07 | 12.7 | 9.39 | 6.49 | 4.05 | 2.88 | 1.80 | 2.31 | 2.28 |
| (WY) | 1991 | 1993 | 1990 | 1991 | 1977 | 1988 | 1990 | 1992 | 1991 | 1992 | 1991 | 1991 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1970 - 1999

|                          |        |         |                              |
|--------------------------|--------|---------|------------------------------|
| ANNUAL TOTAL             | 94687  | 22594.3 |                              |
| ANNUAL MEAN              | 259    | 61.9    | 79.4                         |
| HIGHEST ANNUAL MEAN      |        |         | 339 1983                     |
| LOWEST ANNUAL MEAN       |        |         | 11.6 1977                    |
| HIGHEST DAILY MEAN       | 5560   | Feb 3   | 1530 Feb 9 5560 Feb 3 1998   |
| LOWEST DAILY MEAN        | 14     | Oct 17  | 9.0 Sep 15 .33 Jul 11 1990   |
| ANNUAL SEVEN-DAY MINIMUM | 17     | Oct 17  | 12 Sep 11 1.1 Jul 6 1992     |
| INSTANTANEOUS PEAK FLOW  |        |         | 3590 Feb 7 11400 Jan 5 1982  |
| INSTANTANEOUS PEAK STAGE |        |         | 12.21 Feb 7 22.61 Jan 5 1982 |
| ANNUAL RUNOFF (AC-FT)    | 187800 | 44820   | 57540                        |
| 10 PERCENT EXCEEDS       | 468    | 113     | 104                          |
| 50 PERCENT EXCEEDS       | 50     | 31      | 21                           |
| 90 PERCENT EXCEEDS       | 23     | 16      | 4.7                          |

## 11179000 ALAMEDA CREEK NEAR NILES, CA

LOCATION.—Lat 37°35'14", long 121°57'35", in NW 1/4 sec.15, T.4 S., R.1 W., Alameda County, Hydrologic Unit 18050004, on right bank, 0.3 mi downstream from railroad bridge, 1.2 mi northeast of Niles, and 8.3 mi downstream from James H. Turner Dam on San Antonio Creek.

DRAINAGE AREA.—633 mi<sup>2</sup>.

PERIOD OF RECORD.—January 1891 to current year. Monthly discharge only for some periods, published in WSP 1315-B. Published as "at Niles Dam" 1891–1900 and as "at Sunolglen" 1901–21.

REVISED RECORDS.—WSP 1315-B: 1921. WSP 1515: 1951–52, 1956. WSP 1565: 1945. WDR CA-86-2: 1984(M).

GAGE.—Water-stage recorder and concrete control. Datum of gage is 85.65 ft above sea level. Prior to 1901, nonrecording gage at site 1 mi upstream at different datum. From 1901 to Sept. 30, 1914, nonrecording gage; Oct. 1, 1914, to Sept. 30, 1916, water-stage recorder at site 4.5 mi upstream at different datum; Oct. 1, 1916, to Dec. 17, 1923, water-stage recorder at site 800 ft upstream at different datum.

REMARKS.—Records good. Flow regulated since 1916 by Calaveras Reservoir, although dam not completed until 1925, usable capacity, 96,800 acre-ft, most of which is diverted for San Francisco water supply; since February 1965 by San Antonio Reservoir, capacity, 51,000 acre-ft; and since September 1968 by Del Valle Reservoir, 23 mi upstream, capacity, 77,100 acre-ft. Natural flow of stream affected by water imported from Delta–Mendota Canal beginning in 1962. Other diversions from ground-water basin for irrigation of 9,000 acres upstream from station. See schematic diagram of Alameda Creek Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 29,000 ft<sup>3</sup>/s, Dec. 23, 1955, gage height, 14.9 ft; minimum (water-years 1892–1962), no flow at times; minimum daily (water years 1963–96), 0.63 ft<sup>3</sup>/s, Oct. 7–10, 1984.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN  | FEB   | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|------|------|------|------|-------|------|------|------|------|------|------|------|
| 1     | 36   | 32   | 162  | 41   | 164   | 146  | 79   | 82   | 36   | 44   | 54   | 46   |
| 2     | 38   | 45   | 54   | 34   | 106   | 133  | 71   | 89   | 29   | 48   | 49   | 46   |
| 3     | 38   | 49   | 86   | 36   | 89    | 165  | 78   | 97   | 34   | 44   | 55   | 47   |
| 4     | 37   | 49   | 61   | 35   | 80    | 123  | 77   | 81   | 32   | 47   | 56   | 49   |
| 5     | 38   | 38   | 42   | 31   | 76    | 114  | 187  | 58   | 35   | 44   | 57   | 47   |
| 6     | 32   | 41   | 166  | 23   | 126   | 111  | 163  | 51   | 38   | 42   | 75   | 44   |
| 7     | 32   | 102  | 51   | 23   | 1450  | 108  | 105  | 47   | 35   | 50   | 60   | 42   |
| 8     | 29   | 69   | 42   | 24   | 743   | 107  | 318  | 53   | 31   | 42   | 59   | 42   |
| 9     | 22   | 56   | 62   | 26   | 2260  | 416  | 160  | 55   | 35   | 42   | 57   | 77   |
| 10    | 27   | 41   | 62   | 27   | 861   | 168  | 108  | 52   | 35   | 44   | 57   | 57   |
| 11    | 38   | 55   | 69   | 55   | 380   | 133  | 260  | 52   | 34   | 45   | 57   | 50   |
| 12    | 41   | 38   | 71   | 72   | 252   | 118  | 188  | 64   | 37   | 41   | 55   | 45   |
| 13    | 41   | 32   | 93   | 73   | 198   | 112  | 121  | 63   | 40   | 41   | 52   | 43   |
| 14    | 41   | 32   | 109  | 49   | 206   | 107  | 168  | 51   | 36   | 39   | 53   | 42   |
| 15    | 42   | 50   | 82   | 82   | 148   | 197  | 208  | 71   | 32   | 45   | 55   | 40   |
| 16    | 40   | 52   | 77   | 96   | 157   | 124  | 204  | 75   | 26   | 43   | 55   | 45   |
| 17    | 19   | 56   | 73   | 42   | 653   | 111  | 199  | 64   | 25   | 45   | 56   | 33   |
| 18    | 19   | 52   | 72   | 166  | 349   | 104  | 161  | 48   | 34   | 46   | 56   | 20   |
| 19    | 24   | 52   | 81   | 567  | 291   | 109  | 137  | 46   | 39   | 47   | 55   | 21   |
| 20    | 23   | 49   | 86   | 1100 | 315   | 161  | 125  | 45   | 46   | 47   | 56   | 20   |
| 21    | 22   | 38   | 80   | 322  | 1180  | 132  | 109  | 43   | 50   | 48   | 55   | 21   |
| 22    | 20   | 65   | 76   | 145  | 446   | 105  | 106  | 43   | 45   | 49   | 54   | 28   |
| 23    | 40   | 106  | 74   | 264  | 294   | 103  | 89   | 44   | 40   | 54   | 55   | 31   |
| 24    | 168  | 120  | 78   | 216  | 233   | 93   | 82   | 40   | 44   | 54   | 47   | 20   |
| 25    | 117  | 39   | 79   | 129  | 397   | 190  | 77   | 34   | 45   | 57   | 43   | 22   |
| 26    | 74   | 37   | 75   | 254  | 233   | 136  | 69   | 30   | 46   | 56   | 41   | 37   |
| 27    | 69   | 52   | 71   | 349  | 185   | 88   | 77   | 29   | 49   | 55   | 42   | 49   |
| 28    | 36   | 177  | 73   | 130  | 159   | 82   | 76   | 31   | 48   | 52   | 44   | 55   |
| 29    | 31   | 81   | 75   | 106  | ---   | 77   | 75   | 32   | 41   | 49   | 48   | 46   |
| 30    | 25   | 351  | 71   | 95   | ---   | 72   | 72   | 35   | 47   | 49   | 48   | 43   |
| 31    | 29   | ---  | 72   | 331  | ---   | 166  | ---  | 37   | ---  | 52   | 47   | ---  |
| TOTAL | 1288 | 2056 | 2425 | 4943 | 12031 | 4111 | 3949 | 1642 | 1144 | 1461 | 1653 | 1208 |
| MEAN  | 41.5 | 68.5 | 78.2 | 159  | 430   | 133  | 132  | 53.0 | 38.1 | 47.1 | 53.3 | 40.3 |
| MAX   | 168  | 351  | 166  | 1100 | 2260  | 416  | 318  | 97   | 50   | 57   | 75   | 77   |
| MIN   | 19   | 32   | 42   | 23   | 76    | 72   | 69   | 29   | 25   | 39   | 41   | 20   |
| AC-FT | 2550 | 4080 | 4810 | 9800 | 23860 | 8150 | 7830 | 3260 | 2270 | 2900 | 3280 | 2400 |



## 11179000 ALAMEDA CREEK NEAR NILES, CA—Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1961, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 2.61 | 21.0 | 101  | 185  | 322  | 213  | 156  | 18.9 | 8.19 | 5.46 | 3.26 | 3.14 |
| MAX  | 36.5 | 581  | 1469 | 2578 | 2431 | 1439 | 2323 | 95.5 | 46.1 | 50.1 | 47.5 | 48.9 |
| (WY) | 1936 | 1951 | 1956 | 1952 | 1938 | 1938 | 1958 | 1941 | 1938 | 1935 | 1935 | 1935 |
| MIN  | .000 | .000 | .000 | .22  | .71  | .17  | 1.08 | .11  | .000 | .000 | .000 | .000 |
| (WY) | 1925 | 1926 | 1931 | 1949 | 1948 | 1931 | 1929 | 1934 | 1931 | 1929 | 1925 | 1925 |

## SUMMARY STATISTICS

## WATER YEARS 1925 - 1961

|                          |                   |
|--------------------------|-------------------|
| ANNUAL MEAN              | 85.4              |
| HIGHEST ANNUAL MEAN      | 401 1952          |
| LOWEST ANNUAL MEAN       | .90 1961          |
| HIGHEST DAILY MEAN       | 23900 Dec 23 1955 |
| LOWEST DAILY MEAN        | .00 Oct 1 1924    |
| ANNUAL SEVEN-DAY MINIMUM | .00 Oct 1 1924    |
| INSTANTANEOUS PEAK FLOW  | 29000 Dec 23 1955 |
| INSTANTANEOUS PEAK STAGE | 14.9 Dec 23 1955  |
| ANNUAL RUNOFF (AC-FT)    | 61830             |
| 10 PERCENT EXCEEDS       | 91                |
| 50 PERCENT EXCEEDS       | 2.7               |
| 90 PERCENT EXCEEDS       | .00               |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 29.2 | 59.4 | 110  | 319  | 509  | 377  | 143  | 61.4 | 46.6 | 41.0 | 39.6 | 32.9 |
| MAX  | 78.6 | 247  | 434  | 1975 | 3715 | 2725 | 1163 | 318  | 154  | 62.9 | 65.9 | 62.1 |
| (WY) | 1992 | 1984 | 1984 | 1997 | 1998 | 1983 | 1982 | 1983 | 1973 | 1981 | 1972 | 1981 |
| MIN  | 9.91 | 17.2 | 20.1 | 28.4 | 28.9 | 32.5 | 18.3 | 18.6 | 16.4 | 20.6 | 15.8 | 2.51 |
| (WY) | 1979 | 1996 | 1979 | 1985 | 1977 | 1977 | 1991 | 1971 | 1978 | 1974 | 1995 | 1984 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1970 - 1999

|                          |        |        |                             |
|--------------------------|--------|--------|-----------------------------|
| ANNUAL TOTAL             | 173710 | 37911  |                             |
| ANNUAL MEAN              | 476    | 104    | 145                         |
| HIGHEST ANNUAL MEAN      |        |        | 621 1983                    |
| LOWEST ANNUAL MEAN       |        |        | 31.5 1977                   |
| HIGHEST DAILY MEAN       | 9770   | Feb 3  | 2260 Feb 9 9770 Feb 3 1998  |
| LOWEST DAILY MEAN        | 19     | Oct 17 | 19 Oct 17 .63 Oct 7 1984    |
| ANNUAL SEVEN-DAY MINIMUM | 24     | Oct 16 | 23 Sep 18 .66 Oct 4 1984    |
| INSTANTANEOUS PEAK FLOW  |        |        | 4570 Feb 9 17900 Feb 3 1998 |
| INSTANTANEOUS PEAK STAGE |        |        | 7.98 Feb 9 14.83 Feb 3 1998 |
| ANNUAL RUNOFF (AC-FT)    | 344600 | 75200  | 105400                      |
| 10 PERCENT EXCEEDS       | 1300   | 187    | 195                         |
| 50 PERCENT EXCEEDS       | 80     | 55     | 43                          |
| 90 PERCENT EXCEEDS       | 33     | 32     | 17                          |

## 11180500 DRY CREEK AT UNION CITY, CA

LOCATION.—Lat 37°36'22", long 122°01'22", in Arroyo de la Alameda Grant, Alameda County, Hydrologic Unit 18050004, on right bank, 900 ft downstream from bridge, on State Highway 238, in Decoto District in Union City, and 1.7 mi upstream from mouth.

DRAINAGE AREA.—9.39 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1916 to September 1919 (published as "near Decoto"), April 1959 to current year.

REVISED RECORDS.—WSP 2129: 1962(M), 1963(P), 1965(P). WDR CA-76-2: Drainage area.

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 85.12 ft above sea level. Prior to Apr. 1, 1959, at site 1.4 mi downstream at different datum.

REMARKS.—Records fair. No regulation or diversion upstream from station. See schematic diagram of Alameda Creek Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,680 ft<sup>3</sup>/s, Jan. 9, 1995, gage height, 5.32 ft, from rating curve extended above 600 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 90 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Jan. 19 | 2300 | 95                                | 2.61                | Feb. 17 | 0230 | 163                               | 2.91                |
| Feb. 7  | 1145 | 451                               | 3.69                |         |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN    | FEB   | MAR   | APR   | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|------|------|------|--------|-------|-------|-------|-------|-------|------|------|------|
| 1     | .00  | .00  | .64  | .01    | 3.7   | 7.4   | 4.2   | 1.5   | .93   | .00  | .00  | .00  |
| 2     | .00  | .00  | .18  | .02    | 2.8   | 6.8   | 3.6   | 1.6   | .94   | .00  | .00  | .00  |
| 3     | .00  | .00  | .44  | .01    | 2.5   | 9.8   | 3.2   | 1.9   | 1.3   | .00  | .00  | .00  |
| 4     | .00  | .00  | .28  | .00    | 2.1   | 6.6   | 3.0   | 1.6   | 1.2   | .00  | .00  | .00  |
| 5     | .00  | .00  | .26  | .00    | 1.8   | 5.7   | 5.7   | 1.4   | 1.0   | .00  | .00  | .00  |
| 6     | .00  | .00  | .30  | .01    | 3.5   | 5.3   | 5.7   | 1.3   | .98   | .00  | .00  | .00  |
| 7     | .00  | .00  | .14  | .01    | 103   | 4.8   | 4.1   | 1.3   | .96   | .00  | .00  | .00  |
| 8     | .00  | .00  | .06  | .00    | 36    | 4.5   | 13    | 1.2   | .91   | .00  | .00  | .00  |
| 9     | .00  | .00  | .04  | .00    | 93    | 12    | 7.2   | 1.2   | .88   | .00  | .00  | .00  |
| 10    | .00  | .00  | .03  | .01    | 24    | 6.9   | 6.2   | 1.1   | .86   | .00  | .00  | .00  |
| 11    | .00  | .00  | .03  | .01    | 13    | 5.9   | 12    | 1.1   | .80   | .00  | .00  | .00  |
| 12    | .00  | .00  | .03  | .00    | 8.7   | 5.0   | 8.0   | 1.1   | .78   | .00  | .00  | .00  |
| 13    | .00  | .00  | .11  | .00    | 6.5   | 4.6   | 6.4   | 1.1   | .80   | .00  | .00  | .00  |
| 14    | .00  | .00  | .10  | .00    | 6.2   | 6.9   | 5.6   | 1.0   | .82   | .00  | .00  | .00  |
| 15    | .00  | .00  | .06  | .10    | 4.7   | 16    | 4.8   | .99   | .87   | .00  | .00  | .00  |
| 16    | .00  | .00  | .04  | .30    | 13    | 8.0   | 4.3   | 1.0   | .87   | .00  | .00  | .00  |
| 17    | .00  | .00  | .04  | .18    | 61    | 6.7   | 3.7   | .98   | .82   | .00  | .00  | .00  |
| 18    | .00  | .00  | .03  | 1.7    | 32    | 5.9   | 3.3   | .96   | .80   | .00  | .00  | .00  |
| 19    | .00  | .00  | .03  | 11     | 22    | 6.8   | 3.0   | .94   | .78   | .00  | .00  | .00  |
| 20    | .00  | .00  | .02  | 25     | 28    | 6.6   | 2.8   | .94   | .75   | .00  | .00  | .00  |
| 21    | .00  | .00  | .02  | 7.8    | 39    | 5.7   | 2.7   | .94   | .72   | .00  | .00  | .00  |
| 22    | .00  | .00  | .03  | 4.1    | 22    | 5.3   | 2.5   | .89   | .68   | .00  | .00  | .00  |
| 23    | .00  | .01  | .03  | 16     | 16    | 6.6   | 2.1   | .86   | .62   | .00  | .00  | .00  |
| 24    | .10  | .00  | .03  | 7.7    | 13    | 5.3   | 2.0   | .83   | .57   | .00  | .00  | .00  |
| 25    | .00  | .00  | .02  | 4.5    | 19    | 8.5   | 1.9   | .85   | .56   | .00  | .00  | .00  |
| 26    | .00  | .00  | .03  | 8.2    | 13    | 5.7   | 1.9   | .83   | .48   | .00  | .00  | .00  |
| 27    | .00  | .07  | .02  | 5.3    | 10    | 4.8   | 1.8   | .83   | .42   | .00  | .00  | .00  |
| 28    | .00  | .14  | .02  | 3.4    | 8.5   | 4.3   | 1.7   | .87   | .24   | .00  | .00  | .00  |
| 29    | .00  | .06  | .02  | 2.7    | ---   | 4.0   | 1.7   | .94   | .00   | .00  | .00  | .00  |
| 30    | .00  | .57  | .02  | 2.3    | ---   | 4.0   | 1.6   | .94   | .00   | .00  | .00  | .00  |
| 31    | .00  | ---  | .02  | 8.4    | ---   | 6.6   | ---   | .93   | ---   | .00  | .00  | ---  |
| TOTAL | 0.10 | 0.85 | 3.12 | 108.76 | 608.0 | 203.0 | 129.7 | 33.92 | 22.34 | 0.00 | 0.00 | 0.00 |
| MEAN  | .003 | .028 | .10  | 3.51   | 21.7  | 6.55  | 4.32  | 1.09  | .74   | .000 | .000 | .000 |
| MAX   | .10  | .57  | .64  | 25     | 103   | 16    | 13    | 1.9   | 1.3   | .00  | .00  | .00  |
| MIN   | .00  | .00  | .02  | .00    | 1.8   | 4.0   | 1.6   | .83   | .00   | .00  | .00  | .00  |
| AC-FT | .2   | 1.7  | 6.2  | 216    | 1210  | 403   | 257   | 67    | 44    | .00  | .00  | .00  |

## 11180500 DRY CREEK AT UNION CITY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .15  | .57  | 2.39 | 8.61 | 10.2 | 6.74 | 3.02 | .65  | .18  | .037 | .013 | .004 |
| MAX  | 6.31 | 11.3 | 21.0 | 33.8 | 70.1 | 58.2 | 20.1 | 6.45 | 2.87 | .82  | .51  | .10  |
| (WY) | 1963 | 1984 | 1974 | 1997 | 1998 | 1983 | 1982 | 1983 | 1983 | 1983 | 1983 | 1983 |
| MIN  | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1917 | 1917 | 1918 | 1918 | 1918 | 1972 | 1917 | 1917 | 1917 | 1917 | 1917 | 1917 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |       | WATER YEARS 1917 - 1999 |            |
|--------------------------|------------------------|--------|---------------------|-------|-------------------------|------------|
| ANNUAL TOTAL             | 3979.10                |        | 1109.79             |       |                         |            |
| ANNUAL MEAN              | 10.9                   |        | 3.04                |       | 2.68                    |            |
| HIGHEST ANNUAL MEAN      |                        |        |                     |       | 13.0                    |            |
| LOWEST ANNUAL MEAN       |                        |        |                     |       | .002                    |            |
| HIGHEST DAILY MEAN       | 453                    | Feb 3  | 103                 | Feb 7 | 453                     | Feb 3 1998 |
| LOWEST DAILY MEAN        | .00                    | Jul 8  | .00                 | Oct 1 | .00                     | Oct 1 1916 |
| ANNUAL SEVEN-DAY MINIMUM | .00                    | Aug 12 | .00                 | Oct 1 | .00                     | Oct 1 1916 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 451                 | Feb 7 | 1680                    | Jan 9 1995 |
| INSTANTANEOUS PEAK STAGE |                        |        | 3.69                | Feb 7 | 5.32                    | Jan 9 1995 |
| ANNUAL RUNOFF (AC-FT)    | 7890                   |        | 2200                |       | 1940                    |            |
| 10 PERCENT EXCEEDS       | 27                     |        | 7.0                 |       | 4.8                     |            |
| 50 PERCENT EXCEEDS       | .34                    |        | .04                 |       | .00                     |            |
| 90 PERCENT EXCEEDS       | .00                    |        | .00                 |       | .00                     |            |

## 11180700 PATTERSON CREEK AT UNION CITY, CA

LOCATION.—Lat 37°35'09", long 122°02'50", in Potrero de los Cerritos Grant, Alameda County, Hydrologic Unit 18050004, on right bank, 0.1 mi downstream from effluence from Alameda Creek, 0.2 mi upstream from bridge on Interstate 880 (Nimitz Freeway), and 2.0 mi southwest of Decoto District in Union City.

PERIOD OF RECORD.—October 1958 to current year.

GAGE.—Water-stage recorder. Datum of gage is 4.13 ft above sea level. Prior to Oct. 26, 1966, at site 0.2 mi downstream at same datum.

REMARKS.—Records poor. This stream is a tributary of Alameda Creek. Diversion by Alameda County Water District to percolation ponds between station 11179000 and this station; additional percolation to ground water by placing check dams in channel. See schematic diagram of Alameda Creek Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 25,800 ft<sup>3</sup>/s, Feb. 3, 1998, gage height, 20.43 ft; no flow at times in each year.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN    | FEB     | MAR  | APR  | MAY   | JUN   | JUL   | AUG  | SEP  |
|-------|-------|-------|-------|--------|---------|------|------|-------|-------|-------|------|------|
| 1     | .00   | 2.0   | 320   | 2.2    | 104     | 53   | e12  | e15   | e5.8  | e2.3  | e.00 | e.00 |
| 2     | .00   | 2.0   | 66    | 2.3    | 9.6     | 73   | e13  | e16   | e5.5  | e2.2  | e.00 | e.00 |
| 3     | .00   | 1.9   | 89    | 2.4    | 8.9     | 98   | e13  | e17   | e5.3  | e2.1  | e.00 | e.00 |
| 4     | .00   | 2.0   | 68    | 2.4    | 6.9     | 46   | e14  | e14   | e5.2  | e2.0  | e.00 | e.00 |
| 5     | .00   | 2.1   | 6.3   | 2.5    | 4.8     | 48   | e61  | e12   | e4.9  | e2.0  | e.00 | e.00 |
| 6     | .00   | 34    | 131   | 2.5    | 15      | 50   | e24  | e10   | e4.7  | e2.0  | e.00 | e.00 |
| 7     | .00   | e86   | 42    | 2.5    | 2000    | 43   | e18  | e8.9  | e4.6  | e1.9  | e.00 | e.00 |
| 8     | .00   | e30   | 2.9   | 2.2    | 729     | 144  | e105 | e9.4  | e4.4  | e1.9  | e.00 | e.00 |
| 9     | .00   | 4.0   | 2.0   | 2.0    | 2910    | 333  | e39  | e9.0  | e4.3  | e1.8  | e.00 | e.00 |
| 10    | .00   | 11    | 1.8   | 2.0    | 790     | 128  | e18  | e9.0  | e4.1  | e1.8  | e.00 | e.00 |
| 11    | .00   | 38    | 1.7   | 2.0    | 253     | 60   | e60  | e9.0  | e4.0  | e1.7  | e.00 | e.00 |
| 12    | .00   | 23    | 1.7   | 2.0    | 128     | 25   | e39  | e10   | e3.9  | e1.7  | e.00 | e.00 |
| 13    | .00   | 2.6   | 5.3   | 3.7    | 30      | 30   | e22  | e11   | e3.8  | e1.7  | e.00 | e.00 |
| 14    | .00   | 2.0   | 3.4   | e2.6   | 23      | e20  | e30  | e9.2  | e3.7  | e1.6  | e.00 | e.00 |
| 15    | .00   | 1.9   | 1.7   | e3.6   | 88      | e90  | e37  | e9.8  | e3.5  | e1.6  | e.00 | e.00 |
| 16    | .00   | 1.9   | 1.5   | e6.1   | 126     | e54  | e36  | e11   | e3.4  | e1.6  | e.00 | e.00 |
| 17    | .00   | 2.1   | 1.5   | e4.7   | 622     | e34  | e34  | e9.5  | e3.4  | e1.5  | e.00 | e.00 |
| 18    | .00   | 1.6   | 1.5   | e3.3   | 295     | e19  | e28  | e8.9  | e3.3  | e1.4  | e.00 | e.00 |
| 19    | .00   | 1.5   | 1.5   | e200   | 251     | e20  | e26  | e8.4  | e4.0  | e1.3  | e.00 | e.00 |
| 20    | .00   | 1.6   | 1.5   | e1200  | 214     | e52  | e22  | e8.4  | e4.0  | e1.2  | e.00 | e.00 |
| 21    | .00   | 2.2   | 1.5   | 262    | 992     | e20  | e20  | e7.8  | e3.9  | e1.5  | e.00 | e.00 |
| 22    | .00   | 7.7   | 1.7   | 90     | 365     | e19  | e18  | e7.4  | e3.5  | e1.3  | e.00 | e.00 |
| 23    | .00   | 6.5   | 1.7   | 215    | 138     | e18  | e16  | e7.0  | e3.2  | e1.2  | e.00 | e.00 |
| 24    | e4.4  | 146   | 1.7   | 144    | 57      | e18  | e16  | e6.8  | e3.1  | e1.1  | e.00 | e.00 |
| 25    | e6.9  | 4.4   | 1.8   | 28     | 222     | e60  | e14  | e6.4  | e4.0  | e1.0  | e.00 | e.00 |
| 26    | e6.0  | 2.0   | 2.2   | 106    | 118     | e35  | e14  | e6.2  | e3.4  | e.90  | e.00 | e.00 |
| 27    | e5.1  | 5.8   | 2.5   | 215    | 111     | e15  | e13  | e5.8  | e3.0  | e.70  | e.00 | e.00 |
| 28    | e4.3  | 143   | 2.3   | 15     | 125     | e14  | e13  | e6.0  | e2.8  | e.50  | e.00 | e.00 |
| 29    | 3.6   | 6.4   | 2.2   | 10     | ---     | e13  | e13  | e6.2  | e2.5  | e.30  | e.00 | e.00 |
| 30    | 2.3   | 358   | 2.2   | 7.1    | ---     | e13  | e14  | e6.2  | e2.3  | e.10  | e.00 | e.00 |
| 31    | 2.0   | ---   | 2.2   | 223    | ---     | e58  | ---  | e6.3  | ---   | e.05  | e.00 | ---  |
| TOTAL | 34.60 | 933.2 | 772.3 | 2766.1 | 10736.2 | 1703 | 802  | 287.6 | 117.5 | 43.95 | 0.00 | 0.00 |
| MEAN  | 1.12  | 31.1  | 24.9  | 89.2   | 383     | 54.9 | 26.7 | 9.28  | 3.92  | 1.42  | .000 | .000 |
| MAX   | 6.9   | 358   | 320   | 1200   | 2910    | 333  | 105  | 17    | 5.8   | 2.3   | .00  | .00  |
| MIN   | .00   | 1.5   | 1.5   | 2.0    | 4.8     | 13   | 12   | 5.8   | 2.3   | .05   | .00  | .00  |
| AC-FT | 69    | 1850  | 1530  | 5490   | 21300   | 3380 | 1590 | 570   | 233   | 87    | .00  | .00  |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 6.47 | 42.0 | 90.8 | 279  | 413  | 275  | 116  | 28.8 | 9.69 | 2.04 | .51  | 1.11 |
| MAX  | 53.0 | 404  | 757  | 2073 | 4196 | 3007 | 1091 | 312  | 120  | 27.1 | 8.73 | 19.1 |
| (WY) | 1963 | 1984 | 1997 | 1997 | 1998 | 1983 | 1982 | 1983 | 1973 | 1995 | 1970 | 1983 |
| MIN  | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1959 | 1959 | 1959 | 1959 | 1961 | 1960 | 1959 | 1959 | 1959 | 1959 | 1959 | 1959 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR | FOR 1999 WATER YEAR | WATER YEARS 1959 - 1999 |
|--------------------------|------------------------|---------------------|-------------------------|
| ANNUAL TOTAL             | 186698.48              | 18196.45            |                         |
| ANNUAL MEAN              | 512                    | 49.9                | 104                     |
| HIGHEST ANNUAL MEAN      |                        |                     | 703                     |
| LOWEST ANNUAL MEAN       |                        |                     | .000                    |
| HIGHEST DAILY MEAN       | 14400                  | 2910                | 14400                   |
| LOWEST DAILY MEAN        | .00                    | .00                 | .00                     |
| ANNUAL SEVEN-DAY MINIMUM | .00                    | .00                 | .00                     |
| INSTANTANEOUS PEAK FLOW  |                        | 7420                | 25800                   |
| INSTANTANEOUS PEAK STAGE |                        | 14.23               | 20.43                   |
| ANNUAL RUNOFF (AC-FT)    | 370300                 | 36090               | 75120                   |
| 10 PERCENT EXCEEDS       | 1400                   | 100                 | 150                     |
| 50 PERCENT EXCEEDS       | 25                     | 3.6                 | .02                     |
| 90 PERCENT EXCEEDS       | .00                    | .00                 | .00                     |

e Estimated.

## 11180810 PALOMARES CREEK NEAR HAYWARD, CA

LOCATION.—Lat 37°41'40", long 122°01'26", in San Lorenzo Grant, Alameda County, Hydrologic Unit 18050004, on left bank, at Palomares School, 0.1 mi upstream of confluence with San Lorenzo Creek, and 3.6 mi northeast of Hayward.

DRAINAGE AREA.—9.08 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1997 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 310 ft above sea level, from topographic map.

REMARKS.—Records fair including estimated daily discharges. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,940 ft<sup>3</sup>/s, Feb. 3, 1998, gage height 10.67 ft, from rating curve extended above 300 ft<sup>3</sup>/s. Minimum daily, 0.01 ft<sup>3</sup>/s, Sept. 4, 7, 1999.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 250 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 7 | 1130 | 605                               | 5.69                |      |      |                                   |                     |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN    | FEB   | MAR   | APR   | MAY  | JUN   | JUL   | AUG  | SEP  |
|-------|------|-------|-------|--------|-------|-------|-------|------|-------|-------|------|------|
| 1     | .38  | e.18  | .65   | .78    | 4.3   | 11    | 5.4   | 2.9  | 1.3   | .48   | .28  | .16  |
| 2     | .28  | e.21  | .53   | .78    | 3.8   | 10    | 5.0   | 2.9  | 1.4   | .46   | .24  | .05  |
| 3     | .24  | e.19  | .87   | .74    | 3.5   | 12    | 4.7   | 3.0  | 1.3   | .52   | .21  | .06  |
| 4     | .21  | e.18  | .56   | .74    | 3.2   | 9.3   | 4.4   | 2.7  | 1.2   | .53   | .25  | .01  |
| 5     | .16  | e.22  | .97   | .76    | 2.8   | 8.6   | 7.4   | 2.5  | 1.1   | .50   | .31  | .03  |
| 6     | .17  | e1.0  | .74   | .73    | 6.8   | 8.1   | 6.4   | 2.4  | 1.1   | .48   | .35  | .03  |
| 7     | .19  | e1.6  | .57   | .71    | 134   | 7.5   | 5.3   | 2.3  | 1.0   | .49   | .28  | .01  |
| 8     | .19  | e1.0  | .57   | .69    | 23    | 7.2   | 12    | 2.2  | 1.1   | .45   | .23  | .02  |
| 9     | .17  | e.55  | .54   | .68    | 85    | 12    | 9.2   | 2.1  | 1.0   | .41   | .25  | .12  |
| 10    | .20  | e.50  | .61   | .69    | 26    | 8.2   | 8.0   | 2.1  | .94   | .34   | .29  | .14  |
| 11    | .18  | e.48  | .61   | .64    | 15    | 7.5   | 12    | 2.0  | .98   | .32   | .30  | .12  |
| 12    | .17  | e.46  | .62   | .70    | 11    | 7.0   | 9.6   | 2.0  | .89   | .27   | .27  | .20  |
| 13    | .19  | e.42  | 1.0   | .64    | 9.2   | 6.8   | 8.7   | 2.0  | .88   | 1.2   | .24  | .29  |
| 14    | .19  | e.38  | .76   | .64    | 7.9   | 7.8   | 8.2   | 1.9  | .89   | .30   | .22  | .31  |
| 15    | .19  | e.35  | .72   | .79    | 6.5   | 9.7   | 7.7   | 1.8  | .91   | .27   | .19  | .19  |
| 16    | .17  | e.32  | .70   | e2.3   | 11    | 7.6   | 7.0   | 1.8  | .88   | .26   | .20  | .07  |
| 17    | .14  | e.33  | .72   | e1.1   | 36    | 7.1   | 6.4   | 1.7  | .81   | .27   | .20  | .10  |
| 18    | .16  | e.40  | .72   | e5.0   | 23    | 6.7   | 5.8   | 1.7  | .75   | .25   | .24  | .17  |
| 19    | .15  | e.30  | .72   | e18    | 18    | 7.2   | 5.5   | 1.7  | .77   | .26   | .21  | .19  |
| 20    | .15  | e.23  | .76   | e19    | 26    | 6.8   | 5.2   | 1.7  | .76   | .25   | .18  | .14  |
| 21    | .16  | e.18  | .73   | e7.2   | 42    | 6.4   | 5.0   | 1.7  | .77   | .24   | .13  | .17  |
| 22    | .18  | .29   | .77   | e3.0   | 27    | 6.1   | 4.7   | 1.5  | .70   | .19   | .11  | .16  |
| 23    | .21  | .87   | .76   | e18    | 21    | 6.4   | 4.3   | 1.5  | .63   | .41   | .07  | .27  |
| 24    | .49  | .17   | .74   | 6.2    | 18    | 6.7   | 4.0   | 1.5  | .68   | .45   | .10  | .35  |
| 25    | .21  | .16   | .76   | 4.4    | 22    | 9.1   | 3.8   | 1.5  | .68   | .42   | .08  | .32  |
| 26    | .20  | .16   | .78   | 8.9    | 16    | 7.3   | 3.6   | 1.5  | .64   | .40   | .08  | .16  |
| 27    | e.21 | .42   | .73   | 6.1    | 14    | 6.8   | 3.5   | 1.5  | .62   | .37   | .07  | .14  |
| 28    | e.20 | .62   | .74   | 4.6    | 12    | 6.3   | 3.3   | 1.5  | .55   | .28   | .06  | .13  |
| 29    | e.19 | .82   | .76   | 3.9    | ---   | 6.0   | 3.1   | 1.6  | .51   | .26   | .09  | .30  |
| 30    | e.19 | 1.9   | .79   | 3.5    | ---   | 5.8   | 3.0   | 1.4  | .51   | .27   | .12  | .35  |
| 31    | e.17 | ---   | .79   | 9.4    | ---   | 6.4   | ---   | 1.3  | ---   | .28   | .15  | ---  |
| TOTAL | 6.29 | 14.89 | 22.29 | 131.31 | 628.0 | 241.4 | 182.2 | 59.9 | 26.25 | 11.88 | 6.00 | 4.76 |
| MEAN  | .20  | .50   | .72   | 4.24   | 22.4  | 7.79  | 6.07  | 1.93 | .88   | .38   | .19  | .16  |
| MAX   | .49  | 1.9   | 1.0   | 19     | 134   | 12    | 12    | 3.0  | 1.4   | 1.2   | .35  | .35  |
| MIN   | .14  | .16   | .53   | .64    | 2.8   | 5.8   | 3.0   | 1.3  | .51   | .19   | .06  | .01  |
| AC-FT | 12   | 30    | 44    | 260    | 1250  | 479   | 361   | 119  | 52    | 24    | 12   | 9.4  |

e Estimated.

## SAN LORENZO CREEK BASIN

## 11180810 PALOMARES CREEK NEAR HAYWARD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .14  | .53  | .95  | 17.5 | 47.3 | 10.2 | 8.06 | 2.55 | 1.29 | .57  | .28  | .22  |
| MAX  | .20  | .57  | 1.18 | 30.8 | 72.1 | 12.6 | 10.0 | 3.16 | 1.70 | .76  | .37  | .27  |
| (WY) | 1999 | 1998 | 1998 | 1998 | 1998 | 1998 | 1998 | 1998 | 1998 | 1998 | 1998 | 1998 |
| MIN  | .082 | .50  | .72  | 4.24 | 22.4 | 7.79 | 6.07 | 1.93 | .88  | .38  | .19  | .16  |
| (WY) | 1998 | 1999 | 1999 | 1999 | 1999 | 1999 | 1999 | 1999 | 1999 | 1999 | 1999 | 1999 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |       | WATER YEARS 1998 - 1999 |            |
|--------------------------|------------------------|--------|---------------------|-------|-------------------------|------------|
| ANNUAL TOTAL             | 3903.29                |        | 1335.17             |       |                         |            |
| ANNUAL MEAN              | 10.7                   |        | 3.66                |       | 7.19                    |            |
| HIGHEST ANNUAL MEAN      |                        |        |                     |       | 10.7                    |            |
| LOWEST ANNUAL MEAN       |                        |        |                     |       | 3.66                    |            |
| HIGHEST DAILY MEAN       | 410                    | Feb 3  | 134                 | Feb 7 | 410                     | Feb 3 1998 |
| LOWEST DAILY MEAN        | .14                    | Oct 17 | .01                 | Sep 4 | .01                     | Sep 4 1999 |
| ANNUAL SEVEN-DAY MINIMUM | .16                    | Oct 16 | .03                 | Sep 2 | .03                     | Sep 2 1999 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 605                 |       | 1940                    |            |
| INSTANTANEOUS PEAK STAGE |                        |        | 5.69                |       | 10.67                   |            |
| ANNUAL RUNOFF (AC-FT)    | 7740                   |        | 2650                |       | 5210                    |            |
| 10 PERCENT EXCEEDS       | 25                     |        | 8.8                 |       | 16                      |            |
| 50 PERCENT EXCEEDS       | 1.1                    |        | .74                 |       | .80                     |            |
| 90 PERCENT EXCEEDS       | .21                    |        | .16                 |       | .16                     |            |

## 11180825 SAN LORENZO CREEK ABOVE DON CASTRO RESERVOIR, NEAR CASTRO VALLEY, CA

LOCATION.—Lat 37°41'43", long 122°02'38", in San Lorenzo Grant, Alameda County, Hydrologic Unit 18050004, on right bank, at Interstate Highway 580, 0.3 mi southeast of Independent School, and 2.2 mi east of Castro Valley.

DRAINAGE AREA.—18.0 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1980 to September 1994, October 1997 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 260 ft above sea level, from topographic map. October 1980 to September 1994 at site 250 ft downstream at same datum.

REMARKS.—Records good except for estimated daily discharges, which are fair. Some regulation of low flow by ponds upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,890 ft<sup>3</sup>/s, Feb. 3, 1998, gage height, 15.48 ft; no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 275 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Feb. 7 | 1145 | 1,260                             | 8.88                | Feb. 17 | 0145 | 405                               | 5.62                |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC  | JAN   | FEB    | MAR  | APR   | MAY   | JUN  | JUL   | AUG   | SEP   |
|-------|-------|-------|------|-------|--------|------|-------|-------|------|-------|-------|-------|
| 1     | .86   | 1.1   | e10  | 1.6   | 6.5    | 21   | 9.1   | 5.9   | 2.9  | 1.3   | .79   | e.37  |
| 2     | .81   | 1.1   | e1.4 | 1.5   | 5.8    | 20   | 8.6   | 6.9   | 2.9  | 1.2   | .73   | e.39  |
| 3     | .71   | 1.0   | e5.0 | 1.5   | 5.4    | 24   | 8.1   | 8.0   | 3.0  | 1.2   | .72   | e.40  |
| 4     | .69   | 1.1   | e1.7 | 1.4   | 5.1    | 19   | 7.3   | 5.9   | 3.0  | 1.2   | .73   | e.34  |
| 5     | .64   | 1.1   | e2.6 | 1.4   | 4.5    | 16   | 21    | 5.6   | 3.0  | 1.2   | .82   | e.33  |
| 6     | .64   | 1.9   | e5.4 | 1.4   | 12     | 15   | 12    | 5.2   | 2.7  | 1.2   | 1.2   | e.32  |
| 7     | .63   | 3.6   | e1.8 | 1.3   | 312    | 14   | 8.9   | 5.6   | 2.6  | 1.2   | .75   | e.39  |
| 8     | .63   | 2.4   | e1.5 | 1.3   | 76     | 15   | 39    | 4.9   | 2.7  | 1.1   | .67   | e.43  |
| 9     | .64   | .98   | e1.4 | 1.3   | 265    | 34   | 16    | 4.7   | 2.8  | 1.1   | .70   | e.60  |
| 10    | .66   | .96   | e1.2 | 1.3   | 64     | 17   | 14    | 4.5   | 2.6  | 1.0   | .74   | e.47  |
| 11    | .68   | e.92  | e1.1 | 1.3   | 37     | 15   | 26    | 4.2   | 2.3  | 1.0   | .74   | .44   |
| 12    | .66   | e.74  | e1.9 | 1.2   | 27     | 14   | 15    | 4.4   | 2.5  | .96   | .72   | .44   |
| 13    | .68   | e.70  | e3.4 | 1.2   | 24     | 13   | 13    | 4.1   | 2.7  | 1.5   | .66   | .46   |
| 14    | .70   | e.61  | e2.8 | 1.3   | 22     | 17   | 12    | 3.8   | 2.6  | .98   | .63   | .48   |
| 15    | .69   | e.58  | e2.5 | 3.7   | 20     | 20   | 12    | 3.6   | 2.7  | .97   | .61   | .47   |
| 16    | .66   | e.56  | e2.3 | 4.2   | 37     | 15   | 11    | 3.5   | 2.8  | .97   | .59   | .46   |
| 17    | .64   | e.63  | e2.1 | 1.5   | 119    | 13   | 11    | 4.2   | 2.7  | .97   | .60   | .52   |
| 18    | .67   | e.54  | 2.3  | 12    | 56     | 12   | 10    | 3.8   | 2.6  | .93   | .63   | .47   |
| 19    | .68   | e.49  | 2.3  | 30    | 40     | 13   | 9.4   | 3.6   | 2.5  | .87   | .66   | .47   |
| 20    | .66   | e.54  | 2.4  | 36    | 72     | 13   | 9.1   | 3.7   | 2.4  | .86   | .61   | .49   |
| 21    | .61   | .92   | 2.0  | 7.1   | 102    | 12   | 9.0   | 3.1   | 2.6  | .84   | .57   | .54   |
| 22    | .53   | 1.7   | 2.1  | 5.4   | 49     | 12   | 8.0   | 2.8   | 2.6  | .83   | .53   | 1.4   |
| 23    | .56   | 5.3   | 2.2  | 21    | 40     | 13   | 7.1   | 2.9   | 2.2  | .84   | .50   | .43   |
| 24    | 4.8   | 1.4   | 2.1  | 8.4   | 31     | 16   | 7.0   | 2.7   | 2.5  | .88   | .53   | .39   |
| 25    | 1.0   | 1.1   | 2.2  | 6.4   | 45     | 23   | 6.8   | 2.4   | 2.4  | .85   | .51   | .38   |
| 26    | .89   | e1.0  | 2.2  | 13    | 28     | 16   | 6.9   | 2.3   | 2.2  | .82   | .46   | .33   |
| 27    | .96   | e.98  | 2.1  | 8.0   | 24     | 15   | 7.2   | 2.3   | 2.1  | .84   | e.40  | .34   |
| 28    | 1.1   | e2.0  | 1.7  | 6.4   | 23     | 14   | 6.8   | 2.4   | 1.7  | .83   | e.39  | .31   |
| 29    | 1.1   | e6.1  | 1.7  | 5.7   | ---    | 13   | 7.4   | 2.3   | 1.3  | .82   | e.40  | .33   |
| 30    | 1.1   | e29   | 1.7  | 5.3   | ---    | 14   | 7.3   | 2.3   | 1.3  | .75   | e.42  | .37   |
| 31    | 1.1   | ---   | 1.9  | 15    | ---    | 14   | ---   | 2.6   | ---  | .78   | e.40  | ---   |
| TOTAL | 27.38 | 71.05 | 77.0 | 208.1 | 1552.3 | 502  | 346.0 | 124.2 | 74.9 | 30.79 | 19.41 | 13.56 |
| MEAN  | .88   | 2.37  | 2.48 | 6.71  | 55.4   | 16.2 | 11.5  | 4.01  | 2.50 | .99   | .63   | .45   |
| MAX   | 4.8   | 29    | 10   | 36    | 312    | 34   | 39    | 8.0   | 3.0  | 1.5   | 1.2   | 1.4   |
| MIN   | .53   | .49   | 1.1  | 1.2   | 4.5    | 12   | 6.8   | 2.3   | 1.3  | .75   | .39   | .31   |
| AC-FT | 54    | 141   | 153  | 413   | 3080   | 996  | 686   | 246   | 149  | 61    | 38    | 27    |

e Estimated.

## SAN LORENZO CREEK BASIN

## 11180825 SAN LORENZO CREEK ABOVE DON CASTRO RESERVOIR, NEAR CASTRO VALLEY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .88  | 3.27 | 6.35 | 17.4 | 34.4 | 17.9 | 7.71 | 3.03 | 1.43 | .54  | .25  | .23  |
| MAX  | 2.20 | 16.6 | 30.1 | 79.3 | 194  | 90.7 | 42.3 | 13.0 | 4.44 | 2.05 | .78  | .53  |
| (WY) | 1992 | 1984 | 1984 | 1993 | 1998 | 1983 | 1982 | 1983 | 1998 | 1983 | 1998 | 1986 |
| MIN  | .072 | .12  | .65  | .16  | .65  | .47  | .70  | .19  | .14  | .023 | .001 | .000 |
| (WY) | 1989 | 1993 | 1990 | 1991 | 1989 | 1990 | 1990 | 1991 | 1990 | 1989 | 1988 | 1988 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1981 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 9368.09                |        | 3046.69             |        |                         |             |
| ANNUAL MEAN              | 25.7                   |        | 8.35                |        | 7.63                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 25.8                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | .70                     |             |
| HIGHEST DAILY MEAN       | 1270                   | Feb 3  | 312                 | Feb 7  | 1270                    | Feb 3 1998  |
| LOWEST DAILY MEAN        | .43                    | Sep 23 | .31                 | Sep 28 | .00                     | Aug 28 1981 |
| ANNUAL SEVEN-DAY MINIMUM | .45                    | Sep 18 | .35                 | Sep 24 | .00                     | Sep 6 1981  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 1260                |        | 3890                    |             |
| INSTANTANEOUS PEAK STAGE |                        |        | 8.88                |        | 15.48                   |             |
| ANNUAL RUNOFF (AC-FT)    | 18580                  |        | 6040                |        | 5520                    |             |
| 10 PERCENT EXCEEDS       | 47                     |        | 18                  |        | 14                      |             |
| 50 PERCENT EXCEEDS       | 2.9                    |        | 2.1                 |        | .77                     |             |
| 90 PERCENT EXCEEDS       | .59                    |        | .53                 |        | .04                     |             |



11180825 SAN LORENZO CREEK ABOVE DON CASTRO RESERVOIR, NEAR CASTRO VALLEY, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—December 1980 to September 1994, October 1997 to current year, (storm season only).

WATER TEMPERATURE: December 1980 to September 1994, October 1997 to current year.

SEDIMENT DATA: December 1980 to September 1994, October 1997 to current year.

PERIOD OF DAILY RECORD.—December 1980 to September 1994, October 1997 to current year.

WATER TEMPERATURE: December 1980 to September 1994, October 1997 to current year.

SUSPENDED-SEDIMENT DISCHARGE: December 1980 to September 1994, October 1997 to current year.

REMARKS.—Sediment samples were collected on most days where water temperature is published. Zero bed-load discharge observed for flows less than 11.4 ft<sup>3</sup>/s.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SEDIMENT CONCENTRATION (storm season only): Maximum daily mean, 15,300 mg/L, Feb. 3, 1998; minimum daily mean, 0 mg/L, Feb. 26, 1989.

SEDIMENT LOAD (storm season only): Maximum daily, 80,900 tons, Feb. 3, 1998; minimum daily, 0 ton several days in most years.

EXTREMES FOR CURRENT YEAR.—

SEDIMENT CONCENTRATION (storm season only): Maximum daily mean, 6,080 mg/L, Feb. 7; minimum daily mean, 12 mg/L, Jan. 17.

SEDIMENT LOAD (storm season only): Maximum daily, 12,000 tons, Feb. 7; minimum daily, 0.02 ton, Nov. 19.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-    | TEMPER- | SEDI-   | SEDI-   | SED.    | SED.    |
|-------|------|---------|---------|---------|---------|---------|---------|
|       |      | CHARGE, |         |         |         |         |         |
|       |      | INST.   | ATURE   | MENT,   | DIS-    | FALL    | FALL    |
|       |      | CUBIC   | WATER   | SUS-    | CHARGE, | DIAM.   | DIAM.   |
|       |      | PER     | (DEG C) | PENDE   | SUS-    | % FINER | % FINER |
|       |      | SECOND  | (00010) | (MG/L)  | PENDE   | THAN    | THAN    |
|       |      | (00061) |         | (80154) | (T/DAY) | .002 MM | .004 MM |
| OCT   |      |         |         |         |         |         |         |
| 07... | 1220 | .68     | 11.0    | 21      | .04     | --      | --      |
| DEC   |      |         |         |         |         |         |         |
| 05... | 1355 | e2.6    | 7.5     | 44      | .31     | --      | --      |
| JAN   |      |         |         |         |         |         |         |
| 20... | 1435 | 16      | 12.0    | 227     | 9.8     | --      | --      |
| 22... | 1210 | 5.5     | 10.5    | 34      | .50     | --      | --      |
| 31... | 0945 | 22      | 8.5     | 2300    | 137     | 62      | 75      |
| FEB   |      |         |         |         |         |         |         |
| 18... | 1020 | 40      | 10.5    | 182     | 20      | --      | --      |
| 18... | 1440 | 84      | 11.5    | 1310    | 297     | 29      | 37      |
| MAR   |      |         |         |         |         |         |         |
| 25... | 0735 | 24      | 11.0    | 664     | 43      | --      | --      |
| 31... | 1545 | 9.9     | 11.0    | 40      | 1.1     | --      | --      |
| APR   |      |         |         |         |         |         |         |
| 11... | 1515 | 22      | 10.5    | 630     | 37      | --      | --      |
| 23... | 0820 | 7.2     | 12.0    | 17      | .33     | --      | --      |
|       |      | SED.    | SED.    | SED.    | SED.    | SED.    | SED.    |
|       |      | SUSP.   | SUSP.   | SUSP.   | SUSP.   | SUSP.   | SUSP.   |
|       |      | FALL    | FALL    | FALL    | SIEVE   | SIEVE   | SIEVE   |
|       |      | DIAM.   | DIAM.   | DIAM.   | DIAM.   | DIAM.   | DIAM.   |
|       |      | % FINER | % FINER | % FINER | % FINER | % FINER | % FINER |
|       |      | THAN    | THAN    | THAN    | THAN    | THAN    | THAN    |
|       |      | .008 MM | .016 MM | .031 MM | .062 MM | .125 MM | .250 MM |
|       |      | (70339) | (70340) | (70341) | (70331) | (70332) | (70333) |
| OCT   |      |         |         |         |         |         |         |
| 07... | --   | --      | --      | 56      | --      | --      | --      |
| DEC   |      |         |         |         |         |         |         |
| 05... | --   | --      | --      | 60      | --      | --      | --      |
| JAN   |      |         |         |         |         |         |         |
| 20... | --   | --      | --      | 95      | 98      | 100     | --      |
| 22... | --   | --      | --      | 83      | --      | --      | --      |
| 31... | 87   | 94      | 98      | 99      | 99      | 100     | --      |
| FEB   |      |         |         |         |         |         |         |
| 18... | --   | --      | --      | 86      | 91      | 94      | 100     |
| 18... | 48   | 57      | 71      | 82      | 90      | 98      | 100     |
| MAR   |      |         |         |         |         |         |         |
| 25... | --   | --      | --      | 98      | 99      | 100     | --      |
| 31... | --   | --      | --      | 74      | 93      | 99      | 100     |
| APR   |      |         |         |         |         |         |         |
| 11... | --   | --      | --      | 96      | 98      | 100     | --      |
| 23... | --   | --      | --      | 69      | --      | --      | --      |

e Estimated.

11180825 SAN LORENZO CREEK ABOVE DON CASTRO RESERVOIR, NEAR CASTRO VALLEY, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF BEDLOAD, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME   | SAM-<br>PLING<br>METHOD,<br>CODES<br>(82398)                  | SAMPLER<br>TYPE<br>(CODE)<br>(84164)   | BAG<br>MESH<br>SIZE<br>SAMPLER<br>(MM)<br>(30333)                     | TETHER<br>LINE<br>USED IN<br>SAMPLING<br>(YES=1)<br>(CODE)<br>(04117) | START-<br>ING<br>TIME<br>(2400<br>HOURS)<br>(82073)                              | END-<br>ING<br>TIME<br>(2400<br>HOURS)<br>(82074)                        | TIME   | HORI-  | COMPSTD  |
|-------|--|---|--|---|---|--|--|--|--|--|
|       |  |   |  |   |   |  |  | ON BED<br>FOR<br>BED<br>LOAD<br>SAMPLE<br>(SEC)<br>(04120)         | ZONTAL<br>WIDTH<br>OF<br>VER-<br>TICAL<br>(FEET)<br>(04121)        | SAMPLES<br>IN<br>X-SEC<br>BEDLOAD<br>MEASMNT<br>(NUM)<br>(04118)   |
| FEB   |  |   |  |   |   |  |  |  |  |  |
| 18... | 1410   | 1000  | 1120   | .250  | 0   | 1405   | 1415   | 190  | 1.0  | 2  |
| 18... | 1425   | 1000  | 1120   | .250  | 0   | 1420   | 1430   | 190  | 1.0  | 2  |
| DATE  | VER-<br>TICALS<br>IN<br>COM-<br>POSITE<br>SAMPLE<br>(NUM)<br>(04119) | NUMBER<br>OF<br>SAM-<br>PLING<br>POINTS<br>(COUNT)<br>(00063) | SAMPLE<br>LOC-<br>ATION,<br>CROSS<br>SECTION<br>(FT FM<br>L BANK)<br>(00009) | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010)                       | DISCH,<br>BEDLOAD<br>AV UNIT<br>FOR COM<br>POSITE<br>SAMPLE<br>T/D/FT<br>(04122) | SEDI-<br>MENT<br>DIS-<br>CHARGE,<br>BEDLOAD<br>(TONS/<br>DAY)<br>(80225) | SED.   | SED.   |  |
|       |  |   |  |   |   |  |  | BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.250 MM<br>(80228) | BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.500 MM<br>(80229) | BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>1.00 MM<br>(80230) |
| FEB   |  |   |  |   |   |  |  |  |  |  |
| 18... | 19   | 19  | .40  | 87  | 11.5  | .57  | 10   | 1  | 2  |  |
| 18... | 19   | 19  | .40  | 85  | 11.5  | .49  | 10   | 1  | 3  |  |
| FEB   |  |   |  |   |   |  |  |  |  |  |
| 18... | 18   | 56  | 64   | 68  | 71  | 74   | 75   | 75   | 100  |  |
| 18... | 22   | 68  | 81   | 87  | 92  | 97   | 100  | --   | --   |  |

11180825 SAN LORENZO CREEK ABOVE DON CASTRO RESERVOIR, NEAR CASTRO VALLEY, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY INSTANTANEOUS VALUES

| DAY | OCT  | NOV | DEC | JAN  | FEB  | MAR  | APR  | MAY | JUN  | JUL | AUG  | SEP |
|-----|------|-----|-----|------|------|------|------|-----|------|-----|------|-----|
| 1   | ---  | --- | --- | ---  | ---  | ---  | ---  | --- | ---  | --- | ---  | --- |
| 2   | ---  | --- | --- | ---  | ---  | ---  | ---  | --- | ---  | --- | ---  | --- |
| 3   | ---  | --- | --- | 6.0  | 7.0  | 10.5 | 11.0 | --- | ---  | --- | ---  | --- |
| 4   | ---  | --- | --- | ---  | ---  | ---  | ---  | --- | ---  | --- | 15.0 | --- |
| 5   | ---  | --- | 7.5 | ---  | ---  | ---  | ---  | --- | ---  | --- | ---  | --- |
| 6   | ---  | --- | --- | 5.0  | 8.5  | ---  | 11.5 | --- | ---  | --- | ---  | --- |
| 7   | 11.0 | --- | 6.5 | ---  | 11.0 | 7.5  | ---  | --- | ---  | --- | ---  | --- |
| 8   | ---  | --- | --- | ---  | ---  | ---  | ---  | --- | ---  | --- | ---  | --- |
| 9   | ---  | --- | 7.0 | ---  | 10.0 | ---  | ---  | --- | ---  | --- | ---  | --- |
| 10  | ---  | --- | --- | ---  | ---  | 7.0  | ---  | --- | ---  | --- | ---  | --- |
| 11  | ---  | --- | --- | ---  | ---  | 8.5  | 10.5 | --- | ---  | --- | ---  | --- |
| 12  | ---  | --- | 6.5 | ---  | ---  | ---  | ---  | --- | ---  | --- | ---  | --- |
| 13  | ---  | --- | --- | 8.5  | ---  | ---  | ---  | --- | ---  | --- | ---  | --- |
| 14  | ---  | --- | 9.0 | ---  | 10.0 | ---  | ---  | --- | ---  | --- | ---  | --- |
| 15  | ---  | --- | --- | 9.0  | ---  | ---  | ---  | --- | ---  | --- | ---  | --- |
| 16  | ---  | --- | 9.0 | 11.5 | 11.0 | ---  | 13.0 | --- | ---  | --- | ---  | --- |
| 17  | ---  | --- | --- | ---  | 11.0 | 10.5 | 13.0 | --- | ---  | --- | ---  | --- |
| 18  | ---  | --- | --- | 13.0 | 11.5 | ---  | ---  | --- | ---  | --- | ---  | --- |
| 19  | ---  | --- | 7.5 | ---  | ---  | 11.0 | ---  | --- | ---  | --- | ---  | --- |
| 20  | ---  | 8.0 | 6.5 | 12.0 | ---  | ---  | 14.5 | --- | ---  | --- | ---  | --- |
| 21  | ---  | --- | --- | 11.5 | 8.5  | 11.0 | ---  | --- | ---  | --- | ---  | --- |
| 22  | ---  | --- | --- | 10.5 | ---  | ---  | ---  | --- | ---  | --- | ---  | --- |
| 23  | ---  | --- | 2.0 | ---  | ---  | ---  | 12.0 | --- | ---  | --- | ---  | --- |
| 24  | ---  | --- | --- | ---  | ---  | 11.0 | ---  | --- | ---  | --- | ---  | --- |
| 25  | ---  | --- | --- | ---  | 9.5  | 11.0 | ---  | --- | ---  | --- | ---  | --- |
| 26  | ---  | --- | --- | ---  | ---  | ---  | ---  | --- | ---  | --- | ---  | --- |
| 27  | ---  | --- | 4.0 | 6.0  | ---  | ---  | ---  | --- | ---  | --- | ---  | --- |
| 28  | ---  | --- | --- | ---  | 11.0 | ---  | ---  | --- | 18.5 | --- | ---  | --- |
| 29  | ---  | --- | 5.5 | 6.0  | ---  | ---  | ---  | --- | ---  | --- | ---  | --- |
| 30  | ---  | --- | --- | ---  | ---  | ---  | ---  | --- | ---  | --- | ---  | --- |
| 31  | ---  | --- | 8.0 | 8.5  | ---  | 11.0 | ---  | --- | ---  | --- | ---  | --- |

## 11180825 SAN LORENZO CREEK ABOVE DON CASTRO RESERVOIR, NEAR CASTRO VALLEY, CA—Continued

## SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY   | MEAN               | MEAN                         | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN               | MEAN                         | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN               | MEAN                         | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|-------|--------------------|------------------------------|-------------------------------------|--------------------|------------------------------|-------------------------------------|--------------------|------------------------------|-------------------------------------|
|       | DISCHARGE<br>(CFS) | CONCEN-<br>TRATION<br>(MG/L) |                                     | DISCHARGE<br>(CFS) | CONCEN-<br>TRATION<br>(MG/L) |                                     | DISCHARGE<br>(CFS) | CONCEN-<br>TRATION<br>(MG/L) |                                     |
|       | OCTOBER            |                              |                                     | NOVEMBER           |                              |                                     | DECEMBER           |                              |                                     |
| 1     | .86                | 21                           | .05                                 | 1.1                | 23                           | .07                                 | e10                | 1400                         | 38                                  |
| 2     | .81                | 21                           | .05                                 | 1.1                | 22                           | .06                                 | e1.4               | 100                          | .38                                 |
| 3     | .71                | 21                           | .04                                 | 1.0                | 21                           | .06                                 | e5.0               | 505                          | 6.82                                |
| 4     | .69                | 21                           | .04                                 | 1.1                | 24                           | .07                                 | e1.7               | 42                           | .19                                 |
| 5     | .64                | 20                           | .04                                 | 1.1                | 31                           | .09                                 | e2.6               | 44                           | .31                                 |
| 6     | .64                | 21                           | .04                                 | 1.9                | 111                          | 1.1                                 | e5.4               | 230                          | 3.4                                 |
| 7     | .63                | 21                           | .04                                 | 3.6                | 262                          | 3.8                                 | e1.8               | 43                           | .21                                 |
| 8     | .63                | 21                           | .04                                 | 2.4                | 169                          | 2.0                                 | e1.5               | 41                           | .17                                 |
| 9     | .64                | 20                           | .04                                 | .98                | 61                           | .17                                 | e1.4               | 40                           | .15                                 |
| 10    | .66                | 20                           | .04                                 | .96                | 66                           | .19                                 | e1.2               | 36                           | .12                                 |
| 11    | .68                | 20                           | .04                                 | e.92               | 53                           | .14                                 | e1.1               | 31                           | .09                                 |
| 12    | .66                | 20                           | .04                                 | e.74               | 33                           | .07                                 | e1.9               | 48                           | .25                                 |
| 13    | .68                | 19                           | .04                                 | e.70               | 30                           | .06                                 | e3.4               | 320                          | 2.9                                 |
| 14    | .70                | 19                           | .04                                 | e.61               | 26                           | .04                                 | e2.8               | 160                          | 1.2                                 |
| 15    | .69                | 19                           | .04                                 | e.58               | 21                           | .03                                 | e2.5               | 72                           | .49                                 |
| 16    | .66                | 19                           | .03                                 | e.56               | 17                           | .03                                 | e2.3               | 56                           | .35                                 |
| 17    | .64                | 18                           | .03                                 | e.63               | 23                           | .04                                 | e2.1               | 38                           | .23                                 |
| 18    | .67                | 18                           | .03                                 | e.54               | 22                           | .03                                 | 2.3                | 33                           | .20                                 |
| 19    | .68                | 18                           | .03                                 | e.49               | 18                           | .02                                 | 2.3                | 26                           | .16                                 |
| 20    | .66                | 17                           | .03                                 | e.54               | 21                           | .03                                 | 2.4                | 42                           | .28                                 |
| 21    | .61                | 17                           | .03                                 | .92                | 47                           | .36                                 | 2.0                | 45                           | .25                                 |
| 22    | .53                | 17                           | .03                                 | 1.7                | 141                          | 1.3                                 | 2.1                | 42                           | .24                                 |
| 23    | .56                | 18                           | .03                                 | 5.3                | 576                          | 22                                  | 2.2                | 39                           | .23                                 |
| 24    | 4.8                | 354                          | 17                                  | 1.4                | 97                           | .42                                 | 2.1                | 34                           | .19                                 |
| 25    | 1.0                | 32                           | .09                                 | 1.1                | 76                           | .22                                 | 2.2                | 29                           | .17                                 |
| 26    | .89                | 27                           | .06                                 | e1.0               | 84                           | .25                                 | 2.2                | 24                           | .14                                 |
| 27    | .96                | 30                           | .08                                 | e.98               | 59                           | .16                                 | 2.1                | 34                           | .19                                 |
| 28    | 1.1                | 33                           | .10                                 | e2.0               | 150                          | .81                                 | 1.7                | 36                           | .16                                 |
| 29    | 1.1                | 30                           | .09                                 | e6.1               | 610                          | 10                                  | 1.7                | 33                           | .15                                 |
| 30    | 1.1                | 27                           | .08                                 | e29                | 4700                         | 368                                 | 1.7                | 33                           | .16                                 |
| 31    | 1.1                | 24                           | .07                                 | ---                | ---                          | ---                                 | 1.9                | 35                           | .18                                 |
| TOTAL | 27.38              | ---                          | 18.43                               | 71.05              | ---                          | 411.62                              | 77.0               | ---                          | 57.96                               |
|       | JANUARY            |                              |                                     | FEBRUARY           |                              |                                     | MARCH              |                              |                                     |
| 1     | 1.6                | 34                           | .15                                 | 6.5                | 101                          | 1.8                                 | 21                 | 87                           | 4.9                                 |
| 2     | 1.5                | 32                           | .14                                 | 5.8                | 52                           | .82                                 | 20                 | 61                           | 3.3                                 |
| 3     | 1.5                | 31                           | .12                                 | 5.4                | 33                           | .48                                 | 24                 | 431                          | 29                                  |
| 4     | 1.4                | 31                           | .12                                 | 5.1                | 30                           | .41                                 | 19                 | 298                          | 15                                  |
| 5     | 1.4                | 30                           | .11                                 | 4.5                | 28                           | .34                                 | 16                 | 229                          | 10                                  |
| 6     | 1.4                | 30                           | .11                                 | 12                 | 128                          | 8.1                                 | 15                 | 172                          | 7.0                                 |
| 7     | 1.3                | 29                           | .10                                 | 312                | 6080                         | 12000                               | 14                 | 127                          | 4.8                                 |
| 8     | 1.3                | 28                           | .10                                 | 76                 | 746                          | 158                                 | 15                 | 140                          | 5.8                                 |
| 9     | 1.3                | 27                           | .09                                 | 265                | 4990                         | 6460                                | 34                 | 365                          | 52                                  |
| 10    | 1.3                | 26                           | .09                                 | 64                 | 710                          | 133                                 | 17                 | 129                          | 5.8                                 |
| 11    | 1.3                | 26                           | .09                                 | 37                 | 338                          | 34                                  | 15                 | 142                          | 5.8                                 |
| 12    | 1.2                | 25                           | .08                                 | 27                 | 206                          | 15                                  | 14                 | 115                          | 4.4                                 |
| 13    | 1.2                | 24                           | .08                                 | 24                 | 174                          | 11                                  | 13                 | 83                           | 3.0                                 |
| 14    | 1.3                | 24                           | .08                                 | 22                 | 125                          | 7.3                                 | 17                 | 120                          | 6.8                                 |
| 15    | 3.7                | 108                          | 5.2                                 | 20                 | 91                           | 4.9                                 | 20                 | 229                          | 13                                  |
| 16    | 4.2                | 69                           | 1.5                                 | 37                 | 343                          | 71                                  | 15                 | 157                          | 6.3                                 |
| 17    | 1.5                | 12                           | .05                                 | 119                | 2070                         | 1330                                | 13                 | 133                          | 4.8                                 |
| 18    | 12                 | 255                          | 15                                  | 56                 | 530                          | 107                                 | 12                 | 109                          | 3.6                                 |
| 19    | 30                 | 985                          | 421                                 | 40                 | 278                          | 30                                  | 13                 | 119                          | 4.5                                 |
| 20    | 36                 | 898                          | 230                                 | 72                 | 1170                         | 509                                 | 13                 | 86                           | 3.0                                 |
| 21    | 7.1                | 79                           | 1.6                                 | 102                | 1620                         | 544                                 | 12                 | 74                           | 2.5                                 |
| 22    | 5.4                | 37                           | .55                                 | 49                 | 619                          | 83                                  | 12                 | 75                           | 2.5                                 |
| 23    | 21                 | 236                          | 16                                  | 40                 | 400                          | 43                                  | 13                 | 86                           | 3.0                                 |
| 24    | 8.4                | 80                           | 1.8                                 | 31                 | 304                          | 26                                  | 16                 | 110                          | 6.3                                 |
| 25    | 6.4                | 53                           | .93                                 | 45                 | 843                          | 112                                 | 23                 | 600                          | 43                                  |
| 26    | 13                 | 74                           | 2.8                                 | 28                 | 284                          | 22                                  | 16                 | 289                          | 12                                  |
| 27    | 8.0                | 31                           | .67                                 | 24                 | 114                          | 7.5                                 | 15                 | 225                          | 8.8                                 |
| 28    | 6.4                | 27                           | .47                                 | 23                 | 70                           | 4.3                                 | 14                 | 167                          | 6.2                                 |
| 29    | 5.7                | 24                           | .37                                 | ---                | ---                          | ---                                 | 13                 | 124                          | 4.5                                 |
| 30    | 5.3                | 22                           | .32                                 | ---                | ---                          | ---                                 | 14                 | 89                           | 3.3                                 |
| 31    | 15                 | 1240                         | 106                                 | ---                | ---                          | ---                                 | 14                 | 42                           | 1.7                                 |
| TOTAL | 208.1              | ---                          | 805.72                              | 1552.3             | ---                          | 21723.95                            | 502                | ---                          | 286.6                               |

e Estimated.

11180825 SAN LORENZO CREEK ABOVE DON CASTRO RESERVOIR, NEAR CASTRO VALLEY, CA—Continued

## SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY    | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|--------|----------------------------|--------------------------------------|-------------------------------------|
| APRIL  |                            |                                      |                                     |
| 1      | 9.1                        | 26                                   | .64                                 |
| 2      | 8.6                        | 26                                   | .60                                 |
| 3      | 8.1                        | 26                                   | .56                                 |
| 4      | 7.3                        | 23                                   | .45                                 |
| 5      | 21                         | 94                                   | 8.9                                 |
| 6      | 12                         | 32                                   | 1.0                                 |
| 7      | 8.9                        | 23                                   | .56                                 |
| 8      | 39                         | 420                                  | 90                                  |
| 9      | 16                         | 157                                  | 6.8                                 |
| 10     | 14                         | 138                                  | 5.3                                 |
| 11     | 26                         | 646                                  | 61                                  |
| 12     | 15                         | 291                                  | 12                                  |
| 13     | 13                         | 127                                  | 4.4                                 |
| 14     | 12                         | 90                                   | 3.0                                 |
| 15     | 12                         | 64                                   | 2.0                                 |
| 16     | 11                         | 48                                   | 1.5                                 |
| 17     | 11                         | 42                                   | 1.3                                 |
| 18     | 10                         | 30                                   | .82                                 |
| 19     | 9.4                        | 24                                   | .61                                 |
| 20     | 9.1                        | 20                                   | .48                                 |
| 21     | 9.0                        | 18                                   | .44                                 |
| 22     | 8.0                        | 18                                   | .38                                 |
| 23     | 7.1                        | 17                                   | .33                                 |
| 24     | 7.0                        | 17                                   | .31                                 |
| 25     | 6.8                        | 16                                   | .30                                 |
| 26     | 6.9                        | 16                                   | .30                                 |
| 27     | 7.2                        | 16                                   | .30                                 |
| 28     | 6.8                        | 15                                   | .28                                 |
| 29     | 7.4                        | 17                                   | .35                                 |
| 30     | 7.3                        | 18                                   | .40                                 |
| 31     | ---                        | ---                                  | ---                                 |
| TOTAL  | 346.0                      | ---                                  | 205.31                              |
| PERIOD | 2783.83                    |                                      | 23509.59                            |

## SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| MONTH         | WATER<br>DISCHARGE<br>CFS-DAYS | SUSPENDED<br>SEDIMENT<br>DISCHARGE<br>TONS | BEDLOAD<br>DISCHARGE<br>TONS | TOTAL<br>SEDIMENT<br>DISCHARGE<br>TONS |
|---------------|--------------------------------|--|------------------------------|--|
| OCTOBER 1998  | 27.38                          | 18.43                                      | 0                            | 18                                     |
| NOVEMBER .... | 71.05                          | 411.62                                     | 0                            | 412                                    |
| DECEMBER .... | 77.00                          | 57.96                                      | 0                            | 58                                     |
| JANUARY 1999  | 208.10                         | 805.72                                     | 8                            | 814                                    |
| FEBRUARY .... | 1552.30                        | 21723.95                                   | 155                          | 21900                                  |
| MARCH .....   | 502.00                         | 286.60                                     | 1                            | 288                                    |
| APRIL .....   | 346.00                         | 205.31                                     | 4                            | 209                                    |
| PERIOD .....  | 2783.83                        | 23509.59                                   | 168                          | 23699                                  |

## 11180900 CROW CREEK NEAR HAYWARD, CA

LOCATION.—Lat 37°42'18", long 122°02'34", in San Lorenzo Grant, Alameda County, Hydrologic Unit 18050004, on right bank, on the upstream side of Crow Canyon Road bridge, 0.4 mi east of Canyon High School, 0.8 mi upstream of confluence of Cull Creek, and 2.3 mi northeast of Castro Valley.

DRAINAGE AREA.—10.51 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1997 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 270 ft above sea level, from topographic map.

REMARKS.—Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,990 ft<sup>3</sup>/s, Feb. 3, 1998, gage height, 13.07, from rating curve extended above 700 ft<sup>3</sup>/s; minimum daily, 0.05 ft<sup>3</sup>/s, Oct. 1, 1997.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 350 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Feb. 7 | 1045 | 783                               | 8.90                | Feb. 17 | 0130 | 386                               | 6.90                |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC  | JAN   | FEB    | MAR   | APR   | MAY  | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|------|-------|--------|-------|-------|------|-------|-------|-------|-------|
| 1     | e. 65 | 1.3   | 3.0  | 1.4   | 4.9    | 19    | 7.9   | 4.7  | 1.8   | .97   | .66   | .44   |
| 2     | e. 51 | 1.3   | 2.0  | 1.4   | 4.3    | 16    | 6.8   | 4.4  | 1.8   | .94   | .65   | .43   |
| 3     | e. 46 | 1.3   | e3.2 | 1.3   | 4.1    | 22    | 7.5   | 4.3  | 1.7   | .92   | .62   | .40   |
| 4     | e. 41 | 1.4   | 2.0  | 1.3   | 3.8    | 14    | 7.0   | 4.4  | 1.7   | .99   | .68   | .42   |
| 5     | e. 37 | 1.4   | 4.2  | 1.3   | 3.4    | 13    | 6.1   | 4.4  | 1.7   | .97   | .73   | .41   |
| 6     | e. 43 | 1.6   | 2.9  | 1.4   | 28     | 12    | 6.4   | 4.2  | 1.6   | .91   | 1.1   | .40   |
| 7     | .40   | 3.1   | 1.7  | 1.4   | 263    | 11    | 5.5   | 4.1  | 1.5   | .91   | .65   | .38   |
| 8     | .48   | 2.0   | 1.7  | 1.4   | 57     | 18    | 20    | 3.9  | 1.5   | .88   | .56   | .44   |
| 9     | .49   | .85   | 1.6  | 1.3   | 151    | 46    | 8.1   | 3.6  | 1.5   | .85   | .57   | .39   |
| 10    | .46   | .80   | 1.5  | e1.2  | 50     | 17    | 6.0   | 3.5  | 1.5   | .80   | .59   | .42   |
| 11    | .44   | .77   | 1.5  | e1.2  | 36     | 15    | 5.4   | 3.4  | 1.5   | .77   | .64   | .43   |
| 12    | .42   | .69   | 1.5  | e1.4  | 29     | 14    | 5.4   | 3.3  | 1.5   | .76   | .61   | .42   |
| 13    | .46   | .68   | e4.6 | e1.2  | 27     | 13    | 5.4   | 3.2  | 1.6   | .70   | .58   | .42   |
| 14    | .49   | .69   | 1.7  | e1.2  | 23     | 16    | 6.5   | 3.0  | 1.4   | .71   | .55   | .46   |
| 15    | .49   | .69   | 1.5  | e2.6  | 19     | 20    | 5.4   | 3.0  | 1.3   | .75   | .48   | .51   |
| 16    | .43   | .69   | 1.4  | e5.7  | 52     | 13    | 4.4   | 3.1  | 1.4   | .80   | .49   | .49   |
| 17    | .37   | .81   | 1.4  | e2.0  | 121    | 12    | 4.2   | 3.3  | 1.4   | .82   | .50   | .56   |
| 18    | .35   | .70   | 1.4  | e8.3  | 53     | 11    | 4.1   | 3.1  | 1.5   | .78   | .55   | .37   |
| 19    | .37   | .69   | 1.4  | e32   | 38     | 12    | 5.3   | 2.4  | 1.5   | .75   | .58   | .37   |
| 20    | .36   | .68   | 1.5  | e36   | 67     | 11    | 13    | 2.3  | 1.5   | .74   | .50   | .49   |
| 21    | .36   | e. 74 | 1.3  | e13   | 87     | 11    | 4.6   | 2.2  | 1.4   | .68   | .49   | .39   |
| 22    | .36   | .98   | 1.4  | e4.0  | 45     | 10    | 26    | 2.2  | 1.4   | .68   | .41   | 1.2   |
| 23    | .41   | e2.9  | 1.4  | 29    | 36     | 10    | 15    | 2.1  | 1.4   | .66   | .40   | .40   |
| 24    | 3.9   | 1.4   | 1.3  | 7.8   | 31     | 15    | 5.7   | 2.0  | 1.3   | .71   | .40   | .35   |
| 25    | 1.4   | .77   | 1.4  | 5.7   | 39     | 24    | 23    | 1.9  | 1.2   | .70   | .40   | .35   |
| 26    | 1.2   | .80   | 1.4  | 12    | 27     | 11    | 17    | 2.0  | 1.2   | .68   | .39   | .32   |
| 27    | 1.2   | 1.4   | 1.4  | 6.3   | 23     | 9.7   | 7.2   | 2.1  | 1.2   | .69   | .37   | .40   |
| 28    | 1.3   | 1.5   | 1.4  | 4.9   | 21     | 9.1   | 6.3   | 2.0  | 1.1   | .67   | .39   | .28   |
| 29    | 1.4   | e2.0  | 1.4  | 4.4   | ---    | 8.9   | 5.6   | 1.9  | 1.0   | .63   | .41   | .28   |
| 30    | 1.3   | e16   | 1.4  | 4.2   | ---    | 9.0   | 5.2   | 1.9  | .99   | .61   | .44   | .28   |
| 31    | 1.2   | ---   | 1.4  | 14    | ---    | 10    | ---   | 1.8  | ---   | .64   | .45   | ---   |
| TOTAL | 22.87 | 50.63 | 56.9 | 210.3 | 1343.5 | 452.7 | 256.0 | 93.7 | 43.09 | 24.07 | 16.84 | 12.90 |
| MEAN  | .74   | 1.69  | 1.84 | 6.78  | 48.0   | 14.6  | 8.53  | 3.02 | 1.44  | .78   | .54   | .43   |
| MAX   | 3.9   | 16    | 4.6  | 36    | 263    | 46    | 26    | 4.7  | 1.8   | .99   | 1.1   | 1.2   |
| MIN   | .35   | .68   | 1.3  | 1.2   | 3.4    | 8.9   | 4.1   | 1.8  | .99   | .61   | .37   | .28   |
| AC-FT | 45    | 100   | 113  | 417   | 2660   | 898   | 508   | 186  | 85    | 48    | 33    | 26    |

e Estimated.

## 11180900 CROW CREEK NEAR HAYWARD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .47  | 1.31 | 2.47 | 28.6 | 85.1 | 18.2 | 12.2 | 4.59 | 2.36 | 1.18 | .65  | .52  |
| MAX  | .74  | 1.69 | 3.11 | 50.4 | 122  | 21.8 | 16.0 | 6.16 | 3.28 | 1.58 | .77  | .61  |
| (WY) | 1999 | 1999 | 1998 | 1998 | 1998 | 1998 | 1998 | 1998 | 1998 | 1998 | 1998 | 1998 |
| MIN  | .20  | .94  | 1.84 | 6.78 | 48.0 | 14.6 | 8.53 | 3.02 | 1.44 | .78  | .54  | .43  |
| (WY) | 1998 | 1998 | 1999 | 1999 | 1999 | 1999 | 1999 | 1999 | 1999 | 1999 | 1999 | 1999 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1998 - 1999 |            |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|------------|
| ANNUAL TOTAL             | 6648.11                |        | 2583.50             |        |                         |            |
| ANNUAL MEAN              | 18.2                   |        | 7.08                |        | 12.6                    |            |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 18.2                    |            |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 7.08                    |            |
| HIGHEST DAILY MEAN       | 465                    | Feb 3  | 263                 | Feb 7  | 465                     | Feb 3 1998 |
| LOWEST DAILY MEAN        | .35                    | Oct 18 | .28                 | Sep 28 | .05                     | Oct 1 1997 |
| ANNUAL SEVEN-DAY MINIMUM | .37                    | Oct 17 | .32                 | Sep 24 | .13                     | Oct 1 1997 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 783                 |        | 1990                    |            |
| INSTANTANEOUS PEAK STAGE |                        |        | 8.90                |        | 13.07                   |            |
| ANNUAL RUNOFF (AC-FT)    | 13190                  |        | 5120                |        | 9160                    |            |
| 10 PERCENT EXCEEDS       | 52                     |        | 17                  |        | 26                      |            |
| 50 PERCENT EXCEEDS       | 2.7                    |        | 1.4                 |        | 1.6                     |            |
| 90 PERCENT EXCEEDS       | .59                    |        | .42                 |        | .40                     |            |

## 11180960 CULL CREEK ABOVE CULL CREEK RESERVOIR, NEAR CASTRO VALLEY, CA

LOCATION.—Lat 37°42'55", long 122°03'12", in San Lorenzo (Castro) Grant, Alameda County, Hydrologic Unit 18050004, on left bank, 0.9 mi upstream from Cull Creek Dam, and 1.1 mi northeast of Castro Valley Post Office.

DRAINAGE AREA.—5.79 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1978 to current year.

REVISED RECORDS.—WDR CA-80-2: 1979(P).

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 450 ft above sea level, from topographic map.

REMARKS.—Records fair except for estimated daily discharges, which are poor. No storage or diversions upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,690 ft<sup>3</sup>/s, Jan. 5, 1982, gage height, 8.71 ft; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 150 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Feb. 7 | 1130 | 683                               | 4.99                | Feb. 17 | 0145 | 271                               | 3.21                |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN    | FEB   | MAR   | APR   | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|------|-------|-------|--------|-------|-------|-------|-------|-------|------|------|------|
| 1     | .04  | .07   | 1.7   | .12    | 2.9   | 8.2   | 4.6   | 1.9   | .69   | e.28 | .10  | .04  |
| 2     | .04  | .07   | .16   | .13    | 2.6   | 9.9   | 3.9   | 1.9   | .69   | e.25 | .09  | .04  |
| 3     | .04  | .07   | 1.3   | .21    | 2.4   | 15    | 3.2   | 2.1   | .66   | .24  | .09  | .04  |
| 4     | .03  | .06   | .40   | .17    | 2.3   | 8.2   | 3.0   | 1.7   | .66   | .24  | .09  | .04  |
| 5     | .03  | .07   | .60   | .37    | 2.0   | 7.8   | 5.8   | 1.6   | .64   | .22  | .10  | .03  |
| 6     | .02  | .07   | 1.4   | .29    | 13    | 7.4   | 4.6   | 1.4   | .58   | .21  | .15  | .03  |
| 7     | .04  | .61   | .38   | .24    | 149   | 6.8   | 4.0   | 1.3   | .55   | .22  | .12  | .03  |
| 8     | .05  | .48   | .29   | .07    | 28    | 22    | 12    | 1.1   | .55   | .20  | .09  | .03  |
| 9     | .06  | .38   | .24   | .10    | 99    | 35    | 3.5   | .81   | .53   | .18  | .09  | .04  |
| 10    | .06  | .24   | .22   | .14    | 37    | 17    | 3.0   | .79   | .51   | .18  | .09  | .03  |
| 11    | .06  | .21   | .16   | .14    | 21    | 18    | 11    | 1.5   | .50   | .16  | .10  | .03  |
| 12    | .06  | .18   | .15   | .11    | 15    | 15    | 7.1   | 1.2   | .55   | .15  | .10  | .03  |
| 13    | .06  | .16   | .29   | .14    | 11    | 14    | 5.6   | 1.2   | .56   | .14  | .09  | .03  |
| 14    | .06  | .15   | .57   | .15    | 7.6   | 15    | 4.5   | 1.2   | .60   | .13  | .08  | .03  |
| 15    | .06  | .15   | .42   | .29    | 4.2   | 17    | 4.5   | 1.1   | .47   | .14  | .07  | .03  |
| 16    | .06  | .14   | .35   | .74    | 32    | 8.2   | 4.0   | 1.1   | .51   | .14  | .07  | .03  |
| 17    | .06  | .16   | .35   | .39    | 72    | 6.8   | 3.5   | 1.2   | .52   | .15  | .07  | .03  |
| 18    | .07  | .14   | .32   | 6.5    | 24    | 6.6   | 3.2   | 1.3   | .48   | .15  | .07  | .03  |
| 19    | .07  | .12   | .28   | 18     | 15    | 6.9   | 3.2   | 1.3   | .46   | .14  | .07  | .03  |
| 20    | .07  | .12   | .24   | 21     | 31    | 6.8   | 3.0   | 1.3   | .50   | .14  | .07  | .02  |
| 21    | .07  | .12   | .24   | 5.4    | 43    | 7.6   | 2.7   | 1.3   | .40   | .14  | .06  | .02  |
| 22    | .07  | .21   | .26   | 3.0    | 26    | 7.3   | 2.6   | 1.1   | .32   | .13  | .06  | .03  |
| 23    | .07  | .83   | .27   | 13     | 22    | 7.1   | 2.4   | .94   | .46   | .12  | .05  | .02  |
| 24    | .17  | .60   | .25   | 5.2    | 19    | 9.0   | 2.5   | .78   | .47   | .13  | .05  | .02  |
| 25    | .15  | .22   | .25   | 3.6    | 18    | 15    | 2.4   | .57   | .43   | .13  | .05  | .02  |
| 26    | .10  | .20   | .24   | 6.4    | 14    | 7.8   | 2.2   | .80   | .45   | .13  | .05  | .02  |
| 27    | .09  | .25   | .22   | 3.8    | 12    | 6.6   | 2.2   | .80   | e.36  | .12  | .05  | .02  |
| 28    | .09  | .36   | .18   | 3.0    | 11    | 6.0   | 1.9   | .78   | e.34  | .12  | .04  | .02  |
| 29    | .10  | .73   | .16   | 2.7    | ---   | 5.6   | 2.2   | .78   | e.32  | .11  | .04  | .01  |
| 30    | .07  | 6.5   | .15   | 2.5    | ---   | 5.4   | 1.9   | .71   | e.30  | .10  | .04  | .01  |
| 31    | .07  | ---   | .11   | 6.5    | ---   | 6.0   | ---   | .67   | ---   | .10  | .04  | ---  |
| TOTAL | 2.09 | 13.67 | 12.15 | 104.40 | 736.0 | 335.0 | 120.2 | 36.23 | 15.06 | 4.99 | 2.33 | 0.83 |
| MEAN  | .067 | .46   | .39   | 3.37   | 26.3  | 10.8  | 4.01  | 1.17  | .50   | .16  | .075 | .028 |
| MAX   | .17  | 6.5   | 1.7   | 21     | 149   | 35    | 12    | 2.1   | .69   | .28  | .15  | .04  |
| MIN   | .02  | .06   | .11   | .07    | 2.0   | 5.4   | 1.9   | .57   | .30   | .10  | .04  | .01  |
| AC-FT | 4.1  | 27    | 24    | 207    | 1460  | 664   | 238   | 72    | 30    | 9.9  | 4.6  | 1.6  |

e Estimated.



## 11180960 CULL CREEK ABOVE CULL CREEK RESERVOIR, NEAR CASTRO VALLEY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .044 | .79  | 2.73 | 10.4 | 14.1 | 9.32 | 3.08 | .88  | .30  | .085 | .020 | .008 |
| MAX  | .45  | 6.00 | 14.0 | 43.7 | 58.9 | 54.3 | 16.8 | 3.56 | 1.27 | .50  | .13  | .079 |
| (WY) | 1983 | 1984 | 1984 | 1997 | 1998 | 1983 | 1982 | 1983 | 1998 | 1998 | 1998 | 1983 |
| MIN  | .000 | .000 | .001 | .000 | .045 | .13  | .055 | .016 | .007 | .000 | .000 | .000 |
| (WY) | 1979 | 1987 | 1990 | 1991 | 1991 | 1988 | 1990 | 1988 | 1988 | 1981 | 1979 | 1979 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1979 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 3245.86                |        | 1382.95             |        |                         |             |
| ANNUAL MEAN              | 8.89                   |        | 3.79                |        | 3.42                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 10.3                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | .054                    |             |
| HIGHEST DAILY MEAN       | 369                    | Feb 3  | 149                 | Feb 7  | 445                     | Feb 15 1982 |
| LOWEST DAILY MEAN        | .02                    | Oct 6  | .01                 | Sep 29 | .00                     | Oct 1 1978  |
| ANNUAL SEVEN-DAY MINIMUM | .03                    | Sep 19 | .02                 | Sep 24 | .00                     | Oct 1 1978  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 683                 |        | 1690                    | Jan 5 1982  |
| INSTANTANEOUS PEAK STAGE |                        |        | 4.99                |        | 8.71                    | Jan 5 1982  |
| ANNUAL RUNOFF (AC-FT)    | 6440                   |        | 2740                |        | 2480                    |             |
| 10 PERCENT EXCEEDS       | 22                     |        | 10                  |        | 6.5                     |             |
| 50 PERCENT EXCEEDS       | .90                    |        | .32                 |        | .12                     |             |
| 90 PERCENT EXCEEDS       | .06                    |        | .04                 |        | .00                     |             |

## 11180960 CULL CREEK ABOVE CULL CREEK RESERVOIR, NEAR CASTRO VALLEY, CA—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1979 to current year (storm season only).

WATER TEMPERATURE: Water years 1979 to current year.

SEDIMENT DATA: Water years 1979 to current year.

PERIOD OF DAILY RECORD.—October 1978 to current year.

WATER TEMPERATURE: October 1978 to current year.

SUSPENDED-SEDIMENT DISCHARGE: October 1978 to current year.

REMARKS.—Zero bed-load discharge observed at flows less than 4.80 ft<sup>3</sup>/s. Sediment samples were collected on most days where a water temperature is published.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SEDIMENT CONCENTRATION: Maximum daily mean, 24,400 mg/L, Mar. 13, 1993; minimum daily mean, no flow many days during most years.

SEDIMENT LOAD: Maximum daily, 26,400 tons, Feb. 17, 1986; minimum daily, 0 ton many days during most years.

EXTREMES FOR CURRENT YEAR.—

SEDIMENT CONCENTRATION (storm season only): Maximum daily mean, 4,870 mg/L, Feb. 7; minimum daily mean, 9 mg/L, Apr. 25, 26.

SEDIMENT LOAD (storm season only): Maximum daily, 3,650 tons, Feb. 7; minimum daily, 0 ton on many days.

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-    | TEMPER- | SEDI-   | SEDI-   | SED.    | SED.    | SED.    |
|-------|------|---------|---------|---------|---------|---------|---------|---------|
|       |      | CHARGE, |         |         | MENT,   | SUSP.   | FALL    | FALL    |
|       |      | INST.   | ATURE   | MENT,   | CHARGE, | FALL    | FALL    | FALL    |
|       |      | CUBIC   | WATER   | SUS-    | SUS-    | DIAM.   | DIAM.   | DIAM.   |
|       |      | FEET    | (DEG C) | PENDED  | PENDED  | THAN    | THAN    | THAN    |
|       |      | PER     |         | (MG/L)  | (T/DAY) | .002 MM | .004 MM | .008 MM |
|       |      | SECOND  | (00010) | (80154) | (80155) | (70337) | (70338) | (70339) |
|       |      | (00061) |         |         |         |         |         |         |
| NOV   |      |         |         |         |         |         |         |         |
| 30... | 1215 | 37      | --      | 5460    | 545     | 46      | 57      | 66      |
| JAN   |      |         |         |         |         |         |         |         |
| 20... | 1800 | 19      | 11.5    | 1000    | 51      | --      | --      | --      |
| 21... | 1415 | 4.7     | 10.0    | 87      | 1.1     | --      | --      | --      |
| FEB   |      |         |         |         |         |         |         |         |
| 09... | 0915 | 252     | 9.5     | 13100   | 8910    | 26      | 30      | 33      |
| 21... | 0855 | 41      | 8.5     | 1430    | 158     | 34      | 41      | 46      |
| MAR   |      |         |         |         |         |         |         |         |
| 31... | 1715 | 4.7     | 10.5    | 52      | .66     | --      | --      | --      |
| APR   |      |         |         |         |         |         |         |         |
| 01... | 1050 | 4.5     | 6.0     | 30      | .36     | --      | --      | --      |
| 13... | 1910 | 5.0     | 14.5    | 51      | .69     | --      | --      | --      |
| 29... | 1530 | 2.0     | 15.0    | 10      | .05     | --      | --      | --      |
|       |      |         |         |         |         |         |         |         |
|       |      | SED.    | SED.    | SED.    | SED.    | SED.    | SED.    | SED.    |
|       |      | SUSP.   | SUSP.   | SUSP.   | SUSP.   | SUSP.   | SUSP.   | SUSP.   |
|       |      | FALL    | FALL    | SIEVE   | SIEVE   | SIEVE   | SIEVE   | SIEVE   |
|       |      | DIAM.   | DIAM.   | DIAM.   | DIAM.   | DIAM.   | DIAM.   | DIAM.   |
|       |      | % FINER | % FINER | % FINER | % FINER | % FINER | % FINER | % FINER |
|       |      | THAN    | THAN    | THAN    | THAN    | THAN    | THAN    | THAN    |
|       |      | .016 MM | .031 MM | .062 MM | .125 MM | .250 MM | .500 MM | 1.00 MM |
|       |      | (70340) | (70341) | (70331) | (70332) | (70333) | (70334) | (70335) |
|       |      |         |         |         |         |         |         | (70336) |
| NOV   |      |         |         |         |         |         |         |         |
| 30... | 77   | 85      | 90      | 93      | 97      | 99      | 100     | --      |
| JAN   |      |         |         |         |         |         |         |         |
| 20... | --   | --      | 91      | 93      | 96      | 98      | 100     | --      |
| 21... | --   | --      | 98      | 99      | 100     | --      | --      | --      |
| FEB   |      |         |         |         |         |         |         |         |
| 09... | 40   | 52      | 63      | 76      | 91      | 97      | 99      | 100     |
| 21... | 56   | 70      | 80      | 90      | 98      | 100     | --      | --      |
| MAR   |      |         |         |         |         |         |         |         |
| 31... | --   | --      | 51      | --      | --      | --      | --      | --      |
| APR   |      |         |         |         |         |         |         |         |
| 01... | --   | --      | 51      | --      | --      | --      | --      | --      |
| 13... | --   | --      | 83      | --      | --      | --      | --      | --      |
| 29... | --   | --      | 48      | --      | --      | --      | --      | --      |

## 11180960 CULL CREEK ABOVE CULL CREEK RESERVOIR, NEAR CASTRO VALLEY, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY INSTANTANEOUS VALUES

| DAY | OCT  | NOV  | DEC | JAN  | FEB  | MAR  | APR  | MAY | JUN | JUL  | AUG  | SEP |
|-----|------|------|-----|------|------|------|------|-----|-----|------|------|-----|
| 1   | ---  | ---  | --- | ---  | 8.0  | ---  | 6.0  | --- | --- | 15.0 | ---  | --- |
| 2   | ---  | ---  | --- | ---  | ---  | ---  | ---  | --- | --- | ---  | ---  | --- |
| 3   | ---  | ---  | --- | ---  | 8.5  | ---  | ---  | --- | --- | ---  | ---  | --- |
| 4   | ---  | ---  | 7.0 | 6.5  | ---  | 8.5  | ---  | --- | --- | ---  | 14.5 | --- |
| 5   | ---  | ---  | --- | ---  | ---  | ---  | ---  | --- | --- | ---  | ---  | --- |
| 6   | 13.0 | ---  | 5.0 | ---  | 8.0  | ---  | 10.5 | --- | --- | ---  | ---  | --- |
| 7   | ---  | ---  | 6.0 | 6.5  | ---  | ---  | 10.0 | --- | --- | ---  | ---  | --- |
| 8   | ---  | ---  | 7.5 | ---  | 11.5 | ---  | ---  | --- | --- | ---  | ---  | --- |
| 9   | ---  | ---  | --- | ---  | 9.5  | ---  | ---  | --- | --- | ---  | ---  | --- |
| 10  | ---  | ---  | --- | ---  | ---  | 10.0 | ---  | --- | --- | ---  | ---  | --- |
| 11  | ---  | ---  | 7.0 | 6.0  | ---  | ---  | ---  | --- | --- | ---  | ---  | --- |
| 12  | ---  | ---  | --- | ---  | ---  | ---  | ---  | --- | --- | ---  | ---  | --- |
| 13  | ---  | ---  | --- | ---  | 8.0  | 10.0 | 14.5 | --- | --- | ---  | ---  | --- |
| 14  | ---  | ---  | 9.0 | 8.0  | 10.0 | ---  | ---  | --- | --- | ---  | ---  | --- |
| 15  | ---  | ---  | --- | 8.0  | ---  | 11.5 | 12.5 | --- | --- | ---  | ---  | --- |
| 16  | ---  | ---  | --- | 10.0 | 10.0 | ---  | ---  | --- | --- | ---  | ---  | --- |
| 17  | ---  | ---  | 8.0 | ---  | ---  | 12.5 | ---  | --- | --- | ---  | ---  | --- |
| 18  | ---  | ---  | --- | 11.0 | 11.0 | ---  | ---  | --- | --- | ---  | ---  | --- |
| 19  | ---  | ---  | --- | 11.5 | ---  | 10.5 | 16.5 | --- | --- | ---  | ---  | --- |
| 20  | ---  | ---  | --- | 11.5 | ---  | ---  | 14.5 | --- | --- | ---  | ---  | --- |
| 21  | ---  | 8.0  | 2.5 | 10.0 | 8.5  | ---  | ---  | --- | --- | ---  | ---  | --- |
| 22  | ---  | 10.0 | --- | ---  | ---  | 12.0 | ---  | --- | --- | ---  | ---  | --- |
| 23  | ---  | 12.0 | --- | ---  | 9.5  | ---  | ---  | --- | --- | ---  | ---  | --- |
| 24  | ---  | ---  | 2.5 | ---  | 11.5 | ---  | ---  | --- | --- | ---  | ---  | --- |
| 25  | ---  | 9.0  | --- | 8.5  | ---  | ---  | 13.5 | --- | --- | ---  | ---  | --- |
| 26  | ---  | ---  | --- | 8.0  | ---  | ---  | ---  | --- | --- | ---  | ---  | --- |
| 27  | ---  | ---  | --- | 7.5  | ---  | ---  | ---  | --- | --- | ---  | ---  | --- |
| 28  | ---  | ---  | 6.0 | ---  | ---  | ---  | 13.0 | --- | --- | ---  | ---  | --- |
| 29  | ---  | ---  | --- | ---  | ---  | ---  | 15.0 | --- | --- | ---  | ---  | --- |
| 30  | ---  | ---  | --- | ---  | ---  | 12.0 | ---  | --- | --- | ---  | ---  | --- |
| 31  | ---  | ---  | --- | ---  | ---  | 10.5 | ---  | --- | --- | ---  | ---  | --- |

## 11180960 CULL CREEK ABOVE CULL CREEK RESERVOIR, NEAR CASTRO VALLEY, CA—Continued

## SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY   | MEAN               | MEAN                         | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN               | MEAN                         | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN               | MEAN                         | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|-------|--------------------|------------------------------|-------------------------------------|--------------------|------------------------------|-------------------------------------|--------------------|------------------------------|-------------------------------------|
|       | DISCHARGE<br>(CFS) | CONCEN-<br>TRATION<br>(MG/L) |                                     | DISCHARGE<br>(CFS) | CONCEN-<br>TRATION<br>(MG/L) |                                     | DISCHARGE<br>(CFS) | CONCEN-<br>TRATION<br>(MG/L) |                                     |
|       | OCTOBER            |                              |                                     | NOVEMBER           |                              |                                     | DECEMBER           |                              |                                     |
| 1     | .04                | 16                           | .00                                 | .07                | 11                           | .00                                 | 1.7                | 181                          | 1.2                                 |
| 2     | .04                | 16                           | .00                                 | .07                | 11                           | .00                                 | .16                | 71                           | .03                                 |
| 3     | .04                | 16                           | .00                                 | .07                | 11                           | .00                                 | 1.3                | 123                          | .88                                 |
| 4     | .03                | 16                           | .00                                 | .06                | 11                           | .00                                 | .40                | 35                           | .04                                 |
| 5     | .03                | 16                           | .00                                 | .07                | 11                           | .00                                 | .60                | 74                           | .38                                 |
| 6     | .02                | 16                           | .00                                 | .07                | 11                           | .00                                 | 1.4                | 428                          | 2.1                                 |
| 7     | .04                | 16                           | .00                                 | .61                | 64                           | .16                                 | .38                | 74                           | .08                                 |
| 8     | .05                | 15                           | .00                                 | .48                | 17                           | .02                                 | .29                | 54                           | .04                                 |
| 9     | .06                | 15                           | .00                                 | .38                | 12                           | .01                                 | .24                | 49                           | .03                                 |
| 10    | .06                | 14                           | .00                                 | .24                | 13                           | .01                                 | .22                | 40                           | .02                                 |
| 11    | .06                | 14                           | .00                                 | .21                | 14                           | .01                                 | .16                | 33                           | .01                                 |
| 12    | .06                | 14                           | .00                                 | .18                | 15                           | .01                                 | .15                | 37                           | .01                                 |
| 13    | .06                | 13                           | .00                                 | .16                | 17                           | .01                                 | .29                | 43                           | .04                                 |
| 14    | .06                | 13                           | .00                                 | .15                | 18                           | .01                                 | .57                | 48                           | .07                                 |
| 15    | .06                | 13                           | .00                                 | .15                | 20                           | .01                                 | .42                | 43                           | .05                                 |
| 16    | .06                | 12                           | .00                                 | .14                | 21                           | .01                                 | .35                | 37                           | .04                                 |
| 17    | .06                | 12                           | .00                                 | .16                | 23                           | .01                                 | .35                | 33                           | .03                                 |
| 18    | .07                | 12                           | .00                                 | .14                | 25                           | .01                                 | .32                | 36                           | .03                                 |
| 19    | .07                | 11                           | .00                                 | .12                | 27                           | .01                                 | .28                | 39                           | .03                                 |
| 20    | .07                | 11                           | .00                                 | .12                | 30                           | .01                                 | .24                | 44                           | .03                                 |
| 21    | .07                | 11                           | .00                                 | .12                | 37                           | .01                                 | .24                | 46                           | .03                                 |
| 22    | .07                | 10                           | .00                                 | .21                | 41                           | .02                                 | .26                | 36                           | .03                                 |
| 23    | .07                | 10                           | .00                                 | .83                | 81                           | .40                                 | .27                | 27                           | .02                                 |
| 24    | .17                | 33                           | .02                                 | .60                | 68                           | .13                                 | .25                | 21                           | .01                                 |
| 25    | .15                | 18                           | .01                                 | .22                | 28                           | .02                                 | .25                | 20                           | .01                                 |
| 26    | .10                | 11                           | .00                                 | .20                | 31                           | .02                                 | .24                | 21                           | .01                                 |
| 27    | .09                | 11                           | .00                                 | .25                | 39                           | .03                                 | .22                | 21                           | .01                                 |
| 28    | .09                | 11                           | .00                                 | .36                | 50                           | .05                                 | .18                | 22                           | .01                                 |
| 29    | .10                | 11                           | .00                                 | .73                | 90                           | .22                                 | .16                | 21                           | .01                                 |
| 30    | .07                | 11                           | .00                                 | 6.5                | 389                          | 26                                  | .15                | 21                           | .01                                 |
| 31    | .07                | 11                           | .00                                 | ---                | ---                          | ---                                 | .11                | 20                           | .01                                 |
| TOTAL | 2.09               | ---                          | 0.03                                | 13.67              | ---                          | 27.20                               | 12.15              | ---                          | 5.30                                |
|       | JANUARY            |                              |                                     | FEBRUARY           |                              |                                     | MARCH              |                              |                                     |
| 1     | .12                | 20                           | .01                                 | 2.9                | 35                           | .28                                 | 8.2                | 107                          | 2.4                                 |
| 2     | .13                | 19                           | .01                                 | 2.6                | 38                           | .26                                 | 9.9                | 99                           | 2.7                                 |
| 3     | .21                | 19                           | .01                                 | 2.4                | 43                           | .28                                 | 15                 | 146                          | 7.3                                 |
| 4     | .17                | 18                           | .01                                 | 2.3                | 46                           | .28                                 | 8.2                | 84                           | 1.9                                 |
| 5     | .37                | 23                           | .02                                 | 2.0                | 48                           | .26                                 | 7.8                | 82                           | 1.7                                 |
| 6     | .29                | 32                           | .02                                 | 13                 | 518                          | 48                                  | 7.4                | 81                           | 1.6                                 |
| 7     | .24                | 40                           | .03                                 | 149                | 4870                         | 3650                                | 6.8                | 81                           | 1.5                                 |
| 8     | .07                | 33                           | .01                                 | 28                 | 554                          | 43                                  | 22                 | 451                          | 91                                  |
| 9     | .10                | 25                           | .01                                 | 99                 | 4400                         | 1750                                | 35                 | 449                          | 60                                  |
| 10    | .14                | 19                           | .01                                 | 37                 | 793                          | 98                                  | 17                 | 155                          | 7.3                                 |
| 11    | .14                | 15                           | .01                                 | 21                 | 258                          | 15                                  | 18                 | 120                          | 6.0                                 |
| 12    | .11                | 16                           | .00                                 | 15                 | 142                          | 6.0                                 | 15                 | 88                           | 3.5                                 |
| 13    | .14                | 19                           | .01                                 | 11                 | 84                           | 2.6                                 | 14                 | 66                           | 2.5                                 |
| 14    | .15                | 23                           | .01                                 | 7.6                | 75                           | 1.5                                 | 15                 | 102                          | 4.9                                 |
| 15    | .29                | 36                           | .03                                 | 4.2                | 74                           | .85                                 | 17                 | 171                          | 10                                  |
| 16    | .74                | 43                           | .09                                 | 32                 | 775                          | 201                                 | 8.2                | 77                           | 1.7                                 |
| 17    | .39                | 43                           | .04                                 | 72                 | 1700                         | 839                                 | 6.8                | 59                           | 1.1                                 |
| 18    | 6.5                | 714                          | 21                                  | 24                 | 370                          | 27                                  | 6.6                | 59                           | 1.1                                 |
| 19    | 18                 | 728                          | 156                                 | 15                 | 277                          | 11                                  | 6.9                | 65                           | 1.2                                 |
| 20    | 21                 | 1420                         | 124                                 | 31                 | 728                          | 120                                 | 6.8                | 63                           | 1.2                                 |
| 21    | 5.4                | 176                          | 2.9                                 | 43                 | 1820                         | 248                                 | 7.6                | 61                           | 1.3                                 |
| 22    | 3.0                | 88                           | .72                                 | 26                 | 652                          | 46                                  | 7.3                | 58                           | 1.2                                 |
| 23    | 13                 | 883                          | 44                                  | 22                 | 227                          | 14                                  | 7.1                | 58                           | 1.1                                 |
| 24    | 5.2                | 95                           | 1.5                                 | 19                 | 167                          | 8.4                                 | 9.0                | 93                           | 3.0                                 |
| 25    | 3.6                | 25                           | .24                                 | 18                 | 149                          | 7.4                                 | 15                 | 145                          | 7.5                                 |
| 26    | 6.4                | 104                          | 2.5                                 | 14                 | 138                          | 5.3                                 | 7.8                | 57                           | 1.2                                 |
| 27    | 3.8                | 32                           | .34                                 | 12                 | 127                          | 4.0                                 | 6.6                | 57                           | 1.0                                 |
| 28    | 3.0                | 28                           | .23                                 | 11                 | 117                          | 3.6                                 | 6.0                | 56                           | .90                                 |
| 29    | 2.7                | 28                           | .20                                 | ---                | ---                          | ---                                 | 5.6                | 55                           | .83                                 |
| 30    | 2.5                | 28                           | .19                                 | ---                | ---                          | ---                                 | 5.4                | 55                           | .81                                 |
| 31    | 6.5                | 310                          | 11                                  | ---                | ---                          | ---                                 | 6.0                | 57                           | .96                                 |
| TOTAL | 104.40             | ---                          | 365.15                              | 736.0              | ---                          | 7151.01                             | 335.0              | ---                          | 230.40                              |

11180960 CULL CREEK ABOVE CULL CREEK RESERVOIR, NEAR CASTRO VALLEY, CA—Continued  
 SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY    | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|--------|----------------------------|--------------------------------------|-------------------------------------|
| APRIL  |                            |                                      |                                     |
| 1      | 4.6                        | 29                                   | .37                                 |
| 2      | 3.9                        | 19                                   | .20                                 |
| 3      | 3.2                        | 15                                   | .13                                 |
| 4      | 3.0                        | 12                                   | .10                                 |
| 5      | 5.8                        | 69                                   | 1.6                                 |
| 6      | 4.6                        | 94                                   | 1.2                                 |
| 7      | 4.0                        | 42                                   | .46                                 |
| 8      | 12                         | 182                                  | 13                                  |
| 9      | 3.5                        | 28                                   | .27                                 |
| 10     | 3.0                        | 20                                   | .16                                 |
| 11     | 11                         | 91                                   | 4.1                                 |
| 12     | 7.1                        | 50                                   | .97                                 |
| 13     | 5.6                        | 51                                   | .76                                 |
| 14     | 4.5                        | 44                                   | .54                                 |
| 15     | 4.5                        | 36                                   | .43                                 |
| 16     | 4.0                        | 29                                   | .31                                 |
| 17     | 3.5                        | 24                                   | .23                                 |
| 18     | 3.2                        | 19                                   | .17                                 |
| 19     | 3.2                        | 16                                   | .14                                 |
| 20     | 3.0                        | 19                                   | .15                                 |
| 21     | 2.7                        | 17                                   | .13                                 |
| 22     | 2.6                        | 15                                   | .10                                 |
| 23     | 2.4                        | 13                                   | .08                                 |
| 24     | 2.5                        | 11                                   | .07                                 |
| 25     | 2.4                        | 9                                    | .06                                 |
| 26     | 2.2                        | 9                                    | .06                                 |
| 27     | 2.2                        | 10                                   | .06                                 |
| 28     | 1.9                        | 10                                   | .05                                 |
| 29     | 2.2                        | 10                                   | .06                                 |
| 30     | 1.9                        | 10                                   | .05                                 |
| 31     | ---                        | ---                                  | ---                                 |
| TOTAL  | 120.2                      | ---                                  | 26.01                               |
| PERIOD | 1323.47                    |                                      | 7805.10                             |

SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| MONTH            | WATER<br>DISCHARGE<br>CFS-DAYS | SUSPENDED<br>SEDIMENT<br>DISCHARGE<br>TONS | BEDLOAD<br>DISCHARGE<br>TONS | TOTAL<br>SEDIMENT<br>DISCHARGE<br>TONS |
|------------------|--------------------------------|--|------------------------------|--|
| OCTOBER 1998     | 2.09                           | 0.03                                       | 0                            | 0                                      |
| NOVEMBER . . . . | 13.67                          | 27.20                                      | 3                            | 30                                     |
| DECEMBER . . . . | 12.15                          | 5.30                                       | 0                            | 5                                      |
| JANUARY 1999     | 104.40                         | 365.15                                     | 31                           | 396                                    |
| FEBRUARY . . . . | 736.00                         | 7151.01                                    | 613                          | 7760                                   |
| MARCH . . . . .  | 335.00                         | 230.40                                     | 82                           | 312                                    |
| APRIL . . . . .  | 120.20                         | 26.01                                      | 7                            | 33                                     |
| PERIOD . . . . . | 1323.51                        | 7805.10                                    | 736                          | 8536                                   |

## 11181000 SAN LORENZO CREEK AT HAYWARD, CA

LOCATION.—Lat 37°41'08", long 122°03'48", in San Lorenzo Grant, Alameda County, Hydrologic Unit 18050004, on left bank, 300 ft downstream of Center Street Bridge, just outside city limits of Hayward, 0.6 mi downstream from Crow Creek, and 1.0 mi downstream from Don Castro Dam.

DRAINAGE AREA.—37.5 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1939 to September 1940, October 1946 to Apr. 28, 1983; October 1997 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

REVISED RECORDS.—WSP 1315-B: 1947(M), 1949(M). WSP 1345: 1940(M). WSP 1715: 1947.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 133.16 ft above sea level. January to September 1940, nonrecording gage on bridge 0.1 mi upstream at present datum.

REMARKS.—Records fair including estimated daily discharges. Flow partly regulated since October 1962 by Cull Creek Reservoir, capacity, 310 acre-ft, and since January 1965 by Don Castro Reservoir, 1.0 mi upstream, capacity, 380 acre-ft. A few very small diversions above station for irrigation.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 8,140 ft<sup>3</sup>/s, Feb. 3, 1998, gage height, 21.85 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 550 ft<sup>3</sup>/s, or maximum:

| Date   | Time    | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|---------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 7 | unknown | 2,690                             | 13.42               |      |      |                                   |                     |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT   | NOV    | DEC   | JAN   | FEB  | MAR  | APR  | MAY   | JUN   | JUL  | AUG  | SEP   |
|-------|-------|--------|-------|-------|------|------|------|-------|-------|------|------|-------|
| 1     | 1.4   | e.64   | e14   | 2.0   | e29  | 37   | 21   | 13    | 8.5   | 3.7  | 2.0  | e1.1  |
| 2     | 1.8   | e.65   | e1.8  | 2.0   | e26  | 33   | 20   | 13    | 8.5   | 3.5  | 1.9  | e1.1  |
| 3     | 2.0   | e.67   | e5.9  | 2.0   | e24  | 44   | 18   | 16    | 8.3   | 3.1  | 1.8  | e1.2  |
| 4     | .90   | e.72   | e1.9  | 1.8   | e23  | 30   | 17   | 13    | 8.2   | 3.2  | 1.8  | e1.1  |
| 5     | .92   | e.80   | e3.3  | 1.8   | e21  | 29   | 40   | 12    | 7.9   | 3.1  | 2.0  | e1.0  |
| 6     | .52   | e1.6   | e8.1  | 1.9   | e51  | 28   | 25   | 12    | 7.7   | 3.1  | 4.0  | e.98  |
| 7     | .48   | e6.9   | 1.6   | 1.9   | e600 | 26   | 19   | 11    | 7.6   | 3.2  | 2.7  | e1.2  |
| 8     | .77   | e4.5   | 1.3   | e2.1  | e150 | 36   | 73   | 11    | 7.9   | 3.0  | 2.0  | e1.4  |
| 9     | .54   | e.74   | 2.9   | e2.0  | e520 | 87   | 30   | 11    | 7.8   | 2.7  | 2.0  | e1.5  |
| 10    | .44   | e.73   | 2.9   | e2.1  | e120 | 36   | 27   | 10    | 7.1   | 2.6  | 2.1  | e1.4  |
| 11    | .42   | e.71   | 3.9   | e2.1  | e65  | 30   | 61   | 9.4   | 7.1   | 2.6  | 2.4  | 1.3   |
| 12    | .42   | e.55   | 3.8   | e2.2  | e47  | 26   | 33   | 9.7   | 7.2   | 2.5  | 2.3  | 1.3   |
| 13    | .50   | e.53   | 8.6   | e1.8  | e41  | 28   | 28   | 9.4   | 7.2   | 2.8  | 2.1  | 1.2   |
| 14    | .98   | e.46   | 4.6   | 2.2   | e37  | 40   | 25   | 8.6   | 7.2   | 3.0  | 2.0  | 1.3   |
| 15    | .66   | e.44   | 2.6   | 8.0   | e34  | 48   | 24   | 8.6   | 7.4   | 2.7  | 1.8  | 1.4   |
| 16    | .55   | e.43   | 2.5   | 17    | e66  | 32   | 22   | 8.6   | 7.1   | 2.8  | 1.7  | 1.3   |
| 17    | .66   | e1.1   | 2.5   | 2.8   | e200 | 27   | 22   | 9.7   | 6.2   | 2.9  | 1.6  | 1.6   |
| 18    | .41   | e.40   | 3.7   | 54    | e98  | 26   | 21   | 10    | 5.6   | 2.7  | 1.7  | 1.5   |
| 19    | e.36  | e.37   | 2.6   | 75    | 66   | 32   | 20   | 9.4   | 5.9   | 2.7  | 1.8  | 1.5   |
| 20    | e.35  | e.40   | 3.8   | 122   | 119  | 27   | 20   | 9.4   | 4.8   | 2.7  | 1.7  | 1.4   |
| 21    | e.34  | e.97   | 1.3   | 30    | 171  | 25   | 18   | 9.2   | 4.6   | 2.6  | 1.6  | 1.5   |
| 22    | e.34  | e4.0   | 1.1   | 19    | 82   | 26   | 18   | 9.2   | 4.7   | 2.4  | 1.4  | 5.7   |
| 23    | e.39  | e15    | 1.3   | 78    | 62   | 28   | 16   | 9.1   | 4.3   | 2.4  | 1.3  | 3.1   |
| 24    | e9.5  | e1.3   | 1.4   | 29    | 53   | 33   | 16   | 9.0   | 4.4   | 2.5  | 1.3  | 2.2   |
| 25    | e.66  | e.74   | 1.2   | 20    | 78   | 50   | 16   | 9.2   | 4.6   | 2.4  | 1.4  | 2.1   |
| 26    | e.61  | e.70   | 1.5   | 46    | 51   | 30   | 16   | 8.9   | 5.6   | 2.3  | 1.3  | 1.9   |
| 27    | e.55  | e.82   | 1.7   | 26    | 45   | 27   | 15   | 8.8   | 5.3   | 2.3  | e1.2 | 1.8   |
| 28    | e.56  | e1.9   | 2.4   | 19    | 39   | 24   | 14   | 8.8   | 4.5   | 2.2  | e1.3 | 1.6   |
| 29    | e.62  | e12    | 1.8   | 17    | ---  | 24   | 13   | 8.6   | 3.9   | 2.1  | e1.3 | 1.5   |
| 30    | e.60  | e66    | 2.7   | 15    | ---  | 24   | 13   | 8.5   | 4.5   | 2.0  | e1.3 | 1.5   |
| 31    | e.58  | ---    | 2.3   | 66    | ---  | 28   | ---  | 8.0   | ---   | 2.0  | e1.2 | ---   |
| TOTAL | 29.83 | 126.77 | 101.0 | 671.7 | 2918 | 1021 | 721  | 312.1 | 191.6 | 83.8 | 56.0 | 48.68 |
| MEAN  | .96   | 4.23   | 3.26  | 21.7  | 104  | 32.9 | 24.0 | 10.1  | 6.39  | 2.70 | 1.81 | 1.62  |
| MAX   | 9.5   | 66     | 14    | 122   | 600  | 87   | 73   | 16    | 8.5   | 3.7  | 4.0  | 5.7   |
| MIN   | .34   | .37    | 1.1   | 1.8   | 21   | 24   | 13   | 8.0   | 3.9   | 2.0  | 1.2  | .98   |
| AC-FT | 59    | 251    | 200   | 1330  | 5790 | 2030 | 1430 | 619   | 380   | 166  | 111  | 97    |

e Estimated.

## 11181000 SAN LORENZO CREEK AT HAYWARD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

| OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 3.71 | 3.59 | 21.2 | 55.5 | 54.5 | 37.7 | 25.3 | 5.69 | 2.35 | 1.05 | .72  | .62  |
| MAX  | 107  | 30.1 | 184  | 227  | 327  | 267  | 255  | 21.3 | 9.03 | 5.22 | 4.58 | 2.89 |
| (WY) | 1963 | 1951 | 1956 | 1952 | 1998 | 1983 | 1958 | 1967 | 1967 | 1982 | 1980 | 1968 |
| MIN  | .000 | .000 | .13  | .39  | .73  | .84  | .29  | .12  | .043 | .000 | .000 | .000 |
| (WY) | 1947 | 1949 | 1949 | 1949 | 1948 | 1972 | 1977 | 1976 | 1977 | 1961 | 1947 | 1947 |

## SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1940 - 1999

|                          |          |            |         |            |       |  |             |  |
|--------------------------|----------|------------|---------|------------|-------|--|-------------|--|
| ANNUAL TOTAL             | 18604.12 |            | 6281.48 |            | 16.4  |  | 1982        |  |
| ANNUAL MEAN              | 51.0     |            | 17.2    |            | 56.4  |  | 1977        |  |
| HIGHEST ANNUAL MEAN      |          |            |         |            | .63   |  | 1946        |  |
| LOWEST ANNUAL MEAN       |          |            |         |            | 2600  |  | Oct 13 1962 |  |
| HIGHEST DAILY MEAN       | 2000     | Feb 3      | 600     | Feb 7      | .00   |  | Sep 19 1940 |  |
| LOWEST DAILY MEAN        |          | .34 Oct 21 |         | .34 Oct 21 | .00   |  | Oct 1 1946  |  |
| ANNUAL SEVEN-DAY MINIMUM |          | .41 Oct 17 |         | .41 Oct 17 | 8140  |  | Feb 3 1998  |  |
| INSTANTANEOUS PEAK FLOW  |          |            | 2690    | Feb 7      | 21.85 |  | Feb 3 1998  |  |
| INSTANTANEOUS PEAK STAGE |          |            | 13.42   | Feb 7      | 11900 |  |             |  |
| ANNUAL RUNOFF (AC-FT)    | 36900    |            | 12460   |            | 34    |  |             |  |
| 10 PERCENT EXCEEDS       | 133      |            | 38      |            | 1.6   |  |             |  |
| 50 PERCENT EXCEEDS       | 6.9      |            | 3.8     |            | .72   |  |             |  |
| 90 PERCENT EXCEEDS       | .69      |            | .72     |            | .00   |  |             |  |

## 11181008 CASTRO VALLEY CREEK AT HAYWARD, CA

LOCATION.—Lat 37°40'48", long 122°04'46", in San Lorenzo (Castro) Grant, Alameda County, Hydrologic Unit 18050004, on left bank, 500 ft east of Hayward City Hall, 700 ft upstream from mouth, and 700 ft downstream from small left-bank tributary.

DRAINAGE AREA.—5.51 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1971 to current year (seasonal records only, water years 1975–77).

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 100 ft above sea level, from topographic map.

REMARKS.—Records good. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,550 ft<sup>3</sup>/s, Feb. 2, 1998, gage height, 9.12 ft, from rating curve extended above 61 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 3.92 ft and step-backwater computation to gage height 10.40 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 500 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Nov. 30 | 0955 | 863                               | 6.81                | Jan. 19 | 2210 | 674                               | 6.04                |
| Dec. 5  | 2005 | 672                               | 6.03                | Feb. 9  | 0435 | 700                               | 6.15                |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV    | DEC   | JAN    | FEB    | MAR   | APR    | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|--------|-------|--------|--------|-------|--------|-------|-------|-------|-------|-------|
| 1     | .27   | .33    | 2.2   | .35    | 1.8    | 2.2   | 1.5    | .75   | .82   | .50   | .42   | .42   |
| 2     | .26   | .25    | .96   | .33    | 1.3    | 2.2   | 1.3    | 1.4   | .59   | .54   | .50   | .34   |
| 3     | .25   | .24    | 16    | .33    | 1.2    | 12    | 1.2    | 2.2   | .75   | .37   | .51   | .28   |
| 4     | .23   | .33    | 1.1   | .54    | 1.1    | 2.0   | 1.1    | .77   | .65   | .40   | .54   | .27   |
| 5     | .23   | .24    | 17    | .38    | .89    | 1.8   | 24     | .75   | .54   | .38   | .66   | .25   |
| 6     | .23   | 3.0    | 2.4   | .33    | 32     | 1.6   | 6.6    | .71   | .55   | .49   | 2.0   | .26   |
| 7     | .22   | 11     | .95   | .33    | 96     | 1.4   | 2.0    | .82   | .71   | .48   | .48   | .29   |
| 8     | .23   | 5.3    | .71   | .32    | 11     | 4.7   | 26     | .70   | .61   | .46   | .42   | .36   |
| 9     | .33   | .50    | .60   | .34    | 59     | 23    | 3.2    | .67   | .65   | .39   | .41   | .65   |
| 10    | .24   | 1.3    | .54   | .32    | 7.2    | 2.5   | 4.4    | .69   | .55   | .38   | .45   | .31   |
| 11    | .23   | .78    | .54   | .32    | 4.3    | 1.9   | 15     | .72   | .57   | .38   | .49   | .25   |
| 12    | .23   | .35    | .58   | .31    | 3.1    | 1.6   | 3.2    | .88   | .49   | .44   | .41   | .24   |
| 13    | .25   | 1.2    | 6.2   | .34    | 6.5    | 1.5   | 3.0    | .61   | .46   | .47   | .42   | .29   |
| 14    | .25   | .32    | .87   | .30    | 2.8    | 24    | 2.0    | .59   | .56   | .46   | .37   | .34   |
| 15    | .25   | .31    | .49   | 14     | 2.0    | 11    | 1.7    | .58   | .56   | .37   | .36   | .28   |
| 16    | .57   | .33    | .45   | 6.8    | 42     | 3.2   | 1.5    | .57   | .51   | .49   | .40   | .32   |
| 17    | .24   | 1.5    | .44   | .69    | 52     | 2.3   | 1.4    | 1.1   | .49   | .34   | .38   | .27   |
| 18    | .23   | .30    | .42   | 52     | 15     | 2.0   | 1.3    | .58   | .51   | .45   | .38   | .25   |
| 19    | .22   | .29    | .40   | 68     | 5.9    | 8.4   | 1.3    | 1.1   | .45   | .50   | .41   | .25   |
| 20    | .21   | .30    | 1.3   | 19     | 33     | 3.0   | 1.2    | .62   | .46   | .48   | .35   | .43   |
| 21    | .23   | 2.1    | .40   | 4.2    | 19     | 2.7   | 1.2    | .63   | .53   | .46   | .34   | .30   |
| 22    | .22   | 2.1    | .39   | 2.1    | 7.4    | 3.8   | 1.0    | .59   | .48   | .44   | .34   | 3.1   |
| 23    | .22   | 19     | .40   | 34     | 4.8    | 5.1   | 1.6    | .61   | .56   | .38   | .33   | .39   |
| 24    | 20    | .93    | .36   | 3.5    | 3.8    | 13    | 1.2    | .62   | .45   | .39   | .55   | .62   |
| 25    | .57   | .47    | .36   | 2.1    | 18     | 13    | .89    | .59   | .46   | .40   | .38   | .23   |
| 26    | .33   | 1.4    | .38   | 19     | 4.0    | 3.2   | .89    | .63   | .45   | .41   | .33   | .22   |
| 27    | .28   | 7.9    | .36   | 2.7    | 3.0    | 2.3   | .83    | .61   | .45   | .56   | .34   | .26   |
| 28    | .26   | 4.2    | .37   | 1.7    | 2.5    | 1.9   | .82    | .72   | .57   | .47   | .34   | .27   |
| 29    | .27   | 9.9    | .37   | 1.5    | ---    | 1.7   | .84    | .55   | .50   | .46   | .36   | .28   |
| 30    | .27   | 55     | .40   | 1.2    | ---    | 3.7   | 1.9    | .56   | .63   | .45   | .48   | .19   |
| 31    | .25   | ---    | .41   | 20     | ---    | 3.2   | ---    | .56   | ---   | .42   | .40   | ---   |
| TOTAL | 28.07 | 131.17 | 58.35 | 257.33 | 440.59 | 165.9 | 114.07 | 23.48 | 16.56 | 13.61 | 14.55 | 12.21 |
| MEAN  | .91   | 4.37   | 1.88  | 8.30   | 15.7   | 5.35  | 3.80   | .76   | .55   | .44   | .47   | .41   |
| MAX   | 20    | 55     | 17    | 68     | 96     | 24    | 26     | 2.2   | .82   | .56   | 2.0   | 3.1   |
| MIN   | .21   | .24    | .36   | .30    | .89    | 1.4   | .82    | .55   | .45   | .34   | .33   | .19   |
| AC-FT | 56    | 260    | 116   | 510    | 874    | 329   | 226    | 47    | 33    | 27    | 29    | 24    |



## 11181008 CASTRO VALLEY CREEK AT HAYWARD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 1.55 | 4.85 | 5.36 | 10.0 | 10.6 | 7.52 | 2.85 | 1.12 | .58  | .39  | .38  | .49  |
| MAX  | 4.97 | 19.0 | 14.2 | 29.3 | 45.6 | 34.6 | 12.3 | 3.23 | 1.55 | 1.15 | 1.50 | 1.62 |
| (WY) | 1976 | 1974 | 1997 | 1998 | 1998 | 1983 | 1974 | 1990 | 1995 | 1974 | 1983 | 1983 |
| MIN  | .15  | .24  | .24  | .39  | 1.06 | .60  | .20  | .30  | .28  | .17  | .14  | .12  |
| (WY) | 1978 | 1993 | 1990 | 1991 | 1977 | 1988 | 1977 | 1992 | 1980 | 1991 | 1980 | 1980 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1972 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 2984.66                |        | 1275.89             |        |                         |             |
| ANNUAL MEAN              | 8.18                   |        | 3.50                |        | 4.00                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 9.14                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 1.51                    |             |
| HIGHEST DAILY MEAN       | 243                    | Feb 2  | 96                  | Feb 7  | 322                     | Jan 4 1982  |
| LOWEST DAILY MEAN        | .21                    | Oct 20 | .19                 | Sep 30 | .00                     | Oct 11 1977 |
| ANNUAL SEVEN-DAY MINIMUM | .22                    | Oct 17 | .22                 | Oct 17 | .00                     | Oct 11 1977 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 863                 |        | 1550                    | Feb 2 1998  |
| INSTANTANEOUS PEAK STAGE |                        |        | 6.81                |        | 9.12                    | Feb 2 1998  |
| ANNUAL RUNOFF (AC-FT)    | 5920                   |        | 2530                |        | 2900                    |             |
| 10 PERCENT EXCEEDS       | 17                     |        | 7.3                 |        | 6.8                     |             |
| 50 PERCENT EXCEEDS       | .90                    |        | .56                 |        | .48                     |             |
| 90 PERCENT EXCEEDS       | .26                    |        | .27                 |        | .19                     |             |

## 11181040 SAN LORENZO CREEK AT SAN LORENZO, CA

LOCATION.—Lat 37°41'03", long 122°08'20", in San Lorenzo (Soto) Grant, Alameda County, Hydrologic Unit 18050004, on left bank, 400 ft downstream from Washington Avenue Bridge in San Lorenzo, and 1.6 mi upstream from mouth.

DRAINAGE AREA.—44.6 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1967 to September 1978, October 1987 to current year.

WATER TEMPERATURE: Water years 1989–93 (storm season only).

SEDIMENT DATA: Water years 1989–93 (storm season only).

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 6.13 ft above sea level (levels by Alameda County Flood Control and Water Conservation District).

REMARKS.—Records poor. Flow partly regulated since October 1962 by Cull Creek Reservoir, capacity, 310 acre-ft, and since January 1965 by Don Castro Reservoir, capacity, 380 acre-ft, 7 mi upstream. A few very small diversions upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 10,300 ft<sup>3</sup>/s, Feb. 3, 1998, gage height, 14.27 ft from rating curve extended above 1,200 ft<sup>3</sup>/s; minimum daily, 0.01 ft<sup>3</sup>/s, several days in June and July 1977.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,500 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Feb. 7 | 1300 | 3,130                             | 7.55                | Feb. 27 | 0300 | 1,620                             | 6.19                |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV    | DEC   | JAN    | FEB  | MAR  | APR  | MAY  | JUN   | JUL  | AUG  | SEP   |
|-------|-------|--------|-------|--------|------|------|------|------|-------|------|------|-------|
| 1     | e3.2  | 1.3    | 31    | 3.9    | 29   | 41   | 29   | 21   | e11   | 2.1  | e1.6 | e1.9  |
| 2     | e3.2  | 1.1    | 14    | 3.5    | 26   | 39   | 28   | 20   | e11   | 2.4  | e2.1 | e1.7  |
| 3     | e3.1  | .96    | 43    | 3.5    | 25   | 54   | 28   | 21   | e11   | 2.9  | e2.9 | e1.4  |
| 4     | e3.0  | 1.0    | 16    | 3.4    | 24   | 38   | 28   | 20   | e10   | 3.0  | e3.0 | e1.3  |
| 5     | e3.0  | .99    | 45    | 3.3    | 23   | 37   | 87   | 18   | e10   | 2.9  | e4.0 | e1.3  |
| 6     | e3.1  | 6.6    | 34    | 3.6    | 93   | 37   | 41   | 18   | e10   | 3.0  | e8.2 | e1.3  |
| 7     | e3.3  | 32     | 11    | 3.4    | 934  | 36   | 26   | 17   | e10   | 3.0  | e3.2 | e1.4  |
| 8     | e3.4  | 17     | 8.3   | 3.4    | 118  | 42   | 138  | 17   | e10   | e2.9 | e2.1 | e1.7  |
| 9     | e3.5  | 8.3    | 7.2   | 3.2    | 647  | 107  | 40   | 16   | e10   | e2.7 | e2.2 | e2.4  |
| 10    | 3.3   | 4.5    | 6.0   | 3.0    | 89   | 43   | 37   | e16  | e9.8  | e2.6 | e2.4 | e1.4  |
| 11    | 3.3   | 6.1    | 5.9   | 3.3    | 53   | 40   | 90   | e15  | e9.4  | e2.5 | e2.6 | e1.2  |
| 12    | 3.4   | 1.9    | 5.9   | 3.2    | 42   | 38   | 39   | e14  | e9.2  | e2.5 | e2.5 | e1.1  |
| 13    | 3.7   | 4.5    | 22    | 3.3    | 42   | 37   | 33   | e14  | e8.5  | e3.0 | e2.7 | e1.1  |
| 14    | 4.9   | 1.6    | 17    | 3.4    | 37   | 63   | 31   | e13  | e7.4  | e3.0 | e2.4 | e1.2  |
| 15    | 4.6   | 1.6    | 6.7   | 29     | 32   | 64   | 29   | e12  | e6.7  | e3.3 | e1.9 | e1.1  |
| 16    | 4.3   | 1.4    | 5.6   | 45     | 129  | 47   | 29   | e12  | e6.9  | e3.4 | e2.1 | e1.2  |
| 17    | 4.8   | 4.3    | 5.2   | 9.4    | 424  | 39   | 28   | e14  | e6.7  | e3.1 | e2.5 | e1.1  |
| 18    | 3.6   | 2.4    | 5.1   | 128    | 94   | 35   | 27   | e13  | e6.9  | e2.7 | e2.5 | e.95  |
| 19    | 3.2   | 1.6    | 4.7   | 189    | 60   | 43   | 27   | e14  | e6.6  | e2.9 | e2.4 | e.91  |
| 20    | 3.0   | 1.4    | 9.2   | 179    | 177  | 40   | 27   | e12  | e6.4  | e2.9 | e2.3 | e1.2  |
| 21    | 3.1   | 2.3    | 4.8   | 40     | 214  | 36   | 27   | e12  | e6.5  | e2.7 | e2.3 | e1.5  |
| 22    | 3.0   | 19     | 4.4   | 28     | 73   | 34   | 26   | e11  | e6.5  | e2.6 | e2.1 | 8.3   |
| 23    | 2.9   | e76    | 4.4   | 130    | 59   | 41   | 26   | e10  | e6.8  | e2.6 | e2.0 | 2.9   |
| 24    | 45    | 18     | 4.1   | 48     | 52   | 35   | 25   | e11  | e5.2  | e2.7 | e2.3 | e2.0  |
| 25    | 7.1   | 4.8    | 4.5   | 38     | 78   | 72   | 24   | e11  | e4.0  | 2.1  | e2.2 | e1.6  |
| 26    | 2.1   | 4.7    | 4.2   | 82     | 48   | 43   | 23   | e11  | e3.6  | 1.9  | e2.0 | e1.4  |
| 27    | 1.6   | 14     | 4.2   | 44     | 44   | 34   | 23   | e12  | e3.2  | 2.1  | e2.1 | e1.4  |
| 28    | 1.2   | 27     | 4.1   | 36     | 42   | 31   | 23   | e12  | e3.4  | e2.0 | e1.7 | e1.3  |
| 29    | 1.2   | 28     | 4.1   | 33     | ---  | 30   | 22   | e13  | e3.2  | e1.9 | e2.2 | e1.4  |
| 30    | 1.2   | 209    | 4.1   | 31     | ---  | 29   | 22   | e13  | e2.9  | e1.8 | e2.3 | e1.2  |
| 31    | 1.3   | ---    | 4.2   | 81     | ---  | 34   | ---  | e12  | ---   | e1.6 | e1.9 | ---   |
| TOTAL | 140.6 | 503.35 | 349.9 | 1217.8 | 3708 | 1339 | 1083 | 445  | 222.8 | 80.8 | 78.7 | 49.86 |
| MEAN  | 4.54  | 16.8   | 11.3  | 39.3   | 132  | 43.2 | 36.1 | 14.4 | 7.43  | 2.61 | 2.54 | 1.66  |
| MAX   | 45    | 209    | 45    | 189    | 934  | 107  | 138  | 21   | 11    | 3.4  | 8.2  | 8.3   |
| MIN   | 1.2   | .96    | 4.1   | 3.0    | 23   | 29   | 22   | 10   | 2.9   | 1.6  | 1.6  | .91   |
| AC-FT | 279   | 998    | 694   | 2420   | 7350 | 2660 | 2150 | 883  | 442   | 160  | 156  | 99    |

e Estimated.

## 11181040 SAN LORENZO CREEK AT SAN LORENZO, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 5.24 | 9.76 | 24.7 | 74.9 | 68.4 | 44.7 | 23.2 | 9.23 | 4.21 | 1.89 | 1.53 | 1.77 |
| MAX  | 30.2 | 38.1 | 106  | 259  | 390  | 154  | 108  | 31.9 | 17.0 | 5.99 | 3.25 | 4.58 |
| (WY) | 1992 | 1974 | 1971 | 1997 | 1998 | 1995 | 1974 | 1996 | 1993 | 1998 | 1969 | 1975 |
| MIN  | .23  | 1.49 | 1.41 | 1.14 | 2.15 | 1.83 | 2.07 | .85  | .066 | .64  | .11  | .35  |
| (WY) | 1978 | 1991 | 1990 | 1991 | 1977 | 1972 | 1976 | 1972 | 1977 | 1990 | 1977 | 1988 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1968 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 23520.95               |        | 9218.81             |        |                         |             |
| ANNUAL MEAN              | 64.4                   |        | 25.3                |        | 22.3                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 65.6                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 2.38                    |             |
| HIGHEST DAILY MEAN       | 2340                   | Feb 3  | 934                 | Feb 7  | 2400                    | Jan 21 1970 |
| LOWEST DAILY MEAN        | .96                    | Nov 3  | .91                 | Sep 19 | .01                     | Jun 12 1977 |
| ANNUAL SEVEN-DAY MINIMUM | 1.1                    | Oct 30 | 1.1                 | Sep 13 | .01                     | Jun 10 1977 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 3130                |        | 10300                   |             |
| INSTANTANEOUS PEAK STAGE |                        |        | 7.55                |        | 14.27                   |             |
| ANNUAL RUNOFF (AC-FT)    | 46650                  |        | 18290               |        | 16120                   |             |
| 10 PERCENT EXCEEDS       | 164                    |        | 45                  |        | 45                      |             |
| 50 PERCENT EXCEEDS       | 9.7                    |        | 6.7                 |        | 2.7                     |             |
| 90 PERCENT EXCEEDS       | 2.3                    |        | 1.6                 |        | .60                     |             |





## 380519122262901 SAN PABLO BAY AT PETALUMA RIVER CHANNEL MARKER 9, CA—Continued

## TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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

## 11181360 SAN PABLO STRAIT AT POINT SAN PABLO, CA

LOCATION.—Lat 37°57'53", long 122°25'42", in NW 1/4 sec.3, T.1 N., R.5 W., Contra Costa County, Hydrologic Unit 18050002, on north end of Richmond Terminal No. 4 Pier on west side of Point San Pablo.

## GAGE-HEIGHT RECORDS

DRAINAGE AREA.—Indeterminate.

PERIOD OF RECORD.—October 1989 to current year (gage height only).

GAGE.—Water-stage recorder. Datum of gage is 10.00 ft below sea level.

REMARKS.—Daily maximums and minimums sometimes differ from tidal-cycle (24.8 hours) maximums and minimums.

EXTREMES FOR PERIOD OF RECORD.—Maximum gage height recorded, 16.17 ft, Feb. 6, 1998; minimum gage height recorded, 4.93 ft, June 13, 1995.

EXTREMES FOR CURRENT YEAR.—Maximum gage height recorded, 14.98 ft, Nov. 30; minimum gage height recorded, 5.50 ft, June 15.

## GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY   | MAX     | MIN  | MAX      | MIN  | MAX      | MIN  | MAX     | MIN  | MAX      | MIN  | MAX   | MIN  |
|-------|---------|------|----------|------|----------|------|---------|------|----------|------|-------|------|
|       | OCTOBER |      | NOVEMBER |      | DECEMBER |      | JANUARY |      | FEBRUARY |      | MARCH |      |
| 1     | 13.01   | 7.80 | 13.20    | 7.70 | 14.35    | 6.88 | 14.31   | 5.59 | 13.54    | 6.06 | 13.46 | 6.60 |
| 2     | 13.12   | 7.41 | 13.73    | 7.36 | 14.55    | 6.27 | 14.23   | 5.77 | 13.18    | 6.30 | 13.48 | 7.32 |
| 3     | 13.11   | 7.27 | 14.01    | 6.66 | 14.74    | 6.05 | 14.08   | 5.82 | 13.16    | 7.24 | 13.20 | 7.48 |
| 4     | 13.19   | 7.24 | 14.13    | 6.21 | 14.57    | 5.83 | 13.54   | 6.12 | 12.90    | 7.68 | 12.80 | 7.86 |
| 5     | 13.50   | 7.45 | 14.01    | 5.93 | 14.27    | 6.13 | 13.12   | 6.58 | 12.81    | 8.24 | 12.60 | 8.49 |
| 6     | 13.85   | 7.30 | 14.13    | 6.17 | 13.62    | 5.79 | 12.59   | 7.11 | 12.82    | 9.39 | 12.84 | 8.79 |
| 7     | 14.05   | 7.07 | 14.14    | 6.49 | 13.00    | 5.90 | 12.76   | 7.49 | 13.32    | 9.33 | 12.81 | 8.84 |
| 8     | 13.97   | 6.88 | 13.65    | 6.71 | 12.50    | 6.44 | 12.57   | 8.07 | 12.95    | 9.12 | ---   | ---  |
| 9     | 13.73   | 6.91 | 12.98    | 7.08 | 12.33    | 7.28 | 12.49   | 8.24 | 13.67    | 8.38 | 12.93 | 8.66 |
| 10    | 13.53   | 6.99 | 12.81    | 7.46 | 12.28    | 7.49 | 12.77   | 8.63 | 12.54    | 7.78 | 12.53 | 8.49 |
| 11    | 13.22   | 7.23 | 12.79    | 7.79 | 12.52    | 7.85 | 13.14   | 8.47 | 12.65    | 7.41 | 12.62 | 8.23 |
| 12    | 12.86   | 7.30 | 12.72    | 7.70 | 12.67    | 8.32 | 13.20   | 7.80 | 13.02    | 7.03 | 12.48 | 7.82 |
| 13    | 12.60   | 7.41 | 12.77    | 7.88 | 13.21    | 8.36 | 13.18   | 7.14 | 13.39    | 6.76 | 12.78 | 7.63 |
| 14    | 12.75   | 7.54 | 13.17    | 8.31 | 12.86    | 7.59 | 13.30   | 6.83 | 13.71    | 6.56 | 13.52 | 7.34 |
| 15    | 12.80   | 7.75 | 13.32    | 7.96 | 13.14    | 7.13 | 13.68   | 6.75 | 13.77    | 6.47 | 13.70 | 7.27 |
| 16    | 12.76   | 7.77 | 13.41    | 7.95 | 13.37    | 6.77 | 13.86   | 6.64 | 13.93    | 6.55 | 13.48 | 6.99 |
| 17    | 12.82   | 7.91 | 13.55    | 7.41 | 13.49    | 6.85 | 13.96   | 6.56 | 13.66    | 6.94 | 13.47 | 7.19 |
| 18    | 13.02   | 8.17 | 13.32    | 7.00 | 13.85    | 6.85 | 13.85   | 6.60 | 13.71    | 7.24 | 13.59 | 7.82 |
| 19    | 13.26   | 8.04 | 13.21    | 6.77 | 13.80    | 6.48 | 13.90   | 6.90 | 13.14    | 7.71 | 13.86 | 8.14 |
| 20    | 13.30   | 7.87 | 13.26    | 6.75 | 13.50    | 6.13 | 13.77   | 7.01 | 13.42    | 8.50 | 14.02 | 7.59 |
| 21    | 13.41   | 7.80 | 13.38    | 7.02 | 13.14    | 6.00 | 12.90   | 6.95 | 13.45    | 8.19 | 14.02 | 7.39 |
| 22    | 13.13   | 7.58 | 13.27    | 7.01 | 12.92    | 6.37 | 12.70   | 7.77 | 13.23    | 7.80 | 13.92 | 7.30 |
| 23    | 13.12   | 7.49 | 13.79    | 7.43 | 12.59    | 6.39 | 13.19   | 8.15 | 13.04    | 7.78 | 13.79 | 7.46 |
| 24    | 13.28   | 7.64 | 12.54    | 7.14 | 12.08    | 6.67 | 13.34   | 8.58 | 13.42    | 7.71 | 13.70 | 7.87 |
| 25    | 12.92   | 7.61 | 12.37    | 7.58 | 12.22    | 7.34 | 13.82   | 8.29 | 13.65    | 7.05 | 13.71 | 7.52 |
| 26    | 12.85   | 8.02 | 12.62    | 7.98 | 12.64    | 7.70 | 14.11   | 7.04 | 13.53    | 6.48 | 13.17 | 7.15 |
| 27    | 12.56   | 7.94 | 13.07    | 8.01 | 13.04    | 8.02 | 13.67   | 6.48 | 13.61    | 6.35 | 12.61 | 6.78 |
| 28    | 12.35   | 7.91 | 13.27    | 8.27 | 13.23    | 7.31 | 13.73   | 6.00 | 13.70    | 6.55 | 12.66 | 6.92 |
| 29    | 12.42   | 7.88 | 14.11    | 8.40 | 13.65    | 6.71 | 13.99   | 5.80 | ---      | ---  | 12.82 | 7.24 |
| 30    | 12.72   | 7.72 | 14.98    | 8.45 | 14.14    | 6.44 | 14.40   | 6.37 | ---      | ---  | 13.15 | 7.74 |
| 31    | 13.02   | 7.75 | ---      | ---  | 14.33    | 5.88 | 14.40   | 5.96 | ---      | ---  | 13.15 | 7.92 |
| MONTH | 14.05   | 6.88 | 14.98    | 5.93 | 14.74    | 5.79 | 14.40   | 5.59 | 13.93    | 6.06 | ---   | ---  |

## 11181360 SAN PABLO STRAIT AT POINT SAN PABLO, CA—Continued

## GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY   | MAX   | MIN  | MAX   | MIN  | MAX   | MIN  | MAX   | MIN  | MAX    | MIN  | MAX       | MIN  |
|-------|-------|------|-------|------|-------|------|-------|------|--------|------|-----------|------|
|       | APRIL |      | MAY   |      | JUNE  |      | JULY  |      | AUGUST |      | SEPTEMBER |      |
| 1     | 12.99 | 7.81 | 13.28 | 7.14 | 13.45 | 6.86 | 13.86 | 7.20 | 12.91  | 7.19 | 13.58     | 8.12 |
| 2     | 13.13 | 7.83 | 13.13 | 7.07 | 13.55 | 7.13 | 13.73 | 7.25 | 12.73  | 7.50 | 13.62     | 7.85 |
| 3     | 13.07 | 7.62 | 13.26 | 7.18 | 13.23 | 6.99 | 13.30 | 7.36 | 13.01  | 8.02 | 13.71     | 7.82 |
| 4     | 12.40 | 7.43 | 13.05 | 7.01 | 12.74 | 6.96 | 12.75 | 7.40 | 13.37  | 8.19 | 13.84     | 7.57 |
| 5     | 12.61 | 7.93 | 12.56 | 7.00 | 12.40 | 7.29 | 12.96 | 7.74 | 13.62  | 8.14 | 13.85     | 7.27 |
| 6     | 12.75 | 7.87 | 12.40 | 7.36 | 12.44 | 7.44 | ---   | ---  | 13.81  | 7.71 | 14.02     | 7.08 |
| 7     | 12.53 | 8.10 | 11.98 | 7.29 | 12.57 | 7.54 | 13.40 | 8.33 | 13.89  | 6.98 | 13.96     | 7.09 |
| 8     | 12.53 | 7.72 | 11.68 | 7.36 | 12.96 | 7.90 | 13.84 | 7.79 | 14.03  | 6.59 | 13.79     | 7.02 |
| 9     | 11.62 | 7.42 | 12.11 | 7.42 | 13.36 | 8.18 | 14.03 | 7.32 | 14.33  | 6.38 | 13.62     | 7.25 |
| 10    | 12.40 | 7.66 | 12.59 | 7.47 | 13.87 | 7.47 | 14.42 | 6.64 | 14.20  | 6.42 | 13.61     | 7.43 |
| 11    | 12.81 | 7.71 | 13.00 | 7.56 | 14.10 | 6.86 | 14.64 | 6.31 | 14.01  | 6.27 | 13.31     | 7.79 |
| 12    | 12.70 | 7.32 | 13.36 | 7.78 | 14.24 | 6.21 | 14.68 | 6.16 | 13.85  | 6.44 | 13.03     | 8.18 |
| 13    | 12.85 | 7.08 | 13.50 | 7.07 | 14.34 | 5.67 | 14.61 | 6.14 | 13.54  | 6.64 | ---       | ---  |
| 14    | 13.36 | 7.40 | 13.81 | 6.37 | 14.31 | 5.57 | 14.61 | 6.31 | 13.10  | 7.10 | ---       | ---  |
| 15    | 13.74 | 7.45 | 13.96 | 5.85 | 14.25 | 5.50 | 14.27 | 6.47 | 12.84  | 7.63 | ---       | ---  |
| 16    | 13.77 | 6.99 | 13.96 | 5.57 | 14.01 | 5.67 | 13.74 | 6.73 | 12.80  | 8.20 | ---       | ---  |
| 17    | 13.94 | 6.60 | 14.08 | 5.54 | 13.58 | 6.05 | 13.11 | 7.19 | 12.81  | 8.74 | ---       | ---  |
| 18    | 14.01 | 6.25 | 13.93 | 5.54 | 13.24 | 6.55 | 13.05 | 7.70 | 12.82  | 8.53 | ---       | ---  |
| 19    | 13.84 | 5.95 | 13.80 | 5.93 | 13.02 | 7.08 | 13.12 | 8.22 | 12.95  | 8.51 | ---       | ---  |
| 20    | 13.56 | 6.25 | 13.29 | 6.35 | 13.22 | 7.81 | 13.14 | 8.86 | 12.88  | 8.25 | ---       | ---  |
| 21    | 13.16 | 6.41 | 12.84 | 6.94 | 13.37 | 8.45 | 13.23 | 8.65 | 13.13  | 7.77 | ---       | ---  |
| 22    | 12.82 | 6.65 | 13.14 | 7.49 | 13.56 | 8.91 | 13.28 | 8.24 | 13.45  | 7.65 | 13.30     | 7.43 |
| 23    | 12.58 | 7.21 | 13.14 | 7.83 | 13.63 | 8.42 | 13.26 | 7.86 | 13.52  | 7.66 | 13.28     | 7.41 |
| 24    | 12.87 | 7.53 | 13.28 | 8.22 | 13.65 | 8.13 | 13.42 | 7.50 | 13.64  | 7.24 | 13.21     | 7.46 |
| 25    | 12.84 | 7.38 | 13.41 | 8.41 | 13.69 | 7.61 | 13.60 | 7.19 | 13.83  | 7.13 | 13.19     | 7.53 |
| 26    | 12.81 | 7.56 | 13.38 | 8.09 | 13.72 | 7.27 | ---   | ---  | 13.79  | 7.26 | 13.42     | 7.95 |
| 27    | 12.87 | 7.91 | 13.42 | 7.48 | 13.77 | 7.01 | 13.75 | 6.93 | 13.79  | 7.33 | 13.67     | 7.68 |
| 28    | 12.85 | 7.55 | 13.45 | 7.24 | 13.86 | 6.94 | 13.64 | 6.82 | 13.53  | 7.28 | 13.66     | 7.53 |
| 29    | 13.29 | 7.33 | 13.66 | 6.96 | 13.87 | 6.91 | 13.68 | 6.69 | 13.22  | 7.56 | 13.66     | 7.46 |
| 30    | 13.27 | 7.26 | 13.59 | 6.99 | 13.87 | 7.00 | 13.49 | 6.75 | 13.01  | 7.83 | 13.66     | 7.54 |
| 31    | ---   | ---  | 13.55 | 6.74 | ---   | ---  | 13.20 | 6.86 | 13.29  | 8.12 | ---       | ---  |
| MONTH | 14.01 | 5.95 | 14.08 | 5.54 | 14.34 | 5.50 | ---   | ---  | 14.33  | 6.27 | ---       | ---  |



## 11181360 SAN PABLO STRAIT AT POINT SAN PABLO, CA—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.—October 1989 to current year.

SPECIFIC CONDUCTANCE: October 1989 to current year.

WATER TEMPERATURE: October 1989 to current year.

PERIOD OF DAILY RECORD.—October 1989 to current year.

SPECIFIC CONDUCTANCE: October 1989 to current year.

WATER TEMPERATURE: October 1989 to current year.

INSTRUMENTATION.—Water-quality monitor since October 1989.

REMARKS.—Interruptions in record were due to malfunction of the sensing and (or) recording instruments. Upper probe is set about 4.0 ft below Mean Lower Low Water (MLLW). Lower probe is set about 20.0 ft below MLLW. Daily maximums and minimums sometimes differ from tidal-cycle (24.8 hours) maximums and minimums.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: (Upper probe) Maximum recorded, 50,900 microsiemens, Aug. 25, 28, 1992; minimum recorded, 155 microsiemens, Jan. 5, 1997.

(Lower probe) Maximum recorded, 50,100 microsiemens, July 23, 1990; minimum recorded, 147 microsiemens, Jan. 5, 1997.

WATER TEMPERATURE: (Upper probe) Maximum recorded, 24.0°C, July 31, 1993; minimum recorded, 4.5°C, Dec. 23, 1990.

(Lower probe) Maximum recorded, 22.5°C, July 30, 1995, Aug. 26, 28, Sept. 4, 1997; minimum recorded, 5.0°C, Dec. 21, 23, 1990.

EXTREMES FOR CURRENT YEAR.—

SPECIFIC CONDUCTANCE: (Upper probe) Maximum recorded, 46,400 microsiemens, Sept. 30; minimum recorded, 2,540 microsiemens, Feb. 21.

(Lower probe) Maximum recorded, 48,200 microsiemens, July 15; minimum recorded, 2,860 microsiemens, Feb. 19.

WATER TEMPERATURE: (Upper probe) Maximum recorded, 20.5°C, Sept. 30; minimum recorded, 6.5°C, Dec. 21.

(Lower probe) Maximum recorded, 19.5°C, June 20, July 16, 23, Sept. 30; minimum recorded, 8.5°C, Apr. 4.

## SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## (UPPER PROBE)

| DAY   | OCTOBER |       | NOVEMBER |       | DECEMBER |       | JANUARY |       | FEBRUARY |       | MARCH |       |
|-------|---------|-------|----------|-------|----------|-------|---------|-------|----------|-------|-------|-------|
|       | MAX     | MIN   | MAX      | MIN   | MAX      | MIN   | MAX     | MIN   | MAX      | MIN   | MAX   | MIN   |
| 1     | 42300   | 29000 | 43900    | 32600 | 42500    | 26800 | 43100   | 25300 | 38200    | 16100 | 28700 | 7620  |
| 2     | 41600   | 30800 | 44900    | 31200 | 42600    | 22300 | 43600   | 25600 | 39800    | 14800 | 30000 | 6530  |
| 3     | 41500   | 30300 | 45200    | 32900 | 43000    | 23600 | 43600   | 24700 | 39400    | 13200 | 30900 | 7120  |
| 4     | 41400   | 28100 | 45800    | 33100 | 42300    | 21500 | 41900   | 24900 | 36900    | 15300 | 27700 | 2890  |
| 5     | ---     | ---   | 44900    | 35300 | 42000    | 17900 | 41900   | 25700 | 35800    | 15900 | 27600 | 7470  |
| 6     | 43100   | 29300 | 44000    | 32500 | 40100    | 16400 | ---     | ---   | 37500    | 18500 | 28000 | 7770  |
| 7     | 43400   | 29300 | 45400    | 33500 | 36900    | 10100 | 42200   | 24400 | 34700    | 13100 | 30800 | 7040  |
| 8     | ---     | ---   | 44700    | 32400 | 37400    | 11100 | 41800   | 24300 | 35000    | 12500 | ---   | ---   |
| 9     | 42600   | 30600 | 43900    | 30400 | 37300    | 7120  | 41300   | 24900 | ---      | ---   | 33400 | 6990  |
| 10    | 43100   | 27900 | 43000    | 27700 | 35600    | 5920  | 40900   | 25600 | 29800    | 7610  | 32200 | 5460  |
| 11    | 41900   | 28000 | 42800    | 26800 | 35700    | 13300 | 41300   | 26200 | 34000    | 8170  | 34300 | 7950  |
| 12    | 42200   | 29300 | 43500    | 28400 | 34500    | 15400 | 42500   | 28200 | 31200    | 10800 | 33000 | 7710  |
| 13    | 41500   | 25300 | ---      | ---   | 36200    | 16500 | 41100   | 29400 | 32500    | 13500 | 33400 | 10100 |
| 14    | 42700   | 27900 | ---      | ---   | 35300    | 18200 | 42400   | 29900 | 31400    | 12100 | 31100 | 8010  |
| 15    | 43100   | 29100 | ---      | ---   | 37500    | 18000 | 43600   | 30900 | 35000    | 10400 | 31500 | 13100 |
| 16    | 43400   | 31000 | 43300    | 29000 | 37200    | 18800 | 44000   | 30800 | 32800    | 6920  | 35400 | 10100 |
| 17    | 43300   | 30000 | 43300    | 28200 | 37400    | 21200 | 44100   | 31100 | 31100    | 7890  | 34500 | 10700 |
| 18    | 43800   | 30900 | ---      | ---   | 38500    | 20000 | 44300   | 30500 | 34000    | 7530  | 36000 | 13000 |
| 19    | 43300   | 31700 | ---      | ---   | 37200    | 20300 | 43900   | 30400 | 29300    | 2710  | 36200 | 13400 |
| 20    | ---     | ---   | ---      | ---   | 37200    | 21700 | 43800   | 30700 | 28500    | 4270  | 36500 | 6620  |
| 21    | 43200   | 30800 | ---      | ---   | 36000    | 17300 | 42400   | 26900 | 28900    | 2540  | 35200 | 11000 |
| 22    | 43600   | 31800 | 41400    | 28800 | 37600    | 14900 | 41700   | 20600 | 24700    | 3170  | 37500 | 10400 |
| 23    | ---     | ---   | 43000    | 30600 | 38600    | 16300 | 41900   | 21700 | 25400    | 3380  | 36800 | 12900 |
| 24    | ---     | ---   | 40400    | 22500 | 37900    | 16500 | 42300   | 17000 | 26800    | 3920  | 33100 | 10700 |
| 25    | 41900   | 31300 | 41200    | 22400 | 40000    | 17000 | 40600   | 16600 | 28600    | 6590  | ---   | ---   |
| 26    | 42600   | 30100 | 41500    | 22200 | 40300    | 19100 | 39800   | 17900 | 27600    | 6590  | 33700 | 13700 |
| 27    | 43500   | 29900 | 41800    | 23600 | 40900    | 20800 | 41400   | 14200 | 26900    | 6040  | 38300 | 14000 |
| 28    | 43500   | 30800 | 42100    | 24800 | 41100    | 22000 | 38400   | 16600 | 29700    | 6300  | 38600 | 14200 |
| 29    | 44000   | 29400 | 42000    | 25300 | 42600    | 24300 | 40200   | 13400 | ---      | ---   | 35900 | 14200 |
| 30    | 44300   | 31700 | ---      | ---   | 42700    | 24700 | 40500   | 15700 | ---      | ---   | 35900 | 13000 |
| 31    | 44000   | 29900 | ---      | ---   | 42600    | 25500 | 40500   | 18300 | ---      | ---   | 37900 | 13000 |
| MONTH | ---     | ---   | ---      | ---   | 43000    | 5920  | ---     | ---   | ---      | ---   | ---   | ---   |



## 11181360 SAN PABLO STRAIT AT POINT SAN PABLO, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
(LOWER PROBE)

| DAY   | MAX     | MIN   | MAX      | MIN   | MAX      | MIN   | MAX     | MIN   | MAX      | MIN   | MAX       | MIN   |
|-------|---------|-------|----------|-------|----------|-------|---------|-------|----------|-------|-----------|-------|
|       | OCTOBER |       | NOVEMBER |       | DECEMBER |       | JANUARY |       | FEBRUARY |       | MARCH     |       |
|       |         |       |          |       |          |       |         |       |          |       |           |       |
| 1     | 42800   | 30100 | 43700    | 32600 | 43000    | 27200 | 41800   | 25500 | 38000    | 16300 | 35400     | 9260  |
| 2     | 42500   | 30800 | 44400    | 34000 | 42900    | 23300 | 42200   | 25400 | 39100    | 15100 | 35700     | 6800  |
| 3     | 41800   | 30500 | 44800    | 33000 | 43300    | 24000 | 42500   | 24800 | 39400    | 14600 | 35200     | 8890  |
| 4     | 42000   | 29500 | 44900    | 33300 | 42800    | 21700 | 41700   | 24400 | 38700    | 17600 | 34300     | 6640  |
| 5     | ---     | ---   | 45000    | 35800 | 42000    | 18600 | 41400   | 25600 | 38900    | 17000 | 35000     | 8440  |
| 6     | 43200   | 29700 | 45200    | 33000 | 40500    | 17700 | 41400   | 23600 | 40300    | 21500 | 37500     | 8420  |
| 7     | 43600   | 29500 | 46700    | 33700 | 39200    | 12900 | 40800   | 24300 | 37100    | 15400 | 38400     | 9900  |
| 8     | 43600   | 30000 | 44900    | 32600 | 38600    | 12200 | 40800   | 26700 | 40200    | 16700 | ---       | ---   |
| 9     | 43300   | 32000 | 44300    | 32400 | 38600    | 13500 | 42000   | 26500 | ---      | ---   | 38200     | 8940  |
| 10    | 43500   | 29500 | 43800    | 30500 | 40100    | 15200 | 43500   | 27900 | 39600    | 7860  | 39400     | 7840  |
| 11    | 43500   | 29800 | 43500    | 29800 | 41300    | 16600 | 43800   | 26900 | 38400    | 8840  | 39500     | 9390  |
| 12    | 42800   | 30200 | 43800    | 28700 | 41800    | 18000 | 41900   | 28100 | 37900    | 11700 | 39400     | 12200 |
| 13    | 42800   | 26200 | 44000    | 31600 | 41800    | 19800 | 41400   | 29100 | 40200    | 14200 | 39700     | 10700 |
| 14    | 43200   | 30800 | 43900    | 31100 | 38100    | 20500 | 42400   | 29500 | 38500    | 13200 | 37900     | 11400 |
| 15    | 43300   | 30400 | 43400    | 32700 | 41000    | 18000 | 42300   | 30200 | 38200    | 10700 | 37700     | 13200 |
| 16    | 43500   | 31500 | 43800    | 33700 | 41000    | 19400 | 42600   | 30400 | 37000    | 8390  | 35700     | 11700 |
| 17    | 43500   | 30800 | 43900    | 33500 | 41200    | 21500 | 42500   | 29500 | 34800    | 8480  | 35900     | 11100 |
| 18    | 43700   | 32500 | 44400    | 31800 | 40400    | 20200 | 42500   | 29700 | 34000    | 8980  | 35900     | 14500 |
| 19    | 43900   | 32500 | 44600    | 31100 | 40200    | 21400 | 42800   | 30000 | 33600    | 2860  | 36700     | 16200 |
| 20    | 43900   | 32200 | 43900    | 30100 | 40300    | 21700 | 42800   | 29900 | 34600    | 5140  | 36200     | 14900 |
| 21    | 43900   | 31800 | 43600    | 28900 | 39000    | 17500 | 41500   | 26300 | 35700    | 5160  | 36600     | 11900 |
| 22    | 43700   | 32100 | 43700    | 29400 | 39900    | 15400 | 40700   | 20800 | 31600    | 4160  | 37600     | 11600 |
| 23    | 43500   | 31400 | 43500    | 31400 | 38300    | 15900 | 41100   | 22300 | 34700    | 4300  | 37800     | 14300 |
| 24    | 43600   | 31900 | 42500    | 23300 | 38800    | 16800 | 41400   | 19900 | 36000    | 4290  | 36900     | 11500 |
| 25    | 43100   | 31500 | 42100    | 24100 | 40000    | 19500 | 42400   | 21600 | 35300    | 8460  | ---       | ---   |
| 26    | 43700   | 31200 | 42500    | 23000 | 40800    | 20800 | 41200   | 18100 | 35700    | 8260  | 37900     | 14100 |
| 27    | 43300   | 34200 | 42800    | 25000 | 40800    | 23200 | 40600   | 14800 | 35300    | 6820  | 38100     | 14800 |
| 28    | 43300   | 32400 | 42700    | 26900 | 40900    | 23300 | 40300   | 16400 | 37100    | 6950  | 38700     | 14900 |
| 29    | 43500   | 32200 | 42600    | 26200 | 41300    | 24700 | 40400   | 13900 | ---      | ---   | 39200     | 16400 |
| 30    | 43700   | 33300 | ---      | ---   | 41500    | 24500 | 40900   | 16700 | ---      | ---   | 38800     | 19100 |
| 31    | 43600   | 29600 | ---      | ---   | 41600    | 25700 | 40100   | 18500 | ---      | ---   | 38500     | 20200 |
| MONTH | ---     | ---   | ---      | ---   | 43300    | 12200 | 43800   | 13900 | ---      | ---   | ---       | ---   |
| DAY   | MAX     | MIN   | MAX      | MIN   | MAX      | MIN   | MAX     | MIN   | MAX      | MIN   | MAX       | MIN   |
|       | APRIL   |       | MAY      |       | JUNE     |       | JULY    |       | AUGUST   |       | SEPTEMBER |       |
|       |         |       |          |       |          |       |         |       |          |       |           |       |
| 1     | 38600   | 17200 | 42400    | 22800 | 44800    | 29500 | 46500   | 33100 | ---      | ---   | ---       | ---   |
| 2     | 39100   | 19300 | 44000    | 24600 | 44700    | 29100 | 46000   | 34300 | ---      | ---   | ---       | ---   |
| 3     | 39600   | 19000 | 42600    | 21100 | 44200    | 29300 | 45200   | 33100 | ---      | ---   | ---       | ---   |
| 4     | 40700   | 20700 | 42700    | 23800 | 44000    | 24500 | 45100   | 31500 | ---      | ---   | ---       | ---   |
| 5     | 39500   | 19100 | 41500    | 21700 | 44700    | 25700 | 45300   | 29900 | ---      | ---   | ---       | ---   |
| 6     | 41000   | 18000 | 41900    | 22000 | 43100    | 25800 | ---     | ---   | ---      | ---   | ---       | ---   |
| 7     | 41200   | 18200 | 42400    | 23700 | 43300    | 24300 | 46100   | 31800 | ---      | ---   | ---       | ---   |
| 8     | 40100   | 20900 | 42900    | 24500 | 44000    | 24400 | 46100   | 30400 | ---      | ---   | ---       | ---   |
| 9     | 41200   | 21100 | 44000    | 24100 | 44200    | 28200 | 46400   | 33500 | ---      | ---   | ---       | ---   |
| 10    | 41600   | 20500 | 43200    | 22500 | 44800    | 28100 | 47600   | 32400 | ---      | ---   | ---       | ---   |
| 11    | 41800   | 20700 | 43000    | 25800 | 44600    | 29500 | 46900   | 33100 | ---      | ---   | ---       | ---   |
| 12    | 41300   | 24200 | 43200    | 27800 | 44400    | 29900 | 46900   | 33600 | ---      | ---   | ---       | ---   |
| 13    | 39600   | 24400 | 43800    | 30400 | 44900    | 31100 | 47100   | 34500 | ---      | ---   | ---       | ---   |
| 14    | 39700   | 25100 | 43800    | 29200 | 45300    | 30500 | 47700   | 35200 | ---      | ---   | ---       | ---   |
| 15    | 40400   | 25100 | 44900    | 30300 | 45600    | 31000 | 48200   | 35300 | ---      | ---   | ---       | ---   |
| 16    | 41100   | 23800 | 45100    | 28500 | 45700    | 31200 | 46600   | 35300 | ---      | ---   | ---       | ---   |
| 17    | 41600   | 24100 | 45300    | 28900 | 45100    | 30700 | 46600   | 34800 | ---      | ---   | ---       | ---   |
| 18    | 41400   | 23000 | 45200    | 29000 | 44000    | 30600 | 46000   | 31900 | ---      | ---   | ---       | ---   |
| 19    | 41100   | 23700 | 44700    | 28500 | 44600    | 28200 | 46800   | 33700 | ---      | ---   | ---       | ---   |
| 20    | 41400   | 21000 | 44500    | 28200 | 44900    | 29300 | 46200   | 35100 | ---      | ---   | ---       | ---   |
| 21    | 41800   | 18200 | 44500    | 24400 | 44800    | 31900 | 45900   | 34400 | ---      | ---   | ---       | ---   |
| 22    | 42700   | 20600 | 44000    | 25900 | 45300    | 30300 | 46000   | 34400 | ---      | ---   | ---       | ---   |
| 23    | 43800   | 20400 | 44400    | 28300 | 45200    | 31500 | 46600   | 34300 | ---      | ---   | ---       | ---   |
| 24    | 42500   | 20700 | 44400    | 30300 | 45800    | 32200 | 46900   | 36800 | ---      | ---   | ---       | ---   |
| 25    | 42200   | 23100 | 44300    | 31200 | 45300    | 32500 | 47100   | 34500 | ---      | ---   | ---       | ---   |
| 26    | 41500   | 23400 | 44000    | 28300 | 45500    | 32100 | ---     | ---   | ---      | ---   | ---       | ---   |
| 27    | 41300   | 24300 | 43700    | 29100 | 45500    | 31400 | ---     | ---   | ---      | ---   | ---       | ---   |
| 28    | 41500   | 24800 | 43700    | 29000 | 45500    | 31600 | ---     | ---   | ---      | ---   | ---       | ---   |
| 29    | 42500   | 25200 | 43700    | 28800 | 46000    | 32700 | ---     | ---   | ---      | ---   | ---       | ---   |
| 30    | 42100   | 21100 | 44400    | 29600 | 45900    | 31500 | ---     | ---   | ---      | ---   | 47300     | 38200 |
| 31    | ---     | ---   | 44300    | 30500 | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| MONTH | 43800   | 17200 | 45300    | 21100 | 46000    | 24300 | ---     | ---   | ---      | ---   | ---       | ---   |





## 11182500 SAN RAMON CREEK AT SAN RAMON, CA

LOCATION.—Lat 37°46'23", long 121°59'37", in sec.8, T.2 S., R.1 W., Contra Costa County, Hydrologic Unit 18050001, on right bank, 0.2 mi downstream from Bollinger Creek, and 1.0 mi southwest of San Ramon.

DRAINAGE AREA.—5.89 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1952 to current year.

REVISED RECORDS.—WSP 1445: 1953–54(P).

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 530 ft above sea level, from topographic map.

REMARKS.—Records fair including estimated daily discharges. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,600 ft<sup>3</sup>/s, Oct. 13, 1962, gage height, 16.98 ft, from rating curve extended above 200 ft<sup>3</sup>/s on basis of culvert computations at gage heights 11.80, 12.09, 14.20, and 16.98 ft; no flow for parts of most years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 200 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Feb. 7 | 1045 | 596                               | 6.11                | Feb. 17 | 0100 | 208                               | 3.77                |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN    | FEB   | MAR   | APR   | MAY  | JUN   | JUL   | AUG  | SEP  |
|-------|-------|-------|-------|--------|-------|-------|-------|------|-------|-------|------|------|
| 1     | e. 23 | e. 52 | 3.1   | e. 32  | 2.9   | 8.9   | 5.1   | 3.5  | 1.4   | .45   | .27  | .08  |
| 2     | e. 23 | e. 51 | 1.5   | e. 43  | 2.8   | 7.9   | 4.5   | 3.7  | 1.5   | .47   | .27  | .08  |
| 3     | e. 22 | e. 50 | 4.9   | e. 62  | 2.3   | 11    | 4.3   | 4.0  | 1.4   | .49   | .26  | .10  |
| 4     | e. 21 | e. 52 | 2.0   | e. 48  | 2.1   | 7.3   | 4.3   | 3.5  | 1.4   | .51   | .25  | .08  |
| 5     | e. 19 | e. 48 | 2.7   | e. 81  | 1.8   | 6.8   | 7.9   | 3.3  | 1.3   | .47   | .31  | .08  |
| 6     | e. 20 | e. 85 | 3.3   | e1.1   | 19    | 6.2   | 5.5   | 3.2  | 1.2   | .44   | .39  | .07  |
| 7     | e. 22 | e1.7  | e. 50 | e2.8   | 162   | 5.9   | 4.5   | 3.1  | 1.2   | .46   | .29  | .06  |
| 8     | e. 21 | e1.4  | e. 47 | e. 43  | 34    | 22    | 17    | 3.0  | 1.2   | .41   | .23  | .08  |
| 9     | e. 21 | e1.1  | e. 46 | e. 49  | 103   | 32    | 6.5   | 2.9  | 1.1   | .38   | .23  | .11  |
| 10    | e. 23 | e. 95 | e. 49 | e. 40  | 27    | 12    | 5.8   | 2.7  | 1.1   | .35   | .24  | .11  |
| 11    | e. 24 | e. 89 | e. 40 | e. 28  | 17    | 10    | 21    | 2.7  | 1.1   | .32   | .28  | .10  |
| 12    | e. 25 | e. 92 | e. 58 | e. 38  | 13    | 9.5   | 8.6   | 2.6  | 1.0   | .29   | .29  | .10  |
| 13    | e. 25 | e. 86 | e. 79 | e. 29  | 11    | 8.9   | 7.3   | 2.5  | 1.0   | .23   | .27  | .09  |
| 14    | e. 26 | e. 83 | e. 60 | .43    | 10    | 9.2   | 6.7   | 2.4  | .99   | .26   | .22  | .10  |
| 15    | e. 27 | e. 80 | e. 41 | .89    | 8.3   | 10    | 6.2   | 2.3  | 1.0   | .29   | .20  | .10  |
| 16    | e. 27 | e. 81 | e. 33 | 1.3    | 28    | 8.1   | 5.8   | 2.2  | 1.0   | .34   | .18  | .09  |
| 17    | e. 26 | e. 84 | e. 32 | .76    | 61    | 7.5   | 5.4   | 2.1  | .91   | .39   | .17  | .08  |
| 18    | e. 27 | e. 93 | e. 32 | 9.8    | 26    | 7.2   | 5.3   | 2.1  | .84   | .33   | .17  | .09  |
| 19    | e. 28 | e. 86 | e. 31 | 20     | 17    | 7.4   | 5.1   | 2.1  | .84   | .31   | .20  | .10  |
| 20    | e. 29 | e1.0  | e. 29 | 26     | 25    | 7.9   | 5.1   | 2.1  | .83   | .33   | .17  | .10  |
| 21    | e. 30 | e. 35 | e. 27 | 5.1    | 44    | 6.9   | 5.0   | 2.0  | .83   | .32   | .14  | .09  |
| 22    | e. 28 | e. 51 | e. 29 | 2.7    | 19    | 6.2   | 4.7   | 1.8  | .81   | .28   | .13  | .18  |
| 23    | e. 43 | e1.1  | e. 31 | 16     | 16    | 6.1   | 4.4   | 1.7  | .72   | .29   | .11  | .10  |
| 24    | e. 86 | e. 60 | e. 31 | 4.8    | 14    | 7.2   | 4.3   | 1.7  | .68   | .31   | .09  | .08  |
| 25    | e. 75 | e. 50 | e. 33 | 3.1    | 16    | 12    | 4.2   | 1.7  | .68   | .32   | .09  | .06  |
| 26    | e. 62 | e. 39 | e. 36 | 7.8    | 11    | 7.1   | 4.2   | 1.6  | .68   | .30   | .08  | .06  |
| 27    | e. 55 | e. 46 | e. 32 | 3.7    | 10    | 6.1   | 4.1   | 1.6  | .66   | .29   | .08  | .04  |
| 28    | e. 50 | e. 59 | e. 30 | 2.8    | 9.6   | 5.7   | 4.0   | 1.7  | .59   | .28   | .06  | .03  |
| 29    | e. 57 | e2.0  | e. 28 | 2.4    | ---   | 5.5   | 3.8   | 1.6  | .55   | .26   | .08  | .03  |
| 30    | e. 62 | e15   | e. 33 | 2.2    | ---   | 5.6   | 3.5   | 1.7  | .49   | .25   | .10  | .03  |
| 31    | e. 57 | ---   | e. 38 | 7.4    | ---   | 6.5   | ---   | 1.5  | ---   | .23   | .09  | ---  |
| TOTAL | 10.84 | 38.77 | 27.25 | 126.01 | 712.8 | 280.6 | 184.1 | 74.6 | 29.00 | 10.65 | 5.94 | 2.50 |
| MEAN  | .35   | 1.29  | .88   | 4.06   | 25.5  | 9.05  | 6.14  | 2.41 | .97   | .34   | .19  | .083 |
| MAX   | .86   | 15    | 4.9   | 26     | 162   | 32    | 21    | 4.0  | 1.5   | .51   | .39  | .18  |
| MIN   | .19   | .35   | .27   | .28    | 1.8   | 5.5   | 3.5   | 1.5  | .49   | .23   | .06  | .03  |
| AC-FT | 22    | 77    | 54    | 250    | 1410  | 557   | 365   | 148  | 58    | 21    | 12   | 5.0  |

e Estimated.

11182500 SAN RAMON CREEK AT SAN RAMON, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | .49  | .64  | 3.36 | 9.49 | 10.7 | 7.89 | 4.85 | 1.41 | .56  | .22  | .090 | .058 |
| MAX  | 17.0 | 5.49 | 27.2 | 42.3 | 67.2 | 60.6 | 44.9 | 4.92 | 1.99 | .83  | .42  | .33  |
| (WY) | 1963 | 1984 | 1956 | 1997 | 1998 | 1983 | 1958 | 1967 | 1967 | 1958 | 1998 | 1982 |
| MIN  | .000 | .000 | .001 | .002 | .039 | .17  | .016 | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1953 | 1956 | 1977 | 1991 | 1991 | 1977 | 1977 | 1977 | 1976 | 1955 | 1954 | 1954 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |       | FOR 1999 WATER YEAR |        | WATER YEARS 1953 - 1999 |             |
|--------------------------|------------------------|-------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 3604.56                |       | 1503.06             |        |                         |             |
| ANNUAL MEAN              | 9.88                   |       | 4.12                |        | 3.28                    |             |
| HIGHEST ANNUAL MEAN      |                        |       |                     |        | 12.4                    |             |
| LOWEST ANNUAL MEAN       |                        |       |                     |        | .029                    |             |
| HIGHEST DAILY MEAN       | 275                    | Feb 3 | 162                 | Feb 7  | 411                     | Oct 13 1962 |
| LOWEST DAILY MEAN        | .19                    | Oct 5 | .03                 | Sep 28 | .00                     | Oct 1 1952  |
| ANNUAL SEVEN-DAY MINIMUM | .21                    | Oct 3 | .05                 | Sep 24 | .00                     | Oct 1 1952  |
| INSTANTANEOUS PEAK FLOW  |                        |       | 596                 |        | 1600                    |             |
| INSTANTANEOUS PEAK STAGE |                        |       | 6.11                |        | 16.98                   |             |
| ANNUAL RUNOFF (AC-FT)    | 7150                   |       | 2980                |        | 2370                    |             |
| 10 PERCENT EXCEEDS       | 26                     |       | 9.5                 |        | 6.7                     |             |
| 50 PERCENT EXCEEDS       | 1.4                    |       | .81                 |        | .30                     |             |
| 90 PERCENT EXCEEDS       | .29                    |       | .11                 |        | .00                     |             |





## 11455820 CARQUINEZ STRAIT AT CARQUINEZ BRIDGE, NEAR CROCKETT, CA—Continued

## SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## (UPPER PROBE)

| DAY   | MAX   | MIN   | MAX | MIN | MAX   | MIN   | MAX   | MIN   | MAX    | MIN   | MAX       | MIN   |
|-------|-------|-------|-----|-----|-------|-------|-------|-------|--------|-------|-----------|-------|
|       | APRIL |       | MAY |     | JUNE  |       | JULY  |       | AUGUST |       | SEPTEMBER |       |
| 1     | 23000 | 2970  | --- | --- | ---   | ---   | 31900 | 17400 | 32200  | 16300 | 37900     | 24700 |
| 2     | 22900 | 3990  | --- | --- | ---   | ---   | 31300 | 17900 | 32900  | 15800 | 38200     | 20900 |
| 3     | 22900 | 4980  | --- | --- | ---   | ---   | 30300 | 16900 | 33200  | 14200 | 38400     | 26700 |
| 4     | 21400 | 3360  | --- | --- | ---   | ---   | 29700 | 15400 | 33900  | 19300 | 39600     | 25000 |
| 5     | 23500 | 4520  | --- | --- | ---   | ---   | 31300 | 15700 | 34000  | 16300 | 39400     | 23700 |
| 6     | 27400 | 5290  | --- | --- | ---   | ---   | 31300 | 17000 | 34200  | 16900 | 39400     | 25000 |
| 7     | ---   | ---   | --- | --- | ---   | ---   | 31700 | 17500 | 35400  | 17900 | ---       | ---   |
| 8     | 30000 | 7080  | --- | --- | ---   | ---   | 32800 | 19300 | 34300  | 10700 | 41300     | 30000 |
| 9     | 23200 | 4990  | --- | --- | ---   | ---   | 32900 | 20500 | 35500  | 14100 | 42100     | 29600 |
| 10    | 32000 | 7940  | --- | --- | ---   | ---   | 33300 | 19300 | 35300  | 19000 | 42100     | 30800 |
| 11    | 32100 | 10200 | --- | --- | 33200 | 16800 | 33500 | 19000 | ---    | ---   | 41800     | 30500 |
| 12    | 29700 | 12100 | --- | --- | 32700 | 16400 | 33800 | 16800 | 37100  | 20100 | 38100     | 28600 |
| 13    | 28100 | 10200 | --- | --- | 32800 | 15500 | 33800 | 19700 | 36300  | 19700 | 38200     | 28600 |
| 14    | 26300 | 7930  | --- | --- | 32700 | 15000 | 34000 | 19100 | 35400  | 19900 | 38200     | 28400 |
| 15    | 26600 | 6780  | --- | --- | 31900 | 14200 | 34300 | 21400 | 35100  | 19400 | 38200     | 28800 |
| 16    | 27400 | 6190  | --- | --- | 30000 | 13700 | 34200 | 20300 | 35300  | 22100 | 38400     | 28200 |
| 17    | 28300 | 5710  | --- | --- | 29300 | 13000 | 33500 | 18900 | 35000  | 20200 | 38500     | 27600 |
| 18    | 26200 | 4510  | --- | --- | 27500 | 13400 | 34000 | 18800 | 35200  | 20200 | 38900     | 28100 |
| 19    | 26800 | 3010  | --- | --- | 28400 | 12600 | 33300 | 19000 | 35300  | 18000 | 38500     | 19200 |
| 20    | 25300 | 1970  | --- | --- | 29400 | 13500 | 33600 | 19600 | 35600  | 22800 | 38700     | 22000 |
| 21    | 22000 | 1690  | --- | --- | 29700 | 15600 | 34200 | 21800 | 34600  | 18000 | 38800     | 26000 |
| 22    | ---   | ---   | --- | --- | 29200 | 18100 | 34100 | 21700 | 37100  | 16900 | 38800     | 26500 |
| 23    | ---   | ---   | --- | --- | 29900 | 19800 | 34500 | 19300 | 34400  | 18100 | 40000     | 27200 |
| 24    | ---   | ---   | --- | --- | 29500 | 20800 | 34400 | 21200 | 35000  | 16400 | 39600     | 25100 |
| 25    | ---   | ---   | --- | --- | 29800 | 17600 | 34400 | 17200 | 35900  | 17000 | 39400     | 21800 |
| 26    | ---   | ---   | --- | --- | 30600 | 16800 | 34500 | 19400 | 37600  | 23900 | 39100     | 26300 |
| 27    | ---   | ---   | --- | --- | 30700 | 15900 | 34400 | 15600 | 36900  | 22700 | 39400     | 26400 |
| 28    | ---   | ---   | --- | --- | 31000 | 15900 | 33900 | 19400 | 36700  | 24000 | 39300     | 25500 |
| 29    | ---   | ---   | --- | --- | 30700 | 16200 | 34500 | 18500 | 35400  | 17100 | 39000     | 21200 |
| 30    | ---   | ---   | --- | --- | 30600 | 16500 | 33900 | 12200 | 36100  | 16700 | 41600     | 27700 |
| 31    | ---   | ---   | --- | --- | ---   | ---   | 33800 | 13400 | 36100  | 22500 | ---       | ---   |
| MONTH | ---   | ---   | --- | --- | ---   | ---   | 34500 | 12200 | ---    | ---   | ---       | ---   |

## 11455820 CARQUINEZ STRAIT AT CARQUINEZ BRIDGE, NEAR CROCKETT, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

(LOWER PROBE)

| DAY   | MAX     | MIN   | MAX      | MIN   | MAX      | MIN   | MAX     | MIN   | MAX      | MIN   | MAX       | MIN   |
|-------|---------|-------|----------|-------|----------|-------|---------|-------|----------|-------|-----------|-------|
|       | OCTOBER |       | NOVEMBER |       | DECEMBER |       | JANUARY |       | FEBRUARY |       | MARCH     |       |
| 1     | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 2     | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 3     | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 4     | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 5     | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 6     | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 7     | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 8     | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 9     | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 10    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 11    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 12    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 13    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 14    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 15    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 16    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 17    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| 18    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | 20400     | 306   |
| 19    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | 21900     | 633   |
| 20    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | 22400     | 518   |
| 21    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | 22500     | 1190  |
| 22    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | 23600     | 810   |
| 23    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | 24400     | 1000  |
| 24    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | 24600     | 4390  |
| 25    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | 27100     | 5440  |
| 26    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | 27800     | 5540  |
| 27    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | 26600     | 2000  |
| 28    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | 26700     | 2600  |
| 29    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | 26200     | 5440  |
| 30    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | 26700     | 6560  |
| 31    | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | 24500     | 4770  |
| MONTH | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | ---      | ---   | ---       | ---   |
| DAY   | MAX     | MIN   | MAX      | MIN   | MAX      | MIN   | MAX     | MIN   | MAX      | MIN   | MAX       | MIN   |
|       | APRIL   |       | MAY      |       | JUNE     |       | JULY    |       | AUGUST   |       | SEPTEMBER |       |
| 1     | 25900   | 4820  | 30100    | 10600 | 32400    | 8400  | 36400   | 19700 | 35300    | 18600 | ---       | ---   |
| 2     | 26700   | 6530  | 28300    | 7950  | 32100    | 10800 | 35600   | 16700 | 34900    | 19000 | ---       | ---   |
| 3     | 26300   | 8650  | 31500    | 8660  | 29500    | 8510  | 35300   | 19200 | 35000    | 11200 | ---       | ---   |
| 4     | 27200   | 5210  | ---      | ---   | 31500    | 8880  | 35200   | 17500 | 35300    | 12800 | ---       | ---   |
| 5     | 29100   | 8320  | 33700    | 8720  | 31200    | 13300 | 36000   | 16300 | 34700    | 9010  | ---       | ---   |
| 6     | 34000   | 10300 | 35100    | 12300 | 31200    | 15700 | 35100   | 18900 | 36300    | 21600 | ---       | ---   |
| 7     | ---     | ---   | 34700    | 12300 | 31000    | 17500 | 36800   | 14400 | 37300    | 18300 | ---       | ---   |
| 8     | 36400   | 15100 | 36400    | 13400 | 31300    | 20200 | 37400   | 13000 | 37300    | 18700 | 39600     | 26900 |
| 9     | 32400   | 10900 | 38200    | 13200 | 32700    | 21700 | 36900   | 14500 | 37000    | 14400 | 39700     | 27000 |
| 10    | 37500   | 15300 | 37800    | 18600 | ---      | ---   | 36900   | 20300 | ---      | ---   | 39700     | 25100 |
| 11    | 36800   | 11000 | 36100    | 19100 | 34700    | 16700 | 37400   | 17400 | ---      | ---   | 39300     | 28300 |
| 12    | 24700   | 11400 | 34700    | 19600 | 34700    | 16200 | 37900   | 19500 | ---      | ---   | 38900     | 28300 |
| 13    | 26900   | 8290  | 32600    | 16200 | 34600    | 15000 | 36700   | 18000 | ---      | ---   | 38900     | 28400 |
| 14    | 22200   | 7650  | 32900    | 13400 | 35400    | 14800 | 37400   | 21500 | ---      | ---   | 39400     | 28700 |
| 15    | 22100   | 6190  | 33800    | 11300 | 35500    | 14400 | 36700   | 23300 | ---      | ---   | 39500     | 29600 |
| 16    | 29500   | 7960  | 34500    | 10700 | 35100    | 13700 | 36100   | 19900 | ---      | ---   | 39700     | 29300 |
| 17    | 29700   | 6810  | 35000    | 10600 | 34500    | 14300 | 36000   | 20300 | ---      | ---   | 40100     | 29100 |
| 18    | 29200   | 5640  | 34500    | 11100 | 34500    | 15300 | 36100   | 21200 | ---      | ---   | 40100     | 29500 |
| 19    | 28700   | 4300  | 34200    | 10600 | 34200    | 17200 | 35600   | 23100 | ---      | ---   | 39600     | 29100 |
| 20    | 28100   | 2970  | 32800    | 10800 | 34400    | 18900 | 36000   | 16500 | ---      | ---   | 39600     | 27400 |
| 21    | 26800   | 2670  | 33300    | 12800 | 34500    | 22900 | 37900   | 25000 | ---      | ---   | 40000     | 27000 |
| 22    | 30600   | 1190  | 33500    | 11900 | 34500    | 23700 | 37000   | 16500 | ---      | ---   | 40700     | 26400 |
| 23    | 35400   | 7490  | 33400    | 19700 | 34700    | 22400 | 36300   | 23800 | ---      | ---   | 40200     | 26600 |
| 24    | 35300   | 14300 | 31600    | 17500 | 34700    | 20300 | 36300   | 20200 | ---      | ---   | 40100     | 27400 |
| 25    | 28300   | 10800 | 34200    | 20000 | 34500    | 18800 | 36100   | 21200 | ---      | ---   | 39400     | 26900 |
| 26    | 30400   | 12500 | 33800    | 12600 | 35700    | 15400 | 36900   | 20000 | ---      | ---   | 39400     | 27700 |
| 27    | 30500   | 12500 | 32500    | 16300 | 35800    | 17600 | 36400   | 20000 | ---      | ---   | 40200     | 23000 |
| 28    | 28500   | 10500 | 33500    | 15800 | 35900    | 17700 | 36700   | 19300 | ---      | ---   | 40700     | 26900 |
| 29    | 29800   | 8460  | 32500    | 14200 | 35900    | 14300 | 36400   | 18200 | ---      | ---   | 40700     | 28200 |
| 30    | 31300   | 10200 | 31700    | 13300 | ---      | ---   | 36000   | 17200 | ---      | ---   | 41600     | 27200 |
| 31    | ---     | ---   | 32300    | 12400 | ---      | ---   | 35700   | 19000 | ---      | ---   | ---       | ---   |
| MONTH | ---     | ---   | ---      | ---   | ---      | ---   | 37900   | 13000 | ---      | ---   | ---       | ---   |

## 11455820 CARQUINEZ STRAIT AT CARQUINEZ BRIDGE, NEAR CROCKETT, CA—Continued

## TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## (UPPER PROBE)

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

## 11455820 CARQUINEZ STRAIT AT CARQUINEZ BRIDGE, NEAR CROCKETT, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

(LOWER PROBE)

| DAY   | MAX     | MIN  | MAX      | MIN  | MAX      | MIN  | MAX     | MIN  | MAX      | MIN  | MAX       | MIN  |
|-------|---------|------|----------|------|----------|------|---------|------|----------|------|-----------|------|
|       | OCTOBER |      | NOVEMBER |      | DECEMBER |      | JANUARY |      | FEBRUARY |      | MARCH     |      |
| 1     | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 2     | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 3     | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 4     | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 5     | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 6     | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 7     | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 8     | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 9     | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 10    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 11    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 12    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 13    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 14    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 15    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 16    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 17    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| 18    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | 12.0      | 11.5 |
| 19    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | 12.0      | 11.5 |
| 20    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | 12.0      | 11.5 |
| 21    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | 12.0      | 11.5 |
| 22    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | 12.0      | 11.5 |
| 23    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | 12.5      | 12.0 |
| 24    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | 12.0      | 12.0 |
| 25    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | 12.5      | 12.0 |
| 26    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | 13.0      | 12.0 |
| 27    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | 13.0      | 12.0 |
| 28    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | 13.0      | 12.0 |
| 29    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | 13.0      | 12.0 |
| 30    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | 12.5      | 12.0 |
| 31    | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | 12.5      | 12.0 |
| MONTH | ---     | ---  | ---      | ---  | ---      | ---  | ---     | ---  | ---      | ---  | ---       | ---  |
| DAY   | MAX     | MIN  | MAX      | MIN  | MAX      | MIN  | MAX     | MIN  | MAX      | MIN  | MAX       | MIN  |
|       | APRIL   |      | MAY      |      | JUNE     |      | JULY    |      | AUGUST   |      | SEPTEMBER |      |
| 1     | 12.5    | 12.0 | 15.0     | 13.5 | 16.5     | 15.5 | 20.5    | 18.5 | 19.5     | 18.5 | ---       | ---  |
| 2     | 12.5    | 12.0 | 15.0     | 14.0 | 16.5     | 15.5 | 20.5    | 18.5 | 19.5     | 18.5 | ---       | ---  |
| 3     | 12.5    | 12.0 | 15.0     | 13.5 | 16.5     | 15.0 | 20.5    | 18.5 | 19.5     | 19.0 | ---       | ---  |
| 4     | 12.5    | 11.5 | ---      | ---  | 16.5     | 15.0 | 20.0    | 18.5 | 19.5     | 19.0 | ---       | ---  |
| 5     | 12.0    | 11.5 | 14.5     | 13.0 | 16.5     | 15.0 | 20.0    | 18.0 | 19.5     | 18.5 | ---       | ---  |
| 6     | 12.0    | 11.0 | 15.0     | 12.5 | 17.0     | 15.0 | 20.0    | 18.5 | 19.5     | 18.5 | ---       | ---  |
| 7     | ---     | ---  | 15.5     | 13.0 | 16.5     | 15.0 | 20.0    | 18.0 | 19.5     | 18.5 | ---       | ---  |
| 8     | 12.0    | 11.0 | 15.5     | 13.0 | 16.5     | 15.0 | 20.0    | 18.0 | 19.5     | 18.5 | 19.5      | 18.5 |
| 9     | 12.0    | 11.0 | 15.0     | 12.5 | 16.5     | 15.0 | 20.0    | 18.0 | 19.5     | 18.5 | 19.5      | 18.5 |
| 10    | 11.5    | 11.0 | 15.0     | 12.5 | ---      | ---  | 20.0    | 18.0 | ---      | ---  | 19.5      | 18.5 |
| 11    | 11.5    | 10.5 | 15.0     | 13.0 | 17.0     | 15.0 | 20.0    | 18.0 | ---      | ---  | 19.5      | 18.5 |
| 12    | 12.0    | 11.0 | 16.0     | 13.5 | 17.0     | 15.5 | 20.5    | 18.0 | ---      | ---  | 19.5      | 18.5 |
| 13    | 13.0    | 11.0 | 16.0     | 14.0 | 17.5     | 16.0 | 21.0    | 18.5 | ---      | ---  | 19.0      | 18.5 |
| 14    | 13.0    | 11.5 | 15.5     | 14.5 | 17.5     | 16.0 | 20.5    | 19.0 | ---      | ---  | 19.0      | 18.5 |
| 15    | 13.5    | 12.0 | 15.5     | 14.5 | 18.0     | 16.5 | 20.0    | 19.0 | ---      | ---  | 19.0      | 18.5 |
| 16    | 14.0    | 13.0 | 15.5     | 14.0 | 18.0     | 16.5 | 20.0    | 19.0 | ---      | ---  | 19.0      | 18.0 |
| 17    | 14.5    | 13.5 | 15.5     | 14.0 | 18.5     | 17.0 | 20.0    | 18.5 | ---      | ---  | 18.5      | 18.0 |
| 18    | 15.0    | 14.0 | 16.0     | 14.5 | 18.5     | 17.0 | 20.0    | 18.5 | ---      | ---  | 18.5      | 18.0 |
| 19    | 15.5    | 14.0 | 16.0     | 14.5 | 18.5     | 17.0 | 19.5    | 18.0 | ---      | ---  | 18.0      | 18.0 |
| 20    | 15.5    | 14.5 | 16.0     | 15.0 | 18.5     | 17.0 | 19.0    | 18.0 | ---      | ---  | 18.0      | 18.0 |
| 21    | 16.0    | 14.5 | 16.5     | 14.5 | 18.5     | 17.0 | 19.0    | 17.5 | ---      | ---  | 18.0      | 18.0 |
| 22    | 15.5    | 13.5 | 17.0     | 14.5 | 18.5     | 17.0 | 19.0    | 17.5 | ---      | ---  | 18.0      | 18.0 |
| 23    | 15.5    | 13.0 | 16.5     | 15.0 | 19.0     | 17.0 | 19.0    | 18.0 | ---      | ---  | 18.0      | 18.0 |
| 24    | 15.5    | 13.0 | 16.5     | 15.0 | 18.5     | 17.5 | 19.0    | 18.0 | ---      | ---  | 18.5      | 18.0 |
| 25    | 15.5    | 14.0 | 16.5     | 15.0 | 19.0     | 17.5 | 19.0    | 18.5 | ---      | ---  | 18.5      | 18.0 |
| 26    | 15.5    | 13.5 | 16.5     | 15.0 | 19.0     | 17.5 | 19.0    | 18.5 | ---      | ---  | 19.0      | 18.0 |
| 27    | 15.0    | 13.5 | 16.5     | 15.5 | 19.0     | 17.5 | 19.0    | 18.5 | ---      | ---  | 19.0      | 18.5 |
| 28    | 14.5    | 13.5 | 16.5     | 15.0 | 19.5     | 18.0 | 19.0    | 18.5 | ---      | ---  | 19.0      | 18.5 |
| 29    | 14.5    | 13.5 | 16.5     | 15.5 | 20.0     | 18.0 | 19.0    | 18.5 | ---      | ---  | 20.0      | 19.0 |
| 30    | 14.5    | 13.0 | 16.5     | 15.5 | 20.0     | 18.5 | 19.5    | 18.5 | ---      | ---  | 20.0      | 19.0 |
| 31    | ---     | ---  | 16.5     | 15.5 | ---      | ---  | 19.5    | 18.5 | ---      | ---  | ---       | ---  |
| MONTH | ---     | ---  | ---      | ---  | ---      | ---  | 21.0    | 17.5 | ---      | ---  | ---       | ---  |

11456000 NAPA RIVER NEAR ST. HELENA, CA

LOCATION.—Lat 38°29'52", long 122°25'37", in Carne Humana Grant, Napa County, Hydrologic Unit 18050002, on right bank, 0.2 mi upstream from highway bridge, 1.3 mi northeast of Zinfandel, and 2.5 mi east of St. Helena.

DRAINAGE AREA.—81.4 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1929 to September 1932, October 1939 to June 30, 1995. Stage only July 1, 1995, to current year. Monthly discharge only for some periods, published in WSP 1315-B.

WATER TEMPERATURE.—Water years 1958–79.

SEDIMENT DATA.—Water years 1961–62.

REVISED RECORDS.—WSP 1929: Drainage area. WDR CA-78-2: 1977(M).

GAGE.—Water-stage recorder. Datum of gage is 170.12 ft above sea level. Prior to Nov. 22, 1958, at datum 3.00 ft higher. Nov. 22, 1958, to July 22, 1976, at datum 2.00 ft higher.

REMARKS.—Some regulation by Kimball Creek Reservoir, capacity, 344 acre-ft, since 1939, and Bell Canyon Reservoir, capacity, 2,530 acre-ft, since 1959. Small diversions upstream from station for irrigation of about 1,500 acres.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 16,900 ft<sup>3</sup>/s, Feb. 17, 1986, gage height, 18.52 ft, from rating curve extended above 11,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow at times.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY   | MAX     | MIN  | MAX      | MIN  | MAX      | MIN  | MAX     | MIN  | MAX      | MIN  | MAX   | MIN  |
|-------|---------|------|----------|------|----------|------|---------|------|----------|------|-------|------|
|       | OCTOBER |      | NOVEMBER |      | DECEMBER |      | JANUARY |      | FEBRUARY |      | MARCH |      |
| 1     | 2.94    | 2.94 | 2.94     | 2.91 | 5.54     | 4.18 | 3.25    | 3.24 | 4.47     | 4.13 | 6.07  | 5.20 |
| 2     | 2.97    | 2.94 | 2.96     | 2.94 | 5.10     | 4.03 | 3.24    | 3.24 | 4.14     | 3.97 | 5.24  | 4.99 |
| 3     | 2.96    | 2.93 | 2.96     | 2.95 | 6.89     | 5.10 | 3.24    | 3.23 | 3.98     | 3.89 | 5.24  | 4.87 |
| 4     | 2.93    | 2.91 | 2.97     | 2.96 | 5.10     | 4.26 | 3.23    | 3.22 | 3.89     | 3.79 | 4.92  | 4.71 |
| 5     | 2.91    | 2.88 | 2.97     | 2.96 | 4.60     | 3.97 | 3.23    | 3.22 | 3.80     | 3.69 | 4.74  | 4.55 |
| 6     | 2.94    | 2.89 | 2.98     | 2.97 | 4.61     | 4.01 | 3.22    | 3.22 | 8.31     | 3.68 | 4.58  | 4.42 |
| 7     | 2.91    | 2.89 | 3.56     | 2.98 | 4.01     | 3.82 | 3.22    | 3.21 | 13.39    | 7.18 | 4.44  | 4.29 |
| 8     | 2.94    | 2.91 | 3.25     | 3.10 | 3.89     | 3.79 | 3.22    | 3.20 | 7.26     | 6.25 | 5.72  | 4.26 |
| 9     | 2.95    | 2.92 | 3.13     | 3.06 | 3.79     | 3.67 | 3.21    | 3.20 | 13.58    | 6.84 | 5.93  | 5.09 |
| 10    | 2.93    | 2.89 | 3.10     | 3.03 | 3.67     | 3.59 | 3.20    | 3.19 | 7.15     | 5.71 | 5.14  | 4.79 |
| 11    | 2.91    | 2.90 | 3.08     | 3.03 | 3.59     | 3.54 | 3.20    | 3.19 | 5.82     | 5.22 | 4.83  | 4.59 |
| 12    | 2.92    | 2.90 | 3.05     | 3.02 | 3.54     | 3.50 | 3.19    | 3.19 | 5.28     | 4.88 | 4.62  | 4.44 |
| 13    | 2.94    | 2.92 | 3.03     | 3.00 | 3.58     | 3.48 | 3.19    | 3.18 | 4.91     | 4.72 | 4.48  | 4.36 |
| 14    | 2.95    | 2.94 | 3.01     | 3.00 | 3.57     | 3.47 | 3.18    | 3.17 | 4.77     | 4.51 | 4.78  | 4.33 |
| 15    | 2.94    | 2.92 | 3.01     | 3.00 | 3.48     | 3.44 | 3.35    | 3.18 | 4.55     | 4.33 | 4.75  | 4.46 |
| 16    | 2.96    | 2.92 | 3.00     | 2.99 | 3.44     | 3.40 | 3.33    | 3.22 | 8.09     | 4.33 | 4.48  | 4.28 |
| 17    | 2.97    | 2.94 | 3.11     | 3.00 | 3.41     | 3.39 | 3.37    | 3.21 | 8.69     | 5.83 | 4.30  | 4.19 |
| 18    | 2.97    | 2.95 | 3.05     | 3.02 | 3.39     | 3.38 | 4.58    | 3.37 | 6.44     | 5.54 | 4.21  | 4.14 |
| 19    | 2.96    | 2.94 | 3.02     | 3.00 | 3.38     | 3.35 | 5.78    | 3.63 | 5.96     | 5.30 | 4.28  | 4.12 |
| 20    | 2.95    | 2.92 | 3.00     | 3.00 | 3.36     | 3.33 | 6.22    | 5.01 | 6.77     | 5.12 | 4.23  | 4.10 |
| 21    | 2.96    | 2.94 | 3.11     | 3.00 | 3.33     | 3.32 | 5.19    | 4.37 | 6.93     | 5.70 | 4.17  | 4.03 |
| 22    | 2.97    | 2.95 | 3.12     | 3.04 | 3.33     | 3.32 | 5.07    | 4.11 | 5.81     | 5.39 | 4.06  | 4.01 |
| 23    | 2.96    | 2.95 | 5.84     | 3.09 | 3.32     | 3.31 | 6.01    | 4.99 | 5.44     | 5.12 | 4.09  | 4.00 |
| 24    | 3.37    | 2.95 | 4.64     | 3.46 | 3.31     | 3.29 | 4.99    | 4.42 | 5.92     | 4.93 | 5.95  | 3.99 |
| 25    | 3.15    | 2.98 | 3.46     | 3.29 | 3.29     | 3.28 | 4.43    | 4.11 | 6.66     | 5.52 | 6.60  | 5.41 |
| 26    | 2.98    | 2.95 | 3.38     | 3.25 | 3.29     | 3.28 | 4.15    | 4.01 | 5.63     | 5.18 | 5.43  | 4.94 |
| 27    | 2.95    | 2.94 | 3.38     | 3.26 | 3.28     | 3.27 | 4.01    | 3.84 | 5.22     | 4.93 | 4.96  | 4.69 |
| 28    | 2.95    | 2.94 | 3.26     | 3.21 | 3.27     | 3.26 | 3.84    | 3.75 | 6.25     | 4.88 | 4.70  | 4.50 |
| 29    | 2.96    | 2.94 | 4.04     | 3.21 | 3.27     | 3.26 | 3.75    | 3.68 | ---      | ---  | 4.54  | 4.36 |
| 30    | 2.95    | 2.92 | 7.20     | 4.04 | 3.26     | 3.25 | 3.69    | 3.65 | ---      | ---  | 4.86  | 4.27 |
| 31    | 2.92    | 2.90 | ---      | ---  | 3.26     | 3.24 | 5.19    | 3.67 | ---      | ---  | 4.81  | 4.31 |
| MONTH | 3.37    | 2.88 | 7.20     | 2.91 | 6.89     | 3.24 | 6.22    | 3.17 | 13.58    | 3.68 | 6.60  | 3.99 |

## 11456000 NAPA RIVER NEAR ST. HELENA, CA—Continued

## GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY   | MAX   | MIN  | MAX  | MIN  | MAX  | MIN  | MAX  | MIN  | MAX    | MIN  | MAX       | MIN  |
|-------|-------|------|------|------|------|------|------|------|--------|------|-----------|------|
|       | APRIL |      | MAY  |      | JUNE |      | JULY |      | AUGUST |      | SEPTEMBER |      |
| 1     | 4.33  | 4.17 | 3.51 | 3.48 | 3.19 | 3.17 | 3.00 | 2.98 | 2.86   | 2.82 | 2.84      | 2.79 |
| 2     | 4.20  | 4.07 | 3.50 | 3.47 | 3.20 | 3.16 | 3.00 | 2.97 | 2.85   | 2.81 | 2.85      | 2.82 |
| 3     | 4.08  | 4.00 | 3.51 | 3.47 | 3.23 | 3.16 | 3.01 | 2.96 | 2.86   | 2.82 | 2.84      | 2.82 |
| 4     | 4.01  | 3.93 | 3.48 | 3.42 | 3.17 | 3.14 | 2.99 | 2.96 | 2.86   | 2.84 | 2.83      | 2.80 |
| 5     | 4.52  | 3.93 | 3.44 | 3.41 | 3.15 | 3.13 | 3.00 | 2.98 | 2.86   | 2.83 | 2.81      | 2.79 |
| 6     | 4.26  | 4.05 | 3.41 | 3.37 | 3.14 | 3.12 | 2.99 | 2.97 | 2.87   | 2.84 | 2.83      | 2.79 |
| 7     | 4.06  | 3.95 | 3.39 | 3.37 | 3.14 | 3.09 | 3.00 | 2.97 | 2.87   | 2.83 | 2.84      | 2.80 |
| 8     | 5.22  | 3.96 | 3.39 | 3.34 | 3.11 | 3.08 | 2.98 | 2.97 | 2.84   | 2.81 | 2.81      | 2.80 |
| 9     | 4.76  | 4.34 | 3.37 | 3.35 | 3.12 | 3.08 | 2.98 | 2.96 | 2.85   | 2.81 | 2.82      | 2.80 |
| 10    | 4.75  | 4.27 | 3.36 | 3.33 | 3.10 | 3.08 | 2.98 | 2.94 | 2.87   | 2.85 | 2.83      | 2.81 |
| 11    | 6.95  | 4.74 | 3.35 | 3.32 | 3.10 | 3.07 | 2.96 | 2.94 | 2.88   | 2.86 | 2.83      | 2.80 |
| 12    | 5.75  | 5.06 | 3.34 | 3.32 | 3.10 | 3.08 | 2.95 | 2.92 | 2.88   | 2.85 | 2.82      | 2.80 |
| 13    | 5.08  | 4.78 | 3.32 | 3.31 | 3.10 | 3.08 | 2.95 | 2.93 | 2.86   | 2.85 | 2.84      | 2.80 |
| 14    | 4.81  | 4.55 | 3.31 | 3.27 | 3.11 | 3.09 | 2.94 | 2.91 | 2.86   | 2.82 | 2.84      | 2.81 |
| 15    | 4.58  | 4.38 | 3.30 | 3.26 | 3.09 | 3.07 | 2.93 | 2.89 | 2.83   | 2.81 | 2.83      | 2.81 |
| 16    | 4.41  | 4.25 | 3.29 | 3.27 | 3.08 | 3.06 | 2.93 | 2.87 | 2.83   | 2.81 | 2.83      | 2.82 |
| 17    | 4.26  | 4.13 | 3.28 | 3.23 | 3.09 | 3.05 | 2.92 | 2.88 | 2.84   | 2.80 | 2.84      | 2.82 |
| 18    | 4.16  | 4.05 | 3.25 | 3.23 | 3.05 | 3.03 | 2.90 | 2.87 | 2.83   | 2.79 | 2.86      | 2.82 |
| 19    | 4.07  | 3.95 | 3.25 | 3.23 | 3.04 | 3.02 | 2.94 | 2.88 | 2.82   | 2.79 | 2.84      | 2.82 |
| 20    | 3.98  | 3.92 | 3.25 | 3.24 | 3.04 | 3.01 | 2.95 | 2.93 | 2.82   | 2.80 | 2.84      | 2.82 |
| 21    | 3.93  | 3.86 | 3.26 | 3.24 | 3.06 | 3.04 | 2.96 | 2.94 | 2.81   | 2.78 | 2.84      | 2.81 |
| 22    | 3.87  | 3.80 | 3.25 | 3.20 | 3.05 | 2.99 | 2.99 | 2.94 | 2.80   | 2.78 | 2.84      | 2.82 |
| 23    | 3.81  | 3.72 | 3.23 | 3.20 | 3.02 | 3.00 | 3.01 | 2.94 | 2.82   | 2.79 | 2.85      | 2.84 |
| 24    | 3.74  | 3.68 | 3.23 | 3.21 | 3.03 | 3.00 | 2.96 | 2.87 | 2.83   | 2.81 | 2.85      | 2.83 |
| 25    | 3.70  | 3.66 | 3.23 | 3.20 | 3.03 | 2.99 | 2.92 | 2.88 | 2.84   | 2.81 | 2.85      | 2.83 |
| 26    | 3.67  | 3.63 | 3.21 | 3.20 | 2.99 | 2.98 | 3.00 | 2.90 | 2.85   | 2.83 | 2.85      | 2.82 |
| 27    | 3.64  | 3.57 | 3.21 | 3.19 | 3.00 | 2.97 | 2.95 | 2.89 | 2.84   | 2.79 | 2.84      | 2.80 |
| 28    | 3.60  | 3.56 | 3.21 | 3.19 | 3.01 | 2.98 | 2.93 | 2.90 | 2.80   | 2.79 | 2.84      | 2.81 |
| 29    | 3.57  | 3.54 | 3.20 | 3.18 | 3.00 | 2.97 | 2.92 | 2.89 | 2.83   | 2.79 | 2.85      | 2.81 |
| 30    | 3.54  | 3.49 | 3.19 | 3.17 | 3.01 | 2.99 | 2.91 | 2.88 | 2.84   | 2.82 | 2.82      | 2.80 |
| 31    | ---   | ---  | 3.19 | 3.17 | ---  | ---  | 2.91 | 2.85 | 2.84   | 2.78 | ---       | ---  |
| MONTH | 6.95  | 3.49 | 3.51 | 3.17 | 3.23 | 2.97 | 3.01 | 2.85 | 2.88   | 2.78 | 2.86      | 2.79 |

## 11458000 NAPA RIVER NEAR NAPA, CA

LOCATION.—Lat 38°22'06", long 122°18'08", in Yajome Grant, Napa County, Hydrologic Unit 18050002, on left bank, at downstream side of Oak Knoll Avenue Bridge, 0.4 mi downstream from Dry Creek, 5 mi north of Napa, and 12.8 mi downstream from Conn Dam.

DRAINAGE AREA.—218 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1929 to September 1932, October 1959 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

CHEMICAL DATA: Water years 1973–93.

BIOLOGICAL DATA: Water years 1978–81.

SPECIFIC CONDUCTANCE: Water years 1978–93.

WATER TEMPERATURE: Water years 1977–93.

SEDIMENT DATA: Water years 1971, 1977–93.

REVISED RECORDS.—WSP 1315-B: 1930(M). WDR CA-87-2: 1963(M), 1965(M), 1967(M), 1982–85.

GAGE.—Water-stage recorder. Datum of gage is 24.74 ft above sea level.

REMARKS.—Records fair including estimated daily discharge. Flow regulated by Lake Hennessey beginning in December 1945, 12.8 mi upstream, capacity, 31,000 acre-ft; Rector Reservoir beginning in 1948, 12.4 mi upstream, capacity, 4,400 acre-ft; Bell Canyon Reservoir beginning in 1959, 19.6 mi upstream, capacity, 2,530 acre-ft. Diversions for irrigation upstream from station of about 10,000 acres.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 37,100 ft<sup>3</sup>/s, Feb. 18, 1986, gage height, 30.20 ft, from floodmarks; maximum gage height, 30.50 ft, Mar. 9, 1995; no flow at times.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV    | DEC  | JAN  | FEB   | MAR   | APR   | MAY  | JUN  | JUL   | AUG  | SEP   |
|-------|------|--------|------|------|-------|-------|-------|------|------|-------|------|-------|
| 1     | 3.5  | 3.3    | 530  | 37   | 222   | 904   | 362   | 117  | 43   | 11    | 3.5  | .82   |
| 2     | 3.5  | 3.2    | 209  | 36   | 168   | 697   | 327   | 113  | 42   | 10    | 3.0  | .73   |
| 3     | 3.5  | 3.0    | 711  | 36   | 146   | 650   | 294   | 113  | 42   | 10    | 3.0  | .73   |
| 4     | 3.5  | 3.4    | 360  | 34   | 132   | 568   | 272   | 108  | 42   | 11    | 3.6  | .73   |
| 5     | 3.2  | 3.5    | 207  | 32   | 117   | 503   | 302   | 97   | 40   | 9.8   | 3.6  | 1.3   |
| 6     | 2.8  | 3.5    | 237  | 30   | 852   | 455   | 326   | 96   | 39   | 11    | 4.2  | 1.5   |
| 7     | 2.6  | 14     | 168  | 29   | 5960  | 414   | 282   | 92   | 36   | 9.4   | 3.7  | 1.0   |
| 8     | 2.3  | 29     | 145  | 29   | 2090  | 515   | 453   | 88   | 33   | 8.4   | 3.7  | .71   |
| 9     | 2.2  | 15     | 130  | 27   | 5690  | 929   | 448   | 82   | 31   | 7.5   | 3.9  | .64   |
| 10    | 2.2  | 11     | 111  | 26   | 1890  | 663   | 370   | 80   | 30   | 6.3   | 3.2  | .63   |
| 11    | 2.2  | 9.7    | 100  | 27   | 1130  | 557   | e1230 | 75   | 29   | 7.3   | 2.7  | .60   |
| 12    | 2.2  | 8.9    | 89   | 26   | 846   | 481   | 938   | 73   | 28   | 6.1   | 2.2  | .62   |
| 13    | 2.1  | 8.4    | 83   | 26   | 681   | 437   | 654   | 68   | 28   | 5.1   | 2.4  | 1.0   |
| 14    | 2.0  | 8.1    | 86   | 25   | 602   | 422   | 540   | 65   | 27   | 3.9   | 3.2  | .78   |
| 15    | 1.5  | 7.4    | 78   | 25   | 515   | 485   | 454   | 81   | 27   | 3.4   | 3.7  | .67   |
| 16    | 1.2  | 7.2    | 73   | 33   | 791   | 412   | 394   | 70   | 25   | 3.6   | 3.3  | .62   |
| 17    | 1.3  | 7.2    | 66   | 31   | 2400  | 367   | 350   | 69   | 23   | 4.0   | 3.2  | .60   |
| 18    | 1.6  | 8.7    | 64   | 130  | 1310  | 333   | 311   | 65   | 23   | 4.3   | 3.1  | .58   |
| 19    | 1.7  | 7.8    | 61   | 125  | 1110  | 325   | 281   | 63   | 21   | 3.9   | 2.7  | .72   |
| 20    | 1.6  | 6.6    | 56   | 507  | 945   | 344   | 257   | 62   | 21   | 3.2   | 2.5  | 1.1   |
| 21    | 1.6  | 6.0    | 51   | 346  | 1680  | 308   | 239   | 62   | 20   | 3.2   | 2.3  | .75   |
| 22    | 1.4  | 6.5    | 50   | 204  | 1120  | 287   | 223   | 59   | 20   | 3.5   | 2.2  | .61   |
| 23    | 1.9  | 110    | 49   | 495  | 886   | 281   | 209   | 54   | 17   | 4.3   | 2.1  | .76   |
| 24    | 2.5  | 235    | 46   | 319  | 747   | 347   | 190   | 53   | 17   | 4.4   | 2.0  | 1.3   |
| 25    | 7.2  | 66     | 44   | 213  | 1290  | 1210  | 178   | 51   | 16   | 4.2   | 2.0  | 1.3   |
| 26    | 6.7  | 34     | 43   | 180  | 942   | 783   | 171   | 49   | 15   | 3.6   | 1.9  | 1.2   |
| 27    | 4.7  | 32     | 43   | 157  | 767   | 601   | 159   | 47   | 15   | 3.1   | 1.8  | 1.0   |
| 28    | 3.9  | 27     | 41   | 132  | 712   | 500   | 146   | 47   | 14   | 2.9   | 1.7  | .67   |
| 29    | 3.8  | 39     | 41   | 118  | ---   | 435   | 135   | 47   | 13   | 3.2   | 1.6  | .61   |
| 30    | 3.6  | 901    | 40   | 109  | ---   | 395   | 127   | 46   | 12   | 3.9   | 1.5  | .65   |
| 31    | 3.3  | ---    | 39   | 249  | ---   | 438   | ---   | 45   | ---  | 3.8   | 1.0  | ---   |
| TOTAL | 87.3 | 1625.4 | 4051 | 3793 | 35741 | 16046 | 10622 | 2237 | 789  | 179.3 | 84.5 | 24.93 |
| MEAN  | 2.82 | 54.2   | 131  | 122  | 1276  | 518   | 354   | 72.2 | 26.3 | 5.78  | 2.73 | .83   |
| MAX   | 7.2  | 901    | 711  | 507  | 5960  | 1210  | 1230  | 117  | 43   | 11    | 4.2  | 1.5   |
| MIN   | 1.2  | 3.0    | 39   | 25   | 117   | 281   | 127   | 45   | 12   | 2.9   | 1.0  | .58   |
| AC-FT | 173  | 3220   | 8040 | 7520 | 70890 | 31830 | 21070 | 4440 | 1560 | 356   | 168  | 49    |

e Estimated.

## NAPA RIVER BASIN

## 11458000 NAPA RIVER NEAR NAPA, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1999, BY WATER YEAR (WY)

| OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 12.1 | 80.1 | 273  | 731  | 736  | 489  | 188  | 51.3 | 17.7 | 5.76 | 2.77 | 2.29 |
| MAX  | 338  | 616  | 1474 | 3083 | 4089 | 2598 | 1341 | 226  | 100  | 23.9 | 9.43 | 10.7 |
| (WY) | 1963 | 1974 | 1984 | 1995 | 1986 | 1983 | 1982 | 1983 | 1998 | 1998 | 1983 | 1982 |
| MIN  | .000 | 1.10 | .73  | 2.17 | .42  | 2.60 | .20  | .000 | .000 | .000 | .000 | .000 |
| (WY) | 1961 | 1991 | 1977 | 1991 | 1977 | 1977 | 1977 | 1977 | 1977 | 1961 | 1960 | 1960 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1960 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 155281.5               |        | 75280.43            |        | 213                     |             |
| ANNUAL MEAN              | 425                    |        | 206                 |        | 585                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 1983                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | .72                     |             |
| HIGHEST DAILY MEAN       | 15000                  | Feb 3  | 5960                | Feb 7  | 26200                   | Feb 17 1986 |
| LOWEST DAILY MEAN        | 1.2                    | Oct 16 | .58                 | Sep 18 | .00                     | Jul 14 1960 |
| ANNUAL SEVEN-DAY MINIMUM | 1.5                    | Oct 16 | .70                 | Sep 12 | .00                     | Jul 14 1960 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 9030                | Feb 9  | 37100                   | Feb 18 1986 |
| INSTANTANEOUS PEAK STAGE |                        |        | 21.11               | Feb 9  | 30.50                   | Mar 9 1995  |
| ANNUAL RUNOFF (AC-FT)    | 308000                 |        | 149300              |        | 154600                  |             |
| 10 PERCENT EXCEEDS       | 921                    |        | 561                 |        | 438                     |             |
| 50 PERCENT EXCEEDS       | 78                     |        | 33                  |        | 14                      |             |
| 90 PERCENT EXCEEDS       | 2.9                    |        | 1.6                 |        | .59                     |             |



## 11458370 NAPA RIVER AT MARE ISLAND CAUSEWAY, NEAR VALLEJO, CA

LOCATION.—Lat 38°06'40", long 122°16'25", T.3 N., R.4 W., Solano County, Hydrologic Unit 18050002, at east side of Napa River main channel, underneath Mare Island Causeway Bridge.

PERIOD OF RECORD.—October 1998 to September 1999.

SPECIFIC CONDUCTANCE: October 1998 to September 1999.

WATER TEMPERATURE: October 1998 to September 1999.

PERIOD OF DAILY RECORD.—October 1998 to September 1999.

SPECIFIC CONDUCTANCE: October 1998 to September 1999.

WATER TEMPERATURE: October 1998 to September 1999.

INSTRUMENTATION.—Water-quality monitor since October 1998.

REMARKS.—Interruptions in record were due to malfunction of the sensing instruments. Upper probe is set at 5.0 ft below Mean Lower Low Water (MLLW). Lower probe is set at 27.0 ft below MLLW. Daily maximums and minimums sometimes differ from tidal-cycle (24.8 hours) maximums and minimums.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: (Upper probe) Maximum recorded, 37,000 microsiemens, Jan. 11, 1999; minimum recorded, 72 microsiemens, Mar. 4, 5, 1999.

(Lower probe) Maximum recorded, 44,600 microsiemens, Jan. 11, 1999; minimum recorded, 81 microsiemens, Mar. 4, 1999.

WATER TEMPERATURE: (Upper probe) Maximum recorded, 22.5°C, July 11–13, 1999; minimum recorded, 6.5°C, Jan. 11, 1999.

(Lower probe) Maximum recorded, 19.0°C, June 13, 1999; minimum recorded, 6.5°C, Dec. 24, 1998.

EXTREMES FOR CURRENT YEAR.—

SPECIFIC CONDUCTANCE: (Upper probe) Maximum recorded, 37,000 microsiemens, Jan. 11; minimum recorded, 72 microsiemens, Mar. 4, 5.

(Lower probe) Maximum recorded, 44,600 microsiemens, Jan. 11; minimum recorded, 81 microsiemens, Mar. 4.

WATER TEMPERATURE: (Upper probe) Maximum recorded, 22.5°C, July 11–13; minimum recorded, 6.5°C, Jan. 11.

(Lower probe) Maximum recorded, 19.0°C, June 13; minimum recorded, 6.5°C, Dec. 24.

## SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## (UPPER PROBE)

| DAY   | MAX     | MIN   | MAX      | MIN   | MAX      | MIN | MAX     | MIN   | MAX      | MIN  | MAX   | MIN  |
|-------|---------|-------|----------|-------|----------|-----|---------|-------|----------|------|-------|------|
|       | OCTOBER |       | NOVEMBER |       | DECEMBER |     | JANUARY |       | FEBRUARY |      | MARCH |      |
| 1     | 23600   | 19300 | 24700    | 22400 | ---      | --- | ---     | ---   | 15100    | 1980 | 2900  | 91   |
| 2     | 21700   | 17400 | 25900    | 22800 | ---      | --- | ---     | ---   | 11800    | 746  | 2670  | 82   |
| 3     | 20700   | 17000 | 27300    | 22500 | ---      | --- | ---     | ---   | 15100    | 878  | 1120  | 82   |
| 4     | 19700   | 16000 | 27900    | 22400 | ---      | --- | ---     | ---   | 13900    | 3960 | 1120  | 72   |
| 5     | 19700   | 15900 | 28100    | 22500 | ---      | --- | 25000   | 10800 | 14400    | 5750 | 1120  | 72   |
| 6     | ---     | ---   | 28400    | 21200 | ---      | --- | 22200   | 11200 | 17500    | 7000 | 4440  | 781  |
| 7     | 23000   | 16700 | 31800    | 21300 | ---      | --- | 22800   | 12800 | 18800    | 1020 | 7580  | 1540 |
| 8     | 24200   | 18400 | 28000    | 21900 | ---      | --- | 24600   | 13200 | 14500    | 970  | 6100  | 2280 |
| 9     | 24700   | 17400 | 26800    | 20300 | ---      | --- | 23400   | 14100 | 8240     | 460  | 6330  | 1960 |
| 10    | 24800   | 17100 | 28600    | 20400 | ---      | --- | 27200   | 15300 | 4540     | 350  | 5580  | 2080 |
| 11    | 23700   | 16200 | 26100    | 21200 | ---      | --- | 37000   | 17200 | 7750     | 494  | 11900 | 2230 |
| 12    | 26000   | 16900 | 26300    | 21500 | ---      | --- | 36600   | 19000 | 17600    | 1640 | 14600 | 3040 |
| 13    | 24400   | 17200 | 26900    | 21900 | ---      | --- | 34300   | 20500 | 20000    | 1450 | 18100 | 4760 |
| 14    | 23700   | 18800 | 28700    | 22600 | ---      | --- | 32100   | 21200 | 18500    | 417  | 23800 | 5910 |
| 15    | 23600   | 19400 | 27200    | 23000 | ---      | --- | 34100   | 20700 | 11800    | 267  | 18300 | 3030 |
| 16    | 23000   | 19300 | 27000    | 22900 | ---      | --- | 32900   | 20800 | 11200    | 112  | 12000 | 640  |
| 17    | 23300   | 19900 | 26600    | 21900 | ---      | --- | 32500   | 20700 | 2740     | 111  | 11500 | 375  |
| 18    | 25300   | 20200 | ---      | ---   | ---      | --- | 30500   | 19800 | 2470     | 87   | 8130  | 878  |
| 19    | 25100   | 20500 | ---      | ---   | ---      | --- | 28600   | 18400 | 1400     | 82   | 8950  | 1520 |
| 20    | 25800   | 20900 | ---      | ---   | ---      | --- | 25800   | 18100 | 1250     | 77   | 12100 | 1690 |
| 21    | 26500   | 21100 | ---      | ---   | ---      | --- | 20100   | 16900 | 1150     | 77   | 15600 | 2510 |
| 22    | 26400   | 21400 | ---      | ---   | ---      | --- | 19100   | 9700  | 1100     | 90   | 15400 | 1840 |
| 23    | 26800   | 21700 | ---      | ---   | ---      | --- | 16600   | 9450  | 1900     | 152  | ---   | ---  |
| 24    | 27900   | 21700 | ---      | ---   | ---      | --- | 15700   | 6380  | 7590     | 174  | 20000 | 3410 |
| 25    | 26900   | 21500 | ---      | ---   | ---      | --- | 22700   | 8000  | 6690     | 77   | 20600 | 3300 |
| 26    | 28400   | 20700 | ---      | ---   | ---      | --- | 21300   | 5340  | 3530     | 86   | 18200 | 3490 |
| 27    | 29300   | 21200 | ---      | ---   | ---      | --- | 20800   | 2300  | 4480     | 100  | 12500 | 2860 |
| 28    | 27800   | 22400 | ---      | ---   | ---      | --- | 17200   | 756   | 5360     | 95   | 14100 | 3520 |
| 29    | 27000   | 21300 | ---      | ---   | ---      | --- | 20600   | 691   | ---      | ---  | 15000 | 3330 |
| 30    | 26700   | 22900 | ---      | ---   | ---      | --- | 23400   | 1450  | ---      | ---  | 14300 | 4020 |
| 31    | 25500   | 22700 | ---      | ---   | ---      | --- | 24700   | 2910  | ---      | ---  | 14400 | 4050 |
| MONTH | ---     | ---   | ---      | ---   | ---      | --- | ---     | ---   | 20000    | 77   | ---   | ---  |

## 11458370 NAPA RIVER AT MARE ISLAND CAUSEWAY, NEAR VALLEJO, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

(UPPER PROBE)

| DAY   | MAX   | MIN   | MAX   | MIN   | MAX   | MIN   | MAX   | MIN   | MAX    | MIN   | MAX       | MIN   |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-----------|-------|
|       | APRIL |       | MAY   |       | JUNE  |       | JULY  |       | AUGUST |       | SEPTEMBER |       |
| 1     | 13700 | 4290  | 24800 | 11200 | 27800 | 13100 | 34700 | 19900 | 27100  | 18900 | 31000     | 27200 |
| 2     | 15300 | 4230  | 20900 | 9980  | 26200 | 12300 | ---   | ---   | 25300  | 18700 | 33800     | 27800 |
| 3     | 17800 | 4470  | 23400 | 8980  | 24200 | 9680  | 29500 | 19500 | 28000  | 19900 | 34000     | 27800 |
| 4     | 12200 | 4750  | 21200 | 6520  | 25500 | 10800 | 28000 | 18200 | 29000  | 20600 | 35900     | 27200 |
| 5     | 16200 | 5670  | 19400 | 7700  | 26400 | 12400 | 28900 | 19000 | 30900  | 22100 | 36300     | 26300 |
| 6     | 20900 | 5940  | 23100 | 9740  | 25000 | 13500 | 30100 | 20800 | 30200  | 23100 | 34900     | 26500 |
| 7     | 22600 | 6520  | 19500 | 9380  | 23600 | 14100 | 31800 | 21600 | 32200  | 20200 | 34500     | 27300 |
| 8     | 20400 | 7370  | 19500 | 9300  | 27700 | 15700 | 32600 | 22100 | 32400  | 20100 | 34200     | 28700 |
| 9     | 17900 | 6900  | 22400 | 11300 | 30600 | 16700 | 31100 | 22300 | 31700  | 20800 | 35100     | 28300 |
| 10    | 21900 | 8370  | 26300 | 13700 | 27000 | 17100 | 32700 | 22700 | 31700  | 21900 | 34400     | 29000 |
| 11    | 27400 | 8800  | 28600 | 15000 | 29800 | 17700 | 35300 | 22200 | 32400  | 21100 | 32500     | 29300 |
| 12    | 25900 | 7140  | 27100 | 15900 | 31000 | 18000 | 35300 | 22000 | 30400  | 20500 | 31600     | 28900 |
| 13    | 19800 | 7140  | 25100 | 16100 | 31100 | 17100 | 35100 | 23000 | 30000  | 20800 | 30900     | 28700 |
| 14    | 17200 | 8330  | 26300 | 15200 | 31000 | 16800 | ---   | ---   | 28700  | 21200 | 31100     | 28600 |
| 15    | 16900 | 8940  | 26500 | 13200 | 30500 | 16400 | 34900 | 24300 | 28500  | 22000 | 32000     | 29200 |
| 16    | 19800 | 8950  | 27600 | 12000 | 32400 | 15500 | 32800 | 22400 | 27400  | 23100 | 32700     | 28700 |
| 17    | 20400 | 7980  | 28200 | 12100 | 31600 | 15100 | 30800 | 21500 | 30600  | 23600 | 33000     | 28400 |
| 18    | 23000 | 6800  | 28400 | 12000 | 28300 | 15700 | 27900 | 21500 | 32300  | 23900 | 34400     | 28900 |
| 19    | 23100 | 5640  | 29300 | 11000 | 24400 | 15900 | 30800 | 23100 | 31600  | 24600 | 34200     | 29500 |
| 20    | 19000 | 4020  | 27400 | 11500 | 28300 | 17500 | 30700 | 23200 | 31400  | 25200 | 32300     | 27800 |
| 21    | 19700 | 4020  | 25100 | 12800 | 29500 | 18500 | 33200 | 24700 | 34000  | 25400 | 32800     | 26100 |
| 22    | 15100 | 2910  | 24700 | 13400 | 32400 | 19400 | 33900 | 24900 | 34600  | 24700 | 32000     | 26500 |
| 23    | 22100 | 5850  | 26100 | 15600 | 32100 | 19900 | 31500 | 25400 | 33700  | 25800 | 31400     | 27300 |
| 24    | 30900 | 9810  | 27400 | 16500 | 30000 | 20700 | 31800 | 24200 | 33500  | 25800 | 31500     | 27300 |
| 25    | 20800 | 10900 | 29500 | 17200 | 31100 | 20900 | 32100 | 21700 | 34500  | 26000 | 31000     | 27500 |
| 26    | 21200 | 11200 | 26900 | 17500 | 32500 | 19600 | 33000 | 21800 | 34500  | 25900 | 29900     | 27100 |
| 27    | 20300 | 11600 | 27000 | 17600 | 33200 | 19000 | 32200 | 21900 | 33100  | 25900 | 31100     | 27300 |
| 28    | 20400 | 11600 | 27100 | 16200 | ---   | ---   | 32200 | 21700 | 32700  | 27000 | 31800     | 26600 |
| 29    | 22100 | 9760  | 27000 | 15600 | 34100 | 19100 | 31500 | 20500 | 31600  | 27400 | 33500     | 26300 |
| 30    | 25800 | 11000 | 27500 | 14900 | 32300 | 18700 | 30800 | 19600 | 30600  | 26900 | 35600     | 26200 |
| 31    | ---   | ---   | 26900 | 14100 | ---   | ---   | 27500 | 18800 | 29400  | 26200 | ---       | ---   |
| MONTH | 30900 | 2910  | 29500 | 6520  | ---   | ---   | ---   | ---   | 34600  | 18700 | 36300     | 26100 |

## 11458370 NAPA RIVER AT MARE ISLAND CAUSEWAY, NEAR VALLEJO, CA—Continued

## SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## (LOWER PROBE)

| DAY   | MAX     | MIN   | MAX      | MIN   | MAX      | MIN   | MAX     | MIN   | MAX      | MIN   | MAX       | MIN   |
|-------|---------|-------|----------|-------|----------|-------|---------|-------|----------|-------|-----------|-------|
|       | OCTOBER |       | NOVEMBER |       | DECEMBER |       | JANUARY |       | FEBRUARY |       | MARCH     |       |
| 1     | 26200   | 20000 | ---      | ---   | 21700    | 12400 | ---     | ---   | 20400    | 2820  | 5450      | 179   |
| 2     | 25000   | 19300 | ---      | ---   | 22600    | 9170  | ---     | ---   | 19600    | 988   | 6730      | 166   |
| 3     | 23800   | 18000 | ---      | ---   | 24300    | 8340  | ---     | ---   | 21900    | 1430  | 1140      | 133   |
| 4     | 23700   | 16800 | ---      | ---   | 23400    | 7210  | ---     | ---   | 24300    | 4600  | 1110      | 81    |
| 5     | 22200   | 16400 | ---      | ---   | 22600    | 4550  | 31200   | 11600 | 19700    | 5850  | 1070      | 85    |
| 6     | ---     | ---   | ---      | ---   | 19900    | 3530  | 30500   | 12100 | 25200    | 8940  | 8600      | 779   |
| 7     | 20700   | 18300 | ---      | ---   | 21700    | 1690  | 24900   | 12800 | 27400    | 2010  | 14900     | 1720  |
| 8     | 27000   | 18700 | ---      | ---   | 20600    | 2810  | 29600   | 15000 | 22500    | 2010  | 14000     | 3580  |
| 9     | ---     | ---   | ---      | ---   | 16200    | 5750  | 32500   | 16200 | 19500    | 569   | 15100     | 2660  |
| 10    | ---     | ---   | ---      | ---   | 18700    | 6950  | 40500   | 19000 | 8940     | 480   | 11000     | 2880  |
| 11    | 31500   | 17900 | ---      | ---   | 24300    | 8090  | 44600   | 22300 | 22000    | 871   | 21100     | 4520  |
| 12    | 32000   | 18600 | ---      | ---   | 28500    | 11100 | 42900   | 24500 | 29200    | 2700  | 26500     | 7500  |
| 13    | 29000   | 18900 | ---      | ---   | 31400    | 12700 | 39900   | 22800 | 33500    | 2370  | 24800     | 6930  |
| 14    | 28100   | 19200 | ---      | ---   | 25200    | 12600 | 36500   | 21700 | 30500    | 789   | 30500     | 6150  |
| 15    | 27300   | 19600 | ---      | ---   | 29800    | 11800 | 36300   | 21300 | 22800    | 408   | 23700     | 3840  |
| 16    | 25700   | 19900 | ---      | ---   | 28900    | 10500 | 35600   | 21200 | 17700    | 280   | 18100     | 1030  |
| 17    | 26500   | 20200 | ---      | ---   | 27700    | 9830  | 35400   | 21100 | 6500     | 226   | 15200     | 835   |
| 18    | ---     | ---   | ---      | ---   | 28800    | 9970  | 32700   | 20600 | 4290     | 192   | 13100     | 1310  |
| 19    | ---     | ---   | 30200    | 20600 | 24600    | 9680  | 32700   | 18900 | 1540     | 203   | 14500     | 2050  |
| 20    | ---     | ---   | 30600    | 20100 | 23300    | 7740  | 29300   | 18500 | 1270     | 183   | 16600     | 2230  |
| 21    | ---     | ---   | 32100    | 19600 | 26300    | 5120  | 22400   | 17300 | 3640     | 208   | 18400     | 3110  |
| 22    | ---     | ---   | 30800    | 19600 | 26900    | 5790  | 20600   | 12100 | 1880     | 183   | 17700     | 2350  |
| 23    | ---     | ---   | 33100    | 19000 | 26300    | 8580  | 21900   | 12000 | 4190     | 377   | ---       | ---   |
| 24    | ---     | ---   | 24000    | 18500 | 21600    | 9460  | 21300   | 9280  | 15700    | 331   | 27000     | 3710  |
| 25    | ---     | ---   | 27900    | 17300 | 21800    | 10700 | 31000   | 10500 | 14800    | 229   | 28500     | 3920  |
| 26    | ---     | ---   | 29200    | 18300 | 25400    | 12800 | 31600   | 8520  | 10100    | 218   | 24100     | 4510  |
| 27    | ---     | ---   | 27600    | 18600 | 29500    | 13800 | 30600   | 4390  | 13500    | 206   | 14700     | 3810  |
| 28    | 29800   | 23100 | 28200    | 18700 | 29900    | 14800 | 29200   | 2380  | 13500    | 211   | 19600     | 3630  |
| 29    | 30200   | 23300 | 28600    | 18300 | ---      | ---   | 28200   | 1910  | ---      | ---   | 21900     | 3500  |
| 30    | ---     | ---   | 28000    | 18200 | ---      | ---   | 27900   | 2280  | ---      | ---   | 19300     | 4250  |
| 31    | ---     | ---   | ---      | ---   | ---      | ---   | 29800   | 4450  | ---      | ---   | 18900     | 4450  |
| MONTH | ---     | ---   | ---      | ---   | ---      | ---   | ---     | ---   | 33500    | 183   | ---       | ---   |
| DAY   | MAX     | MIN   | MAX      | MIN   | MAX      | MIN   | MAX     | MIN   | MAX      | MIN   | MAX       | MIN   |
|       | APRIL   |       | MAY      |       | JUNE     |       | JULY    |       | AUGUST   |       | SEPTEMBER |       |
| 1     | 17600   | 4490  | 29000    | 11600 | 33800    | 14800 | 38900   | 21000 | 28300    | 20300 | 33800     | 27700 |
| 2     | 21200   | 4580  | 24600    | 11100 | 34100    | 14400 | ---     | ---   | 26700    | 21100 | 35500     | 28100 |
| 3     | 23600   | 4590  | 27900    | 10800 | 26600    | 11900 | 31200   | 20700 | 29800    | 21700 | 36400     | 28200 |
| 4     | 18400   | 6360  | 22500    | 8650  | 37400    | 14800 | 29500   | 20200 | 31900    | 22200 | 38800     | 28100 |
| 5     | 22500   | 5820  | 27000    | 10700 | 32300    | 15900 | 31400   | 20700 | 34500    | 22700 | 38500     | 27300 |
| 6     | 26500   | 9160  | 33800    | 13100 | 27700    | 15700 | 31900   | 21100 | 32200    | 22900 | 37400     | 27200 |
| 7     | 35100   | 13300 | 25900    | 13600 | 27900    | 16400 | 33500   | 21700 | 35500    | 21300 | 36400     | 27900 |
| 8     | 28700   | 9850  | 25500    | 14200 | 30700    | 16700 | 35000   | 22200 | 35300    | 21000 | 36300     | 28500 |
| 9     | 23500   | 13600 | 29000    | 14500 | 32200    | 17000 | 34300   | 22500 | 35400    | 21400 | 36300     | 28600 |
| 10    | 30400   | 12700 | 32900    | 15100 | 30600    | 17600 | 36600   | 23000 | 35300    | 22600 | 35100     | 29300 |
| 11    | 34500   | 12500 | 32000    | 16400 | 32600    | 18100 | 38600   | 22800 | 35100    | 21700 | 33900     | 29200 |
| 12    | 28400   | 13600 | 29400    | 16600 | 33100    | 18400 | 38600   | 22700 | 33600    | 21300 | 32000     | 29400 |
| 13    | 22700   | 11600 | 27500    | 16400 | 34900    | 18200 | 38400   | 23700 | 32500    | 21500 | 31700     | 29200 |
| 14    | 20800   | 10100 | 27300    | 16100 | 35200    | 17900 | ---     | ---   | 30800    | 21800 | 31400     | 29100 |
| 15    | 21000   | 9540  | 29500    | 13700 | 35500    | 17300 | 36300   | 24500 | 29200    | 22700 | 33700     | 29400 |
| 16    | 23900   | 9470  | 31900    | 13100 | 34800    | 16600 | 34300   | 23200 | 30700    | 23300 | 33400     | 29400 |
| 17    | 25400   | 8810  | 34000    | 12800 | 35400    | 16600 | 31200   | 23000 | 33600    | 23700 | 35400     | 29600 |
| 18    | 26900   | 7860  | 34200    | 13300 | 34800    | 17500 | 29900   | 23500 | 35700    | 23900 | 36700     | 29700 |
| 19    | 26100   | 6440  | 34400    | 12500 | 28100    | 18100 | 32900   | 23900 | 37300    | 25400 | 35900     | 29900 |
| 20    | 25100   | 5300  | 33300    | 13900 | 30100    | 18200 | 36000   | 24500 | 36500    | 25500 | 33300     | 29800 |
| 21    | 27100   | 6380  | 31900    | 14200 | 32600    | 18800 | 39700   | 24500 | 37500    | 25600 | 34000     | 27600 |
| 22    | 25200   | 5530  | 28500    | 14900 | 35800    | 19700 | 40000   | 24900 | 38700    | 25800 | 34200     | 27700 |
| 23    | 35800   | 7500  | 27400    | 16100 | 36200    | 20400 | 36800   | 25500 | 35500    | 25700 | 34000     | 27800 |
| 24    | 39200   | 11800 | 31000    | 17600 | 33300    | 21000 | 35800   | 25900 | 36300    | 26200 | 34200     | 27800 |
| 25    | 22700   | 12000 | 33300    | 17300 | 34100    | 21400 | 35600   | 23300 | 36300    | 26500 | 32400     | 28100 |
| 26    | 25100   | 11800 | 30500    | 17700 | 35200    | 21100 | 36100   | 22900 | 36700    | 26700 | 31600     | 27500 |
| 27    | 25300   | 12100 | 29800    | 17800 | 36600    | 20100 | 36100   | 23000 | 36200    | 26400 | 32400     | 27400 |
| 28    | 25400   | 12200 | 31100    | 17600 | ---      | ---   | 35500   | 22600 | 34700    | 27200 | 33800     | 26800 |
| 29    | 29200   | 11600 | 31500    | 17100 | 37400    | 20400 | 35300   | 21400 | 33100    | 27200 | 35000     | 26600 |
| 30    | 30200   | 11600 | 32400    | 16300 | 38200    | 19900 | 33300   | 20400 | 31200    | 27300 | 36900     | 27100 |
| 31    | ---     | ---   | 30100    | 15600 | ---      | ---   | 30800   | 20300 | 30700    | 27000 | ---       | ---   |
| MONTH | 39200   | 4490  | 34400    | 8650  | ---      | ---   | ---     | ---   | 38700    | 20300 | 38800     | 26600 |

## 11458370 NAPA RIVER AT MARE ISLAND CAUSEWAY, NEAR VALLEJO, CA—Continued

## TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## (UPPER PROBE)

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



## 11459500 NOVATO CREEK AT NOVATO, CA

LOCATION.—Lat 38°06'28", long 122°34'44", in Novato Grant, Marin County, Hydrologic Unit 18050002, on left bank in Novato, 100 ft upstream from 7th Street Bridge, and 3.9 mi downstream from Novato Creek Dam.

DRAINAGE AREA.—17.6 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1946 to current year. Prior to October 1966, published as "near Novato."

GAGE.—Water-stage recorder. Datum of gage is 14.76 ft above sea level. Prior to Aug. 23, 1967, at site 0.6 mi upstream at different datum.

REMARKS.—Records fair. Flow regulated by Stafford Lake beginning Dec. 1, 1951, capacity, 4,500 acre-ft, since Oct. 18, 1954. Diversion from Stafford Lake for municipal water supply began Apr. 25, 1952.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,000 ft<sup>3</sup>/s, Jan. 4, 1982, gage height, 14.52 ft, from contracted opening and slope-area measurements of 3,800 ft<sup>3</sup>/s at the gage site, and slope-conveyance computations of 1,200 ft<sup>3</sup>/s of overflow about 1 mi upstream, which entered the adjoining Warner Creek Basin; no flow for many days most years.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN    | FEB    | MAR  | APR   | MAY  | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|-------|--------|--------|------|-------|------|-------|-------|-------|-------|
| 1     | .65   | .41   | 3.1   | .60    | 8.0    | 48   | 25    | 3.5  | 1.9   | .80   | .49   | .50   |
| 2     | .64   | .39   | 1.6   | .65    | 4.9    | 43   | 21    | 3.5  | 1.9   | .81   | .61   | 1.1   |
| 3     | .51   | .37   | 8.2   | .68    | 3.9    | 42   | 17    | 3.5  | 2.1   | .86   | .76   | .47   |
| 4     | .45   | .39   | 1.7   | .68    | 3.1    | 35   | 16    | 2.9  | 2.0   | .97   | .74   | .36   |
| 5     | .51   | .38   | 2.9   | .76    | 2.6    | 32   | 20    | 2.8  | 1.9   | .95   | .78   | .35   |
| 6     | .96   | .38   | 1.6   | .75    | 47     | 29   | 20    | 2.5  | 1.7   | .86   | .81   | .35   |
| 7     | 1.4   | 5.0   | 1.2   | .76    | 259    | 26   | 14    | 2.4  | 1.7   | .90   | .77   | .36   |
| 8     | .61   | 2.6   | 1.8   | .76    | 54     | 37   | 32    | 2.3  | 1.6   | .86   | .75   | .35   |
| 9     | .35   | .87   | 1.2   | .76    | 210    | 46   | 18    | 2.0  | 1.6   | 1.3   | .74   | .40   |
| 10    | .34   | .68   | 1.1   | .76    | 49     | 36   | 16    | 1.9  | 1.6   | .65   | .84   | 1.2   |
| 11    | .36   | .94   | 1.0   | .83    | 33     | 34   | 106   | 1.8  | 1.6   | .66   | .89   | .38   |
| 12    | .38   | .62   | .85   | .78    | 26     | 29   | 48    | 1.6  | 1.6   | 1.2   | .86   | .36   |
| 13    | .38   | .44   | 1.5   | .76    | 23     | 24   | 38    | 1.5  | 1.6   | .51   | .84   | .35   |
| 14    | .37   | .40   | .97   | .63    | 20     | 28   | 30    | 2.2  | 1.7   | .46   | .77   | .37   |
| 15    | 1.3   | .38   | .72   | 2.7    | 17     | 28   | 26    | 1.7  | 1.6   | .44   | .81   | .38   |
| 16    | .61   | .39   | .68   | 1.6    | 115    | 24   | 23    | 1.7  | 1.6   | .57   | .76   | .36   |
| 17    | .33   | 2.5   | .68   | .77    | 134    | 20   | 19    | 1.7  | 1.6   | .53   | .76   | .35   |
| 18    | .41   | .55   | .76   | 5.3    | 95     | 18   | 16    | 1.7  | 1.9   | .52   | .79   | .35   |
| 19    | .45   | .52   | 1.0   | 6.6    | 80     | 16   | 12    | 1.7  | 1.1   | .55   | .78   | .35   |
| 20    | .36   | .42   | 1.1   | 6.6    | 100    | 16   | 10    | 1.7  | 1.1   | .58   | 1.2   | .36   |
| 21    | .33   | .64   | .88   | 3.1    | 112    | 16   | 8.1   | 1.6  | 1.1   | .52   | .43   | .36   |
| 22    | .36   | .84   | .78   | 3.1    | 85     | 15   | 6.6   | 1.4  | 1.2   | .48   | .40   | .38   |
| 23    | .35   | 12    | .78   | 8.7    | 70     | 14   | 5.8   | 1.8  | 1.2   | .51   | .39   | .38   |
| 24    | 4.2   | 1.5   | .71   | 2.8    | 68     | 61   | 5.4   | 1.8  | 1.2   | .51   | .40   | .39   |
| 25    | .84   | .72   | .61   | 1.9    | 96     | 87   | 5.1   | 1.9  | 1.1   | .54   | .39   | .30   |
| 26    | .52   | 1.4   | .60   | 8.7    | 66     | 52   | 4.8   | 2.0  | 1.0   | .50   | .39   | .23   |
| 27    | .44   | .73   | .60   | 3.3    | 57     | 44   | 4.6   | 2.0  | 1.0   | 1.0   | .43   | .21   |
| 28    | .47   | .68   | .60   | 2.2    | 53     | 38   | 4.2   | 2.0  | 1.0   | .52   | .39   | .18   |
| 29    | .71   | 13    | .60   | 1.7    | ---    | 34   | 3.9   | 2.0  | .95   | .48   | .41   | .18   |
| 30    | .66   | 37    | .63   | 3.3    | ---    | 31   | 3.6   | 2.0  | .82   | .49   | .43   | .49   |
| 31    | .37   | ---   | .60   | 44     | ---    | 28   | ---   | 1.9  | ---   | .49   | .48   | ---   |
| TOTAL | 20.62 | 87.14 | 41.05 | 116.53 | 1891.5 | 1031 | 579.1 | 65.0 | 43.97 | 21.02 | 20.29 | 12.15 |
| MEAN  | .67   | 2.90  | 1.32  | 3.76   | 67.6   | 33.3 | 19.3  | 2.10 | 1.47  | .68   | .65   | .41   |
| MAX   | 4.2   | 37    | 8.2   | 44     | 259    | 87   | 106   | 3.5  | 2.1   | 1.3   | 1.2   | 1.2   |
| MIN   | .33   | .37   | .60   | .60    | 2.6    | 14   | 3.6   | 1.4  | .82   | .44   | .39   | .18   |
| AC-FT | 41    | 173   | 81    | 231    | 3750   | 2040 | 1150  | 129  | 87    | 42    | 40    | 24    |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1999, BY WATER YEAR (WY)

|          | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|----------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN     | .72  | 3.21 | 15.4 | 48.9 | 48.9 | 26.3 | 9.37 | 1.49 | .76  | .64  | .40  | .30  |
| MAX (WY) | 9.07 | 17.2 | 117  | 210  | 386  | 207  | 81.3 | 12.9 | 7.73 | 8.61 | 8.53 | 5.40 |
| MIN (WY) | 1963 | 1974 | 1956 | 1995 | 1998 | 1983 | 1958 | 1983 | 1980 | 1980 | 1980 | 1967 |
| MIN (WY) | 1947 | 1948 | 1950 | 1948 | 1948 | 1976 | 1977 | 1961 | 1951 | 1947 | 1947 | 1947 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1947 - 1999

|                          |          |         |       |        |  |      |        |  |       |       |      |      |
|--------------------------|----------|---------|-------|--------|--|------|--------|--|-------|-------|------|------|
| ANNUAL TOTAL             | 14014.67 | 3929.37 |       |        |  |      |        |  |       |       |      |      |
| ANNUAL MEAN              | 38.4     | 10.8    |       |        |  |      |        |  |       | 12.9  |      |      |
| HIGHEST ANNUAL MEAN      |          |         |       |        |  |      |        |  |       | 47.9  |      | 1983 |
| LOWEST ANNUAL MEAN       |          |         |       |        |  |      |        |  |       | .40   |      | 1976 |
| HIGHEST DAILY MEAN       |          |         | 1670  | Feb 3  |  | 259  | Feb 7  |  | 2850  | Jan 4 | 1982 |      |
| LOWEST DAILY MEAN        |          |         | .33   | Oct 17 |  | .18  | Sep 28 |  | .00   | Oct 1 | 1946 |      |
| ANNUAL SEVEN-DAY MINIMUM |          |         | .37   | Oct 17 |  | .27  | Sep 23 |  | .00   | Oct 1 | 1946 |      |
| INSTANTANEOUS PEAK FLOW  |          |         |       |        |  | 679  | Feb 7  |  | 5000  | Jan 4 | 1982 |      |
| INSTANTANEOUS PEAK STAGE |          |         |       |        |  | 6.85 | Feb 7  |  | 14.52 | Jan 4 | 1982 |      |
| INSTANTANEOUS LOW FLOW   |          |         |       |        |  |      |        |  | .00   | Oct 1 | 1946 |      |
| ANNUAL RUNOFF (AC-FT)    |          |         | 27800 |        |  | 7790 |        |  | 9320  |       |      |      |
| 10 PERCENT EXCEEDS       |          |         | 89    |        |  | 34   |        |  | 22    |       |      |      |
| 50 PERCENT EXCEEDS       |          |         | 1.7   |        |  | 1.1  |        |  | .60   |       |      |      |
| 90 PERCENT EXCEEDS       |          |         | .51   |        |  | .38  |        |  | .00   |       |      |      |

## 11460400 LAGUNITAS CREEK AT SAMUEL P. TAYLOR STATE PARK, CA

LOCATION.—Lat 38°01'37", long 122°44'07", Marin County, Hydrologic Unit 18050005, in Samuel P. Taylor State Park, on left bank, 300 ft upstream from Deadman's Gulch, 0.9 mi downstream from park entrance, 2.1 mi northwest of Lagunitas, and 3.4 mi downstream from Kent Lake.

DRAINAGE AREA.—34.3 mi<sup>2</sup>.

PERIOD OF RECORD.—December 1982 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 102.89 ft above sea level.

REMARKS.—Records good including estimated daily discharge. Flow regulated by Kent Lake, capacity, 16,680 acre-ft, and Alpine Lake, capacity, 8,890 acre-ft, both of which divert for domestic and industrial use in Marin County.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,830 ft<sup>3</sup>/s, Feb. 3, 1998, gage height, 10.00 ft; minimum daily, 3.8 ft<sup>3</sup>/s, Oct.16–18, 1986.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC  | JAN  | FEB   | MAR  | APR  | MAY  | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|------|------|-------|------|------|------|-------|-------|-------|-------|
| 1     | 7.8   | 8.2   | 69   | 38   | 85    | 163  | 89   | 18   | 12    | 8.3   | 8.5   | 8.8   |
| 2     | 7.8   | 8.3   | 33   | 38   | 53    | 148  | 75   | 18   | 12    | 8.3   | 8.4   | 8.7   |
| 3     | 7.8   | 8.2   | 82   | 38   | 41    | 191  | 62   | 17   | 12    | 8.3   | 8.4   | 8.8   |
| 4     | 7.7   | 8.2   | 46   | 30   | 33    | 168  | 53   | 15   | 11    | 8.2   | 8.4   | 8.7   |
| 5     | 7.6   | 8.1   | 48   | 26   | 31    | 144  | 70   | 15   | 11    | 8.1   | 8.5   | 8.7   |
| 6     | 7.5   | 8.4   | 62   | 28   | 539   | 121  | 73   | 15   | 11    | 8.2   | 8.6   | 8.7   |
| 7     | 7.7   | 16    | 37   | 27   | 1250  | 100  | 67   | 15   | 11    | 8.1   | 8.5   | 8.6   |
| 8     | 7.8   | 10    | 28   | 28   | 1000  | 152  | 147  | 16   | 11    | 8.0   | 8.5   | 8.7   |
| 9     | 7.9   | 9.9   | 23   | 28   | 987   | 215  | 120  | 16   | 11    | 8.0   | 8.4   | 8.7   |
| 10    | 8.6   | 9.2   | 20   | 28   | 595   | 178  | 115  | 16   | 11    | 7.9   | 8.5   | 8.7   |
| 11    | 7.9   | e9.0  | 22   | 27   | 328   | 149  | 419  | 15   | 10    | 8.0   | 8.7   | 8.7   |
| 12    | 7.8   | 8.8   | 25   | 27   | 219   | 124  | 384  | 15   | 10    | 7.9   | 8.6   | 8.7   |
| 13    | 7.7   | 8.9   | 25   | 28   | 162   | 102  | 273  | 15   | 10    | 8.0   | 8.5   | 8.7   |
| 14    | 7.8   | 8.8   | 25   | 28   | 128   | 97   | 194  | 15   | 10    | 8.3   | 8.4   | 8.8   |
| 15    | 7.9   | 8.6   | 23   | 28   | 100   | 92   | 146  | 14   | 9.6   | 8.4   | 8.5   | 8.8   |
| 16    | 7.9   | 25    | 22   | 30   | 378   | 82   | 110  | 14   | 8.5   | 8.6   | 8.3   | 8.8   |
| 17    | 7.9   | 38    | 22   | 32   | 1270  | 75   | 83   | 14   | 8.3   | 8.6   | 8.4   | 8.8   |
| 18    | 7.9   | 38    | 21   | 138  | 744   | 68   | 66   | 13   | 8.0   | 8.6   | 8.7   | 8.8   |
| 19    | 7.8   | 37    | 21   | 91   | 374   | 61   | 54   | 13   | 7.4   | 8.7   | 8.7   | 8.9   |
| 20    | 7.8   | 28    | 21   | 157  | 347   | 55   | 45   | 13   | 6.9   | 8.7   | 9.0   | 8.8   |
| 21    | 7.8   | 20    | 20   | 83   | 462   | 51   | 40   | 12   | 6.9   | 8.6   | 9.3   | 8.8   |
| 22    | 7.8   | 21    | 20   | 62   | 360   | 47   | 35   | 12   | 6.8   | 8.6   | 9.0   | 8.8   |
| 23    | 7.9   | 56    | 20   | 185  | 234   | 51   | 31   | 12   | 6.9   | 8.6   | 9.1   | 8.8   |
| 24    | 11    | 36    | 20   | 82   | 203   | 124  | 27   | 12   | 6.7   | 8.6   | 8.8   | 8.8   |
| 25    | 8.6   | 36    | 19   | 52   | 306   | 352  | 23   | 11   | 6.7   | 8.6   | 8.7   | 8.8   |
| 26    | 8.2   | 32    | 19   | 46   | 242   | 278  | 20   | 11   | 6.7   | 8.5   | 8.8   | 8.8   |
| 27    | 8.1   | 25    | 19   | 34   | 193   | 216  | 19   | 11   | 6.5   | 8.6   | 8.6   | 8.6   |
| 28    | 8.0   | 23    | 18   | 28   | 168   | 163  | 19   | 11   | 7.0   | 8.6   | 8.7   | 8.7   |
| 29    | 8.2   | 112   | 19   | 30   | ---   | 128  | 19   | 12   | 7.7   | 8.4   | 8.7   | 9.0   |
| 30    | 8.2   | 214   | 18   | 35   | ---   | 111  | 19   | 12   | 8.0   | 8.5   | 8.7   | 8.6   |
| 31    | 8.2   | ---   | 28   | 217  | ---   | 109  | ---  | 11   | ---   | 8.5   | 8.7   | ---   |
| TOTAL | 248.6 | 879.6 | 895  | 1749 | 10832 | 4115 | 2897 | 429  | 271.6 | 259.3 | 267.6 | 262.6 |
| MEAN  | 8.02  | 29.3  | 28.9 | 56.4 | 387   | 133  | 96.6 | 13.8 | 9.05  | 8.36  | 8.63  | 8.75  |
| MAX   | 11    | 214   | 82   | 217  | 1270  | 352  | 419  | 18   | 12    | 8.7   | 9.3   | 9.0   |
| MIN   | 7.5   | 8.1   | 18   | 26   | 31    | 47   | 19   | 11   | 6.5   | 7.9   | 8.3   | 8.6   |
| AC-FT | 493   | 1740  | 1780 | 3470 | 21490 | 8160 | 5750 | 851  | 539   | 514   | 531   | 521   |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 8.27 | 24.8 | 53.7 | 133  | 182  | 113  | 30.4 | 19.0 | 9.69 | 6.90 | 6.21 | 6.12 |
| MAX  | 13.4 | 66.3 | 201  | 568  | 796  | 503  | 96.6 | 66.9 | 26.6 | 8.69 | 8.65 | 8.90 |
| (WY) | 1990 | 1985 | 1997 | 1995 | 1998 | 1983 | 1999 | 1995 | 1998 | 1995 | 1996 | 1996 |
| MIN  | 4.34 | 4.74 | 6.84 | 14.5 | 11.2 | 13.6 | 8.39 | 7.43 | 6.30 | 4.92 | 4.44 | 4.29 |
| (WY) | 1987 | 1987 | 1987 | 1991 | 1989 | 1988 | 1987 | 1987 | 1987 | 1992 | 1984 | 1984 |

## SUMMARY STATISTICS

|                          | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1983 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 39865.3                |        | 23106.3             |        |                         |             |
| ANNUAL MEAN              | 109                    |        | 63.3                |        | 45.3                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 112                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 14.7                    |             |
| HIGHEST DAILY MEAN       | 2870                   | Feb 3  | 1270                | Feb 17 | 2870                    | Feb 3 1998  |
| LOWEST DAILY MEAN        | 7.3                    | Jul 12 | 6.5                 | Jun 27 | 3.8                     | Oct 16 1986 |
| ANNUAL SEVEN-DAY MINIMUM | 7.6                    | Jul 11 | 6.7                 | Jun 21 | 4.0                     | Oct 16 1986 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 1860                |        | 5830                    |             |
| INSTANTANEOUS PEAK STAGE |                        |        | 6.93                |        | 10.00                   |             |
| ANNUAL RUNOFF (AC-FT)    | 79070                  |        | 45830               |        | 32840                   |             |
| 10 PERCENT EXCEEDS       | 344                    |        | 162                 |        | 86                      |             |
| 50 PERCENT EXCEEDS       | 18                     |        | 14                  |        | 12                      |             |
| 90 PERCENT EXCEEDS       | 7.8                    |        | 8.0                 |        | 5.1                     |             |

e Estimated.

## 11460600 LAGUNITAS CREEK NEAR POINT REYES STATION, CA

LOCATION.—Lat 38°04'49", long 122°47'00", in Nicasio (Black) Grant, Marin County, Hydrologic Unit 18050005, on right bank, at upstream side of road bridge, 300 ft downstream from small right-bank tributary, 1.4 mi northeast of town of Point Reyes Station, and 2.5 mi downstream from Nicasio Dam.

DRAINAGE AREA.—81.7 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1974 to current year.

WATER TEMPERATURE: October 1989 to September 1990.

SEDIMENT DATA: October 1989 to September 1990.

REVISED RECORDS.—WDR CA-79-2: 1975, 1978. WDR CA-82-2: 1975(M), 1978(M), 1980(M).

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 50 ft above sea level, from topographic map.

REMARKS.—Records good. Flow regulated by Nicasio Reservoir, capacity, 22,450 acre-ft; Kent Lake, capacity, 16,680 acre-ft; and Alpine Lake, capacity, 8,890 acre-ft, all of which divert water for domestic and industrial use in Marin County.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 22,100 ft<sup>3</sup>/s, Jan. 4, 1982, gage height, 26.96 ft, from rating curve extended above 6,200 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily, 0.01 ft<sup>3</sup>/s, Sept. 26, 1977.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC  | JAN  | FEB   | MAR   | APR   | MAY  | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|------|------|-------|-------|-------|------|-------|-------|-------|-------|
| 1     | 8.5   | 9.9   | 112  | 42   | 325   | 287   | 158   | 28   | 14    | 9.8   | 9.4   | 9.3   |
| 2     | 8.4   | 9.7   | 50   | 42   | 180   | 237   | 133   | 27   | 14    | 9.8   | 9.2   | 9.3   |
| 3     | 8.2   | 9.7   | 112  | 41   | 131   | 322   | 110   | 30   | 14    | 9.8   | 9.3   | 9.3   |
| 4     | 8.4   | 9.8   | 71   | 37   | 102   | 261   | 100   | 27   | 14    | 9.8   | 9.4   | 9.3   |
| 5     | 8.3   | 9.7   | 52   | 27   | 83    | 216   | 120   | 24   | 14    | 9.7   | 9.5   | 9.2   |
| 6     | 8.3   | 9.9   | 98   | 31   | 1150  | 180   | 128   | 23   | 13    | 9.8   | 9.6   | 9.2   |
| 7     | 8.2   | 18    | 55   | 30   | 4470  | 152   | 115   | 22   | 13    | 9.8   | 9.6   | 9.2   |
| 8     | 8.4   | 15    | 41   | 30   | 2070  | 263   | 236   | 21   | 13    | 9.6   | 9.4   | 9.2   |
| 9     | 8.4   | 13    | 33   | 30   | 2550  | 477   | 221   | 20   | 13    | 9.5   | 9.3   | 9.3   |
| 10    | 8.4   | 11    | 27   | 29   | 1160  | 325   | 191   | 20   | 13    | 9.5   | 9.4   | 9.3   |
| 11    | 9.3   | 11    | 26   | 29   | 621   | 255   | 850   | 22   | 13    | 9.4   | 9.6   | 9.3   |
| 12    | 8.4   | 11    | 30   | 29   | 387   | 203   | 724   | 21   | 13    | 9.3   | 9.5   | 9.3   |
| 13    | 8.4   | 10    | 30   | 29   | 274   | 170   | 470   | 20   | 13    | 9.2   | 9.2   | 9.2   |
| 14    | 8.4   | 10    | 31   | 29   | 221   | 172   | 318   | 19   | 12    | 9.3   | 9.1   | 9.3   |
| 15    | 8.4   | 10    | 28   | 30   | 173   | 179   | 232   | 18   | 12    | 9.3   | 9.0   | 9.4   |
| 16    | 8.4   | 18    | 27   | 34   | 657   | 150   | 175   | 17   | 11    | 9.6   | 9.2   | 9.3   |
| 17    | 8.4   | 39    | 26   | 34   | 2550  | 131   | 137   | 17   | 10    | 9.6   | 9.0   | 9.3   |
| 18    | 8.4   | 39    | 25   | 169  | 1220  | 117   | 111   | 17   | 10    | 9.5   | 9.4   | 9.3   |
| 19    | 8.5   | 38    | 24   | 108  | 746   | 107   | 92    | 16   | 9.3   | 9.6   | 9.5   | 9.4   |
| 20    | 8.3   | 33    | 24   | 261  | 634   | 99    | 77    | 16   | 8.6   | 9.8   | 9.4   | 9.3   |
| 21    | 8.4   | 21    | 23   | 138  | 905   | 90    | 68    | 15   | 9.0   | 9.8   | 9.9   | 9.3   |
| 22    | 8.4   | 22    | 23   | 92   | 664   | 83    | 61    | 15   | 8.6   | 9.6   | 9.7   | 9.4   |
| 23    | 8.5   | 54    | 22   | 333  | 433   | 88    | 58    | 15   | 8.6   | 9.6   | 9.7   | 9.3   |
| 24    | 13    | 47    | 22   | 224  | 345   | 208   | 47    | 15   | 8.5   | 9.7   | 9.4   | 9.3   |
| 25    | 12    | 37    | 22   | 160  | 688   | 879   | 42    | 14   | 8.4   | 9.5   | 9.2   | 9.2   |
| 26    | 10    | 37    | 22   | 152  | 467   | 554   | 39    | 14   | 8.4   | 9.5   | 9.3   | 9.1   |
| 27    | 9.7   | 28    | 22   | 131  | 343   | 379   | 33    | 14   | 8.0   | 9.5   | 9.1   | 9.2   |
| 28    | 9.8   | 25    | 22   | 99   | 296   | 276   | 29    | 14   | 8.1   | 9.6   | 9.2   | 9.0   |
| 29    | 9.6   | 98    | 21   | 85   | ---   | 214   | 30    | 14   | 9.2   | 9.3   | 9.3   | 9.2   |
| 30    | 9.7   | 264   | 21   | 81   | ---   | 184   | 29    | 14   | 9.3   | 9.3   | 9.2   | 8.9   |
| 31    | 9.7   | ---   | 27   | 639  | ---   | 194   | ---   | 14   | ---   | 9.4   | 9.2   | ---   |
| TOTAL | 277.2 | 967.7 | 1169 | 3225 | 23845 | 7452  | 5134  | 583  | 333.0 | 296.5 | 290.2 | 277.6 |
| MEAN  | 8.94  | 32.3  | 37.7 | 104  | 852   | 240   | 171   | 18.8 | 11.1  | 9.56  | 9.36  | 9.25  |
| MAX   | 13    | 264   | 112  | 639  | 4470  | 879   | 850   | 30   | 14    | 9.8   | 9.9   | 9.4   |
| MIN   | 8.2   | 9.7   | 21   | 27   | 83    | 83    | 29    | 14   | 8.0   | 9.2   | 9.0   | 8.9   |
| AC-FT | 550   | 1920  | 2320 | 6400 | 47300 | 14780 | 10180 | 1160 | 661   | 588   | 576   | 551   |



## 11460600 LAGUNITAS CREEK NEAR POINT REYES STATION, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 7.42 | 37.5 | 102  | 309  | 370  | 225  | 66.8 | 20.4 | 8.54 | 5.97 | 5.16 | 4.89 |
| MAX  | 19.2 | 177  | 542  | 1427 | 1916 | 1109 | 531  | 91.4 | 32.4 | 10.3 | 9.36 | 9.25 |
| (WY) | 1984 | 1983 | 1984 | 1995 | 1998 | 1983 | 1982 | 1995 | 1998 | 1998 | 1999 | 1999 |
| MIN  | .19  | 1.35 | 1.51 | 2.37 | 3.52 | 7.40 | 1.59 | .67  | .45  | 1.77 | 1.47 | 1.12 |
| (WY) | 1977 | 1977 | 1977 | 1976 | 1977 | 1977 | 1977 | 1977 | 1977 | 1976 | 1976 | 1977 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |  |  | FOR 1999 WATER YEAR |  |  | WATER YEARS 1975 - 1999 |  |  |
|--------------------------|------------------------|--|--|---------------------|--|--|-------------------------|--|--|
| ANNUAL TOTAL             | 90674.7                |  |  | 43850.2             |  |  |                         |  |  |
| ANNUAL MEAN              | 248                    |  |  | 120                 |  |  | 95.5                    |  |  |
| HIGHEST ANNUAL MEAN      |                        |  |  |                     |  |  | 269                     |  |  |
| LOWEST ANNUAL MEAN       |                        |  |  |                     |  |  | 2.54                    |  |  |
| HIGHEST DAILY MEAN       | 7720                   |  |  | 4470                |  |  | 10700                   |  |  |
| LOWEST DAILY MEAN        | 7.8                    |  |  | 8.0                 |  |  | .01                     |  |  |
| ANNUAL SEVEN-DAY MINIMUM | 8.0                    |  |  | 8.3                 |  |  | .02                     |  |  |
| INSTANTANEOUS PEAK FLOW  |                        |  |  | 5810                |  |  | 22100                   |  |  |
| INSTANTANEOUS PEAK STAGE |                        |  |  | 17.70               |  |  | 26.96                   |  |  |
| ANNUAL RUNOFF (AC-FT)    | 179900                 |  |  | 86980               |  |  | 69220                   |  |  |
| 10 PERCENT EXCEEDS       | 726                    |  |  | 268                 |  |  | 161                     |  |  |
| 50 PERCENT EXCEEDS       | 25                     |  |  | 17                  |  |  | 10                      |  |  |
| 90 PERCENT EXCEEDS       | 8.4                    |  |  | 9.1                 |  |  | 2.5                     |  |  |

## 11460600 LAGUNITAS CREEK NEAR POINT REYES, CA—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.— August 1977, October 1989 to August 1990, November 1998 to September 1999.

CHEMICAL DATA: August 1977, November 1998 to September 1999.

SEDIMENT DATA: October 1989 to August 1990, November 1998 to September 1999.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)<br>(00095) | PH<br>WATER<br>WHOLE<br>FIELD<br>(STAND-<br>ARD<br>UNITS)<br>(00400) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010)                | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG)<br>(00025)               | OXYGEN,<br>OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)<br>(00300) | OXYGEN,<br>DIS-<br>SOLVED<br>CENT<br>SATUR-<br>ATION)<br>CACO3)<br>(00301) | HARD-<br>NESS<br>TOTAL<br>DISSOLV<br>TOTAL<br>(MG/L<br>CACO3)<br>(00900) | HARD-<br>NESS<br>NONCARB<br>DISSOLV<br>FLD. AS<br>CACO3<br>(MG/L)<br>(00904) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)<br>(00915)                       | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG)<br>(00925)           |  |
|-------|------|---|--|--|--|---|---|--|--|--|---|---|--|
| NOV   |      |   |  |  |  |   |   |  |  |  |   |   |  |
| 24... | 0810 | 47  | 219  | 7.9  | 11.9   | 766   | 9.6   | 88   | 88   | 15   | 14  | 13  |  |
| JAN   |      |   |  |  |  |   |   |  |  |  |   |   |  |
| 28... | 0950 | 101   | 191  | 7.7  | 8.4  | 768   | 10.6  | 90   | 78   | 17   | 14  | 10  |  |
| FEB   |      |   |  |  |  |   |   |  |  |  |   |   |  |
| 07... | 1250 | 5800  | 122  | 7.4  | --   | --  | --  | --   | 45   | 7  | 8.1   | 6.0   |  |
| MAR   |      |   |  |  |  |   |   |  |  |  |   |   |  |
| 25... | 1300 | 869   | 138  | 7.6  | 11.9   | 758   | 12.4  | 115  | 53   | 3  | 9.2   | 7.3   |  |
| MAY   |      |   |  |  |  |   |   |  |  |  |   |   |  |
| 20... | 0930 | 16  | 233  | 8.0  | 13.5   | 761   | 8.6   | 83   | 95   | 6  | 16  | 13  |  |
| JUL   |      |   |  |  |  |   |   |  |  |  |   |   |  |
| 30... | 1430 | 9.4   | 207  | 7.9  | 16.6   | 763   | 8.8   | 90   | 84   | 1  | 15  | 12  |  |
| SEP   |      |   |  |  |  |   |   |  |  |  |   |   |  |
| 30... | 1000 | 9.1   | 186  | 7.5  | 14.2   | 760   | 7.9   | 77   | 74   | 3  | 13  | 10  |  |
|       |      |   |  |  |  |   |   |  |  |  |   |   |  |
| DATE  |      | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)<br>(00930)               | SODIUM<br>PERCENT<br>(00932)                                 | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO<br>(00931)                   | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K)<br>(00935) | ALKA-<br>LINITY<br>WAT. DIS<br>GRAN T.<br>FIELD<br>CACO3<br>(MG/L)<br>(29802) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)<br>(00945)  | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)<br>(00940)             | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)<br>(00950)            | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS SIO2)<br>(00955)                    | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L)<br>(70300) | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L)<br>(70301) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT)<br>(70303) |
| NOV   |      |   |  |  |  |   |   |  |  |  |   |   |  |
| 24... | 9.8  | 19  | .5   | 2.0  | 73   | 9.4   | 14  | <.1  | 12   | 157  | 127   | .21   |  |
| JAN   |      |   |  |  |  |   |   |  |  |  |   |   |  |
| 28... | 9.2  | 20  | .5   | 1.3  | 61   | 7.1   | 11  | <.1  | 10   | 112  | 109   | .15   |  |
| FEB   |      |   |  |  |  |   |   |  |  |  |   |   |  |
| 07... | 6.7  | 24  | .4   | 1.6  | 38   | 5.0   | 7.9   | <.1  | 7.8  | 85   | 74  | .12   |  |
| MAR   |      |   |  |  |  |   |   |  |  |  |   |   |  |
| 25... | 7.1  | 22  | .4   | 1.3  | 50   | 4.6   | 8.1   | <.1  | 11   | 94   | 80  | .13   |  |
| MAY   |      |   |  |  |  |   |   |  |  |  |   |   |  |
| 20... | 9.4  | 18  | .4   | .8   | 89   | 7.0   | 11  | <.1  | 11   | 129  | 122   | .18   |  |
| JUL   |      |   |  |  |  |   |   |  |  |  |   |   |  |
| 30... | 8.2  | 17  | .4   | .7   | 83   | 5.1   | 9.4   | <.1  | 15   | 123  | 114   | .17   |  |
| SEP   |      |   |  |  |  |   |   |  |  |  |   |   |  |
| 30... | 7.3  | 17  | .4   | .8   | 71   | 4.7   | 8.6   | <.1  | 14   | 104  | 101   | .14   |  |

&lt; Actual value is known to be less than the value shown.

## 11460600 LAGUNITAS CREEK NEAR POINT REYES, CA—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE             | NITRO-<br>GEN,<br>NITRITE<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00613) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00631) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00608) | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)<br>(00625) | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>DIS.<br>(MG/L<br>AS N)<br>(00623) | PHOS-<br>PHORUS<br>TOTAL<br>(MG/L<br>AS P)<br>(00665) | PHOS-<br>PHORUS<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00666) | PHOS-<br>PHORUS<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00671) | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE)<br>(01046) | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN)<br>(01056) | CARBON,<br>ORGANIC<br>DIS-<br>SOLVED<br>(MG/L<br>AS C)<br>(00681) | CARBON,<br>ORGANIC<br>SUS-<br>PENDE<br>TOTAL<br>(MG/L<br>AS C)<br>(00689) |
|------------------|--|--|--|--|---|---|--|--|---|---|---|---|
| NOV<br>24...01   |  | 1.3  | .02  | .7   | .4  | .14   | .06  | .05  | 44  | 12  | --  | --  |
| JAN<br>28...01   |  | .41  | <.02   | .2   | .2  | .03   | .02  | .02  | e9  | 15  | --  | --  |
| FEB<br>07...<.01 |  | .44  | .03  | .9   | .3  | .21   | .08  | .10  | 24  | <3  | 4.5   | 2.7   |
| MAR<br>25...<.01 |  | .35  | <.02   | .5   | .2  | .10   | .03  | .02  | 36  | 4   | --  | --  |
| MAY<br>20...<.01 |  | <.05   | <.02   | .1   | .1  | .01   | .02  | .01  | 43  | 31  | --  | --  |
| JUL<br>30...<.01 |  | .05  | <.02   | .1   | .1  | .03   | .02  | .02  | 41  | 40  | 1.9   | .2  |
| SEP<br>30...<.01 |  | <.05   | <.02   | .1   | <.1   | .03   | .02  | .02  | 50  | 33  | --  | --  |

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE          | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>SUS-<br>PENDE<br>(MG/L)<br>(80154) | SEDI-<br>MENT,<br>CHARGE,<br>SUS-<br>PENDE<br>(T/DAY)<br>(80155) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) |
|---------------|------|---|---|--|--|--|
| NOV<br>24...N | 0810 | 47  | 11.9  | 28   | 3.6  | 98   |
| JAN<br>28...N | 0950 | 101   | 8.4   | 7  | 2.0  | 75   |
| FEB<br>07...N | 1250 | 5800  | --  | 188  | 3150   | 97   |
| MAR<br>25...N | 1300 | 869   | 11.9  | 26   | 61   | 100  |
| MAY<br>20...N | 0930 | 16  | 13.5  | 3  | .13  | 70   |
| JUL<br>30...N | 1430 | 9.4   | 16.6  | 5  | .13  | 83   |
| SEP<br>30...N | 1000 | 9.1   | 14.2  | 2  | .05  | 93   |

e Estimated.

&lt; Actual value is known to be less than the value shown.

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

11460600 LAGUNITAS CREEK NEAR POINT REYES, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | NUMBER OF SAMPLING POINTS (COUNT) | DIS-CHARGE, CUBIC FEET PER SECOND (00061) | TEMPER-ATURE WATER (DEG C) (00010) | BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167) | BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168) | BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169) | BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170) | BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171) | BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172) | BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173) | BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM (80174) |
|-------|------|-----------------------------------|---|------------------------------------|---|---|---|---|---|---|---|---|
| FEB   |      |                                   |   |                                    |   |   |   |   |   |   |   |   |
| 07... | 1600 | 1                                 | 4930                                      | 11.0                               | 1   | 1   | 2   | 10  | 39  | 84  | 100   | --  |
| 07... | 1605 | 1                                 | 4900                                      | 11.0                               | --  | 1   | 3   | 10  | 25  | 52  | 100   | --  |
| 07... | 1610 | 1                                 | 4800                                      | 11.0                               | --  | --  | --  | 5   | 34  | 100   | --  | --  |
| 07... | 1615 | 1                                 | 4800                                      | 11.0                               | --  | --  | 1   | 11  | 42  | 100   | --  | --  |
| 07... | 1620 | 1                                 | 4800                                      | 11.0                               | --  | --  | 2   | 11  | 26  | 36  | 100   | --  |
| 07... | 1625 | 1                                 | 4700                                      | 11.0                               | --  | 1   | 5   | 24  | 37  | 41  | 58  | 100   |
| 07... | 1630 | 1                                 | 4700                                      | 11.0                               | --  | --  | --  | --  | --  | --  | --  | --  |
| 07... | 1635 | 1                                 | 4700                                      | 11.0                               | --  | --  | --  | --  | --  | --  | --  | --  |

PARTICLE-SIZE DISTRIBUTION OF BEDLOAD, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | SAM-PLING METHOD, CODES (82398) | SAMPLER TYPE (CODE) (84164) | BAG MESH SIZE SAMPLER (MM) (30333) | TETHER LINE USED IN SAMPLING (YES=1) (CODE) (04117) | START-ING TIME (2400 HOURS) (82073) | END-ING TIME (2400 HOURS) (82074) | TIME ON BED FOR SAMPLE (SEC) (04120) | HORI-ZONTAL WIDTH OF VER-TICAL (FEET) (04121) |
|-------|------|---------------------------------|-----------------------------|------------------------------------|---|-------------------------------------|-----------------------------------|--------------------------------------|---|
| FEB   |      |                                 |                             |                                    |   |                                     |                                   |                                      |   |
| 07... | 1439 | 1000                            | 1100                        | .250                               | 0   | 1440                                | 1540                              | 15                                   | 2   |

| DATE  | MEASMT (NUM) (04118) | COMPSD IN X-SEC BEDLOAD POSITE (NUM) (04119) | VER-TICALS IN COM-POSITE SAMPLE (NUM) (04119) | NUMBER OF SAM-PLING POINTS (COUNT) (00063) | SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009) | DIS-CHARGE, CUBIC FEET PER SECOND (00061) | TEMPER-ATURE WATER (DEG C) (00010) | DISCH, AV UNIT FOR COM SAMPLE (T/D/FT DAY) (04122) | SEDI-MENT DIS-CHARGE, BEDLOAD (TONS/ DAY) (80225) |
|-------|----------------------|--|---|--|--|---|------------------------------------|--|---|
| FEB   |                      |  |   |  |  |   |                                    |  |   |
| 07... | 1                    | 10   | 10  | 5  | 5200   | 11.0                                      | 33.8                               | 676  |   |

| DATE  | SED. BEDLOAD SIEVE DIAM. % FINER THAN .500 MM (80229) | SED. BEDLOAD SIEVE DIAM. % FINER THAN 1.00 MM (80230) | SED. BEDLOAD SIEVE DIAM. % FINER THAN 2.00 MM (80231) | SED. BEDLOAD SIEVE DIAM. % FINER THAN 4.00 MM (80232) | SED. BEDLOAD SIEVE DIAM. % FINER THAN 8.00 MM (80233) | SED. BEDLOAD SIEVE DIAM. % FINER THAN 16.0 MM (80234) | SED. BEDLOAD SIEVE DIAM. % FINER THAN 32.0 MM (80235) | SED. BEDLOAD SIEVE DIAM. % FINER THAN 64.0 MM (80236) |
|-------|---|---|---|---|---|---|---|---|
| 07... | 1   | 5   | 15  | 37  | 65  | 88  | 98  | 100   |

## 11460750 WALKER CREEK NEAR MARSHALL, CA

LOCATION.—Lat 38°10'33", long 122°49'02", in SoulaJule (Vasquez) Grant, Marin County, Hydrologic Unit 18050005, on right bank, 0.8 mi downstream from Verde Canyon, 2.8 mi below confluence of Arroyo Sausal and Salmon Creek, and 4.0 mi east of Marshall.

DRAINAGE AREA.—31.1 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1983 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 140 ft above sea level, from topographic map.

REMARKS.—Records fair. Flow affected by regulation and diversions and by SoulaJule Reservoir on Arroyo Sausal; reservoir capacity, 10,570 acre-ft.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 10,500 ft<sup>3</sup>/s, Feb. 2, 1998, gage height, 14.21 ft, from rating curve extended above 1,100 ft<sup>3</sup>/s on basis of comparison with discontinued downstream station Walker Creek near Tomales; minimum daily, 0.73 ft<sup>3</sup>/s, Nov. 26, 1991.

EXTREMES OUTSIDE OF PERIOD OF RECORD.—Flood of Jan. 4, 1982, reached a stage of 15.9 ft, present datum, from floodmarks, discharge, 14,600 ft<sup>3</sup>/s.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC  | JAN  | FEB   | MAR  | APR    | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|------|------|-------|------|--------|-------|-------|-------|-------|-------|
| 1     | 5.4   | 5.2   | 24   | 12   | 59    | 124  | 44     | 9.4   | 6.5   | 5.3   | 4.9   | 4.9   |
| 2     | 5.3   | 5.2   | 30   | 12   | 47    | 95   | 37     | 9.5   | 6.3   | 5.3   | 4.9   | 4.9   |
| 3     | 5.3   | 5.3   | 63   | 11   | 41    | 112  | 32     | 10    | 6.3   | 5.3   | 5.0   | 4.9   |
| 4     | 5.3   | 5.3   | 29   | 11   | 36    | 84   | 27     | 9.2   | 6.3   | 5.3   | 5.0   | 4.9   |
| 5     | 5.2   | 5.1   | 28   | 12   | 32    | 69   | 30     | 8.7   | 6.3   | 5.3   | 5.0   | 4.9   |
| 6     | 5.2   | 5.0   | 30   | 12   | 350   | 59   | 32     | 8.5   | 6.2   | 5.3   | 5.0   | 4.9   |
| 7     | 5.3   | 6.6   | 22   | 12   | 2240  | 51   | 29     | 8.2   | 6.0   | 5.2   | 5.0   | 4.8   |
| 8     | 5.3   | 5.6   | 22   | 11   | 572   | 83   | 49     | 7.9   | 5.9   | 5.2   | 4.9   | 4.9   |
| 9     | 5.3   | 5.3   | 19   | 11   | 840   | 155  | 41     | 7.6   | 5.9   | 5.2   | 5.0   | 5.0   |
| 10    | 5.3   | 5.5   | 17   | 12   | 329   | 95   | 38     | 7.5   | 6.0   | 5.2   | 5.0   | 4.9   |
| 11    | 5.3   | 5.4   | 16   | 12   | 163   | 75   | 269    | 7.4   | 5.8   | 5.1   | 5.1   | 4.9   |
| 12    | 5.3   | 5.3   | 15   | 12   | 109   | 63   | 161    | 7.4   | 6.0   | 5.0   | 4.9   | 4.9   |
| 13    | 5.3   | 5.3   | 17   | 11   | 81    | 56   | 103    | 7.3   | 6.0   | 5.0   | 4.9   | 4.9   |
| 14    | 5.3   | 5.3   | 17   | 11   | 68    | 65   | 78     | 7.2   | 5.9   | 5.0   | 4.9   | 5.1   |
| 15    | 5.3   | 5.5   | 16   | 12   | 55    | 68   | 62     | 7.2   | 6.0   | 5.0   | 4.9   | 5.1   |
| 16    | 5.2   | 5.3   | 15   | 16   | 606   | 55   | 51     | 7.0   | 6.0   | 5.1   | 4.9   | 5.0   |
| 17    | 5.2   | 5.4   | 15   | 15   | 1010  | 46   | 42     | 7.0   | 5.7   | 5.2   | 4.9   | 5.0   |
| 18    | 5.3   | 5.3   | 14   | 61   | 421   | 42   | 36     | 7.0   | 5.7   | 5.1   | 5.0   | 4.9   |
| 19    | 5.3   | 5.2   | 14   | 54   | 278   | 37   | 30     | 6.9   | 5.6   | 5.1   | 4.9   | 4.8   |
| 20    | 5.2   | 5.4   | 14   | 121  | 266   | 36   | 26     | 6.9   | 5.7   | 5.2   | 5.0   | 4.7   |
| 21    | 5.2   | 6.1   | 14   | 67   | 306   | 33   | 23     | 6.8   | 5.7   | 5.1   | 4.9   | 4.9   |
| 22    | 5.3   | 5.9   | 13   | 73   | 203   | 31   | 21     | 6.6   | 5.6   | 5.1   | 4.9   | 4.9   |
| 23    | 5.3   | 13    | 13   | 133  | 141   | 34   | 18     | 6.6   | 5.7   | 5.1   | 4.9   | 4.9   |
| 24    | 7.1   | 7.3   | 12   | 65   | 136   | 101  | 17     | 6.6   | 5.6   | 5.0   | 4.9   | 5.0   |
| 25    | 5.5   | 5.7   | 12   | 48   | 299   | 267  | 16     | 6.6   | 5.6   | 5.0   | 4.9   | 5.0   |
| 26    | 5.4   | 5.9   | 12   | 49   | 166   | 141  | 13     | 6.5   | 5.5   | 5.0   | 4.8   | 4.9   |
| 27    | 5.5   | 5.8   | 12   | 40   | 118   | 96   | 12     | 6.5   | 5.4   | 5.0   | 4.9   | 4.9   |
| 28    | 5.3   | 5.2   | 12   | 34   | 123   | 74   | 11     | 6.5   | 5.4   | 5.0   | 4.9   | 4.8   |
| 29    | 5.1   | 21    | 12   | 31   | ---   | 60   | 10     | 6.3   | 5.3   | 5.0   | 5.0   | 4.7   |
| 30    | 5.2   | 49    | 12   | 31   | ---   | 54   | 9.7    | 6.3   | 5.3   | 4.9   | 4.9   | 4.8   |
| 31    | 5.3   | ---   | 12   | 129  | ---   | 53   | ---    | 6.4   | ---   | 5.0   | 4.9   | ---   |
| TOTAL | 165.8 | 232.4 | 573  | 1141 | 9095  | 2414 | 1367.7 | 229.5 | 175.2 | 158.6 | 153.0 | 147.1 |
| MEAN  | 5.35  | 7.75  | 18.5 | 36.8 | 325   | 77.9 | 45.6   | 7.40  | 5.84  | 5.12  | 4.94  | 4.90  |
| MAX   | 7.1   | 49    | 63   | 133  | 2240  | 267  | 269    | 10    | 6.5   | 5.3   | 5.1   | 5.1   |
| MIN   | 5.1   | 5.0   | 12   | 11   | 32    | 31   | 9.7    | 6.3   | 5.3   | 4.9   | 4.8   | 4.7   |
| AC-FT | 329   | 461   | 1140 | 2260 | 18040 | 4790 | 2710   | 455   | 348   | 315   | 303   | 292   |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 4.83 | 11.0 | 41.4 | 123  | 153  | 65.5 | 14.9 | 7.34 | 5.34 | 4.76 | 4.61 | 4.69 |
| MAX  | 6.27 | 46.3 | 247  | 572  | 775  | 374  | 45.6 | 18.6 | 8.13 | 5.93 | 5.84 | 5.80 |
| (WY) | 1990 | 1984 | 1984 | 1995 | 1998 | 1995 | 1999 | 1995 | 1998 | 1998 | 1998 | 1984 |
| MIN  | 1.35 | 1.23 | 1.85 | 1.71 | 2.14 | 10.4 | 5.52 | 2.18 | 1.90 | 1.42 | 1.42 | 1.22 |
| (WY) | 1991 | 1992 | 1991 | 1991 | 1991 | 1988 | 1991 | 1991 | 1991 | 1991 | 1991 | 1991 |

## SUMMARY STATISTICS

|                          | FOR 1998 CALENDAR YEAR | FOR 1999 WATER YEAR | WATER YEARS 1984 - 1999 |
|--------------------------|------------------------|---------------------|-------------------------|
| ANNUAL TOTAL             | 34837.6                | 15852.3             |                         |
| ANNUAL MEAN              | 95.4                   | 43.4                | 36.1                    |
| HIGHEST ANNUAL MEAN      |                        |                     | 98.3                    |
| LOWEST ANNUAL MEAN       |                        |                     | 7.41                    |
| HIGHEST DAILY MEAN       | 4230                   | Feb 3               | 4940                    |
| LOWEST DAILY MEAN        | 5.0                    | Nov 6               | .73                     |
| ANNUAL SEVEN-DAY MINIMUM | 5.2                    | Oct 31              | .78                     |
| INSTANTANEOUS PEAK FLOW  |                        |                     | 3950                    |
| INSTANTANEOUS PEAK STAGE |                        |                     | 10.56                   |
| ANNUAL RUNOFF (AC-FT)    | 69100                  | 31440               | 26170                   |
| 10 PERCENT EXCEEDS       | 198                    | 83                  | 46                      |
| 50 PERCENT EXCEEDS       | 10                     | 6.5                 | 5.8                     |
| 90 PERCENT EXCEEDS       | 5.3                    | 4.9                 | 4.0                     |

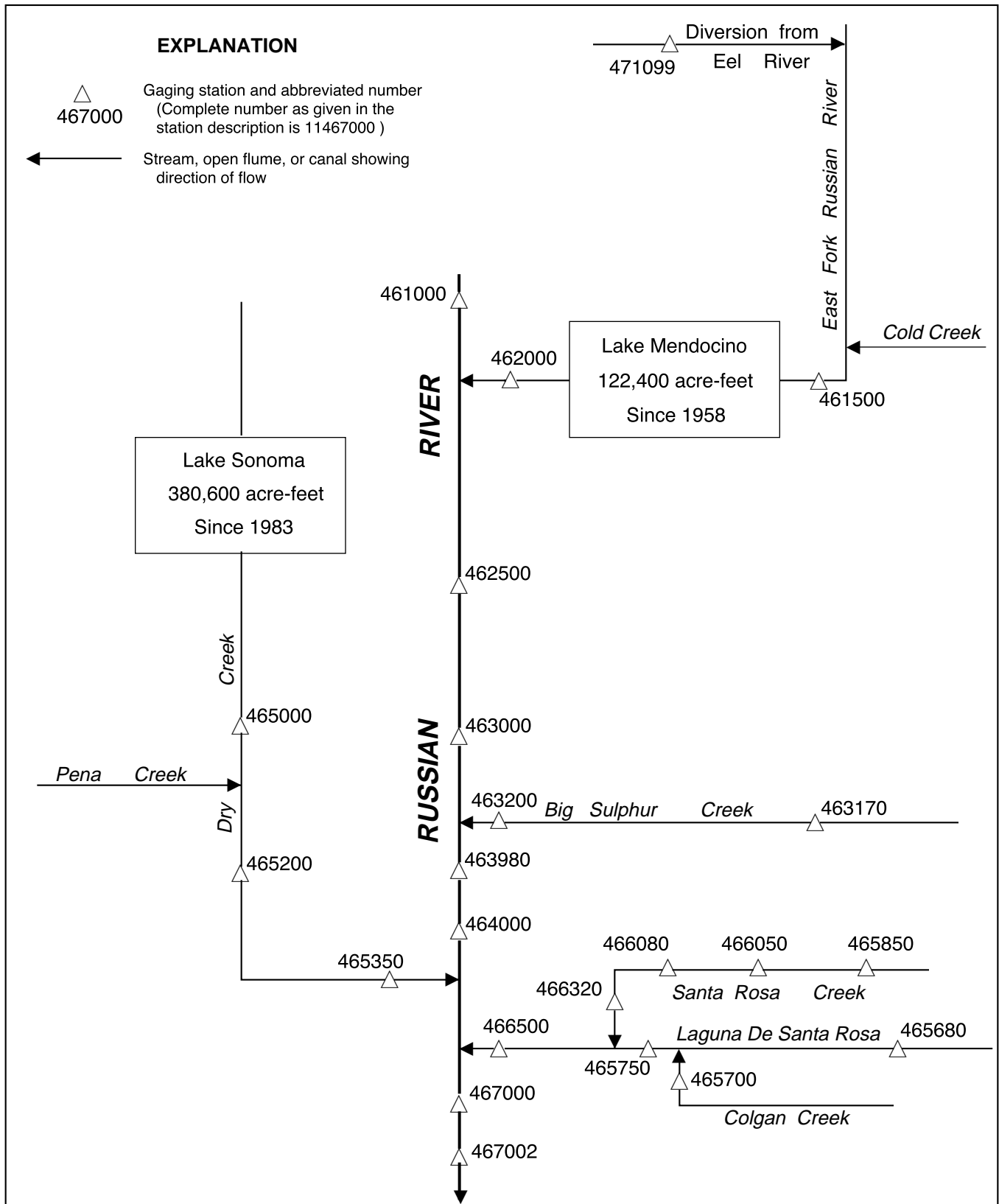


Figure 22. Diversions and storage in Russian River Basin.

## 11461000 RUSSIAN RIVER NEAR UKIAH, CA

LOCATION.—Lat 39°11'44", long 123°11'38", in Yokaya Grant, Mendocino County, Hydrologic Unit 18010110, on right bank, 20 ft upstream from bridge on Lake Mendocino Drive, 0.4 mi upstream from East Fork, 0.6 mi downstream from York Creek, and 3.2 mi north of Ukiah.

DRAINAGE AREA.—100 mi<sup>2</sup>.

PERIOD OF RECORD.—August 1911 to September 1913, October 1952 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

CHEMICAL DATA: Water years 1977–79.

BIOLOGICAL DATA: Water years 1977–79.

WATER TEMPERATURE: Water years 1965–68.

SEDIMENT DATA: Water years 1964–68, 1991–92, 1994–97.

REVISED RECORDS.—WSP 1929: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 599.22 ft above sea level. Prior to October 1952, nonrecording gage at bridge 20 ft upstream at different datum. Oct. 1, 1952, to Nov. 8, 1971, water-stage recorder at site 0.6 mi upstream at different datum.

REMARKS.—Records good. No regulation. Diversions upstream from station for irrigation of about 1,000 acres. See schematic diagram of Russian River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 18,900 ft<sup>3</sup>/s, Dec. 21, 1955, gage height, 19.0 ft, site and datum then in use; maximum gage height, 20.87 ft, Jan. 20, 1993; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 4,000 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Feb. 9 | 0400 | 5,730                             | 13.11               | Feb. 16 | 2300 | 5,220                             | 12.62               |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN   | JUL  | AUG  | SEP   |
|-------|------|--------|-------|-------|-------|-------|-------|------|-------|------|------|-------|
| 1     | 2.8  | 4.5    | 413   | 36    | 139   | 957   | 268   | 57   | 20    | 4.5  | 2.2  | 1.3   |
| 2     | 2.7  | 4.2    | 964   | 34    | 119   | 712   | 228   | 56   | 20    | 4.3  | 2.0  | 1.3   |
| 3     | 2.6  | 4.2    | 1180  | 33    | 110   | 872   | 204   | 65   | 19    | 3.8  | 1.7  | 1.3   |
| 4     | 2.5  | 4.3    | 347   | 32    | 104   | 586   | 184   | 58   | 16    | 4.8  | 1.5  | 1.3   |
| 5     | 2.4  | 4.2    | 226   | 31    | 95    | 469   | 240   | 52   | 16    | 4.6  | 1.6  | 1.2   |
| 6     | 2.2  | 5.2    | 226   | 31    | 1270  | 396   | 230   | 49   | 15    | 3.4  | 2.1  | 1.2   |
| 7     | 2.1  | 13     | 159   | 30    | 2900  | 337   | 192   | 46   | 15    | 3.6  | 2.1  | .86   |
| 8     | 2.6  | 10     | 282   | 29    | 1250  | 675   | 346   | 42   | 14    | 3.6  | 2.1  | .65   |
| 9     | 2.4  | 7.6    | 179   | 27    | 2870  | 1060  | 310   | 41   | 14    | 3.5  | 1.8  | .69   |
| 10    | 2.5  | 6.6    | 139   | 26    | 1030  | 657   | 304   | 40   | 14    | 3.1  | 1.5  | .70   |
| 11    | 2.2  | 7.8    | 113   | 26    | 658   | 511   | 757   | 40   | 13    | 3.3  | 1.6  | 1.1   |
| 12    | 2.2  | 7.6    | 93    | 25    | 472   | 422   | 411   | 39   | 13    | 2.5  | 1.7  | 1.2   |
| 13    | 2.3  | 5.7    | 100   | 25    | 445   | 367   | 302   | 37   | 11    | 2.5  | 1.7  | .97   |
| 14    | 2.2  | 5.4    | 173   | 24    | 465   | 537   | 246   | 36   | 11    | 2.3  | 1.5  | 1.1   |
| 15    | 3.5  | 6.1    | 116   | 36    | 359   | 476   | 210   | 31   | 11    | 2.2  | 1.4  | 1.1   |
| 16    | 2.3  | 6.7    | 95    | 161   | 2650  | 369   | 181   | 34   | 11    | 2.3  | 1.3  | 1.1   |
| 17    | 2.2  | 30     | 81    | 403   | 2080  | 325   | 160   | 34   | 9.4   | 2.5  | 1.1  | 1.1   |
| 18    | 2.2  | 26     | 72    | 626   | 1430  | 296   | 141   | 33   | 8.3   | 2.8  | 1.3  | 1.0   |
| 19    | 1.9  | 12     | 64    | 336   | 966   | 273   | 127   | 32   | 9.6   | 2.7  | 1.5  | 1.0   |
| 20    | 1.8  | 9.3    | 60    | 467   | 902   | 259   | 117   | 32   | 9.0   | 2.6  | 1.2  | 1.1   |
| 21    | 1.6  | 8.8    | 53    | 579   | 1560  | 236   | 109   | 31   | 7.5   | 2.0  | 1.3  | 1.2   |
| 22    | 1.8  | 23     | 50    | 858   | 1180  | 229   | 103   | 28   | 7.5   | 2.4  | 1.4  | 1.2   |
| 23    | 1.5  | 566    | 47    | 1190  | 954   | 381   | 93    | 27   | 7.2   | 2.6  | 1.2  | .89   |
| 24    | 7.9  | 327    | 44    | 492   | 947   | 1380  | 86    | 26   | 5.2   | 2.7  | 1.3  | .76   |
| 25    | 7.1  | 114    | 42    | 317   | 1550  | 1250  | 80    | 25   | 6.7   | 2.4  | 1.0  | .87   |
| 26    | 4.0  | 91     | 42    | 239   | 889   | 526   | 74    | 23   | 6.6   | 2.4  | 1.0  | .98   |
| 27    | 5.9  | 103    | 41    | 183   | 711   | 370   | 64    | 22   | 6.7   | 2.0  | 1.1  | .80   |
| 28    | 3.7  | 59     | 39    | 155   | 1350  | 294   | 63    | 21   | 5.7   | 2.3  | 1.2  | .79   |
| 29    | 3.4  | 385    | 38    | 136   | ---   | 256   | 61    | 20   | 5.1   | 2.3  | 1.2  | .87   |
| 30    | 3.5  | 767    | 37    | 123   | ---   | 267   | 59    | 21   | 4.4   | 2.4  | 1.2  | .90   |
| 31    | 3.8  | ---    | 37    | 175   | ---   | 355   | ---   | 20   | ---   | 2.1  | 1.2  | ---   |
| TOTAL | 91.8 | 2624.2 | 5552  | 6885  | 29455 | 16100 | 5950  | 1118 | 331.9 | 90.5 | 46.0 | 30.53 |
| MEAN  | 2.96 | 87.5   | 179   | 222   | 1052  | 519   | 198   | 36.1 | 11.1  | 2.92 | 1.48 | 1.02  |
| MAX   | 7.9  | 767    | 1180  | 1190  | 2900  | 1380  | 757   | 65   | 20    | 4.8  | 2.2  | 1.3   |
| MIN   | 1.5  | 4.2    | 37    | 24    | 95    | 229   | 59    | 20   | 4.4   | 2.0  | 1.0  | .65   |
| AC-FT | 182  | 5210   | 11010 | 13660 | 58420 | 31930 | 11800 | 2220 | 658   | 180  | 91   | 61    |

## 11461000 RUSSIAN RIVER NEAR UKIAH, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 8.59 | 115  | 346  | 579  | 509  | 362  | 158  | 43.6 | 11.7 | 2.38 | .63  | .62  |
| MAX  | 147  | 682  | 1663 | 1986 | 1975 | 1436 | 770  | 201  | 57.4 | 10.8 | 3.75 | 2.70 |
| (WY) | 1963 | 1974 | 1965 | 1995 | 1958 | 1983 | 1963 | 1995 | 1993 | 1983 | 1998 | 1983 |
| MIN  | .000 | .15  | 1.77 | 3.82 | 14.3 | 20.0 | 4.33 | 3.15 | .22  | .000 | .000 | .000 |
| (WY) | 1953 | 1953 | 1960 | 1991 | 1977 | 1988 | 1977 | 1977 | 1977 | 1977 | 1977 | 1970 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1912 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 123950.6               |        | 68274.93            |        |                         |             |
| ANNUAL MEAN              | 340                    |        | 187                 |        | 177                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 420                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 5.76                    |             |
| HIGHEST DAILY MEAN       | 4370                   | Feb 6  | 2900                | Feb 7  | 13300                   | Dec 22 1964 |
| LOWEST DAILY MEAN        | 1.5                    | Oct 23 | .65                 | Sep 8  | .00                     | Oct 1 1911  |
| ANNUAL SEVEN-DAY MINIMUM | 1.8                    | Sep 13 | .85                 | Sep 23 | .00                     | Oct 1 1911  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 5730                | Feb 9  | 18900                   | Dec 21 1955 |
| INSTANTANEOUS PEAK STAGE |                        |        | 13.11               | Feb 9  | 20.87                   | Jan 20 1993 |
| ANNUAL RUNOFF (AC-FT)    | 245900                 |        | 135400              |        | 128000                  |             |
| 10 PERCENT EXCEEDS       | 1060                   |        | 571                 |        | 422                     |             |
| 50 PERCENT EXCEEDS       | 49                     |        | 25                  |        | 13                      |             |
| 90 PERCENT EXCEEDS       | 2.3                    |        | 1.3                 |        | .13                     |             |



## 11461500 EAST FORK RUSSIAN RIVER NEAR CALPELLA, CA

LOCATION.—Lat 39°14'48", long 123°07'45", in NW 1/4 NW 1/4 sec.18, T.16 N., R.11 W., Mendocino County, Hydrologic Unit 18010110, on left bank, 0.1 mi downstream from Cold Creek, and 3.9 mi east of Calpella.

DRAINAGE AREA.—92.2 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1941 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

GAGE.—Water-stage recorder. Datum of gage is 787.87 ft above sea level. Prior to May 28, 1957, at site 1.3 mi downstream at different datum. May 28, 1957, to Apr. 5, 1966, at site 0.4 mi downstream at same datum.

REMARKS.—Records good. Flow greatly affected by diversion from Eel River through Potter Valley Powerplant Intake and Tailrace (stations 11471000, 11471099, respectively). Diversion for irrigation of about 8,000 acres upstream from station. See schematic diagram of Russian River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 18,700 ft<sup>3</sup>/s, Dec. 22, 1964, gage height, 20.21 ft, site then in use; maximum gage height, 22.89 ft, Jan. 20, 1993; minimum daily, 1.7 ft<sup>3</sup>/s, July 23, 1990.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 3,300 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Feb. 9  | 0445 | 6,500                             | 18.29               | Mar. 24 | 2115 | 4,910                             | 16.09               |
| Feb. 16 | 2245 | 4,920                             | 16.10               |         |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN  | JUL  | AUG  | SEP  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|
| 1     | 309   | 305   | 313   | 288   | 369   | 647   | 460   | 232   | 159  | 103  | 101  | 122  |
| 2     | 303   | 302   | 513   | 285   | 361   | 450   | 519   | 228   | 159  | 97   | 105  | 121  |
| 3     | 302   | 303   | 797   | 282   | 354   | 621   | 512   | 236   | 165  | 94   | 80   | 124  |
| 4     | 297   | 300   | 326   | 235   | 354   | 631   | 480   | 154   | 170  | 100  | 91   | 120  |
| 5     | 274   | 301   | 397   | 182   | 347   | 571   | 573   | 236   | 159  | 109  | 95   | 119  |
| 6     | 269   | 310   | 401   | 183   | 1140  | 524   | 491   | 366   | 143  | 93   | 97   | 115  |
| 7     | 273   | 336   | 298   | 183   | 2400  | 487   | 327   | 360   | 143  | 97   | 91   | 96   |
| 8     | 295   | 333   | 322   | 177   | 1160  | 824   | 554   | 275   | 135  | 104  | 94   | 91   |
| 9     | 292   | 320   | 254   | 182   | 3000  | 1250  | 465   | 198   | 142  | 107  | 101  | 90   |
| 10    | 292   | 317   | 321   | 182   | 714   | 730   | 530   | 207   | 141  | 99   | 111  | 94   |
| 11    | 290   | 317   | 342   | 183   | 554   | 604   | 1240  | 203   | 134  | 102  | 119  | 97   |
| 12    | 291   | 309   | 334   | 182   | 524   | 541   | 577   | 206   | 131  | 103  | 115  | 104  |
| 13    | 295   | 308   | 402   | 181   | 577   | 504   | 466   | 214   | 135  | 90   | 110  | 103  |
| 14    | 295   | 306   | 470   | 182   | 569   | 886   | 411   | 233   | 140  | 121  | 106  | 109  |
| 15    | 300   | 307   | 368   | 196   | 478   | 711   | 369   | 230   | 145  | 84   | 111  | 105  |
| 16    | 298   | 304   | 343   | 254   | 2710  | 562   | 350   | 231   | 141  | 89   | 104  | 129  |
| 17    | 302   | 327   | 344   | 383   | 1850  | 515   | 331   | 238   | 138  | 94   | 99   | 182  |
| 18    | 301   | 313   | 332   | 638   | 1600  | 485   | 318   | 253   | 137  | 92   | 100  | 143  |
| 19    | 296   | 308   | 332   | 426   | 689   | 470   | 307   | 242   | 114  | 100  | 102  | 147  |
| 20    | 290   | 302   | 324   | 623   | 849   | 470   | 297   | 242   | 116  | 96   | 98   | 143  |
| 21    | 280   | 305   | 320   | 623   | 1650  | 443   | 283   | 231   | 121  | 92   | 95   | 147  |
| 22    | 277   | 325   | 314   | 902   | 924   | 443   | 277   | 232   | 127  | 95   | 96   | 137  |
| 23    | 274   | 546   | 309   | 1120  | 576   | 502   | 271   | 222   | 112  | 91   | 96   | 150  |
| 24    | 329   | 286   | 306   | 433   | 672   | 2090  | 269   | 235   | 112  | 95   | 95   | 150  |
| 25    | 307   | 272   | 303   | 313   | 1350  | 1670  | 261   | 240   | 109  | 116  | 95   | 150  |
| 26    | 303   | 278   | 305   | 271   | 582   | 816   | 258   | 241   | 103  | 118  | 98   | 147  |
| 27    | 301   | 276   | 302   | 244   | 462   | 647   | 224   | 219   | 99   | 117  | 102  | 150  |
| 28    | 299   | 264   | 298   | 231   | 1150  | 568   | 206   | 157   | 97   | 111  | 98   | 144  |
| 29    | 297   | 593   | 295   | 264   | ---   | 525   | 215   | 166   | 98   | 104  | 104  | 148  |
| 30    | 300   | 770   | 288   | 371   | ---   | 437   | 224   | 160   | 99   | 103  | 110  | 154  |
| 31    | 298   | ---   | 292   | 382   | ---   | 355   | ---   | 158   | ---  | 102  | 108  | ---  |
| TOTAL | 9129  | 10143 | 10865 | 10581 | 27965 | 20979 | 12065 | 7045  | 3924 | 3118 | 3127 | 3831 |
| MEAN  | 294   | 338   | 350   | 341   | 999   | 677   | 402   | 227   | 131  | 101  | 101  | 128  |
| MAX   | 329   | 770   | 797   | 1120  | 3000  | 2090  | 1240  | 366   | 170  | 121  | 119  | 182  |
| MIN   | 269   | 264   | 254   | 177   | 347   | 355   | 206   | 154   | 97   | 84   | 80   | 90   |
| AC-FT | 18110 | 20120 | 21550 | 20990 | 55470 | 41610 | 23930 | 13970 | 7780 | 6180 | 6200 | 7600 |

## 11461500 EAST FORK RUSSIAN RIVER NEAR CALPELLA, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 229  | 287  | 473  | 643  | 625  | 523  | 348  | 233  | 163  | 138  | 139  | 189  |
| MAX  | 352  | 738  | 1476 | 1720 | 1815 | 1611 | 847  | 422  | 363  | 275  | 276  | 298  |
| (WY) | 1963 | 1982 | 1965 | 1970 | 1998 | 1983 | 1982 | 1983 | 1998 | 1967 | 1952 | 1967 |
| MIN  | 4.89 | 74.0 | 30.2 | 42.2 | 21.5 | 42.7 | 11.9 | 23.5 | 15.3 | 8.25 | 19.0 | 23.9 |
| (WY) | 1960 | 1978 | 1960 | 1991 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1942 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 195891                 |        | 122772              |        |                         |             |
| ANNUAL MEAN              | 537                    |        | 336                 |        | 331                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 586                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 76.8                    |             |
| HIGHEST DAILY MEAN       | 4400                   | Feb 6  | 3000                | Feb 9  | 12500                   | Dec 22 1964 |
| LOWEST DAILY MEAN        | 98                     | Aug 27 | 80                  | Aug 3  | 1.7                     | Jul 23 1990 |
| ANNUAL SEVEN-DAY MINIMUM | 109                    | Aug 15 | 92                  | Jul 15 | 3.2                     | Jul 11 1977 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 6500                | Feb 9  | 18700                   | Dec 22 1964 |
| INSTANTANEOUS PEAK STAGE |                        |        | 18.29               | Feb 9  | 22.89                   | Jan 20 1993 |
| ANNUAL RUNOFF (AC-FT)    | 388500                 |        | 243500              |        | 239800                  |             |
| 10 PERCENT EXCEEDS       | 1070                   |        | 597                 |        | 556                     |             |
| 50 PERCENT EXCEEDS       | 334                    |        | 275                 |        | 254                     |             |
| 90 PERCENT EXCEEDS       | 135                    |        | 99                  |        | 80                      |             |

## 11462000 EAST FORK RUSSIAN RIVER NEAR UKIAH, CA

LOCATION.—Lat 39°11'51", long 123°11'11", in Yokaya Grant, Mendocino County, Hydrologic Unit 18010110, on right bank of outlet channel, 500 ft downstream from Coyote Dam, 1,300 ft upstream from mouth, and 3.2 mi northeast of Ukiah.

DRAINAGE AREA.—105 mi<sup>2</sup>.

PERIOD OF RECORD.—August 1911 to September 1913, October 1951 to June 1956, October 1957 to current year.

CHEMICAL DATA: Water years 1953–55, 1973–82.

BIOLOGICAL DATA: Water years 1977–78.

WATER TEMPERATURE: Water years 1953–55, 1965–68, 1973–1994.

SEDIMENT DATA: Water years 1953–55, 1964–68.

GAGE.—Water-stage recorder and concrete control. Datum of gage is 614.41 ft above sea level. Prior to October 1951, nonrecording gage at site 0.5 mi upstream at different datum. October 1951 to June 1956, water-stage recorder at site 1.0 mi upstream at different datum.

REMARKS.—Records good. Flow affected by diversion from Eel River through Potter Valley Powerplant Intake (station 11471000) and since November 1958 by storage in Lake Mendocino, capacity, 122,400 acre-ft, 500 ft upstream. Diversions upstream from station for irrigation of about 8,000 acres and about 10 ft<sup>3</sup>/s at times, through a fish taking station which bypasses the gage. See schematic diagram of Russian River Basin.

EXTREMES FOR PERIOD OF RECORD.—Prior to regulation by Lake Mendocino, maximum discharge, 13,300 ft<sup>3</sup>/s, Dec. 21, 1955, gage height, 16.86 ft, site and datum then in use, from rating curve extended above 6,300 ft<sup>3</sup>/s on basis of maximum flow at station upstream which was defined to 8,600 ft<sup>3</sup>/s; no flow Aug. 13–15, 1913. Maximum discharge, since regulation (1959), 7,350 ft<sup>3</sup>/s, Jan. 24, 1970, gage height, 10.84 ft; minimum daily, 0.02 ft<sup>3</sup>/s, Apr. 17, 1973.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1     | 245   | 321   | 664   | 321   | 382   | 514   | 543   | 206   | 173   | 238   | 303   | 316   |
| 2     | 242   | 321   | 1030  | 323   | 610   | 514   | 543   | 206   | 173   | 238   | 303   | 316   |
| 3     | 242   | 312   | 1030  | 326   | 528   | 514   | 543   | 206   | 180   | 238   | 303   | 316   |
| 4     | 242   | 316   | 548   | 326   | 415   | 514   | 543   | 204   | 188   | 241   | 303   | 313   |
| 5     | 242   | 314   | 263   | 329   | 398   | 514   | 543   | 202   | 188   | 242   | 303   | 312   |
| 6     | 242   | 316   | 263   | 250   | 375   | 514   | 543   | 202   | 188   | 242   | 303   | 312   |
| 7     | 242   | 317   | 263   | 206   | 155   | 514   | 543   | 470   | 188   | 232   | 303   | 316   |
| 8     | 246   | 319   | 299   | 206   | 624   | 353   | 543   | 756   | 188   | 228   | 303   | 316   |
| 9     | 250   | 319   | 321   | 206   | 403   | 231   | 492   | 400   | 191   | 230   | 303   | 316   |
| 10    | 248   | 326   | 321   | 206   | 1880  | 230   | 439   | 177   | 142   | 230   | 303   | 316   |
| 11    | 246   | 325   | 321   | 206   | 2890  | 230   | 773   | 177   | 202   | 239   | 303   | 316   |
| 12    | 246   | 326   | 321   | 206   | 1130  | 230   | 1110  | 177   | 199   | 250   | 303   | 315   |
| 13    | 246   | 327   | 321   | 206   | 852   | 230   | 820   | 177   | 199   | 250   | 303   | 296   |
| 14    | 270   | 330   | 321   | 206   | 1130  | 228   | 506   | 177   | 199   | 275   | 303   | 259   |
| 15    | 289   | 327   | 321   | 206   | 1120  | 406   | 412   | 177   | 199   | 307   | 303   | 260   |
| 16    | 283   | 329   | 442   | 206   | 557   | 517   | 397   | 177   | 199   | 307   | 303   | 263   |
| 17    | 276   | 327   | 520   | 206   | 196   | 519   | 400   | 178   | 197   | 307   | 299   | 263   |
| 18    | 276   | 326   | 442   | 206   | 255   | 520   | 400   | 180   | 195   | 307   | 298   | 263   |
| 19    | 276   | 327   | 326   | 209   | 1260  | 282   | 279   | 180   | 195   | 307   | 301   | 263   |
| 20    | 276   | 331   | 326   | 623   | 1650  | 131   | 206   | 180   | 194   | 307   | 303   | 263   |
| 21    | 275   | 333   | 326   | 1040  | 1540  | 132   | 208   | 178   | 195   | 307   | 303   | 263   |
| 22    | 276   | 336   | 326   | 711   | 1530  | 178   | 210   | 177   | 204   | 307   | 299   | 249   |
| 23    | 279   | 334   | 326   | 405   | 1520  | 327   | 210   | 177   | 212   | 307   | 298   | 230   |
| 24    | 280   | 335   | 326   | 405   | 1520  | 391   | 212   | 177   | 214   | 307   | 298   | 230   |
| 25    | 280   | 336   | 326   | 729   | 1510  | 1060  | 214   | 173   | 214   | 307   | 298   | 230   |
| 26    | 279   | 334   | 326   | 884   | 926   | 1050  | 213   | 173   | 214   | 307   | 298   | 230   |
| 27    | 280   | 331   | 326   | 498   | 508   | 543   | 210   | 173   | 214   | 307   | 298   | 241   |
| 28    | 280   | 331   | 325   | 289   | 510   | 543   | 210   | 173   | 229   | 307   | 310   | 250   |
| 29    | 284   | 330   | 322   | 242   | ---   | 543   | 210   | 173   | 241   | 307   | 316   | 250   |
| 30    | 304   | 307   | 321   | 218   | ---   | 543   | 207   | 173   | 242   | 304   | 316   | 250   |
| 31    | 324   | ---   | 321   | 218   | ---   | 543   | ---   | 173   | ---   | 303   | 316   | ---   |
| TOTAL | 8266  | 9763  | 12234 | 10818 | 26374 | 13558 | 12682 | 6729  | 5956  | 8585  | 9399  | 8333  |
| MEAN  | 267   | 325   | 395   | 349   | 942   | 437   | 423   | 217   | 199   | 277   | 303   | 278   |
| MAX   | 324   | 336   | 1030  | 1040  | 2890  | 1060  | 1110  | 756   | 242   | 307   | 316   | 316   |
| MIN   | 242   | 307   | 263   | 206   | 155   | 131   | 206   | 173   | 142   | 228   | 298   | 230   |
| AC-FT | 16400 | 19360 | 24270 | 21460 | 52310 | 26890 | 25150 | 13350 | 11810 | 17030 | 18640 | 16530 |

## RUSSIAN RIVER BASIN

## 11462000 EAST FORK RUSSIAN RIVER NEAR UKIAH, CA—Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1958, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 200  | 271  | 576  | 871  | 649  | 461  | 399  | 309  | 213  | 162  | 166  | 161  |
| MAX  | 316  | 437  | 1138 | 1289 | 1784 | 709  | 775  | 367  | 307  | 260  | 272  | 266  |
| (WY) | 1958 | 1913 | 1956 | 1956 | 1958 | 1958 | 1958 | 1912 | 1953 | 1953 | 1953 | 1954 |
| MIN  | 20.0 | 21.0 | 40.0 | 258  | 105  | 182  | 214  | 226  | 102  | 65.0 | 23.8 | 2.03 |
| (WY) | 1912 | 1912 | 1912 | 1912 | 1913 | 1913 | 1955 | 1913 | 1913 | 1912 | 1913 | 1913 |

## SUMMARY STATISTICS

## WATER YEARS 1911 - 1958

|                          |                   |
|--------------------------|-------------------|
| ANNUAL MEAN              | 356               |
| HIGHEST ANNUAL MEAN      | 526 1958          |
| LOWEST ANNUAL MEAN       | 183 1912          |
| HIGHEST DAILY MEAN       | 7300 Dec 22 1955  |
| LOWEST DAILY MEAN        | .00 Aug 13 1913   |
| ANNUAL SEVEN-DAY MINIMUM | 1.4 Aug 13 1913   |
| INSTANTANEOUS PEAK FLOW  | 13300 Dec 21 1955 |
| INSTANTANEOUS PEAK STAGE | 16.86 Dec 21 1955 |
| ANNUAL RUNOFF (AC-FT)    | 257700            |
| 10 PERCENT EXCEEDS       | 647               |
| 50 PERCENT EXCEEDS       | 286               |
| 90 PERCENT EXCEEDS       | 63                |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 227  | 246  | 363  | 639  | 627  | 448  | 317  | 225  | 219  | 249  | 260  | 244  |
| MAX  | 419  | 635  | 1175 | 1905 | 1934 | 1780 | 1026 | 448  | 361  | 336  | 388  | 416  |
| (WY) | 1994 | 1984 | 1965 | 1970 | 1986 | 1983 | 1982 | 1998 | 1998 | 1961 | 1961 | 1974 |
| MIN  | 42.3 | 13.4 | 6.97 | 20.7 | 17.9 | 13.3 | 52.6 | 76.3 | 104  | 179  | 163  | 92.7 |
| (WY) | 1978 | 1978 | 1978 | 1977 | 1977 | 1977 | 1977 | 1968 | 1988 | 1988 | 1988 | 1977 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1960 - 1999

|                          |        |        |                               |
|--------------------------|--------|--------|-------------------------------|
| ANNUAL TOTAL             | 203484 | 132697 |                               |
| ANNUAL MEAN              | 557    | 364    | 337                           |
| HIGHEST ANNUAL MEAN      |        |        | 598 1983                      |
| LOWEST ANNUAL MEAN       |        |        | 103 1977                      |
| HIGHEST DAILY MEAN       | 4240   | Feb 15 | 2890 Feb 11 6620 Jan 25 1970  |
| LOWEST DAILY MEAN        | 23     | Jan 17 | 131 Mar 20 .02 Apr 17 1973    |
| ANNUAL SEVEN-DAY MINIMUM | 161    | Jul 2  | 173 May 25 .14 Jan 2 1971     |
| INSTANTANEOUS PEAK FLOW  |        |        | 4020 Feb 10 7350 Jan 24 1970  |
| INSTANTANEOUS PEAK STAGE |        |        | 6.86 Feb 10 10.84 Jan 24 1970 |
| ANNUAL RUNOFF (AC-FT)    | 403600 | 263200 | 244400                        |
| 10 PERCENT EXCEEDS       | 1210   | 543    | 531                           |
| 50 PERCENT EXCEEDS       | 326    | 303    | 231                           |
| 90 PERCENT EXCEEDS       | 205    | 193    | 67                            |

## 11462500 RUSSIAN RIVER NEAR HOPLAND, CA

LOCATION.—Lat 39°01'36", long 123°07'46", in Rancho de Sanel Grant, Mendocino County, Hydrologic Unit 18010110, on right bank, at abandoned highway bridge, 0.2 mi downstream from McNab Creek, 4 mi north of Hopland, and 15.2 mi downstream from Coyote Valley Dam on the East Fork Russian River.

DRAINAGE AREA.—362 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1939 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

REVISED RECORDS.—WSP 1041: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 497.61 ft above sea level. Prior to Sept. 9, 1943, nonrecording gage at same site and datum.

REMARKS.—Records good. Diversions for irrigation of about 11,800 acres upstream from station. Flow also affected by diversion into basin (see REMARKS for East Fork Russian River stations) and since November 1958 by storage in Lake Mendocino, capacity, 122,400 acre-ft, 15.2 mi upstream. See schematic diagram of Russian River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 45,000 ft<sup>3</sup>/s, Dec. 22, 1955, gage height, 27.00 ft; minimum daily, 9.1 ft<sup>3</sup>/s, Apr. 20, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of December 1937 reached a stage of 30.0 ft, from floodmarks.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB    | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|
| 1     | 237   | 318   | 1590  | 411   | 623    | 2460  | 1140  | 364   | 228   | 215   | 253   | 273   |
| 2     | 234   | 315   | 2380  | 410   | 837    | 1870  | 1030  | 362   | 227   | 216   | 258   | 271   |
| 3     | 230   | 314   | 3520  | 407   | 795    | 2120  | 982   | 369   | 222   | 219   | 253   | 266   |
| 4     | 232   | 316   | 1500  | 405   | 653    | 1600  | 917   | 359   | 231   | 226   | 254   | 256   |
| 5     | 233   | 316   | 748   | 404   | 628    | 1370  | 1020  | 347   | 218   | 227   | 256   | 265   |
| 6     | 232   | 325   | 758   | 377   | 2220   | 1230  | 1000  | 337   | 220   | 220   | 266   | 271   |
| 7     | 235   | 343   | 590   | 316   | 6570   | 1130  | 904   | 413   | 224   | 218   | 269   | 266   |
| 8     | 243   | 338   | 744   | 310   | 3200   | 1560  | 1230  | 749   | 222   | 211   | 270   | 262   |
| 9     | 249   | 331   | 650   | 307   | 7960   | 2530  | 1140  | 584   | 221   | 200   | 266   | 265   |
| 10    | 249   | 332   | 580   | 305   | 3650   | 1640  | 1030  | 315   | 184   | 195   | 264   | 264   |
| 11    | 250   | 334   | 538   | 303   | 4760   | 1280  | 3100  | 301   | 206   | 193   | 266   | 266   |
| 12    | 250   | 328   | 509   | 301   | 2490   | 1060  | 2270  | 294   | 199   | 208   | 267   | 268   |
| 13    | 251   | 330   | 508   | 299   | 1460   | 932   | 1710  | 287   | 202   | 209   | 264   | 266   |
| 14    | 260   | 330   | 646   | 298   | 1820   | 1250  | 1180  | 277   | 207   | 213   | 260   | 219   |
| 15    | 282   | 331   | 550   | 309   | 1580   | 1310  | 965   | 269   | 207   | 250   | 254   | 220   |
| 16    | 275   | 332   | 581   | 448   | 5520   | 1190  | 856   | 269   | 205   | 261   | 258   | 220   |
| 17    | 260   | 355   | 669   | 638   | 6650   | 1080  | 787   | 268   | 199   | 261   | 255   | 215   |
| 18    | 254   | 357   | 627   | 1370  | 3500   | 1020  | 731   | 262   | 184   | 269   | 253   | 220   |
| 19    | 266   | 344   | 474   | 817   | 3460   | 840   | 639   | 259   | 197   | 274   | 256   | 222   |
| 20    | 265   | 341   | 463   | 1390  | 3900   | 617   | 527   | 254   | 201   | 274   | 263   | 221   |
| 21    | 260   | 344   | 448   | 2340  | 5410   | 555   | 501   | 253   | 202   | 266   | 262   | 221   |
| 22    | 262   | 354   | 440   | 1920  | 4480   | 536   | 480   | 246   | 200   | 269   | 261   | 219   |
| 23    | 257   | 1200  | 434   | 3240  | 3760   | 853   | 459   | 238   | 212   | 268   | 259   | 197   |
| 24    | 281   | 1070  | 428   | 1540  | 3480   | 2730  | 441   | 242   | 210   | 265   | 260   | 196   |
| 25    | 280   | 549   | 426   | 1340  | 5600   | 5060  | 426   | 236   | 209   | 259   | 260   | 193   |
| 26    | 277   | 476   | 425   | 1440  | 3410   | 3070  | 409   | 233   | 196   | 268   | 261   | 202   |
| 27    | 280   | 513   | 425   | 1040  | 2050   | 1610  | 393   | 228   | 198   | 266   | 260   | 204   |
| 28    | 279   | 448   | 421   | 685   | 2870   | 1330  | 386   | 225   | 209   | 264   | 262   | 213   |
| 29    | 277   | 983   | 418   | 608   | ---    | 1190  | 379   | 223   | 220   | 259   | 269   | 207   |
| 30    | 286   | 2130  | 415   | 542   | ---    | 1160  | 369   | 224   | 216   | 261   | 270   | 207   |
| 31    | 313   | ---   | 414   | 603   | ---    | 1350  | ---   | 229   | ---   | 251   | 269   | ---   |
| TOTAL | 8039  | 14697 | 23319 | 25123 | 93336  | 47533 | 27401 | 9516  | 6276  | 7455  | 8098  | 7055  |
| MEAN  | 259   | 490   | 752   | 810   | 3333   | 1533  | 913   | 307   | 209   | 240   | 261   | 235   |
| MAX   | 313   | 2130  | 3520  | 3240  | 7960   | 5060  | 3100  | 749   | 231   | 274   | 270   | 273   |
| MIN   | 230   | 314   | 414   | 298   | 623    | 536   | 369   | 223   | 184   | 193   | 253   | 193   |
| AC-FT | 15950 | 29150 | 46250 | 49830 | 185100 | 94280 | 54350 | 18870 | 12450 | 14790 | 16060 | 13990 |

## RUSSIAN RIVER BASIN

## 11462500 RUSSIAN RIVER NEAR HOPLAND, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 231  | 428  | 1146 | 1861 | 1813 | 1282 | 714  | 329  | 217  | 199  | 207  | 209  |
| MAX  | 555  | 1656 | 4849 | 5856 | 6799 | 5361 | 2572 | 820  | 490  | 326  | 369  | 383  |
| (WY) | 1958 | 1984 | 1965 | 1970 | 1958 | 1983 | 1982 | 1983 | 1998 | 1961 | 1961 | 1974 |
| MIN  | 35.1 | 96.5 | 87.6 | 37.2 | 28.8 | 57.1 | 44.1 | 77.0 | 59.6 | 79.7 | 105  | 78.9 |
| (WY) | 1978 | 1978 | 1991 | 1977 | 1977 | 1977 | 1977 | 1977 | 1949 | 1948 | 1950 | 1977 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1940 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 498408                 |        | 277848              |        |                         |             |
| ANNUAL MEAN              | 1366                   |        | 761                 |        | 715                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 1587                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 94.0                    |             |
| HIGHEST DAILY MEAN       | 12600                  | Feb 6  | 7960                | Feb 9  | 33800                   | Dec 22 1955 |
| LOWEST DAILY MEAN        | 194                    | Jul 7  | 184                 | Jun 10 | 9.1                     | Apr 20 1977 |
| ANNUAL SEVEN-DAY MINIMUM | 202                    | Jul 11 | 198                 | Jun 16 | 13                      | Apr 15 1977 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 12800               | Feb 9  | 45000                   | Dec 22 1955 |
| INSTANTANEOUS PEAK STAGE |                        |        | 14.63               | Feb 9  | 27.00                   | Dec 22 1955 |
| ANNUAL RUNOFF (AC-FT)    | 988600                 |        | 551100              |        | 518000                  |             |
| 10 PERCENT EXCEEDS       | 4820                   |        | 1750                |        | 1580                    |             |
| 50 PERCENT EXCEEDS       | 480                    |        | 314                 |        | 255                     |             |
| 90 PERCENT EXCEEDS       | 216                    |        | 216                 |        | 138                     |             |

11463000 RUSSIAN RIVER NEAR CLOVERDALE, CA

LOCATION.—Lat 38°52'46", long 123°03'09", in NW 1/4 NW 1/4 sec.23, T.12 N., R.11 W., Mendocino County, Hydrologic Unit 18010110, on left bank, 0.3 mi downstream from Cummisky Creek, 5.5 mi northwest of Cloverdale, and 28 mi downstream from Coyote Dam.

DRAINAGE AREA.—503 mi<sup>2</sup>.

PERIOD OF RECORD.—July 1951 to current year.

WATER TEMPERATURE: Water years 1964–68, 1994–96.

SEDIMENT DATA: Water years 1964–68, 1994–96.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 350 ft above sea level, from topographic map. Prior to July 30, 1970, at site 0.2 mi upstream at different datum.

REMARKS.—Records fair except for estimated daily discharges, which are poor. Diversions for irrigation of about 15,000 acres upstream from station. Flow also affected by diversion into basin (see REMARKS for East Fork Russian River stations) and since November 1958 by storage in Lake Mendocino. See schematic diagram of Russian River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 55,200 ft<sup>3</sup>/s, Dec. 22, 1964, gage height, 31.60 ft, site and datum then in use; minimum daily, 12 ft<sup>3</sup>/s, Apr. 22, 1977.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB    | MAR    | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|
| 1     | 254   | 309   | 2290  | 454   | 636    | 3700   | 1710  | 496   | 280   | 217   | 244   | 268   |
| 2     | 251   | 314   | 2330  | 449   | 876    | 2830   | 1540  | 491   | 280   | 223   | 256   | 270   |
| 3     | 245   | 314   | 4510  | 446   | 875    | 3240   | 1460  | 508   | 274   | 224   | 248   | 263   |
| 4     | 241   | 314   | 2250  | 448   | 697    | 2540   | 1370  | 488   | 272   | 233   | 246   | 237   |
| 5     | 241   | 315   | 1170  | 450   | 653    | 2190   | 1440  | e470  | 267   | 248   | 257   | 240   |
| 6     | 241   | 320   | 1120  | 437   | 3030   | 1940   | 1470  | e460  | 271   | 250   | 273   | 262   |
| 7     | 239   | 352   | 854   | 335   | 9440   | 1740   | 1300  | 451   | 273   | 235   | 282   | 264   |
| 8     | 240   | 353   | 921   | 318   | 5340   | 2530   | 1650  | 891   | 270   | 226   | 285   | 259   |
| 9     | 246   | 348   | 867   | 311   | 12100  | 4070   | 1660  | 846   | 258   | 219   | 284   | 257   |
| 10    | 247   | 344   | 764   | 303   | 4850   | 2750   | 1490  | 459   | 254   | 183   | 278   | 255   |
| 11    | 251   | 341   | 692   | 294   | 5660   | 2150   | 4460  | e410  | 228   | 174   | 282   | 263   |
| 12    | 253   | 339   | 650   | 292   | 3460   | 1760   | 3240  | e395  | 242   | 202   | 278   | 261   |
| 13    | 252   | 332   | 635   | 291   | 2020   | 1520   | 2540  | e380  | 230   | 202   | 271   | 261   |
| 14    | 252   | 333   | 807   | 282   | 2430   | 2040   | 1840  | 369   | 236   | 202   | 260   | 226   |
| 15    | 275   | 334   | 709   | 284   | 2070   | 2180   | 1520  | 345   | 235   | 238   | 252   | 214   |
| 16    | 281   | 335   | 672   | e430  | 6150   | 1840   | 1330  | 346   | 231   | 256   | 255   | 214   |
| 17    | 275   | 348   | 796   | 619   | 9470   | 1650   | 1210  | 343   | 220   | 253   | 256   | 208   |
| 18    | 258   | e366  | 784   | 1780  | 4990   | 1520   | 1100  | 339   | 196   | 270   | 250   | 211   |
| 19    | 267   | e365  | 607   | 1340  | 4560   | 1370   | 1000  | 333   | 197   | 279   | 248   | 215   |
| 20    | 269   | 363   | 565   | 1980  | 5100   | 1050   | 842   | 322   | 206   | 282   | 258   | 218   |
| 21    | 260   | 360   | 544   | 3040  | 7190   | 910    | 791   | 317   | 215   | 286   | 252   | 219   |
| 22    | 257   | 359   | 521   | 2670  | 5760   | 795    | 760   | 308   | 209   | 280   | 253   | 215   |
| 23    | 255   | e1600 | 512   | 4580  | 4770   | 913    | 704   | 300   | 223   | 274   | 253   | 200   |
| 24    | 271   | e1900 | 492   | 2370  | 4630   | e3200  | 663   | 307   | 222   | 270   | 254   | 194   |
| 25    | 285   | e700  | 476   | 1760  | 7570   | e8500  | 640   | 298   | 220   | 269   | 252   | 190   |
| 26    | 281   | 595   | 475   | 1850  | 4880   | e5000  | 609   | 293   | 213   | 283   | 251   | 196   |
| 27    | 275   | 631   | 486   | 1400  | 3170   | 2610   | 581   | 287   | 206   | 277   | 251   | 203   |
| 28    | 274   | 530   | 481   | 873   | 3880   | 2090   | 558   | 281   | 216   | 282   | 251   | 213   |
| 29    | 272   | 990   | 467   | 738   | ---    | 1840   | 544   | 275   | 234   | 281   | 263   | 210   |
| 30    | 271   | 3870  | 461   | 619   | ---    | 1780   | 525   | 276   | 222   | 269   | 267   | 207   |
| 31    | 293   | ---   | 458   | 667   | ---    | 2030   | ---   | 284   | ---   | 247   | 266   | ---   |
| TOTAL | 8072  | 18274 | 29366 | 32110 | 126257 | 74278  | 40547 | 12368 | 7100  | 7634  | 8076  | 6913  |
| MEAN  | 260   | 609   | 947   | 1036  | 4509   | 2396   | 1352  | 399   | 237   | 246   | 261   | 230   |
| MAX   | 293   | 3870  | 4510  | 4580  | 12100  | 8500   | 4460  | 891   | 280   | 286   | 285   | 270   |
| MIN   | 239   | 309   | 458   | 282   | 636    | 795    | 525   | 275   | 196   | 174   | 244   | 190   |
| AC-FT | 16010 | 36250 | 58250 | 63690 | 250400 | 147300 | 80420 | 24530 | 14080 | 15140 | 16020 | 13710 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1999, BY WATER YEAR (WY)

|          | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|----------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN     | 248  | 581  | 1576 | 2765 | 2602 | 1828 | 921  | 396  | 246  | 215  | 222  | 217  |
| MAX (WY) | 659  | 2636 | 6398 | 8324 | 9790 | 7015 | 3708 | 1156 | 840  | 336  | 359  | 385  |
| MIN (WY) | 1963 | 1984 | 1965 | 1995 | 1998 | 1983 | 1982 | 1983 | 1998 | 1998 | 1961 | 1974 |
| MIN (WY) | 34.5 | 114  | 97.8 | 53.7 | 44.5 | 97.2 | 47.3 | 80.7 | 99.9 | 117  | 118  | 72.5 |
| MIN (WY) | 1978 | 1992 | 1991 | 1977 | 1977 | 1977 | 1977 | 1977 | 1988 | 1988 | 1988 | 1977 |

SUMMARY STATISTICS

|                          | FOR 1998 CALENDAR YEAR | FOR 1999 WATER YEAR | WATER YEARS 1951 - 1999 |
|--------------------------|------------------------|---------------------|-------------------------|
| ANNUAL TOTAL             | 707842                 | 370995              |                         |
| ANNUAL MEAN              | 1939                   | 1016                |                         |
| HIGHEST ANNUAL MEAN      |                        |                     | 2144                    |
| LOWEST ANNUAL MEAN       |                        |                     | 99.2                    |
| HIGHEST DAILY MEAN       | 21800                  | Feb 3               | 12100                   |
| LOWEST DAILY MEAN        | 197                    | Sep 4               | 174                     |
| ANNUAL SEVEN-DAY MINIMUM | 242                    | Oct 3               | 201                     |
| INSTANTANEOUS PEAK FLOW  |                        |                     | 15900                   |
| INSTANTANEOUS PEAK STAGE |                        |                     | 15.03                   |
| ANNUAL RUNOFF (AC-FT)    | 1404000                | 735900              | 708600                  |
| 10 PERCENT EXCEEDS       | 7060                   | 2570                | 2290                    |
| 50 PERCENT EXCEEDS       | 650                    | 334                 | 270                     |
| 90 PERCENT EXCEEDS       | 283                    | 223                 | 156                     |

e Estimated.

## 11463170 BIG SULPHUR CREEK AT GEYSERS RESORT, NEAR CLOVERDALE, CA

LOCATION.—Lat 38°47'52", long 122°48'05", in NW 1/4 NW 1/4 sec.19, T.11 N., R.8 W., Sonoma County, Hydrologic Unit 18010110, on left bank, 400 ft downstream from unnamed tributary, and 12 mi east of Cloverdale.

DRAINAGE AREA.—13.1 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1980 to current year.

REVISED RECORDS.—WDR CA-98-2: 1995-96 (P).

GAGE.—Water-stage recorder. Elevation of gage is 1,430 ft above sea level, from topographic map.

REMARKS.—Records fair except for estimated daily discharges, which are poor. Diversion for industrial use 150 ft upstream from station when flows are above 10 ft<sup>3</sup>/s. See schematic diagram of Russian River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 8,010 ft<sup>3</sup>/s, Jan. 1, 1997, gage height, 9.78 ft, from rating curve extended above 1,200 ft<sup>3</sup>/s on basis of culvert computation of peak flow; minimum daily, 0.08 ft<sup>3</sup>/s, Aug. 31, 1983.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 0300 | 2,870                             | 7.60                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN    | FEB   | MAR  | APR    | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|------|-------|-------|--------|-------|------|--------|-------|-------|------|------|------|
| 1     | 1.8  | e1.9  | 69    | e6.3   | 17    | 131  | 46     | 12    | 8.1   | 3.3  | 1.7  | 1.4  |
| 2     | 1.8  | e2.0  | 28    | e6.3   | 15    | 104  | 36     | 11    | 8.0   | 3.2  | 1.7  | e1.5 |
| 3     | 1.8  | e1.9  | 63    | e6.3   | 15    | 113  | 30     | 11    | 8.1   | 3.1  | 1.7  | e1.5 |
| 4     | 1.7  | e1.9  | 34    | e6.6   | 15    | 77   | 24     | 12    | 7.8   | 2.7  | 1.7  | e1.4 |
| 5     | 1.6  | e2.0  | 20    | e7.0   | 15    | 60   | 35     | 12    | 7.3   | 3.0  | 1.7  | e1.4 |
| 6     | 1.7  | e3.0  | 19    | e7.5   | 376   | 49   | 31     | 12    | 6.7   | 2.9  | 1.8  | e1.3 |
| 7     | 1.7  | e6.0  | 12    | e8.0   | 705   | 46   | 31     | 12    | 6.5   | 2.9  | 1.8  | e1.3 |
| 8     | 1.8  | e5.0  | 10    | 9.8    | 415   | 179  | 107    | 12    | 6.4   | 2.8  | 1.8  | 1.2  |
| 9     | e1.8 | e3.5  | 8.0   | 9.7    | 1160  | 165  | 70     | 12    | 6.3   | 2.6  | 1.8  | 1.2  |
| 10    | e1.8 | e3.1  | 6.9   | 9.5    | 286   | 116  | 85     | 12    | 6.1   | 2.4  | 1.8  | 1.2  |
| 11    | e1.8 | e3.0  | 6.9   | 9.3    | 148   | 87   | 411    | 12    | 5.9   | 2.4  | 1.8  | 1.2  |
| 12    | e1.8 | e3.0  | 6.9   | 9.1    | 96    | 64   | 195    | 12    | 5.8   | 2.3  | 1.8  | 1.2  |
| 13    | e1.7 | e2.9  | 7.1   | 8.9    | 67    | 50   | 125    | 12    | 5.6   | 2.2  | 1.7  | 1.1  |
| 14    | e1.7 | e3.0  | 7.3   | 8.7    | 50    | 85   | 88     | 12    | 5.5   | 2.2  | 1.7  | 1.1  |
| 15    | e1.7 | e3.1  | 6.6   | 10     | 37    | 75   | 67     | 12    | 5.4   | 2.2  | 1.5  | 1.1  |
| 16    | e1.6 | 3.1   | 6.7   | 11     | 123   | 56   | 52     | 12    | 5.3   | 2.2  | 1.5  | 1.1  |
| 17    | 1.6  | 3.8   | 6.7   | 121    | 156   | 46   | 41     | 12    | 5.2   | 2.2  | 1.4  | 1.0  |
| 18    | 1.6  | 3.7   | 6.6   | 54     | 139   | 36   | 32     | 12    | 5.0   | 2.2  | 1.4  | 1.0  |
| 19    | 1.5  | 3.4   | 6.6   | e400   | 106   | 33   | 25     | 12    | 4.9   | 2.1  | 1.4  | 1.1  |
| 20    | 1.5  | 3.3   | e6.5  | 281    | 122   | 30   | 20     | 11    | 4.8   | 2.2  | 1.4  | 1.2  |
| 21    | 1.5  | 3.2   | e6.5  | 134    | 153   | 25   | 16     | 11    | 4.7   | 2.2  | 1.5  | 1.1  |
| 22    | 1.6  | 5.8   | e6.5  | 207    | 143   | 26   | 12     | 10    | 4.4   | 2.1  | 1.4  | 1.1  |
| 23    | 1.6  | 64    | e6.5  | 260    | 103   | 57   | 10     | 9.9   | 4.2   | 2.1  | 1.4  | 1.1  |
| 24    | e3.0 | 35    | e6.4  | 114    | 122   | 279  | 10     | 9.6   | 4.1   | 2.1  | 1.4  | 1.1  |
| 25    | e2.5 | 9.7   | e6.4  | 70     | 203   | 391  | 9.9    | 9.3   | 4.0   | 2.1  | 1.3  | 1.1  |
| 26    | e2.0 | 7.5   | e6.4  | 47     | 121   | 185  | 9.6    | 8.9   | 3.9   | 1.9  | 1.3  | 1.0  |
| 27    | e1.9 | 11    | e6.4  | 30     | 90    | 123  | 10     | 8.6   | 3.8   | 1.7  | 1.3  | 1.2  |
| 28    | e1.9 | 6.2   | e6.4  | 20     | 153   | 89   | 14     | 8.4   | 3.6   | 1.7  | 1.2  | 1.3  |
| 29    | e1.8 | 12    | e6.4  | 16     | ---   | 69   | 17     | 8.3   | 3.5   | 1.7  | 1.2  | 1.0  |
| 30    | e1.8 | 85    | e6.4  | 16     | ---   | 67   | 16     | 8.2   | 3.4   | 1.7  | 1.2  | 1.0  |
| 31    | e1.8 | ---   | e6.4  | 40     | ---   | 64   | ---    | 8.0   | ---   | 1.7  | 1.3  | ---  |
| TOTAL | 55.4 | 302.0 | 408.5 | 1944.0 | 5151  | 2977 | 1675.5 | 337.2 | 164.3 | 72.1 | 47.6 | 35.5 |
| MEAN  | 1.79 | 10.1  | 13.2  | 62.7   | 184   | 96.0 | 55.8   | 10.9  | 5.48  | 2.33 | 1.54 | 1.18 |
| MAX   | 3.0  | 85    | 69    | 400    | 1160  | 391  | 411    | 12    | 8.1   | 3.3  | 1.8  | 1.5  |
| MIN   | 1.5  | 1.9   | 6.4   | 6.3    | 15    | 25   | 9.6    | 8.0   | 3.4   | 1.7  | 1.2  | 1.0  |
| AC-FT | 110  | 599   | 810   | 3860   | 10220 | 5900 | 3320   | 669   | 326   | 143  | 94   | 70   |

e Estimated.



11463170 BIG SULPHUR CREEK AT GEYSERS RESORT, NEAR CLOVERDALE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 3.29 | 26.6 | 79.4 | 121  | 125  | 105  | 32.8 | 19.9 | 6.46 | 2.91 | 1.48 | 1.33 |
| MAX  | 20.9 | 146  | 341  | 639  | 571  | 358  | 162  | 81.6 | 18.0 | 7.34 | 2.99 | 2.90 |
| (WY) | 1990 | 1984 | 1997 | 1995 | 1986 | 1995 | 1982 | 1990 | 1998 | 1998 | 1998 | 1985 |
| MIN  | .74  | 1.22 | 1.81 | 2.52 | 7.34 | 8.57 | 8.44 | 4.79 | 2.62 | .86  | .70  | .65  |
| (WY) | 1989 | 1981 | 1991 | 1991 | 1989 | 1988 | 1990 | 1986 | 1987 | 1984 | 1988 | 1988 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1981 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 21552.6                |        | 13170.1             |        |                         |             |
| ANNUAL MEAN              | 59.0                   |        | 36.1                |        | 43.4                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 101                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 15.5                    |             |
| HIGHEST DAILY MEAN       | 975                    | Feb 3  | 1160                | Feb 9  | 3920                    | Feb 17 1986 |
| LOWEST DAILY MEAN        | 1.5                    | Oct 19 | 1.0                 | Sep 17 | .08                     | Aug 31 1983 |
| ANNUAL SEVEN-DAY MINIMUM | 1.6                    | Oct 16 | 1.1                 | Sep 13 | .24                     | Oct 13 1983 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 2870                | Feb 9  | 8010                    | Jan 1 1997  |
| INSTANTANEOUS PEAK STAGE |                        |        | 7.60                | Feb 9  | 9.78                    | Jan 1 1997  |
| ANNUAL RUNOFF (AC-FT)    | 42750                  |        | 26120               |        | 31470                   |             |
| 10 PERCENT EXCEEDS       | 183                    |        | 106                 |        | 92                      |             |
| 50 PERCENT EXCEEDS       | 10                     |        | 6.5                 |        | 6.2                     |             |
| 90 PERCENT EXCEEDS       | 1.8                    |        | 1.4                 |        | 1.0                     |             |

## 11463200 BIG SULPHUR CREEK NEAR CLOVERDALE, CA

LOCATION.—Lat 38°49'34", long 122°59'45", in Rincon de Masalacon Grant, Sonoma County, Hydrologic Unit 18010110, on right bank, 900 ft downstream from unnamed tributary, 1.0 mi upstream of Russian River, and 1.8 mi northeast of Cloverdale.

DRAINAGE AREA.—85.5 mi<sup>2</sup>.

PERIOD OF RECORD.—July 1957 to September 1972. October 1989 to current year (since October 1989, low-flow records only).

REVISED RECORDS.—WSP 1929: 1958–60.

GAGE.—Water-stage recorder. Elevation of gage is 350 ft above sea level, from topographic map. Prior to September 1972, at site 0.8 mi upstream at different datum.

REMARKS.—Records poor. No records computed above 200 ft<sup>3</sup>/s. Diversions for irrigation and geothermal recharge upstream from station. See schematic diagram of Russian River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge (water years 1958–72), 15,700 ft<sup>3</sup>/s, Dec. 22, 1964, gage height, 15.08 ft, site and datum then in use, from rating curve extended above 5,700 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 16.8 ft; minimum daily, 0.90 ft<sup>3</sup>/s, Aug. 17, 1994.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 22, 1955, reached a stage of 16.8 ft from floodmarks, site and datum then in use, discharge, 20,000 ft<sup>3</sup>/s, by slope-area measurement of peak flow.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC  | JAN  | FEB  | MAR | APR  | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------|-------|-------|------|------|------|-----|------|------|------|-------|-------|-------|
| 1     | 11    | 7.8   | ---  | e18  | e68  | --- | ---  | e94  | e30  | e15   | e9.2  | e4.1  |
| 2     | 10    | 7.7   | ---  | e18  | e54  | --- | ---  | e86  | e30  | e14   | e9.1  | e4.0  |
| 3     | 9.9   | 8.1   | e175 | e17  | e48  | --- | 199  | e82  | e30  | e14   | e9.0  | e3.8  |
| 4     | 9.6   | 8.8   | ---  | e17  | e42  | --- | 184  | e78  | e30  | e14   | e8.9  | e3.8  |
| 5     | 12    | 8.6   | e200 | e16  | e38  | --- | 200  | e75  | e30  | e13   | e8.8  | e3.7  |
| 6     | 9.6   | 8.8   | e135 | e16  | e98  | --- | ---  | e72  | e29  | e13   | e8.8  | e3.7  |
| 7     | 9.1   | 23    | e98  | e16  | e190 | --- | 187  | e68  | e29  | e13   | e8.7  | e3.7  |
| 8     | 8.9   | 17    | e74  | e15  | ---  | --- | ---  | e64  | e28  | e13   | e8.7  | e3.5  |
| 9     | 8.8   | 11    | e61  | e15  | ---  | --- | ---  | e62  | e27  | e12   | e8.6  | 3.9   |
| 10    | 8.6   | 9.5   | e52  | e15  | ---  | --- | ---  | e60  | e26  | e12   | e8.6  | 3.9   |
| 11    | 8.3   | 9.2   | e48  | e14  | ---  | --- | ---  | e58  | e25  | e12   | e8.6  | 3.9   |
| 12    | 8.0   | 8.9   | e42  | e14  | ---  | --- | ---  | e56  | e25  | e12   | e8.4  | 3.8   |
| 13    | 8.1   | 8.8   | e38  | e14  | e200 | --- | ---  | e53  | e24  | e12   | e8.0  | 3.9   |
| 14    | 8.0   | 8.6   | e46  | e15  | e170 | --- | ---  | e50  | e23  | e12   | e7.6  | 3.8   |
| 15    | 8.1   | 8.7   | e40  | e16  | e150 | --- | ---  | e48  | e23  | e12   | e7.3  | 3.8   |
| 16    | 8.0   | 8.8   | e37  | e17  | e130 | --- | ---  | e46  | e22  | e12   | e6.9  | 3.8   |
| 17    | 8.3   | e12   | e35  | e19  | ---  | --- | ---  | e44  | e22  | e12   | e6.8  | 3.7   |
| 18    | 8.2   | e14   | e33  | e40  | ---  | --- | 185  | e42  | e22  | e11   | e6.7  | 3.7   |
| 19    | 8.1   | e13   | e30  | e190 | ---  | --- | 173  | e40  | e21  | e11   | e6.3  | 3.7   |
| 20    | 8.2   | e12   | e28  | ---  | ---  | --- | 166  | e38  | e20  | e11   | e6.1  | 3.8   |
| 21    | 7.8   | e13   | e27  | ---  | ---  | --- | e160 | e36  | e19  | e11   | e5.6  | 3.8   |
| 22    | 7.9   | e14   | e26  | ---  | ---  | 195 | e155 | e35  | e19  | e10   | e5.3  | 4.0   |
| 23    | 8.0   | e30   | e25  | ---  | ---  | --- | e150 | e34  | e18  | e10   | e5.1  | 4.1   |
| 24    | 9.3   | e52   | e23  | ---  | ---  | --- | e145 | e33  | e18  | e10   | e5.0  | 3.9   |
| 25    | 7.9   | e200  | e22  | e180 | ---  | --- | e140 | e32  | e17  | e9.9  | e4.9  | 3.8   |
| 26    | 7.1   | e43   | e21  | e115 | ---  | --- | e135 | e31  | e17  | e9.9  | e4.9  | 3.8   |
| 27    | 7.3   | e44   | e21  | e80  | ---  | --- | e130 | e30  | e16  | e9.8  | e4.8  | 3.7   |
| 28    | 7.3   | e45   | e20  | e63  | ---  | --- | e120 | e30  | e16  | e9.7  | e4.5  | 3.7   |
| 29    | 7.3   | e32   | e20  | e56  | ---  | --- | e100 | e30  | e16  | e9.5  | e4.3  | 3.7   |
| 30    | 7.3   | e70   | e19  | e45  | ---  | --- | e94  | e30  | e15  | e9.2  | e4.2  | 3.6   |
| 31    | 7.7   | ---   | e19  | e80  | ---  | --- | ---  | e30  | ---  | e9.1  | e4.2  | ---   |
| TOTAL | 263.7 | 757.3 | ---  | ---  | ---  | --- | ---  | 1567 | 687  | 358.1 | 213.9 | 114.1 |
| MEAN  | 8.51  | 25.2  | ---  | ---  | ---  | --- | ---  | 50.5 | 22.9 | 11.6  | 6.90  | 3.80  |
| MAX   | 12    | 200   | ---  | ---  | ---  | --- | ---  | 94   | 30   | 15    | 9.2   | 4.1   |
| MIN   | 7.1   | 7.7   | ---  | ---  | ---  | --- | ---  | 30   | 15   | 9.1   | 4.2   | 3.5   |
| AC-FT | 523   | 1500  | ---  | ---  | ---  | --- | ---  | 3110 | 1360 | 710   | 424   | 226   |

e Estimated.

## 11463980 RUSSIAN RIVER AT DIGGER BEND, NEAR HEALDSBURG, CA

LOCATION.—Lat 38°37'59", long 122°51'16", in Sotoyome Grant, Sonoma County, Hydrologic Unit 18010110, on right bank, 1,800 ft downstream from unnamed tributary, and 1.6 mi northeast of Healdsburg.

DRAINAGE AREA.—791 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1988 to current year (low-flow records only). Records for October 1985 to September 1988 are in the files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Elevation of gage is 100 ft above sea level, from topographic map.

REMARKS.—Records fair including estimated daily discharges. No records computed above 400 ft<sup>3</sup>/s. See schematic diagram of Russian River Basin.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV  | DEC | JAN  | FEB | MAR | APR | MAY | JUN   | JUL   | AUG   | SEP   |
|-------|-------|------|-----|------|-----|-----|-----|-----|-------|-------|-------|-------|
| 1     | e280  | e300 | --- | ---  | --- | --- | --- | --- | 340   | 197   | 227   | 238   |
| 2     | e265  | e315 | --- | ---  | --- | --- | --- | --- | 338   | 194   | 221   | 263   |
| 3     | e292  | e314 | --- | ---  | --- | --- | --- | --- | 322   | 198   | 232   | 246   |
| 4     | e245  | e300 | --- | ---  | --- | --- | --- | --- | 318   | 207   | 209   | e264  |
| 5     | e240  | e300 | --- | ---  | --- | --- | --- | --- | 325   | 216   | 217   | e283  |
| 6     | e236  | e310 | --- | ---  | --- | --- | --- | --- | 313   | 213   | 233   | e228  |
| 7     | e235  | e365 | --- | ---  | --- | --- | --- | --- | 305   | 207   | 231   | e240  |
| 8     | e232  | ---  | --- | ---  | --- | --- | --- | --- | 301   | 195   | 259   | 231   |
| 9     | e232  | e390 | --- | e380 | --- | --- | --- | --- | 292   | 191   | 262   | 229   |
| 10    | e230  | e375 | --- | e360 | --- | --- | --- | --- | 314   | 198   | 238   | e228  |
| 11    | e230  | e370 | --- | e360 | --- | --- | --- | --- | 279   | 180   | 242   | 229   |
| 12    | e233  | e370 | --- | e358 | --- | --- | --- | --- | 303   | 179   | 240   | 237   |
| 13    | e235  | e360 | --- | e357 | --- | --- | --- | --- | 276   | 177   | 241   | 245   |
| 14    | e235  | e355 | --- | e347 | --- | --- | --- | --- | 298   | 183   | 249   | 240   |
| 15    | e225  | e350 | --- | e338 | --- | --- | --- | --- | 261   | 182   | 231   | 246   |
| 16    | e230  | e345 | --- | e360 | --- | --- | --- | --- | 258   | 210   | 239   | 241   |
| 17    | e240  | e348 | --- | ---  | --- | --- | --- | --- | 248   | 218   | 251   | 206   |
| 18    | e242  | e388 | --- | ---  | --- | --- | --- | --- | 240   | 228   | 220   | 197   |
| 19    | e235  | e380 | --- | ---  | --- | --- | --- | --- | 220   | 248   | 228   | e190  |
| 20    | e236  | e367 | --- | ---  | --- | --- | --- | --- | 216   | 252   | 208   | e200  |
| 21    | e243  | e360 | --- | ---  | --- | --- | --- | --- | 231   | 244   | e228  | 211   |
| 22    | e248  | e368 | --- | ---  | --- | --- | --- | --- | 232   | 236   | e230  | 207   |
| 23    | e250  | ---  | --- | ---  | --- | --- | --- | --- | 229   | 234   | e234  | 217   |
| 24    | e272  | ---  | --- | ---  | --- | --- | --- | --- | 230   | 231   | 236   | 202   |
| 25    | e293  | ---  | --- | ---  | --- | --- | --- | --- | 218   | 235   | 226   | 187   |
| 26    | e288  | ---  | --- | ---  | --- | --- | --- | --- | 207   | 239   | 228   | 172   |
| 27    | e282  | ---  | --- | ---  | --- | --- | --- | --- | 208   | 245   | 217   | 168   |
| 28    | e282  | ---  | --- | ---  | --- | --- | --- | --- | 204   | 232   | 220   | 163   |
| 29    | e280  | ---  | --- | ---  | --- | --- | --- | --- | 386   | 197   | 239   | 228   |
| 30    | e277  | ---  | --- | ---  | --- | --- | --- | --- | 341   | 204   | 236   | 240   |
| 31    | e280  | ---  | --- | ---  | --- | --- | --- | --- | 342   | ---   | 241   | 228   |
| TOTAL | 7823  | ---  | --- | ---  | --- | --- | --- | --- | 7927  | 6685  | 7193  | 6586  |
| MEAN  | 252   | ---  | --- | ---  | --- | --- | --- | --- | 264   | 216   | 232   | 220   |
| MAX   | 293   | ---  | --- | ---  | --- | --- | --- | --- | 340   | 252   | 262   | 283   |
| MIN   | 225   | ---  | --- | ---  | --- | --- | --- | --- | 197   | 177   | 208   | 163   |
| AC-FT | 15520 | ---  | --- | ---  | --- | --- | --- | --- | 15720 | 13260 | 14270 | 13060 |

e Estimated.

## 11464000 RUSSIAN RIVER NEAR HEALDSBURG, CA

LOCATION.—Lat 38°36'48", long 122°50'07", in Sotoyome Grant, Sonoma County, Hydrologic Unit 18010110, on left bank, 2 mi east of Healdsburg, and 3.5 mi upstream from Dry Creek.

DRAINAGE AREA.—793 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1939 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

REVISED RECORDS.—WSP 981: 1942. WSP 1929: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 77.01 ft above sea level.

REMARKS.—Records fair, including estimated daily discharges. Several diversions for irrigation of about 17,800 acres upstream from station. Flow also affected by diversion into basin (see REMARKS for East Fork Russian River stations) and since November 1958 by storage in Lake Mendocino, 63 mi upstream. See schematic diagram of Russian River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 73,000 ft<sup>3</sup>/s, Jan. 9, 1995, gage height, 26.23 ft; maximum gage height, 30.0 ft, Feb. 28, 1940; minimum daily discharge, 12 ft<sup>3</sup>/s, June 14, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of December 1937 reached a stage of 30.8 ft, from floodmarks.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB    | MAR    | APR    | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|-------|-------|--------|--------|--------|-------|-------|-------|-------|-------|
| 1     | 275   | 300   | 5500  | 509   | 1130   | 6630   | 2550   | 710   | 345   | 191   | 223   | 239   |
| 2     | 261   | 310   | 2760  | 504   | 1080   | 4650   | 2260   | 683   | 348   | 184   | 219   | 244   |
| 3     | 289   | 308   | 6010  | 495   | 1110   | 5020   | 2070   | 682   | 346   | 186   | 223   | 246   |
| 4     | 241   | 297   | 3860  | 485   | 1060   | 3990   | 1910   | 677   | 338   | 194   | 217   | 238   |
| 5     | 234   | 295   | 2060  | 480   | 1040   | 3320   | 1930   | 643   | 337   | 205   | 217   | 219   |
| 6     | 231   | 307   | 1870  | 477   | 4260   | 2900   | 2070   | 623   | 322   | 214   | 226   | 218   |
| 7     | 230   | 364   | 1380  | 463   | 17000  | 2580   | 1820   | 604   | 319   | 204   | 242   | 222   |
| 8     | 227   | 411   | 1190  | 408   | 10500  | 3300   | 2220   | 725   | 281   | 194   | 253   | 213   |
| 9     | 227   | 383   | 1170  | 385   | 24200  | 6820   | 2500   | 934   | 296   | 185   | 256   | 206   |
| 10    | 227   | 374   | 1030  | 369   | 10300  | 4780   | 2120   | 743   | 294   | 176   | 255   | 206   |
| 11    | 227   | 367   | 982   | 363   | 8470   | 3620   | 6630   | 583   | 281   | 169   | 255   | 208   |
| 12    | 230   | 357   | 906   | 361   | 6400   | 3000   | 5630   | 546   | 261   | 158   | 255   | 215   |
| 13    | 233   | 353   | 846   | 359   | 3900   | 2550   | 4080   | 524   | 254   | 162   | 252   | 215   |
| 14    | 232   | 346   | 931   | 349   | 3840   | 2690   | 3080   | 503   | 257   | 164   | 250   | 215   |
| 15    | 219   | 341   | 938   | 340   | 3390   | 3650   | 2480   | 487   | 256   | 168   | 242   | 202   |
| 16    | 226   | 341   | 835   | 365   | 6130   | 2870   | 2120   | 469   | 250   | 191   | 238   | 187   |
| 17    | 237   | 346   | 837   | 455   | 15100  | 2500   | 1880   | 462   | 244   | 214   | 234   | 182   |
| 18    | 240   | e385  | 870   | 1820  | 7830   | 2250   | 1700   | 452   | 235   | 222   | 232   | 176   |
| 19    | 234   | e375  | 819   | 2610  | 7490   | 2100   | 1560   | 442   | 221   | 237   | 226   | 173   |
| 20    | 234   | e365  | 705   | 5210  | 6860   | 1790   | 1370   | 432   | 213   | 246   | 219   | 176   |
| 21    | 240   | 355   | 662   | 3980  | 10400  | 1550   | 1230   | 418   | 218   | 248   | 223   | 176   |
| 22    | 245   | 362   | 628   | 3380  | 8700   | 1400   | 1140   | 405   | 224   | 246   | 222   | 176   |
| 23    | 248   | 2000  | 604   | 7190  | 6970   | 1740   | 1060   | 391   | 221   | 245   | 225   | 176   |
| 24    | 271   | 2830  | 586   | 4050  | 6060   | 3700   | 1010   | 384   | 228   | 239   | 220   | 172   |
| 25    | 292   | 1220  | 566   | 2590  | 10500  | 13900  | 964    | 380   | 224   | 235   | 221   | 212   |
| 26    | 286   | 864   | 557   | 2340  | 7940   | 7660   | e934   | e384  | 212   | 233   | 219   | 173   |
| 27    | 280   | 933   | 551   | 1990  | 5230   | 4830   | e896   | e416  | 192   | 239   | 220   | 172   |
| 28    | 281   | 788   | 543   | 1470  | 5290   | 3590   | e846   | 357   | 199   | 240   | 217   | 173   |
| 29    | 279   | 939   | 535   | 1160  | ---    | 3010   | e796   | 345   | 202   | 241   | 223   | 178   |
| 30    | 274   | 6990  | 525   | 1040  | ---    | 2700   | e749   | 343   | 202   | 242   | 236   | 176   |
| 31    | 279   | ---   | 519   | 1390  | ---    | 2930   | ---    | 344   | ---   | 237   | 237   | ---   |
| TOTAL | 7729  | 24206 | 41775 | 47387 | 202180 | 118020 | 61605  | 16091 | 7820  | 6509  | 7197  | 5984  |
| MEAN  | 249   | 807   | 1348  | 1529  | 7221   | 3807   | 2054   | 519   | 261   | 210   | 232   | 199   |
| MAX   | 292   | 6990  | 6010  | 7190  | 24200  | 13900  | 6630   | 934   | 348   | 248   | 256   | 246   |
| MIN   | 219   | 295   | 519   | 340   | 1040   | 1400   | 749    | 343   | 192   | 158   | 217   | 172   |
| AC-FT | 15330 | 48010 | 82860 | 93990 | 401000 | 234100 | 122200 | 31920 | 15510 | 12910 | 14280 | 11870 |

e Estimated.

## 11464000 RUSSIAN RIVER NEAR HEALDSBURG, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN   | FEB   | MAR   | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|-------|-------|-------|------|------|------|------|------|------|
| MEAN | 274  | 783  | 2453 | 4164  | 4092  | 2825  | 1469 | 566  | 272  | 187  | 186  | 192  |
| MAX  | 1605 | 5293 | 8945 | 14490 | 16450 | 11810 | 6592 | 1638 | 972  | 300  | 331  | 360  |
| (WY) | 1958 | 1974 | 1956 | 1995  | 1998  | 1983  | 1982 | 1983 | 1998 | 1961 | 1974 | 1974 |
| MIN  | 33.7 | 122  | 111  | 90.9  | 58.7  | 146   | 55.7 | 85.1 | 81.3 | 70.5 | 82.8 | 67.4 |
| (WY) | 1978 | 1992 | 1991 | 1977  | 1977  | 1977  | 1977 | 1977 | 1977 | 1947 | 1947 | 1977 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |  | FOR 1999 WATER YEAR |  | WATER YEARS 1940 - 1999 |  |
|--------------------------|------------------------|--|---------------------|--|-------------------------|--|
| ANNUAL TOTAL             | 1053525                |  | 546503              |  |                         |  |
| ANNUAL MEAN              | 2886                   |  | 1497                |  | 1444                    |  |
| HIGHEST ANNUAL MEAN      |                        |  |                     |  | 3277                    |  |
| LOWEST ANNUAL MEAN       |                        |  |                     |  | 101                     |  |
| HIGHEST DAILY MEAN       | 37000                  |  | 24200               |  | 69300                   |  |
| LOWEST DAILY MEAN        | 181                    |  | 158                 |  | 12                      |  |
| ANNUAL SEVEN-DAY MINIMUM | 187                    |  | 169                 |  | 21                      |  |
| INSTANTANEOUS PEAK FLOW  |                        |  | 30400               |  | 73000                   |  |
| INSTANTANEOUS PEAK STAGE |                        |  | 15.59               |  | 30.00                   |  |
| ANNUAL RUNOFF (AC-FT)    | 2090000                |  | 1084000             |  | 1046000                 |  |
| 10 PERCENT EXCEEDS       | 10000                  |  | 4060                |  | 3400                    |  |
| 50 PERCENT EXCEEDS       | 835                    |  | 375                 |  | 315                     |  |
| 90 PERCENT EXCEEDS       | 219                    |  | 207                 |  | 141                     |  |

## 11464000 RUSSIAN RIVER NEAR HEALDSBURG, CA—Continued

## WATER-QUALITY RECORDS

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

CHEMICAL DATA: Water years 1951–66, 1980.

WATER TEMPERATURE: Water years 1966 to current year.

PERIOD OF DAILY RECORD.—October 1965 to current year.

WATER TEMPERATURE: October 1965 to current year.

INSTRUMENTATION.—Temperature recorder since October 1965 provides hourly recordings.

REMARKS.—Temperature during summer months affected by recreation dams above and below gage. Interruptions in record due to malfunction of the recording equipment.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 32.0°C, July 18 and Aug. 3, 1998; minimum recorded, 3.0°C, Dec. 23, 1990.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 28.0°C, June 30, July 1, 12; minimum recorded, 6.0°C, Dec. 21–24.

## TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY   | OCTOBER |      | NOVEMBER |      | DECEMBER |      | JANUARY |      | FEBRUARY |      | MARCH |      |
|-------|---------|------|----------|------|----------|------|---------|------|----------|------|-------|------|
|       | MAX     | MIN  | MAX      | MIN  | MAX      | MIN  | MAX     | MIN  | MAX      | MIN  | MAX   | MIN  |
| 1     | 20.5    | 18.5 | 16.5     | 15.0 | 11.5     | 10.5 | 10.0    | 9.0  | 9.5      | 8.0  | 12.5  | 10.5 |
| 2     | 19.0    | 17.0 | 16.0     | 15.0 | 12.5     | 11.5 | 9.5     | 8.5  | 10.0     | 8.0  | 12.0  | 10.0 |
| 3     | 18.5    | 16.5 | 15.5     | 14.5 | 12.5     | 11.0 | 9.5     | 8.0  | 10.5     | 8.0  | 12.0  | 10.5 |
| 4     | 19.5    | 16.0 | 16.0     | 14.0 | 11.0     | 9.5  | 9.0     | 8.0  | 10.5     | 8.5  | 11.0  | 9.0  |
| 5     | 19.5    | 16.5 | 15.0     | 13.5 | 10.0     | 9.0  | 8.5     | 7.5  | 10.0     | 8.5  | 11.0  | 9.0  |
| 6     | 19.5    | 16.5 | 14.5     | 13.5 | 9.5      | 8.0  | 8.5     | 8.0  | 10.0     | 9.5  | 11.5  | 9.5  |
| 7     | 19.0    | 16.5 | 15.0     | 14.0 | 9.5      | 8.0  | 8.5     | 8.0  | 11.0     | 9.5  | 11.5  | 9.5  |
| 8     | 20.0    | 18.0 | 14.0     | 12.5 | 11.0     | 9.5  | 9.0     | 7.5  | 10.5     | 10.0 | 11.5  | 9.5  |
| 9     | 19.0    | 16.5 | 14.0     | 12.0 | 10.5     | 9.0  | 9.0     | 8.0  | 11.0     | 9.0  | 10.0  | 8.5  |
| 10    | 18.5    | 15.5 | 13.5     | 13.0 | 10.0     | 8.5  | 8.5     | 7.5  | 9.5      | 8.0  | 10.0  | 8.5  |
| 11    | 18.0    | 15.5 | 14.0     | 12.5 | 10.0     | 9.0  | 9.0     | 7.5  | 9.0      | 8.0  | 11.5  | 9.0  |
| 12    | 17.5    | 16.0 | 14.0     | 12.5 | 10.5     | 9.0  | 9.5     | 7.5  | 9.5      | 8.0  | 12.0  | 9.5  |
| 13    | 19.0    | 17.0 | 14.0     | 12.5 | 11.0     | 10.5 | 10.5    | 9.0  | 10.0     | 9.0  | 12.5  | 10.5 |
| 14    | 19.0    | 17.0 | 14.0     | 12.5 | 10.5     | 9.5  | 10.5    | 9.5  | 10.5     | 9.5  | 12.5  | 10.5 |
| 15    | 18.5    | 15.5 | 15.0     | 13.5 | 11.0     | 9.5  | 11.5    | 10.0 | 10.0     | 9.0  | 12.5  | 9.5  |
| 16    | 17.0    | 15.0 | 14.5     | 14.0 | 11.0     | 10.0 | 12.5    | 11.5 | 9.5      | 9.0  | 13.5  | 10.5 |
| 17    | 17.0    | 14.5 | 14.5     | 13.5 | 11.0     | 10.0 | 12.0    | 11.5 | 10.0     | 9.0  | 13.0  | 11.5 |
| 18    | 17.5    | 15.0 | 13.5     | 12.5 | 11.0     | 10.0 | 12.0    | 11.0 | 10.5     | 10.0 | 13.0  | 11.5 |
| 19    | 18.0    | 15.5 | 13.0     | 11.5 | 10.5     | 8.5  | 11.0    | 10.5 | 10.5     | 9.0  | 11.5  | 10.5 |
| 20    | 18.0    | 16.0 | 13.0     | 11.5 | 9.0      | 7.5  | 11.0    | 11.0 | 10.0     | 9.0  | 13.5  | 10.5 |
| 21    | 19.0    | 16.0 | 14.5     | 13.0 | 7.5      | 6.0  | 11.0    | 10.0 | 9.5      | 8.5  | 13.5  | 11.5 |
| 22    | 18.5    | 16.0 | 14.5     | 14.0 | 7.0      | 6.0  | 10.5    | 9.5  | 10.5     | 9.0  | 13.0  | 11.5 |
| 23    | 17.5    | 14.5 | 14.5     | 13.0 | 7.0      | 6.0  | 10.5    | 9.5  | 11.0     | 10.0 | 13.5  | 11.0 |
| 24    | 17.5    | 15.5 | 13.0     | 12.0 | 7.0      | 6.0  | 9.5     | 8.0  | 10.5     | 10.5 | 13.0  | 11.0 |
| 25    | 20.5    | 11.0 | 13.0     | 11.5 | 7.5      | 6.5  | 9.5     | 7.5  | 10.5     | 9.5  | 11.5  | 10.5 |
| 26    | 23.0    | 9.5  | 13.0     | 12.5 | 8.5      | 7.5  | 9.5     | 8.5  | 10.0     | 9.0  | 13.0  | 11.0 |
| 27    | 16.0    | 8.0  | 13.0     | 12.5 | 9.0      | 8.5  | 9.5     | 8.0  | 11.5     | 9.5  | 12.5  | 10.5 |
| 28    | 19.5    | 12.0 | 12.5     | 11.5 | 10.0     | 9.0  | 9.5     | 8.0  | 11.5     | 11.0 | 13.0  | 10.0 |
| 29    | 17.5    | 9.5  | 12.5     | 11.5 | 9.5      | 8.5  | 9.5     | 8.0  | ---      | ---  | 12.5  | 10.5 |
| 30    | 16.0    | 14.5 | 12.0     | 11.5 | 10.0     | 9.0  | 9.5     | 8.0  | ---      | ---  | 11.5  | 9.5  |
| 31    | 15.5    | 14.5 | ---      | ---  | 11.0     | 9.5  | 10.0    | 9.0  | ---      | ---  | 12.0  | 9.0  |
| MONTH | 23.0    | 8.0  | 16.5     | 11.5 | 12.5     | 6.0  | 12.5    | 7.5  | 11.5     | 8.0  | 13.5  | 8.5  |

## 11464000 RUSSIAN RIVER NEAR HEALDSBURG, CA—Continued

## TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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

## 11465000 DRY CREEK BELOW WARM SPRINGS DAM, NEAR GEYSERVILLE, CA

LOCATION.—Lat 38°43'11", long 122°59'58", in Tzabaco Grant, Sonoma County, Hydrologic Unit 18010110, on right bank of outlet channel, 500 ft downstream from Warm Springs Dam, 500 ft upstream from county road bridge, and 5.0 mi west of Geyserville.

DRAINAGE AREA.—131 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1939 to September 1942 (published as "Dry Creek near Healdsburg"), October 1981 to current year.

WATER TEMPERATURE RECORD: Water years 1981–94.

GAGE.—Water-stage recorder and concrete control. Datum of gage is 188.21 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Sept. 30, 1942, nonrecording gage at site 500 ft downstream at different datum.

REMARKS.—Records good. Flow affected by storage in Lake Sonoma, capacity, 380,600 acre-ft, beginning October 1983. See schematic diagram of Russian River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 22,500 ft<sup>3</sup>/s, Feb. 28, 1940, gage height, 16.9 ft, datum then in use; no flow Oct. 1 to Dec. 8, 1939. Maximum discharge since regulation by Lake Sonoma, 5,590 ft<sup>3</sup>/s, Feb. 11, 1998, gage height, 10.38 ft; minimum daily, 6.1 ft<sup>3</sup>/s, Oct. 21, 22, 1983.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of December 1937 reached a stage of 21.8 ft from floodmarks, discharge about 25,000 ft<sup>3</sup>/s.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN  | FEB   | MAR   | APR   | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|------|------|------|------|-------|-------|-------|------|------|------|------|------|
| 1     | 98   | 114  | 112  | 109  | 92    | 1090  | 413   | 149  | 105  | 97   | 111  | 103  |
| 2     | 101  | 126  | 112  | 109  | 92    | 792   | 297   | 139  | 106  | 95   | 111  | 108  |
| 3     | 101  | 121  | 112  | 109  | 92    | 792   | 287   | 136  | 102  | 94   | 111  | 108  |
| 4     | 101  | 115  | 112  | 101  | 98    | 667   | 294   | 133  | 102  | 94   | 111  | 109  |
| 5     | 101  | 114  | 112  | 96   | 107   | 605   | 294   | 134  | 102  | 94   | 110  | 108  |
| 6     | 101  | 118  | 112  | 94   | 111   | 606   | 294   | 112  | 102  | 94   | 110  | 108  |
| 7     | 101  | 121  | 112  | 87   | 111   | 604   | 294   | 91   | 102  | 94   | 110  | 108  |
| 8     | 101  | 115  | 112  | 87   | 590   | 440   | 294   | 91   | 101  | 94   | 110  | 108  |
| 9     | 101  | 115  | 112  | 87   | 632   | 279   | 294   | 92   | 92   | 94   | 110  | 108  |
| 10    | 101  | 114  | 111  | 87   | 1500  | 277   | 294   | 92   | 92   | 94   | 110  | 108  |
| 11    | 101  | 114  | 112  | 87   | 2350  | 277   | 299   | 93   | 92   | 94   | 110  | 108  |
| 12    | 101  | 114  | 112  | 87   | 2280  | 278   | 663   | 93   | 92   | 94   | 109  | 108  |
| 13    | 101  | 116  | 112  | 87   | 2160  | 277   | 1020  | 93   | 92   | 94   | 103  | 107  |
| 14    | 101  | 116  | 111  | 87   | 2150  | 279   | 1020  | 93   | 92   | 102  | 92   | 107  |
| 15    | 101  | 124  | 111  | 87   | 2150  | 657   | 1020  | 93   | 92   | 112  | 92   | 107  |
| 16    | 101  | 117  | 111  | 88   | 977   | 999   | 613   | 93   | 92   | 119  | 92   | 108  |
| 17    | 101  | 112  | 111  | 88   | 363   | 999   | 290   | 93   | 92   | 119  | 92   | 108  |
| 18    | 101  | 112  | 110  | 88   | 581   | 998   | 290   | 93   | 92   | 119  | 92   | 111  |
| 19    | 100  | 113  | 110  | 89   | 1620  | 758   | 286   | 93   | 92   | 119  | 92   | 110  |
| 20    | 100  | 112  | 110  | 90   | 2160  | 619   | 284   | 92   | 92   | 119  | 92   | 116  |
| 21    | 100  | 112  | 110  | 89   | 2150  | 618   | 285   | 92   | 91   | 67   | 92   | 120  |
| 22    | 99   | 111  | 110  | 90   | 1410  | 618   | 230   | 92   | 91   | 31   | 92   | 125  |
| 23    | 99   | 114  | 110  | 90   | 1000  | 618   | 139   | 92   | 92   | 32   | 92   | 116  |
| 24    | 99   | 112  | 110  | 90   | 900   | 624   | 138   | 91   | 91   | 30   | 97   | 106  |
| 25    | 99   | 111  | 110  | 90   | 778   | 1420  | 138   | 91   | 91   | 29   | 102  | 106  |
| 26    | 98   | 112  | 110  | 90   | 1240  | 1770  | 138   | 91   | 92   | 28   | 102  | 112  |
| 27    | 98   | 110  | 110  | 91   | 1590  | 1480  | 138   | 92   | 92   | 28   | 102  | 105  |
| 28    | 98   | 110  | 110  | 91   | 1590  | 1490  | 139   | 94   | 92   | 50   | 102  | 105  |
| 29    | 98   | 112  | 110  | 91   | ---   | 1220  | 154   | 94   | 92   | 111  | 102  | 105  |
| 30    | 105  | 116  | 109  | 91   | ---   | 855   | 142   | 94   | 92   | 111  | 102  | 105  |
| 31    | 111  | ---  | 109  | 92   | ---   | 620   | ---   | 104  | ---  | 111  | 102  | ---  |
| TOTAL | 3119 | 3443 | 3437 | 2839 | 30874 | 23626 | 10481 | 3125 | 2842 | 2663 | 3157 | 3271 |
| MEAN  | 101  | 115  | 111  | 91.6 | 1103  | 762   | 349   | 101  | 94.7 | 85.9 | 102  | 109  |
| MAX   | 111  | 126  | 112  | 109  | 2350  | 1770  | 1020  | 149  | 106  | 119  | 111  | 125  |
| MIN   | 98   | 110  | 109  | 87   | 92    | 277   | 138   | 91   | 91   | 28   | 92   | 103  |
| AC-FT | 6190 | 6830 | 6820 | 5630 | 61240 | 46860 | 20790 | 6200 | 5640 | 5280 | 6260 | 6490 |



11465000 DRY CREEK BELOW WARM SPRINGS DAM, NEAR GEYSERVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 80.8 | 154  | 193  | 438  | 569  | 428  | 185  | 95.1 | 114  | 116  | 110  | 90.8 |
| MAX  | 120  | 524  | 1501 | 1986 | 2583 | 1494 | 948  | 265  | 276  | 274  | 169  | 122  |
| (WY) | 1997 | 1984 | 1984 | 1997 | 1998 | 1995 | 1995 | 1995 | 1998 | 1987 | 1987 | 1996 |
| MIN  | 7.70 | 50.8 | 49.8 | 49.3 | 73.3 | 25.0 | 23.0 | 26.1 | 25.1 | 27.0 | 42.0 | 39.0 |
| (WY) | 1984 | 1986 | 1986 | 1986 | 1988 | 1985 | 1985 | 1985 | 1985 | 1985 | 1985 | 1985 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |  | FOR 1999 WATER YEAR |  | WATER YEARS 1984 - 1999 |  |
|--------------------------|------------------------|--|---------------------|--|-------------------------|--|
| ANNUAL TOTAL             | 162189                 |  | 92877               |  |                         |  |
| ANNUAL MEAN              | 444                    |  | 254                 |  | 213                     |  |
| HIGHEST ANNUAL MEAN      |                        |  |                     |  | 512                     |  |
| LOWEST ANNUAL MEAN       |                        |  |                     |  | 46.0                    |  |
| HIGHEST DAILY MEAN       | 5300                   |  | 2350                |  | 5300                    |  |
| LOWEST DAILY MEAN        | 84                     |  | 28                  |  | 6.1                     |  |
| ANNUAL SEVEN-DAY MINIMUM | 92                     |  | 33                  |  | 6.3                     |  |
| INSTANTANEOUS PEAK FLOW  |                        |  | 2380                |  | 5590                    |  |
| INSTANTANEOUS PEAK STAGE |                        |  | 8.21                |  | 10.38                   |  |
| ANNUAL RUNOFF (AC-FT)    | 321700                 |  | 184200              |  | 154100                  |  |
| 10 PERCENT EXCEEDS       | 947                    |  | 642                 |  | 256                     |  |
| 50 PERCENT EXCEEDS       | 112                    |  | 109                 |  | 100                     |  |
| 90 PERCENT EXCEEDS       | 98                     |  | 91                  |  | 41                      |  |

## 11465200 DRY CREEK NEAR GEYSERVILLE, CA

LOCATION.—Lat 38°41'55", long 122°57'25", in Tzabaco Grant, Sonoma County, Hydrologic Unit 18010110, on left bank pier of bridge, 0.3 mi downstream from Pena Creek, 3.0 mi downstream from Warm Springs Dam, and 3 mi west of Geyserville.

DRAINAGE AREA.—162 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1959 to current year.

CHEMICAL DATA: Water years 1971–81.

WATER TEMPERATURE: Water years 1964–86.

SEDIMENT DATA: Water years 1964–87.

TURBIDITY: Water years 1964–86.

REVISED RECORDS.—WDR CA-65-1: 1962(M), 1963(M).

GAGE.—Water-stage recorder. Datum of gage is 156.40 ft above sea level. Prior to Oct. 1, 1964, at datum 4.00 ft higher. Oct. 1, 1964, to Apr. 8, 1976, at datum 3.00 ft higher; Apr. 9, 1976, to Sept. 30, 1982, at datum 2.00 ft higher.

REMARKS.—Records good except for estimated daily discharges and discharges above 600 ft<sup>3</sup>/s, which are fair. Small diversions upstream from station for irrigation of about 1,200 acres. Flow affected by storage in Lake Sonoma, 3.0 mi upstream, capacity, 380,600 acre-ft, beginning October 1983. See schematic diagram of Russian River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 32,400 ft<sup>3</sup>/s, Jan. 31, 1963, gage height, 20.50 ft, present datum; no flow at times. Maximum discharge since regulation by Lake Sonoma, 7,600 ft<sup>3</sup>/s, Jan. 8, 1995, gage height, 15.48 ft; minimum daily, 19 ft<sup>3</sup>/s, Oct. 18–25, 1984.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV  | DEC   | JAN  | FEB   | MAR   | APR   | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|------|------|-------|------|-------|-------|-------|------|------|------|------|------|
| 1     | 95   | 126  | 299   | 141  | 130   | 1570  | 583   | 178  | 111  | 95   | 108  | 97   |
| 2     | 99   | 142  | 215   | 141  | 126   | 1090  | 429   | 168  | 115  | 92   | 109  | 104  |
| 3     | 100  | 139  | 260   | 140  | 124   | 1080  | 408   | 166  | 109  | 91   | 110  | 104  |
| 4     | 100  | 132  | 210   | 128  | 130   | 895   | 410   | 162  | 109  | 92   | 111  | 105  |
| 5     | 100  | 132  | 194   | 116  | 143   | 772   | 424   | 161  | 108  | 92   | 111  | 105  |
| 6     | 100  | 136  | 194   | 116  | 507   | 759   | 414   | 136  | 108  | 92   | 113  | 105  |
| 7     | 101  | 147  | 177   | 102  | 971   | 740   | 406   | 104  | 108  | 91   | 112  | 105  |
| 8     | 101  | 138  | 176   | 102  | 1040  | 708   | 436   | 102  | 108  | 91   | 112  | 105  |
| 9     | 102  | 137  | 170   | 102  | 2070  | 620   | 416   | 101  | 96   | 91   | 110  | 106  |
| 10    | 103  | 140  | 164   | 101  | 1930  | 540   | 433   | 100  | 95   | 91   | 111  | 105  |
| 11    | 103  | 139  | 160   | 101  | 2830  | 486   | 782   | 99   | 95   | 91   | 111  | 105  |
| 12    | 103  | 137  | 158   | 101  | 2740  | 451   | 966   | 98   | 95   | 90   | 111  | 105  |
| 13    | 102  | 139  | 160   | 101  | 2610  | 434   | 1300  | 98   | 95   | 90   | 102  | 105  |
| 14    | 103  | 138  | 161   | 101  | 2640  | 474   | 1280  | 98   | 94   | 101  | 88   | 105  |
| 15    | 103  | 149  | 157   | 101  | 2670  | 830   | 1270  | 98   | 94   | 115  | 87   | 105  |
| 16    | 102  | 143  | 155   | 102  | 1750  | 1260  | 818   | 97   | 95   | 125  | 87   | 105  |
| 17    | 102  | e142 | 153   | 103  | 921   | 1260  | 426   | 96   | 94   | 126  | 86   | 105  |
| 18    | 102  | 139  | 152   | 131  | 1010  | 1250  | 410   | 96   | 92   | 126  | 86   | 110  |
| 19    | 102  | 139  | 151   | 229  | 2060  | 981   | 396   | 96   | 91   | 125  | 86   | 109  |
| 20    | 102  | 138  | 150   | 281  | 2790  | 762   | 385   | 95   | 93   | 125  | 85   | 117  |
| 21    | 102  | 139  | 148   | 214  | 2850  | 750   | 379   | 95   | 92   | e79  | 84   | 127  |
| 22    | 102  | 139  | 147   | 218  | 2060  | 745   | 311   | 94   | 92   | e36  | 84   | 131  |
| 23    | 102  | 337  | 145   | 316  | 1420  | 774   | 192   | 94   | 92   | e33  | 84   | 121  |
| 24    | 106  | 179  | 144   | 218  | 1320  | 1300  | 185   | 93   | 90   | e30  | 89   | 106  |
| 25    | 104  | 138  | 144   | 182  | 1290  | 2170  | 182   | 93   | 90   | e30  | 94   | 105  |
| 26    | 103  | 135  | 143   | 164  | 1710  | 2450  | 180   | 92   | 90   | e30  | 95   | 115  |
| 27    | 103  | 133  | 143   | 149  | 2160  | 1960  | 176   | 94   | 90   | 30   | 95   | 104  |
| 28    | 103  | 128  | 143   | 141  | 2180  | 1880  | 178   | 96   | 89   | 42   | 96   | 104  |
| 29    | 103  | 185  | 142   | 134  | ---   | 1560  | 189   | 96   | 89   | 101  | 96   | 103  |
| 30    | 112  | 545  | 142   | 131  | ---   | 1120  | 174   | 97   | 89   | 104  | 96   | 103  |
| 31    | 124  | ---  | 141   | 139  | ---   | 789   | ---   | 110  | ---  | 106  | 96   | ---  |
| TOTAL | 3189 | 4830 | 5198  | 4546 | 44182 | 32460 | 14538 | 3403 | 2908 | 2653 | 3045 | 3231 |
| MEAN  | 103  | 161  | 168   | 147  | 1578  | 1047  | 485   | 110  | 96.9 | 85.6 | 98.2 | 108  |
| MAX   | 124  | 545  | 299   | 316  | 2850  | 2450  | 1300  | 178  | 115  | 126  | 113  | 131  |
| MIN   | 95   | 126  | 141   | 101  | 124   | 434   | 174   | 92   | 89   | 30   | 84   | 97   |
| AC-FT | 6330 | 9580 | 10310 | 9020 | 87640 | 64380 | 28840 | 6750 | 5770 | 5260 | 6040 | 6410 |

e Estimated.

11465200 DRY CREEK NEAR GEYSERVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1983, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 22.5 | 240  | 610  | 1178 | 959  | 666  | 345  | 80.3 | 23.3 | 6.01 | 1.70 | 1.35 |
| MAX  | 323  | 1619 | 2035 | 3930 | 2038 | 3095 | 1499 | 369  | 76.0 | 20.9 | 8.91 | 8.61 |
| (WY) | 1963 | 1974 | 1965 | 1970 | 1983 | 1983 | 1982 | 1983 | 1983 | 1983 | 1983 | 1983 |
| MIN  | .000 | .54  | 4.31 | 22.7 | 27.1 | 34.1 | 9.58 | 5.64 | .25  | .000 | .000 | .000 |
| (WY) | 1961 | 1981 | 1977 | 1976 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1972 | 1972 |

SUMMARY STATISTICS

WATER YEARS 1960 - 1983

|                          |                   |
|--------------------------|-------------------|
| ANNUAL MEAN              | 342               |
| HIGHEST ANNUAL MEAN      | 790 1983          |
| LOWEST ANNUAL MEAN       | 8.81 1977         |
| HIGHEST DAILY MEAN       | 19400 Jan 16 1974 |
| LOWEST DAILY MEAN        | .00 Sep 17 1960   |
| ANNUAL SEVEN-DAY MINIMUM | .00 Sep 17 1960   |
| INSTANTANEOUS PEAK FLOW  | 32400 Jan 31 1963 |
| INSTANTANEOUS PEAK STAGE | 20.50 Jan 31 1963 |
| ANNUAL RUNOFF (AC-FT)    | 247800            |
| 10 PERCENT EXCEEDS       | 868               |
| 50 PERCENT EXCEEDS       | 32                |
| 90 PERCENT EXCEEDS       | .08               |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 89.8 | 143  | 175  | 687  | 940  | 662  | 236  | 115  | 135  | 129  | 119  | 96.9 |
| MAX  | 116  | 459  | 539  | 2634 | 3890 | 2110 | 1115 | 341  | 379  | 296  | 180  | 128  |
| (WY) | 1997 | 1987 | 1997 | 1997 | 1998 | 1995 | 1995 | 1995 | 1998 | 1987 | 1987 | 1988 |
| MIN  | 42.2 | 60.4 | 88.2 | 83.0 | 85.4 | 86.0 | 38.5 | 36.6 | 91.8 | 85.6 | 96.1 | 44.1 |
| (WY) | 1991 | 1986 | 1991 | 1991 | 1991 | 1988 | 1990 | 1991 | 1996 | 1999 | 1990 | 1991 |

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1986 - 1999

|                          |        |        |                              |
|--------------------------|--------|--------|------------------------------|
| ANNUAL TOTAL             | 230860 | 124183 |                              |
| ANNUAL MEAN              | 632    | 340    | 282                          |
| HIGHEST ANNUAL MEAN      |        |        | 676 1995                     |
| LOWEST ANNUAL MEAN       |        |        | 90.5 1990                    |
| HIGHEST DAILY MEAN       | 6260   | Feb 16 | 2850 Feb 21 6260 Feb 16 1998 |
| LOWEST DAILY MEAN        | 91     | Sep 10 | 30 Jul 24 27 May 20 1992     |
| ANNUAL SEVEN-DAY MINIMUM | 97     | Sep 25 | 33 Jul 22 29 Oct 7 1997      |
| INSTANTANEOUS PEAK FLOW  |        |        | 3960 Feb 9 7600 Jan 8 1995   |
| INSTANTANEOUS PEAK STAGE |        |        | 11.66 Feb 9 15.48 Jan 8 1995 |
| ANNUAL RUNOFF (AC-FT)    | 457900 | 246300 | 203900                       |
| 10 PERCENT EXCEEDS       | 1710   | 993    | 468                          |
| 50 PERCENT EXCEEDS       | 153    | 121    | 109                          |
| 90 PERCENT EXCEEDS       | 99     | 92     | 78                           |

## 11465350 DRY CREEK NEAR MOUTH, NEAR HEALDSBURG, CA

LOCATION.—Lat 38°35'15", long 122°51'40", in Sotoyome Grant, Sonoma County, Hydrologic Unit 18010110, on right bank, 0.25 mi upstream from mouth, 0.4 mi downstream from Mill Creek, 1.7 mi south of Healdsburg, and 13.5 mi downstream from Warm Springs Dam.

DRAINAGE AREA.—217 mi<sup>2</sup>.

PERIOD OF RECORD.—November 1980 to current year (low-flow records only).

GAGE.—Water-stage recorder. Elevation of gage is 50 ft above sea level, from topographic map.

REMARKS.—Records good except for estimated daily discharges, which are fair. No records computed above 200 ft<sup>3</sup>/s. Some diversions for irrigation upstream from station. Flow regulated by Lake Sonoma 13.5 mi upstream beginning October 1983. See schematic diagram of Russian River Basin.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN  | JUL  | AUG  | SEP  |
|-------|------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| 1     | 94   | 118 | --- | 147 | 200 | --- | --- | --- | 120  | 77   | 96   | 88   |
| 2     | 94   | 125 | --- | 145 | 184 | --- | --- | --- | 125  | 77   | 96   | 93   |
| 3     | 95   | 127 | --- | 144 | 181 | --- | --- | --- | 118  | 79   | 96   | 96   |
| 4     | 96   | 125 | --- | 142 | 172 | --- | --- | --- | 118  | 80   | 97   | 97   |
| 5     | 99   | 125 | --- | 127 | 174 | --- | --- | --- | 115  | 80   | 98   | 97   |
| 6     | 100  | 125 | --- | 127 | --- | --- | --- | 191 | 114  | 79   | 98   | 98   |
| 7     | 100  | 170 | --- | 116 | --- | --- | --- | 149 | 113  | 76   | 100  | 97   |
| 8     | 100  | 138 | --- | 113 | --- | --- | --- | 139 | 113  | 76   | 100  | 96   |
| 9     | 100  | 134 | --- | 112 | --- | --- | --- | 133 | 105  | 76   | 100  | 97   |
| 10    | 102  | 133 | --- | 109 | --- | --- | --- | 130 | 99   | 77   | 100  | 97   |
| 11    | 102  | 133 | --- | 109 | --- | --- | --- | 127 | 97   | 77   | 100  | 98   |
| 12    | 102  | 133 | 195 | 108 | --- | --- | --- | 124 | 96   | 74   | 100  | 98   |
| 13    | 102  | 133 | 197 | 107 | --- | --- | --- | 122 | 96   | 74   | 94   | 98   |
| 14    | 102  | 131 | 199 | 108 | --- | --- | --- | 121 | 94   | 77   | 84   | 98   |
| 15    | 102  | 131 | 186 | 110 | --- | --- | --- | 120 | 93   | 91   | 80   | 98   |
| 16    | 103  | 131 | 178 | 117 | --- | --- | --- | 119 | 93   | 105  | 79   | 99   |
| 17    | 104  | 131 | 176 | 121 | --- | --- | --- | 117 | 91   | 110  | 78   | 98   |
| 18    | 104  | 129 | 173 | --- | --- | --- | --- | 115 | 90   | 112  | 78   | 100  |
| 19    | 104  | 129 | 166 | --- | --- | --- | --- | 115 | 86   | 112  | 78   | 101  |
| 20    | 104  | 129 | 164 | --- | --- | --- | --- | 113 | 90   | 111  | 76   | 102  |
| 21    | 102  | 128 | 159 | --- | --- | --- | --- | 113 | 87   | 99   | 75   | 113  |
| 22    | 102  | 127 | 161 | --- | --- | --- | --- | 111 | 85   | 48   | 75   | 117  |
| 23    | 103  | --- | 161 | --- | --- | --- | --- | 110 | 85   | 33   | 76   | 116  |
| 24    | 121  | --- | 159 | --- | --- | --- | --- | 110 | e88  | 26   | 77   | 102  |
| 25    | 111  | --- | 160 | --- | --- | --- | --- | 108 | e83  | 23   | 83   | 98   |
| 26    | 109  | --- | 162 | --- | --- | --- | --- | 108 | 82   | 21   | 85   | 102  |
| 27    | 108  | --- | 171 | --- | --- | --- | --- | 107 | 83   | 19   | 86   | 96   |
| 28    | 108  | --- | 180 | --- | --- | --- | --- | 110 | 80   | 18   | 87   | 94   |
| 29    | 107  | --- | 179 | 197 | --- | --- | --- | 109 | 78   | 57   | 89   | 94   |
| 30    | 108  | --- | 162 | 185 | --- | --- | --- | 109 | 75   | 86   | 88   | 93   |
| 31    | 115  | --- | 149 | --- | --- | --- | --- | 117 | ---  | 93   | 88   | ---  |
| TOTAL | 3203 | --- | --- | --- | --- | --- | --- | --- | 2892 | 2243 | 2737 | 2971 |
| MEAN  | 103  | --- | --- | --- | --- | --- | --- | --- | 96.4 | 72.4 | 88.3 | 99.0 |
| MAX   | 121  | --- | --- | --- | --- | --- | --- | --- | 125  | 112  | 100  | 117  |
| MIN   | 94   | --- | --- | --- | --- | --- | --- | --- | 75   | 18   | 75   | 88   |
| AC-FT | 6350 | --- | --- | --- | --- | --- | --- | --- | 5740 | 4450 | 5430 | 5890 |

e Estimated.

## 11465680 LAGUNA DE SANTA ROSA AT STONY POINT ROAD, NEAR COTATI, CA

LOCATION.—Lat 38°21'08", long 122°44'35", in Llano de Santa Rosa Grant, Sonoma County, Hydrologic Unit 180101110, on right bank, upstream side of Stony Point Road bridge, 300 ft downstream of unnamed tributary, and 1.5 mi west of Rohnert Park.

DRAINAGE AREA.—40.75 mi<sup>2</sup>.

PERIOD OF RECORD.—November 1998 to September 1999.

GAGE.—Water-stage recorder. Datum of gage is sea level.

REMARKS.—Records fair, including estimated daily discharges. No regulation or diversion upstream from station. See schematic diagram of Russian River Basin.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,200 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Feb. 7  | 1230 | 2,040                             | 86.20               | Mar. 24 | 2300 | 1,450                             | 85.15               |
| Feb. 16 | 2030 | 1,390                             | 85.02               |         |      |                                   |                     |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT | NOV  | DEC   | JAN     | FEB    | MAR  | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-----|------|-------|---------|--------|------|-------|-------|-------|-------|-------|-------|
| 1     | --- | ---  | 99    | 1.1     | 78     | 121  | 34    | 6.1   | 1.4   | .79   | .82   | .76   |
| 2     | --- | ---  | 52    | 1.0     | 43     | 69   | 28    | 6.8   | 1.5   | .79   | .81   | .77   |
| 3     | --- | ---  | 108   | .97     | 18     | 82   | 23    | 6.7   | 2.0   | .73   | .83   | .75   |
| 4     | --- | ---  | 58    | .95     | 12     | 58   | 21    | 6.0   | 2.5   | .71   | .94   | .81   |
| 5     | --- | ---  | 24    | 1.1     | 7.7    | 46   | 43    | 5.2   | 1.7   | .69   | 1.1   | .80   |
| 6     | --- | e.52 | 72    | 2.2     | 401    | 35   | 36    | 4.9   | 1.5   | .66   | 1.3   | .80   |
| 7     | --- | 40   | 24    | 1.5     | 1030   | 26   | 16    | 4.6   | 1.3   | .64   | 1.3   | .83   |
| 8     | --- | 24   | 14    | 1.1     | 370    | 81   | 62    | 4.2   | 1.3   | .62   | 1.2   | .76   |
| 9     | --- | 7.7  | 9.7   | 1.0     | 727    | 133  | 39    | 4.2   | 1.2   | .62   | 1.1   | .74   |
| 10    | --- | 2.5  | 5.2   | .98     | 169    | 66   | 28    | 4.3   | 1.2   | .63   | 1.1   | .82   |
| 11    | --- | 2.1  | 3.4   | .96     | 87     | 49   | 298   | 4.2   | 1.2   | .65   | 1.1   | .85   |
| 12    | --- | 1.9  | 2.6   | .90     | 64     | 32   | 96    | 4.1   | 1.2   | .67   | 1.1   | .89   |
| 13    | --- | 1.2  | 2.7   | .87     | 56     | 24   | 56    | 3.9   | 1.1   | .66   | 1.1   | .89   |
| 14    | --- | .94  | 5.6   | .88     | 60     | 50   | 39    | 3.9   | 1.1   | e.72  | 1.0   | .91   |
| 15    | --- | .94  | 3.9   | 1.1     | 43     | 80   | 29    | 3.8   | 1.0   | e.78  | .92   | .91   |
| 16    | --- | .91  | 2.6   | 6.2     | 554    | 44   | 21    | 3.7   | 1.0   | .81   | .91   | .92   |
| 17    | --- | 3.0  | 2.0   | 5.3     | 565    | 27   | 15    | 3.9   | .96   | .83   | .91   | .93   |
| 18    | --- | 2.6  | 1.7   | 74      | 182    | 20   | 12    | 4.1   | .95   | .86   | .88   | .95   |
| 19    | --- | 1.4  | 1.6   | 57      | 118    | 25   | 11    | 4.2   | .93   | .90   | .84   | .96   |
| 20    | --- | .97  | 1.5   | 217     | 175    | 29   | 11    | 4.1   | .89   | .90   | .81   | .98   |
| 21    | --- | .78  | 1.4   | 137     | 261    | 16   | e10   | 3.9   | .87   | .91   | .79   | 1.1   |
| 22    | --- | 1.0  | 1.2   | 64      | 107    | 13   | e9.6  | 3.7   | .86   | .93   | .77   | 1.1   |
| 23    | --- | 61   | 1.2   | 171     | 76     | 50   | 8.9   | 3.3   | .83   | .91   | .74   | 1.2   |
| 24    | --- | 79   | 1.3   | 67      | 74     | 247  | 8.2   | 3.1   | .90   | .84   | .69   | 1.1   |
| 25    | --- | 12   | 1.2   | 34      | 317    | 535  | 7.3   | 2.6   | .92   | .81   | .72   | .99   |
| 26    | --- | 3.5  | 1.1   | 36      | 91     | 99   | 7.5   | 2.2   | .92   | .80   | .70   | .91   |
| 27    | --- | 5.4  | 1.1   | 31      | 67     | 64   | 7.4   | 1.9   | .85   | .80   | .75   | .94   |
| 28    | --- | 3.3  | 1.1   | 10      | 118    | 51   | 7.0   | 1.9   | .79   | .82   | .77   | 1.1   |
| 29    | --- | 84   | 1.1   | 6.3     | ---    | 44   | 6.7   | 1.7   | .74   | .85   | .75   | 1.0   |
| 30    | --- | 242  | 1.1   | 5.4     | ---    | 42   | 6.1   | 1.6   | .71   | .84   | .71   | 1.0   |
| 31    | --- | ---  | 1.1   | 302     | ---    | 49   | ---   | 1.5   | ---   | .83   | .74   | ---   |
| TOTAL | --- | ---  | 506.4 | 1239.81 | 5870.7 | 2307 | 996.7 | 120.3 | 34.32 | 24.00 | 28.20 | 27.47 |
| MEAN  | --- | ---  | 16.3  | 40.0    | 210    | 74.4 | 33.2  | 3.88  | 1.14  | .77   | .91   | .92   |
| MAX   | --- | ---  | 108   | 302     | 1030   | 535  | 298   | 6.8   | 2.5   | .93   | 1.3   | 1.2   |
| MIN   | --- | ---  | 1.1   | .87     | 7.7    | 13   | 6.1   | 1.5   | .71   | .62   | .69   | .74   |
| AC-FT | --- | ---  | 1000  | 2460    | 11640  | 4580 | 1980  | 239   | 68    | 48    | 56    | 54    |

e Estimated.

## 11465700 COLGAN CREEK NEAR SEBASTOPOL, CA

LOCATION.—Lat 38°22'25", long 122°46'02", in Llano de Santa Rosa Grant, Sonoma County, Hydrologic Unit 180101110, on left bank, downstream side of Llano Road bridge, 0.5 mile upstream of Laguna de Santa Rosa, and 3.5 mi southeast of Sebastopol.

DRAINAGE AREA.—6.78 mi<sup>2</sup>.

PERIOD OF RECORD.—Nov. 7, 1998, to September 1999.

GAGE.—Water-stage recorder. Datum of gage is sea level.

REMARKS.—Records poor. No regulation or diversion upstream of station. See schematic diagram of Russian River Basin.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 290 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Feb. 7  | 0745 | a                                 | 77.21               | Mar. 24 | 2245 | a                                 | 75.87               |
| Feb. 16 | 2400 | a                                 | 76.26               |         |      |                                   |                     |

(a) Backwater from Laguna de Santa Rosa.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT | NOV  | DEC    | JAN    | FEB    | MAR   | APR   | MAY   | JUN  | JUL  | AUG  | SEP  |
|-------|-----|------|--------|--------|--------|-------|-------|-------|------|------|------|------|
| 1     | --- | ---  | e18    | .57    | e17    | e41   | 3.0   | 1.1   | .37  | .09  | .01  | .02  |
| 2     | --- | ---  | e7.1   | .56    | 5.5    | e9.4  | 2.6   | 1.4   | .41  | .09  | .00  | .01  |
| 3     | --- | ---  | e26    | .54    | 4.4    | e12   | 2.3   | 1.2   | 1.3  | .07  | .00  | .00  |
| 4     | --- | ---  | e10    | .52    | 3.4    | 6.7   | 2.2   | 1.0   | .69  | .08  | .01  | .00  |
| 5     | --- | ---  | e4.1   | .49    | 2.5    | 5.0   | 5.8   | .96   | .41  | .04  | .04  | .00  |
| 6     | --- | ---  | e18    | .53    | e124   | 4.4   | 3.4   | 1.0   | .38  | .03  | .01  | .00  |
| 7     | --- | e21  | 4.2    | .48    | e268   | 4.0   | 2.3   | .92   | .32  | .02  | .00  | .00  |
| 8     | --- | 3.0  | 4.9    | .46    | e87    | e24   | 6.6   | .81   | .29  | .02  | .00  | .00  |
| 9     | --- | 3.1  | 2.2    | .45    | e152   | e42   | 3.9   | .81   | .26  | .08  | .03  | .00  |
| 10    | --- | .66  | 1.4    | .43    | e25    | 9.0   | 3.3   | .76   | .25  | .11  | .02  | .00  |
| 11    | --- | 1.5  | 1.1    | .44    | e11    | 5.5   | e108  | .72   | .21  | .12  | .01  | .01  |
| 12    | --- | .81  | 1.0    | .46    | 7.6    | 4.2   | e19   | .71   | .32  | .09  | .00  | .00  |
| 13    | --- | .43  | 1.8    | .46    | 6.1    | 3.8   | 6.6   | .70   | .21  | .02  | .00  | .00  |
| 14    | --- | .27  | 3.1    | .43    | 6.7    | 6.5   | 5.6   | .64   | .16  | .01  | .00  | .00  |
| 15    | --- | .27  | 1.2    | .49    | 4.8    | 10    | 4.5   | .63   | .15  | .02  | .00  | .00  |
| 16    | --- | .24  | .97    | 7.5    | e96    | 4.5   | 3.2   | .63   | .16  | .00  | .00  | .00  |
| 17    | --- | 2.2  | .91    | 3.8    | e125   | 3.6   | 2.5   | .59   | .15  | .00  | .00  | .00  |
| 18    | --- | 1.1  | 1.1    | e27    | e49    | 3.4   | 1.9   | .60   | .15  | .00  | .00  | .00  |
| 19    | --- | .45  | .99    | e13    | e30    | 3.7   | 1.8   | .63   | .14  | .00  | .00  | .00  |
| 20    | --- | .29  | .85    | e42    | e64    | 3.4   | 1.7   | .61   | .11  | .02  | .00  | .00  |
| 21    | --- | .23  | .77    | e24    | e132   | 3.0   | 1.6   | .58   | .09  | .00  | .03  | .00  |
| 22    | --- | 1.1  | .72    | e8.6   | e27    | 2.8   | 1.5   | .50   | .10  | .00  | .01  | .02  |
| 23    | --- | e12  | .72    | e37    | e11    | 5.0   | 1.4   | .47   | .08  | .00  | .00  | .01  |
| 24    | --- | e11  | .71    | e16    | e12    | e52   | 1.4   | .46   | .09  | .02  | .00  | .01  |
| 25    | --- | e6.9 | .66    | e9.6   | e139   | e185  | 1.3   | .50   | .08  | .01  | .00  | .02  |
| 26    | --- | e13  | .65    | e15    | e17    | e18   | 1.2   | .46   | .08  | .00  | .00  | .01  |
| 27    | --- | 7.0  | .70    | e9.8   | e8.9   | 8.9   | 1.2   | .45   | .08  | .00  | .00  | .00  |
| 28    | --- | 1.1  | .68    | 3.2    | e33    | 5.7   | 1.1   | .42   | .06  | .00  | .01  | .01  |
| 29    | --- | e53  | .70    | 2.2    | ---    | 3.4   | 1.2   | .42   | .06  | .03  | .00  | .02  |
| 30    | --- | e51  | .68    | 2.1    | ---    | 3.7   | 1.1   | .39   | .08  | .01  | .00  | .02  |
| 31    | --- | ---  | .66    | e92    | ---    | 4.1   | ---   | .36   | ---  | .05  | .00  | ---  |
| TOTAL | --- | ---  | 116.57 | 320.11 | 1468.9 | 497.7 | 203.2 | 21.43 | 7.24 | 1.03 | 0.18 | 0.16 |
| MEAN  | --- | ---  | 3.76   | 10.3   | 52.5   | 16.1  | 6.77  | .69   | .24  | .033 | .006 | .005 |
| MAX   | --- | ---  | .26    | .92    | 268    | 185   | 108   | 1.4   | 1.3  | .12  | .04  | .02  |
| MIN   | --- | ---  | .65    | .43    | 2.5    | 2.8   | 1.1   | .36   | .06  | .00  | .00  | .00  |
| AC-FT | --- | ---  | 231    | 635    | 2910   | 987   | 403   | 43    | 14   | 2.0  | .4   | .3   |

e Estimated.

## 11465750 LAGUNA DE SANTA ROSA NEAR SEBASTOPOL, CA

LOCATION.—Lat 38°25'32", long 122°49'41", in SE 1/4 NW 1/4 sec.26, T.7 N., R.9 W., Sonoma County, Hydrologic Unit 180101110, on right bank, upstream side of Occidental Road bridge, 1.6 mi north of Sebastopol.

DRAINAGE AREA.—79.6 mi<sup>2</sup>.

PERIOD OF RECORD.—Nov. 18, 1998, to September 1999.

GAGE.—Water-stage recorder. Datum of gage is sea level.

REMARKS.—Records poor. No regulation or diversion upstream of station. See schematic diagram of Russian River Basin.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 2000 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Feb. 7 | 1800 | 3,270                             | 66.81               | Feb. 17 | 1015 | 2,230                             | 63.39               |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT | NOV | DEC    | JAN    | FEB   | MAR  | APR  | MAY   | JUN   | JUL  | AUG   | SEP   |
|-------|-----|-----|--------|--------|-------|------|------|-------|-------|------|-------|-------|
| 1     | --- | --- | e835   | 9.5    | 389   | 320  | 71   | 20    | 6.8   | 3.2  | 1.7   | .78   |
| 2     | --- | --- | e475   | 9.3    | 111   | 229  | 61   | 18    | 6.8   | 3.0  | 1.6   | .75   |
| 3     | --- | --- | e520   | 9.1    | 68    | 183  | 57   | 18    | 7.2   | 2.8  | 1.6   | .72   |
| 4     | --- | --- | e446   | 9.0    | 54    | 154  | 51   | 18    | 7.4   | 2.7  | 1.5   | .76   |
| 5     | --- | --- | e230   | 8.9    | 46    | 118  | 54   | 18    | 7.6   | 2.6  | 1.4   | .82   |
| 6     | --- | --- | e150   | 9.0    | 120   | 100  | 72   | 17    | 7.5   | 2.5  | 1.4   | .86   |
| 7     | --- | --- | e220   | 9.9    | 2230  | 87   | 64   | 16    | 7.0   | 2.5  | 1.4   | .85   |
| 8     | --- | --- | e150   | 9.7    | 1620  | 97   | 79   | 15    | 6.6   | 2.4  | 1.4   | .82   |
| 9     | --- | --- | e127   | 9.7    | 1700  | 243  | 98   | 14    | 6.2   | 2.4  | 1.4   | .79   |
| 10    | --- | --- | e80    | 11     | 1050  | 209  | 84   | 14    | 5.9   | 2.3  | 1.4   | .80   |
| 11    | --- | --- | e44    | 12     | 418   | 141  | 239  | 13    | 5.6   | 2.3  | 1.4   | .85   |
| 12    | --- | --- | e35    | 13     | 229   | 107  | 369  | 13    | 5.4   | 2.3  | 1.5   | .90   |
| 13    | --- | --- | e26    | 13     | 168   | 90   | 193  | 12    | 5.3   | 2.3  | 1.5   | .93   |
| 14    | --- | --- | e23    | 13     | 142   | 83   | 123  | 11    | 5.2   | 2.2  | 1.5   | .95   |
| 15    | --- | --- | e30    | 13     | 126   | 111  | 96   | 10    | 5.2   | 2.2  | e1.5  | .98   |
| 16    | --- | --- | e27    | 16     | 264   | 106  | 80   | 9.5   | 5.2   | 2.2  | e1.5  | 1.0   |
| 17    | --- | --- | e23    | 23     | 1860  | 84   | 68   | 9.1   | 5.2   | 2.2  | e1.5  | 1.0   |
| 18    | --- | e18 | e21    | 95     | 1040  | 69   | 60   | 8.7   | 5.2   | 2.2  | e1.4  | 1.0   |
| 19    | --- | 21  | e19    | 162    | 622   | 61   | 53   | 8.5   | 5.0   | 2.2  | e1.4  | 1.0   |
| 20    | --- | 19  | e17    | 660    | 360   | 61   | 46   | 8.3   | 4.9   | 2.2  | e1.3  | 1.1   |
| 21    | --- | 15  | e15    | 740    | 803   | 59   | 43   | 8.6   | 4.8   | 2.2  | e1.3  | 1.1   |
| 22    | --- | 16  | e12    | 502    | 559   | 55   | 40   | 8.6   | 4.6   | 2.2  | e1.3  | 1.1   |
| 23    | --- | 68  | e12    | 577    | 315   | 61   | 36   | 8.0   | 4.4   | 2.2  | e1.2  | 1.2   |
| 24    | --- | 191 | e13    | 515    | 198   | 89   | 32   | 8.1   | 4.2   | 2.2  | e1.1  | 1.2   |
| 25    | --- | 195 | e12    | 331    | 508   | 841  | 30   | 7.7   | 4.1   | 2.1  | 1.1   | 1.3   |
| 26    | --- | 164 | e11    | 238    | 427   | 571  | 30   | 7.6   | 4.0   | 2.1  | .99   | 1.3   |
| 27    | --- | 164 | e11    | 206    | 234   | 246  | 27   | 7.7   | 3.8   | 2.0  | .97   | 1.3   |
| 28    | --- | 131 | e11    | 162    | 184   | 140  | 25   | 7.4   | 3.6   | 1.9  | .94   | 1.2   |
| 29    | --- | 170 | e10    | 124    | ---   | 103  | 23   | 7.1   | 3.5   | 1.9  | .97   | 1.1   |
| 30    | --- | 532 | e10    | 89     | ---   | 81   | 22   | 7.0   | 3.3   | 1.9  | .91   | 1.0   |
| 31    | --- | --- | e9.8   | 398    | ---   | 81   | ---  | 6.9   | ---   | 1.8  | .86   | ---   |
| TOTAL | --- | --- | 3624.8 | 4997.1 | 15845 | 4980 | 2326 | 355.8 | 161.5 | 71.2 | 40.94 | 29.46 |
| MEAN  | --- | --- | 117    | 161    | 566   | 161  | 77.5 | 11.5  | 5.38  | 2.30 | 1.32  | .98   |
| MAX   | --- | --- | 835    | 740    | 2230  | 841  | 369  | 20    | 7.6   | 3.2  | 1.7   | 1.3   |
| MIN   | --- | --- | 9.8    | 8.9    | 46    | 55   | 22   | 6.9   | 3.3   | 1.8  | .86   | .72   |
| AC-FT | --- | --- | 7190   | 9910   | 31430 | 9880 | 4610 | 706   | 320   | 141  | 81    | 58    |

e Estimated.

## 11465850 SPRING LAKE AT SANTA ROSA, CA

LOCATION.—Lat 38°27'26", long 122°38'59", Sonoma County, Hydrologic Unit 18010110, 100 ft northwest of spillway, in Santa Rosa.

PERIOD OF RECORD.—October 1997 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level.

REMARKS.—Reservoir is formed by earth-fill dam, capacity, 3,500 acre-ft. Spring Lake is a flood-control reservoir. Water is diverted from Santa Rosa Creek into Spring Lake during flood events. Gage is for local flood warning and is operated seasonally from Oct. 1 to Apr. 30. Spillway elevation is 307.07 ft. See schematic diagram of Russian River Basin.

NOTE: Figures are published for only those days when the elevation was above 291.50 ft. There were no days during the 1999 water year when the elevation was above 291.50 ft.







11466320 SANTA ROSA CREEK AT WILLOWSIDE ROAD, NEAR SANTA ROSA, CA

LOCATION.—Lat 38°26'43", long 122°48'22", in NW 1/4 sec. 13, T.7 N., R.9 W., Sonoma County, Hydrologic Unit 18010110, on right bank, upstream side of Willowside Road bridge, 1.6 mi upstream of the confluence of Laguna de Santa Rosa, and 5.4 mi west of Santa Rosa.

DRAINAGE AREA.—77.6 mi<sup>2</sup>.

PERIOD OF RECORD.—December 1998 to September 1999.

GAGE.—Water-stage and dopler velocity recorder. Datum of gage is sea level.

REMARKS.—Records fair except for periods of backwater, Feb. 7–19, Feb. 24–27, and March 24–27, which are poor. Backwater conditions from Laguna de Santa Rosa can occur during periods of heavy rainfall. Diversions upstream from station for irrigation of about 5,000 acres. See schematic diagram of Russian River Basin.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 2,500 ft<sup>3</sup>/s, or maximum.

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|---------|------|--------------------------------|------------------|
| Feb. 7  | 0800 | 8,190                          | 68.94            | Mar. 24 | 2315 | 2,600                          | 64.12            |
| Feb. 16 | 2345 | 5,040                          | 66.98            |         |      |                                |                  |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN  | FEB   | MAR   | APR  | MAY  | JUN   | JUL   | AUG   | SEP   |
|-------|-----|-----|-----|------|-------|-------|------|------|-------|-------|-------|-------|
| 1     | --- | --- | --- | 25   | 143   | 316   | 69   | 37   | 18    | 7.8   | 5.1   | 3.8   |
| 2     | --- | --- | --- | 25   | 109   | 222   | 60   | 39   | 18    | 7.7   | 4.7   | 4.5   |
| 3     | --- | --- | --- | 25   | 94    | 245   | 51   | 39   | 25    | 7.5   | 4.6   | 4.9   |
| 4     | --- | --- | --- | 24   | 82    | 165   | 46   | 36   | 18    | 7.4   | 4.4   | 5.0   |
| 5     | --- | --- | --- | 24   | 75    | 140   | 149  | 33   | 18    | 7.3   | 4.5   | 4.7   |
| 6     | --- | --- | --- | 23   | 2570  | 120   | 72   | 32   | 17    | 7.4   | 5.0   | 4.5   |
| 7     | --- | --- | --- | 19   | 4040  | 106   | 54   | 30   | 16    | 7.1   | 5.3   | 4.3   |
| 8     | --- | --- | --- | 19   | 1470  | 318   | 227  | 29   | 16    | 6.9   | 5.4   | 4.3   |
| 9     | --- | --- | 48  | 19   | 2780  | 338   | 100  | 29   | 15    | 7.1   | 5.3   | 4.4   |
| 10    | --- | --- | 42  | 18   | 775   | 173   | 112  | 28   | 15    | 7.4   | 5.3   | 4.6   |
| 11    | --- | --- | 38  | 18   | 336   | 143   | 811  | 28   | 14    | 7.1   | 6.5   | 4.8   |
| 12    | --- | --- | 36  | 18   | 235   | 118   | 241  | 28   | 13    | 6.9   | 6.1   | 4.8   |
| 13    | --- | --- | 56  | 18   | 189   | 103   | 159  | 26   | 13    | 6.6   | 6.2   | 4.9   |
| 14    | --- | --- | 43  | 18   | 169   | 167   | 127  | 25   | 13    | 6.5   | 5.8   | 4.8   |
| 15    | --- | --- | 33  | 35   | 127   | 157   | 107  | 25   | 12    | 6.4   | 5.1   | 6.5   |
| 16    | --- | --- | 31  | 40   | 1260  | 109   | 92   | 25   | 12    | 6.3   | 4.9   | 6.4   |
| 17    | --- | --- | 30  | 48   | 1380  | 97    | 82   | 26   | 11    | 6.7   | 4.7   | 5.6   |
| 18    | --- | --- | 29  | 238  | 609   | 90    | 73   | 24   | 11    | 6.1   | 4.4   | 5.2   |
| 19    | --- | --- | 28  | 435  | 351   | 92    | 68   | 24   | 11    | 5.9   | 4.5   | 5.3   |
| 20    | --- | --- | 27  | 547  | 672   | 85    | 63   | 23   | 10    | 5.6   | 4.2   | 5.2   |
| 21    | --- | --- | 26  | 279  | 786   | 78    | 59   | 23   | 10    | 5.8   | 4.1   | 4.9   |
| 22    | --- | --- | 26  | 197  | 362   | 75    | 56   | 22   | 9.8   | 6.5   | 4.0   | 10    |
| 23    | --- | --- | 26  | 484  | 242   | 107   | 52   | 21   | 9.5   | 6.3   | 4.0   | 4.8   |
| 24    | --- | --- | 26  | 142  | 311   | 522   | 50   | 21   | 9.0   | 6.3   | 4.1   | 4.4   |
| 25    | --- | --- | 26  | 88   | 837   | 871   | 48   | 20   | 9.3   | 5.9   | 3.9   | 4.2   |
| 26    | --- | --- | 25  | 122  | 280   | 207   | 47   | 19   | 9.2   | 5.6   | 3.9   | 4.1   |
| 27    | --- | --- | 26  | 76   | 209   | 131   | 44   | 19   | 8.9   | 5.7   | 3.7   | 4.0   |
| 28    | --- | --- | 26  | 65   | 439   | 95    | 43   | 19   | 8.5   | 6.1   | 3.8   | 3.9   |
| 29    | --- | --- | 25  | 59   | ---   | 78    | 40   | 18   | 8.1   | 5.9   | 3.9   | 3.7   |
| 30    | --- | --- | 25  | 56   | ---   | 117   | 39   | 18   | 8.0   | 5.5   | 3.8   | 3.7   |
| 31    | --- | --- | 25  | 708  | ---   | 98    | ---  | 17   | ---   | 5.2   | 3.4   | ---   |
| TOTAL | --- | --- | --- | 3912 | 20932 | 5683  | 3241 | 803  | 386.3 | 202.5 | 144.6 | 146.2 |
| MEAN  | --- | --- | --- | 126  | 748   | 183   | 108  | 25.9 | 12.9  | 6.53  | 4.66  | 4.87  |
| MAX   | --- | --- | --- | 708  | 4040  | 871   | 811  | 39   | 25    | 7.8   | 6.5   | 10    |
| MIN   | --- | --- | --- | 18   | 75    | 75    | 39   | 17   | 8.0   | 5.2   | 3.4   | 3.7   |
| AC-FT | --- | --- | --- | 7760 | 41520 | 11270 | 6430 | 1590 | 766   | 402   | 287   | 290   |



11467000 RUSSIAN RIVER NEAR GUERNEVILLE, CA  
(National Stream-Quality Accounting Network Station)

LOCATION.—Lat 38°30'31", long 122°55'36", in NE 1/4 SE 1/4 sec.26, T.8 N., R.10 W., Sonoma County, Hydrologic Unit 18010110, on right bank, at downstream side of Hacienda Bridge, 0.1 mi upstream from Hobson Creek, and 3.8 mi east of Guerneville.

DRAINAGE AREA.—1,338 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1939 to current year. Monthly discharge only for some periods, published in WSP 1315-B. Prior to October 1954, published as "at Guerneville."

CHEMICAL DATA: Water years 1951–1995. Published as "at Guerneville" in 1961–65.

BIOLOGICAL DATA: Water years 1975–81.

SPECIFIC CONDUCTANCE: Water years 1973–81.

WATER TEMPERATURE: Water years 1964–81.

SEDIMENT DATA: Water years 1966–95.

REVISED RECORDS.—WSP 1395: Drainage area at former site. WSP 1929: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 20.14 ft above sea level. Prior to Oct. 1, 1954, nonrecording gage at bridge 5.3 mi downstream at datum 8.58 ft lower. Oct. 1, 1954, to Oct. 23, 1974, at site 0.7 mi downstream at datum 2.75 ft lower. Supplementary water-stage recorder 2.1 mi downstream used during periods of low flow, 1948–54.

REMARKS.—Records good except for estimated daily discharges, which are fair. Flow regulated by Lake Mendocino 77 mi upstream, beginning November 1958, and by Lake Sonoma 26 mi upstream, beginning October 1983. Many diversions upstream from station for irrigation of about 29,000 acres. Flow also affected by diversion into basin (see REMARKS for East Fork Russian River stations), and by diversion for municipal use at Wohler Pumping Plant 4.0 mi upstream beginning in May 1959. See schematic diagram of Russian River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 102,000 ft<sup>3</sup>/s, Feb. 18, 1986, gage height, 48.56 ft, from rating curve extended above 57,000 ft<sup>3</sup>/s; maximum gage height, 49.7 ft, Dec. 23, 1955, site and datum then in use, from floodmarks; minimum daily discharge, 0.75 ft<sup>3</sup>/s, May 6, 1977.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC    | JAN    | FEB    | MAR    | APR    | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|
| 1     | 298   | 360   | 9040   | 679    | 2570   | 9930   | 3670   | 994   | 395   | 169   | 226   | 208   |
| 2     | 286   | 387   | 4200   | 670    | 2100   | 7200   | 3080   | 955   | 403   | 162   | 205   | 201   |
| 3     | 290   | 402   | 6290   | 660    | 1870   | 7000   | 2790   | 940   | 405   | 166   | 229   | 206   |
| 4     | 306   | 404   | 5820   | 650    | 1610   | 6000   | 2590   | 930   | 396   | 174   | 220   | 210   |
| 5     | 252   | 501   | 3290   | 630    | 1390   | 4980   | 2580   | 880   | 386   | 186   | 201   | 203   |
| 6     | 226   | 459   | 2970   | 624    | 4660   | 4390   | 2780   | 846   | 372   | 192   | 207   | 199   |
| 7     | 227   | 617   | 2270   | 604    | 25100  | 3940   | 2530   | 785   | 360   | 192   | 219   | 243   |
| 8     | 226   | 627   | 1900   | 557    | 22800  | 4390   | 2860   | 810   | 343   | 185   | 225   | 245   |
| 9     | 251   | 595   | 1780   | 536    | 30800  | 8500   | 3350   | 1030  | 331   | 174   | 224   | 222   |
| 10    | 237   | 564   | 1530   | 528    | 24000  | 6720   | 2900   | 940   | 327   | 164   | 226   | 217   |
| 11    | 249   | 568   | 1360   | 520    | 13600  | 5170   | 7450   | 733   | 316   | 160   | 239   | 232   |
| 12    | 237   | 551   | 1230   | 512    | 10900  | 4260   | 8450   | 676   | 293   | 149   | 254   | 220   |
| 13    | 272   | 535   | 1150   | 504    | 7740   | 3660   | 6350   | 593   | 291   | 142   | 240   | 226   |
| 14    | 275   | 524   | 1230   | 495    | 6810   | 3510   | 5060   | 532   | 285   | 157   | 228   | 237   |
| 15    | 260   | 522   | 1210   | 498    | 6310   | 4800   | 4190   | 528   | 289   | 164   | 217   | 240   |
| 16    | 266   | 521   | 1100   | 557    | 7870   | 4460   | 3540   | 515   | 285   | 184   | 212   | 220   |
| 17    | 265   | e526  | 1060   | 658    | 19900  | 4070   | 2780   | 507   | 271   | 208   | 205   | 211   |
| 18    | 262   | 532   | 1080   | 1960   | 13500  | 3760   | 2490   | 496   | 261   | 218   | 206   | 205   |
| 19    | 253   | 533   | 1030   | 2820   | 11400  | 3480   | 2280   | 498   | 238   | 231   | 206   | 205   |
| 20    | 246   | e519  | 915    | 7720   | 10500  | 3000   | 2060   | 497   | 228   | 237   | 197   | 178   |
| 21    | 235   | 516   | 863    | 5970   | 14800  | 2680   | 1860   | 485   | 228   | 232   | 196   | 190   |
| 22    | 242   | 528   | 827    | 4990   | 13700  | 2510   | 1730   | 452   | 221   | 200   | 207   | 220   |
| 23    | 251   | 1720  | 799    | 8370   | 10200  | 2720   | 1520   | 433   | 215   | 189   | 196   | 210   |
| 24    | 358   | 4040  | 773    | 6250   | 8480   | 4510   | 1400   | 432   | 220   | 158   | 188   | 192   |
| 25    | 358   | 1920  | 753    | 3990   | 12700  | 18000  | 1320   | 433   | 218   | 149   | 208   | 198   |
| 26    | 338   | 1280  | 740    | 3230   | 11500  | 12900  | 1260   | 368   | 214   | 148   | 185   | 234   |
| 27    | 334   | 1310  | 728    | 2850   | 8700   | 8380   | 1190   | 395   | 208   | 162   | 179   | 172   |
| 28    | 337   | 1130  | 717    | 2260   | 7780   | 6260   | 1130   | 401   | 198   | 167   | 178   | 163   |
| 29    | 334   | 1510  | 706    | 1790   | ---    | 5250   | 1090   | 392   | 188   | 179   | 193   | 167   |
| 30    | 331   | 6560  | 700    | 1530   | ---    | 4380   | 1050   | 387   | 176   | 203   | 202   | 172   |
| 31    | 336   | ---   | 691    | 2520   | ---    | 4170   | ---    | 391   | ---   | 204   | 208   | ---   |
| TOTAL | 8638  | 30761 | 58752  | 66132  | 313290 | 174980 | 87330  | 19254 | 8561  | 5605  | 6526  | 6246  |
| MEAN  | 279   | 1025  | 1895   | 2133   | 11190  | 5645   | 2911   | 621   | 285   | 181   | 211   | 208   |
| MAX   | 358   | 6560  | 9040   | 8370   | 30800  | 18000  | 8450   | 1030  | 405   | 237   | 254   | 245   |
| MIN   | 226   | 360   | 691    | 495    | 1390   | 2510   | 1050   | 368   | 176   | 142   | 178   | 163   |
| AC-FT | 17130 | 61010 | 116500 | 131200 | 621400 | 347100 | 173200 | 38190 | 16980 | 11120 | 12940 | 12390 |

e Estimated.

## RUSSIAN RIVER BASIN

11467000 RUSSIAN RIVER NEAR GUERNEVILLE, CA—Continued  
(National Stream-Quality Accounting Network Station)

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|-------|-------|-------|-------|-------|------|------|------|------|------|
| MEAN | 310  | 1186 | 4036  | 7031  | 6973  | 4637  | 2308  | 741  | 313  | 180  | 169  | 184  |
| MAX  | 2515 | 9425 | 17410 | 25220 | 26940 | 23290 | 11700 | 2798 | 1418 | 350  | 308  | 344  |
| (WY) | 1963 | 1974 | 1956  | 1995  | 1998  | 1983  | 1982  | 1983 | 1998 | 1998 | 1961 | 1961 |
| MIN  | 25.3 | 140  | 116   | 127   | 88.2  | 201   | 48.2  | 39.0 | 22.6 | 32.0 | 36.7 | 35.9 |
| (WY) | 1978 | 1940 | 1977  | 1977  | 1977  | 1977  | 1977  | 1977 | 1977 | 1977 | 1977 | 1977 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR | FOR 1999 WATER YEAR | WATER YEARS 1940 - 1999 |
|--------------------------|------------------------|---------------------|-------------------------|
| ANNUAL TOTAL             | 1580488                | 786075              |                         |
| ANNUAL MEAN              | 4330                   | 2154                | 2319                    |
| HIGHEST ANNUAL MEAN      |                        |                     | 5898 1983               |
| LOWEST ANNUAL MEAN       |                        |                     | 88.7 1977               |
| HIGHEST DAILY MEAN       | 51500 Feb 7            | 30800 Feb 9         | 97700 Feb 18 1986       |
| LOWEST DAILY MEAN        | 173 Aug 30             | 142 Jul 13          | .75 May 6 1977          |
| ANNUAL SEVEN-DAY MINIMUM | 187 Aug 24             | 159 Jul 9           | 5.9 Jul 29 1977         |
| INSTANTANEOUS PEAK FLOW  |                        | 37800 Feb 9         | 102000 Feb 18 1986      |
| INSTANTANEOUS PEAK STAGE |                        | 31.86 Feb 9         | 49.70 Dec 23 1955       |
| ANNUAL RUNOFF (AC-FT)    | 3135000                | 1559000             | 1680000                 |
| 10 PERCENT EXCEEDS       | 14500                  | 6330                | 5580                    |
| 50 PERCENT EXCEEDS       | 1080                   | 521                 | 361                     |
| 90 PERCENT EXCEEDS       | 226                    | 193                 | 140                     |



## 11467002 RUSSIAN RIVER AT JOHNSONS BEACH, AT GUERNEVILLE, CA—Continued

## GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY   | MAX   | MIN   | MAX  | MIN  | MAX  | MIN  | MAX  | MIN  | MAX    | MIN  | MAX       | MIN  |
|-------|-------|-------|------|------|------|------|------|------|--------|------|-----------|------|
|       | APRIL |       | MAY  |      | JUNE |      | JULY |      | AUGUST |      | SEPTEMBER |      |
| 1     | 10.05 | 9.33  | 6.29 | 6.20 | 8.35 | 8.32 | ---  | ---  | 8.58   | 8.49 | 8.54      | 8.51 |
| 2     | 9.33  | 8.91  | 6.22 | 6.15 | 8.40 | 8.30 | ---  | ---  | 8.58   | 8.47 | 8.55      | 8.48 |
| 3     | 8.94  | 8.64  | 6.18 | 6.14 | 8.41 | 8.27 | ---  | ---  | 8.59   | 8.55 | 8.54      | 8.50 |
| 4     | 8.67  | 8.44  | 6.17 | 6.11 | 8.37 | 8.31 | ---  | ---  | 8.59   | 8.53 | 8.55      | 8.51 |
| 5     | 8.77  | 8.37  | 6.12 | 6.02 | 8.34 | 8.29 | ---  | ---  | 8.54   | 8.49 | 8.55      | 8.49 |
| 6     | 8.83  | 8.66  | 6.04 | ---  | 8.33 | 8.27 | ---  | ---  | 8.54   | 8.50 | 8.53      | 8.47 |
| 7     | 8.66  | 8.33  | ---  | ---  | 8.29 | 8.24 | ---  | ---  | 8.58   | 8.54 | 8.54      | 8.27 |
| 8     | 9.44  | 8.30  | 6.26 | ---  | 8.28 | 8.20 | 8.45 | ---  | 8.59   | 8.55 | 8.67      | 8.31 |
| 9     | 9.51  | 9.13  | 6.46 | 6.26 | 8.23 | 8.13 | 8.45 | 8.38 | 8.58   | 8.56 | 8.66      | 8.55 |
| 10    | 9.13  | 8.73  | 6.49 | 6.02 | 8.22 | 8.16 | 8.40 | 8.33 | 8.58   | 8.56 | 8.57      | 8.54 |
| 11    | 15.57 | 9.09  | 6.02 | ---  | 8.28 | 8.15 | 8.36 | 8.31 | 8.63   | 8.57 | 8.63      | 8.54 |
| 12    | 15.57 | 12.71 | ---  | ---  | 8.28 | 8.20 | 8.32 | 8.22 | 8.65   | 8.62 | 8.59      | 8.53 |
| 13    | 12.71 | 11.50 | ---  | ---  | 8.25 | 8.21 | 8.24 | 8.18 | 8.65   | 8.58 | 8.61      | 8.56 |
| 14    | 11.50 | 10.43 | ---  | ---  | 8.23 | 8.18 | 8.35 | 8.21 | 8.60   | 8.55 | 8.67      | 8.57 |
| 15    | 10.48 | 9.82  | ---  | ---  | 8.24 | 8.20 | 8.37 | 8.26 | 8.58   | 8.52 | 8.67      | 8.57 |
| 16    | 9.93  | 9.04  | ---  | ---  | 8.24 | 8.20 | 8.49 | 8.34 | 8.56   | 8.51 | 8.60      | 8.54 |
| 17    | 9.09  | 8.55  | ---  | ---  | 8.36 | 8.18 | 8.55 | 8.47 | 8.54   | 8.50 | 8.58      | 8.52 |
| 18    | 8.56  | 8.22  | ---  | ---  | 8.37 | 8.31 | 8.58 | 8.52 | 8.53   | 8.48 | 8.56      | 8.50 |
| 19    | 8.23  | 7.96  | ---  | ---  | 8.33 | 8.24 | 8.60 | 8.56 | 8.53   | 8.51 | 8.55      | 8.50 |
| 20    | 8.00  | 7.66  | 8.37 | ---  | 8.26 | 8.22 | 8.61 | 8.58 | 8.52   | 8.48 | 8.55      | 8.41 |
| 21    | 7.73  | 7.53  | 8.37 | 8.26 | 8.26 | 8.20 | 8.62 | 8.56 | 8.51   | 8.47 | 8.49      | 8.43 |
| 22    | 7.56  | 7.35  | 8.28 | 8.22 | 8.25 | ---  | 8.57 | 8.47 | 8.58   | 8.47 | 8.60      | 8.46 |
| 23    | 7.35  | 7.08  | 8.26 | 8.22 | ---  | ---  | 8.53 | 8.42 | 8.57   | 8.47 | 8.53      | 8.50 |
| 24    | 7.10  | 6.90  | 8.26 | 8.21 | ---  | ---  | 8.42 | 8.31 | 8.48   | 8.44 | 8.53      | 8.43 |
| 25    | 6.92  | 6.74  | 8.26 | 8.24 | ---  | ---  | 8.32 | 8.21 | 8.55   | 8.45 | 8.54      | 8.40 |
| 26    | 6.78  | 6.64  | 8.26 | 7.86 | ---  | ---  | 8.23 | 8.18 | 8.54   | 8.42 | 8.66      | 8.53 |
| 27    | 6.68  | 6.52  | 8.24 | 7.85 | ---  | ---  | 8.32 | 8.21 | 8.44   | 8.40 | 8.57      | 8.33 |
| 28    | 6.55  | 6.41  | 8.34 | 8.18 | ---  | ---  | 8.33 | 8.32 | 8.44   | 8.41 | 8.35      | 8.31 |
| 29    | 6.43  | 6.35  | 8.34 | 8.28 | ---  | ---  | 8.43 | 8.31 | 8.50   | 8.41 | 8.61      | 8.32 |
| 30    | 6.41  | 6.27  | 8.35 | 8.26 | ---  | ---  | 8.49 | 8.42 | 8.53   | 8.48 | 8.65      | 8.58 |
| 31    | ---   | ---   | 8.35 | 8.27 | ---  | ---  | 8.51 | 8.48 | 8.55   | 8.50 | ---       | ---  |
| MONTH | 15.57 | 6.27  | ---  | ---  | ---  | ---  | ---  | ---  | 8.65   | 8.40 | 8.67      | 8.27 |



11468000 NAVARRO RIVER NEAR NAVARRO, CA

LOCATION.—Lat 39°10'14", long 123°40'01", in SE 1/4 sec.7, T.15 N., R.16 W., Mendocino County, Hydrologic Unit 18010108, on left bank, 2.8 mi downstream from North Fork, 5.3 mi upstream from mouth, and 6.7 mi west of Navarro.

DRAINAGE AREA.—303 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1950 to current year.

REVISED RECORDS.—WSP 1445: 1954(M). WSP 1929: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 4.79 ft above sea level. Prior to Oct. 1, 1998, at site 0.1 mi downstream at datum 2.00 ft lower. Prior to Jan. 9, 1995, at current datum. Prior to Oct. 1, 1969, at site 0.1 mi upstream at datum 0.14 ft lower.

REMARKS.—Records good except for estimated daily discharges, which are fair. No regulation. Minor diversion upstream from station at discharges above 200 ft<sup>3</sup>/s for irrigation.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 64,500 ft<sup>3</sup>/s, Dec. 22, 1955, gage height, 40.60 ft, site and datum then in use, from rating curve extended above 19,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily, 0.23 ft<sup>3</sup>/s, July 13, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of December 1937 reached a stage of 38.2 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 7,000 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|---------|------|--------------------------------|------------------|
| Feb. 9  | 1000 | 16,400                         | 25.70            | Mar. 25 | 0030 | 10,600                         | 21.59            |
| Feb. 17 | 0400 | 11,500                         | 22.52            |         |      |                                |                  |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN   | FEB    | MAR   | APR   | MAY  | JUN  | JUL  | AUG  | SEP   |
|-------|------|-------|-------|-------|--------|-------|-------|------|------|------|------|-------|
| 1     | 16   | 20    | 2080  | 112   | 546    | e2630 | 1000  | 218  | 83   | e36  | e17  | 10    |
| 2     | 16   | 22    | 1150  | 106   | 449    | 1870  | 870   | 215  | 86   | e35  | e16  | 10    |
| 3     | 16   | 22    | 2600  | 102   | 406    | 2020  | 762   | 228  | 84   | e34  | e16  | 10    |
| 4     | 16   | 21    | 1400  | 98    | 378    | 1590  | 683   | 220  | 81   | e33  | 17   | 10    |
| 5     | 16   | 21    | 794   | 93    | 337    | 1310  | 683   | 198  | 78   | e33  | 17   | 11    |
| 6     | 16   | 23    | 747   | 90    | 1850   | 1090  | 667   | 186  | 75   | e32  | 18   | 10    |
| 7     | 15   | 50    | 544   | 88    | 7390   | 942   | 580   | 177  | 72   | e31  | 20   | 10    |
| 8     | 15   | 82    | 507   | 86    | 4390   | 1250  | 889   | 169  | 70   | 30   | 22   | 9.4   |
| 9     | 15   | 72    | 442   | 83    | 10200  | 2610  | 1090  | 163  | 69   | 28   | 21   | 10    |
| 10    | 15   | 51    | 369   | 81    | 4680   | 2130  | 952   | 158  | 67   | 27   | 20   | 8.5   |
| 11    | 15   | 44    | 323   | 79    | 2850   | 1650  | 3660  | 153  | 64   | 26   | 18   | 7.7   |
| 12    | 15   | 40    | 281   | 78    | 1990   | 1280  | 2560  | 149  | 62   | 26   | 19   | 7.9   |
| 13    | 15   | 36    | 280   | 76    | 1540   | 1030  | 1720  | 145  | 59   | 24   | 19   | 8.1   |
| 14    | 16   | 33    | 539   | 74    | 1510   | 1290  | 1260  | 139  | 58   | 23   | 18   | 7.9   |
| 15    | 16   | 33    | 413   | 82    | 1210   | 1370  | 985   | 135  | 57   | 22   | 17   | 7.9   |
| 16    | 16   | 32    | 354   | 153   | 3770   | 1090  | 804   | 130  | 56   | 20   | 17   | 8.8   |
| 17    | 15   | 52    | 308   | 193   | 8070   | 942   | 678   | 126  | 54   | 20   | 16   | 8.1   |
| 18    | 15   | 71    | 272   | 768   | 4230   | 842   | 582   | 124  | 51   | 21   | 15   | 8.1   |
| 19    | 15   | 54    | 241   | 653   | 3360   | 744   | 511   | 122  | 49   | 22   | 14   | 8.6   |
| 20    | 15   | 43    | 226   | 1120  | 2580   | 684   | 457   | 116  | 48   | e20  | 14   | 8.6   |
| 21    | 15   | 44    | 203   | 1590  | 3600   | 599   | 420   | 112  | 49   | e19  | 14   | 8.9   |
| 22    | 15   | 76    | 180   | 1240  | 2820   | 566   | 391   | 110  | 48   | e18  | 14   | 9.4   |
| 23    | 15   | 914   | 168   | 3350  | 2220   | 794   | 360   | 105  | e47  | e18  | 12   | 10    |
| 24    | 22   | 1190  | 153   | 2010  | e1940  | 3150  | 332   | 102  | e46  | e18  | 12   | 12    |
| 25    | 38   | 412   | 143   | 1280  | e3920  | 6390  | 308   | 98   | e44  | e20  | 12   | 10    |
| 26    | 30   | 265   | 136   | 934   | e3000  | 3120  | 289   | 95   | e42  | e19  | 12   | 9.8   |
| 27    | 24   | 444   | 132   | 691   | e2150  | 2120  | 271   | 90   | e40  | e18  | 11   | 9.4   |
| 28    | 21   | 265   | 127   | 541   | e2450  | 1540  | 254   | 86   | e40  | e17  | 11   | 9.1   |
| 29    | 20   | 426   | 121   | 454   | ---    | 1190  | 242   | 84   | e38  | e18  | 10   | 8.8   |
| 30    | 19   | 2290  | 116   | 396   | ---    | 1040  | 229   | 90   | e37  | e17  | 11   | 8.5   |
| 31    | 19   | ---   | 117   | 583   | ---    | 1240  | ---   | 87   | ---  | e17  | 10   | ---   |
| TOTAL | 547  | 7148  | 15466 | 17284 | 83836  | 50113 | 24489 | 4330 | 1754 | 742  | 480  | 276.5 |
| MEAN  | 17.6 | 238   | 499   | 558   | 2994   | 1617  | 816   | 140  | 58.5 | 23.9 | 15.5 | 9.22  |
| MAX   | 38   | 2290  | 2600  | 3350  | 10200  | 6390  | 3660  | 228  | 86   | 36   | 22   | 12    |
| MIN   | 15   | 20    | 116   | 74    | 337    | 566   | 229   | 84   | 37   | 17   | 10   | 7.7   |
| AC-FT | 1080 | 14180 | 30680 | 34280 | 166300 | 99400 | 48570 | 8590 | 3480 | 1470 | 952  | 548   |

e Estimated.

## NAVARRO RIVER BASIN

## 11468000 NAVARRO RIVER NEAR NAVARRO, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 39.8 | 271  | 974  | 1729 | 1506 | 1087 | 495  | 141  | 55.1 | 21.5 | 11.6 | 10.4 |
| MAX  | 367  | 2033 | 4396 | 6496 | 5546 | 4280 | 2517 | 499  | 261  | 74.0 | 31.7 | 32.6 |
| (WY) | 1958 | 1974 | 1965 | 1995 | 1998 | 1983 | 1982 | 1983 | 1998 | 1998 | 1998 | 1957 |
| MIN  | 2.95 | 9.06 | 18.5 | 24.0 | 58.6 | 69.8 | 34.2 | 14.1 | 4.23 | .62  | .67  | 1.33 |
| (WY) | 1995 | 1991 | 1977 | 1991 | 1977 | 1988 | 1977 | 1977 | 1977 | 1977 | 1977 | 1991 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |       | FOR 1999 WATER YEAR |        | WATER YEARS 1951 - 1999 |             |
|--------------------------|------------------------|-------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 368510                 |       | 206465.5            |        |                         |             |
| ANNUAL MEAN              | 1010                   |       | 566                 |        | 525                     |             |
| HIGHEST ANNUAL MEAN      |                        |       |                     |        | 1310                    |             |
| LOWEST ANNUAL MEAN       |                        |       |                     |        | 25.0                    |             |
| HIGHEST DAILY MEAN       | 16300                  | Feb 6 | 10200               | Feb 9  | 45100                   | Jan 16 1974 |
| LOWEST DAILY MEAN        | 15                     | Oct 7 | 7.7                 | Sep 11 | .23                     | Jul 13 1977 |
| ANNUAL SEVEN-DAY MINIMUM | 15                     | Oct 7 | 8.1                 | Sep 11 | .28                     | Jul 8 1977  |
| INSTANTANEOUS PEAK FLOW  |                        |       | 16400               | Feb 9  | 64500                   | Dec 22 1955 |
| INSTANTANEOUS PEAK STAGE |                        |       | 25.70               | Feb 9  | 40.60                   | Dec 22 1955 |
| ANNUAL RUNOFF (AC-FT)    | 730900                 |       | 409500              |        | 380100                  |             |
| 10 PERCENT EXCEEDS       | 3310                   |       | 1770                |        | 1250                    |             |
| 50 PERCENT EXCEEDS       | 202                    |       | 86                  |        | 61                      |             |
| 90 PERCENT EXCEEDS       | 19                     |       | 12                  |        | 7.8                     |             |

11468000 NAVARRO RIVER NEAR NAVARRO, CA

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1959 to current year (storm season only).

CHEMICAL ANALYSES: Water years 1959–66, 1973–79.

WATER TEMPERATURE: Water years 1966 to February 1979, January 1999 to May 1999 (storm season only).

SEDIMENT DATA: Water years October 1998 to September 1999 (storm season only).

PERIOD OF DAILY RECORD.—October 1965 to February 1979, October 1998 to September 1999.

WATER TEMPERATURE: October 1965 to February 1979, January 1999 to May 1999 (storm season only).

SUSPENDED-SEDIMENT DISCHARGE: October 1998 to September 1999 (storm season only).

REMARKS.—Zero bed-load discharge observed at flows less than 52.5 ft<sup>3</sup>/s.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 26.5°C, July 8, 1976; minimum recorded, 3.0°C, Jan. 2, 1976.

SEDIMENT CONCENTRATION: Maximum daily mean, 1,580 mg/L, Feb. 9, 1999; minimum daily mean, 1 mg/L, many days during year.

SEDIMENT LOAD: Maximum daily, 50,800 tons, Feb. 9, 1999; minimum daily, 0.04 ton, many days during year.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum for period recorded, 17.0°C, May 5; minimum for period recorded, 6.5°C, Feb. 2.

SEDIMENT CONCENTRATION (storm season only): Maximum daily mean, 1,580 mg/L, Feb. 9; minimum daily mean, 1 mg/L on many days.

SEDIMENT LOAD (storm season only): Maximum daily, 50,800 tons, Feb. 9; minimum daily, 0.04 ton on many days.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>SUS-<br>PENDE<br>D<br>(MG/L)<br>(80154) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>D<br>(T/DAY)<br>(80155) | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>% FINER<br>% FINER<br>(70337) | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>% FINER<br>% FINER<br>(70338) | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>% FINER<br>% FINER<br>(70339) |
|-------|------|---|---|---|---|--|--|--|
| NOV   |      |   |   |   |   |  |  |  |
| 30... | 1545 | 3730  | --  | 1680  | 16900   | 27   | 37   | 49   |
| JAN   |      |   |   |   |   |  |  |  |
| 18... | 1715 | 972   | 10.5  | 168   | 441   | --   | --   | --   |
| 23... | 0830 | 4190  | 10.5  | 785   | 8880  | --   | --   | --   |
| FEB   |      |   |   |   |   |  |  |  |
| 09... | 0815 | 15000   | 10.5  | 3040  | 123000  | 27   | 29   | 38   |
| 09... | 1605 | 10400   | 10.0  | 1240  | 34800   | 25   | 26   | 36   |
| 10... | 1640 | 4070  | 9.0   | 531   | 5840  | --   | --   | --   |
| MAR   |      |   |   |   |   |  |  |  |
| 24... | 1300 | 1640  | 10.5  | 372   | 1650  | --   | --   | --   |
| 24... | 1815 | 5260  | 10.5  | 1640  | 23300   | --   | --   | --   |
| 31... | 0810 | 1350  | 8.5   | 144   | 525   | --   | --   | --   |
| APR   |      |   |   |   |   |  |  |  |
| 13... | 1230 | 1700  | 11.0  | 112   | 514   | --   | --   | --   |

| DATE  | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>% FINER<br>% FINER<br>(70340) | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>% FINER<br>% FINER<br>(70341) | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>% FINER<br>% FINER<br>(70331) | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>% FINER<br>% FINER<br>(70332) | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>% FINER<br>% FINER<br>(70333) | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>% FINER<br>% FINER<br>(70334) | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>% FINER<br>% FINER<br>(70335) |
|-------|--|--|--|--|--|--|--|
| NOV   |  |  |  |  |  |  |  |
| 30... | 62   | 74   | 85   | 89   | 96   | 100  | --   |
| JAN   |  |  |  |  |  |  |  |
| 18... | --   | --   | 56   | --   | --   | --   | --   |
| 23... | --   | --   | 78   | --   | --   | --   | --   |
| FEB   |  |  |  |  |  |  |  |
| 09... | 54   | 70   | 80   | 99   | 99   | 100  | --   |
| 09... | 49   | 65   | 78   | 90   | 98   | 100  | --   |
| 10... | --   | --   | 59   | --   | --   | --   | --   |
| MAR   |  |  |  |  |  |  |  |
| 24... | --   | --   | 48   | --   | --   | --   | --   |
| 24... | --   | --   | 62   | --   | --   | --   | --   |
| 31... | --   | --   | 46   | --   | --   | --   | --   |
| APR   |  |  |  |  |  |  |  |
| 13... | --   | --   | 46   | 64   | 89   | 98   | 100  |

NAVARRO RIVER BASIN

11468000 NAVARRO RIVER NEAR NAVARRO, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | SAM-PLING POINTS (COUNT) | DIS-CHARGE, CUBIC FEET PER SECOND (00061) | TEMPER-ATURE WATER (DEG C) (00010) | BED MAT. SIEVE DIAM. .125 MM (80165) | BED MAT. SIEVE DIAM. .250 MM (80166) | BED MAT. SIEVE DIAM. .500 MM (80167) |
|-------|------|--------------------------|---|------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| APR   |      |                          |   |                                    |                                      |                                      |                                      |
| 13... | 1450 | 1                        | 1630                                      | 12.5                               | 1                                    | 4                                    | 17                                   |
| 13... | 1455 | 1                        | 1630                                      | 12.5                               | --                                   | 2                                    | 18                                   |
| 13... | 1500 | 1                        | 1630                                      | 12.5                               | --                                   | 2                                    | 36                                   |
| 13... | 1505 | 1                        | 1630                                      | 12.5                               | --                                   | 2                                    | 9                                    |
| 13... | 1510 | 1                        | 1630                                      | 12.5                               | 1                                    | 11                                   | 56                                   |

| DATE  | % FINER THAN 1.00 MM (80168) | % FINER THAN 2.00 MM (80169) | % FINER THAN 4.00 MM (80170) | % FINER THAN 8.00 MM (80171) | % FINER THAN 16.0 MM (80172) | % FINER THAN 32.0 MM (80173) | % FINER THAN 64.0 MM (80174) |
|-------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| APR   |                              |                              |                              |                              |                              |                              |                              |
| 13... | 21                           | 26                           | 44                           | 64                           | 95                           | 100                          | --                           |
| 13... | 26                           | 32                           | 45                           | 64                           | 93                           | 100                          | --                           |
| 13... | 64                           | 76                           | 86                           | 94                           | 100                          | --                           | --                           |
| 13... | 16                           | 21                           | 28                           | 41                           | 57                           | 79                           | 100                          |
| 13... | 60                           | 63                           | 70                           | 81                           | 98                           | 100                          | --                           |

PARTICLE-SIZE DISTRIBUTION OF BEDLOAD, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | SAM-PLING METHOD, CODES (82398) | SAMPLER TYPE (CODE) (84164) | BAG MESH SIZE SAMPLER (MM) (30333) | TETHER LINE USED IN SAMPLING (YES=1) (CODE) (04117) | START-ING TIME (2400 HOURS) (82073) | END-ING TIME (2400 HOURS) (82074) | TIME ON BED FOR BED LOAD SAMPLE (SEC) (04120) | HORI-ZONTAL WIDTH OF VER-TICAL (FEET) (04121) | COMPSTD IN X-SEC BEDLOAD MEASMNT (NUM) (04118) |
|-------|------|---------------------------------|-----------------------------|------------------------------------|---|-------------------------------------|-----------------------------------|---|---|--|
| JAN   |      |                                 |                             |                                    |   |                                     |                                   |   |   |  |
| 17... | 1010 | 1000                            | 1120                        | .250                               | 0   | 1000                                | 1020                              | 60  | 3.0   | 1  |
| 18... | 1240 | 1000                            | 1100                        | .250                               | 0   | 1220                                | 1300                              | 20  | 4.0   | 2  |
| 18... | 1320 | 1000                            | 1100                        | .250                               | 0   | 1310                                | 1335                              | 20  | 4.0   | 2  |
| FEB   |      |                                 |                             |                                    |   |                                     |                                   |   |   |  |
| 09... | 1720 | 1000                            | 1100                        | .250                               | 0   | 1700                                | 1740                              | 15  | 5.0   | 1  |
| APR   |      |                                 |                             |                                    |   |                                     |                                   |   |   |  |
| 13... | 1345 | 1000                            | 1100                        | .250                               | 0   | 1330                                | 1355                              | 15  | 5.0   | 2  |
| 13... | 1415 | 1000                            | 1100                        | .250                               | 0   | 1405                                | 1430                              | 15  | 5.0   | 2  |

| DATE  | VER-TICALS IN COM-POSITE SAMPLE (NUM) (04119) | NUMBER OF SAM-PLING POINTS (COUNT) (00063) | SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009) | DIS-CHARGE, CUBIC FEET PER SECOND (00061) | TEMPER-ATURE WATER (DEG C) (00010) | DISCH, AV UNIT FOR COM POSITE SAMPLE T/D/FT (04122) | SEDI-MENT DIS-CHARGE, (TONS/ DAY) (80225) | SED. BEDLOAD SIEVE DIAM. .062 MM THAN (80226) | SED. BEDLOAD SIEVE DIAM. .125 MM THAN (80227) |
|-------|---|--|--|---|------------------------------------|---|---|---|---|
| JAN   |   |  |  |   |                                    |   |   |   |   |
| 17... | 20  | 20   | 7.00   | 180                                       | 10.0                               | .10   | 5.9                                       | --  | --  |
| 18... | 20  | 20   | 4.00   | 1120                                      | 10.5                               | .26   | 18  | 1   | 3   |
| 18... | 20  | 20   | 4.00   | 1120                                      | 10.5                               | .19   | 18  | 1   | 6   |
| FEB   |   |  |  |   |                                    |   |   |   |   |
| 09... | 18  | 18   | 5.00   | 9590                                      | 10.0                               | 3.85  | 327                                       | --  | 1   |
| APR   |   |  |  |   |                                    |   |   |   |   |
| 13... | 17  | 17   | 5.00   | 1680                                      | 12.0                               | .78   | 53  | --  | 1   |
| 13... | 17  | 17   | 5.00   | 1670                                      | 12.0                               | .47   | 53  | --  | 1   |

11468000 NAVARRO RIVER NEAR NAVARRO, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF BEDLOAD, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | SED.   | SED.   | SED.   | SED.   | SED.   | SED.   | SED.   | SED.   | SED.   |
|-------|--|--|--|--|--|--|--|--|--|
|       | BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.250 MM<br>(80228) | BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.500 MM<br>(80229) | BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>1.00 MM<br>(80230) | BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>2.00 MM<br>(80231) | BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>4.00 MM<br>(80232) | BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>8.00 MM<br>(80233) | BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>16.0 MM<br>(80234) | BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>32.0 MM<br>(80235) | BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>64.0 MM<br>(80236) |
| JAN   |  |  |  |  |  |  |  |  |  |
| 17... | 2  | 31   | 45   | 54   | 63   | 73   | 82   | 100  | --   |
| 18... | 54   | 99   | 100  | --   | --   | --   | --   | --   | --   |
| 18... | 54   | 99   | 100  | --   | --   | --   | --   | --   | --   |
| FEB   |  |  |  |  |  |  |  |  |  |
| 09... | 9  | 23   | 33   | 44   | 58   | 74   | 87   | 94   | 100  |
| APR   |  |  |  |  |  |  |  |  |  |
| 13... | 15   | 61   | 73   | 79   | 85   | 90   | 98   | 100  | --   |
| 13... | 28   | 88   | 94   | 94   | 95   | 96   | 100  | --   | --   |



11468000 NAVARRO RIVER NEAR NAVARRO, CA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| 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) |
|-------|----------------------|---------------------------|-------------------------------|----------------------|---------------------------|-------------------------------|----------------------|---------------------------|-------------------------------|
|       | OCTOBER              |                           |                               | NOVEMBER             |                           |                               | DECEMBER             |                           |                               |
| 1     | 16                   | 1                         | .04                           | 20                   | 3                         | .15                           | 2080                 | 330                       | 2210                          |
| 2     | 16                   | 1                         | .04                           | 22                   | 3                         | .15                           | 1150                 | 93                        | 294                           |
| 3     | 16                   | 1                         | .04                           | 22                   | 2                         | .14                           | 2600                 | 301                       | 2300                          |
| 4     | 16                   | 1                         | .04                           | 21                   | 2                         | .12                           | 1400                 | 100                       | 404                           |
| 5     | 16                   | 1                         | .04                           | 21                   | 2                         | .12                           | 794                  | 47                        | 101                           |
| 6     | 16                   | 1                         | .04                           | 23                   | 2                         | .14                           | 747                  | 46                        | 94                            |
| 7     | 15                   | 1                         | .04                           | 50                   | 4                         | .53                           | 544                  | 25                        | 37                            |
| 8     | 15                   | 1                         | .04                           | 82                   | 4                         | .87                           | 507                  | 20                        | 27                            |
| 9     | 15                   | 1                         | .04                           | 72                   | 2                         | .48                           | 442                  | 17                        | 20                            |
| 10    | 15                   | 1                         | .04                           | 51                   | 2                         | .28                           | 369                  | 14                        | 14                            |
| 11    | 15                   | 1                         | .04                           | 44                   | 2                         | .24                           | 323                  | 12                        | 10                            |
| 12    | 15                   | 1                         | .04                           | 40                   | 2                         | .22                           | 281                  | 10                        | 7.6                           |
| 13    | 15                   | 1                         | .04                           | 36                   | 2                         | .19                           | 280                  | 11                        | 8.6                           |
| 14    | 16                   | 1                         | .04                           | 33                   | 2                         | .18                           | 539                  | 57                        | 85                            |
| 15    | 16                   | 1                         | .04                           | 33                   | 2                         | .18                           | 413                  | 19                        | 22                            |
| 16    | 16                   | 1                         | .04                           | 32                   | 2                         | .17                           | 354                  | 11                        | 10                            |
| 17    | 15                   | 1                         | .04                           | 52                   | 2                         | .35                           | 308                  | 10                        | 8.1                           |
| 18    | 15                   | 1                         | .04                           | 71                   | 3                         | .56                           | 272                  | 9                         | 6.8                           |
| 19    | 15                   | 1                         | .04                           | 54                   | 3                         | .37                           | 241                  | 9                         | 5.7                           |
| 20    | 15                   | 1                         | .04                           | 43                   | 2                         | .26                           | 226                  | 8                         | 5.0                           |
| 21    | 15                   | 1                         | .04                           | 44                   | 2                         | .24                           | 203                  | 8                         | 4.3                           |
| 22    | 15                   | 1                         | .04                           | 76                   | 4                         | .79                           | 180                  | 7                         | 3.6                           |
| 23    | 15                   | 1                         | .04                           | 914                  | 253                       | 1830                          | 168                  | 7                         | 3.2                           |
| 24    | 22                   | 2                         | .13                           | 1190                 | 100                       | 442                           | 153                  | 7                         | 2.7                           |
| 25    | 38                   | 6                         | .66                           | 412                  | 12                        | 15                            | 143                  | 6                         | 2.4                           |
| 26    | 30                   | 6                         | .53                           | 265                  | 10                        | 7.9                           | 136                  | 6                         | 2.2                           |
| 27    | 24                   | 5                         | .35                           | 444                  | 49                        | 61                            | 132                  | 6                         | 2.0                           |
| 28    | 21                   | 5                         | .26                           | 265                  | 20                        | 15                            | 127                  | 5                         | 1.8                           |
| 29    | 20                   | 4                         | .20                           | 426                  | 47                        | 80                            | 121                  | 5                         | 1.6                           |
| 30    | 19                   | 3                         | .17                           | 2290                 | 786                       | 7690                          | 116                  | 5                         | 1.5                           |
| 31    | 19                   | 3                         | .15                           | ---                  | ---                       | ---                           | 117                  | 5                         | 1.4                           |
| TOTAL | 547                  | ---                       | 3.37                          | 7148                 | ---                       | 10147.63                      | 15466                | ---                       | 5696.5                        |
|       | JANUARY              |                           |                               | FEBRUARY             |                           |                               | MARCH                |                           |                               |
| 1     | 112                  | 4                         | 1.3                           | 546                  | 25                        | 37                            | e2630                | 280                       | 1990                          |
| 2     | 106                  | 4                         | 1.2                           | 449                  | 18                        | 21                            | e1870                | 180                       | 909                           |
| 3     | 102                  | 4                         | 1.1                           | 406                  | 14                        | 16                            | 2020                 | 143                       | 786                           |
| 4     | 98                   | 4                         | .95                           | 378                  | 14                        | 14                            | 1590                 | 111                       | 480                           |
| 5     | 93                   | 3                         | .86                           | 337                  | 13                        | 12                            | 1310                 | 79                        | 281                           |
| 6     | 90                   | 3                         | .79                           | 1850                 | 167                       | 2320                          | 1090                 | 57                        | 167                           |
| 7     | 88                   | 3                         | .73                           | 7390                 | 1230                      | 26900                         | 942                  | 40                        | 103                           |
| 8     | 86                   | 3                         | .67                           | 4390                 | 536                       | 6600                          | 1250                 | 144                       | 785                           |
| 9     | 83                   | 3                         | .62                           | 10200                | 1580                      | 50800                         | 2610                 | 354                       | 2510                          |
| 10    | 81                   | 3                         | .57                           | 4680                 | 579                       | 7540                          | 2130                 | 141                       | 822                           |
| 11    | 79                   | 2                         | .53                           | 2850                 | 294                       | 2290                          | 1650                 | 78                        | 351                           |
| 12    | 78                   | 2                         | .49                           | 1990                 | 180                       | 980                           | 1280                 | 55                        | 190                           |
| 13    | 76                   | 2                         | .45                           | 1540                 | 98                        | 409                           | 1030                 | 44                        | 122                           |
| 14    | 74                   | 2                         | .42                           | 1510                 | 68                        | 279                           | 1290                 | 50                        | 189                           |
| 15    | 82                   | 2                         | .54                           | 1210                 | 62                        | 202                           | 1370                 | 64                        | 239                           |
| 16    | 153                  | 8                         | 3.5                           | 3770                 | 945                       | 15800                         | 1090                 | 53                        | 155                           |
| 17    | 193                  | 13                        | 6.8                           | 8070                 | 1300                      | 33300                         | 942                  | 50                        | 126                           |
| 18    | 768                  | 100                       | 246                           | 4230                 | 416                       | 4780                          | 842                  | 48                        | 110                           |
| 19    | 653                  | 53                        | 95                            | 3360                 | 244                       | 2270                          | 744                  | 47                        | 95                            |
| 20    | 1120                 | 197                       | 621                           | 2580                 | 178                       | 1250                          | 684                  | 46                        | 84                            |
| 21    | 1590                 | 197                       | 873                           | 3600                 | 343                       | 3370                          | 599                  | 45                        | 72                            |
| 22    | 1240                 | 102                       | 352                           | 2820                 | 190                       | 1460                          | 566                  | 45                        | 68                            |
| 23    | 3350                 | 464                       | 4550                          | 2220                 | 142                       | 852                           | 794                  | 80                        | 174                           |
| 24    | 2010                 | 164                       | 907                           | e1940                | 135                       | 707                           | 3150                 | 1010                      | 20300                         |
| 25    | 1280                 | 91                        | 316                           | e3920                | 440                       | 4660                          | 6390                 | 1340                      | 29400                         |
| 26    | 934                  | 56                        | 143                           | e3000                | 420                       | 3400                          | 3120                 | 299                       | 2550                          |
| 27    | 691                  | 35                        | 66                            | e2150                | 260                       | 1510                          | 2120                 | 190                       | 1100                          |
| 28    | 541                  | 27                        | 39                            | e2450                | 250                       | 1650                          | 1540                 | 120                       | 501                           |
| 29    | 454                  | 24                        | 29                            | ---                  | ---                       | ---                           | 1190                 | 80                        | 257                           |
| 30    | 396                  | 23                        | 24                            | ---                  | ---                       | ---                           | 1040                 | 60                        | 169                           |
| 31    | 583                  | 40                        | 67                            | ---                  | ---                       | ---                           | 1240                 | 119                       | 399                           |
| TOTAL | 17284                | ---                       | 8349.52                       | 83836                | ---                       | 173429                        | 50113                | ---                       | 65484                         |

e Estimated.

## NAVARRO RIVER BASIN

11468000 NAVARRO RIVER NEAR NAVARRO, CA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY    | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|--------|----------------------------|--------------------------------------|-------------------------------------|
| APRIL  |                            |                                      |                                     |
| 1      | 1000                       | 83                                   | 226                                 |
| 2      | 870                        | 57                                   | 134                                 |
| 3      | 762                        | 41                                   | 85                                  |
| 4      | 683                        | 31                                   | 58                                  |
| 5      | 683                        | 30                                   | 56                                  |
| 6      | 667                        | 27                                   | 49                                  |
| 7      | 580                        | 21                                   | 32                                  |
| 8      | 889                        | 42                                   | 114                                 |
| 9      | 1090                       | 58                                   | 173                                 |
| 10     | 952                        | 49                                   | 126                                 |
| 11     | 3660                       | 912                                  | 10900                               |
| 12     | 2560                       | 319                                  | 2300                                |
| 13     | 1720                       | 126                                  | 599                                 |
| 14     | 1260                       | 82                                   | 281                                 |
| 15     | 985                        | 58                                   | 155                                 |
| 16     | 804                        | 46                                   | 100                                 |
| 17     | 678                        | 37                                   | 68                                  |
| 18     | 582                        | 30                                   | 47                                  |
| 19     | 511                        | 24                                   | 33                                  |
| 20     | 457                        | 20                                   | 24                                  |
| 21     | 420                        | 16                                   | 18                                  |
| 22     | 391                        | 13                                   | 14                                  |
| 23     | 360                        | 11                                   | 10                                  |
| 24     | 332                        | 9                                    | 7.9                                 |
| 25     | 308                        | 7                                    | 6.1                                 |
| 26     | 289                        | 6                                    | 4.7                                 |
| 27     | 271                        | 5                                    | 3.7                                 |
| 28     | 254                        | 4                                    | 2.9                                 |
| 29     | 242                        | 4                                    | 2.8                                 |
| 30     | 229                        | 5                                    | 3.0                                 |
| 31     | ---                        | ---                                  | ---                                 |
| TOTAL  | 24489                      | ---                                  | 15633.1                             |
| PERIOD | 198883                     |                                      | 278743.12                           |

SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| MONTH            | WATER<br>DISCHARGE<br>DISCHARGE<br>CFS-DAYS | SUSPENDED<br>SEDIMENT<br>TONS | BEDLOAD<br>DISCHARGE<br>DISCHARGE<br>TONS | TOTAL<br>SEDIMENT<br>TONS |
|------------------|---|-------------------------------|---|---------------------------|
| OCTOBER 1998     | 547.00                                      | 3.37                          | 0   | 3                         |
| NOVEMBER . . . . | 7148.00                                     | 10147.63                      | 298                                       | 10400                     |
| DECEMBER . . . . | 15466.00                                    | 5696.50                       | 728                                       | 6420                      |
| JANUARY 1999     | 17284.00                                    | 8349.52                       | 323                                       | 8670                      |
| FEBRUARY . . . . | 83836.00                                    | 173429.00                     | 2460                                      | 176000                    |
| MARCH . . . . .  | 50113.00                                    | 65484.00                      | 1240                                      | 66700                     |
| APRIL . . . . .  | 24489.00                                    | 15633.10                      | 619                                       | 16300                     |
| PERIOD . . . . . | 198883.00                                   | 278743.12                     | 5668                                      | 284493                    |



## 11468500 NOYO RIVER NEAR FORT BRAGG, CA

LOCATION.—Lat 39°25'42", long 123°44'12", in NE 1/4 sec.15, T.18 N., R.17 W., Mendocino County, Hydrologic Unit 18010108, on right bank, 0.7 mi downstream from South Fork, and 3.5 mi east of Fort Bragg.

DRAINAGE AREA.—106 mi<sup>2</sup>.

PERIOD OF RECORD.—August 1951 to current year.

REVISED RECORDS.—WSP 1929: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 11.73 ft above sea level.

REMARKS.—Records fair except for estimated daily discharges, which are poor. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 26,600 ft<sup>3</sup>/s, Mar. 29, 1974, gage height, 27.14 ft, from rating curve extended above 4,500 ft<sup>3</sup>/s on basis of slope-conveyance study; minimum daily, 0.79 ft<sup>3</sup>/s, Sept. 8, 1977.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 2,400 ft<sup>3</sup>/s, or maximum:

| Date    | Time    | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|---------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Jan. 23 | unknown | unknown                           | unknown             | Feb. 17 | 0415 | 3,560                             | 13.65               |
| Feb. 7  | 1345    | 5,440                             | 17.00               | Mar. 24 | 2330 | 3,050                             | 12.60               |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV  | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN  | JUL  | AUG   | SEP   |
|-------|-------|------|-------|-------|-------|-------|-------|------|------|------|-------|-------|
| 1     | 9.3   | 12   | 481   | 57    | 255   | 1340  | 459   | e120 | 46   | 24   | 16    | 7.3   |
| 2     | 9.3   | 12   | 927   | 53    | 232   | 1020  | 418   | e115 | e46  | 23   | 15    | 6.8   |
| 3     | 11    | 12   | 1840  | e50   | 221   | 1060  | 366   | e140 | e45  | 20   | 15    | 6.6   |
| 4     | 13    | 11   | 853   | e48   | 208   | 888   | 322   | e115 | e44  | 20   | 15    | 6.2   |
| 5     | 8.7   | 11   | 514   | e47   | 186   | 716   | 314   | e105 | e43  | 22   | 15    | 6.4   |
| 6     | 8.3   | 11   | 408   | e46   | 1350  | 579   | 302   | e95  | e42  | 22   | 16    | 7.3   |
| 7     | 8.3   | 27   | 298   | e45   | 4300  | 474   | 267   | e91  | e41  | 22   | 17    | 6.6   |
| 8     | 8.3   | 36   | 277   | e43   | 2350  | 555   | 400   | 87   | 40   | 21   | 16    | 6.5   |
| 9     | 7.9   | 31   | 239   | e41   | 3940  | 955   | 501   | 84   | 39   | 18   | 16    | 6.2   |
| 10    | 7.9   | 23   | 217   | e40   | 1970  | 906   | 495   | 81   | 39   | 19   | 16    | 6.3   |
| 11    | 7.9   | 20   | 189   | e38   | 1120  | 714   | 857   | 80   | 38   | 19   | 17    | 7.4   |
| 12    | 7.9   | 18   | 165   | e37   | 792   | 559   | 745   | 78   | 37   | 18   | 16    | 7.1   |
| 13    | 8.3   | 17   | 166   | e36   | 634   | 461   | 571   | 76   | 37   | 18   | 16    | 6.6   |
| 14    | 8.3   | 16   | 211   | e35   | 590   | 516   | e456  | 72   | 36   | 17   | 16    | 6.0   |
| 15    | e10   | 15   | 188   | e45   | 511   | 532   | 374   | 70   | 35   | 16   | 15    | 5.3   |
| 16    | e8.2  | 16   | 172   | e160  | 945   | 471   | 314   | 67   | 35   | 15   | 14    | 5.3   |
| 17    | e8.1  | 32   | 155   | e370  | 2800  | 407   | 269   | 66   | 35   | 15   | 13    | 5.2   |
| 18    | e8.1  | 37   | 141   | e700  | 1800  | 355   | 239   | 65   | 33   | 16   | 11    | 5.3   |
| 19    | e7.9  | 26   | 127   | e550  | 1580  | 314   | 218   | 63   | 34   | 16   | 11    | 5.9   |
| 20    | e8.3  | 21   | 117   | e680  | 1160  | 280   | e200  | 62   | 33   | 17   | 11    | 5.6   |
| 21    | e7.8  | 26   | 101   | e800  | 1490  | 249   | e185  | 60   | 32   | 16   | 11    | 5.1   |
| 22    | e8.0  | 74   | 92    | e1200 | 1350  | 237   | e175  | 58   | 32   | 16   | 11    | 5.4   |
| 23    | e7.8  | 481  | 86    | e1800 | 1260  | 292   | e165  | 56   | 31   | 17   | 9.5   | 5.6   |
| 24    | e14   | 446  | 78    | e1350 | 1270  | 1170  | e155  | 55   | 28   | 18   | 10    | 5.6   |
| 25    | e20   | 218  | 72    | e680  | 1990  | 2050  | e150  | 53   | 29   | 17   | 9.9   | 5.2   |
| 26    | e17   | 207  | 69    | e490  | 1430  | 1070  | e142  | 52   | 28   | 17   | 9.6   | 5.3   |
| 27    | 13    | 251  | 66    | e390  | 1020  | 721   | e135  | 51   | 27   | 17   | 9.8   | 8.9   |
| 28    | 12    | 167  | 63    | e320  | 1200  | 541   | e130  | 49   | 27   | 17   | 9.2   | 4.4   |
| 29    | 11    | 205  | 60    | e280  | ---   | 445   | e125  | 47   | 26   | 16   | 8.4   | 4.3   |
| 30    | 11    | 353  | 58    | 234   | ---   | 417   | e120  | 45   | 25   | 15   | 8.1   | 4.1   |
| 31    | 11    | ---  | 60    | 282   | ---   | 494   | ---   | 47   | ---  | 15   | 7.7   | ---   |
| TOTAL | 307.6 | 2832 | 8490  | 10947 | 37954 | 20788 | 9569  | 2305 | 1063 | 559  | 401.2 | 179.8 |
| MEAN  | 9.92  | 94.4 | 274   | 353   | 1356  | 671   | 319   | 74.4 | 35.4 | 18.0 | 12.9  | 5.99  |
| MAX   | 20    | 481  | 1840  | 1800  | 4300  | 2050  | 857   | 140  | 46   | 24   | 17    | 8.9   |
| MIN   | 7.8   | 11   | 58    | 35    | 186   | 237   | 120   | 45   | 25   | 15   | 7.7   | 4.1   |
| AC-FT | 610   | 5620 | 16840 | 21710 | 75280 | 41230 | 18980 | 4570 | 2110 | 1110 | 796   | 357   |

e Estimated.

## 11468500 NOYO RIVER NEAR FORT BRAGG, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 16.8 | 116  | 404  | 674  | 565  | 455  | 216  | 78.6 | 35.3 | 14.5 | 8.04 | 6.52 |
| MAX  | 166  | 750  | 2293 | 1890 | 2114 | 1406 | 877  | 377  | 170  | 32.0 | 17.7 | 12.7 |
| (WY) | 1963 | 1974 | 1965 | 1953 | 1958 | 1983 | 1963 | 1990 | 1993 | 1953 | 1953 | 1983 |
| MIN  | 2.97 | 5.29 | 9.25 | 16.6 | 18.1 | 32.4 | 11.7 | 9.50 | 3.88 | 1.90 | 1.35 | 2.16 |
| (WY) | 1979 | 1960 | 1977 | 1977 | 1977 | 1988 | 1977 | 1977 | 1977 | 1977 | 1977 | 1970 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1952 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 143142.9               |        | 95395.6             |        |                         |             |
| ANNUAL MEAN              | 392                    |        | 261                 |        | 215                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 484                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 10.9                    |             |
| HIGHEST DAILY MEAN       | 3740                   | Jan 17 | 4300                | Feb 7  | 20500                   | Dec 22 1964 |
| LOWEST DAILY MEAN        | 7.8                    | Oct 21 | 4.1                 | Sep 30 | .79                     | Sep 8 1977  |
| ANNUAL SEVEN-DAY MINIMUM | 8.0                    | Oct 17 | 5.4                 | Sep 15 | 1.0                     | Aug 16 1977 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 5440                | Feb 7  | 26600                   | Mar 29 1974 |
| INSTANTANEOUS PEAK STAGE |                        |        | 17.00               | Feb 7  | 27.14                   | Mar 29 1974 |
| ANNUAL RUNOFF (AC-FT)    | 283900                 |        | 189200              |        | 155400                  |             |
| 10 PERCENT EXCEEDS       | 1210                   |        | 795                 |        | 539                     |             |
| 50 PERCENT EXCEEDS       | 85                     |        | 46                  |        | 33                      |             |
| 90 PERCENT EXCEEDS       | 9.8                    |        | 7.9                 |        | 5.3                     |             |

11469000 MATTOLE RIVER NEAR PETROLIA, CA

LOCATION.—Lat 40°18'48", long 124°16'56", in SE 1/4 NW 1/4 sec.10, T.2 S., R.2 W., Humboldt County, Hydrologic Unit 18010107, on downstream side of bridge, on left bank, 0.2 mi downstream from Mill Creek, 0.8 mi south of Petrolia, and 0.6 mi upstream from North Fork.

DRAINAGE AREA.—245 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1911 to December 1913, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

REVISED RECORDS.—WSP 1285: 1912–13. WSP 1929: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 49.41 ft above sea level. November 1911 to December 1913, nonrecording gages at several sites upstream within 0.3 mi of present site at various datums. Dec. 11, 1950, to July 14, 1955, at site 0.3 mi upstream at datum 7.48 ft higher. July 15, 1955, to Oct. 26, 1967, at site 0.4 mi downstream at different datum. Oct. 27, 1967, to Oct. 30, 1996, at site 1.1 mi upstream at datum 7.00 ft higher.

REMARKS.—Records fair. Diversions for irrigation of about 350 acres upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 90,400 ft<sup>3</sup>/s, Dec. 22, 1955, gage height, 36.60 ft, site and datum then in use, from rating curve extended above 26,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily, 17 ft<sup>3</sup>/s, Sept. 5, 15, 1977.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 15,000 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|--------|------|--------------------------------|------------------|---------|------|--------------------------------|------------------|
| Dec. 2 | 2215 | 19,000                         | 21.31            | Feb. 28 | 1115 | 15,800                         | 20.52            |
| Feb. 6 | 1645 | 22,900                         | 22.32            |         |      |                                |                  |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

| DAY   | OCT  | NOV    | DEC    | JAN    | FEB    | MAR    | APR   | MAY   | JUN  | JUL  | AUG  | SEP  |
|-------|------|--------|--------|--------|--------|--------|-------|-------|------|------|------|------|
| 1     | 33   | 49     | 8910   | 427    | 952    | 7550   | 2740  | 476   | 185  | 70   | 47   | 26   |
| 2     | 36   | 49     | 13700  | 388    | 746    | 5600   | 2430  | 490   | 183  | 68   | 46   | 26   |
| 3     | 36   | 50     | 12700  | 361    | 625    | 5600   | 2170  | 643   | 179  | 68   | 45   | 26   |
| 4     | 35   | 51     | 5940   | 335    | 566    | 4500   | 1900  | 551   | 179  | 68   | 44   | 26   |
| 5     | 35   | 55     | 3890   | 302    | 481    | 3770   | 1890  | 469   | 178  | 67   | 44   | 26   |
| 6     | 34   | 83     | 3380   | 262    | 11400  | 3220   | 1660  | 439   | 172  | 66   | 51   | 26   |
| 7     | 34   | 426    | 2690   | 251    | 14800  | 2830   | 1290  | 416   | 166  | 65   | 52   | 25   |
| 8     | 35   | 477    | 2900   | 241    | 8370   | 3440   | 1530  | 392   | 161  | 64   | 52   | 26   |
| 9     | 36   | 296    | 2480   | 225    | 7960   | 3950   | 1310  | 375   | 158  | 63   | 51   | 26   |
| 10    | 37   | 180    | 2150   | 213    | 6010   | 3350   | 2050  | 364   | 153  | 60   | 50   | 25   |
| 11    | 37   | 321    | 1840   | 203    | 4830   | 2950   | 4870  | 357   | 148  | 59   | 48   | 24   |
| 12    | 38   | 244    | 1650   | 195    | 3910   | 2620   | 3580  | 345   | 145  | 58   | 47   | 24   |
| 13    | 52   | 163    | 1650   | 188    | 3440   | 2430   | 2720  | 327   | 141  | 57   | 45   | 24   |
| 14    | 56   | 129    | 1720   | 186    | 3550   | 3110   | 2190  | 315   | 139  | 55   | 43   | 24   |
| 15    | 53   | 159    | 1440   | 280    | 3160   | 2940   | 1930  | 307   | 136  | 54   | 41   | 24   |
| 16    | 45   | 263    | 1270   | 520    | 4550   | 2590   | 1700  | 296   | 132  | 53   | 39   | 24   |
| 17    | 41   | 864    | 1150   | 2320   | 6940   | 2410   | 1460  | 288   | 128  | 52   | 37   | 23   |
| 18    | 40   | 490    | 1040   | 6660   | 6840   | 2190   | 1250  | 285   | 125  | 53   | 34   | 22   |
| 19    | 38   | 273    | 943    | 5560   | 6310   | 2050   | 1060  | 278   | 121  | 53   | 33   | 23   |
| 20    | 38   | 214    | 892    | 5680   | 5370   | 2020   | 909   | 268   | 118  | 53   | 31   | 23   |
| 21    | 37   | 6900   | 782    | 5310   | 5760   | 1920   | 813   | 260   | 115  | 52   | 30   | 23   |
| 22    | 37   | 6340   | 716    | 6360   | 5600   | 1920   | 731   | 252   | 112  | 53   | 29   | 24   |
| 23    | 37   | 9450   | 669    | 8180   | 9470   | 2180   | 673   | 244   | 108  | 54   | 28   | 24   |
| 24    | 110  | 5570   | 620    | 4840   | 8550   | 4980   | 625   | 236   | 98   | 53   | 28   | 23   |
| 25    | 155  | 3340   | 576    | 3510   | 9470   | 6200   | 567   | 228   | 95   | 51   | 27   | 23   |
| 26    | 96   | 5190   | 553    | 2680   | 6610   | 4290   | 532   | 220   | 93   | 51   | 27   | 22   |
| 27    | 66   | 4580   | 520    | 2180   | 5580   | 3380   | 499   | 213   | 89   | 50   | 27   | 21   |
| 28    | 54   | 3220   | 511    | 1830   | 11700  | 2790   | 499   | 205   | 85   | 49   | 27   | 21   |
| 29    | 49   | 4820   | 475    | 1600   | ---    | 2420   | 508   | 200   | 77   | 48   | 26   | 21   |
| 30    | 46   | 11700  | 435    | 1320   | ---    | 2570   | 493   | 195   | 73   | 48   | 26   | 21   |
| 31    | 46   | ---    | 463    | 1230   | ---    | 3170   | ---   | 190   | ---  | 48   | 26   | ---  |
| TOTAL | 1522 | 65946  | 78655  | 63837  | 163550 | 104940 | 46579 | 10124 | 3992 | 1763 | 1181 | 716  |
| MEAN  | 49.1 | 2198   | 2537   | 2059   | 5841   | 3385   | 1553  | 327   | 133  | 56.9 | 38.1 | 23.9 |
| MAX   | 155  | 11700  | 13700  | 8180   | 14800  | 7550   | 4870  | 643   | 185  | 70   | 52   | 26   |
| MIN   | 33   | 49     | 435    | 186    | 481    | 1920   | 493   | 190   | 73   | 48   | 26   | 21   |
| AC-FT | 3020 | 130800 | 156000 | 126600 | 324400 | 208100 | 92390 | 20080 | 7920 | 3500 | 2340 | 1420 |

## MATTOLE RIVER BASIN

## 11469000 MATTOLE RIVER NEAR PETROLIA, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB   | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|-------|------|------|------|------|------|------|------|
| MEAN | 229  | 1425 | 2926 | 3630 | 3105  | 2308 | 1214 | 548  | 214  | 83.1 | 50.6 | 60.7 |
| MAX  | 1900 | 7159 | 8340 | 8928 | 10710 | 7929 | 5225 | 1842 | 1058 | 191  | 164  | 237  |
| (WY) | 1951 | 1974 | 1956 | 1970 | 1958  | 1983 | 1963 | 1960 | 1993 | 1993 | 1983 | 1977 |
| MIN  | 23.8 | 41.8 | 39.7 | 135  | 243   | 187  | 166  | 151  | 68.9 | 31.3 | 22.9 | 22.0 |
| (WY) | 1988 | 1960 | 1977 | 1977 | 1977  | 1988 | 1988 | 1970 | 1977 | 1977 | 1977 | 1970 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1912 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 729385                 |        | 542805              |        |                         |             |
| ANNUAL MEAN              | 1998                   |        | 1487                |        | 1309                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 2642                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 157                     |             |
| HIGHEST DAILY MEAN       | 23500                  | Mar 23 | 14800               | Feb 7  | 55200                   | Dec 22 1964 |
| LOWEST DAILY MEAN        | 32                     | Sep 14 | 21                  | Sep 27 | 17                      | Sep 5 1977  |
| ANNUAL SEVEN-DAY MINIMUM | 32                     | Sep 14 | 22                  | Sep 24 | 17                      | Sep 5 1977  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 22900               | Feb 6  | 90400                   | Dec 22 1955 |
| INSTANTANEOUS PEAK STAGE |                        |        | 22.32               | Feb 6  | 36.60                   | Dec 22 1955 |
| ANNUAL RUNOFF (AC-FT)    | 1447000                |        | 1077000             |        | 948300                  |             |
| 10 PERCENT EXCEEDS       | 6430                   |        | 5240                |        | 3380                    |             |
| 50 PERCENT EXCEEDS       | 426                    |        | 252                 |        | 276                     |             |
| 90 PERCENT EXCEEDS       | 37                     |        | 27                  |        | 36                      |             |

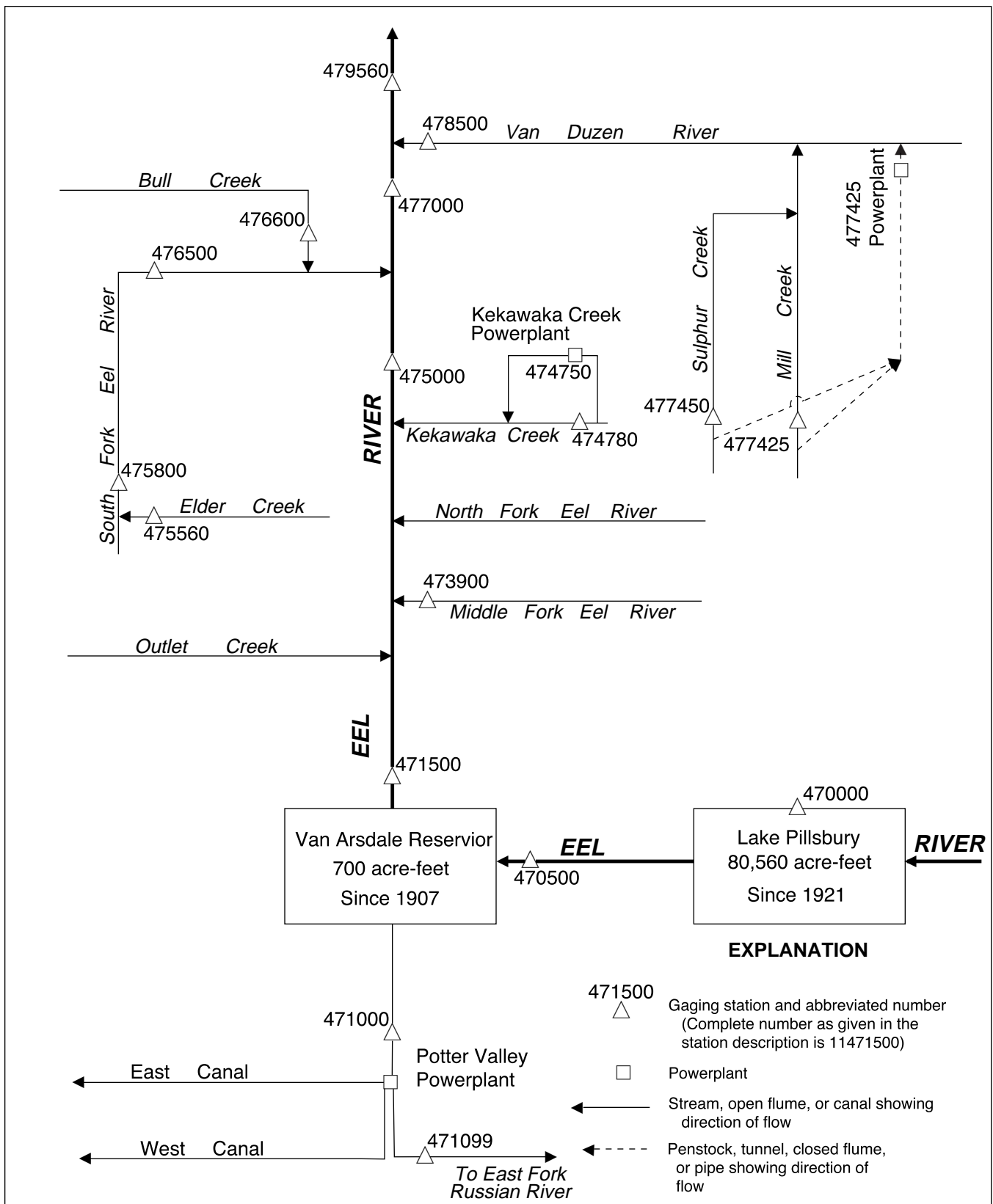


Figure 23. Diversions and storage in Eel River Basin.

## 11470000 LAKE PILLSBURY NEAR POTTER VALLEY, CA

LOCATION.—Lat 39°24'30", long 122°57'30", on line between secs.14 and 23, T.18 N., R.10 W., Lake County, Hydrologic Unit 18010103, Mendocino National Forest, at Scott Dam near right bank of Eel River, 0.3 mi downstream from Rice Fork, and 10.2 mi northeast of town of Potter Valley.

DRAINAGE AREA.—289 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1922 to September 1928 (daily gage heights only), October 1928 to current year. Monthend contents only for some periods, published in WSP 1315-B. Prior to October 1953, published as "at Hullville."

GAGE.—Water-stage recorder and nonrecording gage. Datum of gage is 81.7 ft below sea level (river-profile survey). Prior to Jan. 26, 1950, nonrecording gage at same site and datum.

REMARKS.—Reservoir is formed by concrete overflow-type dam; storage began in December 1921. Beginning Oct. 1, 1985, capacity based on 1984 resurvey. Usable capacity, 80,556 acre-ft, between gage heights 1,822.4 ft, sill of outlet gate, and 1,910.0 ft, top of spillway gates; dead storage, 87 acre-ft. Water is released down Eel River to Van Arsdale Reservoir, most of which is diverted through tunnel to Potter Valley Powerplant (station 11477100); part is then used for irrigation and remainder flows into East Fork Russian River. Records given, including extremes, represent total contents at 2400 hours. See schematic diagram of Eel River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 95,600 acre-ft, May 13, 16, 1925, gage height, 1,910.8 ft; maximum gage height, 1,911.84 ft, Dec. 22, 1964, from floodmarks; minimum contents, 10 acre-ft, Dec. 9, 10, 1931, gage height, 1,822.5 ft.

Capacity table (elevation, in feet, and contents in acre-feet)  
(Based on table provided by Pacific Gas & Electric Co., dated April 1984)

|         |     |       |       |       |        |       |        |       |        |
|---------|-----|-------|-------|-------|--------|-------|--------|-------|--------|
| 1,822.4 | 87  | 1,835 | 1,371 | 1,855 | 7,831  | 1,875 | 22,451 | 1,895 | 50,179 |
| 1,824   | 153 | 1,840 | 2,463 | 1,860 | 10,456 | 1,880 | 28,071 | 1,900 | 59,469 |
| 1,827   | 333 | 1,845 | 3,391 | 1,865 | 13,701 | 1,885 | 34,474 | 1,905 | 69,675 |
| 1,830   | 626 | 1,850 | 5,710 | 1,870 | 17,664 | 1,890 | 41,811 | 1,910 | 80,643 |

## RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY OBSERVATION AT 2400 HOURS

| DAY         | OCT            | NOV        | DEC       | JAN       | FEB     | MAR     | APR     | MAY     | JUN     | JUL     | AUG     | SEP     |
|-------------|----------------|------------|-----------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1           | 50400          | 33300      | 47600     | 54200     | 60200   | 63800   | 60900   | 80400   | 78600   | 72100   | 63600   | 55800   |
| 2           | 49900          | 32800      | 50700     | 53800     | 60000   | 63100   | 60900   | 79400   | 78500   | 71600   | 63300   | 55500   |
| 3           | 49200          | 32500      | 56800     | 53200     | 59900   | 62900   | 61400   | 78100   | 78300   | 71200   | 63100   | 55300   |
| 4           | 48700          | 31800      | 59100     | 52900     | 59700   | 62300   | 61800   | 77800   | 78200   | 70800   | 62800   | 55000   |
| 5           | 48100          | 31200      | 60200     | 52600     | 59600   | 61900   | 62200   | 78000   | 78000   | 70500   | 62600   | 54700   |
| 6           | 47600          | 30800      | 60300     | 52300     | 63400   | 61600   | 62500   | 78200   | 77800   | 70200   | 62400   | 54500   |
| 7           | 47000          | 30600      | 60300     | 51900     | 65900   | 61300   | 63300   | 78300   | 77500   | 69900   | 62200   | 54200   |
| 8           | 46400          | 30200      | 60400     | 51600     | 65300   | 61500   | 64600   | 78400   | 77300   | 69600   | 62000   | 53900   |
| 9           | 45900          | 29800      | 60200     | 51300     | 66500   | 61500   | 65500   | 78600   | 77100   | 69400   | 61800   | 53700   |
| 10          | 45300          | 29300      | 60100     | 51000     | 63600   | 61300   | 66700   | 78800   | 76800   | 69200   | 61600   | 53400   |
| 11          | 44700          | 28900      | 60000     | 50700     | 62500   | 61100   | 68600   | 79000   | 76600   | 69000   | 61300   | 53100   |
| 12          | 43900          | 28400      | 59900     | 50400     | 61800   | 60900   | 70400   | 79300   | 76400   | 68800   | 61100   | 52900   |
| 13          | 43400          | 27900      | 59900     | 50000     | 61400   | 60900   | 72100   | 79300   | 76200   | 68600   | 60800   | 52600   |
| 14          | 42800          | 27400      | 59900     | 49800     | 61200   | 61500   | 73800   | 79600   | 76100   | 68300   | 60600   | 52300   |
| 15          | 42200          | 26900      | 59800     | 49600     | 61000   | 61500   | 75200   | 79500   | 75900   | 68100   | 60400   | 52000   |
| 16          | 41600          | 26500      | 59700     | 49800     | 64500   | 61300   | 76300   | 79500   | 75700   | 67900   | 60100   | 51600   |
| 17          | 41100          | 26200      | 59600     | 50800     | 63900   | 61100   | 77400   | 79500   | 75500   | 67600   | 59800   | 51200   |
| 18          | 40500          | 25800      | 59500     | 54200     | 63900   | 61000   | 79300   | 79500   | 75400   | 67400   | 59600   | 50800   |
| 19          | 39900          | 25400      | 59200     | 56000     | 62800   | 61000   | 78500   | 79500   | 75200   | 67200   | 59300   | 50500   |
| 20          | 39400          | 24900      | 59000     | 59200     | 62900   | 60900   | 78300   | 79500   | 75100   | 66900   | 59100   | 50200   |
| 21          | 38800          | 24500      | 58600     | 61100     | 62800   | 60800   | 77900   | 79400   | 74900   | 66700   | 58800   | 49900   |
| 22          | 38300          | 24400      | 58300     | 63300     | 62500   | 60800   | 77800   | 79400   | 74800   | 66400   | 58600   | 49500   |
| 23          | 37800          | 31300      | 57900     | 63200     | 62500   | 60800   | 78000   | 79300   | 74600   | 66200   | 58300   | 49200   |
| 24          | 37400          | 33400      | 57600     | 62200     | 62800   | 63400   | 78900   | 79200   | 74400   | 65900   | 58000   | 48800   |
| 25          | 36900          | 33700      | 57200     | 61500     | 63400   | 63400   | 78400   | 79200   | 74100   | 65700   | 57800   | 48500   |
| 26          | 36400          | 34400      | 56800     | 61100     | 62600   | 62500   | 78800   | 79000   | 73800   | 65500   | 57500   | 48100   |
| 27          | 35900          | 35000      | 56400     | 60700     | 62700   | 61900   | 79000   | 79000   | 73500   | 65200   | 57200   | 47800   |
| 28          | 35400          | 35100      | 55900     | 60500     | 64900   | 61500   | 79300   | 79000   | 73200   | 64600   | 56900   | 47400   |
| 29          | 34800          | 36600      | 55500     | 60400     | ---     | 61300   | 79600   | 78900   | 72800   | 64400   | 56700   | 47000   |
| 30          | 34300          | 44200      | 55100     | 60200     | ---     | 61300   | 80000   | 78800   | 72400   | 64100   | 56400   | 46700   |
| 31          | 33800          | ---        | 54600     | 60200     | ---     | 61100   | ---     | 78700   | ---     | 63800   | 56100   | ---     |
| TOTAL       | 1297800        | 913200     | 1796100   | 1719700   | 1754200 | 1911200 | 2167400 | 2450100 | 2274700 | 2102800 | 1859800 | 1546100 |
| MEAN        | 41865          | 30440      | 57939     | 55474     | 62650   | 61652   | 72247   | 79035   | 75823   | 67832   | 59994   | 51537   |
| MAX         | 50400          | 44200      | 60400     | 63300     | 66500   | 63800   | 80000   | 80400   | 78600   | 72100   | 63600   | 55800   |
| MIN         | 33800          | 24400      | 47600     | 49600     | 59600   | 60800   | 60900   | 77800   | 72400   | 63800   | 56100   | 46700   |
| a           | 1884.52        | 1891.47    | 1897.46   | 1900.38   | 1902.72 | 1900.83 | 1909.73 | 1909.15 | 1906.30 | 1902.18 | 1898.23 | 1892.98 |
| b           | -17160         | 10340      | 10480     | 5570      | 4710    | -3820   | 18930   | -1310   | -6270   | -8630   | -7750   | -9400   |
| CAL YR 1998 | TOTAL 22726600 | MEAN 62265 | MAX 80600 | MIN 24400 |         |         |         |         |         |         |         |         |
| WTR YR 1999 | TOTAL 21793100 | MEAN 59707 | MAX 80400 | MIN 24400 |         |         |         |         |         |         |         |         |

a Elevation in feet, at end of month.

b Change in contents, in acre-feet.

## 11470500 EEL RIVER BELOW SCOTT DAM, NEAR POTTER VALLEY, CA

LOCATION.—Lat 39°24'29", long 122°58'29", in SE 1/4 sec.15, T.18 N., R.10 W., Lake County, Hydrologic Unit 18010103, Mendocino National Forest, on left bank, 0.4 mi upstream from Soda Creek, 0.7 mi downstream from Scott Dam, and 9.7 mi northeast of town of Potter Valley.

DRAINAGE AREA.—290 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1922 to current year. Monthly discharge only for some periods, published in WSP 1315-B. Prior to October 1929, published as "South Eel River at Hullville," and October 1929 to September 1953, "at Hullville."

REVISED RECORDS.—WSP 1315-B: 1923(M), 1938(M). WSP 1395: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 1,740 ft above sea level, from topographic map. Prior to Dec. 15, 1930, at datum 3.00 ft higher.

REMARKS.—Flow regulated by Lake Pillsbury (station 11470000) 0.7 mi upstream. No diversion upstream from station. See schematic diagram of Eel River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 56,300 ft<sup>3</sup>/s, Dec. 22, 1964, gage height, 24.24 ft, from floodmarks, from rating curve extended above 37,000 ft<sup>3</sup>/s; minimum daily, 0.1 ft<sup>3</sup>/s, Sept. 8, 1924.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB    | MAR    | APR   | MAY   | JUN   | JUL   | AUG  | SEP  |
|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|------|------|
| 1     | 345   | 331   | 129   | 429   | 580    | 4430   | 1180  | 493   | 308   | 258   | 151  | 131  |
| 2     | 314   | 329   | 133   | 428   | 524    | 3280   | 1050  | 1210  | 303   | 258   | 140  | 131  |
| 3     | 314   | 328   | 170   | 427   | 510    | 3210   | 757   | 1380  | 300   | 264   | 135  | 131  |
| 4     | 323   | 326   | 209   | 325   | 503    | 2600   | 708   | 787   | 298   | 265   | 137  | 131  |
| 5     | 320   | 331   | 375   | 302   | 456    | 2170   | 846   | 493   | 304   | 244   | 141  | 132  |
| 6     | 319   | 336   | 691   | 292   | 1220   | 1770   | 713   | 500   | 306   | 218   | 143  | 132  |
| 7     | 318   | 337   | 707   | 283   | 6720   | 1480   | 433   | 520   | 303   | 192   | 140  | 132  |
| 8     | 322   | 335   | 762   | 282   | 4880   | 1400   | 311   | 466   | 298   | 166   | 138  | 132  |
| 9     | 326   | 332   | 723   | 282   | 9310   | 1590   | 346   | 357   | 290   | 151   | 136  | 133  |
| 10    | 325   | 331   | 598   | 282   | 4860   | 1440   | 389   | 369   | 271   | 150   | 135  | 134  |
| 11    | 323   | 330   | 517   | 282   | 2890   | 1260   | 419   | 379   | 256   | 152   | 137  | 134  |
| 12    | 322   | 327   | 466   | 281   | 2100   | 1170   | 452   | 402   | 247   | 150   | 138  | 134  |
| 13    | 322   | 326   | 473   | 280   | 1580   | 1140   | 500   | 473   | 231   | 144   | 136  | 134  |
| 14    | 330   | 324   | 536   | 281   | 1400   | 1230   | 541   | 461   | 220   | 145   | 135  | 153  |
| 15    | 337   | 323   | 505   | 278   | 1210   | 1550   | 713   | 450   | 217   | 144   | 136  | 136  |
| 16    | 337   | 321   | 462   | 235   | 2090   | 1420   | 828   | 404   | 204   | 144   | 137  | 201  |
| 17    | 336   | 323   | 425   | 210   | 4810   | 1290   | 849   | 401   | 200   | 147   | 137  | 232  |
| 18    | 335   | 320   | 426   | 202   | 3630   | 1200   | 928   | 406   | 176   | 149   | 136  | 182  |
| 19    | 333   | 318   | 433   | 200   | 3320   | 1150   | 1160  | 414   | 168   | 150   | 135  | 168  |
| 20    | 332   | 316   | 438   | 204   | 2610   | 1140   | 1260  | 415   | 172   | 150   | 134  | 138  |
| 21    | 331   | 316   | 436   | 704   | 2810   | 1110   | 1250  | 417   | 173   | 149   | 134  | 173  |
| 22    | 330   | 315   | 436   | 1410  | 2580   | 1070   | 1050  | 418   | 173   | 151   | 134  | 196  |
| 23    | 329   | 284   | 435   | 3930  | 2510   | 1080   | 907   | 419   | 172   | 151   | 134  | 179  |
| 24    | 332   | 281   | 434   | 2600  | 2470   | 1720   | 910   | 417   | 171   | 149   | 133  | 178  |
| 25    | 329   | 337   | 433   | 1670  | 3530   | 3790   | 739   | 439   | 211   | 148   | 132  | 180  |
| 26    | 327   | 337   | 433   | 1250  | 2900   | 2890   | 746   | 437   | 196   | 147   | 135  | 178  |
| 27    | 326   | 338   | 433   | 1030  | 2460   | 2210   | 756   | 357   | 226   | 147   | 136  | 177  |
| 28    | 325   | 339   | 432   | 875   | 3820   | 1720   | 654   | 309   | 269   | 146   | 136  | 178  |
| 29    | 327   | 319   | 431   | 756   | ---    | 1440   | 469   | 299   | 268   | 144   | 135  | 189  |
| 30    | 327   | 232   | 430   | 671   | ---    | 1320   | 435   | 297   | 264   | 149   | 134  | 188  |
| 31    | 329   | ---   | 430   | 643   | ---    | 1270   | ---   | 310   | ---   | 152   | 131  | ---  |
| TOTAL | 10145 | 9642  | 13941 | 21324 | 78283  | 55540  | 22299 | 14899 | 7195  | 5274  | 4231 | 4747 |
| MEAN  | 327   | 321   | 450   | 688   | 2796   | 1792   | 743   | 481   | 240   | 170   | 136  | 158  |
| MAX   | 345   | 339   | 762   | 3930  | 9310   | 4430   | 1260  | 1380  | 308   | 265   | 151  | 232  |
| MIN   | 314   | 232   | 129   | 200   | 456    | 1070   | 311   | 297   | 168   | 144   | 131  | 131  |
| AC-FT | 20120 | 19120 | 27650 | 42300 | 155300 | 110200 | 44230 | 29550 | 14270 | 10460 | 8390 | 9420 |

## 11470500 EEL RIVER BELOW SCOTT DAM, NEAR POTTER VALLEY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 222  | 278  | 746  | 1309 | 1445 | 1072 | 670  | 338  | 202  | 178  | 179  | 210  |
| MAX  | 361  | 1851 | 4945 | 5687 | 6624 | 4536 | 3357 | 1184 | 717  | 329  | 334  | 336  |
| (WY) | 1963 | 1974 | 1965 | 1970 | 1986 | 1983 | 1982 | 1983 | 1998 | 1959 | 1959 | 1996 |
| MIN  | 19.1 | 13.3 | 27.6 | 35.8 | 7.28 | 11.8 | 15.4 | 34.4 | 50.3 | 64.5 | 65.0 | 34.4 |
| (WY) | 1978 | 1934 | 1960 | 1944 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1923 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 436689                 |        | 247520              |        |                         |             |
| ANNUAL MEAN              | 1196                   |        | 678                 |        |                         |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 1443                    | 1983        |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 85.4                    | 1977        |
| HIGHEST DAILY MEAN       | 11300                  | Feb 3  | 9310                | Feb 9  | 45300                   | Dec 22 1964 |
| LOWEST DAILY MEAN        | 129                    | Dec 1  | 129                 | Dec 1  | .10                     | Sep 8 1924  |
| ANNUAL SEVEN-DAY MINIMUM | 142                    | Jul 18 | 131                 | Aug 31 | .43                     | Sep 6 1924  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 12100               | Feb 9  | 56300                   | Dec 22 1964 |
| INSTANTANEOUS PEAK STAGE |                        |        | 12.49               | Feb 9  | 24.24                   | Dec 22 1964 |
| ANNUAL RUNOFF (AC-FT)    | 866200                 |        | 491000              |        | 410500                  |             |
| 10 PERCENT EXCEEDS       | 3580                   |        | 1510                |        | 1140                    |             |
| 50 PERCENT EXCEEDS       | 425                    |        | 329                 |        | 234                     |             |
| 90 PERCENT EXCEEDS       | 159                    |        | 137                 |        | 92                      |             |



## 11471000 POTTER VALLEY POWERHOUSE INTAKE NEAR POTTER VALLEY, CA

LOCATION.—Lat 39°22'00", long 123°07'35", in SW 1/4 SW 1/4 sec.31, T.18 N., R.11 W., Mendocino County, Hydrologic Unit 18010103, in penstock of powerhouse of Pacific Gas & Electric Co., 1.5 mi southwest of Van Arsdale Dam, and 3.2 mi northwest of town of Potter Valley.

PERIOD OF RECORD.—December 1909 to current year. Prior to October 1922, monthly discharge only, published in WSP 1315-B. Prior to October 1931, published as Snow Mountain Water and Power Co.'s Tailrace near Potter Valley. October 1931 to September 1984, published as Potter Valley Powerhouse Tailrace near Potter Valley.

REVISED RECORDS.—WSP 1395: 1950. WDR CA-89-2: 1988.

GAGE.—Acoustic flowmeter in penstock of powerplant. Elevation of gage is 1,440 ft above sea level, from topographic map. Prior to Dec. 11, 1985, water-stage recorder and Parshall flume. See WSP 1929 for history of changes prior to Apr. 12, 1950.

REMARKS.—Water is diverted from Eel River above Van Arsdale Dam. After passing through powerhouse, part is used for irrigation in Potter Valley and remainder flows into East Fork Russian River. See schematic diagram of Eel River Basin.

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

EXTREMES FOR PERIOD OF RECORD (1922 TO CURRENT YEAR).—Maximum daily discharge, 351 ft<sup>3</sup>/s, Oct. 31, 1982; no flow at times in several years.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB     | MAR     | APR   | MAY   | JUN  | JUL  | AUG  | SEP  |
|-------|-------|-------|-------|-------|---------|---------|-------|-------|------|------|------|------|
| 1     | 322   | 304   | 188   | 288   | 325     | .18     | 328   | 174   | 157  | 134  | 133  | 138  |
| 2     | 324   | 298   | 209   | 285   | 325     | .16     | 328   | 174   | 157  | 134  | 132  | 138  |
| 3     | 309   | 298   | 162   | 284   | 325     | .33     | 328   | 174   | 157  | 134  | 104  | 138  |
| 4     | 303   | 298   | 165   | 209   | 325     | 322     | 327   | 92    | 157  | 133  | 132  | 138  |
| 5     | 296   | 298   | 325   | 165   | 325     | 325     | 330   | 177   | 156  | 133  | 132  | 138  |
| 6     | 296   | 304   | 318   | 165   | 253     | 325     | 331   | 325   | 157  | 133  | 131  | 136  |
| 7     | 293   | 313   | 322   | 165   | 150     | 324     | 166   | 322   | 157  | 133  | 132  | 134  |
| 8     | 306   | 322   | 166   | 165   | 140     | 324     | 171   | 322   | 157  | 133  | 131  | 132  |
| 9     | 299   | 313   | 165   | 165   | 155     | 324     | 169   | 180   | 157  | 132  | 131  | 134  |
| 10    | 298   | 309   | 319   | 165   | 191     | 324     | 287   | 180   | 157  | 133  | 131  | 136  |
| 11    | 296   | 310   | 321   | 165   | e260    | 324     | 178   | 180   | 159  | 134  | 131  | 136  |
| 12    | 296   | 306   | 321   | 165   | 319     | 324     | 177   | 180   | 160  | 128  | 131  | 136  |
| 13    | 298   | 304   | 321   | 165   | 319     | 322     | 175   | 210   | 160  | 130  | 131  | 136  |
| 14    | 295   | 301   | 321   | 165   | 318     | 322     | 175   | 244   | 160  | 136  | 131  | 148  |
| 15    | 304   | 301   | 321   | 165   | 318     | 322     | 175   | 244   | 160  | 134  | 131  | 141  |
| 16    | 306   | 299   | 321   | 165   | 319     | 322     | 175   | 244   | 160  | 133  | 131  | 178  |
| 17    | 306   | 306   | 322   | 165   | 319     | 324     | 175   | 237   | 160  | 133  | 131  | 210  |
| 18    | 304   | 306   | 312   | 164   | 318     | 322     | 174   | 240   | 148  | 132  | 131  | 180  |
| 19    | 303   | 304   | 324   | 164   | 1.5     | 330     | 175   | 244   | 134  | 136  | 131  | 179  |
| 20    | 303   | 299   | 315   | 164   | 1.5     | 331     | 174   | 244   | 136  | 137  | 132  | 177  |
| 21    | 303   | 296   | 311   | 164   | .26     | 331     | 174   | 240   | 137  | 138  | 132  | 171  |
| 22    | 299   | 304   | 308   | 164   | .26     | 330     | 174   | 240   | 137  | 136  | 132  | 167  |
| 23    | 301   | 316   | 305   | 162   | .24     | 330     | 174   | 239   | 136  | 135  | 134  | 171  |
| 24    | 301   | 124   | 301   | 153   | .23     | 331     | 175   | 239   | 131  | 135  | 134  | 173  |
| 25    | 303   | 247   | 299   | 163   | .23     | 330     | 174   | 240   | 134  | 135  | 133  | 173  |
| 26    | 299   | 250   | 298   | 163   | .23     | 330     | 174   | 240   | 135  | 136  | 131  | 174  |
| 27    | 298   | 248   | 296   | 163   | .23     | 330     | 175   | 242   | 135  | 133  | 134  | 173  |
| 28    | 298   | 251   | 295   | 163   | .22     | 328     | 174   | 160   | 134  | 133  | 138  | 173  |
| 29    | 296   | 250   | 292   | 228   | ---     | 328     | 174   | 160   | 134  | 132  | 139  | 175  |
| 30    | 299   | 268   | 290   | 323   | ---     | 328     | 174   | 156   | 134  | 132  | 139  | 177  |
| 31    | 295   | ---   | 291   | 325   | ---     | 328     | ---   | 156   | ---  | 132  | 138  | ---  |
| TOTAL | 9349  | 8647  | 8824  | 5874  | 5008.90 | 9135.67 | 6260  | 6699  | 4453 | 4142 | 4084 | 4710 |
| MEAN  | 302   | 288   | 285   | 189   | 179     | 295     | 209   | 216   | 148  | 134  | 132  | 157  |
| MAX   | 324   | 322   | 325   | 325   | 325     | 331     | 331   | 325   | 160  | 138  | 139  | 210  |
| MIN   | 293   | 124   | 162   | 153   | .22     | .16     | 166   | 92    | 131  | 128  | 104  | 132  |
| AC-FT | 18540 | 17150 | 17500 | 11650 | 9940    | 18120   | 12420 | 13290 | 8830 | 8220 | 8100 | 9340 |

e Estimated.

## 11471000 POTTER VALLEY POWERHOUSE INTAKE NEAR POTTER VALLEY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 188  | 195  | 211  | 225  | 242  | 244  | 231  | 214  | 178  | 159  | 155  | 180  |
| MAX  | 321  | 311  | 311  | 316  | 325  | 330  | 330  | 330  | 325  | 314  | 320  | 314  |
| (WY) | 1991 | 1963 | 1982 | 1982 | 1982 | 1998 | 1998 | 1982 | 1982 | 1953 | 1953 | 1967 |
| MIN  | .000 | 9.70 | 3.10 | 15.4 | 11.8 | .000 | 18.9 | 39.0 | 38.5 | 11.0 | 2.29 | 2.67 |
| (WY) | 1960 | 1934 | 1934 | 1944 | 1977 | 1950 | 1977 | 1977 | 1920 | 1920 | 1920 | 1920 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1910 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 99971                  |        | 77186.57            |        |                         |             |
| ANNUAL MEAN              | 274                    |        | 211                 |        | 202                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 305                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 84.0                    |             |
| HIGHEST DAILY MEAN       | 336                    | Mar 19 | 331                 | Mar 20 | 351                     | Oct 31 1982 |
| LOWEST DAILY MEAN        | 48                     | Feb 6  | .16                 | Mar 2  | .00                     | Jul 31 1910 |
| ANNUAL SEVEN-DAY MINIMUM | 152                    | Feb 4  | .21                 | Feb 24 | .00                     | Aug 7 1913  |
| ANNUAL RUNOFF (AC-FT)    | 198300                 |        | 153100              |        | 146400                  |             |
| 10 PERCENT EXCEEDS       | 330                    |        | 324                 |        | 313                     |             |
| 50 PERCENT EXCEEDS       | 318                    |        | 175                 |        | 215                     |             |
| 90 PERCENT EXCEEDS       | 157                    |        | 132                 |        | 59                      |             |

## 11471099 POTTER VALLEY POWERHOUSE TAILRACE NEAR POTTER VALLEY, CA

LOCATION.—Lat 39°21'42", long 123°07'38", in SW 1/4 NW 1/4 sec.6, T.17 N., R.11 W., Mendocino County, Hydrologic Unit 18010103, 100 ft downstream from powerhouse of Pacific Gas and Electric Co., 1.8 mi southwest of Van Arsdale Dam, and 2.9 mi northwest of town of Potter Valley.

PERIOD OF RECORD.—October 1987 to current year. October 1931 to September 1984, record published for Potter Valley Powerhouse Intake (station 11471000) not equivalent because diversion for irrigation is included.

GAGE.—Discharge computed as difference between Potter Valley Powerhouse Intake (station 11471000) and the combined flows of Potter Valley Irrigation District East Canal (station 11471105) and Potter Valley Irrigation District West Canal (station 11471106). Elevation of tailrace is 1,020 ft above sea level, from topographic map.

REMARKS.—Flow represents inflow into the Russian River Basin after passing through powerhouse. See schematic diagrams of Russian River and Eel River Basins.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 335 ft<sup>3</sup>/s, Mar. 19, 20, 22, 23, 1998; no flow Apr. 4, 5, and July 18–20, 1990; Nov.15–19, 1993; and many days in 1995.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB     | MAR     | APR   | MAY   | JUN  | JUL  | AUG  | SEP  |
|-------|-------|-------|-------|-------|---------|---------|-------|-------|------|------|------|------|
| 1     | 292   | 301   | 187   | 287   | 324     | .00     | 309   | 167   | 143  | 108  | 116  | 118  |
| 2     | 304   | 296   | 208   | 284   | 324     | .00     | 306   | 161   | 144  | 109  | 115  | 118  |
| 3     | 302   | 296   | 161   | 283   | 324     | .00     | 321   | 164   | 145  | 110  | 90   | 124  |
| 4     | 291   | 296   | 163   | 208   | 324     | 321     | 324   | 87    | 149  | 115  | 104  | 124  |
| 5     | 265   | 296   | 323   | 163   | 324     | 324     | 324   | 167   | 141  | 114  | 106  | 125  |
| 6     | 258   | 302   | 316   | 164   | 252     | 324     | 322   | 313   | 137  | 102  | 106  | 122  |
| 7     | 260   | 311   | 320   | 164   | 149     | 323     | 147   | 311   | 137  | 100  | 106  | 115  |
| 8     | 290   | 320   | 165   | 164   | 139     | 323     | 163   | 298   | 134  | 102  | 108  | 106  |
| 9     | 287   | 312   | 164   | 164   | 154     | 323     | 164   | 162   | 134  | 102  | 110  | 107  |
| 10    | 286   | 307   | 318   | 164   | 190     | 323     | 285   | 154   | 135  | 103  | 113  | 110  |
| 11    | 284   | 309   | 320   | 164   | e259    | 323     | 177   | 149   | 134  | 103  | 115  | 113  |
| 12    | 282   | 305   | 320   | 164   | 318     | 323     | 176   | 156   | 134  | 99   | 113  | 115  |
| 13    | 290   | 302   | 320   | 164   | 318     | 321     | 174   | 188   | 132  | 109  | 109  | 115  |
| 14    | 290   | 300   | 320   | 164   | 317     | 321     | 174   | 226   | 134  | 112  | 110  | 127  |
| 15    | 300   | 300   | 320   | 164   | 317     | 321     | 174   | 229   | 135  | 101  | 113  | 119  |
| 16    | 302   | 298   | 320   | 164   | 318     | 321     | 174   | 226   | 132  | 102  | 106  | 150  |
| 17    | 302   | 304   | 321   | 164   | 318     | 323     | 174   | 213   | 132  | 106  | 103  | 180  |
| 18    | 300   | 305   | 311   | 163   | 317     | 321     | 173   | 218   | 125  | 106  | 104  | 149  |
| 19    | 294   | 303   | 323   | 163   | 1.2     | 329     | 174   | 222   | 113  | 111  | 103  | 152  |
| 20    | 287   | 298   | 314   | 163   | 1.2     | 330     | 173   | 217   | 113  | 109  | 103  | 155  |
| 21    | 282   | 295   | 310   | 163   | .00     | 330     | 173   | 211   | 116  | 106  | 100  | 147  |
| 22    | 271   | 302   | 307   | 163   | .00     | 329     | 173   | 211   | 112  | 107  | 101  | 144  |
| 23    | 267   | 314   | 304   | 161   | .00     | 329     | 173   | 208   | 119  | 104  | 104  | 153  |
| 24    | 294   | 122   | 300   | 152   | .00     | 330     | 174   | 211   | 113  | 106  | 103  | 155  |
| 25    | 302   | 246   | 298   | 161   | .00     | 329     | 173   | 212   | 111  | 113  | 108  | 156  |
| 26    | 297   | 249   | 297   | 162   | .00     | 329     | 173   | 212   | 107  | 118  | 109  | 158  |
| 27    | 294   | 247   | 295   | 162   | .00     | 329     | 174   | 214   | 109  | 111  | 107  | 157  |
| 28    | 294   | 250   | 294   | 162   | .00     | 327     | 151   | 135   | 108  | 112  | 111  | 157  |
| 29    | 292   | 248   | 291   | 227   | ---     | 321     | 154   | 148   | 100  | 107  | 116  | 159  |
| 30    | 296   | 266   | 289   | 322   | ---     | 312     | 160   | 144   | 101  | 108  | 115  | 160  |
| 31    | 292   | ---   | 290   | 324   | ---     | 316     | ---   | 143   | ---  | 113  | 116  | ---  |
| TOTAL | 8947  | 8600  | 8789  | 5841  | 4988.40 | 9075.00 | 6086  | 6077  | 3779 | 3328 | 3343 | 4090 |
| MEAN  | 289   | 287   | 284   | 188   | 178     | 293     | 203   | 196   | 126  | 107  | 108  | 136  |
| MAX   | 304   | 320   | 323   | 324   | 324     | 330     | 324   | 313   | 149  | 118  | 116  | 180  |
| MIN   | 258   | 122   | 161   | 152   | .00     | .00     | 147   | 87    | 100  | 99   | 90   | 106  |
| AC-FT | 17750 | 17060 | 17430 | 11590 | 9890    | 18000   | 12070 | 12050 | 7500 | 6600 | 6630 | 8110 |

e Estimated.

## 11471099 POTTER VALLEY POWERHOUSE TAILRACE NEAR POTTER VALLEY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 195  | 184  | 195  | 203  | 222  | 249  | 207  | 187  | 153  | 108  | 108  | 157  |
| MAX  | 311  | 291  | 292  | 294  | 319  | 329  | 327  | 316  | 307  | 160  | 151  | 286  |
| (WY) | 1991 | 1998 | 1989 | 1998 | 1996 | 1998 | 1998 | 1993 | 1998 | 1993 | 1996 | 1996 |
| MIN  | 79.3 | 90.1 | 60.5 | 35.8 | 45.0 | 51.4 | 53.7 | 97.0 | 59.0 | 60.1 | 81.5 | 66.4 |
| (WY) | 1989 | 1988 | 1995 | 1991 | 1991 | 1995 | 1990 | 1988 | 1994 | 1994 | 1988 | 1994 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1988 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 95193                  |        | 72943.40            |        |                         |             |
| ANNUAL MEAN              | 261                    |        | 200                 |        | 180                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 248                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 82.8                    |             |
| HIGHEST DAILY MEAN       | 335                    | Mar 19 | 330                 | Mar 20 | 335                     | Mar 19 1998 |
| LOWEST DAILY MEAN        | 47                     | Feb 6  | .00                 | Feb 21 | .00                     | Apr 4 1990  |
| ANNUAL SEVEN-DAY MINIMUM | 111                    | Jul 24 | .00                 | Feb 21 | .00                     | Mar 10 1995 |
| ANNUAL RUNOFF (AC-FT)    | 188800                 |        | 144700              |        | 130700                  |             |
| 10 PERCENT EXCEEDS       | 329                    |        | 321                 |        | 321                     |             |
| 50 PERCENT EXCEEDS       | 302                    |        | 165                 |        | 140                     |             |
| 90 PERCENT EXCEEDS       | 118                    |        | 105                 |        | 74                      |             |

## 11471500 EEL RIVER AT VAN ARSDALE DAM, NEAR POTTER VALLEY, CA

LOCATION.—Lat 39°23'19", long 123°06'54", in NE 1/4 sec.30, T.18 N., R.11 W., Mendocino County, Hydrologic Unit 18010103, on left bank, 1,000 ft downstream from Van Arsdale Dam, and 4.6 mi north of town of Potter Valley.

DRAINAGE AREA.—349 mi<sup>2</sup>.

PERIOD OF RECORD.—November 1909 to September 1922 (combined monthly discharge only, of Eel River at this station and Snow Mountain Water and Power Co.'s tailrace near Potter Valley), October 1922 to current year. Monthly discharge only for some periods, published in WSP 1315-B. Prior to October 1929, published as South Eel River at Van Arsdale Dam, near Potter Valley.

REVISED RECORDS.—WSP 1315-B: 1913, 1920–23, 1925–27. WSP 1395: 1923(M), 1938.

GAGE.—Water-stage recorder. Elevation of gage is 1,400 ft above sea level, from topographic map. Nov. 18, 1909, to Mar. 3, 1927, recorder in reservoir 800 ft upstream from Van Arsdale Dam at different datum. Oct. 1, 1927, to Feb. 28, 1937, nonrecording gage at present site and datum.

REMARKS.—Flow regulated by Lake Pillsbury (station 11470000) 11 mi upstream. Low flows may be further regulated at Van Arsdale Dam by calibrated gates in dam and fish ladder. Water is diverted from Van Arsdale Reservoir through tunnel to Potter Valley Powerhouse Intake (station 11471000), after which part is used for irrigation and remainder flows into East Fork Russian River (see station 11471099). Records given represent flow only in the Eel River. See schematic diagram of Eel River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 64,100 ft<sup>3</sup>/s, Dec. 22, 1964, gage height, 33.9 ft from floodmarks; no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT   | NOV    | DEC   | JAN   | FEB    | MAR    | APR   | MAY   | JUN  | JUL   | AUG   | SEP   |
|-------|-------|--------|-------|-------|--------|--------|-------|-------|------|-------|-------|-------|
| 1     | 8.0   | 9.5    | 431   | 101   | 391    | 5430   | 1140  | 410   | 113  | 95    | 5.6   | 5.6   |
| 2     | 8.5   | 9.9    | 364   | 101   | 315    | 4090   | 950   | 939   | 112  | 100   | 5.7   | 5.6   |
| 3     | 7.9   | 10     | 938   | 101   | 271    | 3920   | 658   | 1640  | 112  | 100   | 20    | 5.6   |
| 4     | 8.0   | 10     | 336   | 101   | 283    | 2970   | 520   | 950   | 111  | 100   | 5.6   | 5.5   |
| 5     | 7.8   | 10     | 229   | 101   | 211    | 2300   | 648   | 674   | 110  | 92    | 5.6   | 5.5   |
| 6     | 7.3   | 10     | 451   | 101   | 1510   | 1890   | 674   | 267   | 111  | 73    | 5.6   | 5.5   |
| 7     | 7.9   | 10     | 552   | 100   | 8160   | 1570   | 488   | 162   | 111  | 52    | 5.7   | 5.5   |
| 8     | 8.3   | 10     | 661   | 100   | 6260   | 1510   | 429   | 261   | 109  | 32    | 5.7   | 5.5   |
| 9     | 8.2   | 10     | 594   | 100   | 10600  | 1780   | 331   | 190   | 103  | 11    | 5.6   | 5.6   |
| 10    | 8.0   | 10     | 385   | 101   | 5910   | 1570   | 406   | 195   | 93   | 5.9   | 5.6   | 5.6   |
| 11    | 7.6   | 10     | 368   | 101   | 3450   | 1330   | 701   | 206   | 83   | 5.9   | 5.6   | 5.6   |
| 12    | 7.6   | 10     | 249   | 101   | 2280   | 1180   | 671   | 215   | 73   | 5.8   | 5.6   | 5.6   |
| 13    | 7.7   | 10     | 258   | 101   | 1750   | 1110   | 684   | 216   | 64   | 12    | 5.6   | 5.6   |
| 14    | 7.8   | 10     | 380   | 101   | 1520   | 1280   | 676   | 205   | 56   | 5.5   | 5.6   | 5.6   |
| 15    | 7.8   | 10     | 322   | 101   | 1220   | 1700   | 738   | 199   | 51   | 5.5   | 5.6   | 5.6   |
| 16    | 7.7   | 10     | 258   | 200   | 2440   | 1530   | 813   | 102   | 44   | 5.5   | 5.6   | 5.6   |
| 17    | 7.7   | 9.9    | 100   | 244   | 5810   | 1340   | 801   | 109   | 38   | 5.5   | 5.6   | 5.6   |
| 18    | 7.7   | 9.9    | 100   | 646   | 4510   | 1200   | 843   | 112   | 35   | 5.5   | 5.7   | 17    |
| 19    | 7.7   | 10     | 100   | 391   | 4280   | 1070   | 1080  | 112   | 35   | 5.5   | 5.7   | 5.3   |
| 20    | 7.7   | 10     | 100   | 490   | 3440   | 1060   | 1270  | 112   | 34   | 5.5   | 5.7   | 5.4   |
| 21    | 7.4   | 10     | 100   | 862   | 3750   | 979    | 1260  | 112   | 34   | 5.5   | 5.7   | 5.4   |
| 22    | 7.4   | 10     | 100   | 1710  | 3440   | 910    | 1040  | 112   | 35   | 5.5   | 5.7   | 35    |
| 23    | 7.6   | 809    | 100   | 4980  | 3330   | 973    | 785   | 112   | 35   | 5.5   | 5.7   | 20    |
| 24    | 7.7   | 511    | 100   | 3300  | 3270   | 1840   | 780   | 112   | 35   | 5.6   | 5.7   | 5.7   |
| 25    | 7.7   | 233    | 100   | 2120  | 4540   | 4360   | 670   | 112   | 34   | 5.6   | 5.7   | 5.8   |
| 26    | 7.7   | 218    | 100   | 1500  | 3800   | 3270   | 622   | 113   | 36   | 5.6   | 5.7   | 5.8   |
| 27    | 7.7   | 207    | 100   | 1120  | 3200   | 2320   | 647   | 113   | 47   | 5.5   | 5.7   | 5.8   |
| 28    | 8.0   | 163    | 100   | 876   | 4710   | 1800   | 578   | 113   | 80   | 5.5   | 5.7   | 5.8   |
| 29    | 8.6   | 319    | 100   | 690   | ---    | 1490   | 437   | 112   | 103  | 5.5   | 5.7   | 5.7   |
| 30    | 9.1   | 483    | 100   | 507   | ---    | 1320   | 351   | 111   | 102  | 5.5   | 5.7   | 5.8   |
| 31    | 9.3   | ---    | 100   | 471   | ---    | 1280   | ---   | 112   | ---  | 5.5   | 5.7   | ---   |
| TOTAL | 245.1 | 3162.2 | 8276  | 21619 | 94651  | 60372  | 21691 | 8510  | 2139 | 783.9 | 189.7 | 223.2 |
| MEAN  | 7.91  | 105    | 267   | 697   | 3380   | 1947   | 723   | 275   | 71.3 | 25.3  | 6.12  | 7.44  |
| MAX   | 9.3   | 809    | 938   | 4980  | 10600  | 5430   | 1270  | 1640  | 113  | 100   | 20    | 35    |
| MIN   | 7.3   | 9.5    | 100   | 100   | 211    | 910    | 331   | 102   | 34   | 5.5   | 5.6   | 5.3   |
| AC-FT | 486   | 6270   | 16420 | 42880 | 187700 | 119700 | 43020 | 16880 | 4240 | 1550  | 376   | 443   |

## 11471500 EEL RIVER AT VAN ARSDALE DAM, NEAR POTTER VALLEY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 11.8 | 128  | 713  | 1416 | 1543 | 1061 | 561  | 180  | 28.5 | 5.61 | 5.63 | 5.39 |
| MAX  | 153  | 2389 | 5249 | 6293 | 8904 | 5492 | 3863 | 1174 | 366  | 25.3 | 54.1 | 27.9 |
| (WY) | 1963 | 1974 | 1965 | 1970 | 1986 | 1983 | 1982 | 1983 | 1998 | 1999 | 1980 | 1959 |
| MIN  | .86  | 1.30 | 1.78 | 2.00 | 3.62 | 2.00 | 2.00 | 2.00 | 1.07 | 1.06 | 1.09 | 1.10 |
| (WY) | 1953 | 1953 | 1937 | 1924 | 1977 | 1924 | 1924 | 1924 | 1931 | 1931 | 1931 | 1931 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1923 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 506398.0               |        | 221862.1            |        |                         |             |
| ANNUAL MEAN              | 1387                   |        | 608                 |        | 462                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 1546                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 3.46                    |             |
| HIGHEST DAILY MEAN       | 13100                  | Jan 25 | 10600               | Feb 9  | 49500                   | Dec 22 1964 |
| LOWEST DAILY MEAN        | 5.1                    | Jul 15 | 5.3                 | Sep 19 | .00                     | Sep 13 1953 |
| ANNUAL SEVEN-DAY MINIMUM | 6.1                    | Jul 15 | 5.5                 | Jul 14 | .16                     | Dec 5 1965  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 13200               | Feb 9  | 64100                   | Dec 22 1964 |
| INSTANTANEOUS PEAK STAGE |                        |        | 19.50               | Feb 9  | 33.90                   | Dec 22 1964 |
| ANNUAL RUNOFF (AC-FT)    | 1004000                |        | 440100              |        | 335000                  |             |
| 10 PERCENT EXCEEDS       | 5110                   |        | 1700                |        | 1100                    |             |
| 50 PERCENT EXCEEDS       | 249                    |        | 101                 |        | 9.3                     |             |
| 90 PERCENT EXCEEDS       | 7.4                    |        | 5.6                 |        | 2.0                     |             |

## 11473900 MIDDLE FORK EEL RIVER NEAR DOS RIOS, CA

LOCATION.—Lat 39°42'23", long 123°19'27", in NE 1/4 SE 1/4 sec.5, T.21 N., R.13 W., Mendocino County, Hydrologic Unit 18010104, on right bank, 0.6 mi upstream from Eastman Creek, 1.7 mi southeast of Dos Rios, and 1.9 mi upstream from mouth.

DRAINAGE AREA.—745 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1965 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 901.58 ft above sea level.

REMARKS.—Records fair except for estimated daily discharges and discharges above 16,000 ft<sup>3</sup>/s, which are poor. No regulation or diversion upstream from station. See schematic diagram of Eel River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 135,000 ft<sup>3</sup>/s, Jan. 1, 1997, gage height, 31.46 ft, from rating curve extended above 52,000 ft<sup>3</sup>/s; minimum daily, 0.39 ft<sup>3</sup>/s, Sept. 1, 1994.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 25,000 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 9 | 0730 | 27,500                            | 16.52               |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC    | JAN    | FEB    | MAR    | APR    | MAY    | JUN   | JUL  | AUG  | SEP  |
|-------|------|-------|--------|--------|--------|--------|--------|--------|-------|------|------|------|
| 1     | 28   | 40    | 6590   | 466    | 1250   | 11100  | 2260   | 2390   | 915   | 105  | 39   | 19   |
| 2     | 27   | 43    | 4850   | 398    | 1020   | 7020   | 2050   | 2660   | 844   | 99   | 38   | 20   |
| 3     | 26   | 44    | 12200  | 374    | 920    | 8100   | 1860   | 2590   | 777   | 95   | 38   | 20   |
| 4     | 27   | 42    | 5410   | 353    | 845    | 6020   | 1690   | 2350   | 710   | 90   | 36   | 20   |
| 5     | 27   | 42    | 3140   | 332    | 724    | 4810   | 1680   | 2080   | 643   | 87   | 36   | 20   |
| 6     | 27   | 44    | 2340   | 320    | 4470   | 3930   | 1690   | 2250   | 604   | 84   | 36   | 19   |
| 7     | 26   | 61    | 1790   | 313    | 18700  | 3330   | 1610   | 2520   | 552   | 81   | 60   | 19   |
| 8     | 26   | 230   | 2080   | 302    | 9170   | 3370   | 2030   | 2210   | 511   | 77   | 58   | 18   |
| 9     | 26   | 155   | 1640   | 290    | 17800  | 4120   | 2010   | 1970   | 468   | 73   | 49   | 17   |
| 10    | 27   | 101   | 1370   | 284    | 6420   | 3230   | 2030   | 1820   | 429   | 67   | 44   | 17   |
| 11    | 28   | 110   | 1240   | 281    | 3900   | 2800   | 2780   | 1830   | 399   | 60   | 42   | 17   |
| 12    | 27   | 124   | 1160   | 280    | 2850   | 2560   | 2670   | 2070   | 385   | 57   | 41   | 16   |
| 13    | 28   | 97    | 1240   | 278    | 2310   | 2490   | 2810   | 1970   | 369   | 55   | 40   | 17   |
| 14    | 28   | 83    | 1670   | 274    | 2310   | 2780   | 3310   | 1770   | 357   | 53   | 39   | 16   |
| 15    | 28   | 81    | 1380   | 455    | 1750   | 3010   | 3780   | 1580   | 347   | 50   | 37   | 15   |
| 16    | 28   | 113   | 1320   | 1990   | 5180   | 2690   | 4150   | 1460   | 334   | 49   | 35   | 15   |
| 17    | 28   | 268   | 1350   | 2440   | 12300  | 2630   | 5130   | 1410   | 313   | 48   | 33   | 14   |
| 18    | 28   | 311   | 1310   | 8030   | 8860   | 2590   | 5280   | 1520   | 295   | 49   | 31   | 14   |
| 19    | 27   | 170   | 1130   | 4720   | 7430   | 2490   | 5170   | 1550   | 271   | 48   | 29   | 14   |
| 20    | 27   | 123   | 971    | 4820   | 5620   | 2830   | 4750   | 1600   | 248   | 47   | 28   | 14   |
| 21    | 26   | 118   | e855   | 6000   | 7550   | 2760   | 4040   | 1580   | 231   | 46   | 27   | 14   |
| 22    | 26   | 1980  | 680    | 5850   | 5770   | 2580   | 3400   | 1570   | 213   | 47   | 26   | 14   |
| 23    | 25   | 11900 | 612    | 14000  | 5820   | 2680   | 3010   | 1690   | 191   | 45   | 26   | 14   |
| 24    | 36   | 7300  | 554    | 5960   | 5930   | 5980   | 3020   | 1720   | 170   | 45   | 24   | 13   |
| 25    | 54   | 2240  | 545    | 4170   | 9480   | 9330   | 3340   | 1690   | 155   | 44   | 23   | 13   |
| 26    | 52   | 2700  | 524    | 3330   | 5680   | 5210   | 3690   | 1610   | 143   | 45   | 23   | 13   |
| 27    | 44   | 3020  | 488    | 2700   | 5510   | 3850   | 3410   | 1530   | 136   | 44   | 22   | 12   |
| 28    | 39   | 1570  | 458    | 2200   | 13100  | 3080   | 2700   | 1400   | 127   | 43   | 21   | 12   |
| 29    | 36   | 2300  | 424    | 1850   | ---    | 2670   | 2260   | 1220   | 121   | 42   | 20   | 11   |
| 30    | 34   | 7430  | 393    | 1580   | ---    | 2530   | 2140   | 1090   | 112   | 41   | 20   | 11   |
| 31    | 35   | ---   | 424    | 1540   | ---    | 2580   | ---    | 997    | ---   | 40   | 19   | ---  |
| TOTAL | 951  | 42840 | 60138  | 76180  | 172669 | 125150 | 89750  | 55697  | 11370 | 1856 | 1040 | 468  |
| MEAN  | 30.7 | 1428  | 1940   | 2457   | 6167   | 4037   | 2992   | 1797   | 379   | 59.9 | 33.5 | 15.6 |
| MAX   | 54   | 11900 | 12200  | 14000  | 18700  | 11100  | 5280   | 2660   | 915   | 105  | 60   | 20   |
| MIN   | 25   | 40    | 393    | 274    | 724    | 2490   | 1610   | 997    | 112   | 40   | 19   | 11   |
| AC-FT | 1890 | 84970 | 119300 | 151100 | 342500 | 248200 | 178000 | 110500 | 22550 | 3680 | 2060 | 928  |

e Estimated.

## 11473900 MIDDLE FORK EEL RIVER NEAR DOS RIOS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN   | FEB   | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|-------|-------|------|------|------|------|------|------|------|
| MEAN | 98.5 | 1163 | 2479 | 4423  | 3592  | 3488 | 2092 | 1278 | 432  | 86.6 | 26.2 | 23.5 |
| MAX  | 475  | 6823 | 7477 | 13540 | 12870 | 8622 | 6632 | 3852 | 1868 | 316  | 63.9 | 172  |
| (WY) | 1980 | 1974 | 1997 | 1970  | 1986  | 1983 | 1982 | 1983 | 1998 | 1998 | 1998 | 1986 |
| MIN  | 5.11 | 26.9 | 30.5 | 94.3  | 172   | 384  | 333  | 241  | 82.5 | 13.2 | 4.33 | 1.04 |
| (WY) | 1995 | 1996 | 1977 | 1977  | 1977  | 1977 | 1977 | 1977 | 1977 | 1977 | 1994 | 1994 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1966 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 1097672                |        | 638109              |        |                         |             |
| ANNUAL MEAN              | 3007                   |        | 1748                |        | 1591                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 3351                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 121                     |             |
| HIGHEST DAILY MEAN       | 28400                  | Jan 17 | 18700               | Feb 7  | 81200                   | Jan 1 1997  |
| LOWEST DAILY MEAN        | 25                     | Sep 18 | 11                  | Sep 29 | .39                     | Sep 1 1994  |
| ANNUAL SEVEN-DAY MINIMUM | 26                     | Sep 16 | 12                  | Sep 24 | .42                     | Aug 28 1994 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 27500               |        | 135000                  |             |
| INSTANTANEOUS PEAK STAGE |                        |        | 16.52               |        | 31.46                   |             |
| ANNUAL RUNOFF (AC-FT)    | 2177000                |        | 1266000             |        | 1152000                 |             |
| 10 PERCENT EXCEEDS       | 7820                   |        | 5170                |        | 3900                    |             |
| 50 PERCENT EXCEEDS       | 1460                   |        | 458                 |        | 355                     |             |
| 90 PERCENT EXCEEDS       | 28                     |        | 23                  |        | 16                      |             |



## 11474780 KEKAWAKA CREEK BELOW KEKAWAKA CREEK POWERHOUSE DIVERSION, NEAR ZENIA, CA

LOCATION.—Lat 40°06'37", long 123°27'59", in SW 1/4 SE 1/4 sec.14, T.4 S., R.6 E., Trinity County, Hydrologic Unit 18010105, on left bank, approximately 200 ft downstream from diversion dam, 3.6 mi upstream from confluence with Eel River, and 6.7 mi south of Zenia.

DRAINAGE AREA.—20.7 mi<sup>2</sup>.

PERIOD OF RECORD.—January 1990 to current year.

GAGE.—Water-stage recorder, and 120° V-notch weir. Elevation of gage is 1,480 ft above sea level, from topographic map.

REMARKS.—Water is diverted from creek upstream from gage to Kekawaka Creek Powerplant (station 11474750). See station 11474781 for records of combined discharge of creek and powerplant. See schematic diagram of Eel River Basin.

COOPERATION.—Records provided by STS Hydro Power Ltd., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Creek only, maximum discharge, 3,040 ft<sup>3</sup>/s, Dec. 31, 1996, gage height, 11.03 ft. Combined flow: Maximum discharge, 3,040 ft<sup>3</sup>/s, Dec. 31, 1996.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB    | MAR    | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|
| 1     | .90   | 2.5   | 7.3   | 3.3   | 4.8    | 182    | 22    | 4.1   | 5.0   | 2.3   | .80   | 1.0   |
| 2     | 1.0   | 2.1   | 7.5   | 3.2   | 4.1    | 130    | 16    | 4.2   | 5.0   | 2.3   | .80   | 1.0   |
| 3     | 1.1   | 1.9   | 34    | 3.2   | 4.0    | 146    | 11    | 3.9   | 4.9   | 2.3   | .80   | 1.0   |
| 4     | .90   | 1.9   | 3.4   | 3.2   | 4.1    | 91     | 5.9   | 3.7   | 4.9   | 2.2   | .80   | .90   |
| 5     | .90   | 2.1   | 3.1   | 3.2   | 3.7    | 54     | 8.9   | 4.0   | 4.8   | 2.1   | .90   | .80   |
| 6     | 1.2   | 3.1   | 3.1   | 3.2   | 182    | 34     | 8.6   | 4.1   | 4.8   | 1.9   | 1.4   | .80   |
| 7     | 1.2   | 13    | 4.0   | 3.2   | 356    | 20     | 5.2   | 4.1   | 4.7   | 1.9   | 1.5   | .80   |
| 8     | 1.1   | 11    | 14    | 3.2   | 283    | 31     | 32    | 4.1   | 4.3   | 1.8   | 1.3   | .80   |
| 9     | .90   | 7.9   | 4.8   | 3.1   | 501    | 88     | 20    | 4.0   | 4.2   | 1.7   | 1.0   | .70   |
| 10    | 1.1   | 5.7   | 3.6   | 3.1   | 173    | 28     | 58    | 4.0   | 4.2   | 1.6   | .90   | .70   |
| 11    | 1.2   | 10    | 3.3   | 3.1   | 85     | 24     | 99    | 4.0   | 4.0   | 1.6   | .90   | .50   |
| 12    | 1.1   | 6.4   | 3.2   | 3.1   | 41     | 24     | 80    | 3.8   | 3.7   | 1.5   | .90   | .50   |
| 13    | 1.9   | 4.6   | 4.1   | 3.1   | 45     | 27     | 59    | 3.8   | 3.5   | 1.4   | .90   | .50   |
| 14    | 1.6   | 3.7   | 4.1   | 3.1   | 41     | 78     | 40    | 3.6   | 3.6   | 1.4   | .80   | .40   |
| 15    | 1.5   | 3.3   | 3.4   | 8.9   | 24     | 69     | 23    | 3.3   | 3.6   | 1.4   | .80   | .50   |
| 16    | 1.4   | 3.3   | 3.1   | 12    | 188    | 41     | 19    | 3.3   | 3.5   | 1.4   | .70   | .50   |
| 17    | 1.3   | 27    | 3.1   | 42    | 246    | 26     | 20    | 3.3   | 3.4   | 1.4   | .70   | .50   |
| 18    | 1.3   | 14    | 3.1   | 83    | 301    | 17     | 9.6   | 3.3   | 3.4   | 1.4   | .60   | .50   |
| 19    | 1.3   | 7.1   | 3.0   | 53    | 244    | 8.8    | 3.8   | 3.4   | 3.3   | 1.3   | .70   | .50   |
| 20    | 1.0   | 5.6   | 23    | 66    | 176    | 6.5    | 3.5   | 3.4   | 3.3   | 1.3   | .70   | .50   |
| 21    | .90   | 61    | 23    | 109   | 192    | 4.7    | 3.7   | 3.4   | 3.2   | 1.3   | .60   | .50   |
| 22    | .90   | 87    | 3.2   | 126   | 192    | 4.0    | 3.6   | 3.4   | 3.1   | 1.2   | .60   | .50   |
| 23    | .90   | 244   | 3.2   | 229   | 210    | 4.7    | 3.4   | 3.3   | 2.9   | 1.1   | .60   | .50   |
| 24    | 3.0   | 121   | 3.1   | 92    | 239    | 225    | 3.3   | 3.3   | 2.8   | 1.1   | .60   | .50   |
| 25    | 2.9   | 7.9   | 3.1   | 38    | 312    | 213    | 3.3   | 3.5   | 2.8   | 1.2   | .50   | .50   |
| 26    | 2.1   | 17    | 3.1   | 15    | 196    | 91     | 3.2   | 3.5   | 2.8   | 1.1   | .50   | .50   |
| 27    | 1.7   | 4.7   | 3.1   | 6.5   | 184    | 43     | 3.6   | 3.4   | 2.8   | 1.0   | .60   | .50   |
| 28    | 1.6   | 3.3   | 3.1   | 4.8   | 268    | 23     | 3.9   | 3.3   | 2.6   | .90   | .70   | .50   |
| 29    | 1.6   | 11    | 3.3   | 4.4   | ---    | 16     | 4.2   | 3.3   | 2.5   | .90   | .90   | .50   |
| 30    | 1.5   | 30    | 3.2   | 4.1   | ---    | 19     | 4.2   | 3.3   | 2.4   | .90   | .90   | .50   |
| 31    | 1.7   | ---   | 3.3   | 6.2   | ---    | 27     | ---   | 3.5   | ---   | .90   | 1.0   | ---   |
| TOTAL | 42.70 | 723.1 | 192.9 | 944.2 | 4699.7 | 1795.7 | 580.9 | 112.6 | 110.0 | 45.80 | 25.40 | 18.40 |
| MEAN  | 1.38  | 24.1  | 6.22  | 30.5  | 168    | 57.9   | 19.4  | 3.63  | 3.67  | 1.48  | .82   | .61   |
| MAX   | 3.0   | 244   | 34    | 229   | 501    | 225    | 99    | 4.2   | 5.0   | 2.3   | 1.5   | 1.0   |
| MIN   | .90   | 1.9   | 3.0   | 3.1   | 3.7    | 4.0    | 3.2   | 3.3   | 2.4   | .90   | .50   | .40   |
| AC-FT | 85    | 1430  | 383   | 1870  | 9320   | 3560   | 1150  | 223   | 218   | 91    | 50    | 36    |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 1.11 | 7.25 | 45.5 | 112  | 79.9 | 51.1 | 13.1 | 8.66 | 5.25 | 2.07 | .81  | .55  |
| MAX  | 2.24 | 24.1 | 214  | 262  | 314  | 198  | 51.4 | 21.1 | 14.2 | 4.09 | 1.88 | 1.05 |
| (WY) | 1998 | 1999 | 1997 | 1995 | 1998 | 1995 | 1995 | 1990 | 1993 | 1993 | 1993 | 1995 |
| MIN  | .52  | 1.31 | 3.48 | 5.08 | 8.02 | 5.12 | 3.36 | 3.59 | 1.90 | .51  | .036 | .008 |
| (WY) | 1995 | 1991 | 1991 | 1991 | 1991 | 1994 | 1991 | 1994 | 1992 | 1994 | 1992 | 1992 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1990 - 1999

|                          |          |     |  |     |        |  |       |        |  |       |        |      |
|--------------------------|----------|-----|--|-----|--------|--|-------|--------|--|-------|--------|------|
| ANNUAL TOTAL             | 19468.70 |     |  |     |        |  |       |        |  |       |        |      |
| ANNUAL MEAN              | 53.3     |     |  |     |        |  |       |        |  | 28.0  |        |      |
| HIGHEST ANNUAL MEAN      |          |     |  |     |        |  |       |        |  | 53.5  |        | 1998 |
| LOWEST ANNUAL MEAN       |          |     |  |     |        |  |       |        |  | 6.47  |        | 1991 |
| HIGHEST DAILY MEAN       |          |     |  | 863 | Jan 17 |  | 501   | Feb 9  |  | 1700  | Jan 1  | 1997 |
| LOWEST DAILY MEAN        |          |     |  | .50 | Sep 3  |  | .40   | Sep 14 |  | .00   | Sep 3  | 1992 |
| ANNUAL SEVEN-DAY MINIMUM |          |     |  | .57 | Sep 12 |  | .49   | Sep 11 |  | .00   | Sep 3  | 1992 |
| INSTANTANEOUS PEAK FLOW  |          |     |  |     |        |  | 1060  | Feb 9  |  | 3040  | Dec 31 | 1996 |
| INSTANTANEOUS PEAK STAGE |          |     |  |     |        |  | 6.69  | Feb 9  |  | 11.03 | Dec 31 | 1996 |
| ANNUAL RUNOFF (AC-FT)    | 38620    |     |  |     |        |  | 18430 |        |  | 20290 |        |      |
| 10 PERCENT EXCEEDS       |          | 203 |  |     |        |  | 81    |        |  | 54    |        |      |
| 50 PERCENT EXCEEDS       |          | 3.8 |  |     |        |  | 3.3   |        |  | 3.2   |        |      |
| 90 PERCENT EXCEEDS       |          | .90 |  |     |        |  | .80   |        |  | .50   |        |      |

## 11474781 KEKAWAKA CREEK BELOW KEKAWAKA CREEK POWERHOUSE DIVERSION, NEAR ZENIA, CA—Continued

KEKAWAKA CREEK BELOW KEKAWAKA CREEK POWERHOUSE DIVERSION AND  
 KEKAWAKA CREEK POWERHOUSE, NEAR ZENIA  
 DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 DAILY MEAN VALUES

| DAY   | OCT   | NOV    | DEC  | JAN    | FEB   | MAR  | APR  | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|--------|------|--------|-------|------|------|-------|-------|-------|-------|-------|
| 1     | .90   | 2.5    | 85   | 14     | 47    | 260  | 90   | 15    | 5.0   | 2.3   | .80   | 1.0   |
| 2     | 1.0   | 2.1    | 86   | 12     | 39    | 208  | 79   | 17    | 5.0   | 2.3   | .80   | 1.0   |
| 3     | 1.1   | 1.9    | 112  | 11     | 37    | 224  | 68   | 29    | 4.9   | 2.3   | .80   | 1.0   |
| 4     | .90   | 1.9    | 76   | 10     | 39    | 169  | 58   | 23    | 4.9   | 2.2   | .80   | .90   |
| 5     | .90   | 2.1    | 58   | 9.5    | 33    | 132  | 66   | 17    | 4.8   | 2.1   | .90   | .80   |
| 6     | 1.2   | 3.1    | 35   | 9.1    | 236   | 106  | 67   | 15    | 4.8   | 1.9   | 1.4   | .80   |
| 7     | 1.2   | 13     | 56   | 8.7    | 434   | 84   | 59   | 14    | 4.7   | 1.9   | 1.5   | .80   |
| 8     | 1.1   | 11     | 78   | 8.2    | 361   | 100  | 64   | 13    | 4.3   | 1.8   | 1.3   | .80   |
| 9     | .90   | 7.9    | 55   | 7.8    | 560   | 117  | 76   | 12    | 4.2   | 1.7   | 1.0   | .70   |
| 10    | 1.1   | 5.7    | 43   | 7.5    | 249   | 99   | 116  | 12    | 4.2   | 1.6   | .90   | .70   |
| 11    | 1.2   | 10     | 35   | 7.4    | 154   | 92   | 163  | 12    | 4.0   | 1.6   | .90   | .50   |
| 12    | 1.1   | 6.4    | 31   | 7.0    | 117   | 90   | 137  | 11    | 3.7   | 1.5   | .90   | .50   |
| 13    | 1.9   | 4.6    | 41   | 7.0    | 119   | 95   | 115  | 11    | 3.5   | 1.4   | .90   | .50   |
| 14    | 1.6   | 3.7    | 48   | 7.6    | 116   | 155  | 96   | 10    | 3.6   | 1.4   | .80   | .40   |
| 15    | 1.5   | 3.3    | 36   | 43     | 93    | 147  | 79   | 10    | 3.6   | 1.4   | .80   | .50   |
| 16    | 1.4   | 3.3    | 29   | 66     | 266   | 117  | 64   | 9.8   | 3.5   | 1.4   | .70   | .50   |
| 17    | 1.3   | 27     | 25   | 101    | 324   | 95   | 54   | 9.3   | 3.4   | 1.4   | .70   | .50   |
| 18    | 1.3   | 14     | 21   | 161    | 355   | 79   | 47   | 9.1   | 3.4   | 1.4   | .60   | .50   |
| 19    | 1.3   | 7.1    | 19   | 131    | 279   | 67   | 41   | 9.0   | 3.3   | 1.3   | .70   | .50   |
| 20    | 1.0   | 5.6    | 26   | 144    | 254   | 64   | 36   | 8.8   | 3.3   | 1.3   | .70   | .50   |
| 21    | .90   | 61     | 30   | 187    | 267   | 55   | 34   | 8.6   | 3.2   | 1.3   | .60   | .50   |
| 22    | .90   | 87     | 14   | 204    | 270   | 51   | 31   | 8.1   | 3.1   | 1.2   | .60   | .50   |
| 23    | .90   | 268    | 13   | 307    | 288   | 59   | 27   | 7.6   | 2.9   | 1.1   | .60   | .50   |
| 24    | 3.0   | 193    | 12   | 170    | 317   | 300  | 25   | 7.4   | 2.8   | 1.1   | .60   | .50   |
| 25    | 2.9   | 63     | 12   | 113    | 390   | 291  | 22   | 7.4   | 2.8   | 1.2   | .50   | .50   |
| 26    | 2.1   | 77     | 14   | 80     | 274   | 169  | 20   | 7.2   | 2.8   | 1.1   | .50   | .50   |
| 27    | 1.7   | 61     | 14   | 60     | 262   | 118  | 20   | 6.9   | 2.8   | 1.0   | .60   | .50   |
| 28    | 1.6   | 39     | 14   | 49     | 346   | 89   | 18   | 6.7   | 2.6   | .90   | .70   | .50   |
| 29    | 1.6   | 76     | 13   | 41     | ---   | 79   | 17   | 6.6   | 2.5   | .90   | .90   | .50   |
| 30    | 1.5   | 101    | 12   | 36     | ---   | 80   | 16   | 6.5   | 2.4   | .90   | .90   | .50   |
| 31    | 1.7   | ---    | 17   | 57     | ---   | 92   | ---  | 6.4   | ---   | .90   | 1.0   | ---   |
| TOTAL | 42.70 | 1162.2 | 1160 | 2076.8 | 6526  | 3883 | 1805 | 346.4 | 110.0 | 45.80 | 25.40 | 18.40 |
| MEAN  | 1.38  | 38.7   | 37.4 | 67.0   | 233   | 125  | 60.2 | 11.2  | 3.67  | 1.48  | .82   | .61   |
| MAX   | 3.0   | 268    | 112  | 307    | 560   | 300  | 163  | 29    | 5.0   | 2.3   | 1.5   | 1.0   |
| MIN   | .90   | 1.9    | 12   | 7.0    | 33    | 51   | 16   | 6.4   | 2.4   | .90   | .50   | .40   |
| AC-FT | 85    | 2310   | 2300 | 4120   | 12940 | 7700 | 3580 | 687   | 218   | 91    | 50    | 36    |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 1.11 | 12.4 | 69.0 | 150  | 125  | 97.7 | 43.5 | 22.7 | 11.6 | 2.17 | .81  | .55  |
| MAX  | 2.24 | 38.7 | 268  | 317  | 347  | 255  | 111  | 50.5 | 45.8 | 5.16 | 1.88 | 1.05 |
| (WY) | 1998 | 1999 | 1997 | 1995 | 1998 | 1995 | 1995 | 1993 | 1993 | 1993 | 1993 | 1995 |
| MIN  | .52  | 1.31 | 3.48 | 6.26 | 17.1 | 27.1 | 7.49 | 5.78 | 1.90 | .51  | .036 | .008 |
| (WY) | 1995 | 1991 | 1991 | 1991 | 1991 | 1994 | 1990 | 1992 | 1992 | 1994 | 1992 | 1992 |

## SUMMARY STATISTICS

|                          | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1990 - 1999 |            |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|------------|
| ANNUAL TOTAL             | 26806.10               |        | 17201.70            |        |                         |            |
| ANNUAL MEAN              | 73.4                   |        | 47.1                |        | 45.5                    |            |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 74.1                    |            |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 14.0                    |            |
| HIGHEST DAILY MEAN       | 889                    | Jan 17 | 560                 | Feb 9  | 1700                    | Jan 1 1997 |
| LOWEST DAILY MEAN        | .50                    | Sep 3  | .40                 | Sep 14 | .00                     | Sep 3 1992 |
| ANNUAL SEVEN-DAY MINIMUM | .57                    | Sep 12 | .49                 | Sep 11 | .00                     | Sep 3 1992 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 1140                |        | 3040                    |            |
| ANNUAL RUNOFF (AC-FT)    | 53170                  |        | 34120               |        | 32960                   |            |
| 10 PERCENT EXCEEDS       | 245                    |        | 145                 |        | 120                     |            |
| 50 PERCENT EXCEEDS       | 18                     |        | 7.9                 |        | 6.5                     |            |
| 90 PERCENT EXCEEDS       | .90                    |        | .80                 |        | .50                     |            |

## 11475000 EEL RIVER AT FORT SEWARD, CA

LOCATION.—Lat 40°13'05", long 123°37'54", in SE 1/4 NE 1/4 sec.8, T.3 S., R.5 E., Humboldt County, Hydrologic Unit 18010105, on right bank, at downstream side of bridge, 1.0 mi southeast of Fort Seward, 1.9 mi upstream from Dobbyn Creek, and 11.8 mi northeast of Garberville.

DRAINAGE AREA.—2,107 mi<sup>2</sup>.

PERIOD OF RECORD.—September 1955 to current year. Prior to October 1965, published as "at Alderpoint."

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 217.26 ft above sea level. Prior to Dec. 22, 1964, at site 7.5 mi upstream at datum 46.55 ft higher. Feb. 2 to Sept. 30, 1965, at site 7.7 mi upstream at datum 49.42 ft higher.

REMARKS.—Records good except for estimated daily discharges, which are fair. Flow slightly regulated by Lake Pillsbury (station 11470000) 99 mi upstream and by diversion through Potter Valley Powerhouse Intake (station 11471000). See schematic diagram of Eel River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 561,000 ft<sup>3</sup>/s, Dec. 22, 1964, gage height, 82.6 ft, from floodmarks, present site and datum, 87.2 ft, from floodmarks, site and datum then in use, from rating curve extended above 110,000 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 72.5 ft; minimum daily, 1.2 ft<sup>3</sup>/s, Sept. 13, 1977.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 41,000 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Nov. 23 | 2145 | 45,200                            | 24.96               | Feb. 17 | 0815 | 54,100                            | 25.84               |
| Jan. 23 | 1015 | 45,700                            | 25.06               | Feb. 28 | 2300 | 49,500                            | 24.81               |
| Feb. 9  | 1245 | 85,100                            | 31.90               | Mar. 25 | 0530 | 42,900                            | 23.23               |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV    | DEC    | JAN    | FEB     | MAR    | APR    | MAY    | JUN   | JUL  | AUG  | SEP  |
|-------|------|--------|--------|--------|---------|--------|--------|--------|-------|------|------|------|
| 1     | 62   | 94     | 21300  | 1980   | 5410    | 42800  | 9260   | 3560   | 1480  | 346  | 61   | 32   |
| 2     | 66   | 97     | 15100  | 1920   | 4480    | 29600  | 7980   | 3920   | 1410  | 327  | 60   | 32   |
| 3     | 67   | 105    | 28500  | 1810   | 4080    | 30400  | 6860   | 4640   | 1330  | 314  | 58   | 32   |
| 4     | 64   | 110    | 17900  | 1750   | 3870    | 23700  | 5880   | 5110   | 1260  | 310  | 55   | 32   |
| 5     | 62   | 113    | 11400  | 1680   | 3690    | 17900  | 5440   | 4000   | 1160  | 308  | 54   | 32   |
| 6     | 61   | 126    | 8560   | 1650   | 13000   | 14400  | 6320   | 3370   | 1070  | 306  | 56   | 34   |
| 7     | 62   | 204    | 6670   | 1610   | 61600   | 11900  | 5840   | 3510   | 1030  | 298  | 65   | 34   |
| 8     | 62   | 436    | 8000   | 1570   | 43900   | 11000  | 6320   | 3330   | 962   | 268  | 78   | 33   |
| 9     | 61   | 642    | 6910   | 1520   | 69500   | 15400  | 7880   | 3090   | 911   | 243  | 105  | 32   |
| 10    | 59   | 473    | 5520   | 1480   | 43700   | 13200  | 8040   | 2820   | 865   | 217  | 113  | 32   |
| 11    | 60   | 382    | 4650   | 1460   | 26100   | 11100  | 13000  | 2680   | 816   | 192  | 96   | e31  |
| 12    | 61   | 423    | 4100   | 1430   | 17800   | 9690   | 12000  | 2880   | 773   | 168  | 85   | e29  |
| 13    | 68   | 345    | 3920   | 1410   | 13500   | 8770   | 9890   | 2940   | 735   | 149  | 78   | e27  |
| 14    | 67   | 272    | 4860   | 1400   | 13400   | 9460   | 8960   | 2730   | 705   | 128  | 72   | e27  |
| 15    | 66   | 228    | 4540   | 1620   | 10800   | 11200  | 8500   | 2500   | 673   | 114  | 67   | e26  |
| 16    | 68   | 212    | 3970   | 3730   | 16000   | 9730   | 8210   | 2280   | 642   | 104  | 67   | e25  |
| 17    | 68   | 454    | 3660   | 6340   | 47600   | 8580   | 8480   | 2170   | 616   | 97   | 65   | e24  |
| 18    | 68   | 1360   | 3420   | 19700  | 38500   | 7750   | 8480   | 2160   | 581   | 98   | 62   | e25  |
| 19    | 68   | 992    | 3180   | 13900  | 37900   | 7070   | 8150   | 2280   | 535   | 93   | 58   | e23  |
| 20    | 69   | 582    | 2960   | 13400  | 25800   | 6930   | 7950   | 2300   | 500   | 89   | 54   | e22  |
| 21    | 67   | 1560   | 2740   | 17400  | 33300   | 6760   | 7340   | 2320   | 475   | 86   | 50   | e21  |
| 22    | 65   | 5970   | 2480   | 15900  | 29200   | 6260   | 6580   | 2260   | 450   | 84   | 48   | e20  |
| 23    | 64   | 22100  | 2380   | 37000  | 29500   | 6920   | 5730   | 2330   | 430   | 82   | 47   | e20  |
| 24    | 91   | 25800  | 2260   | 23000  | 27000   | 14700  | 5230   | 2380   | 408   | 80   | 45   | e20  |
| 25    | 105  | 10500  | 2190   | 15900  | 40500   | 37300  | 5330   | 2370   | 377   | 78   | 44   | e24  |
| 26    | 131  | 7780   | 2180   | 11800  | 30800   | 22100  | 5440   | 2290   | 356   | 77   | 42   | e27  |
| 27    | 153  | 10200  | 2160   | 8890   | 24800   | 15700  | 5260   | 2210   | 342   | 76   | 41   | e24  |
| 28    | 134  | 6100   | 2080   | 7000   | 37300   | 11900  | 4680   | 2070   | 328   | 74   | 39   | e40  |
| 29    | 109  | 7150   | 2020   | 5840   | ---     | 9850   | 4030   | 1890   | 314   | 71   | 37   | e37  |
| 30    | 96   | 16200  | 1940   | 5080   | ---     | 9000   | 3620   | 1720   | 345   | 68   | 36   | e32  |
| 31    | 91   | ---    | 1940   | 5500   | ---     | 9680   | ---    | 1590   | ---   | 64   | 34   | ---  |
| TOTAL | 2395 | 121010 | 193490 | 234670 | 753030  | 450750 | 216680 | 85700  | 21879 | 5009 | 1872 | 849  |
| MEAN  | 77.3 | 4034   | 6242   | 7570   | 26890   | 14540  | 7223   | 2765   | 729   | 162  | 60.4 | 28.3 |
| MAX   | 153  | 25800  | 28500  | 37000  | 69500   | 42800  | 13000  | 5110   | 1480  | 346  | 113  | 40   |
| MIN   | 59   | 94     | 1940   | 1400   | 3690    | 6260   | 3620   | 1590   | 314   | 64   | 34   | 20   |
| AC-FT | 4750 | 240000 | 383800 | 465500 | 1494000 | 894100 | 429800 | 170000 | 43400 | 9940 | 3710 | 1680 |

e Estimated.

## 11475000 EEL RIVER AT FORT SEWARD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|
| MEAN | 375  | 2931  | 8806  | 13490 | 12840 | 9887  | 5281  | 2334 | 728  | 151  | 55.0 | 55.0 |
| MAX  | 4938 | 18740 | 56050 | 43180 | 47700 | 30660 | 23040 | 7449 | 4194 | 510  | 199  | 359  |
| (WY) | 1963 | 1974  | 1965  | 1995  | 1986  | 1995  | 1982  | 1983 | 1993 | 1998 | 1983 | 1986 |
| MIN  | 20.5 | 49.4  | 45.5  | 222   | 434   | 1071  | 476   | 356  | 131  | 18.4 | 3.27 | 9.57 |
| (WY) | 1965 | 1960  | 1977  | 1991  | 1977  | 1988  | 1977  | 1977 | 1977 | 1977 | 1977 | 1992 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1955 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 3206783                |        | 2087334             |        |                         |             |
| ANNUAL MEAN              | 8786                   |        | 5719                |        | 4711                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 10350                   |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 260                     |             |
| HIGHEST DAILY MEAN       | 90400                  | Jan 17 | 69500               | Feb 9  | 434000                  | Dec 22 1964 |
| LOWEST DAILY MEAN        | 53                     | Sep 21 | 20                  | Sep 22 | 1.2                     | Sep 13 1977 |
| ANNUAL SEVEN-DAY MINIMUM | 55                     | Sep 17 | 21                  | Sep 19 | 1.4                     | Sep 7 1977  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 85100               |        | 561000                  |             |
| INSTANTANEOUS PEAK STAGE |                        |        | 31.90               |        | 82.60                   |             |
| ANNUAL RUNOFF (AC-FT)    | 6361000                |        | 4140000             |        | 3413000                 |             |
| 10 PERCENT EXCEEDS       | 26000                  |        | 15900               |        | 11900                   |             |
| 50 PERCENT EXCEEDS       | 3120                   |        | 1610                |        | 733                     |             |
| 90 PERCENT EXCEEDS       | 64                     |        | 43                  |        | 36                      |             |

11475560 ELDER CREEK NEAR BRANSCOMB, CA  
(Hydrologic-Benchmark Station)

LOCATION.—Lat 39°43'47", long 123°38'34", in NW 1/4 NE 1/4 sec.29, T.22 N., R.16 W., Mendocino County, Hydrologic Unit 18010106, on right bank, 0.2 mi upstream from mouth, and 5.3 mi north of Branscomb.

DRAINAGE AREA.—6.50 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1967 to current year.

CHEMICAL DATA: Water years 1968 to March 1996.

WATER TEMPERATURE: Water years 1968–79.

SEDIMENT DATA: Water years 1969 to March 1996.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 1,391.08 ft above sea level.

REMARKS.—Records good. No regulation; small diversion upstream from station for domestic use. See schematic diagram of Eel River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,480 ft<sup>3</sup>/s, Dec. 30, 1996, gage height, 9.88 ft, from rating curve extended above 700 ft<sup>3</sup>/s on basis of slope-area measurements at gage heights 9.40 and 11.41 ft; minimum daily, 0.27 ft<sup>3</sup>/s, Sept. 10–15, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 22, 1964, reached a stage of 11.41 ft, from floodmarks, discharge, 3,660 ft<sup>3</sup>/s by slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 400 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Feb. 7 | 0945 | 605                               | 6.52                |      |      |                                   |                     |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC  | JAN    | FEB  | MAR  | APR  | MAY   | JUN   | JUL  | AUG   | SEP   |
|-------|-------|-------|------|--------|------|------|------|-------|-------|------|-------|-------|
| 1     | .99   | 1.9   | 98   | 10     | 30   | 193  | 41   | 13    | 5.4   | 2.7  | 1.4   | .86   |
| 2     | .96   | 1.7   | 166  | 9.7    | 28   | 136  | 39   | 14    | 5.4   | 2.6  | 1.4   | .86   |
| 3     | .95   | 1.7   | 230  | 9.3    | 26   | 117  | 37   | 14    | 5.3   | 2.6  | 1.3   | .84   |
| 4     | .94   | 1.7   | 125  | 8.9    | 25   | 95   | 35   | 13    | 5.2   | 2.6  | 1.3   | .81   |
| 5     | .89   | 1.9   | 78   | 8.6    | 23   | 77   | 34   | 12    | 5.0   | 2.5  | 1.4   | .79   |
| 6     | .85   | 2.4   | 57   | 8.4    | 174  | 63   | 32   | 11    | 4.9   | 2.5  | 1.5   | .78   |
| 7     | .82   | 7.2   | 47   | 8.2    | 455  | 52   | 30   | 11    | 4.8   | 2.4  | 1.5   | .76   |
| 8     | 1.0   | 5.6   | 45   | 7.9    | 292  | 55   | 33   | 10    | 4.7   | 2.4  | 1.4   | .74   |
| 9     | .97   | 4.0   | 41   | 7.6    | 308  | 57   | 32   | 10    | 4.6   | 2.3  | 1.4   | .79   |
| 10    | .96   | 3.4   | 37   | 7.4    | 201  | 54   | 40   | 9.7   | 4.5   | 2.2  | 1.3   | .78   |
| 11    | .96   | 3.8   | 33   | 7.2    | 119  | 49   | 90   | 9.5   | 4.4   | 2.2  | 1.3   | .77   |
| 12    | .92   | 3.2   | 30   | 7.0    | 82   | 43   | 87   | 9.2   | 4.2   | 2.1  | 1.3   | .74   |
| 13    | 1.2   | 2.7   | 29   | 6.9    | 66   | 41   | 73   | 8.9   | 4.1   | 2.0  | 1.3   | .72   |
| 14    | 1.0   | 2.4   | 26   | 6.9    | 58   | 50   | 64   | 8.8   | 4.1   | 2.0  | 1.2   | .71   |
| 15    | 1.0   | 2.7   | 23   | 8.8    | 50   | 52   | 56   | 8.6   | 4.0   | 1.9  | 1.2   | .68   |
| 16    | .96   | 2.8   | 21   | 11     | 88   | 49   | 48   | 8.3   | 4.0   | 1.9  | 1.1   | .67   |
| 17    | .96   | 8.4   | 20   | 38     | 170  | 45   | 41   | 8.1   | 3.8   | 1.9  | 1.1   | .66   |
| 18    | .91   | 5.3   | 18   | 85     | 169  | 41   | 36   | 7.9   | 3.8   | 1.9  | 1.0   | .66   |
| 19    | .89   | 3.9   | 17   | 67     | 153  | 39   | 32   | 7.7   | 3.7   | 1.8  | 1.0   | .65   |
| 20    | .87   | 3.3   | 16   | 77     | 121  | 36   | 29   | 7.4   | 3.6   | 1.7  | 1.0   | .72   |
| 21    | .84   | 22    | 15   | 90     | 117  | 34   | 26   | 7.2   | 3.5   | 1.8  | .97   | .73   |
| 22    | .82   | 30    | 14   | 137    | 127  | 33   | 24   | 7.0   | 3.5   | 1.7  | .93   | .72   |
| 23    | .82   | 172   | 14   | 213    | 188  | 37   | 21   | 6.7   | 3.3   | 1.7  | .90   | .71   |
| 24    | 3.0   | 89    | 13   | 131    | 191  | 82   | 20   | 6.4   | 3.3   | 1.7  | .85   | .69   |
| 25    | 2.2   | 48    | 12   | 86     | 196  | 131  | 18   | 6.3   | 3.2   | 1.7  | .84   | .68   |
| 26    | 1.7   | 53    | 12   | 63     | 146  | 96   | 17   | 6.1   | 3.2   | 1.6  | .79   | .68   |
| 27    | 1.5   | 46    | 12   | 48     | 117  | 71   | 16   | 6.0   | 3.2   | 1.5  | .78   | .65   |
| 28    | 1.5   | 36    | 11   | 40     | 201  | 56   | 15   | 5.8   | 3.1   | 1.5  | .79   | .64   |
| 29    | 1.4   | 42    | 11   | 36     | ---  | 47   | 15   | 5.7   | 3.0   | 1.5  | .83   | .64   |
| 30    | 1.4   | 85    | 11   | 32     | ---  | 45   | 14   | 5.6   | 2.8   | 1.5  | .84   | .64   |
| 31    | 1.7   | ---   | 11   | 34     | ---  | 42   | ---  | 5.5   | ---   | 1.4  | .85   | ---   |
| TOTAL | 35.88 | 693.0 | 1293 | 1310.8 | 3921 | 2018 | 1095 | 270.4 | 121.6 | 61.8 | 34.77 | 21.77 |
| MEAN  | 1.16  | 23.1  | 41.7 | 42.3   | 140  | 65.1 | 36.5 | 8.72  | 4.05  | 1.99 | 1.12  | .73   |
| MAX   | 3.0   | 172   | 230  | 213    | 455  | 193  | 90   | 14    | 5.4   | 2.7  | 1.5   | .86   |
| MIN   | .82   | 1.7   | 11   | 6.9    | 23   | 33   | 14   | 5.5   | 2.8   | 1.4  | .78   | .64   |
| AC-FT | 71    | 1370  | 2560 | 2600   | 7780 | 4000 | 2170 | 536   | 241   | 123  | 69    | 43    |

11475560 ELDER CREEK NEAR BRANSCOMB, CA—Continued  
(Hydrologic Benchmark Station)

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 2.20 | 19.6 | 49.6 | 74.0 | 62.0 | 55.5 | 26.2 | 11.8 | 5.91 | 2.40 | 1.33 | 1.11 |
| MAX  | 8.72 | 132  | 192  | 210  | 173  | 147  | 91.9 | 33.4 | 31.6 | 5.84 | 2.49 | 2.36 |
| (WY) | 1980 | 1974 | 1997 | 1970 | 1986 | 1983 | 1982 | 1996 | 1993 | 1993 | 1990 | 1986 |
| MIN  | .57  | .99  | 1.04 | 2.32 | 3.40 | 5.45 | 3.01 | 2.13 | 1.35 | .67  | .48  | .51  |
| (WY) | 1988 | 1996 | 1977 | 1977 | 1977 | 1988 | 1977 | 1977 | 1977 | 1977 | 1977 | 1988 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR | FOR 1999 WATER YEAR | WATER YEARS 1968 - 1999 |
|--------------------------|------------------------|---------------------|-------------------------|
| ANNUAL TOTAL             | 15885.43               | 10877.02            |                         |
| ANNUAL MEAN              | 43.5                   | 29.8                | 25.8                    |
| HIGHEST ANNUAL MEAN      |                        |                     | 54.4 1974               |
| LOWEST ANNUAL MEAN       |                        |                     | 2.12 1977               |
| HIGHEST DAILY MEAN       | 421 Jan 17             | 455 Feb 7           | 1620 Jan 1 1997         |
| LOWEST DAILY MEAN        | .82 Oct 7              | .64 Sep 28          | .27 Sep 10 1981         |
| ANNUAL SEVEN-DAY MINIMUM | .87 Oct 17             | .66 Sep 24          | .27 Sep 9 1981          |
| INSTANTANEOUS PEAK FLOW  |                        | 605 Feb 7           | 2480 Dec 30 1996        |
| INSTANTANEOUS PEAK STAGE |                        | 6.52 Feb 7          | 9.88 Dec 30 1996        |
| ANNUAL RUNOFF (AC-FT)    | 31510                  | 21570               | 18720                   |
| 10 PERCENT EXCEEDS       | 138                    | 87                  | 67                      |
| 50 PERCENT EXCEEDS       | 12                     | 7.0                 | 5.4                     |
| 90 PERCENT EXCEEDS       | .94                    | .84                 | .95                     |

## 11475800 SOUTH FORK EEL RIVER AT LEGGETT, CA

LOCATION.—Lat 39°52'29", long 123°43'10", in NE 1/4 SE 1/4 sec.3, T.23 N., R.17 W., Mendocino County, Hydrologic Unit 18010106, on right bank, near Standish Hickey State Park, 0.2 mi upstream from Rock Creek, and 0.7 mi northwest of Leggett.

DRAINAGE AREA.—248 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1965 to June 1995, October 1997 to current year (seasonal). Stage only July 1995 to September 1997.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 691.32 ft above sea level. Prior to July 29, 1988, at datum 2.00 ft higher.

REMARKS.—Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station. See schematic diagram of Eel River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 72,700 ft<sup>3</sup>/s, Jan. 4, 1966, gage height, 27.4 ft, from floodmarks, present datum, from rating curve extended above 21,000 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 28.13 ft; minimum daily, 7.3 ft<sup>3</sup>/s, Aug 4–6, 12, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 22, 1964, reached a stage of 28.13 ft, from floodmarks, present datum, discharge, 78,700 ft<sup>3</sup>/s, by slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 8,500 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Nov. 23 | 1130 | 10,400                            | 10.81               | Feb. 7  | 1045 | 18,900                            | 14.40               |
| Dec. 3  | 0130 | 9,370                             | 10.13               | Feb. 17 | 0100 | 10,200                            | 10.13               |
| Jan. 22 | 2215 | 10,400                            | 10.78               |         |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN   | FEB    | MAR    | APR   | MAY | JUN | JUL | AUG | SEP |
|-------|------|-------|-------|-------|--------|--------|-------|-----|-----|-----|-----|-----|
| 1     | e27  | 43    | 2680  | 300   | 960    | 5650   | 2160  | --- | --- | --- | --- | --- |
| 2     | e28  | 44    | 5000  | 278   | 827    | 4190   | 1940  | --- | --- | --- | --- | --- |
| 3     | 27   | 45    | 6460  | 265   | 758    | 4650   | 1730  | --- | --- | --- | --- | --- |
| 4     | 27   | 43    | 2830  | 252   | 718    | 3540   | 1550  | --- | --- | --- | --- | --- |
| 5     | 26   | 44    | 1830  | 241   | 654    | 3000   | 1540  | --- | --- | --- | --- | --- |
| 6     | 25   | 51    | 1630  | 231   | 5480   | 2570   | 1540  | --- | --- | --- | --- | --- |
| 7     | 24   | 134   | 1330  | 223   | 13000  | 2210   | 1340  | --- | --- | --- | --- | --- |
| 8     | 26   | 228   | 1710  | 213   | 8360   | 2420   | 1670  | --- | --- | --- | --- | --- |
| 9     | 26   | 157   | 1290  | 204   | 9820   | 3190   | 1860  | --- | --- | --- | --- | --- |
| 10    | 25   | 119   | 1080  | 197   | 5670   | 2910   | 2170  | --- | --- | --- | --- | --- |
| 11    | 25   | 150   | 928   | 189   | 3960   | 2600   | 4130  | --- | --- | --- | --- | --- |
| 12    | 25   | 116   | 806   | 185   | 3140   | 2350   | 3100  | --- | --- | --- | --- | --- |
| 13    | 32   | 89    | 769   | 181   | 2800   | 2170   | 2510  | --- | --- | --- | --- | --- |
| 14    | 31   | 73    | 833   | 180   | 2900   | 2700   | 2080  | --- | --- | --- | --- | --- |
| 15    | 31   | 73    | 687   | 276   | 2450   | 2630   | 1740  | --- | --- | --- | --- | --- |
| 16    | 30   | 79    | 612   | 715   | 4770   | 2310   | 1480  | --- | --- | --- | --- | --- |
| 17    | 29   | 283   | 556   | 1620  | 7400   | 2070   | 1280  | --- | --- | --- | --- | --- |
| 18    | 27   | 239   | 517   | 3860  | 6390   | 1860   | 1120  | --- | --- | --- | --- | --- |
| 19    | 27   | 138   | 477   | 2350  | 5280   | 1700   | 1010  | --- | --- | --- | --- | --- |
| 20    | 26   | 108   | 458   | 2440  | 4260   | 1620   | 914   | --- | --- | --- | --- | --- |
| 21    | 25   | 677   | 416   | 2990  | 5060   | 1480   | 836   | --- | --- | --- | --- | --- |
| 22    | 24   | 1530  | 393   | 4050  | 4780   | 1440   | 773   | --- | --- | --- | --- | --- |
| 23    | 24   | 5250  | 374   | 6410  | 6220   | 1720   | 705   | --- | --- | --- | --- | --- |
| 24    | 67   | 2750  | 355   | 3270  | 5540   | 4380   | 648   | --- | --- | --- | --- | --- |
| 25    | 81   | 1360  | 339   | 2230  | 6880   | 5160   | 599   | --- | --- | --- | --- | --- |
| 26    | 62   | 1540  | 336   | 1770  | 4860   | 3250   | 556   | --- | --- | --- | --- | --- |
| 27    | 44   | 1390  | 326   | 1410  | 4300   | 2580   | 520   | --- | --- | --- | --- | --- |
| 28    | 38   | 932   | 316   | 1170  | 7040   | 2170   | 489   | --- | --- | --- | --- | --- |
| 29    | 34   | 1470  | 302   | 1010  | ---    | 1910   | 451   | --- | --- | --- | --- | --- |
| 30    | 31   | 3030  | 291   | 891   | ---    | 1980   | 419   | --- | --- | --- | --- | --- |
| 31    | 34   | ---   | 309   | 1150  | ---    | 2410   | ---   | --- | --- | --- | --- | --- |
| TOTAL | 1008 | 22185 | 36240 | 40751 | 134277 | 84820  | 42860 | --- | --- | --- | --- | --- |
| MEAN  | 32.5 | 740   | 1169  | 1315  | 4796   | 2736   | 1429  | --- | --- | --- | --- | --- |
| MAX   | 81   | 5250  | 6460  | 6410  | 13000  | 5650   | 4130  | --- | --- | --- | --- | --- |
| MIN   | 24   | 43    | 291   | 180   | 654    | 1440   | 419   | --- | --- | --- | --- | --- |
| AC-FT | 2000 | 44000 | 71880 | 80830 | 266300 | 168200 | 85010 | --- | --- | --- | --- | --- |

e Estimated.

## 11476500 SOUTH FORK EEL RIVER NEAR MIRANDA, CA

LOCATION.—Lat 40°10'55", long 123°46'30", in NW 1/4 sec.30, T.3 S., R.4 E., Humboldt County, Hydrologic Unit 18010106, on right bank, 0.5 mi upstream from Rocky Glen Creek, 4.3 mi southeast of Miranda, and 20 mi upstream from mouth.

DRAINAGE AREA.—537 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1939 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

TEMPERATURE DATA: Water years 1960–83.

SEDIMENT DATA: Water year 1981.

REVISED RECORDS.—WSP 1395: Drainage area. WSP 2129: 1955.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 217.57 ft above sea level. Prior to Nov. 2, 1940, nonrecording gage at site 200 ft upstream at datum 0.8 ft higher. Nov. 2, 1940, to Oct. 31, 1944, nonrecording gage at present site and datum.

REMARKS.—Records good. Occasional storage and release for recreational use during summer months at Benbow Reservoir, capacity, 1,060 acre-ft, 16 mi upstream. No diversion upstream from station. See schematic diagram of Eel River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 199,000 ft<sup>3</sup>/s, Dec. 22, 1964, gage height, 46.0 ft, from floodmarks, from rating curve extended above 53,000 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 42.7 ft; minimum observed, 9 ft<sup>3</sup>/s, Oct. 17, 1944.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 15,000 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Nov. 23 | 1745 | 19,100                            | 16.75               | Feb. 17 | 0645 | 17,500                            | 16.19               |
| Dec. 3  | 0415 | 19,500                            | 16.89               | Feb. 28 | 1900 | 17,200                            | 16.07               |
| Jan. 23 | 0500 | 19,800                            | 16.97               | Mar. 25 | 0230 | 16,800                            | 15.93               |
| Feb. 7  | 1545 | 39,700                            | 22.66               |         |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV    | DEC    | JAN    | FEB    | MAR    | APR    | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|------|--------|--------|--------|--------|--------|--------|-------|-------|------|------|------|
| 1     | 41   | 60     | 7750   | 663    | 1980   | 12300  | 3550   | 778   | 278   | 107  | 49   | 37   |
| 2     | 43   | 66     | 8920   | 618    | 1620   | 8510   | 3160   | 760   | 275   | 104  | 59   | 36   |
| 3     | 44   | 69     | 15600  | 581    | 1470   | 8780   | 2740   | 832   | 269   | 103  | 59   | 35   |
| 4     | 44   | 67     | 7130   | 546    | 1400   | 6760   | 2390   | 827   | 262   | 103  | 58   | 35   |
| 5     | 43   | 67     | 4540   | 513    | 1290   | 5430   | 2320   | 730   | 255   | 103  | 57   | 36   |
| 6     | 41   | 97     | 3870   | 497    | 10100  | 4540   | 2290   | 662   | 243   | 102  | 62   | 35   |
| 7     | 40   | 340    | 3140   | 475    | 31900  | 3860   | 2010   | 621   | 235   | 103  | 71   | 35   |
| 8     | 41   | 525    | 3770   | 457    | 18700  | 4560   | 2480   | 587   | 230   | 137  | 70   | 35   |
| 9     | 41   | 445    | 3040   | 433    | 21500  | 5940   | 2870   | 563   | 225   | 121  | 67   | 35   |
| 10    | 41   | 321    | 2490   | 418    | 11600  | 5240   | 4080   | 542   | 221   | 78   | 65   | 122  |
| 11    | 41   | 428    | 2090   | 404    | 7210   | 4540   | 7330   | 531   | 215   | 79   | 64   | 110  |
| 12    | 40   | 341    | 1800   | 390    | 5240   | 3990   | 5760   | 514   | 209   | 79   | 73   | 81   |
| 13    | 51   | 239    | 1750   | 380    | 4420   | 3600   | 4410   | 489   | 202   | 40   | 69   | 61   |
| 14    | 53   | 179    | 1950   | 379    | 4630   | 4270   | 3530   | 477   | 198   | 39   | 66   | 44   |
| 15    | 52   | 160    | 1610   | 533    | 3810   | 4500   | 2920   | 472   | 196   | 48   | 44   | 36   |
| 16    | 47   | 160    | 1410   | 1060   | 6100   | 3820   | 2440   | 451   | 192   | 72   | 48   | 35   |
| 17    | 45   | 472    | 1280   | 2700   | 14100  | 3390   | 2090   | 432   | 186   | 77   | 54   | 34   |
| 18    | 43   | 608    | 1170   | 8910   | 11200  | 3030   | 1810   | 424   | 183   | 74   | 65   | 34   |
| 19    | 42   | 463    | 1090   | 5810   | 10400  | 2750   | 1610   | 416   | 178   | 71   | 63   | 34   |
| 20    | 39   | 344    | 1040   | 6110   | 7300   | 2650   | 1450   | 400   | 172   | 67   | 61   | 33   |
| 21    | 38   | 1930   | 959    | 6840   | 8310   | 2400   | 1330   | 385   | 169   | 68   | 58   | 33   |
| 22    | 37   | 3980   | 894    | 6900   | 7950   | 2310   | 1230   | 370   | 161   | 72   | 35   | 33   |
| 23    | 36   | 11300  | 853    | 14500  | 11200  | 2660   | 1150   | 354   | 149   | 74   | 34   | 33   |
| 24    | 98   | 7540   | 804    | 7790   | 11100  | 8600   | 1080   | 342   | 129   | 73   | 36   | 32   |
| 25    | 181  | 3530   | 768    | 5170   | 14800  | 12500  | 1030   | 334   | 120   | 73   | 37   | 30   |
| 26    | 135  | 3710   | 767    | 3830   | 9810   | 6650   | 975    | 324   | 132   | 71   | 39   | 30   |
| 27    | 106  | 3750   | 743    | 2970   | 7640   | 4720   | 932    | 313   | 133   | 69   | 39   | 30   |
| 28    | 77   | 2450   | 709    | 2410   | 13300  | 3700   | 905    | 302   | 126   | 68   | 40   | 29   |
| 29    | 62   | 3780   | 679    | 2050   | ---    | 3160   | 853    | 291   | 89    | 68   | 41   | 29   |
| 30    | 54   | 7860   | 647    | 1800   | ---    | 3230   | 811    | 286   | 98    | 68   | 40   | 29   |
| 31    | 53   | ---    | 674    | 2090   | ---    | 3950   | ---    | 283   | ---   | 67   | 38   | ---  |
| TOTAL | 1749 | 55281  | 83937  | 88227  | 260080 | 156340 | 71536  | 15092 | 5730  | 2478 | 1661 | 1251 |
| MEAN  | 56.4 | 1843   | 2708   | 2846   | 9289   | 5043   | 2385   | 487   | 191   | 79.9 | 53.6 | 41.7 |
| MAX   | 181  | 11300  | 15600  | 14500  | 31900  | 12500  | 7330   | 832   | 278   | 137  | 73   | 122  |
| MIN   | 36   | 60     | 647    | 379    | 1290   | 2310   | 811    | 283   | 89    | 39   | 34   | 29   |
| AC-FT | 3470 | 109600 | 166500 | 175000 | 515900 | 310100 | 141900 | 29930 | 11370 | 4920 | 3290 | 2480 |



## 11476500 SOUTH FORK EEL RIVER NEAR MIRANDA, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV   | DEC   | JAN   | FEB   | MAR   | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|-------|-------|-------|-------|-------|------|------|------|------|------|------|
| MEAN | 263  | 1478  | 4079  | 5488  | 4839  | 3644  | 1856 | 701  | 308  | 114  | 61.2 | 60.5 |
| MAX  | 3332 | 10130 | 17260 | 17530 | 16640 | 13000 | 8425 | 2370 | 1754 | 276  | 131  | 221  |
| (WY) | 1963 | 1974  | 1965  | 1970  | 1986  | 1983  | 1982 | 1990 | 1993 | 1993 | 1983 | 1986 |
| MIN  | 20.0 | 25.0  | 74.6  | 207   | 284   | 304   | 176  | 122  | 52.7 | 20.4 | 18.0 | 29.1 |
| (WY) | 1940 | 1940  | 1977  | 1977  | 1977  | 1988  | 1977 | 1977 | 1977 | 1977 | 1977 | 1949 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1940 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 1052665                |        | 743362              |        |                         |             |
| ANNUAL MEAN              | 2884                   |        | 2037                |        | 1896                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 4393                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 156                     |             |
| HIGHEST DAILY MEAN       | 37100                  | Jan 17 | 31900               | Feb 7  | 161000                  | Dec 22 1964 |
| LOWEST DAILY MEAN        | 29                     | Sep 16 | 29                  | Sep 28 | 10                      | Aug 30 1964 |
| ANNUAL SEVEN-DAY MINIMUM | 30                     | Sep 16 | 30                  | Sep 24 | 14                      | Jul 30 1977 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 39700               |        | 199000                  |             |
| INSTANTANEOUS PEAK STAGE |                        |        | 22.66               |        | 46.00                   |             |
| ANNUAL RUNOFF (AC-FT)    | 2088000                |        | 1474000             |        | 1374000                 |             |
| 10 PERCENT EXCEEDS       | 8450                   |        | 6790                |        | 4960                    |             |
| 50 PERCENT EXCEEDS       | 674                    |        | 404                 |        | 348                     |             |
| 90 PERCENT EXCEEDS       | 42                     |        | 39                  |        | 45                      |             |

## 11476600 BULL CREEK NEAR WEOTT, CA

LOCATION.—Lat 40°21'05", long 124°00'10", in SW 1/4 NW 1/4 sec.30, T.1 S., R.2 E., Humboldt County, Hydrologic Unit 18010106, on left bank, 0.2 mi downstream from Albee Creek, 4.5 mi northwest of Weott, and 4.6 mi upstream from mouth.

DRAINAGE AREA.—28.1 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1960 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 269.36 ft above sea level. Prior to Dec. 22, 1964, water-stage recorder, and Jan. 14 to Aug. 10, 1965, nonrecording gage at site 150 ft downstream at datum 8.90 ft lower.

REMARKS.—Records fair except for estimated daily discharges, which are poor. Minor diversions upstream from station for domestic and recreational use. See schematic diagram of Eel River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 7,830 ft<sup>3</sup>/s, Dec. 31, 1996, gage height, 12.84 ft; maximum gage height, 20.6 ft<sup>3</sup>/s, Dec. 22, 1964, site and datum then in use; minimum daily, 0.25 ft<sup>3</sup>/s, Sept. 27, 1994.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,700 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Nov. 30 | 0745 | 1,430                             | 6.28                |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN   | JUL   | AUG  | SEP   |
|-------|------|--------|-------|-------|-------|-------|-------|------|-------|-------|------|-------|
| 1     | 1.5  | 2.7    | 706   | 57    | 143   | 680   | 252   | 53   | 16    | 6.8   | 3.4  | 1.2   |
| 2     | 1.7  | 2.4    | 994   | 54    | 130   | 576   | 227   | 56   | 16    | 6.9   | 3.1  | 1.2   |
| 3     | 1.7  | 2.5    | 840   | 51    | 121   | 527   | 212   | 58   | 15    | 6.9   | 3.0  | 1.1   |
| 4     | 1.6  | 2.6    | 539   | 48    | 114   | 437   | 190   | 50   | 15    | 6.9   | 3.1  | 1.0   |
| 5     | 1.5  | 5.0    | 423   | 46    | 110   | 364   | 191   | 45   | 14    | 6.8   | 3.5  | .94   |
| 6     | 1.4  | 9.9    | 363   | 44    | 602   | 299   | 175   | 43   | 14    | 6.7   | 4.3  | .88   |
| 7     | e1.5 | 37     | 297   | 43    | 907   | 249   | 159   | 40   | 13    | 6.7   | 4.2  | .88   |
| 8     | e1.5 | 21     | 259   | 40    | 779   | 344   | 183   | 38   | 13    | 6.5   | 4.0  | .83   |
| 9     | e1.4 | 11     | 221   | 39    | 835   | 340   | 171   | 36   | 13    | 6.2   | 3.5  | .82   |
| 10    | e1.5 | 9.1    | 193   | 37    | 601   | 294   | 265   | 35   | 12    | e6.2  | 3.1  | .81   |
| 11    | e1.5 | 9.0    | 171   | 36    | 473   | 258   | 427   | 34   | 12    | e6.4  | 3.1  | .78   |
| 12    | e1.7 | 7.6    | 154   | 34    | 384   | 229   | 348   | 33   | 11    | e6.2  | 3.3  | .72   |
| 13    | e2.2 | 6.8    | 169   | 33    | 343   | 212   | 290   | 31   | 11    | 5.8   | 2.9  | .69   |
| 14    | e2.7 | 6.3    | 164   | 36    | 314   | 256   | 248   | 31   | 10    | 5.7   | 2.8  | .69   |
| 15    | 2.1  | 7.4    | 143   | 54    | 288   | 236   | 217   | 29   | 10    | 5.5   | 2.6  | .74   |
| 16    | 1.9  | 8.6    | 129   | 59    | 404   | 215   | 190   | 28   | 9.9   | 5.5   | 2.5  | .80   |
| 17    | 1.8  | 51     | 120   | 170   | 470   | 197   | 167   | 27   | 9.8   | 5.5   | 2.4  | .85   |
| 18    | 1.7  | 22     | 111   | 301   | 542   | 179   | 149   | 27   | 9.6   | 5.3   | 2.3  | .84   |
| 19    | 1.7  | 15     | 103   | 453   | 497   | 163   | 132   | 26   | 9.3   | 5.1   | 2.3  | .82   |
| 20    | 1.7  | 15     | 100   | 472   | 504   | 149   | 119   | 25   | 9.1   | 4.9   | 2.2  | .78   |
| 21    | 1.6  | 216    | 90    | 446   | 531   | 136   | 108   | 24   | 9.0   | 5.1   | 2.0  | .74   |
| 22    | 1.5  | 162    | 85    | 517   | 492   | 137   | 99    | 23   | 8.7   | 5.0   | 1.8  | .72   |
| 23    | 1.5  | 516    | 80    | 516   | 757   | 138   | 90    | 22   | 8.3   | 4.5   | 1.6  | .70   |
| 24    | 11   | 279    | 75    | 408   | 821   | 528   | 83    | 21   | 8.1   | 4.4   | 1.6  | .67   |
| 25    | 6.2  | 194    | 72    | 332   | 931   | 528   | 76    | 20   | 8.0   | 4.4   | 1.5  | .65   |
| 26    | 4.0  | 290    | 72    | 271   | 714   | 404   | 71    | 19   | 7.9   | 4.1   | 1.3  | .65   |
| 27    | 2.7  | 245    | 68    | 229   | 617   | 326   | 68    | 18   | 7.7   | 3.9   | 1.2  | .66   |
| 28    | 2.4  | 191    | 64    | 202   | 845   | 269   | 63    | 18   | 7.4   | 3.7   | 1.2  | .65   |
| 29    | 2.1  | 238    | 61    | 179   | ---   | 244   | 59    | 18   | 7.1   | 3.9   | 1.2  | .63   |
| 30    | 2.0  | 957    | 59    | 161   | ---   | 274   | 56    | 17   | 6.9   | 3.7   | 1.1  | .65   |
| 31    | 2.3  | ---    | 63    | 162   | ---   | 281   | ---   | 16   | ---   | 3.4   | 1.2  | ---   |
| TOTAL | 71.6 | 3539.9 | 6988  | 5530  | 14269 | 9469  | 5085  | 961  | 321.8 | 168.6 | 77.3 | 24.09 |
| MEAN  | 2.31 | 118    | 225   | 178   | 510   | 305   | 170   | 31.0 | 10.7  | 5.44  | 2.49 | .80   |
| MAX   | 11   | 957    | 994   | 517   | 931   | 680   | 427   | 58   | 16    | 6.9   | 4.3  | 1.2   |
| MIN   | 1.4  | 2.4    | 59    | 33    | 110   | 136   | 56    | 16   | 6.9   | 3.4   | 1.1  | .63   |
| AC-FT | 142  | 7020   | 13860 | 10970 | 28300 | 18780 | 10090 | 1910 | 638   | 334   | 153  | 48    |

e Estimated.

## 11476600 BULL CREEK NEAR WEOTT, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 12.9 | 111  | 263  | 332  | 304  | 239  | 121  | 41.2 | 17.3 | 6.67 | 3.47 | 2.92 |
| MAX  | 160  | 683  | 780  | 901  | 1056 | 717  | 526  | 137  | 88.0 | 14.5 | 10.0 | 12.8 |
| (WY) | 1963 | 1974 | 1997 | 1978 | 1986 | 1983 | 1963 | 1963 | 1993 | 1993 | 1983 | 1986 |
| MIN  | .72  | 3.61 | 3.67 | 10.5 | 13.8 | 16.0 | 11.2 | 10.3 | 4.84 | 1.81 | .70  | .50  |
| (WY) | 1988 | 1994 | 1977 | 1977 | 1977 | 1988 | 1988 | 1988 | 1977 | 1977 | 1992 | 1988 |

## SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1961 - 1999

|                          |         |  |  |          |  |  |             |  |  |
|--------------------------|---------|--|--|----------|--|--|-------------|--|--|
| ANNUAL TOTAL             | 66746.3 |  |  | 46505.29 |  |  |             |  |  |
| ANNUAL MEAN              | 183     |  |  | 127      |  |  | 120         |  |  |
| HIGHEST ANNUAL MEAN      |         |  |  |          |  |  | 287         |  |  |
| LOWEST ANNUAL MEAN       |         |  |  |          |  |  | 9.72        |  |  |
| HIGHEST DAILY MEAN       | 1330    |  |  | Feb 21   |  |  | 994         |  |  |
| LOWEST DAILY MEAN        | 1.4     |  |  | Oct 6    |  |  | .63         |  |  |
| ANNUAL SEVEN-DAY MINIMUM | 1.5     |  |  | Oct 5    |  |  | .65         |  |  |
| INSTANTANEOUS PEAK FLOW  |         |  |  |          |  |  | 1430        |  |  |
| INSTANTANEOUS PEAK STAGE |         |  |  |          |  |  | 6.28        |  |  |
| ANNUAL RUNOFF (AC-FT)    | 132400  |  |  |          |  |  | 92240       |  |  |
| 10 PERCENT EXCEEDS       | 706     |  |  |          |  |  | 425         |  |  |
| 50 PERCENT EXCEEDS       | 28      |  |  |          |  |  | 25          |  |  |
| 90 PERCENT EXCEEDS       | 1.7     |  |  |          |  |  | 1.4         |  |  |
|                          |         |  |  |          |  |  | 7830        |  |  |
|                          |         |  |  |          |  |  | 20.60       |  |  |
|                          |         |  |  |          |  |  | 87240       |  |  |
|                          |         |  |  |          |  |  | 318         |  |  |
|                          |         |  |  |          |  |  | 23          |  |  |
|                          |         |  |  |          |  |  | 2.0         |  |  |
|                          |         |  |  |          |  |  | Dec 31 1996 |  |  |
|                          |         |  |  |          |  |  | Dec 22 1964 |  |  |
|                          |         |  |  |          |  |  | Jan 16 1974 |  |  |
|                          |         |  |  |          |  |  | Sep 27 1994 |  |  |
|                          |         |  |  |          |  |  | Sep 24 1994 |  |  |

## 11477000 EEL RIVER AT SCOTIA, CA

LOCATION.—Lat 40°29'30", long 124°05'55", in SW 1/4 sec.5, T.1 N., R.1 E., Humboldt County, Hydrologic Unit 18010105, near center of span, in left pier of A.S. Murphy Memorial Bridge, on State Highway 283, 0.5 mi north of Scotia, and 6 mi upstream from Van Duzen River.

DRAINAGE AREA.—3,113 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1910 to current year. Monthly discharge only for some periods and yearly estimates for 1915–16, published in WSP 1315-B.

CHEMICAL DATA: Water years 1952–75, 1977, 1979–95.

BIOLOGICAL DATA: Water years 1979–81.

SPECIFIC CONDUCTANCE: Water years 1979–81.

WATER TEMPERATURE: Water years 1958–82.

SEDIMENT DATA: Water years 1955–95; October 1997 to September 1998.

REVISED RECORDS.—WSP 931: 1938. WSP 1315-B: 1914–15(M), 1917(M), 1927–28(M), 1936(M), 1939(M). WSP 1345: Drainage area. WSP 1715: 1959.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 35.50 ft above sea level. Prior to Dec. 12, 1940, nonrecording gage at same site and datum.

REMARKS.—Records good. Low flow slightly regulated by Lake Pillsbury (station 11470000) 138 mi upstream since December 1921 and by diversion through Potter Valley Powerhouse Intake (station 11471000). See schematic diagram of Eel River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 752,000 ft<sup>3</sup>/s, Dec. 23, 1964, gage height, 72.0 ft, from floodmarks, from rating curve extended above 220,000 ft<sup>3</sup>/s on basis of maximum flow at upstream stations; minimum observed, 10 ft<sup>3</sup>/s, Aug. 12–14, 1924.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 72,000 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Nov. 24 | 0515 | 72,500                            | 27.05               | Feb. 17 | 1515 | 74,300                            | 27.31               |
| Jan. 23 | 1530 | 72,800                            | 27.09               | Mar. 1  | 0500 | 73,800                            | 27.24               |
| Feb. 8  | 0015 | 125,000                           | 33.78               |         |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV    | DEC    | JAN    | FEB     | MAR     | APR    | MAY    | JUN   | JUL   | AUG   | SEP  |
|-------|-------|--------|--------|--------|---------|---------|--------|--------|-------|-------|-------|------|
| 1     | 133   | 239    | 41800  | 2660   | 8870    | 64300   | 16800  | 4930   | 2000  | 550   | 204   | 119  |
| 2     | 141   | 238    | 28200  | 2600   | 7520    | 41600   | 14900  | 5100   | 1880  | 558   | 196   | 118  |
| 3     | 142   | 238    | 52400  | 2420   | 6710    | 39100   | 13200  | 5630   | 1810  | 539   | 182   | 115  |
| 4     | 143   | 249    | 35000  | 2280   | 6360    | 33300   | 11700  | 6980   | 1730  | 526   | 182   | 114  |
| 5     | 144   | 265    | 17700  | 2170   | 6080    | 25700   | 10800  | 5770   | 1650  | 523   | 186   | 110  |
| 6     | 142   | 319    | 13900  | 2080   | 15900   | 21100   | 11600  | 4840   | 1540  | 516   | 188   | 107  |
| 7     | 139   | 569    | 10900  | 2020   | 91900   | 17700   | 11100  | 4570   | 1450  | 504   | 190   | 107  |
| 8     | 140   | 1170   | 11400  | 1950   | 82100   | 17100   | 11300  | 4630   | 1400  | 506   | 196   | 106  |
| 9     | 139   | 1530   | 11100  | 1880   | 95900   | 23700   | 13900  | 4260   | 1330  | 504   | 208   | 104  |
| 10    | 138   | 1400   | 8980   | 1800   | 68300   | 22100   | 14200  | 4020   | 1280  | 477   | 211   | 104  |
| 11    | 139   | 1180   | 7540   | 1740   | 35400   | 18300   | 25300  | 3760   | 1230  | 423   | 239   | 114  |
| 12    | 138   | 1170   | 6540   | 1700   | 24600   | 16000   | 24400  | 3730   | 1190  | 383   | 229   | 170  |
| 13    | 150   | 1020   | 6170   | 1650   | 19500   | 14400   | 19200  | 3940   | 1130  | 354   | 218   | 167  |
| 14    | 165   | 823    | 7200   | 1640   | 20100   | 15700   | 16400  | 3780   | 1090  | 323   | 211   | 147  |
| 15    | 165   | 674    | 7050   | 1940   | 17200   | 18800   | 14700  | 3540   | 1060  | 278   | 205   | 130  |
| 16    | 167   | 628    | 6010   | 3240   | 19700   | 16600   | 13500  | 3280   | 1020  | 256   | 192   | 115  |
| 17    | 163   | 1470   | 5400   | 6930   | 59200   | 14500   | 13000  | 3080   | 989   | 256   | 173   | 102  |
| 18    | 157   | 2300   | 4970   | 28600  | 50200   | 13000   | 12700  | 2950   | 956   | 268   | 169   | 96   |
| 19    | 157   | 2320   | 4580   | 24900  | 56400   | 11900   | 11800  | 3030   | 906   | 264   | 172   | 94   |
| 20    | 155   | 1550   | 4300   | 23000  | 35300   | 11300   | 11200  | 3040   | 858   | 257   | 174   | 91   |
| 21    | 152   | 3990   | 3950   | 26400  | 42000   | 11100   | 10600  | 3060   | 813   | 248   | 169   | 90   |
| 22    | 149   | 12200  | 3590   | 24600  | 40600   | 10300   | 9570   | 3010   | 782   | 246   | 167   | 88   |
| 23    | 149   | 27100  | 3350   | 55800  | 42900   | 10800   | 8670   | 2940   | 757   | 243   | 160   | 87   |
| 24    | 207   | 51900  | 3180   | 40400  | 43300   | 20100   | 7690   | 3020   | 730   | 238   | 143   | 86   |
| 25    | 319   | 19000  | 3010   | 23400  | 60900   | 57500   | 7440   | 3010   | 672   | 235   | 132   | 82   |
| 26    | 349   | 13800  | 2980   | 16500  | 49100   | 35900   | 7410   | 2960   | 628   | 231   | 131   | 79   |
| 27    | 338   | 16400  | 2980   | 12900  | 35900   | 24400   | 7230   | 2850   | 624   | 223   | 131   | 80   |
| 28    | 335   | 11800  | 2870   | 10700  | 49500   | 18900   | 6780   | 2720   | 608   | 221   | 132   | 81   |
| 29    | 308   | 11600  | 2750   | 9330   | ---     | 15900   | 5980   | 2550   | 587   | 218   | 127   | 82   |
| 30    | 266   | 27900  | 2630   | 8280   | ---     | 14800   | 5320   | 2320   | 542   | 214   | 125   | 83   |
| 31    | 240   | ---    | 2610   | 8180   | ---     | 17500   | ---    | 2160   | ---   | 208   | 122   | ---  |
| TOTAL | 5769  | 215042 | 325040 | 353690 | 1091440 | 693400  | 368390 | 115460 | 33242 | 10790 | 5464  | 3168 |
| MEAN  | 186   | 7168   | 10490  | 11410  | 38980   | 22370   | 12280  | 3725   | 1108  | 348   | 176   | 106  |
| MAX   | 349   | 51900  | 52400  | 55800  | 95900   | 64300   | 25300  | 6980   | 2000  | 558   | 239   | 170  |
| MIN   | 133   | 238    | 2610   | 1640   | 6080    | 10300   | 5320   | 2160   | 542   | 208   | 122   | 79   |
| AC-FT | 11440 | 426500 | 644700 | 701500 | 2165000 | 1375000 | 730700 | 229000 | 65940 | 21400 | 10840 | 6280 |

## 11477000 EEL RIVER AT SCOTIA, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1999, BY WATER YEAR (WY)

| OCT  | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL  | AUG  | SEP  |      |
|------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|
| MEAN | 671   | 5135  | 13940 | 20230 | 20040 | 14460 | 8917  | 3688  | 1294 | 343  | 151  | 144  |
| MAX  | 10910 | 38690 | 84420 | 69950 | 77680 | 51150 | 39190 | 11570 | 7511 | 920  | 422  | 735  |
| (WY) | 1963  | 1974  | 1965  | 1970  | 1958  | 1983  | 1982  | 1912  | 1993 | 1993 | 1983 | 1986 |
| MIN  | 50.5  | 59.3  | 168   | 659   | 389   | 946   | 703   | 278   | 75.7 | 25.1 | 22.1 | 19.4 |
| (WY) | 1930  | 1930  | 1977  | 1977  | 1920  | 1924  | 1924  | 1924  | 1924 | 1924 | 1924 | 1924 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1911 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 4969866                |        | 3220895             |        |                         |             |
| ANNUAL MEAN              | 13620                  |        | 8824                |        | 7361                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 17300                   |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 563                     |             |
| HIGHEST DAILY MEAN       | 132000                 | Jan 17 | 95900               | Feb 9  | 648000                  | Dec 23 1964 |
| LOWEST DAILY MEAN        | 124                    | Sep 23 | 79                  | Sep 26 | 12                      | Aug 12 1924 |
| ANNUAL SEVEN-DAY MINIMUM | 126                    | Sep 20 | 82                  | Sep 24 | 14                      | Aug 10 1924 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 125000              | Feb 8  | 752000                  | Dec 23 1964 |
| INSTANTANEOUS PEAK STAGE |                        |        | 33.78               | Feb 8  | 72.00                   | Dec 23 1964 |
| INSTANTANEOUS LOW FLOW   |                        |        |                     |        | 10                      | Aug 12 1924 |
| ANNUAL RUNOFF (AC-FT)    | 9858000                |        | 6389000             |        | 5333000                 |             |
| 10 PERCENT EXCEEDS       | 41100                  |        | 25100               |        | 18000                   |             |
| 50 PERCENT EXCEEDS       | 4300                   |        | 2170                |        | 1400                    |             |
| 90 PERCENT EXCEEDS       | 152                    |        | 138                 |        | 104                     |             |

## 11477425 MILL CREEK BELOW DIVERSION DAM, NEAR DINSMORE, CA

LOCATION.—Lat 40°27'52", long 123°35'59", in NE 1/4 SW 1/4 sec.15, T.1 N., R.5 E., Humboldt County, Hydrologic Unit 18010105, on left bank, 1.9 mi south-southeast of Dinsmore.

DRAINAGE AREA.—0.74 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1990 to current year.

GAGE.—Water-stage recorder and 90° V-notch weir. Elevation of gage is 3,660 ft above sea level, from topographic map.

REMARKS.—Records of fishery release normally are computed only during periods of diversion to powerhouse. Flow over spillway bypasses this station. See schematic diagram of Eel River Basin.

COOPERATION.—Records provided by North Coast Hydroelectric, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT | NOV   | DEC  | JAN | FEB  | MAR | APR   | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-------|------|-----|------|-----|-------|-----|-----|-----|-----|-----|
| 1     | --- | ---   | .31  | .35 | .31  | .29 | .38   | .40 | --- | --- | --- | --- |
| 2     | --- | ---   | .38  | .35 | .31  | .29 | .38   | .40 | --- | --- | --- | --- |
| 3     | --- | ---   | .35  | .35 | .31  | --- | .38   | .42 | --- | --- | --- | --- |
| 4     | --- | ---   | .29  | .35 | .33  | --- | .38   | .40 | --- | --- | --- | --- |
| 5     | --- | ---   | .27  | .35 | .33  | --- | .38   | .40 | --- | --- | --- | --- |
| 6     | --- | ---   | .35  | .35 | .35  | --- | .35   | .38 | --- | --- | --- | --- |
| 7     | --- | ---   | .25  | --- | .38  | --- | .35   | .38 | --- | --- | --- | --- |
| 8     | --- | ---   | .25  | --- | .35  | --- | .33   | .38 | --- | --- | --- | --- |
| 9     | --- | ---   | .25  | --- | .35  | --- | .33   | .38 | --- | --- | --- | --- |
| 10    | --- | ---   | .25  | --- | .35  | --- | .33   | .35 | --- | --- | --- | --- |
| 11    | --- | ---   | .25  | --- | .33  | --- | .33   | .33 | --- | --- | --- | --- |
| 12    | --- | ---   | .25  | --- | .31  | --- | .35   | .33 | --- | --- | --- | --- |
| 13    | --- | ---   | .31  | --- | .31  | --- | .35   | .33 | --- | --- | --- | --- |
| 14    | --- | ---   | .35  | .33 | .31  | --- | .38   | .33 | --- | --- | --- | --- |
| 15    | --- | ---   | .35  | .35 | .29  | --- | .40   | .33 | --- | --- | --- | --- |
| 16    | --- | ---   | .38  | .35 | .31  | --- | .40   | .33 | --- | --- | --- | --- |
| 17    | --- | ---   | .35  | .38 | .31  | --- | .40   | .33 | --- | --- | --- | --- |
| 18    | --- | ---   | .35  | .40 | .31  | --- | .40   | .33 | --- | --- | --- | --- |
| 19    | --- | ---   | .35  | .40 | .31  | .42 | .40   | .33 | --- | --- | --- | --- |
| 20    | --- | e. 42 | .35  | .40 | .29  | .40 | .40   | .33 | --- | --- | --- | --- |
| 21    | --- | .42   | .33  | .35 | .29  | .40 | .40   | .33 | --- | --- | --- | --- |
| 22    | --- | .44   | .33  | .38 | .29  | .40 | .40   | .33 | --- | --- | --- | --- |
| 23    | --- | .46   | .33  | .38 | .29  | .40 | .40   | .33 | --- | --- | --- | --- |
| 24    | --- | .49   | .33  | .35 | .27  | .42 | .40   | .33 | --- | --- | --- | --- |
| 25    | --- | .46   | .33  | .31 | .27  | .44 | .40   | --- | --- | --- | --- | --- |
| 26    | --- | .42   | .33  | .31 | .27  | .42 | .40   | --- | --- | --- | --- | --- |
| 27    | --- | .46   | .33  | .31 | .27  | .40 | .40   | --- | --- | --- | --- | --- |
| 28    | --- | .42   | .35  | .31 | .33  | .40 | .40   | --- | --- | --- | --- | --- |
| 29    | --- | .42   | .35  | .31 | ---  | .40 | .40   | --- | --- | --- | --- | --- |
| 30    | --- | .38   | .35  | .31 | ---  | .40 | .40   | --- | --- | --- | --- | --- |
| 31    | --- | ---   | .35  | .31 | ---  | .40 | ---   | --- | --- | --- | --- | --- |
| TOTAL | --- | ---   | 9.95 | --- | 8.73 | --- | 11.40 | --- | --- | --- | --- | --- |
| MEAN  | --- | ---   | .32  | --- | .31  | --- | .38   | --- | --- | --- | --- | --- |
| MAX   | --- | ---   | .38  | --- | .38  | --- | .40   | --- | --- | --- | --- | --- |
| MIN   | --- | ---   | .25  | --- | .27  | --- | .33   | --- | --- | --- | --- | --- |
| AC-FT | --- | ---   | 20   | --- | 17   | --- | 23    | --- | --- | --- | --- | --- |

e Estimated.

## 11477450 SULPHUR CREEK BELOW DIVERSION DAM, NEAR DINSMORE, CA

LOCATION.—Lat 40°27'50", long 123°36'15", in NW 1/4 SW 1/4 sec.15, T.1 N., R.5 E., Humboldt County, Hydrologic Unit 18010105, on right bank, 2 mi south-southeast of Dinsmore.

DRAINAGE AREA.—1.06 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1990 to current year.

GAGE.—Water-stage recorder and 90° V-notch weir. Elevation of gage is 3,660 ft above sea level, from topographic map.

REMARKS.—Records of fishery release normally are computed only during periods of diversion to powerhouse. Flow over spillway bypasses this station. See Schematic diagram of Eel River Basin.

COOPERATION.—Records provided by North Coast Hydroelectric, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT | NOV  | DEC   | JAN  | FEB   | MAR  | APR   | MAY | JUN | JUL | AUG | SEP |
|-------|-----|------|-------|------|-------|------|-------|-----|-----|-----|-----|-----|
| 1     | --- | ---  | .51   | .40  | .72   | e.54 | .69   | .60 | --- | --- | --- | --- |
| 2     | --- | ---  | .49   | .40  | .72   | .57  | .69   | .63 | --- | --- | --- | --- |
| 3     | --- | ---  | .33   | .40  | .72   | ---  | .69   | .78 | --- | --- | --- | --- |
| 4     | --- | ---  | .31   | .40  | .72   | ---  | .69   | .60 | --- | --- | --- | --- |
| 5     | --- | ---  | .44   | .40  | .72   | ---  | .72   | .54 | --- | --- | --- | --- |
| 6     | --- | ---  | .54   | .40  | .95   | ---  | .69   | .51 | --- | --- | --- | --- |
| 7     | --- | ---  | .51   | ---  | 1.0   | ---  | .75   | .54 | --- | --- | --- | --- |
| 8     | --- | ---  | .49   | ---  | .88   | ---  | .69   | .54 | --- | --- | --- | --- |
| 9     | --- | ---  | .49   | ---  | .91   | ---  | .66   | .54 | --- | --- | --- | --- |
| 10    | --- | ---  | .49   | ---  | .88   | ---  | .66   | .57 | --- | --- | --- | --- |
| 11    | --- | ---  | .49   | ---  | .75   | ---  | .66   | .57 | --- | --- | --- | --- |
| 12    | --- | ---  | .51   | ---  | .60   | ---  | .72   | .57 | --- | --- | --- | --- |
| 13    | --- | ---  | .49   | ---  | .66   | ---  | .91   | .57 | --- | --- | --- | --- |
| 14    | --- | ---  | .46   | .40  | .66   | ---  | 1.1   | .57 | --- | --- | --- | --- |
| 15    | --- | ---  | .49   | .35  | .57   | ---  | 1.1   | .57 | --- | --- | --- | --- |
| 16    | --- | ---  | .49   | .40  | .78   | ---  | 1.1   | .57 | --- | --- | --- | --- |
| 17    | --- | ---  | .44   | .51  | .91   | ---  | 1.0   | .57 | --- | --- | --- | --- |
| 18    | --- | ---  | .44   | .40  | .88   | ---  | .99   | .57 | --- | --- | --- | --- |
| 19    | --- | ---  | .42   | e.44 | .78   | .78  | 1.1   | .57 | --- | --- | --- | --- |
| 20    | --- | e.69 | .42   | e.69 | .72   | .78  | 1.1   | .57 | --- | --- | --- | --- |
| 21    | --- | .72  | .42   | .78  | .69   | .75  | .91   | .57 | --- | --- | --- | --- |
| 22    | --- | .54  | .42   | .78  | .69   | .72  | .72   | .54 | --- | --- | --- | --- |
| 23    | --- | e.75 | .42   | .75  | .60   | .72  | .72   | .54 | --- | --- | --- | --- |
| 24    | --- | e.82 | .40   | .66  | .60   | .85  | .72   | .57 | --- | --- | --- | --- |
| 25    | --- | .72  | .40   | .54  | .60   | .88  | .72   | --- | --- | --- | --- | --- |
| 26    | --- | .63  | .42   | .49  | e.54  | .81  | .69   | --- | --- | --- | --- | --- |
| 27    | --- | .46  | .42   | .40  | e.54  | .72  | .63   | --- | --- | --- | --- | --- |
| 28    | --- | .49  | .40   | .78  | e.54  | .60  | .60   | --- | --- | --- | --- | --- |
| 29    | --- | .72  | .40   | .75  | ---   | .57  | .60   | --- | --- | --- | --- | --- |
| 30    | --- | .72  | .40   | .75  | ---   | .72  | .63   | --- | --- | --- | --- | --- |
| 31    | --- | ---  | .40   | .72  | ---   | .85  | ---   | --- | --- | --- | --- | --- |
| TOTAL | --- | ---  | 13.75 | ---  | 20.33 | ---  | 23.65 | --- | --- | --- | --- | --- |
| MEAN  | --- | ---  | .44   | ---  | .73   | ---  | .79   | --- | --- | --- | --- | --- |
| MAX   | --- | ---  | .54   | ---  | 1.0   | ---  | 1.1   | --- | --- | --- | --- | --- |
| MIN   | --- | ---  | .31   | ---  | .54   | ---  | .60   | --- | --- | --- | --- | --- |
| AC-FT | --- | ---  | .27   | ---  | .40   | ---  | .47   | --- | --- | --- | --- | --- |

e Estimated.

## 11478500 VAN DUZEN RIVER NEAR BRIDGEVILLE, CA

LOCATION.—Lat 40°28'50", long 123°53'23", in NE 1/4 SE 1/4 sec.12, T.1 N., R.2 E., Humboldt County, Hydrologic Unit 18010105, on left bank, at downstream side of bridge on State Highway 36, 0.9 mi upstream from Grizzly Creek, and 5 mi west of Bridgeville.

DRAINAGE AREA.—222 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1950 to current year.

REVISED RECORDS.—WSP 1735: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 358.18 ft above sea level. Prior to Oct. 1, 1965, at site 2.4 mi upstream at different datum.

REMARKS.—Records good except for estimated daily discharges, which are fair. No storage or large diversion upstream from station. See schematic diagram of Eel River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 48,700 ft<sup>3</sup>/s, Dec. 22, 1964, gage height, 24.0 ft, from floodmarks, present site and datum, from rating curve extended above 20,000 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 21.3 ft, former site and datum; minimum daily, 4.4 ft<sup>3</sup>/s, Sept. 28, 1992.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 15,000 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Nov. 23 | 1300 | 18,900                            | 12.19               |      |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN   | FEB    | MAR    | APR   | MAY   | JUN  | JUL  | AUG   | SEP   |
|-------|------|-------|-------|-------|--------|--------|-------|-------|------|------|-------|-------|
| 1     | 12   | 31    | 5780  | e450  | 686    | 5270   | 1350  | 463   | 283  | 56   | 18    | 9.5   |
| 2     | 12   | 34    | 7390  | e400  | 573    | 3210   | 1340  | 538   | 264  | 53   | 17    | 9.7   |
| 3     | 12   | 31    | 7780  | e355  | 532    | 3980   | 1220  | 1120  | 236  | 51   | 17    | 9.9   |
| 4     | 12   | 30    | 3630  | e320  | 565    | 2330   | 1010  | 1090  | 211  | 51   | 17    | 9.8   |
| 5     | 12   | 33    | 2140  | 283   | 512    | 1730   | 1010  | 791   | 192  | 50   | 17    | 9.4   |
| 6     | 12   | 55    | 1610  | 263   | 3970   | 1440   | 1030  | 703   | 179  | 49   | 18    | 9.1   |
| 7     | 12   | 216   | 1290  | 248   | 9640   | 1240   | 987   | 683   | 168  | 46   | 19    | 8.9   |
| 8     | 12   | 364   | 1560  | 232   | 5580   | 1440   | 1190  | 602   | 162  | 45   | 20    | 8.8   |
| 9     | 12   | 218   | 1200  | 217   | 5370   | 1500   | 1070  | 537   | 154  | 43   | 21    | 8.6   |
| 10    | 13   | 137   | 993   | 206   | 2800   | 1280   | 1240  | 491   | 147  | 40   | 20    | 8.4   |
| 11    | 13   | 262   | 893   | 196   | 1860   | 1170   | 1610  | 481   | 139  | 38   | 18    | 8.2   |
| 12    | 13   | 179   | 883   | 188   | 1560   | 1120   | 1570  | 509   | 134  | 37   | 18    | 8.1   |
| 13    | 18   | 119   | 1010  | 181   | 1630   | 1110   | 1600  | 497   | 128  | 34   | 17    | 7.8   |
| 14    | 18   | 91    | 1090  | 182   | 1910   | 1770   | 1570  | 460   | 123  | 32   | 17    | 7.6   |
| 15    | 18   | 79    | 917   | 806   | 1510   | 1610   | 1530  | 429   | 118  | 30   | 16    | 7.4   |
| 16    | 16   | 96    | 794   | 1410  | 2260   | 1420   | 1440  | 391   | 115  | 29   | 16    | 7.4   |
| 17    | 15   | 930   | 693   | 2410  | 5040   | 1290   | 1420  | 376   | 109  | 28   | 15    | 7.4   |
| 18    | 15   | 550   | 617   | 5820  | 5020   | 1180   | 1330  | 413   | 106  | 28   | 15    | 7.3   |
| 19    | 15   | 273   | 549   | 4220  | 4050   | 1120   | 1230  | 439   | 99   | 28   | 14    | 7.3   |
| 20    | 15   | 187   | 524   | 4700  | 2870   | 1190   | 1090  | 446   | 95   | 26   | 14    | 7.1   |
| 21    | 14   | 4130  | 450   | 4350  | 3000   | 1220   | 938   | 430   | 92   | 26   | 13    | 7.0   |
| 22    | 14   | 4130  | 412   | 4550  | 2630   | 1150   | 802   | 433   | 89   | 25   | 13    | 7.0   |
| 23    | 13   | 9070  | 386   | 6400  | 4800   | 1250   | 714   | 483   | 85   | 24   | 12    | 6.8   |
| 24    | 28   | 5670  | 360   | 3070  | 4300   | 4120   | e720  | 493   | 80   | 24   | 12    | 6.7   |
| 25    | 49   | e3400 | 345   | 1940  | 5290   | 4470   | e715  | 482   | 77   | 23   | 11    | 6.7   |
| 26    | 50   | e3900 | 428   | 1510  | 3190   | 2210   | e690  | 461   | 74   | 23   | 10    | 6.7   |
| 27    | 37   | e2450 | 428   | 1190  | 3100   | 1590   | 673   | 440   | 72   | 22   | 10    | 6.6   |
| 28    | 31   | 1430  | 429   | 1040  | 9670   | 1340   | 579   | 400   | 70   | 21   | 10    | 6.7   |
| 29    | 27   | 2170  | 398   | 863   | ---    | 1230   | 497   | 363   | 65   | 20   | 9.8   | 6.7   |
| 30    | 25   | 7830  | 349   | 722   | ---    | 1310   | 453   | 336   | 58   | 19   | 9.8   | 6.8   |
| 31    | 25   | ---   | e420  | 798   | ---    | 1360   | ---   | 310   | ---  | 19   | 9.6   | ---   |
| TOTAL | 590  | 48095 | 45748 | 49520 | 93918  | 57650  | 32618 | 16090 | 3924 | 1040 | 464.2 | 235.4 |
| MEAN  | 19.0 | 1603  | 1476  | 1597  | 3354   | 1860   | 1087  | 519   | 131  | 33.5 | 15.0  | 7.85  |
| MAX   | 50   | 9070  | 7780  | 6400  | 9670   | 5270   | 1610  | 1120  | 283  | 56   | 21    | 9.9   |
| MIN   | 12   | 30    | 345   | 181   | 512    | 1110   | 453   | 310   | 58   | 19   | 9.6   | 6.6   |
| AC-FT | 1170 | 95400 | 90740 | 98220 | 186300 | 114300 | 64700 | 31910 | 7780 | 2060 | 921   | 467   |

e Estimated.



## 11478500 VAN DUZEN RIVER NEAR BRIDGEVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 148  | 908  | 1872 | 2299 | 2055 | 1646 | 932  | 447  | 144  | 36.6 | 17.2 | 19.9 |
| MAX  | 1464 | 5476 | 6046 | 6608 | 6232 | 5015 | 3255 | 1139 | 821  | 98.0 | 82.4 | 144  |
| (WY) | 1963 | 1974 | 1956 | 1995 | 1958 | 1995 | 1963 | 1953 | 1993 | 1953 | 1983 | 1986 |
| MIN  | 7.20 | 16.8 | 18.8 | 103  | 156  | 172  | 131  | 109  | 40.4 | 12.2 | 5.89 | 5.72 |
| (WY) | 1988 | 1960 | 1977 | 1977 | 1977 | 1988 | 1977 | 1985 | 1987 | 1977 | 1977 | 1992 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1951 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 509021                 |        | 349892.6            |        |                         |             |
| ANNUAL MEAN              | 1395                   |        | 959                 |        | 872                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 1610                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 95.7                    |             |
| HIGHEST DAILY MEAN       | 14100                  | Jan 17 | 9670                | Feb 28 | 33900                   | Dec 22 1964 |
| LOWEST DAILY MEAN        | 11                     | Sep 16 | 6.6                 | Sep 27 | 4.4                     | Sep 28 1992 |
| ANNUAL SEVEN-DAY MINIMUM | 11                     | Sep 14 | 6.7                 | Sep 23 | 4.6                     | Aug 13 1977 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 18900               | Nov 23 | 48700                   | Dec 22 1964 |
| INSTANTANEOUS PEAK STAGE |                        |        | 12.19               | Nov 23 | 24.00                   | Dec 22 1964 |
| ANNUAL RUNOFF (AC-FT)    | 1010000                |        | 694000              |        | 631900                  |             |
| 10 PERCENT EXCEEDS       | 4150                   |        | 3030                |        | 2160                    |             |
| 50 PERCENT EXCEEDS       | 423                    |        | 336                 |        | 182                     |             |
| 90 PERCENT EXCEEDS       | 13                     |        | 11                  |        | 12                      |             |

## 11479560 EEL RIVER AT FERNBRIDGE, CA

LOCATION.—Lat 40°36'57", long 124°12'06", in SW 1/4 NE 1/4 sec.29, T.3 N., R.1 W., Humboldt County, Hydrologic Unit 18010105, on right bank, downstream from bridge on county road, at Fernbridge.

DRAINAGE AREA.—3,614 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1989 to current year. Records prior to October 1989 are in the files of the California Department of Water Resources.

GAGE.—Water-stage recorder. Datum of gage is 3.64 ft above sea level.

REMARKS.—Data is collected for flood-warning purposes only. Figures given represent only those days when the gage height was above 0.45 ft. See schematic diagram of Eel River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum gage height, 25.31 ft, Jan. 9, 1995.

## GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY | MAX     | MIN  | MAX      | MIN  | MAX      | MIN  | MAX     | MIN  | MAX      | MIN   | MAX       | MIN   |
|-----|---------|------|----------|------|----------|------|---------|------|----------|-------|-----------|-------|
|     | OCTOBER |      | NOVEMBER |      | DECEMBER |      | JANUARY |      | FEBRUARY |       | MARCH     |       |
| 1   | .52     | .52  | .52      | .52  | 11.26    | 8.87 | 2.04    | 1.81 | 4.00     | 3.72  | 13.04     | 11.11 |
| 2   | .52     | .52  | .77      | .52  | 9.91     | 8.46 | 1.94    | 1.72 | 3.72     | 3.29  | 11.11     | 9.01  |
| 3   | .52     | .52  | .54      | .52  | 12.17    | 9.91 | 1.84    | 1.59 | 3.29     | 3.08  | 9.93      | 9.05  |
| 4   | .52     | .52  | 1.34     | .52  | 11.83    | 7.76 | 1.61    | 1.49 | 3.10     | 3.00  | 9.73      | 8.04  |
| 5   | .52     | .52  | 1.22     | .52  | 7.76     | 6.30 | 1.49    | 1.40 | 3.01     | 2.83  | 8.04      | 7.02  |
| 6   | .52     | .52  | 1.69     | .52  | 6.30     | 5.64 | 1.41    | 1.34 | 9.53     | 2.82  | 7.02      | 6.29  |
| 7   | .70     | .52  | 1.16     | .51  | 5.64     | 4.90 | 1.34    | 1.28 | 16.40    | 9.53  | 6.31      | 5.68  |
| 8   | .86     | .52  | 1.07     | .52  | 5.49     | 4.90 | 1.28    | 1.21 | 16.39    | 12.27 | 6.57      | 5.52  |
| 9   | .53     | .52  | 1.22     | 1.02 | 5.52     | 4.82 | 1.21    | 1.15 | 16.01    | 12.45 | 7.43      | 6.57  |
| 10  | .52     | .52  | 1.11     | .92  | 4.82     | 4.25 | 1.16    | 1.09 | 15.51    | 10.65 | 7.30      | 6.47  |
| 11  | .52     | .52  | .95      | .84  | 4.25     | 3.83 | 1.14    | 1.03 | 10.65    | 8.16  | 6.47      | 5.88  |
| 12  | .52     | .51  | .98      | .79  | 3.84     | 3.53 | 1.10    | .99  | 8.17     | 6.95  | 5.89      | 5.48  |
| 13  | .52     | .52  | .79      | .59  | 4.02     | 3.45 | 1.03    | .95  | 6.95     | 6.39  | 5.48      | 5.23  |
| 14  | .52     | .52  | .59      | .51  | 4.13     | 3.97 | 1.10    | .94  | 6.83     | 6.56  | 6.41      | 5.29  |
| 15  | .52     | .52  | .52      | .52  | 4.03     | 3.67 | 1.83    | 1.04 | 6.59     | 5.83  | 6.51      | 6.26  |
| 16  | .52     | .52  | .65      | .52  | 3.67     | 3.33 | 2.72    | 1.83 | 7.45     | 5.77  | 6.26      | 5.65  |
| 17  | .52     | .52  | 2.27     | .52  | 3.33     | 3.09 | 4.69    | 2.70 | 12.66    | 7.45  | 5.65      | 5.22  |
| 18  | .52     | .52  | 2.26     | 1.81 | 3.09     | 2.90 | 9.69    | 4.69 | 11.88    | 10.06 | 5.24      | 4.86  |
| 19  | .52     | .52  | 1.89     | 1.49 | 2.91     | 2.74 | 9.42    | 7.74 | 12.40    | 10.13 | 4.88      | 4.56  |
| 20  | .52     | .52  | 1.49     | 1.07 | 2.78     | 2.59 | 7.92    | 7.67 | 10.13    | 8.63  | 4.58      | 4.47  |
| 21  | .52     | .52  | 6.65     | 1.06 | 2.59     | 2.38 | 8.62    | 7.80 | 10.38    | 8.94  | 4.61      | 4.34  |
| 22  | .52     | .52  | 6.69     | 5.51 | 2.38     | 2.20 | 8.74    | 7.48 | 10.03    | 9.39  | 4.38      | 4.21  |
| 23  | .52     | .51  | 11.86    | 5.45 | 2.20     | 2.09 | 12.94   | 8.74 | 10.75    | 9.37  | 4.49      | 4.23  |
| 24  | .52     | .51  | 12.92    | 8.59 | 2.10     | 1.97 | 11.90   | 8.42 | 10.74    | 9.73  | 10.20     | 4.49  |
| 25  | .52     | .52  | 8.59     | 5.63 | 1.98     | 1.90 | 8.42    | 6.75 | 12.77    | 10.42 | 12.34     | 10.20 |
| 26  | .52     | .52  | 6.67     | 5.31 | 2.00     | 1.89 | 6.76    | 5.75 | 12.15    | 9.72  | 10.85     | 7.97  |
| 27  | .52     | .52  | 6.54     | 5.93 | 2.00     | 1.94 | 5.75    | 4.93 | 9.72     | 8.88  | 7.99      | 6.65  |
| 28  | .52     | .52  | 5.93     | 4.52 | 1.96     | 1.88 | 4.94    | 4.35 | 12.71    | 9.05  | 6.65      | 5.79  |
| 29  | .53     | .52  | 5.93     | 4.41 | 1.93     | 1.79 | 4.39    | 3.93 | ---      | ---   | 5.79      | 5.36  |
| 30  | .52     | .52  | 10.55    | 5.93 | 2.09     | 1.71 | 3.94    | 3.62 | ---      | ---   | 5.68      | 5.22  |
| 31  | .52     | .52  | ---      | ---  | 1.96     | 1.71 | 3.98    | 3.54 | ---      | ---   | 6.15      | 5.67  |
|     | APRIL   |      | MAY      |      | JUNE     |      | JULY    |      | AUGUST   |       | SEPTEMBER |       |
| 1   | 6.15    | 5.69 | 2.59     | 2.46 | 1.19     | 1.05 | .53     | .52  | .52      | .52   | .52       | .52   |
| 2   | 5.73    | 5.25 | 2.63     | 2.45 | 1.11     | .97  | .53     | .52  | .52      | .52   | .52       | .52   |
| 3   | 5.28    | 4.84 | 3.17     | 2.59 | 1.03     | .92  | .52     | .52  | .52      | .52   | .52       | .52   |
| 4   | 4.85    | 4.43 | 3.48     | 3.16 | .94      | .86  | .52     | .52  | .52      | .52   | .52       | .52   |
| 5   | 4.43    | 4.33 | 3.29     | 2.81 | .86      | .78  | .52     | .52  | .52      | .52   | .52       | .52   |
| 6   | 4.54    | 4.42 | 2.81     | 2.48 | .79      | .70  | .52     | .52  | .52      | .52   | .52       | .52   |
| 7   | 4.54    | 4.27 | 2.52     | 2.43 | .71      | .65  | .52     | .52  | .52      | .52   | .52       | .52   |
| 8   | 4.79    | 4.26 | 2.53     | 2.37 | .66      | .62  | .52     | .52  | .52      | .52   | .52       | .52   |
| 9   | 5.12    | 4.79 | 2.37     | 2.22 | .63      | .57  | .52     | .52  | .99      | .52   | .52       | .52   |
| 10  | 6.01    | 4.78 | 2.22     | 2.10 | .71      | .53  | .59     | .52  | .89      | .52   | .52       | .52   |
| 11  | 7.42    | 6.01 | 2.10     | 2.01 | .89      | .52  | 1.36    | .52  | .89      | .52   | .53       | .52   |
| 12  | 7.35    | 6.45 | 2.05     | 1.97 | 1.23     | .52  | 1.59    | .52  | .52      | .52   | .53       | .52   |
| 13  | 6.45    | 5.78 | 2.13     | 1.99 | 1.71     | .52  | 1.54    | .52  | .52      | .52   | .52       | .52   |
| 14  | 5.78    | 5.34 | 2.10     | 1.98 | 1.86     | .52  | 1.63    | .52  | .52      | .52   | .52       | .50   |
| 15  | 5.36    | 5.05 | 2.03     | 1.85 | 1.24     | .52  | .92     | .52  | .52      | .52   | .50       | .49   |
| 16  | 5.08    | 4.80 | 1.94     | 1.70 | 1.05     | .52  | .52     | .52  | .52      | .52   | .49       | .49   |
| 17  | 4.89    | 4.68 | 1.81     | 1.62 | .56      | .52  | .52     | .52  | .52      | .52   | .49       | .48   |
| 18  | 4.87    | 4.58 | 1.75     | 1.58 | .52      | .52  | .52     | .52  | .52      | .52   | .49       | .48   |
| 19  | 4.72    | 4.40 | 1.68     | 1.56 | .52      | .52  | .52     | .52  | .52      | .52   | .49       | .48   |
| 20  | 4.52    | 4.24 | 1.67     | 1.58 | .52      | .52  | .52     | .52  | .52      | .52   | .49       | .48   |
| 21  | 4.35    | 4.06 | 1.68     | 1.58 | .52      | .52  | .52     | .52  | .52      | .52   | .49       | .48   |
| 22  | 4.07    | 3.81 | 1.64     | 1.57 | .52      | .52  | .52     | .52  | .52      | .52   | .49       | .48   |
| 23  | 3.82    | 3.54 | 1.62     | 1.53 | .52      | .52  | .52     | .52  | .52      | .52   | .52       | .48   |
| 24  | 3.54    | 3.31 | 1.64     | 1.54 | .52      | .52  | .52     | .52  | .52      | .52   | .52       | .52   |
| 25  | 3.37    | 3.27 | 1.64     | 1.54 | .53      | .52  | .52     | .52  | .52      | .52   | .52       | .52   |
| 26  | 3.40    | 3.25 | 1.63     | 1.53 | .52      | .52  | .52     | .52  | .52      | .52   | .52       | .52   |
| 27  | 3.36    | 3.19 | 1.56     | 1.49 | .53      | .52  | .52     | .52  | .52      | .52   | .52       | .52   |
| 28  | 3.24    | 3.05 | 1.52     | 1.44 | .52      | .52  | .52     | .52  | .52      | .52   | .52       | .52   |
| 29  | 3.07    | 2.80 | 1.47     | 1.35 | .52      | .52  | .52     | .52  | .52      | .52   | .52       | .52   |
| 30  | 2.81    | 2.58 | 1.43     | 1.22 | .52      | .52  | .52     | .52  | .52      | .52   | .52       | .52   |
| 31  | ---     | ---  | 1.32     | 1.13 | ---      | ---  | .52     | .52  | .52      | .52   | ---       | ---   |

## 11480390 MAD RIVER ABOVE RUTH RESERVOIR, NEAR FOREST GLEN, CA

LOCATION.—Lat 40°17'04", long 123°20'03", in NW 1/4 NE 1/4 sec.24, T.2 S., R.7 E., Trinity County, Hydrologic Unit 18010102, Six Rivers National Forest, on left bank, on downstream side of Zenia Road Bridge, 500 ft downstream from unnamed creek, 0.4 mile downstream from Tompkins Creek, and 6.1 mi southwest of Forest Glen.

DRAINAGE AREA.—93.8 mi<sup>2</sup>.

PERIOD OF RECORD.—June 1980 to current year. Discharge measurements only September to December 1971, July 1972, June to September 1977.

REVISED RECORDS.—WDR CA-80-2: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 2,700 ft above sea level, from topographic map. June 28 to Sept. 30, 1990, nonrecording gage 400 ft upstream at different datum.

REMARKS.—Records good except for estimated daily discharges and discharges below 10 ft<sup>3</sup>/s, which are fair. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 15,000 ft<sup>3</sup>/s, Feb. 17, 1986, gage height, 11.39 ft in gage, 12.94 ft from crest-stage gage, from rating curve extended above 5,000 ft<sup>3</sup>/s, maximum gage height 13.10 ft, Jan. 20, 1993; no flow at times each year.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 3,000 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Nov. 23 | 1100 | 4,530                             | 8.35                | Feb. 7  | 1045 | 5,140                             | 8.78                |
| Dec. 3  | 0400 | 3,890                             | 7.87                | Feb. 17 | 0200 | 3,980                             | 7.94                |
| Jan. 22 | 2330 | 3,980                             | 7.94                | Feb. 28 | 1830 | 4,040                             | 7.99                |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT  | NOV      | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN   | JUL   | AUG   | SEP  |
|-------|------|----------|-------|-------|-------|-------|-------|------|-------|-------|-------|------|
| 1     | .02  | .30      | 1190  | 72    | 263   | 2490  | 320   | 116  | 44    | 7.4   | 1.7   | .40  |
| 2     | .01  | .27      | 1640  | 66    | 238   | 1490  | 322   | 117  | 44    | 6.8   | 1.5   | .41  |
| 3     | .00  | .24      | 2660  | 62    | 228   | 1500  | 301   | 166  | 45    | 6.5   | 1.4   | .38  |
| 4     | .00  | .18      | 994   | 58    | 224   | 1050  | 273   | 144  | 44    | 6.2   | 1.4   | .36  |
| 5     | .00  | .21      | 601   | 54    | 195   | 815   | 276   | 120  | 41    | 5.9   | 1.3   | .35  |
| 6     | .00  | .72      | 427   | 51    | 969   | 654   | 273   | 118  | 38    | 5.5   | 1.3   | .33  |
| 7     | .00  | 7.2      | 343   | 49    | 3960  | 534   | 282   | 113  | 36    | 5.1   | 1.2   | .30  |
| 8     | .00  | 3.0      | 433   | 47    | 2550  | 492   | 311   | 102  | 35    | 4.9   | 1.3   | .28  |
| 9     | .00  | 1.9      | 342   | 44    | 2650  | 465   | 290   | 103  | 34    | 4.5   | 1.3   | .25  |
| 10    | .00  | 5.6      | 276   | 42    | 1380  | 408   | 331   | 99   | 32    | 4.2   | 1.2   | .26  |
| 11    | .00  | 14       | 247   | 41    | 909   | 375   | 470   | 98   | 30    | 3.8   | 1.1   | .29  |
| 12    | .00  | 29       | 230   | 39    | 695   | 350   | 556   | 94   | 28    | 3.5   | 1.1   | .27  |
| 13    | .10  | 24       | 234   | 38    | 631   | 358   | 594   | 88   | 27    | 3.3   | 1.0   | .23  |
| 14    | .00  | 19       | 245   | 38    | 707   | 460   | 566   | 84   | 25    | 3.1   | .97   | .18  |
| 15    | .00  | 17       | 220   | 111   | 610   | 503   | 508   | 80   | 24    | 2.9   | .89   | .30  |
| 16    | .00  | 17       | 200   | 311   | 1500  | 453   | 455   | 75   | 23    | 2.7   | .82   | .29  |
| 17    | .00  | 91       | 178   | 700   | 2880  | 422   | 424   | 71   | 21    | 2.8   | .79   | .04  |
| 18    | .00  | 66       | 159   | 1480  | 2450  | 398   | 389   | 69   | 20    | 2.9   | .71   | .00  |
| 19    | .00  | 39       | 144   | 1090  | 1840  | 422   | 343   | 66   | 19    | 2.8   | .71   | .00  |
| 20    | .00  | 28       | 133   | 1180  | 1190  | 465   | 307   | 64   | 18    | 2.7   | .63   | .00  |
| 21    | .00  | 370      | 112   | 1230  | 1000  | 405   | 267   | 62   | 17    | 2.7   | .62   | .00  |
| 22    | .00  | e669     | 102   | 1740  | 965   | 352   | 229   | 59   | 16    | 2.7   | .59   | .00  |
| 23    | .00  | e2900    | 95    | 2650  | 1820  | 330   | 202   | 57   | 15    | 2.7   | .57   | .02  |
| 24    | 1.5  | e1650    | 89    | 1170  | 1690  | 679   | 195   | 55   | 13    | 2.7   | .57   | .00  |
| 25    | 1.4  | e942     | 85    | 769   | 1800  | 873   | 185   | 54   | 12    | 2.6   | .51   | .00  |
| 26    | .69  | e400     | 82    | 614   | 1120  | 620   | 178   | 52   | 11    | 2.4   | .47   | .00  |
| 27    | .36  | e485     | 78    | 484   | 1230  | 497   | 165   | 51   | 11    | 2.3   | .44   | .00  |
| 28    | .20  | 322      | 76    | 402   | 3260  | 419   | 139   | 49   | 9.7   | 2.2   | .44   | .00  |
| 29    | .11  | 653      | 72    | 347   | ---   | 372   | 121   | 49   | 9.0   | 2.1   | .44   | .00  |
| 30    | .10  | 1730     | 69    | 307   | ---   | 341   | 126   | 47   | 8.1   | 2.0   | .43   | .00  |
| 31    | .23  | ---      | 75    | 299   | ---   | 321   | ---   | 45   | ---   | 1.9   | .41   | ---  |
| TOTAL | 4.72 | 10484.62 | 11831 | 15585 | 38954 | 19313 | 9398  | 2567 | 749.8 | 113.8 | 27.81 | 4.94 |
| MEAN  | .15  | 349      | 382   | 503   | 1391  | 623   | 313   | 82.8 | 25.0  | 3.67  | .90   | .16  |
| MAX   | 1.5  | 2900     | 2660  | 2650  | 3960  | 2490  | 594   | 166  | 45    | 7.4   | 1.7   | .41  |
| MIN   | .00  | .18      | 69    | 38    | 195   | 321   | 121   | 45   | 8.1   | 1.9   | .41   | .00  |
| AC-FT | 9.4  | 20800    | 23470 | 30910 | 77270 | 38310 | 18640 | 5090 | 1490  | 226   | 55    | 9.8  |

e Estimated.

## 11480390 MAD RIVER ABOVE RUTH RESERVOIR, NEAR FOREST GLEN, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 6.02 | 178  | 442  | 639  | 646  | 530  | 269  | 115  | 49.2 | 7.71 | 1.23 | .99  |
| MAX  | 57.6 | 741  | 1684 | 1887 | 2136 | 1299 | 878  | 301  | 229  | 25.0 | 4.87 | 12.2 |
| (WY) | 1990 | 1985 | 1997 | 1995 | 1986 | 1995 | 1982 | 1995 | 1993 | 1993 | 1993 | 1986 |
| MIN  | .000 | .000 | 8.08 | 28.5 | 85.3 | 38.6 | 32.0 | 20.4 | 5.31 | 1.27 | .000 | .000 |
| (WY) | 1988 | 1994 | 1991 | 1991 | 1991 | 1988 | 1988 | 1987 | 1987 | 1985 | 1984 | 1984 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |       | WATER YEARS 1980 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|-------|-------------------------|-------------|
| ANNUAL TOTAL             | 158871.31              |        | 109033.69           |       |                         |             |
| ANNUAL MEAN              | 435                    |        | 299                 |       | 238                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |       | 419                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |       | 61.4                    |             |
| HIGHEST DAILY MEAN       | 5960                   | Jan 17 | 3960                | Feb 7 | 10300                   | Jan 1 1997  |
| LOWEST DAILY MEAN        | .00                    | Oct 3  | .00                 | Oct 3 | .00                     | Oct 8 1980  |
| ANNUAL SEVEN-DAY MINIMUM | .00                    | Oct 3  | .00                 | Oct 3 | .00                     | Sep 11 1982 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 5140                | Feb 7 | 15000                   | Feb 17 1986 |
| INSTANTANEOUS PEAK STAGE |                        |        | 8.78                | Feb 7 | 13.10                   | Jan 20 1993 |
| ANNUAL RUNOFF (AC-FT)    | 315100                 |        | 216300              |       | 172700                  |             |
| 10 PERCENT EXCEEDS       | 1310                   |        | 951                 |       | 622                     |             |
| 50 PERCENT EXCEEDS       | 110                    |        | 49                  |       | 34                      |             |
| 90 PERCENT EXCEEDS       | .20                    |        | .08                 |       | .00                     |             |

## 11480400 RUTH RESERVOIR NEAR FOREST GLEN, CA

LOCATION.—Lat 40°22'08", long 123°25'56", in NW 1/4 NW 1/4 sec.19, T.1 S., R.7 E., Trinity County, Hydrologic Unit 18010102, Six Rivers National Forest, near center of Robert W. Matthews Dam on Mad River and 5.6 mi west of Forest Glen.

DRAINAGE AREA.—121 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1966 to current year. Records prior to October 1966 in files of Humboldt Bay Municipal Water District.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Humboldt Bay Municipal Water District).

REMARKS.—Reservoir is formed by earthfill dam; storage began July 1961. Total capacity, 48,000 acre-ft at elevation 2,654.0 ft, crest of spillway. Minimum pool capacity, 7,810 acre-ft at elevation 2,600 ft. Water is released down Mad River for municipal use. Records given represent total contents at 2400 hours.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 68,000 acre-ft, Feb. 17, 1986, elevation, 2,667.06 ft; minimum, 11,700 acre-ft, Oct. 24–28, 1977; minimum elevation, 2,607.13 ft, Oct. 28, 1977.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 53,800 acre-ft, Feb. 28, elevation, 2,658.95 ft; minimum contents, 32,800 acre-ft, Nov. 16, 19, and 20, elevation, 2638.80 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on survey by Humboldt Bay Municipal Water District in 1977)

|       |        |       |        |       |        |
|-------|--------|-------|--------|-------|--------|
| 2,595 | 5,920  | 2,620 | 18,100 | 2,645 | 38,600 |
| 2,600 | 7,810  | 2,625 | 21,500 | 2,650 | 43,700 |
| 2,605 | 10,000 | 2,630 | 25,300 | 2,655 | 49,200 |
| 2,610 | 12,500 | 2,635 | 29,400 | 2,660 | 55,100 |
| 2,615 | 15,100 | 2,640 | 33,800 | 2,664 | 60,200 |

## RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY OBSERVATION AT 2400 HOURS

| DAY | OCT     | NOV     | DEC     | JAN     | FEB     | MAR     | APR     | MAY     | JUN     | JUL     | AUG     | SEP     |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1   | 39100   | 34700   | 50700   | 45300   | 48600   | 52700   | 49100   | 48200   | 47100   | 46100   | 43100   | 39000   |
| 2   | 39000   | 34500   | 51700   | 45200   | 48500   | 51900   | 49000   | 48200   | 47100   | 46000   | 43000   | 38900   |
| 3   | 38900   | 34300   | 52200   | 45100   | 48400   | 51500   | 49000   | 48200   | 47100   | 45900   | 42700   | 38700   |
| 4   | 38800   | 34200   | 50800   | 44900   | 48400   | 50900   | 48900   | 48100   | 47100   | 45800   | 42700   | 38600   |
| 5   | 38700   | 34000   | 50000   | 44800   | 48300   | 50400   | 48800   | 48000   | 47100   | 45700   | 42600   | 38400   |
| 6   | 38600   | 33900   | 49500   | 44800   | 50500   | 50000   | 48800   | 48000   | 47100   | 45600   | 42600   | 38300   |
| 7   | 38400   | 33900   | 49200   | 44800   | 53700   | 49700   | 48800   | 48100   | 47100   | 45600   | 42300   | 38100   |
| 8   | 38300   | 33700   | 49100   | 44900   | 53200   | 49700   | 48800   | 48100   | 47100   | 45500   | 42200   | 37900   |
| 9   | 38200   | 33600   | 49000   | 44900   | 52600   | 49500   | 48800   | 48200   | 47100   | 45400   | 42100   | 37800   |
| 10  | 38100   | 33500   | 48800   | 44900   | 51300   | 49300   | 49000   | 48300   | 47100   | 45300   | 42000   | 37600   |
| 11  | 37900   | 33300   | 48700   | 44900   | 50500   | 49200   | 49300   | 48500   | 47100   | 45300   | 41800   | 37500   |
| 12  | 37800   | 33200   | 48600   | 44900   | 50000   | 49100   | 49500   | 48600   | 47100   | 45200   | 41700   | 37300   |
| 13  | 37700   | 33100   | 48600   | 44800   | 49900   | 49000   | 49700   | 48500   | 47100   | 45100   | 41600   | 37200   |
| 14  | 37600   | 33000   | 48600   | 44900   | 49900   | 49400   | 49600   | 48200   | 47000   | 45000   | 41500   | 37000   |
| 15  | 37400   | 32800   | 48500   | 45100   | 49800   | 49400   | 49500   | 47900   | 47000   | 44900   | 41400   | 36900   |
| 16  | 37200   | 32800   | 48400   | 45700   | 51700   | 49400   | 49400   | 47600   | 47000   | 44800   | 41200   | 36700   |
| 17  | 37000   | 32900   | 48300   | 47500   | 52700   | 49300   | 49300   | 47400   | 46900   | 44700   | 41100   | 36600   |
| 18  | 36900   | 32900   | 48200   | 49900   | 53100   | 49200   | 49200   | 47300   | 46900   | 44600   | 41000   | 36400   |
| 19  | 36700   | 32800   | 48100   | 50700   | 52100   | 49100   | 49000   | 47300   | 46900   | 44500   | 40900   | 36300   |
| 20  | 36600   | 32800   | 47900   | 51100   | 51600   | 49100   | 48900   | 47300   | 46800   | 44400   | 40700   | 36100   |
| 21  | 36400   | 33700   | 47700   | 51000   | 51200   | 49100   | 48800   | 47300   | 46800   | 44300   | 40600   | 35900   |
| 22  | 36200   | 34900   | 47500   | 52400   | 51200   | 49100   | 48800   | 47300   | 46700   | 44200   | 40500   | 35800   |
| 23  | 36100   | 40100   | 47300   | 52500   | 52000   | 49000   | 48600   | 47300   | 46700   | 44100   | 40400   | 35600   |
| 24  | 36000   | 42700   | 47000   | 51200   | 52200   | 50200   | 48500   | 47300   | 46600   | 44000   | 40300   | 35500   |
| 25  | 35800   | 43500   | 46800   | 50400   | 52000   | 50400   | 48400   | 47300   | 46500   | 43900   | 40200   | 35300   |
| 26  | 35700   | 44600   | 46500   | 49900   | 51300   | 50000   | 48400   | 47300   | 46500   | 43700   | 40000   | 35200   |
| 27  | 35500   | 45300   | 46300   | 49500   | 51600   | 49700   | 48300   | 47300   | 46400   | 43600   | 39900   | 35000   |
| 28  | 35300   | 45600   | 46000   | 49200   | 53800   | 49500   | 48200   | 47200   | 46300   | 43500   | 39700   | 34800   |
| 29  | 35200   | 47000   | 45700   | 49000   | ---     | 49300   | 48100   | 47200   | 46300   | 43400   | 39600   | 34700   |
| 30  | 35000   | 50500   | 45500   | 48800   | ---     | 49200   | 48200   | 47200   | 46200   | 43300   | 39400   | 34500   |
| 31  | 34800   | ---     | 45400   | 48700   | ---     | 49200   | ---     | 47200   | ---     | 43200   | 39200   | ---     |
| MAX | 39100   | 50500   | 52200   | 52500   | 53800   | 52700   | 49700   | 48600   | 47100   | 46100   | 43100   | 39000   |
| MIN | 34800   | 32800   | 45400   | 44800   | 48300   | 49000   | 48100   | 47200   | 46200   | 43200   | 39200   | 34500   |
| a   | 2641.08 | 2656.19 | 2651.66 | 2654.63 | 2658.93 | 2655.04 | 2654.14 | 2653.22 | 2652.35 | 2649.58 | 2645.66 | 2640.77 |
| b   | +4500   | +15700  | -5100   | +3300   | +5100   | -4600   | -1000   | -1000   | -1000   | -3000   | -4000   | -4700   |

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## 11480410 MAD RIVER BELOW RUTH RESERVOIR, NEAR FOREST GLEN, CA

LOCATION.—Lat 40°22'16", long 123°26'06", in SW 1/4 SW 1/4 sec.18, T.1 S., R.7 E., Trinity County, Hydrologic Unit 18010102, Six Rivers National Forest, on left bank, 1,200 ft downstream from Robert W. Matthews Dam, and 5.8 mi west of Forest Glen.

DRAINAGE AREA.—121 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1980 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 2,560 ft above sea level, from topographic map.

REMARKS.—Records good. Flow regulated by Ruth Reservoir (station 11480400) 1,200 ft upstream.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 17,800 ft<sup>3</sup>/s, Feb. 17, 1986, gage height, 17.61 ft, from floodmarks, from rating curve extended above 8,800 ft<sup>3</sup>/s; minimum daily, 5.6 ft<sup>3</sup>/s, Mar. 2, 1991.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV  | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|------|------|-------|-------|-------|-------|-------|------|------|------|------|------|
| 1     | 54   | 82   | 1500  | 153   | 378   | 3310  | 559   | 154  | 72   | 45   | 55   | 82   |
| 2     | 54   | 82   | 1590  | 153   | 340   | 2260  | 517   | 234  | 59   | 45   | 55   | 80   |
| 3     | 54   | 82   | 2660  | 153   | 313   | 2010  | 444   | 274  | 59   | 45   | 56   | 82   |
| 4     | 54   | 82   | 1920  | 153   | 294   | 1640  | 475   | 270  | 59   | 46   | 56   | 83   |
| 5     | 54   | 83   | 1230  | 120   | 283   | 1300  | 449   | 265  | 59   | 46   | 56   | 83   |
| 6     | 55   | 83   | 832   | 53    | 546   | 1050  | 434   | 184  | 59   | 45   | 55   | 83   |
| 7     | 55   | 83   | 618   | 54    | 3010  | 837   | 423   | 109  | 59   | 44   | 56   | 85   |
| 8     | 55   | 83   | 559   | 54    | 3270  | 736   | 435   | 114  | 58   | 44   | 56   | 82   |
| 9     | 55   | 82   | 514   | 54    | 3270  | 693   | 433   | 122  | 52   | 44   | 58   | 81   |
| 10    | 55   | 82   | 458   | 54    | 2140  | 599   | 453   | 71   | 44   | 44   | 57   | 81   |
| 11    | 55   | 81   | 406   | 55    | 1500  | 534   | 549   | 74   | 45   | 44   | 59   | 80   |
| 12    | 55   | 81   | 369   | 55    | 1110  | 492   | 685   | 100  | 45   | 44   | 66   | 80   |
| 13    | 55   | 81   | 352   | 55    | 902   | 470   | 769   | 178  | 45   | 44   | 57   | 83   |
| 14    | 55   | 80   | 326   | 55    | 924   | 537   | 797   | 308  | 46   | 44   | 57   | 83   |
| 15    | 66   | 80   | 348   | 56    | 863   | 654   | 763   | 270  | 45   | 44   | 57   | 81   |
| 16    | 72   | 81   | 320   | 75    | 1070  | 652   | 706   | 267  | 45   | 48   | 59   | 80   |
| 17    | 72   | 82   | 297   | 201   | 2640  | 609   | 652   | 266  | 45   | 55   | 63   | 80   |
| 18    | 72   | 83   | 260   | 649   | 2680  | 560   | 601   | 163  | 45   | 54   | 57   | 80   |
| 19    | 73   | 84   | 260   | 1230  | 2610  | 517   | 545   | 91   | 45   | 55   | 58   | 80   |
| 20    | 78   | 84   | 258   | 1540  | 1900  | 515   | 495   | 91   | 45   | 54   | 57   | 80   |
| 21    | 83   | 137  | 254   | 1710  | 1550  | 514   | 452   | 91   | 45   | 55   | 57   | 80   |
| 22    | 82   | 237  | 253   | 1780  | 1400  | 483   | 399   | 91   | 45   | 55   | 57   | 79   |
| 23    | 82   | 242  | 253   | 3060  | 1880  | 489   | 381   | 91   | 45   | 55   | 58   | 80   |
| 24    | 83   | 240  | 253   | 2150  | 2110  | 732   | 350   | 92   | 45   | 55   | 58   | 79   |
| 25    | 82   | 249  | 252   | 1450  | 2260  | 1250  | 327   | 93   | 45   | 55   | 58   | 79   |
| 26    | 82   | 255  | 252   | 1040  | 1900  | 1150  | 309   | 89   | 45   | 55   | 67   | 79   |
| 27    | 84   | 256  | 252   | 777   | 1640  | 931   | 292   | 84   | 45   | 55   | 83   | 80   |
| 28    | 83   | 256  | 252   | 617   | 2870  | 767   | 279   | 84   | 44   | 55   | 80   | 79   |
| 29    | 83   | 258  | 253   | 516   | ---   | 655   | 269   | 84   | 45   | 55   | 81   | 79   |
| 30    | 83   | 578  | 193   | 443   | ---   | 595   | 174   | 83   | 46   | 55   | 80   | 79   |
| 31    | 83   | ---  | 153   | 410   | ---   | 491   | ---   | 83   | ---  | 55   | 80   | ---  |
| TOTAL | 2108 | 4349 | 17697 | 18925 | 45653 | 28032 | 14416 | 4570 | 1481 | 1539 | 1909 | 2422 |
| MEAN  | 68.0 | 145  | 571   | 610   | 1630  | 904   | 481   | 147  | 49.4 | 49.6 | 61.6 | 80.7 |
| MAX   | 84   | 578  | 2660  | 3060  | 3270  | 3310  | 797   | 308  | 72   | 55   | 83   | 85   |
| MIN   | 54   | 80   | 153   | 53    | 283   | 470   | 174   | 71   | 44   | 44   | 55   | 79   |
| AC-FT | 4180 | 8630 | 35100 | 37540 | 90550 | 55600 | 28590 | 9060 | 2940 | 3050 | 3790 | 4800 |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 86.3 | 149  | 469  | 777  | 860  | 736  | 381  | 162  | 89.6 | 63.7 | 78.5 | 85.5 |
| MAX  | 118  | 607  | 1780 | 2490 | 2993 | 1990 | 1426 | 449  | 408  | 89.3 | 103  | 101  |
| (WY) | 1984 | 1985 | 1997 | 1995 | 1986 | 1995 | 1982 | 1995 | 1993 | 1987 | 1990 | 1986 |
| MIN  | 64.4 | 24.5 | 8.35 | 8.02 | 7.61 | 24.4 | 28.0 | 47.8 | 38.2 | 42.5 | 44.6 | 54.1 |
| (WY) | 1982 | 1993 | 1987 | 1992 | 1991 | 1988 | 1988 | 1987 | 1991 | 1982 | 1998 | 1998 |

## SUMMARY STATISTICS

|                          | FOR 1998 CALENDAR YEAR | FOR 1999 WATER YEAR | WATER YEARS 1981 - 1999 |
|--------------------------|------------------------|---------------------|-------------------------|
| ANNUAL TOTAL             | 216132                 | 143101              |                         |
| ANNUAL MEAN              | 592                    | 392                 | 326                     |
| HIGHEST ANNUAL MEAN      |                        |                     | 591                     |
| LOWEST ANNUAL MEAN       |                        |                     | 101                     |
| HIGHEST DAILY MEAN       | 6080                   | Jan 17              | 3310                    |
| LOWEST DAILY MEAN        | 42                     | Jul 19              | 44                      |
| ANNUAL SEVEN-DAY MINIMUM | 42                     | Jul 18              | 44                      |
| INSTANTANEOUS PEAK FLOW  |                        |                     | 4020                    |
| INSTANTANEOUS PEAK STAGE |                        |                     | 10.37                   |
| ANNUAL RUNOFF (AC-FT)    | 428700                 | 283800              | 236100                  |
| 10 PERCENT EXCEEDS       | 1930                   | 1130                | 757                     |
| 50 PERCENT EXCEEDS       | 204                    | 83                  | 91                      |
| 90 PERCENT EXCEEDS       | 44                     | 47                  | 40                      |

## 11481000 MAD RIVER NEAR ARCATA, CA

LOCATION.—Lat 40°54'35", long 124°03'35", in NW 1/4 NW 1/4 sec.15, T.6 N., R.1 E., Humboldt County, Hydrologic Unit 18010102, on right bank, 100 ft upstream from bridge on U.S. Highway 299, 1.0 mi downstream from Warren Creek, and 2.8 mi northeast of Arcata.

DRAINAGE AREA.—485 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1910 to September 1913, August 1950 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

REVISED RECORDS.—WSP 2129: 1965(M).

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 10.79 ft above sea level. December 1910 to September 1913, nonrecording gage at site 0.1 mi upstream at different datum. Aug. 15, 1950, to July 23, 1956, water-stage recorder at site 0.6 mi upstream at datum 11.00 ft higher. July 24, 1956, to Aug. 10, 1992, water-stage recorder at different datums, at present site.

REMARKS.—Records good except for estimated daily discharge, which is fair. Flow regulated by Ruth Reservoir (station 11480400), 68 mi upstream, beginning in July 1961. Water is diverted 0.5 mi upstream from station for municipal supply and industrial use in Humboldt Bay area.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 81,000 ft<sup>3</sup>/s, Dec. 22, 1964, gage height, 30.7 ft, prior datum, from high-water profile and flood-routing study; minimum daily, 0.10 ft<sup>3</sup>/s, Aug. 29, 1977.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT  | NOV    | DEC    | JAN    | FEB    | MAR    | APR    | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|------|--------|--------|--------|--------|--------|--------|-------|-------|------|------|------|
| 1     | 39   | 92     | 8790   | 1100   | 1410   | 10400  | 3200   | 785   | 290   | 95   | 52   | 55   |
| 2     | 40   | 94     | 12600  | 941    | 1290   | 7320   | 2700   | 803   | 285   | 91   | 50   | 54   |
| 3     | 40   | 83     | 12900  | 841    | 1220   | 7450   | 2460   | 2660  | 265   | 87   | 47   | 57   |
| 4     | 39   | 82     | 7220   | 761    | 1270   | 5940   | 2060   | 2320  | 249   | 87   | 49   | 56   |
| 5     | 38   | 98     | 4370   | 681    | 1240   | 4590   | 2050   | 1590  | 239   | 86   | 51   | 55   |
| 6     | 38   | 139    | 3580   | 615    | 3320   | 3690   | 2010   | 1310  | 231   | 86   | 58   | 54   |
| 7     | 38   | 386    | 2760   | 491    | 10100  | 3040   | 1870   | 1140  | 222   | 85   | 61   | 54   |
| 8     | 48   | 737    | 2850   | 442    | 9070   | 2750   | 2260   | 922   | 218   | 80   | 65   | 52   |
| 9     | 46   | 462    | 2390   | 409    | 9520   | 3240   | 2280   | 798   | 219   | 78   | 60   | 54   |
| 10    | 44   | 307    | 2090   | 386    | 7120   | 2830   | 2150   | 720   | 215   | 76   | 57   | 53   |
| 11    | 43   | 488    | 1910   | 366    | 4930   | 2440   | 2720   | 651   | 205   | 73   | 55   | 52   |
| 12    | 43   | 372    | 1870   | 349    | 3830   | 2200   | 2690   | 622   | 192   | 68   | 53   | 52   |
| 13    | 56   | 272    | 2120   | 336    | 3420   | 2050   | 2770   | 602   | 176   | 65   | 54   | 50   |
| 14    | 54   | 218    | 2320   | 351    | 4080   | 3160   | 2830   | 600   | 169   | 60   | 57   | 50   |
| 15    | 49   | 183    | 1920   | 1560   | 3380   | 3350   | 2780   | 677   | 170   | 57   | 53   | 51   |
| 16    | 46   | 224    | 1760   | 2260   | 3570   | 2870   | 2600   | 615   | 169   | 57   | 48   | 50   |
| 17    | 47   | 1540   | 1600   | 2340   | 8770   | 2510   | 2440   | 593   | 169   | 57   | 46   | 49   |
| 18    | 53   | 1130   | 1450   | 6020   | 8480   | 2250   | 2240   | 640   | 156   | 56   | 47   | 48   |
| 19    | 53   | 579    | 1300   | 4870   | 8890   | 2100   | 2020   | 588   | 150   | 62   | 51   | 47   |
| 20    | 52   | 456    | 1210   | 5660   | 6450   | 2170   | 1790   | 482   | 139   | 63   | 47   | 47   |
| 21    | 52   | e14300 | 1090   | 6670   | 6430   | 2190   | 1600   | 449   | 133   | 62   | 46   | 48   |
| 22    | 53   | 9550   | 1000   | 6070   | 5430   | 1980   | 1450   | 433   | 128   | 61   | 43   | 49   |
| 23    | 57   | 7990   | 935    | 10700  | 8680   | 2010   | 1320   | 430   | 122   | 60   | 42   | 49   |
| 24    | 77   | 7530   | 874    | 7070   | 8070   | 5240   | 1260   | 419   | 117   | 63   | 40   | 48   |
| 25    | 121  | 3970   | 836    | 4400   | 9580   | 7470   | 1240   | 404   | 114   | 60   | 41   | 48   |
| 26    | 93   | 5120   | 895    | 3140   | 7810   | 4530   | 1200   | 389   | 110   | 59   | 40   | 48   |
| 27    | 78   | 4270   | 917    | 2400   | 6800   | 3430   | 1120   | 371   | 106   | 58   | 36   | 47   |
| 28    | 76   | 2810   | 907    | 2000   | 11000  | 2710   | 1030   | 348   | 106   | 57   | 40   | 45   |
| 29    | 72   | 2880   | 882    | 1770   | ---    | 2430   | 942    | 330   | 101   | 55   | 58   | 45   |
| 30    | 69   | 7090   | 836    | 1590   | ---    | 2670   | 871    | 317   | 96    | 56   | 56   | 46   |
| 31    | 74   | ---    | 1070   | 1490   | ---    | 3630   | ---    | 304   | ---   | 54   | 56   | ---  |
| TOTAL | 1728 | 73452  | 87252  | 78079  | 165160 | 114640 | 59953  | 23312 | 5261  | 2114 | 1559 | 1513 |
| MEAN  | 55.7 | 2448   | 2815   | 2519   | 5899   | 3698   | 1998   | 752   | 175   | 68.2 | 50.3 | 50.4 |
| MAX   | 121  | 14300  | 12900  | 10700  | 11000  | 10400  | 3200   | 2660  | 290   | 95   | 65   | 57   |
| MIN   | 38   | 82     | 836    | 336    | 1220   | 1980   | 871    | 304   | 96    | 54   | 36   | 45   |
| AC-FT | 3430 | 145700 | 173100 | 154900 | 327600 | 227400 | 118900 | 46240 | 10440 | 4190 | 3090 | 3000 |

e Estimated.

## 11481000 MAD RIVER NEAR ARCATA, CA—Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1960, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 313  | 1081 | 2997 | 4588 | 4164 | 2438 | 1716 | 1167 | 358  | 97.2 | 40.3 | 39.3 |
| MAX  | 2303 | 2903 | 9335 | 9175 | 9830 | 5054 | 3450 | 2669 | 1311 | 210  | 68.2 | 128  |
| (WY) | 1951 | 1954 | 1956 | 1953 | 1958 | 1957 | 1958 | 1953 | 1953 | 1953 | 1953 | 1912 |
| MIN  | 22.0 | 32.0 | 136  | 852  | 1232 | 1028 | 489  | 277  | 104  | 36.6 | 19.2 | 18.2 |
| (WY) | 1953 | 1960 | 1960 | 1960 | 1955 | 1955 | 1951 | 1954 | 1959 | 1959 | 1959 | 1951 |

## SUMMARY STATISTICS

## WATER YEARS 1911 - 1960

|                          |         |
|--------------------------|---------|
| ANNUAL MEAN              | 1573    |
| HIGHEST ANNUAL MEAN      | 2377    |
| LOWEST ANNUAL MEAN       | 943     |
| HIGHEST DAILY MEAN       | 63100   |
| LOWEST DAILY MEAN        | 17      |
| ANNUAL SEVEN-DAY MINIMUM | 17      |
| INSTANTANEOUS PEAK FLOW  | 77800   |
| INSTANTANEOUS PEAK STAGE | 27.30   |
| ANNUAL RUNOFF (AC-FT)    | 1139000 |
| 10 PERCENT EXCEEDS       | 4010    |
| 50 PERCENT EXCEEDS       | 400     |
| 90 PERCENT EXCEEDS       | 31      |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC   | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|-------|------|------|------|------|------|------|------|------|------|
| MEAN | 205  | 1311 | 2787  | 3615 | 3062 | 2909 | 1773 | 677  | 235  | 59.0 | 45.0 | 64.5 |
| MAX  | 2255 | 6671 | 10400 | 8847 | 9796 | 7150 | 6253 | 1654 | 1721 | 152  | 123  | 392  |
| (WY) | 1963 | 1974 | 1965  | 1970 | 1986 | 1975 | 1963 | 1995 | 1993 | 1964 | 1983 | 1986 |
| MIN  | 21.3 | 52.6 | 29.8  | 135  | 138  | 194  | 165  | 122  | 31.2 | 8.40 | 7.04 | 15.0 |
| (WY) | 1993 | 1994 | 1977  | 1977 | 1977 | 1988 | 1988 | 1968 | 1974 | 1977 | 1977 | 1992 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1963 - 1999

|                          |         |         |         |
|--------------------------|---------|---------|---------|
| ANNUAL TOTAL             | 842922  | 614023  |         |
| ANNUAL MEAN              | 2309    | 1682    | 1389    |
| HIGHEST ANNUAL MEAN      |         |         | 2478    |
| LOWEST ANNUAL MEAN       |         |         | 151     |
| HIGHEST DAILY MEAN       | 24500   | Jan 17  | 14300   |
| LOWEST DAILY MEAN        | 36      | Sep 14  | 36      |
| ANNUAL SEVEN-DAY MINIMUM | 37      | Sep 13  | 39      |
| INSTANTANEOUS PEAK FLOW  |         |         | 22400   |
| INSTANTANEOUS PEAK STAGE |         |         | 16.68   |
| ANNUAL RUNOFF (AC-FT)    | 1672000 | 1218000 | 1006000 |
| 10 PERCENT EXCEEDS       | 7490    | 5320    | 3820    |
| 50 PERCENT EXCEEDS       | 857     | 442     | 280     |
| 90 PERCENT EXCEEDS       | 40      | 48      | 32      |



## 11481200 LITTLE RIVER NEAR TRINIDAD, CA

LOCATION.—Lat 41°00'40", long 124°04'50", in NE 1/4 sec.8, T.7 N., R.1 E., Humboldt County, Hydrologic Unit 18010102, on right bank, 0.5 mi upstream from Coon Creek, 4.7 mi southeast of Trinidad, and 9.1 mi north of Arcata.

DRAINAGE AREA.—40.5 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1955 to current year. Prior to October 1971, published as "at Crannell."

REVISED RECORDS.—WSP 2129: 1956–60. WDR CA-78-2: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 17.62 ft above sea level.

REMARKS.—Records good except for daily discharges below 20 ft<sup>3</sup>/s, which are fair. No storage or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 9,830 ft<sup>3</sup>/s, Mar. 18, 1975, gage height, 14.19 ft, from rating curve extended above 3,100 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 14.08 ft; minimum daily, 1.8 ft<sup>3</sup>/s, Sept. 25–29, 1991.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Jan. 17, 18, 1953, reached a stage of 15.7 ft, observed by an employee of Hammond Lumber Co.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 3,000 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| Nov. 21 | 0615 | 9,470                             | 13.83               | Dec. 2 | 1015 | 3,770                             | 8.84                |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN  | JUL  | AUG   | SEP   |
|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|-------|-------|
| 1     | 7.7   | 29    | 587   | 138   | 129   | 816   | 487   | 51   | 35   | 18   | 9.8   | 5.7   |
| 2     | 8.0   | 18    | 2490  | 110   | 113   | 573   | 330   | 114  | 35   | 17   | 9.3   | 5.7   |
| 3     | 8.6   | 14    | 1300  | 93    | 109   | 765   | 263   | 634  | 34   | 17   | 9.0   | 5.7   |
| 4     | 8.6   | 15    | 587   | 79    | 156   | 606   | 221   | 331  | 32   | 17   | 8.9   | 5.7   |
| 5     | 7.1   | 31    | 430   | 71    | 146   | 454   | 235   | 212  | 31   | 16   | 10    | 5.6   |
| 6     | 7.0   | 66    | 439   | 66    | 654   | 352   | 210   | 162  | 31   | 16   | 11    | 5.5   |
| 7     | 6.7   | 140   | 357   | 61    | 1090  | 271   | 180   | 138  | 29   | 16   | 11    | 5.3   |
| 8     | 16    | 209   | 343   | 57    | 561   | 323   | 289   | 114  | 29   | 15   | 11    | 5.3   |
| 9     | 13    | 79    | 276   | 52    | 638   | 566   | 287   | 99   | 28   | 15   | 10    | 5.3   |
| 10    | 9.1   | 60    | 225   | 49    | 509   | 417   | 327   | 89   | 27   | 14   | 9.7   | 5.2   |
| 11    | 7.8   | 94    | 195   | 47    | 402   | 304   | 428   | 83   | 27   | 14   | 9.9   | 5.1   |
| 12    | 7.4   | 53    | 178   | 45    | 313   | 244   | 285   | 78   | 26   | 13   | 9.9   | 5.1   |
| 13    | 37    | 37    | 218   | 43    | 267   | 216   | 230   | 70   | 25   | 13   | 9.2   | 5.0   |
| 14    | 19    | 30    | 253   | 63    | 263   | 420   | 196   | 68   | 25   | 13   | 8.6   | 5.1   |
| 15    | 13    | 28    | 195   | 416   | 231   | 375   | 171   | 63   | 25   | 12   | 8.0   | 5.3   |
| 16    | 11    | 34    | 166   | 440   | 284   | 272   | 150   | 58   | 25   | 12   | 7.6   | 5.4   |
| 17    | 10    | 401   | 144   | 629   | 676   | 201   | 134   | 57   | 24   | 12   | 7.5   | 5.4   |
| 18    | 9.3   | 188   | 127   | 745   | 833   | 167   | 121   | 104  | 24   | 12   | 7.5   | 5.3   |
| 19    | 7.6   | 106   | 114   | 753   | 705   | 141   | 110   | 83   | 23   | 12   | 7.8   | 5.2   |
| 20    | 6.3   | 188   | 109   | 704   | 474   | 138   | 100   | 69   | 23   | 12   | 7.5   | 5.1   |
| 21    | 6.1   | 6080  | 93    | 550   | 498   | 120   | 93    | 61   | 22   | 12   | 7.1   | 5.1   |
| 22    | 6.1   | 1730  | 86    | 593   | 510   | 114   | 86    | 54   | 21   | 11   | 6.9   | 5.0   |
| 23    | 6.0   | 1200  | 81    | 912   | 1180  | 141   | 79    | 50   | 21   | 11   | 6.6   | 4.9   |
| 24    | 21    | 836   | 75    | 567   | 664   | 799   | 73    | 48   | 20   | 12   | 6.6   | 4.8   |
| 25    | 27    | 453   | 75    | 398   | 752   | 634   | 68    | 47   | 21   | 11   | 6.5   | 4.8   |
| 26    | 15    | 834   | 85    | 303   | 600   | 375   | 66    | 44   | 20   | 11   | 6.3   | 4.7   |
| 27    | 12    | 502   | 81    | 236   | 626   | 275   | 63    | 42   | 19   | 11   | 6.1   | 4.5   |
| 28    | 16    | 343   | 95    | 201   | 1700  | 227   | 59    | 41   | 19   | 11   | 6.2   | 4.4   |
| 29    | 12    | 366   | 84    | 174   | ---   | 250   | 55    | 40   | 18   | 11   | 6.2   | 4.4   |
| 30    | 9.8   | 547   | 77    | 151   | ---   | 366   | 53    | 38   | 18   | 11   | 6.0   | 4.3   |
| 31    | 12    | ---   | 161   | 153   | ---   | 631   | ---   | 36   | ---  | 10   | 5.8   | ---   |
| TOTAL | 363.2 | 14711 | 9726  | 8899  | 15083 | 11553 | 5449  | 3178 | 757  | 408  | 253.5 | 153.9 |
| MEAN  | 11.7  | 490   | 314   | 287   | 539   | 373   | 182   | 103  | 25.2 | 13.2 | 8.18  | 5.13  |
| MAX   | 37    | 6080  | 2490  | 912   | 1700  | 816   | 487   | 634  | 35   | 18   | 11    | 5.7   |
| MIN   | 6.0   | 14    | 75    | 43    | 109   | 114   | 53    | 36   | 18   | 10   | 5.8   | 4.3   |
| AC-FT | 720   | 29180 | 19290 | 17650 | 29920 | 22920 | 10810 | 6300 | 1500 | 809  | 503   | 305   |

## LITTLE RIVER BASIN

## 11481200 LITTLE RIVER NEAR TRINIDAD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 27.6 | 167  | 319  | 346  | 297  | 262  | 142  | 75.3 | 33.3 | 13.3 | 8.34 | 7.88 |
| MAX  | 202  | 849  | 1083 | 1145 | 816  | 819  | 521  | 271  | 168  | 31.4 | 23.3 | 28.4 |
| (WY) | 1963 | 1974 | 1965 | 1970 | 1986 | 1975 | 1963 | 1960 | 1993 | 1983 | 1983 | 1986 |
| MIN  | 4.70 | 4.62 | 7.45 | 28.2 | 19.7 | 35.5 | 22.1 | 21.9 | 12.2 | 6.12 | 3.59 | 3.89 |
| (WY) | 1988 | 1994 | 1977 | 1977 | 1977 | 1988 | 1977 | 1987 | 1966 | 1959 | 1959 | 1987 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1956 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 78816.5                |        | 70534.6             |        |                         |             |
| ANNUAL MEAN              | 216                    |        | 193                 |        | 141                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 240                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 23.8                    |             |
| HIGHEST DAILY MEAN       | 6080                   | Nov 21 | 6080                | Nov 21 | 7860                    | Mar 18 1975 |
| LOWEST DAILY MEAN        | 6.0                    | Oct 23 | 4.3                 | Sep 30 | 1.8                     | Sep 25 1991 |
| ANNUAL SEVEN-DAY MINIMUM | 6.3                    | Sep 12 | 4.6                 | Sep 24 | 1.9                     | Sep 24 1991 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 9470                |        | 9830                    | Mar 18 1975 |
| INSTANTANEOUS PEAK STAGE |                        |        | 13.83               |        | 14.19                   | Mar 18 1975 |
| ANNUAL RUNOFF (AC-FT)    | 156300                 |        | 139900              |        | 102100                  |             |
| 10 PERCENT EXCEEDS       | 550                    |        | 566                 |        | 369                     |             |
| 50 PERCENT EXCEEDS       | 68                     |        | 57                  |        | 35                      |             |
| 90 PERCENT EXCEEDS       | 7.7                    |        | 6.2                 |        | 6.0                     |             |

11481500 REDWOOD CREEK NEAR BLUE LAKE, CA

LOCATION.—Lat 40°54'22", long 123°48'51", in SE 1/4 NE 1/4 sec.15, T.6 N., R.3 E., Humboldt County, Hydrologic Unit 18010102, on right bank, 400 ft upstream from Lupton Creek, and 9.1 mi east of town of Blue Lake.

DRAINAGE AREA.—67.7 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—June 1953 to September 1958, October 1972 to September 1993, October 1997 to September 1998.

REVISED RECORDS.—WDR CA-78-2: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 850 ft above sea level, from topographic map.

REMARKS.—Records fair. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 12,200 ft<sup>3</sup>/s, Mar. 18, 1975, gage height, 13.70 ft, from rating curve extended above 6,400 ft<sup>3</sup>/s; minimum daily, 0.69 ft<sup>3</sup>/s, Sept. 30, 1993.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 2,300 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|---------|------|--------------------------------|------------------|
| Nov. 21 | 1430 | 4,470                          | 8.40             | Feb. 7  | 0800 | 3,340                          | 7.29             |
| Dec. 2  | 1145 | 4,120                          | 8.08             | Feb. 16 | 2345 | 2,340                          | 6.13             |
| Jan. 22 | 1930 | 2,700                          | 6.57             | Feb. 28 | 1215 | 2,720                          | 6.59             |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN  | JUL  | AUG   | SEP  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|------|
| 1     | 3.9   | 17    | 1180  | 224   | 272   | 1460  | 487   | 224   | 105  | 27   | 10    | 4.9  |
| 2     | 5.2   | 13    | 2780  | 191   | 251   | 1150  | 482   | 278   | 99   | 26   | 9.6   | 4.8  |
| 3     | 5.6   | 11    | 1810  | 171   | 242   | 1190  | 454   | 583   | 91   | 27   | 9.6   | 4.6  |
| 4     | 5.0   | 10    | 975   | 154   | 262   | 995   | 405   | 467   | 85   | 27   | 9.7   | 4.1  |
| 5     | 4.8   | 19    | 715   | 141   | 237   | 824   | 410   | 371   | 80   | 26   | 10    | 3.9  |
| 6     | 4.6   | 28    | 571   | 132   | 666   | 707   | 386   | 341   | 77   | 25   | 12    | 3.8  |
| 7     | 4.1   | 80    | 541   | 125   | 1820  | 613   | 376   | 321   | 73   | 25   | 14    | 3.8  |
| 8     | 7.8   | 111   | 593   | 117   | 1140  | 575   | 417   | 284   | 70   | 24   | 13    | 3.6  |
| 9     | 7.2   | 51    | 456   | 110   | 1130  | 557   | 379   | 255   | 67   | 23   | 11    | 3.2  |
| 10    | 5.6   | 52    | 381   | 105   | 785   | 502   | 414   | 239   | 63   | 21   | 10    | 3.1  |
| 11    | 5.3   | 92    | 361   | 100   | 656   | 453   | 457   | 240   | 59   | 20   | 9.8   | 3.1  |
| 12    | 5.2   | 45    | 392   | 96    | 592   | 422   | 457   | 254   | 56   | 20   | 11    | 3.0  |
| 13    | 10    | 32    | 438   | 92    | 645   | 408   | 473   | 238   | 53   | 19   | 11    | 2.7  |
| 14    | 8.2   | 27    | 419   | 128   | 651   | 504   | 482   | 223   | 51   | 18   | 11    | 2.6  |
| 15    | 6.5   | 25    | 345   | 537   | 566   | 493   | 499   | 209   | 51   | 17   | 10    | 2.6  |
| 16    | 5.9   | 46    | 302   | 600   | 879   | 468   | 500   | 195   | 50   | 17   | 8.9   | 2.6  |
| 17    | 5.7   | 224   | 280   | 710   | 1440  | 430   | 501   | 190   | 47   | 17   | 8.0   | 2.6  |
| 18    | 5.5   | 132   | 257   | 929   | 1400  | 410   | 478   | 210   | 45   | 17   | 7.6   | 2.4  |
| 19    | 5.4   | 83    | 232   | 809   | 1270  | 405   | 438   | 208   | 43   | 16   | 7.8   | 2.3  |
| 20    | 5.1   | 94    | 219   | 907   | 1010  | 445   | 390   | 204   | 41   | 15   | 7.4   | 2.3  |
| 21    | 4.8   | 2470  | 188   | 1100  | 997   | 433   | 356   | 188   | 40   | 15   | 6.8   | 2.3  |
| 22    | 4.6   | 1270  | 177   | 1310  | 970   | 402   | 326   | 189   | 39   | 15   | 6.5   | 2.3  |
| 23    | 4.5   | 1140  | 165   | 1480  | 1450  | 393   | 309   | 197   | 36   | 14   | 6.0   | 2.2  |
| 24    | 14    | 1010  | 152   | 900   | 1200  | 1050  | 308   | 191   | 35   | 14   | 5.6   | 2.2  |
| 25    | 25    | 558   | 150   | 674   | 1300  | 987   | 320   | 182   | 35   | 14   | 5.2   | 2.2  |
| 26    | 12    | 804   | 182   | 549   | 1090  | 648   | 311   | 169   | 34   | 13   | 5.0   | 2.3  |
| 27    | 8.8   | 585   | 169   | 456   | 1180  | 531   | 279   | 156   | 33   | 12   | 4.8   | 2.3  |
| 28    | 8.6   | 434   | 170   | 392   | 2090  | 455   | 245   | 141   | 31   | 12   | 5.2   | 2.2  |
| 29    | 8.0   | 545   | 158   | 357   | ---   | 451   | 221   | 130   | 29   | 11   | 5.0   | 2.2  |
| 30    | 7.3   | 1400  | 148   | 320   | ---   | 463   | 212   | 120   | 28   | 11   | 4.8   | 2.2  |
| 31    | 8.1   | ---   | 255   | 304   | ---   | 488   | ---   | 110   | ---  | 10   | 4.9   | ---  |
| TOTAL | 222.3 | 11408 | 15161 | 14220 | 26191 | 19312 | 11772 | 7307  | 1646 | 568  | 261.2 | 88.4 |
| MEAN  | 7.17  | 380   | 489   | 459   | 935   | 623   | 392   | 236   | 54.9 | 18.3 | 8.43  | 2.95 |
| MAX   | 25    | 2470  | 2780  | 1480  | 2090  | 1460  | 501   | 583   | 105  | 27   | 14    | 4.9  |
| MIN   | 3.9   | 10    | 148   | 92    | 237   | 393   | 212   | 110   | 28   | 10   | 4.8   | 2.2  |
| AC-FT | 441   | 22630 | 30070 | 28210 | 51950 | 38310 | 23350 | 14490 | 3260 | 1130 | 518   | 175  |

## REDWOOD CREEK BASIN

## 11481500 REDWOOD CREEK NEAR BLUE LAKE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1999, BY WATER YEAR (WY)

| OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 38.7 | 261  | 449  | 512  | 574  | 487  | 304  | 156  | 69.2 | 21.8 | 9.86 | 8.96 |
| MAX  | 226  | 1179 | 1563 | 1628 | 1479 | 1306 | 748  | 337  | 253  | 46.4 | 27.4 | 29.2 |
| (WY) | 1974 | 1974 | 1956 | 1956 | 1958 | 1975 | 1982 | 1993 | 1993 | 1993 | 1983 | 1986 |
| MIN  | 2.30 | 15.2 | 12.3 | 31.3 | 42.2 | 81.5 | 62.6 | 53.0 | 22.3 | 10.5 | 3.14 | 2.19 |
| (WY) | 1988 | 1977 | 1977 | 1977 | 1977 | 1988 | 1988 | 1992 | 1987 | 1985 | 1992 | 1987 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1954 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 133438.7               |        | 108156.9            |        |                         |             |
| ANNUAL MEAN              | 366                    |        | 296                 |        | 239                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 423                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 44.2                    |             |
| HIGHEST DAILY MEAN       | 3900                   | Jan 17 | 2780                | Dec 2  | 8360                    | Mar 18 1975 |
| LOWEST DAILY MEAN        | 3.4                    | Sep 16 | 2.2                 | Sep 23 | .69                     | Sep 30 1993 |
| ANNUAL SEVEN-DAY MINIMUM | 3.7                    | Sep 12 | 2.2                 | Sep 23 | 1.0                     | Sep 24 1993 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 4470                | Nov 21 | 12200                   | Mar 18 1975 |
| INSTANTANEOUS PEAK STAGE |                        |        | 8.40                | Nov 21 | 13.70                   | Mar 18 1975 |
| ANNUAL RUNOFF (AC-FT)    | 264700                 |        | 214500              |        | 173300                  |             |
| 10 PERCENT EXCEEDS       | 1040                   |        | 887                 |        | 606                     |             |
| 50 PERCENT EXCEEDS       | 166                    |        | 132                 |        | 76                      |             |
| 90 PERCENT EXCEEDS       | 4.7                    |        | 4.8                 |        | 6.5                     |             |

11481500 REDWOOD CREEK NEAR BLUE LAKE, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1973 to current year.

CHEMICAL DATA: Water years 1974–75.

WATER TEMPERATURE: Water years 1973–92.

SEDIMENT DATA: Water years 1973 to current year.

PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: October 1972 to September 1992.

SUSPENDED-SEDIMENT DISCHARGE: October 1972 to September 1992.

REMARKS.—Periodic total load sampling above 1,200 ft<sup>3</sup>/s.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L)<br>(80154) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDED<br>(T/DAY)<br>(80155) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) |
|-------|------|---|---|---|---|--|
| FEB   |      |   |   |   |   |  |
| 07... | 1150 | 2370  | 6.0   | 996   | 6370  | 48   |
| 23... | 1325 | 1570  | 7.0   | 330   | 1400  | 50   |

PARTICLE SIZE DISTRIBUTION OF BEDLOAD, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | SAM-<br>PLING<br>METHOD,<br>CODES<br>(82398) | SAMPLER<br>TYPE<br>(CODE)<br>(84164) | BAG<br>MESH<br>SIZE<br>SAMPLER<br>(MM)<br>(30333) | TETHER<br>LINE<br>USED IN<br>(YES=1)<br>(CODE)<br>(04117) | START-<br>ING<br>TIME<br>(2400<br>HOURS)<br>(82073) | END-<br>ING<br>TIME<br>(2400<br>HOURS)<br>(82074) | TIME<br>ON BED<br>FOR<br>BED<br>LOAD<br>SAMPLE<br>(SEC)<br>(04120) | HORI-<br>ZONTAL<br>WIDTH<br>OF<br>VER-<br>TICAL<br>(FEET)<br>(04121) |
|-------|------|--|--------------------------------------|---|---|---|---|--|--|
| FEB   |      |  |                                      |   |   |   |   |  |  |
| 07... | 1250 | 1000   | 1100                                 | .250  | 0   | 1225  | 1310  | 15   | 4.0  |
| 07... | 1350 | 1000   | 1100                                 | .250  | 0   | 1325  | 1415  | 15   | 4.0  |
| 23... | 1420 | 1000   | 1100                                 | .250  | 0   | 1400  | 1440  | 15   | 3.0  |
| 23... | 1515 | 1000   | 1100                                 | .250  | 0   | 1455  | 1535  | 15   | 3.0  |

| DATE  | MEASNT<br>(NUM)<br>(04118) | VER-<br>TICALS<br>IN<br>COM-<br>POSITE<br>SAMPLE<br>(NUM)<br>(04119) | NUMBER<br>OF<br>SAM-<br>PLING<br>POINTS<br>(COUNT)<br>(00063) | SAMPLE<br>LOC-<br>ATION,<br>CROSS<br>SECTION<br>(FT FM<br>L BANK)<br>(00009) | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | DISCH,<br>BEDLOAD<br>AV UNIT<br>FOR COM<br>POSITE<br>SAMPLE<br>(T/D/FT<br>DAY)<br>(04122) | SEDI-<br>MENT<br>DIS-<br>CHARGE,<br>BEDLOAD<br>(TONS/<br>DAY)<br>(80225) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.250 MM<br>(80228) |
|-------|----------------------------|--|---|--|---|---|---|--|--|
| FEB   |                            |  |   |  |   |   |   |  |  |
| 07... | 2                          | 22   | 22  | 3.00   | 2310  | 6.0   | 30.4  | 2290   | --   |
| 07... | 2                          | 22   | 22  | 3.00   | 2100  | 6.0   | 21.7  | 2290   | 1  |
| 23... | 2                          | 25   | 25  | 2.00   | 1550  | 7.0   | 12.8  | 1040   | --   |
| 23... | 2                          | 25   | 25  | 2.00   | 1490  | 7.0   | 14.9  | 1040   | --   |

| DATE  | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>(80229) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>(80230) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>(80231) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>(80232) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>(80233) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>(80234) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>(80235) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>(80236) |
|-------|---|---|---|---|---|---|---|---|
| FEB   |   |   |   |   |   |   |   |   |
| 07... | 2   | 13  | 30  | 48  | 64  | 77  | 90  | 100   |
| 07... | 6   | 15  | 29  | 46  | 58  | 69  | 84  | 100   |
| 23... | 2   | 12  | 27  | 51  | 72  | 85  | 94  | 100   |
| 23... | 2   | 13  | 30  | 51  | 68  | 80  | 90  | 100   |

## 11482500 REDWOOD CREEK AT ORICK, CA

LOCATION.—Lat 41°17'58", long 124°03'00", in NE 1/4 NE 1/4 sec.34, T.11 N., R.1 E., Humboldt County, Hydrologic Unit 18010102, on right bank, on U.S. Highway 101, 0.8 mi north of Orick, 300 ft downstream from Prairie Creek, and 3.7 mi upstream from mouth.

DRAINAGE AREA.—277 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—September 1911 to September 1913, October 1953 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

REVISED RECORDS.—WSP 1315-B: 1912–13.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 5.16 ft above sea level. Sept. 10, 1911, to Aug. 9, 1913, nonrecording gage at different datum. October 1953 to Apr. 16, 1987, at site 0.9 mi downstream at same datum. May 7 to Aug. 3, 1987, nonrecording gage at same site and datum.

REMARKS.—Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 50,500 ft<sup>3</sup>/s, Dec. 22, 1964, former site, from outside high-water marks, maximum gage height, 28.22 ft, Jan. 1, 1997; minimum daily, 2.1 ft<sup>3</sup>/s, Oct. 20–22, 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Jan. 18, 1953, reached a stage of 23.95 ft, former site, from floodmarks, discharge, 50,000 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 9,000 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|---------|------|--------------------------------|------------------|
| Nov. 21 | 1400 | 31,000                         | 26.08            | Jan. 23 | 0215 | 9,070                          | 19.15            |
| Dec. 2  | 2145 | 17,100                         | 22.15            | Feb. 28 | 1445 | 11,600                         | 20.16            |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV    | DEC    | JAN    | FEB    | MAR    | APR   | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|------|--------|--------|--------|--------|--------|-------|-------|-------|------|------|------|
| 1     | 21   | 104    | 4600   | e1010  | 1100   | 7900   | 2480  | 462   | 311   | 117  | 51   | 20   |
| 2     | 25   | 96     | 11400  | e860   | 978    | 5740   | 2130  | 656   | 305   | 116  | 50   | 20   |
| 3     | 25   | 87     | 11600  | e770   | 911    | 6000   | 1940  | 1930  | 293   | 112  | 46   | 20   |
| 4     | 23   | 82     | 5340   | e679   | 975    | 5030   | 1690  | 1790  | 280   | 111  | 45   | 19   |
| 5     | 21   | 138    | 3570   | 642    | 903    | 3930   | 1690  | 1300  | 270   | 109  | 48   | 19   |
| 6     | 21   | 210    | 3040   | 610    | 2770   | 3150   | 1610  | 1090  | 262   | 108  | 51   | 18   |
| 7     | 20   | 641    | 2510   | 583    | 6740   | 2600   | 1450  | 994   | 253   | 108  | 53   | 18   |
| 8     | 102  | 724    | 2850   | 554    | 4910   | 2620   | 1800  | 886   | 243   | 105  | 55   | 17   |
| 9     | 64   | 447    | 2220   | 529    | 4930   | 2890   | 1760  | 802   | 236   | 101  | 54   | 17   |
| 10    | 42   | 284    | 1840   | 509    | 3660   | 2370   | 2090  | 742   | 228   | 98   | 50   | 17   |
| 11    | 33   | 580    | 1600   | 493    | 2850   | 2020   | 2770  | 715   | 219   | 93   | 49   | 16   |
| 12    | 29   | 350    | 1530   | 477    | 2340   | 1800   | 2160  | 719   | 213   | 89   | 47   | 16   |
| 13    | 136  | 247    | 1620   | 461    | 2180   | 1660   | 1910  | 692   | 206   | 85   | 44   | 16   |
| 14    | 90   | 199    | 1720   | 501    | 2350   | 1990   | 1730  | 650   | 199   | 81   | 44   | 16   |
| 15    | 57   | 179    | 1450   | 2030   | 2000   | 1970   | 1600  | 627   | 199   | 77   | 41   | 16   |
| 16    | 41   | 193    | 1300   | 2070   | 2210   | 1740   | 1460  | 572   | 196   | 75   | 39   | 16   |
| 17    | 33   | 1070   | 1180   | 2650   | 5130   | 1570   | 1350  | 541   | 193   | 75   | 37   | 16   |
| 18    | 28   | 875    | 1070   | 5010   | 5270   | 1420   | 1250  | 602   | 188   | 73   | 36   | 16   |
| 19    | 26   | 572    | 975    | 3910   | 5820   | 1280   | 1140  | 583   | 180   | 70   | 36   | 16   |
| 20    | 25   | 515    | 937    | 4030   | 3980   | 1230   | 1020  | 555   | 174   | 69   | 34   | 16   |
| 21    | 23   | 20500  | e840   | 4630   | 4140   | 1190   | 940   | 527   | 169   | 69   | 33   | 16   |
| 22    | 21   | 11100  | e765   | 5000   | 4170   | 1080   | 861   | 500   | 164   | 68   | 31   | 15   |
| 23    | 21   | 6580   | e700   | 7620   | 7260   | 1110   | 788   | 487   | 157   | 65   | 28   | 15   |
| 24    | 67   | 6070   | e650   | 4970   | 5730   | 2860   | 725   | 472   | 151   | 63   | 27   | 15   |
| 25    | 160  | 3330   | e640   | 3570   | 6060   | 3820   | 688   | 458   | 148   | 63   | 26   | 15   |
| 26    | 121  | 3910   | e770   | 2720   | 5190   | 2570   | 666   | 435   | 144   | 62   | 24   | 14   |
| 27    | 83   | 3120   | e740   | 2160   | 5900   | 1980   | 616   | 414   | 139   | 59   | 23   | 14   |
| 28    | 96   | 2100   | e750   | 1830   | 10000  | 1670   | 562   | 391   | 135   | 57   | 23   | 14   |
| 29    | 66   | 2330   | e695   | 1610   | ---    | 1740   | 507   | 368   | 129   | 57   | 23   | 13   |
| 30    | 48   | 3870   | e650   | 1410   | ---    | 2140   | 465   | 348   | 122   | 54   | 22   | 13   |
| 31    | 49   | ---    | e1140  | 1280   | ---    | 2740   | ---   | 327   | ---   | 53   | 21   | ---  |
| TOTAL | 1617 | 70503  | 70692  | 65178  | 110457 | 81810  | 41848 | 21635 | 6106  | 2542 | 1191 | 489  |
| MEAN  | 52.2 | 2350   | 2280   | 2103   | 3945   | 2639   | 1395  | 698   | 204   | 82.0 | 38.4 | 16.3 |
| MAX   | 160  | 20500  | 11600  | 7620   | 10000  | 7900   | 2770  | 1930  | 311   | 117  | 55   | 20   |
| MIN   | 20   | 82     | 640    | 461    | 903    | 1080   | 465   | 327   | 122   | 53   | 21   | 13   |
| AC-FT | 3210 | 139800 | 140200 | 129300 | 219100 | 162300 | 83010 | 42910 | 12110 | 5040 | 2360 | 970  |

e Estimated.

11482500 REDWOOD CREEK AT ORICK, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1999, BY WATER YEAR (WY)

|      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 154  | 1081 | 2156 | 2546 | 2232 | 1971 | 1227 | 633  | 258  | 87.4 | 42.1 | 39.3 |
| MAX  | 1559 | 5219 | 8981 | 6041 | 6320 | 5565 | 4026 | 1732 | 1213 | 194  | 91.6 | 149  |
| (WY) | 1963 | 1974 | 1965 | 1956 | 1986 | 1975 | 1963 | 1912 | 1993 | 1993 | 1968 | 1986 |
| MIN  | 2.91 | 35.3 | 42.1 | 180  | 190  | 297  | 251  | 188  | 77.3 | 35.7 | 9.89 | 4.44 |
| (WY) | 1988 | 1960 | 1977 | 1977 | 1977 | 1988 | 1988 | 1987 | 1987 | 1987 | 1992 | 1992 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1911 - 1999 |             |  |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|--|
| ANNUAL TOTAL             | 546055                 |        | 474068              |        |                         |             |  |
| ANNUAL MEAN              | 1496                   |        | 1299                |        | 1031                    |             |  |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 1726 1974               |             |  |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 192 1977                |             |  |
| HIGHEST DAILY MEAN       | 20500                  | Nov 21 | 20500               | Nov 21 | 43200                   | Dec 22 1964 |  |
| LOWEST DAILY MEAN        | 19                     | Sep 28 | 13                  | Sep 29 | 2.1                     | Oct 20 1987 |  |
| ANNUAL SEVEN-DAY MINIMUM | 20                     | Sep 24 | 14                  | Sep 24 | 2.2                     | Oct 17 1987 |  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 31000               | Nov 21 | 50500                   | Dec 22 1964 |  |
| INSTANTANEOUS PEAK STAGE |                        |        | 26.08               | Nov 21 | 28.22                   | Jan 1 1997  |  |
| ANNUAL RUNOFF (AC-FT)    | 1083000                |        | 940300              |        | 746700                  |             |  |
| 10 PERCENT EXCEEDS       | 4180                   |        | 3890                |        | 2760                    |             |  |
| 50 PERCENT EXCEEDS       | 587                    |        | 507                 |        | 312                     |             |  |
| 90 PERCENT EXCEEDS       | 26                     |        | 21                  |        | 25                      |             |  |

11482500 REDWOOD CREEK AT ORICK, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1955–56, 1959 to September 1980, October 1981 to current year (storm season only).

CHEMICAL DATA: Water years 1959–66, 1973–81.

WATER TEMPERATURE: Water years 1966–92.

SEDIMENT DATA: Water years 1955–56, 1970 to current year.

PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: October 1965 to September 1981, October 1981 to September 1992 (storm season only).

SUSPENDED-SEDIMENT DISCHARGE: March 1970 to September 1981, October 1981 to September 1992 (storm season only).

EXTREMES FOR PERIOD OF DAILY RECORD.—

SEDIMENT CONCENTRATION: Maximum daily mean, 9,610 mg/L, Mar. 18, 1975; minimum daily mean, 0 mg/L, Nov. 10–12, 1986, Apr. 20, 29, 30, 1987, several days during 1989–90, many days during 1991.

SEDIMENT LOAD: Maximum daily, 1,070,000 tons, Mar. 18, 1975; minimum daily, 0 tons, Nov. 10–12, 1986, Apr. 20, 29, 30, 1987, several days during 1989–90, many days during 1991.

REMARKS: Periodic total load sampling above 5,000 ft<sup>3</sup>/s.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE      | TIME | DIS-CHARGE, INST. CUBIC FEET PER SECOND (000061) | TEMPER-ATURE (DEG C) (00010) | SEDI-MENT, SUS-PENDED (MG/L) (80154) | SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331) | SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332) | SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333) | SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334) | SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335) | SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM (70336) |
|-----------|------|--|------------------------------|--------------------------------------|---|---|---|---|---|---|---|
| FEB 09... | 1200 | 5170   | 7.0                          | 406                                  | 5670  | 61  | 64  | 77  | 88  | 91  | 100   |

PARTICLE SIZE DISTRIBUTION OF BEDLOAD, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE      | TIME | SAM-PLING METHOD, CODES (82398) | SAM-PLER TYPE (CODE) (84164) | BAG MESH SIZE (MM) (30333) | TETHER LINE USED IN SAMPLING (YES=1) (CODE) (04117) | START-ING TIME (2400 HOURS) (82073) | END-ING TIME (2400 HOURS) (82074) | TIME ON BED FOR BED LOAD (SEC) (04120) | HORI-ZONTAL WIDTH OF VER-TICAL (FEET) (04121) |
|-----------|------|---------------------------------|------------------------------|----------------------------|---|-------------------------------------|-----------------------------------|--|---|
| FEB 09... | 1250 | 1000                            | 1100                         | .250                       | 0   | 1225                                | 1310                              | 15                                     | 6.0   |
| FEB 09... | 1345 | 1000                            | 1100                         | .250                       | 0   | 1315                                | 1410                              | 15                                     | 6.0   |

| DATE      | COMPSTD SAMPLES IN X-SEC BEDLOAD MEASMNT (NUM) (04118) | VER-TICALS IN COM-POSITE SAMPLE (NUM) (04119) | NUMBER OF SAM-PLING POINTS (COUNT) (00063) | SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009) | DIS-CHARGE, INST. FEET PER SECOND (00061) | TEMPER-ATURE (DEG C) (00010) | DISCH. BEDLOAD AV UNIT FOR COM (T/D/FT) (04122) | SEDI-MENT DIS-CHARGE, BEDLOAD (TONS/DAY) (80225) |
|-----------|--|---|--|--|---|------------------------------|---|--|
| FEB 09... | 2  | 22  | 22   | 3.00   | 5050                                      | 7.0                          | 31.8  | 5110   |
| FEB 09... | 2  | 22  | 22   | 3.00   | 4960                                      | 7.0                          | 45.5  | 5110   |

| DATE      | SED. BEDLOAD SIEVE DIAM. % FINER THAN .500 MM (80229) | SED. BEDLOAD SIEVE DIAM. % FINER THAN 1.00 MM (80230) | SED. BEDLOAD SIEVE DIAM. % FINER THAN 2.00 MM (80231) | SED. BEDLOAD SIEVE DIAM. % FINER THAN 4.00 MM (80232) | SED. BEDLOAD SIEVE DIAM. % FINER THAN 8.00 MM (80233) | SED. BEDLOAD SIEVE DIAM. % FINER THAN 16.0 MM (80234) | SED. BEDLOAD SIEVE DIAM. % FINER THAN 32.0 MM (80235) | SED. BEDLOAD SIEVE DIAM. % FINER THAN 64.0 MM (80236) |
|-----------|---|---|---|---|---|---|---|---|
| FEB 09... | 4   | 13  | 28  | 46  | 68  | 87  | 97  | 100   |
| FEB 09... | --  | 3   | 12  | 32  | 58  | 77  | 94  | 100   |



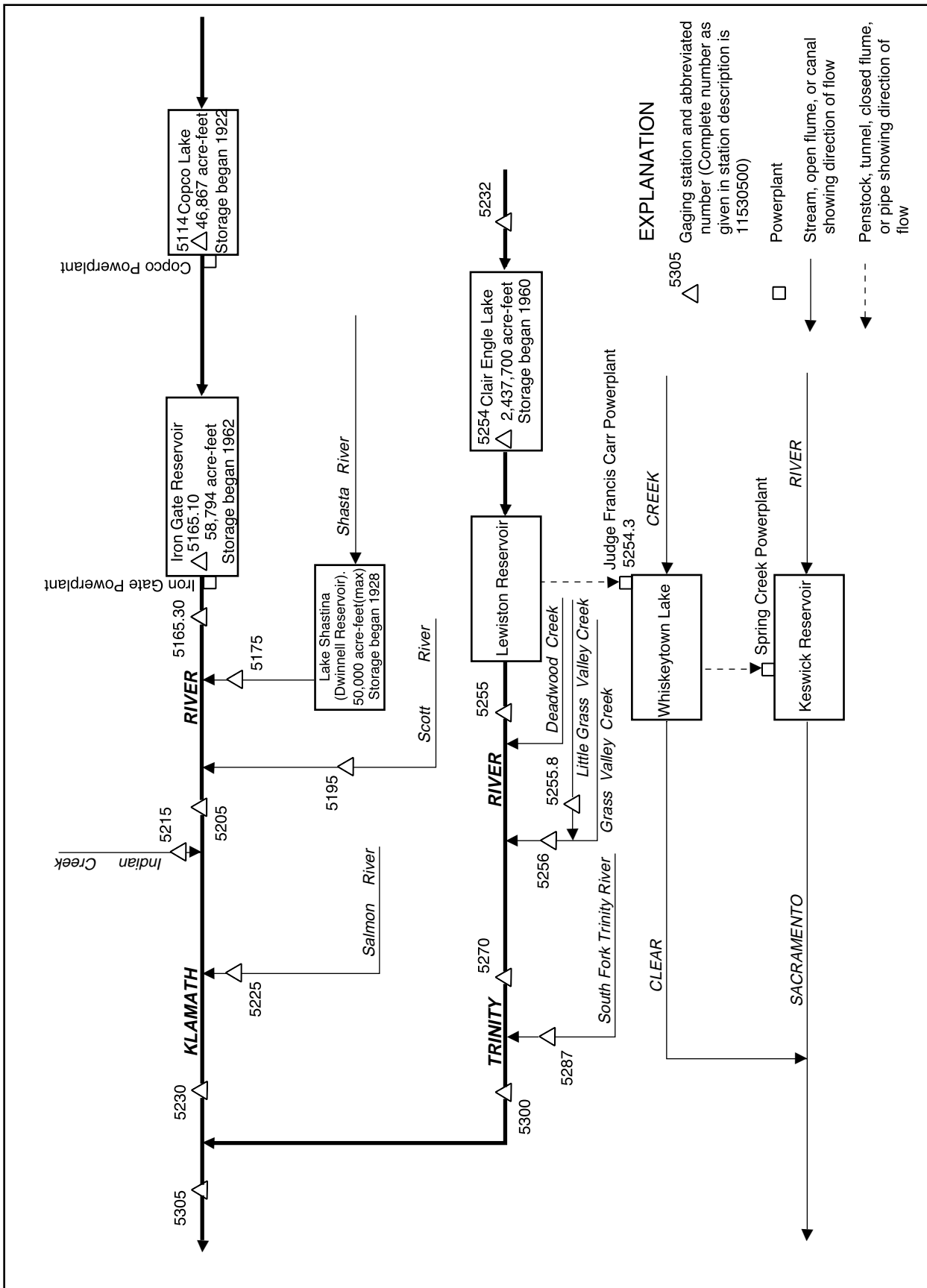


Figure 24. Diversions and storage in Klamath River and Trinity River Basins.

## RESERVOIRS IN KLAMATH RIVER BASIN, CA

## 11511400 COPCO LAKE NEAR COPCO

LOCATION.—Lat 41°58'46", long 122°20'00", in SE 1/4 SW 1/4 sec.29, T.48 N., R.4 W., Siskiyou County, Hydrologic Unit 18010206, 12.7 mi northeast of Hornbrook.

DRAINAGE AREA, 4,300 mi<sup>2</sup>, approximately (not including Lost River, Butte Creek, or Lower Klamath Lake Basins).

PERIOD OF RECORD, October 1967 to current year (monthend contents only).

GAGE, pressure device and telemark read once daily. Datum of gage is sea level (levels by PacifiCorp, formerly Pacific Power and Light Co.). Monthend contents computed from capacity table provided by Pacific Power and Light Co., dated Aug. 25, 1964.

REMARKS.—Lake is formed by gravity-type dam completed in 1922. Usable capacity, 17,107 acre-ft, between elevations 2,607.5 ft, top of tainter gates, and 2,588.5 ft, invert to powerplant intake. Dead storage, 29,760 acre-ft below elevation 2,588.5 ft. Figures given represent total contents at 0800 hours. Lake is used for power generation. See schematic diagram of Klamath River and Trinity River Basins.

COOPERATION.—Records were provided by PacifiCorp, formerly Pacific Power & Light Co., in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES (at 0800) FOR PERIOD OF RECORD.—Maximum contents, 46,818 acre-ft, June 24, 1969, elevation, 2,607.45 ft; minimum since first filling, 30,360 acre-ft, Aug. 19, 1971, elevation, 2,589.24 ft.

EXTREMES (at 0800) FOR CURRENT YEAR.—Maximum contents, 46,521 acre-ft, July 1, elevation, 2,607.15 ft; minimum, 34,438 acre-ft, Oct. 27, elevation, 2,594.10 ft.

## 11516510 IRON GATE RESERVOIR NEAR HORN BROOK

LOCATION.—Lat 41°55'58", long 122°26'06", in SW 1/4 SW 1/4 sec.9, T.47 N., R.5 W., Siskiyou County, Hydrologic Unit 18010206, 6.6 mi northeast of Hornbrook.

DRAINAGE AREA, 4,573 mi<sup>2</sup>, approximately (not including Lost River, Butte Creek, or Lower Klamath Lake Basins).

PERIOD OF RECORD, October 1967 to current year (monthend contents only).

GAGE, pressure device and telemark read once daily. Datum of gage is sea level (levels by PacifiCorp, formerly Pacific Power and Light Co.). Monthend contents computed from capacity table provided by Pacific Power and Light Co., dated Feb. 15, 1960.

REMARKS.—Reservoir is formed by earth and rockfill dam completed in 1962. Usable capacity, 58,387 acre-ft, between elevations 2,328.0 ft, crest of spillway, and 2,184.75 ft, invert to diversion tunnel. Dead storage, 407 acre-ft. Normal operating pool is from elevations 2,305.0 ft, capacity, 39,963 acre-ft, to 2,328.0 ft, capacity, 58,794 acre-ft. Figures given represent total contents at 0800 hours. Reservoir is used for power generation and recreation. See schematic diagram of Klamath River and Trinity River Basins.

COOPERATION.—Records were provided by PacifiCorp, formerly Pacific Power and Light Co., in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES (at 0800) FOR PERIOD OF RECORD.—Maximum contents, 61,797 acre-ft, Jan. 1, 1997, elevation, 2,330.98 ft; minimum since first filling, 50,103 acre-ft, Dec. 9, 1968, elevation, 2,318.40 ft.

EXTREMES (at 0800) FOR CURRENT YEAR.—Maximum contents, 60,743 acre-ft, Mar. 20, elevation, 2,329.95 ft; minimum, 52,139 acre-ft, Oct. 29, elevation, 2,320.80 ft.

## MONTHEND ELEVATION AND CONTENTS AT 0800 HOURS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| Date                  | Elevation<br>(ft)   | Contents<br>(acre-ft) | Change in<br>contents<br>(acre-ft) | Elevation<br>(ft)            | Contents<br>(acre-ft) | Change in<br>contents<br>(acre-ft) |
|-----------------------|---------------------|-----------------------|------------------------------------|------------------------------|-----------------------|------------------------------------|
|                       | 11511400 COPCO LAKE |                       |                                    | 11516510 IRON GATE RESERVOIR |                       |                                    |
| Sept. 30 . . . . .    | 2,604.60            | 44,032                | —                                  | 2,324.46                     | 55,429                | —                                  |
| Oct. 31 . . . . .     | 2,594.70            | 34,957                | -9,075                             | 2,324.04                     | 55,041                | -388                               |
| Nov. 30 . . . . .     | 2,600.18            | 39,872                | +4,915                             | 2,328.62                     | 59,405                | +4,364                             |
| Dec. 31 . . . . .     | 2,604.70            | 44,128                | +4,256                             | 2,328.58                     | 59,365                | -40                                |
| CAL YR 1998 . . . . . | —                   | —                     | +1,677                             | —                            | —                     | +2,554                             |
| Jan. 31 . . . . .     | 2,602.10            | 41,660                | -2,468                             | 2,328.51                     | 59,294                | -71                                |
| Feb. 28 . . . . .     | 2,602.80            | 42,319                | +659                               | 2,329.48                     | 60,266                | +972                               |
| Mar. 31 . . . . .     | 2,600.60            | 40,259                | -2,060                             | 2,329.21                     | 60,004                | -262                               |
| Apr. 30 . . . . .     | 2,600.55            | 40,213                | -46                                | 2,329.08                     | 59,865                | -139                               |
| May 31 . . . . .      | 2,601.09            | 40,718                | +505                               | 2,328.67                     | 59,454                | -411                               |
| June 30 . . . . .     | 2,607.14            | 46,511                | +5,793                             | 2,325.69                     | 56,572                | -2,882                             |
| July 31 . . . . .     | 2,604.84            | 44,263                | -2,248                             | 2,325.62                     | 56,508                | -64                                |
| Aug. 31 . . . . .     | 2,604.60            | 44,032                | -231                               | 2,327.27                     | 58,083                | +1,575                             |
| Sept. 30 . . . . .    | 2,603.65            | 43,122                | -910                               | 2,325.08                     | 56,002                | -2,081                             |
| WTR YR 1999 . . . . . | —                   | —                     | -910                               | —                            | —                     | +573                               |

11516530 KLAMATH RIVER BELOW IRON GATE DAM, CA

LOCATION.—Lat 41°55'41", long 122°26'35", in SE 1/4 NE 1/4 sec.17, T.47 N., R.5 W., Siskiyou County, Hydrologic Unit 18010206, on left bank, 0.1 mi downstream from Bogus Creek, 0.6 mi downstream from Iron Gate Dam, and 5.9 mi northeast of Hornbrook.

DRAINAGE AREA.—4,630 mi<sup>2</sup>, approximately (not including Lost River, Butte Creek, or Lower Klamath Lake Basins).

PERIOD OF RECORD.—October 1960 to current year.

CHEMICAL DATA: Water years 1962–81.

WATER TEMPERATURE: Water years 1963–80.

GAGE.—Water-stage recorder. Datum of gage is 2,162.44 ft above sea level (levels by PacifiCorp, formerly Pacific Power & Light Co.).

REMARKS.—Records good. Flow regulated by Upper Klamath Lake, capacity, 523,700 acre-ft; Iron Gate Reservoir (station 11516510), other smaller reservoirs and diversions upstream from station. See schematic diagram of Klamath River and Trinity River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 29,400 ft<sup>3</sup>/s, Dec. 22, 1964, gage height, 13.63 ft, from rating curve extended above 15,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily, 389 ft<sup>3</sup>/s, Aug. 25–28, 1992.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

| DAY   | OCT   | NOV    | DEC    | JAN    | FEB    | MAR    | APR    | MAY    | JUN    | JUL   | AUG   | SEP   |
|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| 1     | 1410  | 1410   | 3540   | 3150   | 2980   | 7340   | 6510   | 4790   | 2000   | 1430  | 1310  | 1320  |
| 2     | 1410  | 1390   | 3380   | 3140   | 3080   | 7310   | 6420   | 4670   | 1820   | 1400  | 1310  | 1320  |
| 3     | 1410  | 1380   | 3630   | 3120   | 3130   | 7510   | 6540   | 4550   | 1900   | 1400  | 1230  | 1320  |
| 4     | 1410  | 1380   | 3360   | 3120   | 3210   | 7170   | 6900   | 4100   | 1900   | 1400  | 1140  | 1320  |
| 5     | 1410  | 1390   | 3300   | 3100   | 3200   | 7050   | 6910   | 3490   | 1910   | 1400  | 1100  | 1320  |
| 6     | 1410  | 1390   | 3270   | 3070   | 3280   | 7480   | 6150   | 3460   | 1900   | 1400  | 1110  | 1320  |
| 7     | 1410  | 1380   | 3250   | 3070   | 3940   | 8690   | 5820   | 3480   | 1900   | 1400  | 1130  | 1320  |
| 8     | 1420  | 1380   | 3230   | 3070   | 3510   | 8830   | 5750   | 3460   | 1900   | 1370  | 1130  | 1320  |
| 9     | 1410  | 1530   | 3180   | 3070   | 3550   | 8990   | 5640   | 3450   | 1890   | 1320  | 1130  | 1320  |
| 10    | 1390  | 1770   | 3110   | 3070   | 3680   | 9070   | 5510   | 3440   | 2030   | 1310  | 1130  | 1330  |
| 11    | 1400  | 1770   | 3110   | 3070   | 3620   | 8820   | 5250   | 3430   | 2100   | 1310  | 1130  | 1330  |
| 12    | 1400  | 1770   | 3130   | 3080   | 3580   | 8630   | 5070   | 3460   | 2040   | 1310  | 1130  | 1330  |
| 13    | 1380  | 1770   | 3260   | 3100   | 3450   | 8150   | 5330   | 3520   | 1950   | 1310  | 1130  | 1340  |
| 14    | 1380  | 1770   | 3330   | 3110   | 3560   | 7810   | 5630   | 3560   | 1990   | 1310  | 1130  | 1350  |
| 15    | 1380  | 1770   | 3240   | 3150   | 3530   | 7420   | 5550   | 3540   | 1990   | 1310  | 1130  | 1350  |
| 16    | 1380  | 1760   | 3230   | 3230   | 3520   | 6570   | 5470   | 3520   | 1990   | 1310  | 1140  | 1350  |
| 17    | 1400  | 1760   | 3160   | 3390   | 3600   | 5820   | 5460   | 3460   | 1990   | 1320  | 1130  | 1350  |
| 18    | 1400  | 1760   | 3150   | 3770   | 4040   | 6280   | 5540   | 3400   | 1980   | 1320  | 1130  | 1350  |
| 19    | 1400  | 1770   | 3140   | 3500   | 4610   | 8210   | 5410   | 3320   | 1970   | 1320  | 1130  | 1350  |
| 20    | 1400  | 1770   | 3130   | 3640   | 4560   | 9060   | 4950   | 2710   | 1980   | 1320  | 1130  | 1350  |
| 21    | 1400  | 1910   | 3100   | 3590   | 5060   | 8270   | 4720   | 2160   | 1930   | 1310  | 1130  | 1360  |
| 22    | 1400  | 1840   | 3110   | 4720   | 5020   | 7850   | 4850   | 2110   | 1920   | 1320  | 1130  | 1360  |
| 23    | 1400  | 3500   | 3100   | 5060   | 5020   | 7160   | 5560   | 2100   | 2030   | 1320  | 1130  | 1350  |
| 24    | 1400  | 3710   | 3100   | 4740   | 5280   | 6470   | 6970   | 2090   | 2140   | 1320  | 1140  | 1350  |
| 25    | 1390  | 3840   | 3110   | 4540   | 5800   | 6110   | 7010   | 2140   | 1970   | 1310  | 1140  | 1350  |
| 26    | 1380  | 3930   | 3100   | 4310   | 5920   | 6130   | 6640   | 2150   | 1800   | 1310  | 1140  | 1350  |
| 27    | 1380  | 3850   | 3100   | 3930   | 6040   | 6100   | 6150   | 2150   | 1790   | 1310  | 1140  | 1360  |
| 28    | 1390  | 3630   | 3120   | 3690   | 6780   | 5740   | 5690   | 2130   | 1780   | 1310  | 1140  | 1350  |
| 29    | 1400  | 3370   | 3150   | 3300   | ---    | 5550   | 5210   | 2130   | 1770   | 1310  | 1140  | 1350  |
| 30    | 1380  | 3480   | 3140   | 2950   | ---    | 5330   | 4910   | 2110   | 1770   | 1310  | 1150  | 1380  |
| 31    | 1400  | ---    | 3150   | 2880   | ---    | 5740   | ---    | 2100   | ---    | 1310  | 1220  | ---   |
| TOTAL | 43330 | 65130  | 99410  | 107730 | 116550 | 226660 | 173520 | 96180  | 58030  | 41410 | 35630 | 40220 |
| MEAN  | 1398  | 2171   | 3207   | 3475   | 4162   | 7312   | 5784   | 3103   | 1934   | 1336  | 1149  | 1341  |
| MAX   | 1420  | 3930   | 3630   | 5060   | 6780   | 9070   | 7010   | 4790   | 2140   | 1430  | 1310  | 1380  |
| MIN   | 1380  | 1380   | 3100   | 2880   | 2980   | 5330   | 4720   | 2090   | 1770   | 1310  | 1100  | 1320  |
| AC-FT | 85950 | 129200 | 197200 | 213700 | 231200 | 449600 | 344200 | 190800 | 115100 | 82140 | 70670 | 79780 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR   | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|-------|------|------|------|------|------|------|
| MEAN | 1645 | 2114 | 2751 | 3035 | 3178 | 3709  | 3069 | 2165 | 1135 | 784  | 980  | 1299 |
| MAX  | 3353 | 5254 | 6735 | 9553 | 9150 | 10780 | 6922 | 5559 | 3289 | 1429 | 1208 | 2052 |
| (WY) | 1985 | 1985 | 1984 | 1997 | 1965 | 1972  | 1971 | 1998 | 1998 | 1982 | 1965 | 1965 |
| MIN  | 852  | 873  | 889  | 888  | 525  | 511   | 572  | 512  | 506  | 428  | 398  | 538  |
| (WY) | 1982 | 1992 | 1992 | 1992 | 1992 | 1992  | 1994 | 1992 | 1992 | 1992 | 1992 | 1992 |

SUMMARY STATISTICS

|                          | FOR 1998 CALENDAR YEAR | FOR 1999 WATER YEAR | WATER YEARS 1961 - 1999 |
|--------------------------|------------------------|---------------------|-------------------------|
| ANNUAL TOTAL             | 1116100                | 1103800             |                         |
| ANNUAL MEAN              | 3058                   | 3024                | 2150                    |
| HIGHEST ANNUAL MEAN      |                        |                     | 3657                    |
| LOWEST ANNUAL MEAN       |                        |                     | 641                     |
| HIGHEST DAILY MEAN       | 8680                   | Mar 25              | 25000                   |
| LOWEST DAILY MEAN        | 1110                   | Aug 2               | 389                     |
| ANNUAL SEVEN-DAY MINIMUM | 1110                   | Jul 31              | 390                     |
| INSTANTANEOUS PEAK FLOW  |                        | 9220                | Mar 20                  |
| INSTANTANEOUS PEAK STAGE |                        | 9.02                | Mar 20                  |
| INSTANTANEOUS LOW FLOW   |                        |                     | 389                     |
| ANNUAL RUNOFF (AC-FT)    | 2214000                | 2189000             | 1558000                 |
| 10 PERCENT EXCEEDS       | 6380                   | 6100                | 4290                    |
| 50 PERCENT EXCEEDS       | 2390                   | 2140                | 1410                    |
| 90 PERCENT EXCEEDS       | 1120                   | 1310                | 732                     |

## 11517500 SHASTA RIVER NEAR YREKA, CA

LOCATION.—Lat 41°49'23", long 122°35'40", in SE 1/4 NE 1/4 sec.24, T.46 N., R.7 W., Siskiyou County, Hydrologic Unit 18010207, on right bank, 24 mi downstream from Lake Shastina, 0.5 mi upstream from mouth, and 7 mi north of Yreka.

DRAINAGE AREA.—793 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1933 to December 1941, December 1944 to current year.

CHEMICAL DATA: Water years 1959–79.

WATER TEMPERATURE: Water years 1965–79.

SEDIMENT DATA: Water years 1955–56, 1958–62.

REVISED RECORDS.—WSP 1929: Drainage area.

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 2,000 ft above sea level, from topographic map. Prior to Nov. 2, 1933, nonrecording gage at same site and datum.

REMARKS.—Records good. Low flow completely regulated by Lake Shastina (formerly Lake Dwinnell) beginning in 1928; storage limited to 50,000 acre-ft. Small powerplant, 5.6 miles upstream, has operated intermittently since summer of 1987. Many diversions upstream from station for irrigation. See schematic diagram of Klamath River and Trinity River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 21,500 ft<sup>3</sup>/s, Dec. 22, 1964, gage height, 12.92 ft, in gage well, 13.85 ft, from floodmarks, from rating curve extended above 4,100 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily, 1.5 ft<sup>3</sup>/s, Aug. 24, 1981, July 17, 1985.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 630 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Nov. 23 | 0915 | 1,140                             | 5.62                | Feb. 7  | 1145 | 1,220                             | 5.76                |
| Dec. 3  | 1730 | 718                               | 4.73                | Jan. 23 | 0145 | 2,070                             | 6.94                |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN  | JUL  | AUG  | SEP  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|
| 1     | 150   | 215   | 607   | 293   | 381   | 812   | 343   | 247   | 218  | 69   | 32   | 71   |
| 2     | 154   | 215   | 484   | 282   | 357   | 705   | 335   | 251   | 214  | 70   | 39   | 79   |
| 3     | 172   | 215   | 584   | 274   | 352   | 717   | 334   | 270   | 215  | 77   | 42   | 67   |
| 4     | 166   | 225   | 612   | 269   | 349   | 665   | 332   | 285   | 215  | 70   | 46   | 63   |
| 5     | 167   | 219   | 485   | 266   | 335   | 604   | 338   | 235   | 205  | 74   | 50   | 62   |
| 6     | 167   | 222   | 412   | 271   | 415   | 572   | 311   | 231   | 202  | 72   | 59   | 63   |
| 7     | 162   | 242   | 399   | 264   | 986   | 542   | 293   | 231   | 190  | 46   | 63   | 65   |
| 8     | 162   | 258   | 387   | 265   | 903   | 515   | 310   | 242   | 188  | 36   | 46   | 66   |
| 9     | 162   | 237   | 386   | 263   | 817   | 490   | 342   | 236   | 142  | 41   | 34   | 68   |
| 10    | 175   | 233   | 360   | 262   | 752   | 471   | 352   | 225   | 136  | 53   | 31   | 76   |
| 11    | 178   | 231   | 346   | 263   | 647   | 452   | 332   | 208   | 147  | 49   | 40   | 96   |
| 12    | 179   | 222   | 339   | 265   | 578   | 444   | 337   | 206   | 133  | 61   | 57   | 91   |
| 13    | 188   | 217   | 368   | 265   | 557   | 431   | 337   | 203   | 129  | 77   | 60   | 79   |
| 14    | 192   | 213   | 363   | 264   | 650   | 407   | 322   | 200   | 124  | 70   | 54   | 67   |
| 15    | 192   | 210   | 333   | 275   | 569   | 398   | 303   | 205   | 125  | 71   | 57   | 72   |
| 16    | 192   | 207   | 319   | 301   | 551   | 398   | 303   | 200   | 137  | 69   | 61   | 69   |
| 17    | 195   | 227   | 314   | 322   | 636   | 402   | 307   | 195   | 134  | 63   | 53   | 76   |
| 18    | 197   | 230   | 315   | 477   | 776   | 405   | 322   | 206   | 121  | 58   | 71   | 79   |
| 19    | 200   | 217   | 308   | 430   | 853   | 400   | 371   | 195   | 112  | 54   | 53   | 79   |
| 20    | 200   | 212   | 299   | 464   | 707   | 419   | 377   | 220   | 112  | 50   | 34   | 75   |
| 21    | 193   | 435   | 280   | 692   | 660   | 427   | 369   | 227   | 108  | 62   | 33   | 72   |
| 22    | 189   | 688   | 270   | 952   | 596   | 416   | 348   | 236   | 108  | 52   | 63   | 75   |
| 23    | 194   | 797   | 261   | 1610  | 539   | 403   | 304   | 237   | 99   | 52   | 73   | 77   |
| 24    | 200   | 868   | 258   | 893   | 518   | 394   | 286   | 225   | 104  | 54   | 84   | 77   |
| 25    | 209   | 534   | 254   | 670   | 559   | 397   | 270   | 214   | 103  | 58   | 86   | 89   |
| 26    | 206   | 449   | 261   | 596   | 540   | 403   | 274   | 223   | 94   | 61   | 92   | 89   |
| 27    | 205   | 468   | 280   | 546   | 588   | 396   | 261   | 232   | 94   | 55   | 88   | 97   |
| 28    | 201   | 394   | 306   | 497   | 808   | 382   | 266   | 234   | 98   | 59   | 90   | 110  |
| 29    | 200   | 366   | 307   | 461   | ---   | 369   | 257   | 236   | 89   | 39   | 63   | 113  |
| 30    | 202   | 470   | 301   | 421   | ---   | 361   | 270   | 250   | 74   | 36   | 58   | 114  |
| 31    | 203   | ---   | 299   | 397   | ---   | 364   | ---   | 236   | ---  | 33   | 68   | ---  |
| TOTAL | 5752  | 9936  | 11097 | 13770 | 16979 | 14561 | 9506  | 7041  | 4170 | 1791 | 1780 | 2376 |
| MEAN  | 186   | 331   | 358   | 444   | 606   | 470   | 317   | 227   | 139  | 57.8 | 57.4 | 79.2 |
| MAX   | 209   | 868   | 612   | 1610  | 986   | 812   | 377   | 285   | 218  | 77   | 92   | 114  |
| MIN   | 150   | 207   | 254   | 262   | 335   | 361   | 257   | 195   | 74   | 33   | 31   | 62   |
| AC-FT | 11410 | 19710 | 22010 | 27310 | 33680 | 28880 | 18860 | 13970 | 8270 | 3550 | 3530 | 4710 |

11517500 SHASTA RIVER NEAR YREKA, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 152  | 197  | 280  | 342  | 346  | 317  | 206  | 141  | 105  | 45.3 | 39.2 | 75.2 |
| MAX  | 351  | 361  | 1223 | 1234 | 1002 | 946  | 753  | 678  | 564  | 147  | 111  | 182  |
| (WY) | 1963 | 1985 | 1965 | 1997 | 1958 | 1983 | 1974 | 1998 | 1998 | 1995 | 1941 | 1978 |
| MIN  | 90.7 | 117  | 120  | 110  | 133  | 97.7 | 31.8 | 24.5 | 18.0 | 10.1 | 8.35 | 26.7 |
| (WY) | 1989 | 1937 | 1937 | 1937 | 1934 | 1977 | 1992 | 1992 | 1955 | 1960 | 1939 | 1981 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1934 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 135455                 |        | 98759               |        |                         |             |
| ANNUAL MEAN              | 371                    |        | 271                 |        | 187                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 364                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 77.9                    |             |
| HIGHEST DAILY MEAN       | 2540                   | Mar 24 | 1610                | Jan 23 | 10400                   | Dec 23 1964 |
| LOWEST DAILY MEAN        | 57                     | Sep 7  | 31                  | Aug 10 | 1.5                     | Aug 24 1981 |
| ANNUAL SEVEN-DAY MINIMUM | 67                     | Aug 16 | 38                  | Jul 29 | 5.5                     | Aug 9 1939  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 2070                |        | 21500                   |             |
| INSTANTANEOUS PEAK STAGE |                        |        | 6.94                |        | 12.92                   |             |
| ANNUAL RUNOFF (AC-FT)    | 268700                 |        | 195900              |        | 135300                  |             |
| 10 PERCENT EXCEEDS       | 765                    |        | 553                 |        | 354                     |             |
| 50 PERCENT EXCEEDS       | 295                    |        | 230                 |        | 153                     |             |
| 90 PERCENT EXCEEDS       | 88                     |        | 61                  |        | 26                      |             |

## 11519500 SCOTT RIVER NEAR FORT JONES, CA

LOCATION.—Lat 41°38'27", long 123°00'50", in NE 1/4 NE 1/4 sec.29, T.44 N., R.10 W., Siskiyou County, Hydrologic Unit 18010208, on right bank, 1.8 mi upstream from Snow Creek, and 9.0 mi west of Fort Jones.

DRAINAGE AREA.—653 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1941 to current year. Monthly discharge only October to December 1941, published in WSP 1315-B.

CHEMICAL DATA: Water years 1959–79.

SEDIMENT DATA: Water years 1955–56.

REVISED RECORDS.—WSP 1445: 1942–43(M), 1946(M), 1948. WSP 1715: 1951–52(M). WSP 1929: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 2,623.80 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1966, water-stage recorder 400 ft downstream at datum 2.00 ft higher.

REMARKS.—Records good. Diversions for irrigation of about 30,000 acres upstream from station. See schematic diagram of Klamath River and Trinity River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 54,600 ft<sup>3</sup>/s, Dec. 22, 1964, gage height, 25.34 ft, from floodmarks, from rating curve extended above 15,000 ft<sup>3</sup>/s on basis of slope-area measurement at 21.40 ft, site and datum then in use; minimum daily, 4.1 ft<sup>3</sup>/s, Sept. 20, 1994.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 2,700 ft<sup>3</sup>/s, or maximim:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| Nov. 23 | 2130 | 4,010                             | 10.91               | Mar. 1 | 0215 | 3,720                             | 10.65               |
| Jan. 23 | 0615 | 3,980                             | 10.89               | May 28 | 0600 | 3,040                             | 9.98                |
| Feb. 7  | 2145 | 3,150                             | 10.09               |        |      |                                   |                     |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY    | JUN   | JUL   | AUG  | SEP  |
|-------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|------|------|
| 1     | 81   | 135   | 1890  | 516   | 978   | 3410  | 1080  | 1290   | 2010  | 629   | 92   | 63   |
| 2     | 81   | 141   | 1710  | 497   | 1000  | 2710  | 1030  | 1500   | 1820  | 582   | 90   | 62   |
| 3     | 80   | 140   | 2330  | 481   | 993   | 2780  | 988   | 1410   | 1530  | 510   | 87   | 61   |
| 4     | 79   | 138   | 1730  | 466   | 953   | 2390  | 949   | 1240   | 1360  | 440   | 83   | 61   |
| 5     | 79   | 140   | 1370  | 454   | 924   | 2080  | 941   | 1120   | 1370  | 406   | 78   | 61   |
| 6     | 84   | 143   | 1160  | 447   | 1030  | 1880  | 922   | 1140   | 1440  | 370   | 75   | 61   |
| 7     | 83   | 154   | 1010  | 439   | 2220  | 1720  | 888   | 1370   | 1340  | 334   | 75   | 61   |
| 8     | 84   | 160   | 926   | 425   | 2390  | 1620  | 879   | 1340   | 1230  | 306   | 75   | 60   |
| 9     | 83   | 160   | 845   | 417   | 1900  | 1530  | 864   | 1230   | 1150  | 281   | 76   | 60   |
| 10    | 84   | 159   | 785   | 410   | 1570  | 1430  | 849   | 1170   | 1120  | 269   | 78   | 60   |
| 11    | 86   | 158   | 754   | 407   | 1360  | 1340  | 828   | 1140   | 1140  | 257   | 78   | 60   |
| 12    | 88   | 157   | 764   | 404   | 1250  | 1280  | 813   | 1280   | 1240  | 255   | 75   | 59   |
| 13    | 91   | 153   | 862   | 400   | 1220  | 1250  | 853   | 1360   | 1370  | 250   | 73   | 58   |
| 14    | 102  | 153   | 864   | 400   | 1260  | 1230  | 943   | 1270   | 1520  | 230   | 71   | 58   |
| 15    | 107  | 156   | 798   | 837   | 1190  | 1220  | 1030  | 1170   | 1610  | 210   | 69   | 58   |
| 16    | 112  | 166   | 755   | 1150  | 1270  | 1200  | 1190  | 1100   | 1590  | 194   | 68   | 57   |
| 17    | 113  | 174   | 732   | 1210  | 1890  | 1200  | 1470  | 1130   | 1500  | 186   | 67   | 57   |
| 18    | 115  | 170   | 726   | 2490  | 2130  | 1220  | 1920  | 1380   | 1410  | 175   | 66   | 57   |
| 19    | 115  | 166   | 705   | 1940  | 2440  | 1270  | 2170  | 1560   | 1280  | 169   | 65   | 56   |
| 20    | 115  | 163   | 669   | 1810  | 2010  | 1330  | 2180  | 1710   | 1220  | 159   | 64   | 56   |
| 21    | 115  | 1650  | 586   | 1990  | 1900  | 1350  | 1990  | 1780   | 1170  | 150   | 64   | 56   |
| 22    | 115  | 2040  | 559   | 2010  | 1710  | 1320  | 1740  | 1770   | 1170  | 142   | 64   | 56   |
| 23    | 115  | 2220  | 537   | 3390  | 1610  | 1290  | 1580  | 2040   | 1140  | 137   | 64   | 56   |
| 24    | 120  | 2640  | 528   | 2330  | 1670  | 1260  | 1570  | 2410   | 1080  | 128   | 64   | 56   |
| 25    | 131  | 1470  | 530   | 1850  | 1960  | 1420  | 1660  | 2820   | 974   | 125   | 64   | 56   |
| 26    | 139  | 1340  | 526   | 1600  | 1840  | 1370  | 1790  | 2700   | 838   | 124   | 63   | 56   |
| 27    | 135  | 1380  | 517   | 1400  | 1730  | 1300  | 1700  | 2670   | 744   | 119   | 63   | 56   |
| 28    | 131  | 1090  | 546   | 1260  | 2680  | 1240  | 1500  | 2790   | 677   | 111   | 62   | 56   |
| 29    | 131  | 965   | 536   | 1160  | ---   | 1180  | 1320  | 2530   | 643   | 103   | 62   | 55   |
| 30    | 130  | 1290  | 520   | 1090  | ---   | 1160  | 1220  | 2170   | 643   | 98    | 62   | 55   |
| 31    | 132  | ---   | 526   | 1040  | ---   | 1140  | ---   | 2000   | ---   | 94    | 63   | ---  |
| TOTAL | 3256 | 19171 | 27296 | 34720 | 45078 | 48120 | 38857 | 51590  | 37329 | 7543  | 2200 | 1744 |
| MEAN  | 105  | 639   | 881   | 1120  | 1610  | 1552  | 1295  | 1664   | 1244  | 243   | 71.0 | 58.1 |
| MAX   | 139  | 2640  | 2330  | 3390  | 2680  | 3410  | 2180  | 2820   | 2010  | 629   | 92   | 63   |
| MIN   | 79   | 135   | 517   | 400   | 924   | 1140  | 813   | 1100   | 643   | 94    | 62   | 55   |
| AC-FT | 6460 | 38030 | 54140 | 68870 | 89410 | 95450 | 77070 | 102300 | 74040 | 14960 | 4360 | 3460 |

11519500 SCOTT RIVER NEAR FORT JONES, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 111  | 343  | 823  | 1082 | 1177 | 1060 | 1032 | 1156 | 730  | 193  | 65.3 | 55.2 |
| MAX  | 941  | 1628 | 5003 | 4417 | 4793 | 2825 | 2217 | 2426 | 1801 | 769  | 269  | 228  |
| (WY) | 1963 | 1974 | 1965 | 1974 | 1958 | 1972 | 1952 | 1958 | 1975 | 1983 | 1983 | 1983 |
| MIN  | 9.58 | 10.7 | 52.7 | 80.9 | 99.0 | 83.3 | 55.1 | 121  | 78.0 | 12.8 | 5.82 | 4.75 |
| (WY) | 1995 | 1995 | 1995 | 1977 | 1977 | 1977 | 1977 | 1977 | 1992 | 1994 | 1994 | 1994 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1942 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 399144                 |        | 316904              |        | 650                     |             |
| ANNUAL MEAN              | 1094                   |        | 868                 |        | 1496                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 1974                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 74.9                    |             |
| HIGHEST DAILY MEAN       | 11700                  | Mar 23 | 3410                | Mar 1  | 39500                   | Dec 23 1964 |
| LOWEST DAILY MEAN        | 56                     | Sep 4  | 55                  | Sep 29 | 4.1                     | Sep 20 1994 |
| ANNUAL SEVEN-DAY MINIMUM | 57                     | Sep 2  | 56                  | Sep 24 | 4.3                     | Sep 15 1994 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 4010                | Nov 23 | 54600                   | Dec 22 1964 |
| INSTANTANEOUS PEAK STAGE |                        |        | 10.91               | Nov 23 | 25.34                   | Dec 22 1964 |
| ANNUAL RUNOFF (AC-FT)    | 791700                 |        | 628600              |        | 470600                  |             |
| 10 PERCENT EXCEEDS       | 2180                   |        | 1910                |        | 1570                    |             |
| 50 PERCENT EXCEEDS       | 1000                   |        | 828                 |        | 310                     |             |
| 90 PERCENT EXCEEDS       | 74                     |        | 64                  |        | 47                      |             |

## 11520500 KLAMATH RIVER NEAR SEIAD VALLEY, CA

LOCATION.—Lat 41°51'14", long 123°13'52", in SW 1/4 SW 1/4 sec.3, T.46 N., R.12 W., Siskiyou County, Hydrologic Unit 18010206, Klamath National Forest, on left bank, 0.4 mi upstream from Bittenbender Creek, 1.4 mi downstream from Grider Creek, 2.2 mi west of Seiad Valley, and 55 mi downstream from Iron Gate Dam.

DRAINAGE AREA.—6,940 mi<sup>2</sup>, approximately (not including Lost River, Butte Creek, or Lower Klamath Lake Basins).

PERIOD OF RECORD.—October 1912 to September 1925, July 1951 to current year. Monthly discharges only for some periods, published in WSP 1315-B.

CHEMICAL DATA: Water years 1959–66.

WATER TEMPERATURE: Water years 1964–79.

SEDIMENT DATA: Water years 1955–56.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 1,320 ft above sea level, from river-profile map. November 1912 to June 1925, nonrecording gage at site 3.5 mi upstream at different datum.

REMARKS.—Records good. Low flow regulated considerably by reservoirs and powerplants upstream from station. Large diversions upstream from station for irrigation. See schematic diagram of Klamath River and Trinity River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 165,000 ft<sup>3</sup>/s, Dec. 23, 1964, gage height, 33.75 ft, from floodmarks, from rating curve extended above 49,000 ft<sup>3</sup>/s on basis of slope-area measurements at gage heights 20.1 and 29.2 ft; minimum daily, 320 ft<sup>3</sup>/s, Nov. 25, 1917.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 10,000 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Nov. 23 | 2400 | 14,600                            | 10.64               | Feb. 7  | 1715 | 13,100                            | 10.06               |
| Jan. 23 | 0500 | 17,700                            | 11.69               | Feb. 28 | 2115 | 17,900                            | 11.78               |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT    | NOV    | DEC    | JAN    | FEB    | MAR    | APR    | MAY    | JUN    | JUL    | AUG   | SEP   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| 1     | 1780   | e2200  | 8140   | 4670   | 5550   | 17000  | 9170   | 8040   | 6660   | 3280   | 1740  | 1590  |
| 2     | 1790   | e2100  | 7940   | 4600   | 5500   | 15300  | 9080   | 8150   | 6130   | 2930   | 1740  | 1650  |
| 3     | 1810   | 1980   | 9510   | 4540   | 5480   | 15500  | 8980   | 8060   | 5570   | 2840   | 1740  | 1630  |
| 4     | 1810   | 1990   | 8170   | 4500   | 5510   | 14300  | 9230   | 7460   | 5250   | 2740   | 1610  | 1610  |
| 5     | 1810   | 2010   | 7040   | 4460   | 5430   | 13100  | 9520   | 6590   | 5240   | 2650   | 1520  | 1600  |
| 6     | 1810   | 2020   | 6470   | 4410   | 6160   | 12700  | 8760   | 6440   | 5270   | 2580   | 1510  | 1590  |
| 7     | 1810   | 2120   | 6070   | 4380   | 10400  | 13000  | 8170   | 6720   | 5050   | 2500   | 1590  | 1590  |
| 8     | 1850   | 2130   | 5840   | 4360   | 10500  | 13400  | 8040   | 6700   | 4840   | 2430   | 1570  | 1600  |
| 9     | 1840   | 2070   | 5630   | 4340   | 8720   | 13100  | 7950   | 6500   | 4640   | 2330   | 1540  | 1600  |
| 10    | 1830   | 2430   | 5350   | 4320   | 8150   | 12900  | 7840   | 6360   | 4540   | 2280   | 1550  | 1610  |
| 11    | 1830   | 2510   | 5220   | 4310   | 7510   | 12600  | 7570   | 6300   | 4770   | 2240   | 1610  | 1630  |
| 12    | 1840   | 2470   | 5210   | 4300   | 7130   | 12200  | 7280   | 6510   | 4850   | 2230   | 1550  | 1630  |
| 13    | 1870   | 2450   | 5550   | 4320   | 6840   | 11700  | 7490   | 6650   | 4900   | 2220   | 1540  | 1610  |
| 14    | 1860   | 2460   | 5740   | 4360   | 7110   | 11200  | 8100   | 6560   | 5200   | 2190   | 1530  | 1610  |
| 15    | 1870   | 2470   | 5490   | 5080   | 6960   | 11000  | 8260   | 6370   | 5440   | 2130   | 1520  | 1600  |
| 16    | 1870   | 2530   | 5320   | 5730   | 7120   | 10300  | 8490   | 6200   | 5440   | 2090   | 1500  | 1610  |
| 17    | 1880   | 2590   | 5210   | 6150   | 8850   | 9490   | 9050   | 6230   | 5250   | 2050   | 1480  | 1610  |
| 18    | 1900   | 2550   | 5140   | 9710   | 9940   | 9220   | 9920   | 6540   | 5090   | 2020   | 1470  | 1620  |
| 19    | 1910   | 2500   | 5060   | 8220   | 12100  | 10900  | 10300  | 6860   | 4840   | 2010   | 1470  | 1620  |
| 20    | 1900   | 2530   | 4970   | 8320   | 10500  | 12600  | 9950   | 6770   | 4740   | 1980   | 1440  | 1610  |
| 21    | 1910   | 7800   | 4760   | 9060   | 10300  | 12300  | 9240   | 6300   | 4620   | 1960   | 1430  | 1610  |
| 22    | 1900   | 8260   | 4700   | 9760   | 9990   | 11600  | 8810   | 6130   | 4540   | 1930   | 1440  | 1620  |
| 23    | 1930   | 8590   | 4640   | 15600  | 9800   | 11000  | 8810   | 6580   | 4520   | 1900   | 1450  | 1610  |
| 24    | e2140  | 11000  | 4600   | 11500  | 10000  | 10200  | 10300  | 7250   | 4490   | 1890   | 1500  | 1600  |
| 25    | e2100  | 7610   | 4610   | 9650   | 11200  | 9630   | 11200  | 7990   | 4340   | 1870   | 1490  | 1610  |
| 26    | e2000  | 7630   | 4610   | 8730   | 11100  | 9590   | 10900  | 7840   | 3890   | 1870   | 1470  | 1620  |
| 27    | e1900  | 7670   | 4600   | 7760   | 11100  | 9430   | 10300  | 7860   | 3660   | 1850   | 1470  | 1630  |
| 28    | e1930  | 6690   | 4680   | 7240   | 15600  | 9110   | 9410   | 8020   | 3550   | 1830   | 1480  | 1640  |
| 29    | e1980  | 6090   | 4710   | 6600   | ---    | 8580   | 8600   | 7640   | 3480   | 1800   | 1440  | 1640  |
| 30    | e2080  | 6480   | 4660   | 6110   | ---    | 8470   | 8040   | 7100   | 3460   | 1770   | 1430  | 1660  |
| 31    | e2150  | ---    | 4690   | 5610   | ---    | 8160   | ---    | 6730   | ---    | 1750   | 1460  | ---   |
| TOTAL | 58890  | 123930 | 174330 | 202700 | 244550 | 359580 | 268760 | 215450 | 144260 | 68140  | 47280 | 48460 |
| MEAN  | 1900   | 4131   | 5624   | 6539   | 8734   | 11600  | 8959   | 6950   | 4809   | 2198   | 1525  | 1615  |
| MAX   | 2150   | 11000  | 9510   | 15600  | 15600  | 17000  | 11200  | 8150   | 6660   | 3280   | 1740  | 1660  |
| MIN   | 1780   | 1980   | 4600   | 4300   | 5430   | 8160   | 7280   | 6130   | 3460   | 1750   | 1430  | 1590  |
| AC-FT | 116800 | 245800 | 345800 | 402100 | 485100 | 713200 | 533100 | 427300 | 286100 | 135200 | 93780 | 96120 |

e Estimated.



11520500 KLAMATH RIVER NEAR SEIAD VALLEY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN  | JUL  | AUG  | SEP  |
|------|------|------|-------|-------|-------|-------|-------|-------|------|------|------|------|
| MEAN | 2135 | 3083 | 4657  | 5876  | 6294  | 6605  | 6011  | 5189  | 3280 | 1687 | 1433 | 1672 |
| MAX  | 4490 | 7654 | 20280 | 21500 | 17980 | 19120 | 13940 | 10700 | 7980 | 3908 | 2778 | 3000 |
| (WY) | 1963 | 1985 | 1965  | 1965  | 1958  | 1972  | 1974  | 1956  | 1953 | 1913 | 1913 | 1925 |
| MIN  | 1047 | 1200 | 1395  | 1408  | 1466  | 1145  | 1132  | 1285  | 819  | 598  | 436  | 604  |
| (WY) | 1992 | 1995 | 1995  | 1992  | 1992  | 1977  | 1977  | 1992  | 1992 | 1992 | 1992 | 1992 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |  | FOR 1999 WATER YEAR |  | WATER YEARS 1913 - 1999 |  |
|--------------------------|------------------------|--|---------------------|--|-------------------------|--|
| ANNUAL TOTAL             | 2223540                |  | 1956330             |  |                         |  |
| ANNUAL MEAN              | 6092                   |  | 5360                |  | 3982                    |  |
| HIGHEST ANNUAL MEAN      |                        |  |                     |  | 7434                    |  |
| LOWEST ANNUAL MEAN       |                        |  |                     |  | 1151                    |  |
| HIGHEST DAILY MEAN       | 34100                  |  | 17000               |  | 115000                  |  |
| LOWEST DAILY MEAN        | 1350                   |  | 1430                |  | 320                     |  |
| ANNUAL SEVEN-DAY MINIMUM | 1380                   |  | 1450                |  | 417                     |  |
| INSTANTANEOUS PEAK FLOW  |                        |  | 17900               |  | 165000                  |  |
| INSTANTANEOUS PEAK STAGE |                        |  | 11.78               |  | 33.75                   |  |
| INSTANTANEOUS LOW FLOW   |                        |  |                     |  | 320                     |  |
| ANNUAL RUNOFF (AC-FT)    | 4410000                |  | 3880000             |  | 2884000                 |  |
| 10 PERCENT EXCEEDS       | 11200                  |  | 10300               |  | 8190                    |  |
| 50 PERCENT EXCEEDS       | 5320                   |  | 4840                |  | 2730                    |  |
| 90 PERCENT EXCEEDS       | 1700                   |  | 1610                |  | 1210                    |  |

## 11521500 INDIAN CREEK NEAR HAPPY CAMP, CA

LOCATION.—Lat 41°50'07", long 123°22'55", in SW 1/4 SW 1/4 sec.26, T.17 N., R.7 E., Siskiyou County, Hydrologic Unit 18010209, on right bank, 0.2 mi upstream from Slater Creek, 3.0 mi north of Happy Camp, and 3.5 mi upstream from mouth.

DRAINAGE AREA.—120 mi<sup>2</sup>.

PERIOD OF RECORD.—September 1911 to September 1921 (fragmentary), December 1956 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

REVISED RECORDS.—WSP 1635: 1957–58.

GAGE.—Water-stage recorder. Datum of gage is 1,198.37 ft above sea level. Prior to December 1956, nonrecording gages at sites 1.0 mi upstream at different datums. December 1956 to Sept. 20, 1969, water-stage recorder at site 0.8 mi upstream at different datum.

REMARKS.—Records fair. Small diversions upstream and at station for irrigation. See schematic diagram of Klamath River and Trinity River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 39,000 ft<sup>3</sup>/s, Dec. 22, 1964, gage height, 24.3 ft, from floodmarks, present site and datum; 36.59 ft from floodmarks in gage well, from rating curve extended above 6,000 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 29.0 ft, previous site and datum; minimum discharge observed, 20 ft<sup>3</sup>/s, Aug. 19 to Sept. 6, 1914.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 21, 1955, reached a stage of 29.0 ft, at 1956–69 site and datum, from floodmarks, discharge, 23,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 3,100 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Nov. 21 | 1130 | 6,500                             | 11.15               | Jan. 17 | 2045 | 3,410                             | 8.89                |
| Dec. 2  | 1615 | 3,670                             | 9.11                | Feb. 28 | 0645 | 4,480                             | 9.78                |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| 1     | 52   | 73    | 1470  | 362   | 450   | 2340  | 658   | 927   | 1020  | 273  | 102  | 69   |
| 2     | 54   | 66    | 2920  | 333   | 427   | 1740  | 637   | 994   | 877   | 256  | 101  | 68   |
| 3     | 55   | 66    | 1970  | 316   | 409   | 1660  | 632   | 937   | 731   | 242  | 101  | 67   |
| 4     | 55   | 68    | 1210  | 301   | 402   | 1380  | 605   | 827   | 698   | 231  | 99   | 66   |
| 5     | 54   | 84    | 901   | 290   | 385   | 1160  | 598   | 755   | 782   | 218  | 99   | 64   |
| 6     | 53   | 81    | 717   | 281   | 740   | 1020  | 572   | 810   | 732   | 213  | 104  | 63   |
| 7     | 53   | 104   | 612   | 272   | 1370  | 905   | 561   | 866   | 631   | 208  | 118  | 62   |
| 8     | 64   | 101   | 543   | 262   | 1090  | 873   | 563   | 792   | 580   | 197  | 108  | 62   |
| 9     | 61   | 84    | 476   | 253   | 851   | 811   | 541   | 730   | 553   | 192  | 102  | 61   |
| 10    | 61   | 93    | 434   | 247   | 696   | 748   | 553   | 692   | 552   | 187  | 100  | 60   |
| 11    | 59   | 92    | 409   | 242   | 600   | 696   | 555   | 690   | 574   | 182  | 101  | 59   |
| 12    | 58   | 84    | 457   | 237   | 542   | 666   | 581   | 807   | 609   | 178  | 97   | 59   |
| 13    | 67   | 78    | 600   | 232   | 516   | 666   | 658   | 792   | 625   | 171  | 94   | 59   |
| 14    | 65   | 79    | 570   | 265   | 512   | 785   | 726   | 712   | 665   | 163  | 92   | 58   |
| 15    | 61   | 103   | 491   | 753   | 498   | 783   | 801   | 647   | 667   | 154  | 90   | 57   |
| 16    | 59   | 154   | 444   | 748   | 673   | 762   | 942   | 624   | 608   | 147  | 87   | 57   |
| 17    | 58   | 173   | 431   | 1350  | 1230  | 758   | 1200  | 676   | 592   | 143  | 85   | 57   |
| 18    | 57   | 140   | 428   | 1840  | 1510  | 742   | 1360  | 888   | 551   | 139  | 82   | 56   |
| 19    | 57   | 115   | 401   | 1410  | 1380  | 767   | 1270  | 953   | 504   | 135  | 81   | 56   |
| 20    | 56   | 382   | 376   | 1450  | 1080  | 816   | 1170  | 948   | 483   | 132  | 80   | 55   |
| 21    | 55   | 4350  | 351   | 1370  | 973   | 823   | 1090  | 919   | 459   | 129  | 78   | 55   |
| 22    | 55   | 1730  | 323   | 1640  | 915   | 822   | 992   | 983   | 447   | 125  | 76   | 54   |
| 23    | 55   | 2210  | 323   | 1820  | 1300  | 798   | 947   | 1240  | 431   | 122  | 75   | 54   |
| 24    | 75   | 1400  | 308   | 1260  | 1530  | 1030  | 1010  | 1430  | 408   | 122  | 75   | 53   |
| 25    | 73   | 1290  | 288   | 998   | 1550  | 1050  | 1180  | 1450  | 363   | 118  | 73   | 53   |
| 26    | 64   | 1860  | 287   | 834   | 1220  | 949   | 1190  | 1310  | 329   | 115  | 71   | 53   |
| 27    | 61   | 1170  | 282   | 705   | 1370  | 859   | 1020  | 1320  | 312   | 112  | 70   | 53   |
| 28    | 60   | 772   | 310   | 626   | 3830  | 782   | 875   | 1270  | 297   | 110  | 70   | 52   |
| 29    | 59   | 648   | 338   | 568   | ---   | 756   | 789   | 1160  | 298   | 108  | 69   | 52   |
| 30    | 58   | 1560  | 322   | 523   | ---   | 739   | 788   | 1050  | 294   | 106  | 72   | 51   |
| 31    | 62   | ---   | 373   | 487   | ---   | 705   | ---   | 999   | ---   | 104  | 72   | ---  |
| TOTAL | 1836 | 19210 | 19365 | 22275 | 28049 | 29391 | 25064 | 29198 | 16672 | 5032 | 2724 | 1745 |
| MEAN  | 59.2 | 640   | 625   | 719   | 1002  | 948   | 835   | 942   | 556   | 162  | 87.9 | 58.2 |
| MAX   | 75   | 4350  | 2920  | 1840  | 3830  | 2340  | 1360  | 1450  | 1020  | 273  | 118  | 69   |
| MIN   | 52   | 66    | 282   | 232   | 385   | 666   | 541   | 624   | 294   | 104  | 69   | 51   |
| AC-FT | 3640 | 38100 | 38410 | 44180 | 55640 | 58300 | 49710 | 57910 | 33070 | 9980 | 5400 | 3460 |

11521500 INDIAN CREEK NEAR HAPPY CAMP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 80.7 | 320  | 626  | 747  | 831  | 794  | 671  | 562  | 269  | 102  | 60.9 | 52.4 |
| MAX  | 414  | 1498 | 3156 | 2230 | 2820 | 1896 | 1372 | 1368 | 579  | 204  | 100  | 102  |
| (WY) | 1963 | 1974 | 1965 | 1970 | 1958 | 1972 | 1966 | 1969 | 1975 | 1983 | 1983 | 1978 |
| MIN  | 29.8 | 45.6 | 45.7 | 50.5 | 87.1 | 170  | 202  | 152  | 71.8 | 36.5 | 26.3 | 27.9 |
| (WY) | 1992 | 1960 | 1977 | 1977 | 1977 | 1977 | 1977 | 1992 | 1992 | 1977 | 1977 | 1992 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1957 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 229942                 |        | 200561              |        |                         |             |
| ANNUAL MEAN              | 630                    |        | 549                 |        | 425                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 817                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 83.7                    |             |
| HIGHEST DAILY MEAN       | 7270                   | Mar 23 | 4350                | Nov 21 | 30700                   | Dec 22 1964 |
| LOWEST DAILY MEAN        | 52                     | Oct 1  | 51                  | Sep 30 | 21                      | Sep 12 1977 |
| ANNUAL SEVEN-DAY MINIMUM | 53                     | Sep 25 | 52                  | Sep 24 | 22                      | Sep 8 1977  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 6500                |        | Nov 21                  |             |
| INSTANTANEOUS PEAK STAGE |                        |        | 11.15               |        | Nov 21                  |             |
| ANNUAL RUNOFF (AC-FT)    | 456100                 |        | 397800              |        | 307800                  |             |
| 10 PERCENT EXCEEDS       | 1340                   |        | 1260                |        | 981                     |             |
| 50 PERCENT EXCEEDS       | 468                    |        | 428                 |        | 212                     |             |
| 90 PERCENT EXCEEDS       | 57                     |        | 59                  |        | 47                      |             |

## 11522500 SALMON RIVER AT SOMES BAR, CA

LOCATION.—Lat 41°22'40", long 123°28'35", in NE 1/4 sec.3, T.11 N., R.6 E., Siskiyou County, Hydrologic Unit 18010210, Klamath National Forest, on left bank, at Somes Bar, and 1.0 mi upstream from mouth.

DRAINAGE AREA.—751 mi<sup>2</sup>.

PERIOD OF RECORD.—September 1911 to September 1915, October 1927 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

REVISED RECORDS.—WSP 1285: 1912, 1914, 1915(M), 1946(M), 1948(M). WDR CA-72-1: 1970–71(P).

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 482.97 ft above sea level. Prior to October 1927, nonrecording gage at different datum, October 1927 to Dec. 22, 1964, water-stage recorder at site 0.5 mi upstream at datum 6.54 ft higher.

REMARKS.—Records good. No storage or large diversion upstream from station. See schematic diagram of Klamath River and Trinity River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 133,000 ft<sup>3</sup>/s, Dec. 22, 1964 (result of failure of upstream debris dam), gage height, 46.6 ft, present site and datum, from floodmarks, from rating curve extended above 33,000 ft<sup>3</sup>/s; minimum daily, 70 ft<sup>3</sup>/s, Aug. 25, 1931.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 10,000 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|---------|------|--------------------------------|------------------|
| Nov. 21 | 1400 | 15,300                         | 11.32            | Jan. 23 | 0200 | 12,000                         | 9.96             |
| Dec. 3  | 0215 | 10,500                         | 9.36             | Feb. 28 | 2130 | 12,700                         | 10.24            |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT   | NOV    | DEC    | JAN    | FEB    | MAR    | APR    | MAY    | JUN    | JUL   | AUG   | SEP   |
|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| 1     | 208   | 358    | 4870   | 1350   | 2350   | 10000  | 2470   | 3620   | 4780   | 1810  | 464   | 304   |
| 2     | 211   | 349    | 6720   | 1260   | 2200   | 7440   | 2390   | 4050   | 4100   | 1640  | 458   | 291   |
| 3     | 212   | 314    | 8680   | 1220   | 2120   | 6990   | 2340   | 3730   | 3360   | 1420  | 453   | 280   |
| 4     | 211   | 317    | 5580   | 1180   | 2060   | 6040   | 2250   | 3260   | 3110   | 1260  | 446   | 270   |
| 5     | 209   | 393    | 4200   | 1140   | 1950   | 5220   | 2250   | 3000   | 3470   | 1170  | 442   | 262   |
| 6     | 203   | 431    | 3410   | 1090   | 2610   | 4620   | 2140   | 3300   | 3450   | 1150  | 453   | 257   |
| 7     | 196   | 691    | 2930   | 1060   | 5920   | 4140   | 2090   | 3740   | 3070   | 1170  | 511   | 251   |
| 8     | 287   | 676    | 2690   | 1020   | 5570   | 3880   | 2160   | 3430   | 2850   | 1060  | 472   | 249   |
| 9     | 292   | 470    | 2410   | 981    | 4610   | 3600   | 2050   | 3220   | 2750   | 1040  | 443   | 243   |
| 10    | 243   | 494    | 2250   | 949    | 3810   | 3300   | 2060   | 3070   | 2780   | 1060  | 425   | 238   |
| 11    | 228   | 629    | 2160   | 939    | 3310   | 3090   | 2030   | 3060   | 2940   | 1050  | 436   | 238   |
| 12    | 219   | 467    | 2310   | 920    | 3010   | 2940   | 2100   | 3610   | 3210   | 1030  | 415   | 231   |
| 13    | 320   | 418    | 2880   | 899    | 2880   | 2900   | 2390   | 3600   | 3400   | 1020  | 400   | 226   |
| 14    | 325   | 422    | 2760   | 972    | 3020   | 2980   | 2790   | 3290   | 3700   | 970   | 394   | 221   |
| 15    | 261   | 518    | 2480   | 3230   | 2920   | 2950   | 3210   | 2970   | 3880   | 866   | 383   | 218   |
| 16    | 240   | 786    | 2320   | 3880   | 3210   | 2910   | 3840   | 2840   | 3620   | 791   | 367   | 216   |
| 17    | 232   | 929    | 2370   | 4230   | 6070   | 2970   | 4780   | 3020   | 3410   | 743   | 352   | 218   |
| 18    | 226   | 790    | 2420   | 7620   | 6140   | 3010   | 5410   | 3730   | 3170   | 707   | 342   | 218   |
| 19    | 220   | 622    | 2240   | 5650   | 6290   | 3100   | 5440   | 4090   | 2890   | 680   | 334   | 214   |
| 20    | 214   | 773    | 2100   | 6040   | 5230   | 3270   | 5010   | 4340   | 2820   | 656   | 328   | 210   |
| 21    | 207   | 10000  | 1830   | 6430   | 4740   | 3270   | 4570   | 4310   | 2760   | 633   | 323   | 209   |
| 22    | 201   | 7070   | 1740   | 6930   | 4330   | 3150   | 4070   | 4530   | 2810   | 614   | 318   | 207   |
| 23    | 197   | 7880   | 1610   | 9830   | 4950   | 2990   | 3810   | 5510   | 2730   | 593   | 311   | 205   |
| 24    | 385   | 6520   | 1530   | 6560   | 5330   | 3100   | 3970   | 6240   | 2560   | 581   | 314   | 201   |
| 25    | 519   | 4060   | 1460   | 5070   | 5600   | 3170   | 4360   | 6590   | 2260   | 572   | 310   | 200   |
| 26    | 333   | 4640   | 1400   | 4250   | 5080   | 3100   | 4570   | 6400   | 1980   | 557   | 298   | 198   |
| 27    | 282   | 4310   | 1340   | 3610   | 4960   | 2980   | 4190   | 6530   | 1860   | 546   | 292   | 197   |
| 28    | 280   | 3190   | 1460   | 3220   | 9750   | 2830   | 3660   | 6090   | 1790   | 529   | 292   | 195   |
| 29    | 275   | 2790   | 1370   | 2940   | ---    | 2760   | 3290   | 5350   | 1880   | 510   | 289   | 194   |
| 30    | 256   | 4040   | 1280   | 2720   | ---    | 2680   | 3230   | 4940   | 1900   | 489   | 293   | 194   |
| 31    | 264   | ---    | 1420   | 2590   | ---    | 2640   | ---    | 4760   | ---    | 472   | 313   | ---   |
| TOTAL | 7956  | 65347  | 84220  | 99780  | 120020 | 118020 | 98920  | 130220 | 89290  | 27389 | 11671 | 6855  |
| MEAN  | 257   | 2178   | 2717   | 3219   | 4286   | 3807   | 3297   | 4201   | 2976   | 884   | 376   | 228   |
| MAX   | 519   | 10000  | 8680   | 9830   | 9750   | 10000  | 5440   | 6590   | 4780   | 1810  | 511   | 304   |
| MIN   | 196   | 314    | 1280   | 899    | 1950   | 2640   | 2030   | 2840   | 1790   | 472   | 289   | 194   |
| AC-FT | 15780 | 129600 | 167100 | 197900 | 238100 | 234100 | 196200 | 258300 | 177100 | 54330 | 23150 | 13600 |

11522500 SALMON RIVER AT SOMES BAR, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC   | JAN   | FEB   | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|-------|-------|-------|------|------|------|------|------|------|------|
| MEAN | 349  | 1114 | 2206  | 2967  | 3001  | 2965 | 3014 | 3139 | 1937 | 629  | 264  | 204  |
| MAX  | 2297 | 5961 | 10480 | 11260 | 11190 | 9615 | 5741 | 6174 | 4354 | 1906 | 839  | 528  |
| (WY) | 1963 | 1974 | 1965  | 1970  | 1958  | 1972 | 1938 | 1938 | 1953 | 1953 | 1983 | 1983 |
| MIN  | 117  | 130  | 175   | 190   | 255   | 448  | 710  | 786  | 402  | 146  | 81.6 | 83.1 |
| (WY) | 1988 | 1937 | 1937  | 1937  | 1977  | 1977 | 1977 | 1977 | 1992 | 1931 | 1931 | 1931 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1912 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 1125583                |        | 859688              |        |                         |             |
| ANNUAL MEAN              | 3084                   |        | 2355                |        | 1810                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 3754                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 339                     |             |
| HIGHEST DAILY MEAN       | 29000                  | Mar 23 | 10000               | Nov 21 | 100000                  | Dec 22 1964 |
| LOWEST DAILY MEAN        | 196                    | Oct 7  | 194                 | Sep 29 | 70                      | Aug 25 1931 |
| ANNUAL SEVEN-DAY MINIMUM | 207                    | Oct 1  | 197                 | Sep 24 | 73                      | Aug 24 1931 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 15300               |        | 133000                  |             |
| INSTANTANEOUS PEAK STAGE |                        |        | 11.32               |        | 46.60                   |             |
| ANNUAL RUNOFF (AC-FT)    | 2233000                |        | 1705000             |        | 1311000                 |             |
| 10 PERCENT EXCEEDS       | 5710                   |        | 5220                |        | 4260                    |             |
| 50 PERCENT EXCEEDS       | 2760                   |        | 2140                |        | 1040                    |             |
| 90 PERCENT EXCEEDS       | 253                    |        | 238                 |        | 180                     |             |

## 11523000 KLAMATH RIVER AT ORLEANS, CA

LOCATION.—Lat 41°18'13", long 123°32'00", in SW 1/4 NE 1/4 sec.31, T.11 N., R.6 E., Humboldt County, Hydrologic Unit 18010209, Six Rivers National Forest, on right bank at Orleans, 25 ft upstream from highway bridge, and 0.2 mi downstream from Cheenitch Creek.

DRAINAGE AREA.—8,475 mi<sup>2</sup>, not including Lost River or Lower Klamath Lake Basins.

PERIOD OF RECORD.—October 1927 to current year. Monthly discharge only for some periods, published in WSP 1315-B. Prior to October 1965, published as "at Somesbar."

SEDIMENT DATA: Water years 1967–79.

REVISED RECORDS.—WSP 1565: 1935(M), 1949.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 353.98 ft above sea level. Prior to Oct. 1, 1965, at site 6.7 mi upstream at different datum. Oct. 1, 1965, to July 14, 1992, water-stage recorder at datum 2.00 ft higher, at present site.

REMARKS.—Records good. Flow considerably regulated by reservoirs and powerplants upstream from station. Large diversions upstream from station for irrigation. See schematic diagram of Klamath River and Trinity River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 307,000 ft<sup>3</sup>/s, Dec. 22, 1964, gage height, 76.5 ft, from floodmarks, site and datum then in use, from rating curve extended above 80,000 ft<sup>3</sup>/s on basis of slope-conveyance study, gage height, 59.4 ft; minimum daily, 320 ft<sup>3</sup>/s, Aug. 25, Sept. 1, 1951.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 40,000 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Nov. 21 | 1630 | 60,500                            | 19.68               | Jan. 23 | 1130 | 47,900                            | 17.61               |
| Dec. 2  | 2215 | 41,500                            | 16.44               | Feb. 28 | 1615 | 61,000                            | 19.76               |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT    | NOV    | DEC    | JAN    | FEB     | MAR     | APR     | MAY     | JUN    | JUL    | AUG    | SEP    |
|-------|--------|--------|--------|--------|---------|---------|---------|---------|--------|--------|--------|--------|
| 1     | 2400   | 3030   | 23600  | 9290   | 12300   | 49800   | 16700   | 17400   | 17600  | 7170   | 2730   | 2120   |
| 2     | 2420   | 3020   | 31600  | 8960   | 11800   | 38200   | 16900   | 18700   | 16000  | 6500   | 2710   | 2250   |
| 3     | 2440   | 2890   | 35000  | 8720   | 11500   | 36000   | 16600   | 18400   | 13700  | 5970   | 2710   | 2250   |
| 4     | 2460   | 2900   | 25000  | 8520   | 11400   | 32200   | 16500   | 16800   | 12600  | 5630   | 2660   | 2210   |
| 5     | 2440   | 3090   | 19500  | 8360   | 11100   | 28500   | 16800   | 15300   | 13100  | 5340   | 2530   | 2180   |
| 6     | 2430   | 3270   | 16400  | 8220   | 14000   | 25900   | 16400   | 14900   | 13200  | 5190   | 2470   | 2160   |
| 7     | 2420   | 3900   | 14500  | 8070   | 25900   | 24500   | 15300   | 16100   | 12200  | 5080   | 2670   | 2140   |
| 8     | 2660   | 3920   | 13800  | 7940   | 28000   | 24600   | 15100   | 15600   | 11400  | 4840   | 2660   | 2140   |
| 9     | 2670   | 3430   | 12800  | 7800   | 22600   | 23800   | 14800   | 14800   | 10900  | 4690   | 2550   | 2140   |
| 10    | 2550   | 3540   | 12000  | 7710   | 19600   | 22900   | 14800   | 14200   | 10800  | 4550   | 2470   | 2130   |
| 11    | 2530   | 4230   | 11400  | 7670   | 17400   | 22200   | 14600   | 14000   | 11100  | 4480   | 2600   | 2130   |
| 12    | 2520   | 3830   | 11800  | 7610   | 16000   | 21400   | 14400   | 15300   | 11800  | 4410   | 2510   | 2140   |
| 13    | 2760   | 3670   | 13400  | 7550   | 15200   | 21200   | 15000   | 15600   | 12200  | 4350   | 2430   | 2120   |
| 14    | 2760   | 3650   | 13500  | 7630   | 15300   | 21300   | 16300   | 14800   | 12900  | 4240   | 2400   | 2100   |
| 15    | 2630   | 3870   | 12600  | 12700  | 15100   | 20900   | 17600   | 14000   | 13500  | 4000   | 2360   | 2090   |
| 16    | 2600   | 4800   | 11800  | 14600  | 16300   | 20300   | 19200   | 13400   | 13100  | 3820   | 2320   | 2090   |
| 17    | 2570   | 5150   | 11600  | 16200  | 25600   | 19400   | 21700   | 13600   | 12500  | 3700   | 2270   | 2090   |
| 18    | 2580   | 4810   | 11500  | 31200  | 28000   | 18700   | 24000   | 15500   | 11900  | 3600   | 2230   | 2090   |
| 19    | 2580   | 4300   | 11000  | 25300  | 32400   | 19600   | 24200   | 16800   | 11100  | 3510   | 2210   | 2090   |
| 20    | 2570   | 4430   | 10600  | 26000  | 27000   | 21900   | 23300   | 17200   | 10600  | 3430   | 2190   | 2090   |
| 21    | 2550   | 40200  | 9840   | 28400  | 25300   | 22500   | 21900   | 16700   | 10300  | 3340   | 2150   | 2080   |
| 22    | 2540   | 33900  | 9450   | 30200  | 24100   | 21700   | 20200   | 16500   | 10300  | 3300   | 2120   | 2070   |
| 23    | 2520   | 29400  | 9170   | 44700  | 27500   | 20800   | 19100   | 19100   | 10100  | 3220   | 2120   | 2080   |
| 24    | 2950   | 31200  | 8960   | 32300  | 29200   | 21000   | 20200   | 21500   | 9780   | 3180   | 2130   | 2060   |
| 25    | 3280   | 22200  | 8840   | 25100  | 30700   | 20700   | 22700   | 23000   | 9220   | 3150   | 2160   | 2050   |
| 26    | 2890   | 23500  | 8860   | 21700  | 28100   | 19800   | 23300   | 22400   | 8410   | 3090   | 2130   | 2040   |
| 27    | 2760   | 22100  | 8750   | 18600  | 27200   | 19100   | 22000   | 22200   | 7760   | 3040   | 2100   | 2040   |
| 28    | 2740   | 16900  | 9200   | 16600  | 52700   | 18200   | 19900   | 21900   | 7450   | 2980   | 2100   | 2050   |
| 29    | 2710   | 15000  | 9330   | 15300  | ---     | 17400   | 18000   | 20200   | 7420   | 2910   | 2090   | 2060   |
| 30    | 2690   | 18800  | 9070   | 14100  | ---     | 17100   | 16900   | 18700   | 7380   | 2830   | 2050   | 2070   |
| 31    | 2720   | ---    | 9340   | 13100  | ---     | 16600   | ---     | 17500   | ---    | 2780   | 2110   | ---    |
| TOTAL | 81340  | 328930 | 424210 | 500150 | 621300  | 728200  | 554400  | 532100  | 340320 | 128320 | 72940  | 63350  |
| MEAN  | 2624   | 10960  | 13680  | 16130  | 22190   | 23490   | 18480   | 17160   | 11340  | 4139   | 2353   | 2112   |
| MAX   | 3280   | 40200  | 35000  | 44700  | 52700   | 49800   | 24200   | 23000   | 17600  | 7170   | 2730   | 2250   |
| MIN   | 2400   | 2890   | 8750   | 7550   | 11100   | 16600   | 14400   | 13400   | 7380   | 2780   | 2050   | 2040   |
| AC-FT | 161300 | 652400 | 841400 | 992000 | 1232000 | 1444000 | 1100000 | 1055000 | 675000 | 254500 | 144700 | 125700 |

11523000 KLAMATH RIVER AT ORLEANS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL  | AUG  | SEP  |
|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| MEAN | 3034 | 6075  | 10790 | 13820 | 14210 | 14040 | 12790 | 11110 | 6572  | 2841 | 2072 | 2222 |
| MAX  | 9876 | 22080 | 48770 | 51290 | 53740 | 42600 | 26860 | 25320 | 16900 | 7226 | 3666 | 3807 |
| (WY) | 1963 | 1974  | 1965  | 1997  | 1986  | 1972  | 1974  | 1938  | 1953  | 1953 | 1953 | 1953 |
| MIN  | 1354 | 1930  | 2288  | 2334  | 2630  | 2806  | 3065  | 3081  | 1626  | 755  | 549  | 790  |
| (WY) | 1993 | 1988  | 1937  | 1937  | 1977  | 1977  | 1977  | 1992  | 1992  | 1931 | 1931 | 1992 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1928 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 4946390                |        | 4375560             |        |                         |             |
| ANNUAL MEAN              | 13550                  |        | 11990               |        | 8269                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 17030                   |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 2520                    |             |
| HIGHEST DAILY MEAN       | 95400                  | Mar 23 | 52700               | Feb 28 | 240000                  | Dec 23 1964 |
| LOWEST DAILY MEAN        | 2050                   | Sep 1  | 2040                | Sep 26 | 320                     | Aug 25 1931 |
| ANNUAL SEVEN-DAY MINIMUM | 2120                   | Aug 26 | 2050                | Sep 24 | 453                     | Aug 1 1931  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 61000               | Feb 28 | 307000                  | Dec 22 1964 |
| INSTANTANEOUS PEAK STAGE |                        |        | 19.76               | Feb 28 | 76.50                   | Dec 22 1964 |
| ANNUAL RUNOFF (AC-FT)    | 9811000                |        | 8679000             |        | 5991000                 |             |
| 10 PERCENT EXCEEDS       | 24600                  |        | 24300               |        | 18200                   |             |
| 50 PERCENT EXCEEDS       | 12000                  |        | 11000               |        | 4920                    |             |
| 90 PERCENT EXCEEDS       | 2380                   |        | 2160                |        | 1900                    |             |

## 11523200 TRINITY RIVER ABOVE COFFEE CREEK, NEAR TRINITY CENTER, CA

LOCATION.—Lat 41°06'41", long 122°42'16", in SW 1/4 NW 1/4 sec.32, T.38 N., R.7 W., Trinity County, Hydrologic Unit 18010211, Shasta National Forest, on left bank, 24 ft upstream from State Highway No. 3 Bridge, 1.8 mi upstream from Coffee Creek, and 8.6 mi north of Trinity Center.

DRAINAGE AREA.—149 mi<sup>2</sup>.

PERIOD OF RECORD.—September 1957 to current year.

REVISED RECORDS.—WDR CA-85-2: 1982(M). WDR CA-97-2: 1982(M).

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 2,536.93 ft above sea level. Prior to Oct. 1, 1978, water-stage recorder at site 0.2 mi downstream at datum 3.57 ft lower.

REMARKS.—Records good. No regulation or diversion upstream from station. See schematic diagram of Klamath River and Trinity River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 26,500 ft<sup>3</sup>/s, Jan. 16, 1974, gage height, 12.96 ft, site and datum then in use, from rating curve extended above 4,500 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily, 16 ft<sup>3</sup>/s, Sept. 11–14, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 22, 1955, reached a stage of 10.5 ft, previous site and datum, from floodmarks, discharge, 11,400 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 2,300 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| Nov. 23 | 1200 | 2,440                             | 7.07                | May 24 | 2030 | 3,120                             | 7.85                |
| Apr. 18 | 2245 | 2,620                             | 7.40                |        |      |                                   |                     |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| 1     | 61   | 78    | 854   | 162   | 241   | 833   | 445   | 1480  | 1540  | 309  | 88   | 58   |
| 2     | 64   | 69    | 628   | 158   | 232   | 698   | 417   | 1530  | 1250  | 285  | 86   | 57   |
| 3     | 63   | 67    | 979   | 156   | 227   | 857   | 409   | 1190  | 974   | 262  | 85   | 54   |
| 4     | 62   | 66    | 636   | 155   | 221   | 644   | 387   | 1010  | 923   | 246  | 83   | 53   |
| 5     | 61   | 65    | 466   | 153   | 212   | 526   | 379   | 1020  | 1070  | 229  | 82   | 51   |
| 6     | 59   | 67    | 373   | 155   | 235   | 457   | 358   | 1390  | 1020  | 218  | 80   | 47   |
| 7     | 58   | 101   | 314   | 152   | 322   | 404   | 373   | 1530  | 882   | 208  | 90   | 45   |
| 8     | 60   | 88    | 275   | 148   | 288   | 393   | 453   | 1270  | 812   | 197  | 90   | 43   |
| 9     | 61   | 78    | 245   | 145   | 264   | 359   | 417   | 1100  | 773   | 190  | 82   | 41   |
| 10    | 59   | 92    | 228   | 145   | 232   | 330   | 401   | 997   | 771   | 184  | 80   | 41   |
| 11    | 59   | 87    | 218   | 150   | 219   | 309   | 387   | 1050  | 805   | 179  | 83   | 42   |
| 12    | 57   | 82    | 216   | 150   | 212   | 302   | 456   | 1210  | 874   | 169  | 80   | 40   |
| 13    | 70   | 82    | 275   | 149   | 210   | 307   | 647   | 1200  | 918   | 162  | 81   | 38   |
| 14    | 67   | 84    | 275   | 152   | 207   | 372   | 888   | 1020  | 947   | 155  | 79   | 38   |
| 15    | 62   | 91    | 255   | 243   | 202   | 409   | 1080  | 896   | 923   | 149  | 75   | 38   |
| 16    | 61   | 104   | 251   | 357   | 217   | 459   | 1330  | 925   | 847   | 144  | 71   | 38   |
| 17    | 60   | 145   | 292   | 510   | 222   | 525   | 1830  | 1160  | 800   | 139  | 67   | 38   |
| 18    | 58   | 103   | 325   | 981   | 264   | 609   | 2190  | 1450  | 730   | 134  | 65   | 38   |
| 19    | 58   | 85    | 298   | 741   | 255   | 632   | 2270  | 1620  | 669   | 129  | 64   | 38   |
| 20    | 56   | 89    | 273   | 741   | 248   | 668   | 2020  | 1830  | 628   | 125  | 63   | 37   |
| 21    | 55   | 538   | 238   | 671   | 239   | 644   | 1690  | 1790  | 599   | 123  | 61   | 37   |
| 22    | 54   | 380   | 231   | 598   | 231   | 614   | 1440  | 1920  | 590   | 119  | 59   | 37   |
| 23    | 54   | 1270  | 213   | 522   | 264   | 601   | 1350  | 2150  | 550   | 115  | 58   | 37   |
| 24    | 88   | 538   | 203   | 423   | 352   | 765   | 1560  | 2450  | 491   | 114  | 58   | 37   |
| 25    | 86   | 341   | 192   | 370   | 451   | 876   | 1730  | 2550  | 430   | 111  | 57   | 36   |
| 26    | 74   | 566   | 182   | 343   | 365   | 845   | 1730  | 2470  | 383   | 106  | 55   | 36   |
| 27    | 67   | 437   | 175   | 308   | 326   | 752   | 1500  | 2540  | 357   | 99   | 55   | 35   |
| 28    | 70   | 294   | 172   | 287   | 726   | 650   | 1140  | 2430  | 341   | 97   | 58   | 36   |
| 29    | 67   | 256   | 164   | 273   | ---   | 599   | 962   | 2040  | 337   | 94   | 55   | 36   |
| 30    | 63   | 983   | 160   | 261   | ---   | 555   | 1090  | 1750  | 327   | 91   | 55   | 36   |
| 31    | 64   | ---   | 171   | 263   | ---   | 498   | ---   | 1650  | ---   | 90   | 58   | ---  |
| TOTAL | 1958 | 7326  | 9777  | 10022 | 7684  | 17492 | 31329 | 48618 | 22561 | 4972 | 2203 | 1238 |
| MEAN  | 63.2 | 244   | 315   | 323   | 274   | 564   | 1044  | 1568  | 752   | 160  | 71.1 | 41.3 |
| MAX   | 88   | 1270  | 979   | 981   | 726   | 876   | 2270  | 2550  | 1540  | 309  | 90   | 58   |
| MIN   | 54   | 65    | 160   | 145   | 202   | 302   | 358   | 896   | 327   | 90   | 55   | 35   |
| AC-FT | 3880 | 14530 | 19390 | 19880 | 15240 | 34700 | 62140 | 96430 | 44750 | 9860 | 4370 | 2460 |



11523200 TRINITY RIVER ABOVE COFFEE CREEK, NEAR TRINITY CENTER, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 77.7 | 211  | 339  | 456  | 574  | 670  | 844  | 1063 | 511  | 135  | 55.8 | 44.8 |
| MAX  | 447  | 1664 | 1726 | 1899 | 2248 | 1641 | 1500 | 2414 | 2159 | 778  | 205  | 134  |
| (WY) | 1963 | 1974 | 1965 | 1974 | 1958 | 1995 | 1966 | 1983 | 1998 | 1983 | 1983 | 1978 |
| MIN  | 24.3 | 37.4 | 34.1 | 35.9 | 47.2 | 60.0 | 137  | 204  | 95.7 | 29.0 | 20.9 | 23.3 |
| (WY) | 1992 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1994 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1958 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 292239                 |        | 165180              |        |                         |             |
| ANNUAL MEAN              | 801                    |        | 453                 |        | 414                     |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 851                     |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 66.2                    |             |
| HIGHEST DAILY MEAN       | 7200                   | Mar 24 | 2550                | May 25 | 18900                   | Jan 16 1974 |
| LOWEST DAILY MEAN        | 54                     | Oct 22 | 35                  | Sep 27 | 16                      | Sep 11 1977 |
| ANNUAL SEVEN-DAY MINIMUM | 56                     | Oct 17 | 36                  | Sep 24 | 16                      | Sep 8 1977  |
| INSTANTANEOUS PEAK FLOW  |                        |        | 3120                |        | 26500                   |             |
| INSTANTANEOUS PEAK STAGE |                        |        | 7.85                |        | 12.96                   |             |
| ANNUAL RUNOFF (AC-FT)    | 579700                 |        | 327600              |        | 300000                  |             |
| 10 PERCENT EXCEEDS       | 2090                   |        | 1190                |        | 1050                    |             |
| 50 PERCENT EXCEEDS       | 450                    |        | 241                 |        | 175                     |             |
| 90 PERCENT EXCEEDS       | 65                     |        | 57                  |        | 38                      |             |

## 11525400 TRINITY LAKE NEAR LEWISTON, CA

LOCATION.—Lat 40°48'05", long 122°45'44", in NW 1/4 SW 1/4 sec.15, T.34 N., R.8 W., Trinity County, Hydrologic Unit 18010211, Trinity National Forest, Whiskeytown–Shasta–Trinity National Recreation Area, on side of intake structure of Trinity Dam on Trinity River, and 9 mi north of Lewiston.

DRAINAGE AREA.—692 mi<sup>2</sup>.

PERIOD OF RECORD.—November 1960 to current year. From October 1963 to September 1997 published as Clair Engle Lake near Lewiston.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by U.S. Bureau of Reclamation). Prior to Jan. 4, 1962, nonrecording gage at same site and datum. Contents based on capacity table provided by U.S. Bureau of Reclamation, dated April 1962.

REMARKS.—The lake is formed by an earthfill dam completed in November 1960. Storage began Nov. 23, 1960. Usable capacity, 2,437,700 acre-ft, between elevations 1,995.5 ft, elevation of invert of river outlets, and 2,370.0 ft, crest of glory hole spillway. Dead storage, 10,000 acre-ft. Operating pool is from elevation 2,145.0 ft, capacity, 312,621 acre-ft, to 2,370.0 ft, capacity, 2,447,700 acre-ft. Figures given represent total contents at 2400 hours. Lake is used for power generation, flood control, and recreation. See schematic diagram of Klamath River and Trinity River Basins.

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

EXTREMES (at 2400 HOURS) FOR PERIOD OF RECORD.—Maximum contents, 2,588,000 acre-ft, Jan. 19, 1974, elevation, 2,378.32 ft; minimum since first filling, 222,400 acre-ft, Nov. 9, 1977, elevation, 2,120.22 ft.

EXTREMES (at 2400 HOURS) FOR CURRENT YEAR.—Maximum contents, 2,396,535 acre-ft, June 17, elevation, 2,366.88 ft; minimum, 1,905,930 acre-ft, Jan. 14, elevation, 2,334.35 ft.

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

|       |         |       |           |
|-------|---------|-------|-----------|
| 2,100 | 162,231 | 2,250 | 955,140   |
| 2,140 | 292,859 | 2,310 | 1,583,586 |
| 2,190 | 529,611 | 2,380 | 2,616,989 |

## RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY OBSERVATION AT 2400 HOURS

| DAY | OCT     | NOV     | DEC     | JAN     | FEB     | MAR     | APR     | MAY     | JUN     | JUL     | AUG     | SEP     |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1   | 2073888 | 2009316 | 1975007 | 1948080 | 1937694 | 2013388 | 2099601 | 2213185 | 2384710 | 2368269 | 2216100 | 2090216 |
| 2   | 2070637 | 2008442 | 1981060 | 1941242 | 1938259 | 2018342 | 2102431 | 2217328 | 2386818 | 2363296 | 2211500 | 2085313 |
| 3   | 2067978 | 2007569 | 1989437 | 1934430 | 1939254 | 2024184 | 2104072 | 2219782 | 2386656 | 2357531 | 2206906 | 2081306 |
| 4   | 2064874 | 2006841 | 1993493 | 1930029 | 1937126 | 2027396 | 2104671 | 2223008 | 2387142 | 2353368 | 2201859 | 2076557 |
| 5   | 2061768 | 2005680 | 1996389 | 1926919 | 1934711 | 2029438 | 2106164 | 2225308 | 2388436 | 2349530 | 2196204 | 2072409 |
| 6   | 2058815 | 2004807 | 1997839 | 1923813 | 1935705 | 2030316 | 2106763 | 2230082 | 2389408 | 2344754 | 2190101 | 2068126 |
| 7   | 2055429 | 2006262 | 1998854 | 1921552 | 1938685 | 2030610 | 2107212 | 2236086 | 2389408 | 2340457 | 2184160 | 2063987 |
| 8   | 2052928 | 2005389 | 1997839 | 1919718 | 1942518 | 2031784 | 2108410 | 2240707 | 2389084 | 2335686 | 2179132 | 2059848 |
| 9   | 2049101 | 2004807 | 1997259 | 1917457 | 1946366 | 2031784 | 2108560 | 2243178 | 2388922 | 2332039 | 2174881 | 2056608 |
| 10  | 2046158 | 2005680 | 1997259 | 1915199 | 1948222 | 2031490 | 2110054 | 2245188 | 2388598 | 2327608 | 2170477 | 2052486 |
| 11  | 2043363 | 2005098 | 1997259 | 1912952 | 1950647 | 2030316 | 2110503 | 2248123 | 2389084 | 2323812 | 2165926 | 2047922 |
| 12  | 2040432 | 2004516 | 1997694 | 1910422 | 1952075 | 2029438 | 2112000 | 2251522 | 2389895 | 2320486 | 2160320 | 2042923 |
| 13  | 2037647 | 2003933 | 1998419 | 1908316 | 1954500 | 2028127 | 2113943 | 2254767 | 2391192 | 2315601 | 2156538 | 2036766 |
| 14  | 2035449 | 2002914 | 1998419 | 1905930 | 1956210 | 2027688 | 2117682 | 2257090 | 2393458 | 2310253 | 2153512 | 2031637 |
| 15  | 2033101 | 2002336 | 1997549 | 1906910 | 1957782 | 2027688 | 2121131 | 2258949 | 2395566 | 2304436 | 2148822 | 2027542 |
| 16  | 2030904 | 2000300 | 1994798 | 1906910 | 1961654 | 2028562 | 2126539 | 2260656 | 2396215 | 2298013 | 2145204 | 2023307 |
| 17  | 2029146 | 1994508 | 1992478 | 1909582 | 1964666 | 2029292 | 2135256 | 2263291 | 2396535 | 2292856 | 2140983 | 2019072 |
| 18  | 2027542 | 1987846 | 1990887 | 1915765 | 1969974 | 2030757 | 2145959 | 2268099 | 2396053 | 2287226 | 2137818 | 2014258 |
| 19  | 2025496 | 1980920 | 1988422 | 1919294 | 1974718 | 2033835 | 2156689 | 2273531 | 2395404 | 2281622 | 2134351 | 2009607 |
| 20  | 2023599 | 1975007 | 1986396 | 1922824 | 1976594 | 2037207 | 2166074 | 2278044 | 2394107 | 2276023 | 2130895 | 2005680 |
| 21  | 2022430 | 1977456 | 1983658 | 1925223 | 1977745 | 2040872 | 2173365 | 2286914 | 2393783 | 2270113 | 2127892 | 2002044 |
| 22  | 2021407 | 1974718 | 1981205 | 1930172 | 1979044 | 2044537 | 2176552 | 2294418 | 2393458 | 2264688 | 2124886 | 1997549 |
| 23  | 2019365 | 1981926 | 1978611 | 1935421 | 1981349 | 2047922 | 2178372 | 2304436 | 2392003 | 2258949 | 2121883 | 1993203 |
| 24  | 2019365 | 1981493 | 1975873 | 1938401 | 1985242 | 2055282 | 2181873 | 2315601 | 2389408 | 2254302 | 2118580 | 1988136 |
| 25  | 2017465 | 1977601 | 1973423 | 1939254 | 1991612 | 2064135 | 2186750 | 2328396 | 2386656 | 2249825 | 2115889 | 1983802 |
| 26  | 2015422 | 1976161 | 1970688 | 1939964 | 1993783 | 2071229 | 2194368 | 2339027 | 2382930 | 2245034 | 2112599 | 1979044 |
| 27  | 2014112 | 1972269 | 1967820 | 1939822 | 1996099 | 2078042 | 2199414 | 2350008 | 2379868 | 2240707 | 2109458 | 1974430 |
| 28  | 2012951 | 1965958 | 1965096 | 1939538 | 2005826 | 2082643 | 2202930 | 2359935 | 2377288 | 2236086 | 2106164 | 1969686 |
| 29  | 2011787 | 1963661 | 1962372 | 1939254 | ---     | 2087241 | 2206140 | 2368914 | 2374552 | 2231774 | 2102132 | 1965670 |
| 30  | 2011204 | 1968538 | 1959361 | 1938685 | ---     | 2092151 | 2208280 | 2374391 | 2371654 | 2226850 | 2098113 | 1961654 |
| 31  | 2010185 | ---     | 1955214 | 1938685 | ---     | 2096025 | ---     | 2379868 | ---     | 2220857 | 2094090 | ---     |
| a   | 2341.64 | 2338.76 | 2337.83 | 2336.67 | 2341.34 | 2347.47 | 2354.90 | 2365.85 | 2365.34 | 2355.72 | 2347.34 | 2338.28 |
| b   | -67115  | -41647  | -13324  | -16529  | +67141  | +90199  | +112255 | +171588 | -8214   | -150797 | -126767 | -132436 |
| MAX | 2073888 | 2009316 | 1998854 | 1948080 | 2005826 | 2096025 | 2208280 | 2379868 | 2396535 | 2368269 | 2216100 | 2090216 |
| MIN | 2010185 | 1963661 | 1955214 | 1905930 | 1934711 | 2013388 | 2099601 | 2213185 | 2371654 | 2220857 | 2094090 | 1961654 |

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11525430 JUDGE FRANCIS CARR POWERPLANT NEAR FRENCH GULCH, CA

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

PERIOD OF RECORD.—April 1963 to current year.

GAGE.—Recorded powerplant output.

REMARKS.—Water is diverted from Trinity River at NW 1/4 SE 1/4 sec.8, T.33 N., R.8 W., through a tunnel to powerplant and then into Whiskeytown Lake (station 11371700). See schematic diagram of Klamath River and Trinity River Basins.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 4,000 ft<sup>3</sup>/s, Oct. 18, 1987; no flow for many days most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN    | JUL    | AUG   | SEP   |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|
| 1     | 952   | 331   | 0     | 2820  | 1035  | 1651  | 0     | 2024  | 1869   | 2310   | 2243  | 1833  |
| 2     | 967   | 301   | 0     | 3227  | 296   | 1652  | 0     | 2164  | 2023   | 2301   | 2165  | 2093  |
| 3     | 946   | 292   | 0     | 3327  | 0     | 1685  | 468   | 2163  | 2184   | 2235   | 1966  | 1634  |
| 4     | 972   | 328   | 0     | 2958  | 1686  | 1645  | 504   | 1568  | 1998   | 2289   | 2156  | 1896  |
| 5     | 932   | 355   | 0     | 1714  | 1667  | 1654  | 499   | 1951  | 2099   | 2406   | 2161  | 1877  |
| 6     | 1123  | 299   | 0     | 1708  | 1698  | 1659  | 1015  | 1158  | 1921   | 2376   | 2330  | 1766  |
| 7     | 934   | 307   | 0     | 1143  | 1686  | 1670  | 1018  | 1681  | 2147   | 2271   | 2111  | 1751  |
| 8     | 1089  | 334   | 698   | 1177  | 569   | 1680  | 1033  | 1677  | 2223   | 2451   | 2254  | 1530  |
| 9     | 1055  | 330   | 527   | 1160  | 58    | 1602  | 936   | 1549  | 1976   | 2405   | 1869  | 1472  |
| 10    | 986   | 328   | 0     | 1162  | 0     | 1626  | 988   | 1494  | 2023   | 2381   | 1909  | 1676  |
| 11    | 1007  | 334   | 0     | 1143  | 0     | 1496  | 1002  | 1164  | 2188   | 2401   | 2083  | 1725  |
| 12    | 945   | 300   | 0     | 1287  | 281   | 1695  | 892   | 617   | 2247   | 2520   | 2332  | 1940  |
| 13    | 1037  | 324   | 0     | 983   | 0     | 1633  | 837   | 642   | 2035   | 2380   | 1547  | 1699  |
| 14    | 943   | 300   | 2     | 1134  | 0     | 1636  | 857   | 759   | 2040   | 2454   | 1120  | 1748  |
| 15    | 671   | 300   | 677   | 1148  | 0     | 1647  | 1406  | 803   | 1877   | 2293   | 1768  | 1317  |
| 16    | 746   | 1348  | 1214  | 1134  | 0     | 1250  | 949   | 992   | 2024   | 2395   | 1716  | 1735  |
| 17    | 753   | 3146  | 1310  | 1108  | 0     | 1621  | 844   | 874   | 2058   | 2342   | 1685  | 1740  |
| 18    | 813   | 3113  | 1194  | 1121  | 0     | 1634  | 993   | 852   | 2211   | 2537   | 1169  | 1961  |
| 19    | 748   | 3134  | 1178  | 1269  | 0     | 538   | 1567  | 1034  | 2370   | 2480   | 1367  | 1871  |
| 20    | 758   | 3149  | 1366  | 1652  | 1012  | 505   | 1282  | 1075  | 2089   | 2535   | 1324  | 1599  |
| 21    | 436   | 3140  | 1068  | 1668  | 1071  | 538   | 1352  | 998   | 1980   | 2359   | 1187  | 1580  |
| 22    | 0     | 3098  | 1007  | 1666  | 1004  | 499   | 2881  | 1053  | 2149   | 2450   | 1179  | 1700  |
| 23    | 743   | 3094  | 957   | 835   | 987   | 505   | 3093  | 1198  | 2115   | 2495   | 1200  | 1781  |
| 24    | 749   | 3114  | 799   | 1001  | 1047  | 214   | 3019  | 1139  | 1796   | 2290   | 1235  | 1930  |
| 25    | 798   | 3115  | 1108  | 1014  | 982   | 500   | 2672  | 1274  | 2486   | 2297   | 1135  | 1842  |
| 26    | 798   | 3130  | 2119  | 1007  | 1681  | 352   | 1549  | 1730  | 2162   | 2328   | 1170  | 1275  |
| 27    | 365   | 3141  | 1151  | 1047  | 1644  | 0     | 1769  | 1713  | 1987   | 1974   | 1294  | 1711  |
| 28    | 327   | 3138  | 1134  | 1008  | 1633  | 10    | 1602  | 1738  | 2270   | 1955   | 1203  | 1779  |
| 29    | 300   | 3117  | 772   | 1001  | ---   | 0     | 1599  | 1462  | 2424   | 1973   | 1230  | 1398  |
| 30    | 300   | 969   | 1111  | 1007  | ---   | 0     | 2309  | 2030  | 2168   | 1999   | 1226  | 1704  |
| 31    | 300   | ---   | 1760  | 970   | ---   | 0     | ---   | 1849  | ---    | 2499   | 892   | ---   |
| TOTAL | 23493 | 47709 | 21152 | 44599 | 20037 | 32797 | 38935 | 42425 | 63139  | 72381  | 50226 | 51563 |
| MEAN  | 758   | 1590  | 682   | 1439  | 716   | 1058  | 1298  | 1369  | 2105   | 2335   | 1620  | 1719  |
| MAX   | 1123  | 3149  | 2119  | 3327  | 1698  | 1695  | 3093  | 2164  | 2486   | 2537   | 2332  | 2093  |
| MIN   | 0     | 292   | 0     | 835   | 0     | 0     | 0     | 617   | 1796   | 1955   | 892   | 1275  |
| AC-FT | 46600 | 94630 | 41950 | 88460 | 39740 | 65050 | 77230 | 84150 | 125200 | 143600 | 99620 | 10230 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 1320 | 842  | 672  | 607  | 798  | 864  | 1191 | 1341 | 1840 | 2371 | 2229 | 2074 |
| MAX  | 3363 | 2158 | 2891 | 2755 | 3223 | 3111 | 3220 | 3513 | 3662 | 3589 | 3236 | 3504 |
| (WY) | 1988 | 1967 | 1979 | 1982 | 1974 | 1974 | 1970 | 1974 | 1969 | 1968 | 1977 | 1988 |
| MIN  | 166  | 18.0 | .16  | .000 | .34  | .000 | .000 | .097 | .63  | 253  | 507  | 415  |
| (WY) | 1994 | 1992 | 1993 | 1986 | 1988 | 1988 | 1978 | 1991 | 1993 | 1978 | 1992 | 1997 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |  |  |  | FOR 1999 WATER YEAR |  |  |  | WATER YEARS 1963 - 1999 |  |  |  |
|--------------------------|------------------------|--|--|--|---------------------|--|--|--|-------------------------|--|--|--|
| ANNUAL TOTAL             | 494360                 |  |  |  | 508456              |  |  |  |                         |  |  |  |
| ANNUAL MEAN              | 1354                   |  |  |  | 1393                |  |  |  | 1360                    |  |  |  |
| HIGHEST ANNUAL MEAN      |                        |  |  |  |                     |  |  |  | 2485                    |  |  |  |
| LOWEST ANNUAL MEAN       |                        |  |  |  |                     |  |  |  | 301                     |  |  |  |
| HIGHEST DAILY MEAN       | 3402                   |  |  |  | Apr 28              |  |  |  | 4000                    |  |  |  |
| LOWEST DAILY MEAN        | 0                      |  |  |  | Jan 1               |  |  |  | 0                       |  |  |  |
| ANNUAL SEVEN-DAY MINIMUM | .00                    |  |  |  | Jan 4               |  |  |  | .00                     |  |  |  |
| ANNUAL RUNOFF (AC-FT)    | 980600                 |  |  |  | 1009000             |  |  |  | 985200                  |  |  |  |
| 10 PERCENT EXCEEDS       | 3130                   |  |  |  | 2390                |  |  |  | 3130                    |  |  |  |
| 50 PERCENT EXCEEDS       | 1010                   |  |  |  | 1350                |  |  |  | 1110                    |  |  |  |
| 90 PERCENT EXCEEDS       | .00                    |  |  |  | 300                 |  |  |  | .00                     |  |  |  |

## 11525500 TRINITY RIVER AT LEWISTON, CA

LOCATION.—Lat 40°43'10", long 122°48'09", in SW 1/4 NW 1/4 sec.17, T.33 N., R.8 W., Trinity County, Hydrologic Unit 18010211, on right bank, 400 ft upstream from Deadwood Creek, 0.8 mi downstream from Lewiston Diversion Dam, and 0.8 mi northeast of Lewiston.

DRAINAGE AREA.—719 mi<sup>2</sup>.

PERIOD OF RECORD.—August 1911 to current year.

CHEMICAL DATA: Water years 1951–81.

WATER TEMPERATURE: Water years 1952–55, 1958–83.

SEDIMENT DATA: Water years 1955–61.

REVISED RECORDS.—WSP 331: 1911–12. WSP 1181: 1949. WSP 1929: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 1,815.95 ft above sea level. See WSP 1929 for history of changes prior to July 7, 1964.

REMARKS.—Records excellent. Flow completely regulated by Clair Engle Lake (station 11525400) beginning in November 1960 and Lewiston Lake, capacity, 14,660 acre-ft, when diversion to Judge Francis Carr Powerplant (station 11525430) began in April 1963. Small diversions above head of Clair Engle Lake for irrigation, power, placer mining, and domestic use between Trinity Dam and station at Lewiston. See schematic diagram of Klamath River and Trinity River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 71,600 ft<sup>3</sup>/s, Dec. 22, 1955, gage height, 27.3 ft, from floodmarks, site and datum then in use; minimum, 23 ft<sup>3</sup>/s, July 30, 1924. Since completion of Trinity Dam in 1960, maximum discharge, 14,400 ft<sup>3</sup>/s, Jan. 18, 1974, gage height, 10.41 ft; minimum daily, 100 ft<sup>3</sup>/s, Apr. 14, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of December 1861 reached a stage of 21.6 ft, from floodmarks, at site 1.1 mi downstream at different datum, discharge not determined.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1     | 552   | 321   | 1050  | 834   | 522   | 543   | 518   | 507   | 956   | 703   | 476   | 489   |
| 2     | 557   | 321   | 1050  | 717   | 524   | 543   | 517   | 515   | 952   | 691   | 473   | 462   |
| 3     | 553   | 321   | 1050  | 623   | 527   | 542   | 516   | 519   | 959   | 697   | 472   | 463   |
| 4     | 549   | 319   | 1040  | 538   | 521   | 541   | 518   | 521   | 959   | 703   | 470   | 465   |
| 5     | 550   | 319   | 1040  | 535   | 523   | 539   | 522   | 518   | 964   | 705   | 470   | 462   |
| 6     | 552   | 320   | 1040  | 535   | 529   | 536   | 514   | 518   | 965   | 701   | 471   | 461   |
| 7     | 551   | 321   | 1040  | 531   | 533   | 537   | 512   | 519   | 963   | 705   | 477   | 464   |
| 8     | 552   | 321   | 1030  | 531   | 529   | 538   | 512   | 519   | 886   | 609   | 476   | 464   |
| 9     | 548   | 320   | 1060  | 530   | 534   | 536   | 510   | 817   | 904   | 589   | 475   | 462   |
| 10    | 551   | 321   | 1060  | 526   | 528   | 535   | 513   | 1170  | 909   | 593   | 478   | 460   |
| 11    | 550   | 321   | 1040  | 529   | 551   | 536   | 511   | 1490  | 892   | 587   | 472   | 462   |
| 12    | 550   | 321   | 1060  | 531   | 558   | 535   | 508   | 1960  | 883   | 597   | 472   | 687   |
| 13    | 553   | 321   | 1090  | 527   | 542   | 536   | 508   | 1980  | 877   | 605   | 475   | 1660  |
| 14    | 552   | 321   | 1080  | 535   | 538   | 541   | 508   | 1970  | 883   | 608   | 474   | 975   |
| 15    | 357   | 323   | 1070  | 531   | 540   | 543   | 510   | 1830  | 869   | 612   | 474   | 460   |
| 16    | 299   | 322   | 1080  | 528   | 545   | 543   | 517   | 1720  | 890   | 621   | 471   | 462   |
| 17    | 300   | 321   | 1080  | 527   | 548   | 543   | 514   | 1650  | 891   | 620   | 472   | 460   |
| 18    | 301   | 323   | 1070  | 532   | 549   | 532   | 518   | 1570  | 797   | 467   | 470   | 464   |
| 19    | 303   | 324   | 1080  | 531   | 548   | 515   | 520   | 1470  | 795   | 475   | 470   | 458   |
| 20    | 307   | 324   | 1060  | 530   | 547   | 516   | 518   | 1470  | 789   | 477   | 474   | 460   |
| 21    | 296   | 321   | 1060  | 532   | 546   | 517   | 519   | 1400  | 794   | 480   | 472   | 457   |
| 22    | 316   | 301   | 1060  | 535   | 541   | 518   | 517   | 1400  | 788   | 485   | 469   | 458   |
| 23    | 324   | 305   | 1060  | 533   | 542   | 509   | 516   | 1250  | 783   | 483   | 473   | 457   |
| 24    | 323   | 314   | 1070  | 527   | 543   | 519   | 518   | 1250  | 793   | 481   | 473   | 459   |
| 25    | 319   | 728   | 1070  | 528   | 543   | 523   | 522   | 1170  | 796   | 482   | 472   | 458   |
| 26    | 319   | 1060  | 1060  | 527   | 547   | 521   | 520   | 1230  | 793   | 479   | 475   | 461   |
| 27    | 309   | 1050  | 1070  | 522   | 545   | 519   | 517   | 1100  | 799   | 480   | 474   | 462   |
| 28    | 310   | 1050  | 1060  | 528   | 545   | 519   | 520   | 1110  | 719   | 474   | 478   | 461   |
| 29    | 322   | 1070  | 1070  | 528   | ---   | 521   | 521   | 971   | 718   | 473   | 476   | 462   |
| 30    | 321   | 1050  | 1060  | 523   | ---   | 524   | 515   | 953   | 704   | 472   | 476   | 460   |
| 31    | 321   | ---   | 910   | 523   | ---   | 524   | ---   | 952   | ---   | 472   | 478   | ---   |
| TOTAL | 13067 | 13674 | 32720 | 17007 | 15088 | 16444 | 15469 | 36019 | 25670 | 17626 | 14678 | 15795 |
| MEAN  | 422   | 456   | 1055  | 549   | 539   | 530   | 516   | 1162  | 856   | 569   | 473   | 526   |
| MAX   | 557   | 1070  | 1090  | 834   | 558   | 543   | 522   | 1980  | 965   | 705   | 478   | 1660  |
| MIN   | 296   | 301   | 910   | 522   | 521   | 509   | 508   | 507   | 704   | 467   | 469   | 457   |
| AC-FT | 25920 | 27120 | 64900 | 33730 | 29930 | 32620 | 30680 | 71440 | 50920 | 34960 | 29110 | 31330 |

11525500 TRINITY RIVER AT LEWISTON, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1960, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB   | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|-------|------|------|------|------|------|------|------|
| MEAN | 302  | 742  | 1257 | 1572 | 2544  | 2653 | 3675 | 3932 | 2131 | 611  | 201  | 158  |
| MAX  | 2174 | 3055 | 5319 | 5734 | 11670 | 6116 | 6986 | 9062 | 6311 | 2579 | 628  | 423  |
| (WY) | 1951 | 1921 | 1956 | 1956 | 1958  | 1941 | 1915 | 1958 | 1915 | 1941 | 1941 | 1912 |
| MIN  | 92.3 | 121  | 147  | 169  | 331   | 519  | 725  | 442  | 115  | 42.7 | 41.0 | 41.1 |
| (WY) | 1918 | 1930 | 1937 | 1937 | 1933  | 1924 | 1924 | 1924 | 1924 | 1924 | 1924 | 1924 |

SUMMARY STATISTICS

WATER YEARS 1912 - 1960

|                          |                   |
|--------------------------|-------------------|
| ANNUAL MEAN              | 1641              |
| HIGHEST ANNUAL MEAN      | 3721 1958         |
| LOWEST ANNUAL MEAN       | 367 1924          |
| HIGHEST DAILY MEAN       | 38700 Dec 22 1955 |
| LOWEST DAILY MEAN        | 28 Jul 30 1924    |
| ANNUAL SEVEN-DAY MINIMUM | 31 Jul 26 1924    |
| INSTANTANEOUS PEAK FLOW  | 71600 Dec 22 1955 |
| INSTANTANEOUS PEAK STAGE | 27.3 Dec 22 1955  |
| ANNUAL RUNOFF (AC-FT)    | 1189000           |
| 10 PERCENT EXCEEDS       | 4310              |
| 50 PERCENT EXCEEDS       | 732               |
| 90 PERCENT EXCEEDS       | 132               |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 286  | 302  | 380  | 632  | 607  | 680  | 759  | 846  | 743  | 376  | 322  | 314  |
| MAX  | 424  | 849  | 2285 | 6525 | 3369 | 5489 | 5029 | 3937 | 5466 | 1096 | 577  | 556  |
| (WY) | 1993 | 1984 | 1984 | 1997 | 1998 | 1983 | 1963 | 1963 | 1998 | 1983 | 1982 | 1998 |
| MIN  | 203  | 220  | 144  | 145  | 145  | 149  | 130  | 149  | 146  | 142  | 139  | 150  |
| (WY) | 1966 | 1971 | 1977 | 1977 | 1977 | 1977 | 1976 | 1976 | 1976 | 1976 | 1976 | 1966 |

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1962 - 1999

|                          |             |             |                   |
|--------------------------|-------------|-------------|-------------------|
| ANNUAL TOTAL             | 682752      | 233257      |                   |
| ANNUAL MEAN              | 1871        | 639         | 520               |
| HIGHEST ANNUAL MEAN      |             |             | 1795 1998         |
| LOWEST ANNUAL MEAN       |             |             | 165 1977          |
| HIGHEST DAILY MEAN       | 6100 Jun 12 | 1980 May 13 | 13800 Jan 19 1974 |
| LOWEST DAILY MEAN        | 296 Oct 21  | 296 Oct 21  | 100 Apr 14 1976   |
| ANNUAL SEVEN-DAY MINIMUM | 303 Oct 16  | 303 Oct 16  | 103 Apr 12 1976   |
| INSTANTANEOUS PEAK FLOW  |             | 2000 May 12 | 14400 Jan 18 1974 |
| INSTANTANEOUS PEAK STAGE |             | 5.72 May 12 | 10.41 Jan 18 1974 |
| ANNUAL RUNOFF (AC-FT)    | 1354000     | 462700      | 376600            |
| 10 PERCENT EXCEEDS       | 5670        | 1060        | 705               |
| 50 PERCENT EXCEEDS       | 1010        | 529         | 302               |
| 90 PERCENT EXCEEDS       | 316         | 323         | 155               |

## 11525580 LITTLE GRASS VALLEY CREEK NEAR LEWISTON, CA

LOCATION.—Lat 40°39'45", long 122°47'57", in NE 1/4 NW 1/4 sec.5, T.32 N., R.8 W., Trinity County, Hydrologic Unit 18010211, on left bank, 0.2 mi upstream from the confluence with Grass Valley Creek, 0.9 mi west of Buckhorn Station, and 3.1 mi south of Lewiston on State Highway 299.

DRAINAGE AREA.—10.7 mi<sup>2</sup>.

PERIOD OF RECORD.—Water years 1985 to current year.

SEDIMENT DATA: Water years 1985 to current year.

REMARKS.—Zero bed-load observed at flows less than 12 ft<sup>3</sup>/s. Record is collected for hydrologic and sediment-transport correlation studies with Grass Valley Creek at Fawn Lodge, near Lewiston (station 11525600).

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>(MG/L)<br>(80154) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>(T/DAY)<br>(80155) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.125 MM<br>(70332) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.250 MM<br>(70333) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.500 MM<br>(70334) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>1.00 MM<br>(70335) |
|-------|------|---|---|---|--|--|--|--|--|--|
| OCT   |      |   |   |   |  |  |  |  |  |  |
| 02... | 1015 | 5.1   | 10.0  | 1   | .01  | --   | --   | --   | --   | --   |
| NOV   |      |   |   |   |  |  |  |  |  |  |
| 05... | 1340 | 5.4   | 8.5   | 2   | .03  | --   | --   | --   | --   | --   |
| 23... | 1135 | 23  | 9.0   | 232   | 14   | 64   | --   | --   | --   | --   |
| DEC   |      |   |   |   |  |  |  |  |  |  |
| 04... | 1225 | 10  | 5.0   | 9   | .24  | --   | --   | --   | --   | --   |
| JAN   |      |   |   |   |  |  |  |  |  |  |
| 04... | 1445 | 6.4   | 3.5   | 1   | .02  | --   | --   | --   | --   | --   |
| FEB   |      |   |   |   |  |  |  |  |  |  |
| 02... | 0840 | 7.5   | 3.0   | 2   | .04  | --   | --   | --   | --   | --   |
| 25... | 1230 | 24  | 6.0   | 84  | 5.4  | 46   | 56   | 74   | 91   | 100  |
| MAR   |      |   |   |   |  |  |  |  |  |  |
| 25... | 1320 | 43  | 6.5   | 342   | 40   | 50   | 61   | 76   | 93   | 100  |
| MAY   |      |   |   |   |  |  |  |  |  |  |
| 03... | 1145 | 11  | 8.0   | 8   | .24  | 61   | --   | --   | --   | --   |
| JUN   |      |   |   |   |  |  |  |  |  |  |
| 03... | 1040 | 8.0   | 8.5   | 5   | .11  | --   | --   | --   | --   | --   |
| 30... | 1025 | 5.9   | 13.0  | 7   | .11  | --   | --   | --   | --   | --   |
| AUG   |      |   |   |   |  |  |  |  |  |  |
| 11... | 1035 | 3.9   | 13.5  | 3   | .03  | --   | --   | --   | --   | --   |

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | NUMBER<br>OF<br>SAM-<br>PLING<br>POINTS<br>(COUNT)<br>(00063)          | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061)  | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010)                        | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.125 MM<br>(80165) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.250 MM<br>(80166) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.500 MM<br>(80167) |  |
|-------|------|--|--|--|--|--|--|--|
| MAY   |      |  |  |  |  |  |  |  |
| 03... | 1200 | 1  | 11   | 8.0  | --   | 2  | 5  |  |
| 03... | 1205 | 1  | 11   | 8.0  | --   | 2  | 6  |  |
| 03... | 1210 | 1  | 11   | 8.0  | 2  | 13   | 27   |  |
| DATE  | TIME | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>1.00 MM<br>(80168) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>2.00 MM<br>(80169) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>4.00 MM<br>(80170) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>8.00 MM<br>(80171) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>16.0 MM<br>(80172) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>32.0 MM<br>(80173) | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>64.0 MM<br>(80174) |
| MAY   |      |  |  |  |  |  |  |  |
| 03... | 9    | 15   | 22   | 25   | 27   | 50   | 100  |  |
| 03... | 13   | 21   | 30   | 34   | 39   | 83   | 100  |  |
| 03... | 39   | 47   | 58   | 66   | 73   | 87   | 100  |  |

11525580 LITTLE GRASS VALLEY CREEK NEAR LEWISTON, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF BEDLOAD, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME  | SAM-<br>PLING<br>METHOD,<br>CODES<br>(82398)                          | SAMPLER<br>TYPE<br>(CODE)<br>(84164)   | BAG<br>MESH<br>SIZE<br>SAMPLER<br>(MM)<br>(30333)                | TETHER<br>LINE<br>USED IN<br>SAMPLNG<br>(YES=1)<br>(CODE)<br>(04117)      | START-<br>ING<br>TIME<br>(2400<br>HOURS)<br>(82073)                        | END-<br>ING<br>TIME<br>(2400<br>HOURS)<br>(82074)                          | TIME<br>ON BED<br>FOR<br>BED<br>LOAD<br>SAMPLE<br>(SEC)<br>(04120)         | HORI-<br>ZONTAL<br>WIDTH<br>OF<br>VER-<br>TICAL<br>(FEET)<br>(04121)       | COMPSTD<br>SAMPLES<br>IN<br>X-SEC<br>BEDLOAD<br>MEASMNT<br>(NUM)<br>(04118) | VER-<br>TICALS<br>IN<br>COM-<br>POSITE<br>SAMPLE<br>(NUM)<br>(04119)       | NUMBER<br>OF<br>SAM-<br>PLING<br>POINTS<br>(COUNT)<br>(00063)              |
|-------|---|---|--|--|---|--|--|--|--|---|--|--|
| FEB   |   |   |  |  |   |  |  |  |  |   |  |  |
| 25... | 1250  | 1000  | 1120   | .250   | 0   | 1245   | 1255   | 30   | .5   | 2   | 13   | 13   |
| 25... | 1300  | 1000  | 1120   | .250   | 0   | 1255   | 1305   | 30   | .5   | 2   | 13   | 13   |
| MAR   |   |   |  |  |   |  |  |  |  |   |  |  |
| 25... | 1330  | 1000  | 1120   | .250   | 0   | 1320   | 1340   | 30   | .5   | 2   | 19   | 19   |
| 25... | 1345  | 1000  | 1120   | .250   | 0   | 1340   | 1355   | 30   | .5   | 2   | 19   | 19   |
| DATE  | SAMPLE<br>LOC-<br>TION,<br>CROSS<br>SECTION<br>(FT FM<br>L BANK)<br>(00009) | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | DISCH,<br>BEDLOAD<br>AV UNIT<br>FOR COM<br>TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT<br>DIS-<br>CHARGE,<br>BEDLOAD<br>T/D/FT<br>(04122) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>(TONS/<br>DAY)<br>(80225) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.250 MM<br>(80228) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.500 MM<br>(80229) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>1.00 MM<br>(80230) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>2.00 MM<br>(80231) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>4.00 MM<br>(80232)  | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>8.00 MM<br>(80233) | SED.<br>BEDLOAD<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>16.0 MM<br>(80234) |
| FEB   |   |   |  |  |   |  |  |  |  |   |  |  |
| 25... | 1.50  | 24  | 6.0  | 1.20   | 9.2   | 2  | 10   | 42   | 77   | 95  | 100  | --   |
| 25... | 1.50  | 24  | 6.0  | 1.60   | 9.2   | --   | 4  | 23   | 55   | 91  | 100  | --   |
| MAR   |   |   |  |  |   |  |  |  |  |   |  |  |
| 25... | .70   | 43  | 6.5  | 1.10   | 9.2   | 7  | 27   | 52   | 75   | 93  | 99   | 100  |
| 25... | .70   | 43  | 6.5  | .86  | 9.2   | 6  | 26   | 47   | 70   | 92  | 99   | 100  |

## 11525600 GRASS VALLEY CREEK AT FAWN LODGE, NEAR LEWISTON, CA

LOCATION.—Lat 40°40'35", long 122°49'46", in SW 1/4 NE 1/4 sec.36, T.33 N., R.9 W., Trinity County, Hydrologic Unit 18010211, on right bank, 0.1 mi upstream from Phillips Gulch, and 2.5 mi southwest of Lewiston.

DRAINAGE AREA.—30.8 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—November 1975 to current year.

REVISED RECORDS.—WDR CA-86-2: 1983(M). WDR CA-94-2: 1993(P). WDR CA-97-2: 1983(P).

GAGE.—Water-stage recorder. Datum of gage is 2,049.73 ft above sea level (California State Highway Department Benchmark).

REMARKS.—Records fair. Minor regulation by Buckhorn Reservoir since 1990, capacity, 1,090 acre-ft; small pumping diversions upstream from station. See schematic diagram of Klamath River and Trinity River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,500 ft<sup>3</sup>/s, Feb. 28, 1983; gage height, 10.11 ft, from rating curve extended above 700 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily, 3.8 ft<sup>3</sup>/s, July 29, 1994.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 220 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Nov. 30 | 1145 | 240                               | 4.50                | Mar. 25 | 0245 | 359                               | 4.89                |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1     | 20   | 24   | 87   | 31   | 41   | 121  | 105  | 80   | 53   | 26   | 18   | 15   |
| 2     | 20   | 22   | 72   | 31   | 40   | 111  | 101  | 81   | 53   | 26   | 18   | 15   |
| 3     | 20   | 23   | 73   | 31   | 40   | 118  | 96   | 79   | 53   | 25   | 18   | 14   |
| 4     | 20   | 22   | 61   | 31   | 39   | 104  | 92   | 77   | 51   | 26   | 18   | 14   |
| 5     | 20   | 22   | 56   | 31   | 38   | 96   | 92   | 75   | 49   | 26   | 18   | 14   |
| 6     | 20   | 23   | 52   | 30   | 53   | 91   | 88   | 75   | 46   | 25   | 18   | 14   |
| 7     | 19   | 40   | 48   | 30   | 108  | 87   | 85   | 76   | 45   | 24   | 19   | 14   |
| 8     | 20   | 29   | 46   | 29   | 80   | 89   | 91   | 74   | 45   | 24   | 19   | 14   |
| 9     | 20   | 25   | 43   | 29   | 82   | 83   | 84   | 72   | 43   | 23   | 18   | 13   |
| 10    | 20   | 29   | 42   | 29   | 68   | 80   | 86   | 70   | 42   | 23   | 18   | 14   |
| 11    | 20   | 29   | 41   | 29   | 62   | 77   | 88   | 70   | 41   | 22   | 18   | 13   |
| 12    | 20   | 26   | 41   | 29   | 59   | 75   | 86   | 72   | 40   | 22   | 18   | 13   |
| 13    | 21   | 25   | 43   | 28   | 58   | 74   | 87   | 70   | 39   | 21   | 18   | 13   |
| 14    | 21   | 24   | 42   | 29   | 58   | 86   | 88   | 67   | 38   | 21   | 17   | 13   |
| 15    | 21   | 24   | 40   | 33   | 56   | 88   | 87   | 65   | 37   | 21   | 17   | 13   |
| 16    | 21   | 24   | 39   | 34   | 66   | 83   | 87   | 64   | 36   | 21   | 17   | 13   |
| 17    | 20   | 30   | 38   | 39   | 86   | 81   | 90   | 64   | 35   | 21   | 16   | 13   |
| 18    | 20   | 26   | 38   | 53   | 99   | 81   | 92   | 64   | 35   | 20   | 16   | 13   |
| 19    | 20   | 25   | 37   | 44   | 88   | 81   | 93   | 64   | 34   | 20   | 15   | 13   |
| 20    | 20   | 25   | 36   | 52   | 85   | 84   | 93   | 64   | 34   | 20   | 15   | 13   |
| 21    | 20   | 36   | 35   | 55   | 82   | 82   | 90   | 63   | 33   | 20   | 15   | 13   |
| 22    | 20   | 36   | 35   | 59   | 79   | 83   | 88   | 62   | 32   | 20   | 15   | 13   |
| 23    | 20   | 89   | 35   | 78   | 83   | 93   | 86   | 62   | 31   | 19   | 16   | 13   |
| 24    | 30   | 63   | 35   | 58   | 90   | 180  | 85   | 62   | 30   | 19   | 16   | 13   |
| 25    | 24   | 45   | 34   | 53   | 132  | 300  | 86   | 62   | 30   | 19   | 15   | 13   |
| 26    | 21   | 47   | 34   | 50   | 106  | 199  | 87   | 61   | 30   | 19   | 15   | 13   |
| 27    | 21   | 44   | 33   | 46   | 99   | 156  | 86   | 60   | 29   | 18   | 15   | 12   |
| 28    | 21   | 40   | 33   | 44   | 123  | 137  | 82   | 59   | 29   | 18   | 15   | 12   |
| 29    | 21   | 43   | 32   | 43   | ---  | 125  | 80   | 59   | 28   | 18   | 15   | 12   |
| 30    | 21   | 125  | 32   | 42   | ---  | 118  | 79   | 56   | 27   | 18   | 14   | 13   |
| 31    | 23   | ---  | 33   | 45   | ---  | 110  | ---  | 54   | ---  | 18   | 15   | ---  |
| TOTAL | 645  | 1085 | 1346 | 1245 | 2100 | 3373 | 2660 | 2083 | 1148 | 663  | 515  | 398  |
| MEAN  | 20.8 | 36.2 | 43.4 | 40.2 | 75.0 | 109  | 88.7 | 67.2 | 38.3 | 21.4 | 16.6 | 13.3 |
| MAX   | 30   | 125  | 87   | 78   | 132  | 300  | 105  | 81   | 53   | 26   | 19   | 15   |
| MIN   | 19   | 22   | 32   | 28   | 38   | 74   | 79   | 54   | 27   | 18   | 14   | 12   |
| AC-FT | 1280 | 2150 | 2670 | 2470 | 4170 | 6690 | 5280 | 4130 | 2280 | 1320 | 1020 | 789  |



11525600 GRASS VALLEY CREEK AT FAWN LODGE, NEAR LEWISTON, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 12.8 | 23.6 | 42.4 | 76.6 | 103  | 111  | 70.9 | 52.9 | 33.7 | 18.0 | 12.1 | 11.4 |
| MAX  | 20.8 | 70.4 | 220  | 332  | 493  | 531  | 186  | 174  | 121  | 54.1 | 30.6 | 23.0 |
| (WY) | 1999 | 1985 | 1984 | 1995 | 1998 | 1983 | 1983 | 1983 | 1998 | 1998 | 1998 | 1983 |
| MIN  | 6.94 | 8.88 | 8.20 | 10.2 | 9.10 | 13.8 | 12.3 | 15.1 | 9.64 | 5.85 | 4.95 | 6.50 |
| (WY) | 1992 | 1991 | 1991 | 1991 | 1991 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1994 |

SUMMARY STATISTICS FOR 1998 CALENDAR YEAR FOR 1999 WATER YEAR WATER YEARS 1976 - 1999

|                          |       |  |  |       |  |  |       |  |  |            |  |  |
|--------------------------|-------|--|--|-------|--|--|-------|--|--|------------|--|--|
| ANNUAL TOTAL             | 46422 |  |  | 17261 |  |  | 48.2  |  |  | 1983       |  |  |
| ANNUAL MEAN              | 127   |  |  | 47.3  |  |  | 136   |  |  | 1983       |  |  |
| HIGHEST ANNUAL MEAN      |       |  |  |       |  |  | 10.2  |  |  | 1977       |  |  |
| LOWEST ANNUAL MEAN       |       |  |  |       |  |  | 2420  |  |  | Mar 2 1983 |  |  |
| HIGHEST DAILY MEAN       | 1430  |  |  | Feb 6 |  |  | 300   |  |  | Mar 25     |  |  |
| LOWEST DAILY MEAN        | 19    |  |  | Oct 7 |  |  | 12    |  |  | Sep 27     |  |  |
| ANNUAL SEVEN-DAY MINIMUM | 20    |  |  | Oct 1 |  |  | 13    |  |  | Sep 23     |  |  |
| INSTANTANEOUS PEAK FLOW  |       |  |  |       |  |  | 359   |  |  | Mar 25     |  |  |
| INSTANTANEOUS PEAK STAGE |       |  |  |       |  |  | 4.89  |  |  | Mar 25     |  |  |
| ANNUAL RUNOFF (AC-FT)    | 92080 |  |  |       |  |  | 34240 |  |  | 34900      |  |  |
| 10 PERCENT EXCEEDS       | 274   |  |  |       |  |  | 88    |  |  | 103        |  |  |
| 50 PERCENT EXCEEDS       | 65    |  |  |       |  |  | 35    |  |  | 21         |  |  |
| 90 PERCENT EXCEEDS       | 22    |  |  |       |  |  | 15    |  |  | 9.0        |  |  |

## 11525600 GRASS VALLEY CREEK AT FAWN LODGE, NEAR LEWISTON, CA—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1976 to current year.

WATER TEMPERATURE: Water years 1976 to current year.

SEDIMENT DATA: Water years 1976 to current year.

PERIOD OF DAILY RECORD.—November 1975 to current year.

SUSPENDED-SEDIMENT DISCHARGE: November 1975 to current year.

REMARKS.—Sediment samples were collected on most days where a water temperature is published. Zero bed-load observed at flows less than 48 ft<sup>3</sup>/s.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SEDIMENT CONCENTRATION: Maximum daily mean, 9,550 mg/L, Mar. 2, 1983; minimum daily mean, 0 mg/L, several days most years.

SEDIMENT LOAD: Maximum daily, 65,200 tons, Mar. 2, 1983; minimum daily, 0 ton, several days most years.

EXTREMES FOR CURRENT YEAR.—

SEDIMENT CONCENTRATION: Maximum daily mean, 262 mg/L, Nov. 30; minimum daily mean, 1 mg/L, many days during the year.

SEDIMENT LOAD: Maximum daily, 131 tons, Nov. 30; minimum daily, 0.04 ton, Sept. 29, 30.

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-    | TEMPER- | SEDI-   | SEDI-   | SED.    | SED.    | SED.    | SED.    | SED.    | SED.    |
|-------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|       |      | CHARGE, |         | MENT,   | MENT,   | SUSP.   | SUSP.   | SUSP.   | SUSP.   | SUSP.   | SUSP.   |
|       |      | INST.   | ATURE   | MENT,   | DIS-    | SIEVE   | SIEVE   | SIEVE   | SIEVE   | SIEVE   | SIEVE   |
|       |      | CUBIC   | WATER   | CHARGE, | CHARGE, | DIAM.   | DIAM.   | DIAM.   | DIAM.   | DIAM.   | DIAM.   |
|       |      | FEET    | (DEG C) | SUS-    | SUS-    | % FINER | % FINER | % FINER | % FINER | % FINER | % FINER |
|       |      | PER     | (DEG C) | PENDE   | PENDE   | THAN    | THAN    | THAN    | THAN    | THAN    | THAN    |
|       |      | SECOND  | (DEG C) | (MG/L)  | (T/DAY) | .062 MM | .125 MM | .250 MM | .500 MM | 1.00 MM | 2.00 MM |
|       |      | (00061) | (00010) | (80154) | (80155) | (70331) | (70332) | (70333) | (70334) | (70335) | (70336) |
| NOV   |      |         |         |         |         |         |         |         |         |         |         |
| 23... | 0950 | 102     | 8.5     | 184     | 51      | 53      | --      | --      | --      | --      | --      |
| FEB   |      |         |         |         |         |         |         |         |         |         |         |
| 25... | 1000 | 136     | 5.0     | 50      | 18      | 39      | 46      | 66      | 85      | 100     | --      |
| MAR   |      |         |         |         |         |         |         |         |         |         |         |
| 25... | 1135 | 301     | 6.5     | 158     | 128     | 33      | 43      | 58      | 75      | 87      | 100     |
| MAY   |      |         |         |         |         |         |         |         |         |         |         |
| 03... | 0930 | 79      | 8.0     | 4       | .85     | 58      | --      | --      | --      | --      | --      |

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | NUMBER OF SAM-PLING POINTS (COUNT) | DIS-    | TEMPER- | BED     | BED     | BED     |         |         |
|-------|------|------------------------------------|---------|---------|---------|---------|---------|---------|---------|
|       |      |                                    | CHARGE, |         | MAT.    | MAT.    | MAT.    |         |         |
|       |      |                                    | INST.   | ATURE   | SIEVE   | SIEVE   | SIEVE   |         |         |
|       |      |                                    | CUBIC   | WATER   | DIAM.   | DIAM.   | DIAM.   |         |         |
|       |      |                                    | FEET    | (DEG C) | % FINER | % FINER | % FINER |         |         |
|       |      |                                    | PER     | (DEG C) | THAN    | THAN    | THAN    |         |         |
|       |      |                                    | SECOND  | (DEG C) | .125 MM | .250 MM | .500 MM |         |         |
|       |      |                                    | (00063) | (00061) | (00010) | (80165) | (80166) | (80167) |         |
| MAY   |      |                                    |         |         |         |         |         |         |         |
| 03... | 0950 | 1                                  | 81      | 8.0     | 1       | 3       | 7       |         |         |
| 03... | 0955 | 1                                  | 81      | 8.0     | --      | --      | --      |         |         |
| 03... | 1000 | 1                                  | 81      | 8.0     | --      | --      | --      |         |         |
| 03... | 1005 | 1                                  | 81      | 8.0     | --      | --      | 1       |         |         |
| 03... | 1010 | 1                                  | 79      | 8.0     | --      | 1       | 3       |         |         |
|       |      |                                    | BED     | BED     | BED     | BED     | BED     |         |         |
|       |      |                                    | MAT.    | MAT.    | MAT.    | MAT.    | MAT.    |         |         |
|       |      |                                    | SIEVE   | SIEVE   | SIEVE   | SIEVE   | SIEVE   |         |         |
|       |      |                                    | DIAM.   | DIAM.   | DIAM.   | DIAM.   | DIAM.   |         |         |
|       |      |                                    | % FINER | % FINER | % FINER | % FINER | % FINER |         |         |
|       |      |                                    | THAN    | THAN    | THAN    | THAN    | THAN    |         |         |
|       |      |                                    | 1.00 MM | 2.00 MM | 4.00 MM | 8.00 MM | 16.0 MM | 32.0 MM |         |
|       |      |                                    | (80168) | (80169) | (80170) | (80171) | (80172) | (80173) | (80174) |
| MAY   |      |                                    |         |         |         |         |         |         |         |
| 03... | 17   | 29                                 | 41      | 45      | 49      | 69      | 100     |         |         |
| 03... | --   | --                                 | 1       | 1       | 2       | 4       | 100     |         |         |
| 03... | 1    | 2                                  | 4       | 6       | 8       | 19      | 100     |         |         |
| 03... | 2    | 5                                  | 13      | 18      | 30      | 50      | 100     |         |         |
| 03... | 10   | 17                                 | 27      | 31      | 35      | 43      | 100     |         |         |

11525600 GRASS VALLEY CREEK AT FAWN LODGE, NEAR LEWISTON, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF BEDLOAD, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME                                    | SAM-<br>PLING<br>METHOD,<br>CODES<br>(82398)                          | SAMPLER<br>TYPE<br>(CODE)<br>(84164)                      | BAG<br>MESH<br>SIZE<br>SAMPLER<br>(MM)<br>(30333)                                | TETHER<br>LINE<br>USED IN<br>SAMPLNG<br>(YES=1)<br>(CODE)<br>(84117)     | START-<br>ING<br>TIME<br>(2400<br>HOURS)<br>(82073)      | END-<br>ING<br>TIME<br>(2400<br>HOURS)<br>(82074)        | TIME<br>ON BED<br>FOR<br>BED<br>LOAD<br>SAMPLE<br>(SEC)<br>(04120) | HORI-<br>ZONTAL<br>WIDTH<br>OF<br>VER-<br>TICAL<br>(FEET)<br>(04121) | COMPSTD<br>SAMPLES<br>IN<br>X-SEC<br>BEDLOAD<br>MEASMNT<br>(NUM)<br>(04118) | VER-<br>TICALS<br>IN<br>COM-<br>POSITE<br>SAMPLE<br>(NUM)<br>(04119) | NUMBER<br>OF<br>SAM-<br>PLING<br>POINTS<br>(COUNT)<br>(00063) |
|-------|---|---|---|--|--|--|--|--|--|---|--|---|
| FEB   |   |   |   |  |  |  |  |  |  |   |  |   |
| 25... | 1045                                    | 1000  | 1120  | .250   | 0  | 1040   | 1055   | 30   | 1.0  | 2   | 16   | 16  |
| 25... | 1100                                    | 1000  | 1120  | .250   | 0  | 1055   | 1110   | 30   | 1.0  | 2   | 16   | 16  |
| DATE  | SECTION<br>(FT FM<br>L BANK)<br>(00009) | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | TEMPER-<br>ATURE<br>WATER<br>SAMPLE<br>(DEG C)<br>(00010) | DISCH,<br>BEDLOAD<br>AV UNIT<br>FOR COM<br>POSITE<br>SAMPLE<br>T/D/FT<br>(04122) | SEDI-<br>MENT<br>DIS-<br>CHARGE,<br>BEDLOAD<br>(TONS/<br>DAY)<br>(80225) | SED.<br>BEDLOAD<br>% FINER<br>THAN<br>.250 MM<br>(80228) | SED.<br>BEDLOAD<br>% FINER<br>THAN<br>.500 MM<br>(80229) | SED.<br>BEDLOAD<br>% FINER<br>THAN<br>1.00 MM<br>(80230)           | SED.<br>BEDLOAD<br>% FINER<br>THAN<br>2.00 MM<br>(80231)             | SED.<br>BEDLOAD<br>% FINER<br>THAN<br>4.00 MM<br>(80232)                    | SED.<br>BEDLOAD<br>% FINER<br>THAN<br>8.00 MM<br>(80233)             | SED.<br>BEDLOAD<br>% FINER<br>THAN<br>16.0 MM<br>(80234)      |
| FEB   |   |   |   |  |  |  |  |  |  |   |  |   |
| 25... | 8.00                                    | 134   | 5.0   | .47  | 8.0  | 1  | 5  | 22   | 54   | 90  | 99   | 100   |
| 25... | 8.00                                    | 134   | 5.0   | .53  | 8.0  | --   | 3  | 14   | 42   | 82  | 98   | 100   |

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY INSTANTANEOUS VALUES

| DAY | OCT  | NOV | DEC | JAN | FEB | MAR | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|-----|------|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| 1   | ---  | --- | --- | --- | --- | 7.0 | ---  | ---  | ---  | ---  | ---  | ---  |
| 2   | 11.0 | --- | --- | --- | 3.5 | --- | ---  | ---  | ---  | ---  | ---  | ---  |
| 3   | ---  | --- | --- | --- | --- | 5.0 | 7.0  | 8.0  | 10.0 | ---  | ---  | ---  |
| 4   | ---  | 7.0 | 5.0 | 3.5 | --- | --- | ---  | ---  | ---  | ---  | ---  | ---  |
| 5   | ---  | 8.5 | --- | 3.0 | --- | --- | ---  | 7.0  | ---  | ---  | ---  | ---  |
| 6   | ---  | --- | --- | --- | 4.0 | --- | ---  | ---  | ---  | ---  | ---  | ---  |
| 7   | ---  | --- | --- | 3.5 | 3.5 | --- | ---  | ---  | 13.0 | 17.0 | ---  | ---  |
| 8   | ---  | --- | --- | --- | 4.0 | 4.0 | ---  | ---  | ---  | ---  | ---  | ---  |
| 9   | ---  | --- | --- | --- | 3.5 | --- | ---  | ---  | ---  | ---  | ---  | ---  |
| 10  | ---  | --- | --- | --- | --- | --- | ---  | ---  | ---  | ---  | ---  | 14.0 |
| 11  | ---  | --- | --- | --- | --- | --- | ---  | 14.0 | ---  | 16.0 | 15.0 | ---  |
| 12  | ---  | --- | --- | --- | --- | --- | ---  | ---  | ---  | ---  | 17.5 | ---  |
| 13  | ---  | --- | --- | --- | --- | --- | ---  | ---  | ---  | ---  | ---  | ---  |
| 14  | 9.0  | --- | 5.0 | --- | --- | --- | ---  | 12.0 | ---  | ---  | ---  | ---  |
| 15  | ---  | --- | --- | 6.0 | --- | --- | ---  | ---  | ---  | ---  | ---  | ---  |
| 16  | ---  | --- | --- | --- | 4.0 | --- | ---  | ---  | ---  | ---  | ---  | ---  |
| 17  | ---  | --- | --- | --- | 6.0 | --- | ---  | ---  | ---  | ---  | ---  | ---  |
| 18  | ---  | --- | --- | 6.0 | 5.0 | --- | ---  | ---  | ---  | 16.0 | ---  | ---  |
| 19  | ---  | --- | 3.5 | --- | --- | --- | ---  | ---  | ---  | ---  | ---  | ---  |
| 20  | ---  | --- | --- | 5.0 | --- | --- | ---  | ---  | ---  | ---  | ---  | ---  |
| 21  | ---  | --- | --- | --- | --- | --- | ---  | ---  | ---  | 17.0 | ---  | ---  |
| 22  | ---  | --- | --- | 5.5 | --- | --- | ---  | ---  | ---  | ---  | ---  | ---  |
| 23  | ---  | 8.5 | --- | --- | 7.0 | 8.0 | ---  | ---  | ---  | ---  | ---  | 17.5 |
| 24  | ---  | --- | --- | --- | --- | --- | ---  | 18.0 | ---  | ---  | ---  | ---  |
| 25  | ---  | --- | --- | --- | 5.0 | 6.5 | ---  | ---  | ---  | ---  | ---  | ---  |
| 26  | 8.5  | --- | --- | --- | --- | --- | ---  | ---  | ---  | ---  | ---  | ---  |
| 27  | ---  | --- | 4.0 | --- | --- | --- | ---  | ---  | ---  | 18.0 | ---  | ---  |
| 28  | ---  | --- | --- | 4.0 | --- | --- | ---  | ---  | 18.0 | ---  | ---  | ---  |
| 29  | ---  | --- | --- | --- | --- | --- | 12.0 | ---  | ---  | ---  | ---  | ---  |
| 30  | ---  | --- | --- | --- | --- | --- | ---  | ---  | 15.0 | ---  | ---  | ---  |
| 31  | ---  | --- | --- | --- | --- | --- | ---  | ---  | ---  | 18.0 | ---  | ---  |

## 11525600 GRASS VALLEY CREEK AT FAWN LODGE, NEAR LEWISTON, CA—Continued

## SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY   | MEAN               | MEAN                    | SEDIMENT                | MEAN               | MEAN                    | SEDIMENT                | MEAN               | MEAN                    | SEDIMENT                |  |
|-------|--------------------|-------------------------|-------------------------|--------------------|-------------------------|-------------------------|--------------------|-------------------------|-------------------------|--|
|       | DISCHARGE<br>(CFS) | CONCENTRATION<br>(MG/L) | DISCHARGE<br>(TONS/DAY) | DISCHARGE<br>(CFS) | CONCENTRATION<br>(MG/L) | DISCHARGE<br>(TONS/DAY) | DISCHARGE<br>(CFS) | CONCENTRATION<br>(MG/L) | DISCHARGE<br>(TONS/DAY) |  |
|       |                    | OCTOBER                 |                         |                    | NOVEMBER                |                         |                    | DECEMBER                |                         |  |
| 1     | 20                 | 1                       | .07                     | 24                 | 1                       | .08                     | 87                 | 55                      | 13                      |  |
| 2     | 20                 | 1                       | .07                     | 22                 | 1                       | .07                     | 72                 | 29                      | 5.6                     |  |
| 3     | 20                 | 1                       | .05                     | 23                 | 1                       | .06                     | 73                 | 14                      | 2.9                     |  |
| 4     | 20                 | 1                       | .05                     | 22                 | 1                       | .07                     | 61                 | 7                       | 1.1                     |  |
| 5     | 20                 | 1                       | .05                     | 22                 | 1                       | .08                     | 56                 | 5                       | .73                     |  |
| 6     | 20                 | 1                       | .05                     | 23                 | 2                       | .10                     | 52                 | 4                       | .56                     |  |
| 7     | 19                 | 1                       | .05                     | 40                 | 14                      | 1.8                     | 48                 | 3                       | .43                     |  |
| 8     | 20                 | 1                       | .05                     | 29                 | 2                       | .20                     | 46                 | 3                       | .34                     |  |
| 9     | 20                 | 1                       | .05                     | 25                 | 1                       | .07                     | 43                 | 2                       | .26                     |  |
| 10    | 20                 | 1                       | .05                     | 29                 | 1                       | .10                     | 42                 | 2                       | .20                     |  |
| 11    | 20                 | 1                       | .05                     | 29                 | 1                       | .09                     | 41                 | 1                       | .15                     |  |
| 12    | 20                 | 1                       | .05                     | 26                 | 1                       | .07                     | 41                 | 1                       | .12                     |  |
| 13    | 21                 | 1                       | .06                     | 25                 | 1                       | .07                     | 43                 | 2                       | .25                     |  |
| 14    | 21                 | 1                       | .06                     | 24                 | 1                       | .06                     | 42                 | 2                       | .26                     |  |
| 15    | 21                 | 1                       | .06                     | 24                 | 1                       | .06                     | 40                 | 2                       | .22                     |  |
| 16    | 21                 | 1                       | .06                     | 24                 | 1                       | .07                     | 39                 | 2                       | .21                     |  |
| 17    | 20                 | 1                       | .07                     | 30                 | 1                       | .12                     | 38                 | 2                       | .21                     |  |
| 18    | 20                 | 1                       | .07                     | 26                 | 1                       | .07                     | 38                 | 2                       | .20                     |  |
| 19    | 20                 | 1                       | .08                     | 25                 | 1                       | .07                     | 37                 | 2                       | .20                     |  |
| 20    | 20                 | 2                       | .08                     | 25                 | 1                       | .07                     | 36                 | 2                       | .20                     |  |
| 21    | 20                 | 2                       | .09                     | 36                 | 6                       | .79                     | 35                 | 2                       | .19                     |  |
| 22    | 20                 | 2                       | .09                     | 36                 | 2                       | .25                     | 35                 | 2                       | .19                     |  |
| 23    | 20                 | 2                       | .10                     | 89                 | 154                     | 48                      | 35                 | 2                       | .19                     |  |
| 24    | 30                 | 3                       | .25                     | 63                 | 30                      | 5.8                     | 35                 | 2                       | .19                     |  |
| 25    | 24                 | 2                       | .13                     | 45                 | 4                       | .53                     | 34                 | 2                       | .18                     |  |
| 26    | 21                 | 2                       | .11                     | 47                 | 4                       | .49                     | 34                 | 2                       | .18                     |  |
| 27    | 21                 | 2                       | .10                     | 44                 | 2                       | .21                     | 33                 | 2                       | .18                     |  |
| 28    | 21                 | 2                       | .10                     | 40                 | 1                       | .15                     | 33                 | 2                       | .16                     |  |
| 29    | 21                 | 2                       | .09                     | 43                 | 1                       | .13                     | 32                 | 2                       | .15                     |  |
| 30    | 21                 | 1                       | .08                     | 125                | 262                     | 131                     | 32                 | 2                       | .14                     |  |
| 31    | 23                 | 1                       | .08                     | ---                | ---                     | ---                     | 33                 | 1                       | .13                     |  |
| TOTAL | 645                | ---                     | 2.40                    | 1085               | ---                     | 190.73                  | 1346               | ---                     | 29.02                   |  |
|       |                    | JANUARY                 |                         |                    | FEBRUARY                |                         |                    | MARCH                   |                         |  |
| 1     | 31                 | 1                       | .11                     | 41                 | 3                       | .30                     | 121                | 40                      | 13                      |  |
| 2     | 31                 | 1                       | .10                     | 40                 | 2                       | .22                     | 111                | 21                      | 6.4                     |  |
| 3     | 31                 | 1                       | .09                     | 40                 | 2                       | .21                     | 118                | 20                      | 6.4                     |  |
| 4     | 31                 | 1                       | .08                     | 39                 | 2                       | .21                     | 104                | 12                      | 3.3                     |  |
| 5     | 31                 | 1                       | .08                     | 38                 | 2                       | .21                     | 96                 | 9                       | 2.3                     |  |
| 6     | 30                 | 1                       | .08                     | 53                 | 10                      | 1.6                     | 91                 | 7                       | 1.8                     |  |
| 7     | 30                 | 1                       | .08                     | 108                | 122                     | 41                      | 87                 | 6                       | 1.4                     |  |
| 8     | 29                 | 1                       | .08                     | 80                 | 33                      | 7.3                     | 89                 | 15                      | 3.7                     |  |
| 9     | 29                 | 1                       | .08                     | 82                 | 38                      | 8.7                     | 83                 | 17                      | 3.7                     |  |
| 10    | 29                 | 1                       | .08                     | 68                 | 19                      | 3.5                     | 80                 | 14                      | 3.0                     |  |
| 11    | 29                 | 1                       | .08                     | 62                 | 18                      | 3.0                     | 77                 | 11                      | 2.4                     |  |
| 12    | 29                 | 1                       | .08                     | 59                 | 15                      | 2.5                     | 75                 | 9                       | 1.7                     |  |
| 13    | 28                 | 1                       | .08                     | 58                 | 12                      | 1.9                     | 74                 | 6                       | 1.3                     |  |
| 14    | 29                 | 1                       | .09                     | 58                 | 10                      | 1.6                     | 86                 | 23                      | 5.9                     |  |
| 15    | 33                 | 2                       | .16                     | 56                 | 10                      | 1.5                     | 88                 | 16                      | 3.9                     |  |
| 16    | 34                 | 1                       | .13                     | 66                 | 17                      | 3.4                     | 83                 | 10                      | 2.2                     |  |
| 17    | 39                 | 3                       | .37                     | 86                 | 28                      | 6.8                     | 81                 | 9                       | 1.9                     |  |
| 18    | 53                 | 10                      | 1.5                     | 99                 | 69                      | 21                      | 81                 | 8                       | 1.8                     |  |
| 19    | 44                 | 6                       | .66                     | 88                 | 25                      | 6.1                     | 81                 | 6                       | 1.4                     |  |
| 20    | 52                 | 13                      | 2.1                     | 85                 | 25                      | 6.1                     | 84                 | 5                       | 1.1                     |  |
| 21    | 55                 | 14                      | 2.1                     | 82                 | 14                      | 3.1                     | 82                 | 4                       | .97                     |  |
| 22    | 59                 | 44                      | 9.6                     | 79                 | 10                      | 2.1                     | 83                 | 5                       | 1.1                     |  |
| 23    | 78                 | 49                      | 11                      | 83                 | 12                      | 2.7                     | 93                 | 11                      | 2.8                     |  |
| 24    | 58                 | 7                       | 1.1                     | 90                 | 28                      | 8.1                     | 180                | 100                     | 62                      |  |
| 25    | 53                 | 3                       | .45                     | 132                | 67                      | 26                      | 300                | 155                     | 130                     |  |
| 26    | 50                 | 2                       | .27                     | 106                | 23                      | 6.7                     | 199                | 63                      | 35                      |  |
| 27    | 46                 | 2                       | .25                     | 99                 | 14                      | 3.8                     | 156                | 46                      | 19                      |  |
| 28    | 44                 | 2                       | .24                     | 123                | 33                      | 12                      | 137                | 41                      | 15                      |  |
| 29    | 43                 | 2                       | .28                     | ---                | ---                     | ---                     | 125                | 37                      | 13                      |  |
| 30    | 42                 | 2                       | .23                     | ---                | ---                     | ---                     | 118                | 34                      | 11                      |  |
| 31    | 45                 | 3                       | .40                     | ---                | ---                     | ---                     | 110                | 30                      | 9.0                     |  |
| TOTAL | 1245               | ---                     | 31.98                   | 2100               | ---                     | 181.65                  | 3373               | ---                     | 367.47                  |  |

11525600 GRASS VALLEY CREEK AT FAWN LODGE, NEAR LEWISTON, CA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY   | MEAN            | MEAN                 | SEDIMENT DISCHARGE (TONS/DAY) | MEAN            | MEAN                 | SEDIMENT DISCHARGE (TONS/DAY) | MEAN            | MEAN                 | SEDIMENT DISCHARGE (TONS/DAY) |           |  |  |
|-------|-----------------|----------------------|-------------------------------|-----------------|----------------------|-------------------------------|-----------------|----------------------|-------------------------------|-----------|--|--|
|       | DISCHARGE (CFS) | CONCENTRATION (MG/L) |                               | DISCHARGE (CFS) | CONCENTRATION (MG/L) |                               | DISCHARGE (CFS) | CONCENTRATION (MG/L) |                               |           |  |  |
|       |                 | APRIL                |                               |                 |                      | MAY                           |                 |                      |                               | JUNE      |  |  |
| 1     | 105             | 27                   | 7.6                           | 80              | 5                    | 1.1                           | 53              | 3                    | .49                           |           |  |  |
| 2     | 101             | 24                   | 6.4                           | 81              | 4                    | .97                           | 53              | 3                    | .46                           |           |  |  |
| 3     | 96              | 21                   | 5.5                           | 79              | 4                    | .90                           | 53              | 3                    | .43                           |           |  |  |
| 4     | 92              | 19                   | 4.8                           | 77              | 5                    | 1.0                           | 51              | 3                    | .37                           |           |  |  |
| 5     | 92              | 18                   | 4.5                           | 75              | 6                    | 1.2                           | 49              | 2                    | .32                           |           |  |  |
| 6     | 88              | 17                   | 4.0                           | 75              | 5                    | 1.1                           | 46              | 2                    | .28                           |           |  |  |
| 7     | 85              | 16                   | 3.7                           | 76              | 5                    | .98                           | 45              | 2                    | .25                           |           |  |  |
| 8     | 91              | 35                   | 8.6                           | 74              | 4                    | .85                           | 45              | 2                    | .25                           |           |  |  |
| 9     | 84              | 19                   | 4.4                           | 72              | 4                    | .74                           | 43              | 2                    | .25                           |           |  |  |
| 10    | 86              | 18                   | 4.3                           | 70              | 3                    | .65                           | 42              | 2                    | .25                           |           |  |  |
| 11    | 88              | 17                   | 4.1                           | 70              | 3                    | .59                           | 41              | 2                    | .25                           |           |  |  |
| 12    | 86              | 16                   | 3.8                           | 72              | 4                    | .73                           | 40              | 2                    | .25                           |           |  |  |
| 13    | 87              | 15                   | 3.6                           | 70              | 5                    | .95                           | 39              | 2                    | .25                           |           |  |  |
| 14    | 88              | 15                   | 3.4                           | 67              | 7                    | 1.2                           | 38              | 3                    | .25                           |           |  |  |
| 15    | 87              | 14                   | 3.2                           | 65              | 7                    | 1.2                           | 37              | 3                    | .26                           |           |  |  |
| 16    | 87              | 13                   | 3.0                           | 64              | 7                    | 1.2                           | 36              | 3                    | .26                           |           |  |  |
| 17    | 90              | 12                   | 3.0                           | 64              | 7                    | 1.2                           | 35              | 3                    | .26                           |           |  |  |
| 18    | 92              | 12                   | 2.9                           | 64              | 7                    | 1.1                           | 35              | 3                    | .27                           |           |  |  |
| 19    | 93              | 11                   | 2.7                           | 64              | 7                    | 1.1                           | 34              | 3                    | .27                           |           |  |  |
| 20    | 93              | 10                   | 2.6                           | 64              | 6                    | 1.1                           | 34              | 3                    | .28                           |           |  |  |
| 21    | 90              | 10                   | 2.4                           | 63              | 6                    | 1.1                           | 33              | 3                    | .28                           |           |  |  |
| 22    | 88              | 9                    | 2.2                           | 62              | 6                    | 1.0                           | 32              | 3                    | .28                           |           |  |  |
| 23    | 86              | 9                    | 2.0                           | 62              | 6                    | 1.0                           | 31              | 3                    | .28                           |           |  |  |
| 24    | 85              | 8                    | 1.9                           | 62              | 6                    | 1.0                           | 30              | 3                    | .28                           |           |  |  |
| 25    | 86              | 8                    | 1.8                           | 62              | 6                    | .95                           | 30              | 4                    | .29                           |           |  |  |
| 26    | 87              | 7                    | 1.7                           | 61              | 5                    | .87                           | 30              | 4                    | .30                           |           |  |  |
| 27    | 86              | 7                    | 1.6                           | 60              | 5                    | .80                           | 29              | 4                    | .30                           |           |  |  |
| 28    | 82              | 6                    | 1.4                           | 59              | 5                    | .73                           | 29              | 4                    | .31                           |           |  |  |
| 29    | 80              | 6                    | 1.3                           | 59              | 4                    | .68                           | 28              | 4                    | .30                           |           |  |  |
| 30    | 79              | 6                    | 1.2                           | 56              | 4                    | .60                           | 27              | 3                    | .20                           |           |  |  |
| 31    | ---             | ---                  | ---                           | 54              | 4                    | .54                           | ---             | ---                  | ---                           |           |  |  |
| TOTAL | 2660            | ---                  | 103.6                         | 2083            | ---                  | 29.13                         | 1148            | ---                  | 8.77                          |           |  |  |
|       |                 | JULY                 |                               |                 |                      | AUGUST                        |                 |                      |                               | SEPTEMBER |  |  |
| 1     | 26              | 2                    | .16                           | 18              | 3                    | .13                           | 15              | 3                    | .13                           |           |  |  |
| 2     | 26              | 3                    | .18                           | 18              | 2                    | .12                           | 15              | 3                    | .13                           |           |  |  |
| 3     | 25              | 3                    | .20                           | 18              | 2                    | .11                           | 14              | 3                    | .13                           |           |  |  |
| 4     | 26              | 3                    | .23                           | 18              | 2                    | .10                           | 14              | 3                    | .14                           |           |  |  |
| 5     | 26              | 4                    | .26                           | 18              | 2                    | .09                           | 14              | 4                    | .14                           |           |  |  |
| 6     | 25              | 4                    | .29                           | 18              | 2                    | .08                           | 14              | 4                    | .14                           |           |  |  |
| 7     | 24              | 5                    | .32                           | 19              | 1                    | .08                           | 14              | 4                    | .14                           |           |  |  |
| 8     | 24              | 5                    | .35                           | 19              | 1                    | .07                           | 14              | 4                    | .14                           |           |  |  |
| 9     | 23              | 6                    | .37                           | 18              | 1                    | .06                           | 13              | 4                    | .14                           |           |  |  |
| 10    | 23              | 6                    | .40                           | 18              | 1                    | .05                           | 14              | 4                    | .15                           |           |  |  |
| 11    | 22              | 7                    | .41                           | 18              | 2                    | .08                           | 13              | 4                    | .14                           |           |  |  |
| 12    | 22              | 6                    | .36                           | 18              | 2                    | .10                           | 13              | 4                    | .14                           |           |  |  |
| 13    | 21              | 5                    | .31                           | 18              | 2                    | .10                           | 13              | 4                    | .13                           |           |  |  |
| 14    | 21              | 5                    | .27                           | 17              | 2                    | .10                           | 13              | 4                    | .13                           |           |  |  |
| 15    | 21              | 4                    | .24                           | 17              | 2                    | .10                           | 13              | 4                    | .12                           |           |  |  |
| 16    | 21              | 4                    | .21                           | 17              | 2                    | .10                           | 13              | 4                    | .12                           |           |  |  |
| 17    | 21              | 3                    | .19                           | 16              | 2                    | .10                           | 13              | 3                    | .12                           |           |  |  |
| 18    | 20              | 3                    | .17                           | 16              | 2                    | .10                           | 13              | 3                    | .12                           |           |  |  |
| 19    | 20              | 3                    | .18                           | 15              | 2                    | .10                           | 13              | 3                    | .11                           |           |  |  |
| 20    | 20              | 4                    | .19                           | 15              | 2                    | .10                           | 13              | 3                    | .11                           |           |  |  |
| 21    | 20              | 4                    | .21                           | 15              | 2                    | .10                           | 13              | 3                    | .11                           |           |  |  |
| 22    | 20              | 4                    | .19                           | 15              | 3                    | .10                           | 13              | 3                    | .10                           |           |  |  |
| 23    | 19              | 3                    | .17                           | 16              | 3                    | .11                           | 13              | 3                    | .10                           |           |  |  |
| 24    | 19              | 3                    | .15                           | 16              | 3                    | .12                           | 13              | 3                    | .09                           |           |  |  |
| 25    | 19              | 3                    | .13                           | 15              | 3                    | .11                           | 13              | 2                    | .08                           |           |  |  |
| 26    | 19              | 2                    | .12                           | 15              | 3                    | .11                           | 13              | 2                    | .07                           |           |  |  |
| 27    | 18              | 2                    | .10                           | 15              | 3                    | .11                           | 12              | 2                    | .06                           |           |  |  |
| 28    | 18              | 2                    | .10                           | 15              | 3                    | .12                           | 12              | 1                    | .05                           |           |  |  |
| 29    | 18              | 2                    | .12                           | 15              | 3                    | .12                           | 12              | 1                    | .04                           |           |  |  |
| 30    | 18              | 3                    | .13                           | 14              | 3                    | .12                           | 13              | 1                    | .04                           |           |  |  |
| 31    | 18              | 3                    | .14                           | 15              | 3                    | .12                           | ---             | ---                  | ---                           |           |  |  |
| TOTAL | 663             | ---                  | 6.85                          | 515             | ---                  | 3.11                          | 398             | ---                  | 3.36                          |           |  |  |
| YEAR  | 17261           |                      | 958.07                        |                 |                      |                               |                 |                      |                               |           |  |  |

11525600 GRASS VALLEY CREEK AT FAWN LODGE, NEAR LEWISTON, CA—Continued

## SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| MONTH         | WATER<br>DISCHARGE<br>CFS-DAYS | SUSPENDED<br>SEDIMENT<br>DISCHARGE<br>TONS | BEDLOAD<br>DISCHARGE<br>TONS | TOTAL<br>SEDIMENT<br>DISCHARGE<br>TONS |
|---------------|--------------------------------|--|------------------------------|--|
| OCTOBER 1998  | 645.00                         | 2.40                                       | 0                            | 2                                      |
| NOVEMBER .... | 1085.00                        | 190.73                                     | 18                           | 209                                    |
| DECEMBER .... | 1346.00                        | 29.02                                      | 1                            | 30                                     |
| JANUARY 1999  | 1245.00                        | 31.98                                      | 0                            | 32                                     |
| FEBRUARY .... | 2100.00                        | 181.65                                     | 13                           | 195                                    |
| MARCH .....   | 3373.00                        | 367.47                                     | 394                          | 761                                    |
| APRIL .....   | 2660.00                        | 103.60                                     | 9                            | 113                                    |
| MAY .....     | 2083.00                        | 29.13                                      | 1                            | 30                                     |
| JUNE .....    | 1148.00                        | 8.77                                       | 0                            | 9                                      |
| JULY .....    | 663.00                         | 6.85                                       | 0                            | 7                                      |
| AUGUST .....  | 515.00                         | 3.11                                       | 0                            | 3                                      |
| SEPTEMBER ... | 398.00                         | 3.36                                       | 0                            | 3                                      |
| TOTAL .....   | 17261.00                       | 958.07                                     | 436                          | 1394                                   |

11527000 TRINITY RIVER NEAR BURNT RANCH, CA

LOCATION.—Lat 40°47'20", long 123°26'20", in S 1/2 sec.19, T.5 N., R.7 E., Trinity County, Hydrologic Unit 18010211, Trinity National Forest, on left bank, 500 ft upstream from Cedar Flat Creek, 700 ft upstream from highway bridge at Cedar Flat, and 2.3 mi southeast of town of Burnt Ranch.

DRAINAGE AREA.—1,439 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1931 to September 1940, October 1956 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

REVISED RECORDS.—WDR CA-78-2: 1975(M). WSP 1929: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 944.05 ft above sea level. Oct. 1, 1931, to Jan. 19, 1940, at site 2 mi upstream at different datum.

REMARKS.—Records fair. Flow regulated since November 1960 by Clair Engle Lake (station 11525400), 64 mi upstream, and by transbasin diversion to Judge Francis Carr Powerplant (station 11525430) since April 1963. Small diversions upstream from station for irrigation. See schematic diagram of Klamath River and Trinity River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 81,500 ft<sup>3</sup>/s, Feb. 25, 1958, gage height, 30.50 ft, from rating curve extended above 40,000 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 43.2 ft; minimum, 82 ft<sup>3</sup>/s, Aug. 31, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 22, 1955, reached a stage of 43.2 ft, from floodmarks, discharge, 172,000 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 12,000 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|------|------|--------------------------------|------------------|
| Nov. 23 | 1800 | 8,370                          | 10.82            |      |      |                                |                  |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC    | JAN    | FEB    | MAR    | APR    | MAY    | JUN    | JUL   | AUG   | SEP   |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| 1     | 667   | 550   | 4960   | 1550   | 1850   | 7270   | 2890   | 2800   | 2830   | 1580  | 707   | 619   |
| 2     | 667   | 548   | 4510   | 1440   | 1730   | 5990   | 2720   | 3030   | 2570   | 1500  | 708   | 623   |
| 3     | 670   | 534   | 6260   | 1330   | 1680   | 5840   | 2600   | 2840   | 2290   | 1330  | 705   | 598   |
| 4     | 667   | 533   | 4480   | 1230   | 1640   | 5160   | 2480   | 2540   | 2120   | 1240  | 702   | 593   |
| 5     | 666   | 536   | 3530   | 1140   | 1590   | 4520   | 2430   | 2340   | 2220   | 1210  | 701   | 591   |
| 6     | 662   | 541   | 2990   | 1120   | 1850   | 4040   | 2340   | 2460   | 2320   | 1210  | 706   | 588   |
| 7     | 657   | 661   | 2620   | 1110   | 4440   | 3650   | 2230   | 2700   | 2120   | 1250  | 706   | 587   |
| 8     | 657   | 743   | 2410   | 1080   | 5040   | 3460   | 2260   | 2520   | 2000   | 1180  | 700   | 584   |
| 9     | 660   | 617   | 2220   | 1070   | 4640   | 3310   | 2170   | 2450   | 1910   | 1100  | 681   | 581   |
| 10    | 658   | 610   | 2140   | 1060   | 3920   | 3010   | 2210   | 2700   | 1900   | 1130  | 673   | 579   |
| 11    | 662   | 688   | 2100   | 1050   | 3300   | 2820   | 2270   | 3060   | 1950   | 1150  | 683   | 579   |
| 12    | 660   | 629   | 2090   | 1040   | 2950   | 2670   | 2350   | 3680   | 2010   | 1150  | 676   | 578   |
| 13    | 685   | 605   | 2450   | 1030   | 2730   | 2580   | 2650   | 3820   | 2080   | 1190  | 670   | 984   |
| 14    | 689   | 609   | 2580   | 1020   | 2800   | 2680   | 3100   | 3640   | 2170   | 1190  | 666   | 1460  |
| 15    | 670   | 613   | 2410   | 1690   | 2670   | 3060   | 3450   | 3400   | 2270   | 1080  | 662   | 859   |
| 16    | 532   | 693   | 2310   | 2260   | 2930   | 3050   | 3770   | 3200   | 2240   | 1020  | 651   | 593   |
| 17    | 485   | 840   | 2360   | 2260   | 4680   | 3100   | 4300   | 3140   | 2140   | 976   | 638   | 580   |
| 18    | 479   | 808   | 2380   | 4850   | 5050   | 3230   | 4680   | 3330   | 2020   | 930   | 634   | 575   |
| 19    | 476   | 693   | 2250   | 3710   | 5630   | 3350   | 4640   | 3380   | 1830   | 805   | 629   | 575   |
| 20    | 471   | 660   | 2160   | 3760   | 4720   | 3530   | 4350   | 3450   | 1820   | 797   | 627   | 568   |
| 21    | 471   | 3170  | 1990   | 4470   | 4490   | 3460   | 3930   | 3400   | 1820   | 789   | 626   | 570   |
| 22    | 460   | 3540  | 1920   | 4120   | 4060   | 3280   | 3550   | 3420   | 1920   | 779   | 625   | 564   |
| 23    | 471   | 4820  | 1860   | 6240   | 4180   | 3250   | 3290   | 3730   | 1910   | 770   | 618   | 564   |
| 24    | 544   | 4640  | 1830   | 4660   | 4590   | 3790   | 3300   | 3860   | 1800   | 765   | 630   | 563   |
| 25    | 619   | 2680  | 1810   | 3690   | 5900   | 5250   | 3490   | 3980   | 1670   | 765   | 633   | 565   |
| 26    | 532   | 3370  | 1780   | 3110   | 5260   | 4930   | 3600   | 3860   | 1550   | 763   | 623   | 563   |
| 27    | 516   | 3640  | 1750   | 2640   | 4690   | 4320   | 3340   | 3870   | 1520   | 761   | 621   | 564   |
| 28    | 506   | 2800  | 1730   | 2330   | 5980   | 3840   | 2970   | 3660   | 1500   | 752   | 624   | 565   |
| 29    | 509   | 2600  | 1700   | 2130   | ---    | 3510   | 2690   | 3230   | 1530   | 735   | 624   | 563   |
| 30    | 514   | 4000  | 1690   | 2000   | ---    | 3300   | 2600   | 2900   | 1570   | 719   | 614   | 568   |
| 31    | 516   | ---   | 1670   | 1960   | ---    | 3130   | ---    | 2780   | ---    | 707   | 614   | ---   |
| TOTAL | 18098 | 47971 | 78940  | 72150  | 104990 | 118380 | 92650  | 99170  | 59600  | 31323 | 20377 | 18943 |
| MEAN  | 584   | 1599  | 2546   | 2327   | 3750   | 3819   | 3088   | 3199   | 1987   | 1010  | 657   | 631   |
| MAX   | 689   | 4820  | 6260   | 6240   | 5980   | 7270   | 4680   | 3980   | 2830   | 1580  | 708   | 1460  |
| MIN   | 460   | 533   | 1670   | 1020   | 1590   | 2580   | 2170   | 2340   | 1500   | 707   | 614   | 563   |
| AC-FT | 35900 | 95150 | 156600 | 143100 | 208200 | 234800 | 183800 | 196700 | 118200 | 62130 | 40420 | 37570 |

## 11527000 TRINITY RIVER NEAR BURNT RANCH, CA—Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1960, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB   | MAR   | APR   | MAY   | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|-------|-------|-------|-------|------|------|------|------|
| MEAN | 499  | 1192 | 1654 | 2936 | 5702  | 5569  | 5831  | 5674  | 3161 | 878  | 305  | 241  |
| MAX  | 2732 | 4893 | 6426 | 6192 | 24270 | 10110 | 10090 | 11840 | 7076 | 2362 | 835  | 497  |
| (WY) | 1958 | 1938 | 1938 | 1958 | 1958  | 1938  | 1938  | 1958  | 1958 | 1958 | 1958 | 1958 |
| MIN  | 138  | 209  | 253  | 311  | 831   | 2487  | 3319  | 1955  | 808  | 273  | 123  | 111  |
| (WY) | 1933 | 1937 | 1937 | 1937 | 1937  | 1935  | 1932  | 1939  | 1934 | 1934 | 1939 | 1932 |

## SUMMARY STATISTICS

## WATER YEARS 1932 - 1960

|                          |                   |
|--------------------------|-------------------|
| ANNUAL MEAN              | 2784              |
| HIGHEST ANNUAL MEAN      | 6557 1958         |
| LOWEST ANNUAL MEAN       | 1409 1939         |
| HIGHEST DAILY MEAN       | 65600 Feb 19 1958 |
| LOWEST DAILY MEAN        | 93 Sep 13 1939    |
| ANNUAL SEVEN-DAY MINIMUM | 95 Oct 1 1931     |
| INSTANTANEOUS PEAK FLOW  | 81500 Feb 25 1958 |
| INSTANTANEOUS PEAK STAGE | 30.50 Feb 25 1958 |
| ANNUAL RUNOFF (AC-FT)    | 2017000           |
| 10 PERCENT EXCEEDS       | 7120              |
| 50 PERCENT EXCEEDS       | 1240              |
| 90 PERCENT EXCEEDS       | 198               |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN   | FEB   | MAR   | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|-------|-------|-------|------|------|------|------|------|------|
| MEAN | 482  | 1106 | 2210 | 3376  | 3265  | 3437  | 2514 | 2218 | 1590 | 746  | 477  | 437  |
| MAX  | 804  | 3570 | 8745 | 12220 | 10190 | 13770 | 8146 | 6343 | 7006 | 1988 | 1087 | 734  |
| (WY) | 1980 | 1974 | 1965 | 1997  | 1983  | 1983  | 1974 | 1983 | 1983 | 1998 | 1983 | 1983 |
| MIN  | 298  | 375  | 274  | 322   | 373   | 512   | 530  | 547  | 449  | 200  | 189  | 230  |
| (WY) | 1965 | 1977 | 1977 | 1977  | 1977  | 1977  | 1977 | 1977 | 1977 | 1977 | 1977 | 1964 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1964 - 1999

|                          |         |         |                                |
|--------------------------|---------|---------|--------------------------------|
| ANNUAL TOTAL             | 1471445 | 762592  |                                |
| ANNUAL MEAN              | 4031    | 2089    | 1815                           |
| HIGHEST ANNUAL MEAN      |         |         | 4816 1983                      |
| LOWEST ANNUAL MEAN       |         |         | 372 1977                       |
| HIGHEST DAILY MEAN       | 29800   | Mar 23  | 7270 Mar 1 53300 Jan 1 1997    |
| LOWEST DAILY MEAN        | 460     | Oct 22  | 460 Oct 22 165 Aug 24 1966     |
| ANNUAL SEVEN-DAY MINIMUM | 473     | Oct 17  | 473 Oct 17 170 Aug 21 1966     |
| INSTANTANEOUS PEAK FLOW  |         |         | 8370 Nov 23 78100 Dec 22 1964  |
| INSTANTANEOUS PEAK STAGE |         |         | 10.82 Nov 23 29.82 Dec 22 1964 |
| ANNUAL RUNOFF (AC-FT)    | 2919000 | 1513000 | 1315000                        |
| 10 PERCENT EXCEEDS       | 8490    | 4140    | 3920                           |
| 50 PERCENT EXCEEDS       | 2900    | 1860    | 986                            |
| 90 PERCENT EXCEEDS       | 661     | 579     | 350                            |



11528700 SOUTH FORK TRINITY RIVER BELOW HYAMPOM, CA

LOCATION.—Lat 40°39'00", long 123°29'35", in NW 1/4 SW 1/4 sec.10, T.3 N., R.6 E., Trinity County, Hydrologic Unit 18010212, Trinity National Forest, on left bank, 0.3 mi downstream from Big Creek, 3.0 mi northwest of Hyampom, and 3.5 mi downstream from Hayfork Creek.

DRAINAGE AREA.—764 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1965 to current year.

SEDIMENT DATA: Water years 1967–70, 1981–82.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 1,211.37 ft above sea level.

REMARKS.—Records good. No regulation or diversion upstream from station. See schematic diagram of Klamath River and Trinity River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 75,000 ft<sup>3</sup>/s, Feb. 17, 1986, gage height, 25.47 ft, from rating curve extended above 15,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; maximum gage height, 28.00 ft, Jan. 26, 1983; minimum daily, 14 ft<sup>3</sup>/s, Aug. 24, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 22, 1964, reached a stage of 30.45 ft, from floodmarks, discharge, 88,000 ft<sup>3</sup>/s, on basis of flood-routing study.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 8,600 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|---------|------|--------------------------------|------------------|
| Nov. 23 | 1930 | 10,200                         | 10.10            | Feb. 7  | 1545 | 13,800                         | 11.71            |
| Nov. 30 | 2045 | 9,450                          | 9.71             | Feb. 18 | 2000 | 11,600                         | 10.77            |
| Jan. 23 | 0615 | 9,500                          | 9.74             | Feb. 28 | 2215 | 13,100                         | 11.41            |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT  | NOV   | DEC    | JAN    | FEB    | MAR    | APR    | MAY   | JUN   | JUL   | AUG  | SEP  |
|-------|------|-------|--------|--------|--------|--------|--------|-------|-------|-------|------|------|
| 1     | 113  | 159   | 6030   | 716    | 1810   | 10800  | 2910   | 1860  | 976   | 349   | 127  | 79   |
| 2     | 107  | 156   | 4740   | 674    | 1630   | 8220   | 2740   | 1910  | 933   | 336   | 121  | 80   |
| 3     | 107  | 152   | 6540   | 649    | 1540   | 8520   | 2620   | 2000  | 923   | 332   | 120  | 81   |
| 4     | 108  | 148   | 4510   | 622    | 1490   | 6940   | 2460   | 1870  | 891   | 333   | 119  | 80   |
| 5     | 109  | 152   | 3240   | 598    | 1430   | 5750   | 2390   | 1740  | 838   | 331   | 118  | 78   |
| 6     | 109  | 167   | 2630   | 581    | 2460   | 4950   | 2310   | 1700  | 790   | 319   | 129  | 76   |
| 7     | 106  | 276   | 2110   | 566    | 10200  | 4320   | 2200   | 1690  | 752   | 303   | 151  | 75   |
| 8     | 104  | 392   | 1910   | 550    | 8340   | 4060   | 2260   | 1610  | 727   | 295   | 151  | 73   |
| 9     | 105  | 296   | 1680   | 528    | 7580   | 3880   | 2130   | 1530  | 705   | 283   | 145  | 72   |
| 10    | 108  | 261   | 1510   | 512    | 5260   | 3460   | 2200   | 1450  | 679   | 270   | 135  | 70   |
| 11    | 109  | 304   | 1400   | 493    | 4130   | 3190   | 2430   | 1430  | 652   | 255   | 133  | 70   |
| 12    | 109  | 282   | 1380   | 480    | 3580   | 2960   | 2730   | 1440  | 632   | 240   | 125  | 69   |
| 13    | 121  | 252   | 1500   | 466    | 3360   | 2820   | 3070   | 1390  | 613   | 222   | 121  | 67   |
| 14    | 121  | 229   | 1620   | 485    | 3370   | 3130   | 3340   | 1320  | 598   | 214   | 119  | 66   |
| 15    | 119  | 221   | 1500   | 704    | 3070   | 3500   | 3520   | 1240  | 586   | 204   | 117  | 64   |
| 16    | 117  | 231   | 1420   | 961    | 3920   | 3370   | 3570   | 1180  | 571   | 198   | 112  | 65   |
| 17    | 116  | 389   | 1360   | 1350   | 8470   | 3300   | 3800   | 1150  | 554   | 197   | 107  | 64   |
| 18    | 116  | 462   | 1300   | 4160   | 8680   | 3290   | 3870   | 1160  | 536   | 197   | 102  | 63   |
| 19    | 116  | 342   | 1220   | 3500   | 8780   | 3360   | 3730   | 1160  | 516   | 193   | 98   | 62   |
| 20    | 114  | 290   | 1170   | 4160   | 6710   | 3600   | 3460   | 1160  | 499   | 189   | 97   | 62   |
| 21    | 109  | 826   | 1040   | 4790   | 6060   | 3510   | 3130   | 1140  | 490   | 182   | 93   | 62   |
| 22    | 106  | 2270  | 939    | 4610   | 5390   | 3310   | 2840   | 1130  | 477   | 177   | 92   | 62   |
| 23    | 104  | 5250  | 910    | 8160   | 6240   | 3180   | 2620   | 1150  | 459   | 172   | 90   | 62   |
| 24    | 153  | 5080  | 871    | 5620   | 6880   | 4640   | 2540   | 1180  | 441   | 169   | 86   | 61   |
| 25    | 228  | 2660  | 888    | 4230   | 8240   | 6800   | 2530   | 1190  | 434   | 163   | 85   | 61   |
| 26    | 207  | 2430  | 853    | 3530   | 6810   | 5600   | 2520   | 1200  | 425   | 158   | 83   | 61   |
| 27    | 171  | 2720  | 807    | 3030   | 6160   | 4600   | 2370   | 1190  | 414   | 151   | 80   | 61   |
| 28    | 157  | 1940  | 783    | 2650   | 9980   | 3900   | 2180   | 1150  | 400   | 146   | 82   | 61   |
| 29    | 147  | 1850  | 748    | 2360   | ---    | 3490   | 1990   | 1100  | 382   | 141   | 81   | 60   |
| 30    | 141  | 5780  | 718    | 2110   | ---    | 3290   | 1880   | 1070  | 364   | 136   | 78   | 61   |
| 31    | 144  | ---   | 749    | 2030   | ---    | 3130   | ---    | 1020  | ---   | 131   | 79   | ---  |
| TOTAL | 3901 | 35967 | 58076  | 65875  | 151570 | 138870 | 82340  | 42510 | 18257 | 6986  | 3376 | 2028 |
| MEAN  | 126  | 1199  | 1873   | 2125   | 5413   | 4480   | 2745   | 1371  | 609   | 225   | 109  | 67.6 |
| MAX   | 228  | 5780  | 6540   | 8160   | 10200  | 10800  | 3870   | 2000  | 976   | 349   | 151  | 81   |
| MIN   | 104  | 148   | 718    | 466    | 1430   | 2820   | 1880   | 1020  | 364   | 131   | 78   | 60   |
| AC-FT | 7740 | 71340 | 115200 | 130700 | 300600 | 275400 | 163300 | 84320 | 36210 | 13860 | 6700 | 4020 |

## 11528700 SOUTH FORK TRINITY RIVER BELOW HYAMPOM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN   | FEB   | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|-------|-------|------|------|------|------|------|------|------|
| MEAN | 124  | 743  | 2021 | 3648  | 3495  | 3453 | 1942 | 1035 | 478  | 186  | 92.2 | 77.4 |
| MAX  | 351  | 3475 | 8338 | 11740 | 12770 | 9027 | 4989 | 2701 | 1660 | 406  | 227  | 185  |
| (WY) | 1980 | 1974 | 1997 | 1970  | 1986  | 1995 | 1982 | 1983 | 1993 | 1998 | 1983 | 1983 |
| MIN  | 27.4 | 72.9 | 86.8 | 144   | 218   | 365  | 224  | 199  | 91.1 | 33.0 | 17.9 | 22.8 |
| (WY) | 1988 | 1988 | 1977 | 1977  | 1977  | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1987 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1966 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 989468                 |        | 609756              |        |                         |             |
| ANNUAL MEAN              | 2711                   |        | 1671                |        | 1433                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 3049                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 131                     |             |
| HIGHEST DAILY MEAN       | 18200                  | Jan 17 | 10800               | Mar 1  | 59200                   | Jan 16 1974 |
| LOWEST DAILY MEAN        | 100                    | Sep 17 | 60                  | Sep 29 | 14                      | Aug 24 1977 |
| ANNUAL SEVEN-DAY MINIMUM | 103                    | Sep 16 | 61                  | Sep 24 | 15                      | Aug 18 1977 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 13800               | Feb 7  | 75000                   | Feb 17 1986 |
| INSTANTANEOUS PEAK STAGE |                        |        | 11.71               | Feb 7  | 28.00                   | Jan 26 1983 |
| ANNUAL RUNOFF (AC-FT)    | 1963000                |        | 1209000             |        | 1038000                 |             |
| 10 PERCENT EXCEEDS       | 8240                   |        | 4550                |        | 3580                    |             |
| 50 PERCENT EXCEEDS       | 1300                   |        | 748                 |        | 415                     |             |
| 90 PERCENT EXCEEDS       | 113                    |        | 84                  |        | 68                      |             |

11530000 TRINITY RIVER AT HOOPA, CA

LOCATION.—Lat 41°03'00", long 123°40'15", in SE 1/4 NW 1/4 sec.25, T.8 N., R.4 E., Humboldt County, Hydrologic Unit 18010211, in Hoopa Valley Indian Reservation, on left bank, 0.1 mi upstream from Supply Creek, 0.1 mi downstream from Hospital Creek, and in the town of Hoopa.

DRAINAGE AREA.—2,853 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1911 to January 1914, October 1916 to September 1918, October 1931 to current year. Monthly discharge only for some periods, published in WSP 1315-B. Published as "near Hoopa" 1931–60.

REVISED RECORDS.—WSP 1565: 1913. WDR CA-77-2: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 274.82 ft above sea level. Prior to October 1931, nonrecording gage at site 0.4 mi upstream at different datum. October 1931 to Dec. 22, 1964, water-stage recorder at site 2.5 mi upstream at datum 31.67 ft higher.

REMARKS.—Records good. Flow regulated since November 1960 by Clair Engle Lake (station 11525400) 84 mi upstream, and by transbasin diversion to Judge Francis Carr Powerplant (station 11525430) since April 1963. Small diversions upstream from station for irrigation. See schematic diagram of Klamath River and Trinity River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 231,000 ft<sup>3</sup>/s, Dec. 22, 1964, gage height, 57.0 ft, present site and datum, from floodmarks, from rating curve extended above 123,000 ft<sup>3</sup>/s; minimum daily, 162 ft<sup>3</sup>/s, Oct. 4, 1931.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 30,000 ft<sup>3</sup>/s, or maximum:

| Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|--------|------|--------------------------------|------------------|------|------|--------------------------------|------------------|
| Mar. 1 | 0445 | 33,400                         | 25.94            |      |      |                                |                  |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

| DAY   | OCT   | NOV    | DEC    | JAN    | FEB    | MAR    | APR    | MAY    | JUN    | JUL    | AUG   | SEP   |
|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| 1     | 959   | 892    | 19300  | 3760   | 6170   | 31000  | 9360   | 7160   | 5370   | 2560   | 1100  | 874   |
| 2     | 950   | 927    | 18000  | 3530   | 5570   | 24200  | 8820   | 7780   | 5070   | 2470   | 1110  | 891   |
| 3     | 949   | 895    | 23200  | 3320   | 5290   | 23300  | 8460   | 8260   | 4680   | 2260   | 1090  | 867   |
| 4     | 954   | 886    | 16400  | 3120   | 5180   | 19900  | 8050   | 7580   | 4400   | 2150   | 1080  | 846   |
| 5     | 949   | 923    | 11700  | 2960   | 4940   | 16700  | 7880   | 6770   | 4370   | 2070   | 1080  | 844   |
| 6     | 931   | 997    | 9390   | 2870   | 6300   | 14400  | 7640   | 6660   | 4450   | 2030   | 1110  | 836   |
| 7     | 924   | 1360   | 7880   | 2800   | 19000  | 12700  | 7280   | 6990   | 4210   | 2030   | 1160  | 831   |
| 8     | 968   | 1910   | 7560   | 2720   | 22200  | 11600  | 7400   | 6680   | 4000   | 2000   | 1160  | 826   |
| 9     | 964   | 1570   | 6790   | 2650   | 19300  | 11300  | 7190   | 6210   | 3810   | 1870   | 1140  | 815   |
| 10    | 949   | 1380   | 6210   | 2600   | 15400  | 10300  | 7130   | 6200   | 3740   | 1850   | 1070  | 805   |
| 11    | 949   | 1650   | 5890   | 2560   | 12400  | 9550   | 7820   | 6500   | 3730   | 1850   | 1070  | 802   |
| 12    | 950   | 1460   | 5960   | 2520   | 10800  | 8880   | 8090   | 7320   | 3780   | 1830   | 1070  | 798   |
| 13    | 1030  | 1290   | 6760   | 2470   | 10000  | 8520   | 8930   | 7650   | 3820   | 1820   | 1040  | 820   |
| 14    | 1050  | 1230   | 7140   | 2500   | 10200  | 9150   | 10200  | 7250   | 3880   | 1830   | 1040  | 1730  |
| 15    | 1010  | 1220   | 6500   | 4160   | 9590   | 10300  | 10900  | 6750   | 3960   | 1720   | 1030  | 1380  |
| 16    | 911   | 1380   | 6030   | 5870   | 10300  | 10100  | 11400  | 6280   | 3930   | 1620   | 1010  | 878   |
| 17    | 755   | 1980   | 5830   | 6490   | 20400  | 9970   | 12300  | 6090   | 3740   | 1570   | 980   | 795   |
| 18    | 735   | 2310   | 5690   | 14600  | 20500  | 10000  | 13100  | 6430   | 3600   | 1540   | 960   | 786   |
| 19    | 726   | 1820   | 5360   | 12900  | 24400  | 10300  | 12800  | 6670   | 3300   | 1400   | 947   | 783   |
| 20    | 716   | 1570   | 5150   | 13400  | 19100  | 10700  | 11900  | 6730   | 3210   | 1330   | 934   | 778   |
| 21    | 710   | 10800  | 4710   | 17000  | 17800  | 10800  | 11000  | 6660   | 3170   | 1310   | 930   | 774   |
| 22    | 700   | 14900  | 4370   | 16200  | 16000  | 10300  | 10100  | 6640   | 3240   | 1290   | 922   | 768   |
| 23    | 685   | 14200  | 4200   | 25400  | 17900  | 9950   | 9300   | 7200   | 3220   | 1280   | 909   | 761   |
| 24    | 862   | 19100  | 4070   | 19400  | 19200  | 11700  | 9130   | 7410   | 3050   | 1260   | 908   | 757   |
| 25    | 1160  | 10300  | 4030   | 14600  | 22300  | 17200  | 9470   | 7680   | 2890   | 1250   | 916   | 756   |
| 26    | 1030  | 9500   | 4000   | 11800  | 20400  | 15600  | 9740   | 7400   | 2740   | 1250   | 900   | 757   |
| 27    | 906   | 10900  | 3910   | 9820   | 18100  | 13300  | 9170   | 7410   | 2640   | 1230   | 890   | 754   |
| 28    | 858   | 8120   | 3890   | 8530   | 24000  | 11600  | 8250   | 7020   | 2580   | 1210   | 894   | 757   |
| 29    | 821   | 7270   | 3820   | 7680   | ---    | 10800  | 7430   | 6290   | 2520   | 1190   | 895   | 755   |
| 30    | 825   | 12500  | 3730   | 7010   | ---    | 10300  | 7030   | 5710   | 2560   | 1160   | 880   | 760   |
| 31    | 825   | ---    | 3880   | 6670   | ---    | 10100  | ---    | 5420   | ---    | 1130   | 872   | ---   |
| TOTAL | 27711 | 145240 | 231350 | 241910 | 412740 | 404520 | 277270 | 212800 | 109660 | 51360  | 31097 | 25584 |
| MEAN  | 894   | 4841   | 7463   | 7804   | 14740  | 13050  | 9242   | 6865   | 3655   | 1657   | 1003  | 853   |
| MAX   | 1160  | 19100  | 23200  | 25400  | 24400  | 31000  | 13100  | 8260   | 5370   | 2560   | 1160  | 1730  |
| MIN   | 685   | 886    | 3730   | 2470   | 4940   | 8520   | 7030   | 5420   | 2520   | 1130   | 872   | 754   |
| AC-FT | 54960 | 288100 | 458900 | 479800 | 818700 | 802400 | 550000 | 422100 | 217500 | 101900 | 61680 | 50750 |

## KLAMATH RIVER BASIN

## 11530000 TRINITY RIVER AT HOOPA, CA—Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1960, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN  | JUL  | AUG  | SEP  |
|------|------|------|-------|-------|-------|-------|-------|-------|------|------|------|------|
| MEAN | 926  | 2578 | 6468  | 9239  | 11830 | 10400 | 10170 | 8663  | 4755 | 1635 | 650  | 508  |
| MAX  | 5405 | 9589 | 28060 | 30140 | 50380 | 26370 | 19320 | 16700 | 9875 | 4265 | 1365 | 1248 |
| (WY) | 1951 | 1938 | 1956  | 1956  | 1958  | 1938  | 1938  | 1938  | 1953 | 1941 | 1953 | 1912 |
| MIN  | 260  | 373  | 531   | 647   | 2433  | 3815  | 4790  | 3000  | 1378 | 466  | 249  | 213  |
| (WY) | 1933 | 1940 | 1937  | 1937  | 1937  | 1955  | 1944  | 1934  | 1934 | 1918 | 1934 | 1934 |

## SUMMARY STATISTICS

## WATER YEARS 1912 - 1960

|                          |                     |
|--------------------------|---------------------|
| ANNUAL MEAN              | 5618                |
| HIGHEST ANNUAL MEAN      | 12270 1958          |
| LOWEST ANNUAL MEAN       | 2630 1934           |
| HIGHEST DAILY MEAN       | 158000 Dec 22 1955  |
| LOWEST DAILY MEAN        | 162 Oct 4 1931      |
| ANNUAL SEVEN-DAY MINIMUM | 164 Oct 1 1931      |
| INSTANTANEOUS PEAK FLOW  | a190000 Dec 22 1955 |
| INSTANTANEOUS PEAK STAGE | 36.90 Dec 22 1955   |
| ANNUAL RUNOFF (AC-FT)    | 4070000             |
| 10 PERCENT EXCEEDS       | 12700               |
| 50 PERCENT EXCEEDS       | 3070                |
| 90 PERCENT EXCEEDS       | 442                 |

a From rating curve extended above 56,000 ft<sup>3</sup>/s.

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

|      | OCT  | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN  | JUL  | AUG  | SEP  |
|------|------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|
| MEAN | 829  | 3151  | 7235  | 11100 | 10200 | 10230 | 6677  | 4636  | 2792 | 1250 | 748  | 662  |
| MAX  | 1805 | 12900 | 29710 | 32090 | 28810 | 32240 | 16040 | 12020 | 9731 | 3233 | 1681 | 1309 |
| (WY) | 1980 | 1974  | 1965  | 1970  | 1986  | 1983  | 1983  | 1983  | 1998 | 1983 | 1983 | 1983 |
| MIN  | 472  | 679   | 529   | 745   | 891   | 1608  | 1325  | 1204  | 746  | 338  | 270  | 336  |
| (WY) | 1988 | 1991  | 1977  | 1977  | 1977  | 1977  | 1977  | 1977  | 1977 | 1977 | 1977 | 1969 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1964 - 1999

|                          |         |         |                                |
|--------------------------|---------|---------|--------------------------------|
| ANNUAL TOTAL             | 3547247 | 2171242 |                                |
| ANNUAL MEAN              | 9718    | 5949    | 4937                           |
| HIGHEST ANNUAL MEAN      |         |         | 11350 1983                     |
| LOWEST ANNUAL MEAN       |         |         | 786 1977                       |
| HIGHEST DAILY MEAN       | 66800   | Mar 23  | 31000 Mar 1 168000 Dec 22 1964 |
| LOWEST DAILY MEAN        | 685     | Oct 23  | 685 Oct 23 244 Aug 23 1977     |
| ANNUAL SEVEN-DAY MINIMUM | 718     | Oct 17  | 718 Oct 17 246 Aug 18 1977     |
| INSTANTANEOUS PEAK FLOW  |         |         | 33400 Mar 1 231000 Dec 22 1964 |
| INSTANTANEOUS PEAK STAGE |         |         | 25.94 Mar 1 57.00 Dec 22 1964  |
| ANNUAL RUNOFF (AC-FT)    | 7036000 | 4307000 | 3577000                        |
| 10 PERCENT EXCEEDS       | 25400   | 14300   | 11500                          |
| 50 PERCENT EXCEEDS       | 6750    | 3930    | 2160                           |
| 90 PERCENT EXCEEDS       | 950     | 865     | 584                            |

11530000 TRINITY RIVER AT HOOPA, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1960–79, 1998 to current year.

WATER TEMPERATURE: Water year 1998 to current year.

SEDIMENT DATA: Water years 1960–79.

PERIOD OF DAILY RECORD.—July 1998 to current year.

WATER TEMPERATURE: July 1998 to current year.

INSTRUMENTATION.—Temperature recorder since July 1998.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 24.5°C, Aug. 4, 13, and 14, 1998; minimum recorded, 2.0°C, Dec. 23, 24, 1998.

EXTREME FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 24.0°C, July, 13; minimum recorded, 2.0°C, Dec. 23, 24.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY   | MAX     | MIN  | MAX      | MIN  | MAX      | MIN | MAX     | MIN | MAX      | MIN | MAX   | MIN |
|-------|---------|------|----------|------|----------|-----|---------|-----|----------|-----|-------|-----|
|       | OCTOBER |      | NOVEMBER |      | DECEMBER |     | JANUARY |     | FEBRUARY |     | MARCH |     |
| 1     | 18.0    | 17.0 | 12.0     | 10.5 | 8.5      | 8.5 | 7.5     | 6.5 | 6.5      | 6.0 | 8.5   | 8.0 |
| 2     | 17.5    | 16.5 | 11.5     | 10.5 | 9.5      | 8.5 | 6.5     | 6.0 | 6.0      | 6.0 | 8.0   | 7.5 |
| 3     | 16.5    | 15.5 | 12.0     | 11.0 | 9.0      | 8.0 | 6.0     | 5.5 | 7.0      | 6.0 | 8.0   | 8.0 |
| 4     | 16.0    | 14.5 | 12.0     | 11.5 | 8.0      | 7.0 | 5.5     | 5.0 | 7.5      | 7.0 | 8.0   | 7.5 |
| 5     | 15.5    | 14.5 | 12.5     | 11.5 | 7.0      | 6.5 | 5.5     | 5.0 | 7.0      | 6.5 | 7.5   | 7.0 |
| 6     | 15.5    | 14.0 | 11.5     | 11.0 | 6.5      | 6.0 | 5.5     | 5.0 | 6.5      | 6.0 | 7.5   | 7.0 |
| 7     | 15.0    | 14.0 | 11.0     | 10.5 | 6.0      | 6.0 | 6.0     | 5.0 | 7.0      | 6.5 | 7.5   | 6.5 |
| 8     | 15.5    | 14.5 | 10.5     | 10.0 | 6.5      | 6.0 | 5.5     | 5.0 | 7.0      | 6.5 | 7.5   | 7.0 |
| 9     | 15.5    | 14.5 | 10.0     | 9.5  | 7.0      | 6.5 | 5.0     | 4.5 | 7.0      | 5.5 | 7.0   | 6.5 |
| 10    | 15.0    | 14.0 | 10.0     | 9.0  | 7.0      | 6.5 | 5.0     | 4.5 | 6.5      | 5.5 | 7.5   | 6.5 |
| 11    | 14.5    | 13.5 | 9.5      | 8.5  | 7.0      | 6.5 | 5.5     | 4.5 | 6.0      | 5.5 | 8.0   | 6.5 |
| 12    | 13.5    | 13.0 | 9.5      | 8.5  | 8.0      | 7.0 | 6.0     | 5.0 | 6.5      | 6.0 | 7.5   | 7.0 |
| 13    | 14.0    | 13.5 | 9.5      | 8.5  | 8.0      | 8.0 | 6.5     | 6.0 | 7.0      | 6.5 | 8.5   | 7.5 |
| 14    | 14.5    | 13.5 | 9.5      | 9.0  | 8.0      | 7.5 | 7.0     | 6.0 | 7.0      | 6.5 | 8.5   | 7.5 |
| 15    | 14.0    | 13.0 | 10.0     | 9.5  | 7.5      | 7.0 | 7.5     | 7.0 | 7.0      | 6.5 | 8.5   | 7.5 |
| 16    | 14.0    | 13.0 | 10.5     | 10.0 | 7.5      | 7.0 | 8.0     | 7.5 | 7.0      | 7.0 | 9.5   | 8.5 |
| 17    | 13.5    | 12.5 | 10.5     | 10.0 | 7.5      | 7.0 | 8.0     | 7.5 | 7.5      | 6.5 | 9.5   | 8.5 |
| 18    | 13.5    | 12.0 | 10.5     | 10.0 | 7.5      | 7.0 | 8.0     | 8.0 | 8.0      | 7.5 | 10.0  | 9.0 |
| 19    | 13.5    | 12.0 | 10.0     | 9.5  | 7.0      | 5.0 | 8.5     | 8.0 | 7.5      | 7.0 | 9.5   | 9.0 |
| 20    | 13.5    | 12.0 | 9.5      | 9.0  | 5.5      | 4.0 | 8.5     | 8.0 | 7.5      | 7.0 | 10.0  | 9.0 |
| 21    | 13.0    | 11.5 | 9.5      | 9.0  | 4.0      | 3.0 | 8.0     | 7.5 | 7.0      | 6.5 | 9.5   | 9.0 |
| 22    | 13.0    | 11.5 | 9.0      | 9.0  | 3.0      | 2.5 | 8.0     | 7.5 | 7.5      | 7.0 | 9.0   | 8.5 |
| 23    | 13.0    | 12.0 | 10.0     | 9.0  | 3.0      | 2.0 | 8.0     | 7.0 | 8.5      | 7.5 | 9.5   | 8.5 |
| 24    | 13.0    | 12.0 | 9.5      | 9.0  | 3.0      | 2.0 | 7.0     | 6.5 | 8.5      | 8.0 | 9.5   | 8.5 |
| 25    | 13.5    | 12.5 | 9.5      | 9.0  | 4.0      | 3.0 | 6.5     | 6.0 | 8.0      | 7.5 | 9.0   | 8.0 |
| 26    | 14.0    | 12.5 | 10.0     | 9.5  | 5.5      | 4.0 | 7.0     | 6.0 | 7.5      | 7.0 | 9.5   | 9.0 |
| 27    | 13.5    | 13.0 | 9.5      | 9.0  | 6.0      | 5.5 | 6.5     | 6.0 | 8.0      | 7.0 | 9.0   | 8.0 |
| 28    | 14.0    | 13.0 | 9.0      | 8.5  | 7.0      | 6.0 | 6.5     | 6.0 | 8.5      | 8.0 | 8.5   | 7.5 |
| 29    | 13.5    | 12.5 | 8.5      | 8.0  | 7.5      | 7.0 | 7.0     | 6.5 | ---      | --- | 8.5   | 8.0 |
| 30    | 12.5    | 11.5 | 8.5      | 7.5  | 7.5      | 7.0 | 7.0     | 6.5 | ---      | --- | 8.0   | 7.0 |
| 31    | 11.5    | 10.5 | ---      | ---  | 8.0      | 7.0 | 7.0     | 6.5 | ---      | --- | 7.0   | 6.0 |
| MONTH | 18.0    | 10.5 | 12.5     | 7.5  | 9.5      | 2.0 | 8.5     | 4.5 | 8.5      | 5.5 | 10.0  | 6.0 |

## 11530000 TRINITY RIVER AT HOOPA, CA—Continued

## TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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

11530500 KLAMATH RIVER NEAR KLAMATH, CA

LOCATION.—Lat 41°30'52", long 123°59'57", in SW 1/4, sec.13, T.13 N., R.2 E., Del Norte County, Hydrologic Unit 18010209, on right bank, 0.2 mi upstream from Turwar Creek, and 2.2 mi southeast of Klamath.

DRAINAGE AREA.—12,100 mi<sup>2</sup>, approximately (not including Lost River or Lower Klamath Lake Basins).

PERIOD OF RECORD.—October 1910 to December 1926 (published as "near Requa"), October 1950 to September 1994, October 1995 to September 1997 (stage only), and October 1997 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

CHEMICAL DATA: Water years 1951–95.

BIOLOGICAL DATA: Water years 1975–81.

SPECIFIC CONDUCTANCE: Water years 1975–81.

WATER TEMPERATURE: Water years 1966–81.

SEDIMENT DATA: Water years 1955–56, 1975–95.

REVISED RECORDS.—WSP 1285: 1951(P). WSP 1445: 1918–20. WDR CA-81-2: 1980.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is sea level. Prior to June 1926, nonrecording gage at site 2.6 mi upstream at different datum. Oct. 1, 1950, to Oct. 2, 1975, water-stage recorder at site 2.6 mi upstream at datum 5.60 ft above sea level.

REMARKS.—Records good except for estimated daily discharges, which are fair. Medium and low flows considerably regulated by reservoirs and powerplants upstream from station and by transbasin diversion (from Trinity River) to Judge Francis Carr Powerplant (station 11525430) since April 1963. Large diversions for irrigation upstream from station. See schematic diagram of Klamath River and Trinity River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 557,000 ft<sup>3</sup>/s, Dec. 23, 1964, gage height, 55.3 ft, former datum, from floodmarks, from rating curve extended above 230,000 ft<sup>3</sup>/s on basis of flood-routing study; minimum daily, 1,310 ft<sup>3</sup>/s, Sept. 4, 1977.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY   | OCT    | NOV     | DEC     | JAN     | FEB     | MAR     | APR     | MAY     | JUN     | JUL    | AUG    | SEP    |
|-------|--------|---------|---------|---------|---------|---------|---------|---------|---------|--------|--------|--------|
| 1     | 4100   | 4830    | 63200   | 18300   | 25800   | 128000  | 35400   | 29500   | 27400   | 11500  | 5280   | 4210   |
| 2     | 4130   | 5110    | 82300   | 17200   | 24000   | 94300   | 34500   | 32400   | 26000   | 11000  | 5220   | 4330   |
| 3     | 4160   | 4900    | 101000  | 16400   | 22900   | 85700   | 33200   | 36500   | 22800   | 10200  | 5180   | 4420   |
| 4     | 4170   | 5060    | 69400   | 15600   | 22700   | 77400   | 32000   | 34300   | 20500   | 9620   | 5160   | 4350   |
| 5     | 4180   | 5270    | 49600   | 15000   | 21900   | 65900   | 31900   | 30100   | 20200   | 9190   | 5060   | 4270   |
| 6     | 4200   | 5800    | 41100   | 14500   | 29400   | 57600   | 31700   | 27800   | 20700   | 8900   | 5000   | 4340   |
| 7     | 4270   | 7610    | 35300   | 14100   | 57300   | 51900   | 29500   | 29000   | 19700   | 8780   | 5230   | 4300   |
| 8     | 4630   | 8390    | 34600   | 13700   | 76400   | 49400   | 29500   | 28600   | 18500   | 8640   | 5340   | 4240   |
| 9     | 4700   | 7390    | 31300   | 13300   | 62200   | 48900   | 29100   | 26800   | 17600   | 8290   | 5250   | 4220   |
| 10    | 4410   | 6430    | 28300   | 13000   | 51500   | 44900   | 28900   | 25500   | 17200   | 8060   | 5090   | 4230   |
| 11    | 4270   | 8110    | 26100   | 12800   | 43400   | 42000   | 31400   | 25000   | 17200   | 8000   | 5010   | 4210   |
| 12    | 4290   | 7420    | 26000   | 12700   | 38600   | 39600   | 30400   | 26600   | 17900   | 7910   | 5090   | 4170   |
| 13    | e4550  | 6630    | 28200   | 12400   | 35700   | 38300   | 31000   | 28100   | 18400   | 7830   | 4910   | 4120   |
| 14    | e4490  | 6280    | 29600   | 12700   | 35400   | 39000   | 33400   | 27200   | 19000   | 7760   | 4810   | 4520   |
| 15    | e4380  | 6350    | 27300   | 22800   | 34400   | 40200   | 36100   | 25600   | 19800   | 7470   | 4750   | 5040   |
| 16    | e4270  | 7540    | 25100   | 29600   | 35500   | 39200   | 38300   | 24000   | 19800   | 7090   | 4680   | 4440   |
| 17    | e4210  | 10400   | 23900   | 32200   | 59200   | 37900   | 41300   | 23500   | 18800   | 6850   | 4590   | 4080   |
| 18    | 4090   | 11200   | 23400   | 60900   | 68800   | 36400   | 45300   | 25700   | 18100   | 6700   | 4500   | 4040   |
| 19    | 4110   | 9340    | 22400   | 58300   | 84500   | 36300   | 46000   | 28400   | 17000   | 6530   | 4430   | 4040   |
| 20    | 4110   | 9240    | 21400   | 57700   | 68200   | 39000   | 44000   | 29100   | 16100   | 6290   | 4400   | 4030   |
| 21    | 4080   | 89500   | 19800   | 69400   | 61800   | 40900   | 41100   | 28500   | 15800   | 6190   | 4350   | 4030   |
| 22    | 4060   | 101000  | 18500   | 69500   | 58700   | 39700   | 38000   | 27500   | 15600   | 6110   | 4310   | 4020   |
| 23    | 4010   | 63100   | 17700   | 108000  | 72200   | 38400   | 35500   | 30200   | 15500   | 6020   | 4270   | 4000   |
| 24    | 4430   | 84200   | 17000   | 84600   | 75500   | 40400   | 35400   | 33700   | 15000   | 5920   | 4260   | 4010   |
| 25    | 5600   | 53900   | 16700   | 61200   | 77100   | 47800   | 38500   | 36600   | 14400   | 5910   | 4290   | 4000   |
| 26    | 5230   | 48500   | 17000   | 49500   | 73500   | 46000   | 40000   | 36300   | 13500   | 5840   | 4310   | 3980   |
| 27    | 4760   | 51600   | 16800   | 42100   | 70100   | 41900   | 38500   | 35600   | 12500   | 5760   | 4270   | 3980   |
| 28    | 4590   | 39900   | 18000   | 37000   | 114000  | 38400   | 35200   | 35300   | 11900   | 5700   | 4220   | 3980   |
| 29    | 4500   | 34900   | 18200   | 33700   | ---     | 36500   | 32000   | 32900   | 11700   | 5600   | 4210   | 3990   |
| 30    | 4450   | 40700   | 17500   | 30600   | ---     | 36300   | 29700   | 30500   | 11700   | 5490   | 4180   | 4000   |
| 31    | 4480   | ---     | 17900   | 28100   | ---     | 36900   | ---     | 27900   | ---     | 5370   | 4160   | ---    |
| TOTAL | 135910 | 750600  | 984600  | 1076900 | 1500700 | 1535100 | 1056800 | 918700  | 530300  | 230520 | 145810 | 125590 |
| MEAN  | 4384   | 25020   | 31760   | 34740   | 53600   | 49520   | 35230   | 29640   | 17680   | 7436   | 4704   | 4186   |
| MAX   | 5600   | 101000  | 101000  | 108000  | 114000  | 128000  | 46000   | 36600   | 27400   | 11500  | 5340   | 5040   |
| MIN   | 4010   | 4830    | 16700   | 12400   | 21900   | 36300   | 28900   | 23500   | 11700   | 5370   | 4160   | 3980   |
| AC-FT | 269600 | 1489000 | 1953000 | 2136000 | 2977000 | 3045000 | 2096000 | 1822000 | 1052000 | 457200 | 289200 | 249100 |

e Estimated.

## KLAMATH RIVER BASIN

## 11530500 KLAMATH RIVER NEAR KLAMATH, CA—Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1962, BY WATER YEAR (WY)

|      | OCT   | NOV   | DEC   | JAN   | FEB    | MAR   | APR   | MAY   | JUN   | JUL   | AUG  | SEP  |
|------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|------|
| MEAN | 4987  | 11130 | 19480 | 27730 | 37540  | 27340 | 27710 | 23170 | 13830 | 5921  | 3383 | 3339 |
| MAX  | 18950 | 30460 | 72580 | 83550 | 123200 | 53280 | 48860 | 37250 | 29580 | 12370 | 5871 | 5107 |
| (WY) | 1951  | 1921  | 1956  | 1953  | 1958   | 1957  | 1952  | 1952  | 1953  | 1953  | 1953 | 1912 |
| MIN  | 2700  | 3502  | 4138  | 7454  | 6263   | 6916  | 6270  | 3975  | 2106  | 1731  | 1567 | 1860 |
| (WY) | 1920  | 1960  | 1960  | 1924  | 1920   | 1924  | 1924  | 1924  | 1924  | 1924  | 1918 | 1918 |

## SUMMARY STATISTICS

## WATER YEARS 1911 - 1962

|                          |                     |
|--------------------------|---------------------|
| ANNUAL MEAN              | 17010               |
| HIGHEST ANNUAL MEAN      | 33360 1958          |
| LOWEST ANNUAL MEAN       | 5156 1924           |
| HIGHEST DAILY MEAN       | 378000 Dec 22 1955  |
| LOWEST DAILY MEAN        | 1340 Jul 31 1924    |
| ANNUAL SEVEN-DAY MINIMUM | 1440 Jul 30 1924    |
| INSTANTANEOUS PEAK FLOW  | a425000 Dec 22 1955 |
| INSTANTANEOUS PEAK STAGE | b49.7 Dec 22 1955   |
| ANNUAL RUNOFF (AC-FT)    | 12320000            |
| 10 PERCENT EXCEEDS       | 37300               |
| 50 PERCENT EXCEEDS       | 10200               |
| 90 PERCENT EXCEEDS       | 2860                |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, BY WATER YEAR (WY)

|      | OCT   | NOV   | DEC   | JAN   | FEB    | MAR   | APR   | MAY   | JUN   | JUL   | AUG  | SEP  |
|------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|------|
| MEAN | 4933  | 15110 | 26720 | 34030 | 34020  | 34790 | 26610 | 19760 | 11480 | 4741  | 3144 | 3262 |
| MAX  | 17830 | 55620 | 87770 | 97760 | 102700 | 82410 | 60400 | 40080 | 30060 | 12220 | 6599 | 5923 |
| (WY) | 1963  | 1974  | 1965  | 1970  | 1986   | 1983  | 1974  | 1983  | 1998  | 1983  | 1983 | 1983 |
| MIN  | 2134  | 3236  | 3942  | 4212  | 4231   | 6954  | 5448  | 5638  | 3630  | 1782  | 1441 | 1977 |
| (WY) | 1995  | 1988  | 1977  | 1977  | 1977   | 1977  | 1977  | 1977  | 1977  | 1977  | 1977 | 1991 |

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1963 - 1999

|                          |          |          |                                  |
|--------------------------|----------|----------|----------------------------------|
| ANNUAL TOTAL             | 11641570 | 8991530  |                                  |
| ANNUAL MEAN              | 31890    | 24630    | 17970                            |
| HIGHEST ANNUAL MEAN      |          |          | 36100 1983                       |
| LOWEST ANNUAL MEAN       |          |          | 4036 1977                        |
| HIGHEST DAILY MEAN       | 209000   | Jan 17   | 128000 Mar 1 420000 Dec 23 1964  |
| LOWEST DAILY MEAN        | 3970     | Sep 1    | 3980 Sep 26 1310 Sep 4 1977      |
| ANNUAL SEVEN-DAY MINIMUM | 4050     | Sep 15   | 3990 Sep 23 1370 Aug 18 1977     |
| INSTANTANEOUS PEAK FLOW  |          |          | 141000 Feb 28 557000 Dec 23 1964 |
| INSTANTANEOUS PEAK STAGE |          |          | 24.68 Feb 28 55.30 Dec 23 1964   |
| ANNUAL RUNOFF (AC-FT)    | 23090000 | 17830000 | 13020000                         |
| 10 PERCENT EXCEEDS       | 72800    | 57400    | 41000                            |
| 50 PERCENT EXCEEDS       | 26400    | 18300    | 9760                             |
| 90 PERCENT EXCEEDS       | 4200     | 4230     | 2830                             |

a From rating curve extended above 140,000 ft<sup>3</sup>/s on basis of flood-routing study.

b From floodmarks, site and datum then in use.



## 11532500 SMITH RIVER NEAR CRESCENT CITY, CA

LOCATION.—Lat 41°47'30", long 124°04'30", in SW 1/4 SW 1/4 sec. 9, T.16 N., R.1 E., Del Norte County, Hydrologic Unit 18010101, Redwood National Park, on right bank opposite mouth of Cedar Creek, 1.6 mi downstream from South Fork, and 7 mi east of Crescent City.

DRAINAGE AREA.—614 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1931 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

REVISED RECORDS.—WSP 1929: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 79.26 ft above sea level. Prior to Oct. 9, 1991, at site 1.1 mi upstream at datum 10.35 ft higher.

REMARKS.—Records good. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 228,000 ft<sup>3</sup>/s, Dec. 22, 1964, gage height, 48.5 ft, from floodmarks, from rating curve extended above 110,000 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 39.51 ft, former site and datum; minimum daily, 160 ft<sup>3</sup>/s, Oct. 24, 25, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Nov. 30, 1926, reached a stage of 41.40 ft at datum 10.35 ft higher, from floodmarks, discharge, 166,000 ft<sup>3</sup>/s from rating extension above 39.51 ft.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 36,000 ft<sup>3</sup>/s, or maximum:

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Nov. 21 | 1130 | 143,000                           | 31.29               | Jan. 22 | 1930 | 43,200                            | 20.52               |
| Dec. 2  | 1300 | 65,500                            | 23.70               | Feb. 28 | 0615 | 65,900                            | 23.75               |

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

| DAY   | OCT   | NOV    | DEC    | JAN    | FEB    | MAR    | APR    | MAY    | JUN   | JUL   | AUG   | SEP   |
|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|
| 1     | 262   | 524    | 16700  | 5230   | 3860   | 22700  | 6200   | 2630   | 2350  | 751   | 394   | 289   |
| 2     | 303   | 504    | 49000  | 4310   | 3570   | 14200  | 5490   | 3560   | 2130  | 724   | 387   | 284   |
| 3     | 325   | 469    | 28300  | 3720   | 3430   | 14400  | 5180   | 8610   | 1880  | 706   | 382   | 278   |
| 4     | 294   | 698    | 14500  | 3270   | 3930   | 12000  | 4650   | 7150   | 1710  | 701   | 379   | 271   |
| 5     | 283   | 1460   | 10100  | 2940   | 4030   | 9300   | 4480   | 5490   | 1750  | 677   | 381   | 268   |
| 6     | 274   | 1420   | 7940   | 2690   | 16800  | 7720   | 4260   | 4750   | 1720  | 654   | 397   | 267   |
| 7     | 281   | 2910   | 7450   | 2490   | 25500  | 6550   | 4270   | 4430   | 1570  | 650   | 425   | 262   |
| 8     | 552   | 3220   | 10200  | 2300   | 16100  | 6320   | 4760   | 3800   | 1470  | 627   | 439   | 260   |
| 9     | 468   | 1940   | 7980   | 2140   | 12500  | 6450   | 4630   | 3360   | 1400  | 603   | 407   | 258   |
| 10    | 396   | 1700   | 6440   | 2020   | 9370   | 5860   | 4920   | 3070   | 1380  | 587   | 386   | 255   |
| 11    | 353   | 3640   | 5740   | 1920   | 7610   | 5280   | 6050   | 2940   | 1370  | 574   | 376   | 250   |
| 12    | 326   | 1980   | 7250   | 1840   | 6510   | 4860   | 5500   | 3150   | 1400  | 555   | 380   | 249   |
| 13    | 659   | 1410   | 7470   | 1740   | 6130   | 4860   | 5590   | 3020   | 1410  | 535   | 377   | 247   |
| 14    | 567   | 1160   | 6390   | 2250   | 6440   | 5820   | 5480   | 2840   | 1420  | 519   | 367   | 247   |
| 15    | 425   | 1690   | 5380   | 10200  | 6120   | 5700   | 5600   | 2670   | 1430  | 505   | 357   | 245   |
| 16    | 363   | 3260   | 4640   | 9850   | 9510   | 5220   | 5720   | 2470   | 1350  | 500   | 347   | 244   |
| 17    | 333   | 4330   | 4170   | 14800  | 19800  | 4810   | 5770   | 2440   | 1290  | 500   | 338   | 242   |
| 18    | 317   | 3900   | 3770   | 22400  | 21800  | 4430   | 5500   | 3540   | 1250  | 491   | 331   | 242   |
| 19    | 305   | 2840   | 3430   | 19400  | 21300  | 4240   | 4940   | 3720   | 1180  | 479   | 331   | 240   |
| 20    | 298   | 6640   | 3180   | 21800  | 13400  | 4170   | 4390   | 3350   | 1120  | 469   | 327   | 239   |
| 21    | 289   | 91200  | 2830   | 20700  | 11400  | 4050   | 4040   | 3050   | 1080  | 468   | 323   | 239   |
| 22    | 284   | 36400  | 2630   | 24700  | 14200  | 3940   | 3640   | 3020   | 1050  | 459   | 315   | 237   |
| 23    | 282   | 26700  | 2460   | 25400  | 31100  | 3850   | 3390   | 3560   | 1020  | 448   | 308   | 234   |
| 24    | 438   | 23700  | 2310   | 14300  | 20900  | 6520   | 3460   | 3650   | 990   | 441   | 309   | 232   |
| 25    | 710   | 16100  | 2670   | 10000  | 19700  | 7550   | 3750   | 3520   | 973   | 443   | 301   | 230   |
| 26    | 506   | 23200  | 4570   | 7730   | 14800  | 5950   | 3660   | 3260   | 905   | 435   | 294   | 226   |
| 27    | 417   | 15600  | 4170   | 6250   | 24200  | 5050   | 3240   | 3100   | 857   | 423   | 288   | 224   |
| 28    | 466   | 10500  | 7970   | 5490   | 50800  | 4500   | 2850   | 2920   | 820   | 415   | 287   | 223   |
| 29    | 446   | 10600  | 6840   | 5290   | ---    | 5840   | 2540   | 2650   | 797   | 410   | 285   | 222   |
| 30    | 391   | 18900  | 4960   | 4790   | ---    | 7150   | 2430   | 2470   | 778   | 405   | 287   | 221   |
| 31    | 387   | ---    | 5610   | 4360   | ---    | 6960   | ---    | 2320   | ---   | 399   | 293   | ---   |
| TOTAL | 12000 | 318595 | 257050 | 266320 | 404810 | 216250 | 136380 | 110510 | 39850 | 16553 | 10798 | 7425  |
| MEAN  | 387   | 10620  | 8292   | 8591   | 14460  | 6976   | 4546   | 3565   | 1328  | 534   | 348   | 248   |
| MAX   | 710   | 91200  | 49000  | 25400  | 50800  | 22700  | 6200   | 8610   | 2350  | 751   | 439   | 289   |
| MIN   | 262   | 469    | 2310   | 1740   | 3430   | 3850   | 2430   | 2320   | 778   | 399   | 285   | 221   |
| AC-FT | 23800 | 631900 | 509900 | 528200 | 802900 | 428900 | 270500 | 219200 | 79040 | 32830 | 21420 | 14730 |

## SMITH RIVER BASIN

## 11532500 SMITH RIVER NEAR CRESCENT CITY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1999, BY WATER YEAR (WY)

|      | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|
| MEAN | 1036  | 4681  | 7592  | 8642  | 7588  | 6566  | 4415  | 2784 | 1289 | 536  | 340  | 337  |
| MAX  | 11770 | 23620 | 21740 | 21930 | 22680 | 15760 | 11960 | 7550 | 3876 | 1217 | 715  | 1471 |
| (WY) | 1951  | 1974  | 1997  | 1953  | 1986  | 1938  | 1982  | 1933 | 1937 | 1947 | 1947 | 1978 |
| MIN  | 185   | 200   | 264   | 767   | 1076  | 1602  | 1406  | 835  | 524  | 336  | 226  | 198  |
| (WY) | 1965  | 1937  | 1977  | 1977  | 1977  | 1988  | 1977  | 1947 | 1987 | 1987 | 1959 | 1939 |

| SUMMARY STATISTICS       | FOR 1998 CALENDAR YEAR |        | FOR 1999 WATER YEAR |        | WATER YEARS 1932 - 1999 |             |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL             | 1867825                |        | 1796541             |        |                         |             |
| ANNUAL MEAN              | 5117                   |        | 4922                |        | 3801                    |             |
| HIGHEST ANNUAL MEAN      |                        |        |                     |        | 7027                    |             |
| LOWEST ANNUAL MEAN       |                        |        |                     |        | 975                     |             |
| HIGHEST DAILY MEAN       | 91200                  | Nov 21 | 91200               | Nov 21 | 180000                  | Dec 22 1964 |
| LOWEST DAILY MEAN        | 254                    | Sep 17 | 221                 | Sep 30 | 160                     | Oct 24 1964 |
| ANNUAL SEVEN-DAY MINIMUM | 261                    | Sep 11 | 225                 | Sep 24 | 163                     | Oct 20 1964 |
| INSTANTANEOUS PEAK FLOW  |                        |        | 143000              | Nov 21 | 228000                  | Dec 22 1964 |
| INSTANTANEOUS PEAK STAGE |                        |        | 31.29               | Nov 21 | 48.50                   | Dec 22 1964 |
| ANNUAL RUNOFF (AC-FT)    | 3705000                |        | 3563000             |        | 2754000                 |             |
| 10 PERCENT EXCEEDS       | 13100                  |        | 13700               |        | 8960                    |             |
| 50 PERCENT EXCEEDS       | 2420                   |        | 2630                |        | 1600                    |             |
| 90 PERCENT EXCEEDS       | 298                    |        | 286                 |        | 267                     |             |

## 11532650 SMITH RIVER NEAR FORT DICK, CA

LOCATION.—Lat 41°52'51", long 124°08'07", in SW 1/4 NW 1/4 sec.12, T.17 N., R.1 W., Del Norte County, Hydrologic Unit 18010101, on right bank, 10 ft upstream from bridge, on U.S. Highway 101, 0.2 mi downstream from Hutsinpillar Creek, and 1.2 mi northeast of Fort Dick.

DRAINAGE AREA.—672 mi<sup>2</sup>.

PERIOD OF RECORD.—October 1989 to current year. Records prior to October 1989 are in files of the California Department of Water Resources.

GAGE.—Water-stage recorder. Datum of gage is sea level.

REMARKS.—Data is collected for flood-warning purposes. Interruptions in record were due to malfunction of the recording instrument.

EXTREMES FOR PERIOD OF RECORD.—Maximum gage height, 34.12 ft, Jan. 8, 1990.

## GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DAY | MAX     |          | MIN      |         | MAX      |       | MIN   |       | MAX   |       | MIN    |           | MAX |  | MIN |  |
|-----|---------|----------|----------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|-----|--|-----|--|
|     | OCTOBER | NOVEMBER | DECEMBER | JANUARY | FEBRUARY | MARCH | APRIL | MAY   | JUNE  | JULY  | AUGUST | SEPTEMBER |     |  |     |  |
| 1   | 12.84   | 12.66    | 13.24    | 13.00   | 20.62    | 18.97 | 16.51 | 16.09 | 15.82 | 15.62 | 23.52  | 20.21     |     |  |     |  |
| 2   | 12.86   | 12.72    | 13.24    | 13.11   | 27.55    | 19.40 | 16.09 | 15.78 | 15.63 | 15.54 | 20.23  | 19.07     |     |  |     |  |
| 3   | 12.85   | 12.78    | 13.13    | 13.07   | 25.72    | 20.37 | 15.78 | 15.52 | 15.56 | 15.44 | 19.56  | 19.28     |     |  |     |  |
| 4   | 12.78   | 12.73    | 13.63    | 13.13   | 20.41    | 18.46 | 15.53 | 15.32 | 15.79 | 15.52 | 19.29  | 18.36     |     |  |     |  |
| 5   | 12.74   | 12.71    | 14.40    | 13.63   | 18.46    | 17.69 | 15.32 | 15.15 | 15.85 | 15.72 | 18.36  | 17.63     |     |  |     |  |
| 6   | 12.72   | 12.70    | 14.41    | 14.05   | 17.70    | 17.07 | 15.15 | 15.02 | 22.51 | 15.85 | 17.65  | 17.13     |     |  |     |  |
| 7   | 12.91   | 12.69    | 15.60    | 14.41   | 17.92    | 16.83 | 15.03 | 14.89 | 23.12 | 20.51 | 17.13  | 16.72     |     |  |     |  |
| 8   | 13.41   | 12.91    | 15.78    | 15.18   | 18.13    | 17.67 | 14.90 | 14.78 | 20.51 | 19.11 | 17.09  | 16.64     |     |  |     |  |
| 9   | 13.40   | 12.99    | 15.18    | 14.39   | 17.68    | 17.00 | 14.78 | 14.69 | 19.11 | 18.04 | 17.07  | 16.80     |     |  |     |  |
| 10  | 13.02   | 12.93    | 14.98    | 14.22   | 17.02    | 16.56 | 14.69 | 14.61 | 18.06 | 17.28 | 16.81  | 16.56     |     |  |     |  |
| 11  | 13.00   | 12.86    | 16.13    | 14.98   | 16.58    | 16.40 | 14.61 | 14.56 | 17.31 | 16.83 | 16.56  | 16.29     |     |  |     |  |
| 12  | 12.97   | 12.80    | 15.10    | 14.43   | 17.13    | 16.55 | 14.57 | 14.49 | 16.83 | 16.48 | 16.30  | 16.17     |     |  |     |  |
| 13  | 13.59   | 12.97    | 14.43    | 14.09   | 17.16    | 16.94 | 14.49 | 14.43 | 16.52 | 16.42 | 16.28  | 16.16     |     |  |     |  |
| 14  | 13.55   | 13.17    | 14.09    | 13.94   | 16.94    | 16.50 | 16.08 | 14.40 | 16.59 | 16.50 | 16.69  | 16.28     |     |  |     |  |
| 15  | 13.17   | 12.99    | 15.33    | 13.93   | 16.52    | 16.17 | 18.98 | 16.08 | 16.51 | 16.36 | 16.69  | 16.48     |     |  |     |  |
| 16  | 12.99   | 12.89    | 15.69    | 15.13   | 16.20    | 15.92 | 18.25 | 17.45 | 19.14 | 16.49 | 16.48  | 16.28     |     |  |     |  |
| 17  | 12.89   | 12.84    | 16.33    | 15.14   | 15.93    | 15.73 | 23.64 | 17.15 | 21.02 | 19.14 | 16.28  | 16.10     |     |  |     |  |
| 18  | 12.85   | 12.81    | 16.17    | 15.63   | 15.74    | 15.55 | 23.50 | 20.00 | 22.70 | 18.88 | 16.10  | 15.93     |     |  |     |  |
| 19  | 12.82   | 12.79    | 15.63    | 15.05   | 15.55    | 15.41 | 21.14 | 19.64 | 22.61 | 19.54 | 15.94  | 15.86     |     |  |     |  |
| 20  | 12.80   | 12.77    | 23.00    | 14.90   | 15.44    | 15.23 | 21.89 | 20.10 | 19.54 | 18.42 | 15.89  | 15.84     |     |  |     |  |
| 21  | 12.78   | 12.75    | 32.69    | 23.00   | 15.24    | 15.08 | ---   | ---   | 18.47 | 17.99 | 15.85  | 15.74     |     |  |     |  |
| 22  | 12.75   | 12.73    | 27.77    | 20.30   | 15.09    | 14.97 | ---   | ---   | 20.79 | 18.00 | 15.79  | 15.70     |     |  |     |  |
| 23  | 12.74   | 12.73    | 23.22    | 19.91   | 14.98    | 14.86 | 24.32 | 20.35 | 24.43 | 20.79 | 15.80  | 15.65     |     |  |     |  |
| 24  | 13.25   | 12.73    | 22.25    | 19.85   | 14.87    | 14.79 | 20.35 | 18.57 | 22.16 | 20.18 | 17.74  | 15.68     |     |  |     |  |
| 25  | 13.49   | 13.25    | 19.87    | 18.73   | 15.28    | 14.80 | 18.57 | 17.62 | 20.97 | 19.99 | 17.74  | 17.04     |     |  |     |  |
| 26  | 13.36   | 13.09    | 22.56    | 18.69   | 16.13    | 15.28 | 17.63 | 16.96 | 20.01 | 18.93 | 17.04  | 16.52     |     |  |     |  |
| 27  | 13.09   | 13.01    | 20.56    | 18.52   | 16.04    | 15.64 | 16.96 | 16.53 | 25.67 | 19.02 | 16.53  | 16.18     |     |  |     |  |
| 28  | 13.15   | 13.03    | 18.52    | 17.42   | 17.44    | 16.04 | 16.53 | 16.36 | 27.95 | 23.52 | 16.19  | 15.98     |     |  |     |  |
| 29  | 13.16   | 13.02    | 18.22    | 17.42   | 17.37    | 16.46 | 16.39 | 16.23 | ---   | ---   | 17.19  | 15.96     |     |  |     |  |
| 30  | 13.02   | 12.93    | 21.54    | 18.12   | 16.47    | 15.99 | 16.24 | 16.02 | ---   | ---   | 17.36  | 17.03     |     |  |     |  |
| 31  | 13.00   | 12.91    | ---      | ---     | 16.63    | 15.98 | 16.03 | 15.82 | ---   | ---   | 17.36  | 17.08     |     |  |     |  |
| 1   | 17.13   | 16.71    | 15.06    | 14.85   | 14.90    | 14.75 | 13.54 | 13.50 | 13.00 | 12.97 | 12.79  | 12.76     |     |  |     |  |
| 2   | 16.71   | 16.44    | 16.29    | 15.05   | 14.76    | 14.61 | 13.51 | 13.47 | 12.99 | 12.96 | 12.79  | 12.71     |     |  |     |  |
| 3   | 16.46   | 16.27    | 18.18    | 16.29   | 14.61    | 14.43 | 13.47 | 13.44 | 12.98 | 12.95 | 12.77  | 12.74     |     |  |     |  |
| 4   | 16.28   | 16.02    | 17.71    | 16.81   | 14.43    | 14.35 | 13.46 | 13.44 | 12.97 | 12.95 | 12.76  | 12.73     |     |  |     |  |
| 5   | 16.11   | 16.01    | 16.81    | 16.25   | 14.45    | 14.34 | 13.45 | 13.41 | 12.97 | 12.95 | 12.75  | 12.72     |     |  |     |  |
| 6   | 16.04   | 15.87    | 16.25    | 16.11   | 14.45    | 14.33 | 13.42 | 13.38 | 13.01 | 12.97 | 12.74  | 12.71     |     |  |     |  |
| 7   | 15.94   | 15.88    | 16.14    | 15.85   | 14.34    | 14.23 | 13.40 | 13.37 | 13.07 | 13.00 | 12.74  | 12.67     |     |  |     |  |
| 8   | 16.24   | 15.93    | 15.86    | 15.60   | 14.24    | 14.16 | 13.39 | 13.34 | 13.08 | 13.05 | 12.72  | 12.68     |     |  |     |  |
| 9   | 16.24   | 16.04    | 15.60    | 15.39   | 14.17    | 14.12 | 13.35 | 13.30 | 13.07 | 13.00 | 12.75  | 12.67     |     |  |     |  |
| 10  | 16.72   | 16.02    | 15.39    | 15.26   | 14.15    | 14.10 | 13.31 | 13.27 | 13.01 | 12.96 | 12.74  | 12.67     |     |  |     |  |
| 11  | 16.87   | 16.55    | 15.27    | 15.22   | 14.14    | 14.08 | 13.30 | 13.26 | 12.98 | 12.95 | 12.71  | 12.67     |     |  |     |  |
| 12  | 16.57   | 16.39    | 15.40    | 15.26   | 14.18    | 14.09 | 13.28 | 13.23 | 12.97 | 12.94 | 12.70  | 12.67     |     |  |     |  |
| 13  | 16.57   | 16.40    | 15.32    | 15.19   | 14.18    | 14.11 | 13.25 | 13.20 | 12.98 | 12.95 | 12.72  | 12.65     |     |  |     |  |
| 14  | 16.52   | 16.34    | 15.20    | 15.16   | 14.18    | 14.10 | 13.22 | 13.18 | 12.96 | 12.92 | 12.69  | 12.67     |     |  |     |  |
| 15  | 16.53   | 16.38    | 15.17    | 15.00   | 14.21    | 14.12 | 13.19 | 13.16 | 12.93 | 12.91 | 12.69  | 12.64     |     |  |     |  |
| 16  | 16.57   | 16.43    | 15.00    | 14.90   | 14.14    | 14.05 | 13.18 | 13.15 | 12.93 | 12.89 | 12.73  | 12.64     |     |  |     |  |
| 17  | 16.59   | 16.40    | 15.01    | 14.88   | 14.08    | 14.03 | 13.19 | 13.15 | 12.90 | 12.87 | 12.73  | 12.64     |     |  |     |  |
| 18  | 16.53   | 16.26    | 15.77    | 15.01   | 14.05    | 13.98 | 13.17 | 13.13 | 12.89 | 12.85 | 12.74  | 12.65     |     |  |     |  |
| 19  | 16.27   | 16.04    | 15.77    | 15.51   | 13.99    | 13.93 | 13.16 | 13.12 | 12.88 | 12.86 | 12.68  | 12.65     |     |  |     |  |
| 20  | 16.04   | 15.82    | 15.53    | 15.35   | 13.94    | 13.90 | 13.15 | 13.11 | 12.88 | 12.84 | 12.67  | 12.61     |     |  |     |  |
| 21  | 15.82   | 15.68    | 15.36    | 15.20   | 13.91    | 13.86 | 13.13 | 13.11 | 12.87 | 12.83 | 12.72  | 12.63     |     |  |     |  |
| 22  | 15.68   | 15.47    | 15.29    | 15.19   | 13.87    | 13.82 | 13.13 | 13.10 | 12.86 | 12.82 | 12.72  | 12.62     |     |  |     |  |
| 23  | 15.48   | 15.37    | 15.60    | 15.28   | 13.83    | 13.79 | 13.11 | 13.08 | 12.84 | 12.81 | 12.71  | 12.61     |     |  |     |  |
| 24  | 15.50   | 15.38    | 15.68    | 15.46   | 13.81    | 13.76 | 13.11 | 13.07 | 12.83 | 12.81 | 12.70  | 12.60     |     |  |     |  |
| 25  | 15.65   | 15.45    | 15.63    | 15.36   | 13.80    | 13.75 | 13.10 | 13.07 | 12.82 | 12.79 | 12.65  | 12.62     |     |  |     |  |
| 26  | 15.62   | 15.47    | 15.48    | 15.24   | 13.75    | 13.66 | 13.09 | 13.05 | 12.80 | 12.78 | 12.65  | 12.61     |     |  |     |  |
| 27  | 15.47   | 15.27    | 15.37    | 15.17   | 13.67    | 13.62 | 13.06 | 13.03 | 12.80 | 12.76 | 12.68  | 12.58     |     |  |     |  |
| 28  | 15.28   | 15.04    | 15.28    | 15.06   | 13.63    | 13.58 | 13.05 | 13.01 | 12.78 | 12.76 | 12.68  | 12.59     |     |  |     |  |
| 29  | 15.04   | 14.89    | 15.11    | 14.93   | 13.59    | 13.55 | 13.03 | 13.01 | 12.78 | 12.76 | 12.63  | 12.60     |     |  |     |  |
| 30  | 14.91   | 14.85    | 15.00    | 14.82   | 13.57    | 13.53 | 13.02 | 13.00 | 12.79 | 12.76 | 12.68  | 12.60     |     |  |     |  |
| 31  | ---     | ---      | 14.86    | 14.76   | ---      | ---   | 13.01 | 12.98 | 12.80 | 12.77 | ---    | ---       |     |  |     |  |

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 U.S. 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.

Special study and miscellaneous sites

Discharge measurements in the following table were made at special study and miscellaneous sites throughout the area covered by this volume.

Discharge measurements made at special study and miscellaneous sites during water year 1999

| Stream.                          | Tributary to  | Location   | Drainage area (mi <sup>2</sup> ) | Measured previously (water year) | Measurements |                                |
|----------------------------------|---------------|--|----------------------------------|----------------------------------|--------------|--------------------------------|
|                                  |               |  |                                  |                                  | Date         | Discharge (ft <sup>3</sup> /s) |
| SALINAS RIVER BASIN              |               |  |                                  |                                  |              |                                |
| 11148500                         | Salinas River | Lat 35°43'02", long 120°38'21", in NW 1/4 NW 1/4 sec.36, T.25 S., R.12 E., San Luis Obispo County, Hydrologic Unit 18060004, on right bank, 0.2 mi downstream from mouth of Ranchito Canyon, and 1.9 mi northwest of Estrella. | 922                              | 1954-98                          | 03-25-1999   | 11.7                           |
| Estrella River near Estrella, CA |               |  | not including Carrizo Plains     |                                  | 04-23-1999   | .87                            |
| 11151870                         | Salinas River | Lat 36°14'15", long 121°28'50", in NE 1/4 SE 1/4 sec.36, T.19 S., R.4 E., Monterey County, Hydrologic Unit 18060005, on right bank, 0.6 mi downstream from Rocky Creek, and 14.5 mi southwest of Greenfield.                   | 113                              | 1962-98                          | 10-16-1998   | 15.6                           |
| Arroyo Seco near Greenfield, CA  |               |  |                                  |                                  | 11-19-1998   | 22.9                           |
|                                  |               |  |                                  |                                  | 12-18-1998   | 32.5                           |
|                                  |               |  |                                  |                                  | 01-15-1999   | 23.3                           |
|                                  |               |  |                                  |                                  | 04-16-1999   | 253                            |
|                                  |               |  |                                  |                                  | 09-21-1999   | 4.27                           |

## Low-flow partial-record stations

Measurements of streamflow in the area covered by this volume made at low-flow partial-record stations are given in the following table. The column headed "Period of record" shows the water years in which measurements were made at the same or practically the same site.

Discharge measurements made at low-flow partial-record stations during water year 1999

| Station No.         | Station name                   | Location  | Drainage area (mi <sup>2</sup> ) | Period of record     | Measurements                     |                                |
|---------------------|--------------------------------|---|----------------------------------|----------------------|----------------------------------|--------------------------------|
|                     |                                |   |                                  |                      | Date                             | Discharge (ft <sup>3</sup> /s) |
| KLAMATH RIVER BASIN |                                |   |                                  |                      |                                  |                                |
| 11525520            | Deadwood Creek at Lewiston, CA | Lat 40°43'02", long 122°48'04", in SW 1/4 NW 1/4 sec.17, T.33 N., R.8 W., Trinity County, 300 ft upstream from mouth and 0.7 mi north-east of Lewiston. | 9.10                             | a1965-75,<br>1976-99 | 11-05-98<br>03-05-99<br>08-06-99 | b3.01<br>33.4<br>b1.77         |

a Published as a miscellaneous measurement.

b Base flow.

## PINE GULCH CREEK BASIN

## 11460170 PINE GULCH CREEK AT BOLINAS, CA—Continued

## 11460170 PINE GULCH CREEK AT BOLINAS, CA

LOCATION.—Lat 37°55'07", long 122°41'31", in Las Baulinas Grant, Marin County, Hydrologic Unit 18050005, on right bank, 100 ft upstream from highway bridge, 0.4 mile upstream from mouth, and 0.9 mile north of Bolinas.

DRAINAGE AREA. 7.83 mi<sup>2</sup>.

PERIOD OF RECORD.—November 1998 to September 1999.

CHEMICAL DATA: November 1998 to September 1999.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061)    | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)<br>(00095)             | PH<br>WATER<br>WHOLE<br>FIELD<br>(STAND-<br>ARD<br>UNITS)<br>(00400)     | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010)                               | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG)<br>(00025)              | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION)<br>(00300)<br>(00301) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)<br>(00300)                           | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION)<br>(00301) | HARD-<br>NESS<br>TOTAL<br>AS<br>CACO3<br>(00900)<br>(00904)                   | HARD-<br>NESS<br>NONCARB<br>DISSOLV<br>FLD. AS<br>CACO3<br>(MG/L)<br>(00904)   | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)<br>(00915)           | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG)<br>(00925)            |
|-------|------|--|--|--|---|--|--|--|---|---|--|---|--|
| NOV   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 23... | 1630 | 12   | 257  | 8.0  | 12.0  | 759  | 10.2   | 95   | 79  | 23  | 15   | 9.9   |  |
| JAN   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 28... | 1500 | 23   | 186  | 7.5  | 8.9   | 768  | 10.6   | 91   | 55  | 21  | 11   | 6.9   |  |
| FEB   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 18... | 1500 | 190  | 118  | 7.5  | 11.2  | --   | --   | --   | 29  | 9   | 5.4  | 3.9   |  |
| MAR   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 25... | 1500 | 48   | 186  | 7.5  | 12.0  | 758  | 12.0   | 112  | 44  | 10  | 8.3  | 5.7   |  |
| MAY   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 20... | 1400 | 3.4  | 232  | 7.6  | 13.5  | 761  | 10.4   | 100  | 64  | 10  | 12   | 8.1   |  |
| JUL   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 30... | 1250 | 1.0  | 273  | 7.8  | 14.9  | 763  | 9.0  | 89   | 78  | 16  | 15   | 10  |  |
| SEP   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 30... | 1150 | .51  | 302  | 7.6  | 14.4  | 760  | 7.5  | 74   | 82  | 11  | 15   | 11  |  |
| DATE  |      | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)<br>(00930)                  | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO<br>(00931)                       | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K)<br>(00935)           | ALKA-<br>LINITY<br>WAT.DIS<br>GRAN T.<br>FIELD<br>CACO3<br>(MG/L)<br>(29802)  | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)<br>(00945)                     | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)<br>(00940)                       | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)<br>(00950)            | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2)<br>(00955)              | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L)<br>(70300) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L)<br>(70301) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT)<br>(70303)    |  |
| NOV   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 23... | 21   | 36   | 1  | 2.0  | 56  | 35   | 20   | .1   | 17  | 183   | 158  | .25   |  |
| JAN   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 28... | 15   | 37   | .9   | 1.1  | 34  | 20   | 16   | .1   | 19  | 124   | 116  | .17   |  |
| FEB   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 18... | 11   | 43   | .8   | 1.1  | 20  | 10   | 12   | <.1  | 17  | 84  | 77   | .11   |  |
| MAR   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 25... | 13   | 38   | .9   | 1.1  | 34  | 16   | 14   | <.1  | 18  | 112   | 98   | .15   |  |
| MAY   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 20... | 18   | 38   | 1  | 1.3  | 54  | 28   | 18   | .1   | 19  | 147   | 140  | .20   |  |
| JUL   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 30... | 13   | 38   | 1  | 1.7  | 62  | 34   | 21   | .1   | 19  | 173   | 162  | .24   |  |
| SEP   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 30... | 25   | 40   | 1  | 1.7  | 71  | 34   | 22   | .2   | 19  | 180   | 172  | .24   |  |
| DATE  |      | NITRO-<br>GEN,<br>NITRITE<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00613) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00631) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00608) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)<br>(00625) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>DIS.<br>(MG/L<br>AS N)<br>(00623) | PHOS-<br>PHORUS<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00665)                       | PHOS-<br>PHORUS<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00666) | PHOS-<br>PHORUS<br>ORTH,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00671)   | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE)<br>(01046)                         | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN)<br>(01056)                | CARBON,<br>ORGANIC<br>DIS-<br>SOLVED<br>(MG/L<br>AS C)<br>(00681) | CARBON,<br>ORGANIC<br>SUS-<br>PENDED<br>TOTAL<br>(MG/L<br>AS C)<br>(00689) |
| NOV   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 23... | <.01 | .36  | .02  | .5   | .2  | .14  | .08  | .07  | 120   | 12  | --   | --  |  |
| JAN   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 28... | .01  | .64  | <.02   | .2   | .1  | .07  | .04  | .05  | 21  | 6   | --   | --  |  |
| FEB   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 18... | <.01 | .43  | <.02   | 1.2  | .2  | .45  | .04  | .03  | 79  | 6   | 3.8  | 2.1   |  |
| MAR   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 25... | <.01 | .33  | <.02   | .3   | .2  | .11  | .04  | .04  | 57  | 4   | --   | --  |  |
| MAY   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 20... | <.01 | .18  | .02  | .1   | .1  | .06  | .06  | .05  | 38  | 5   | --   | --  |  |
| JUL   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 30... | <.01 | .47  | <.02   | .1   | .1  | .07  | .06  | .05  | 44  | 7   | 2.3  | .3  |  |
| SEP   |      |  |  |  |   |  |  |  |   |   |  |   |  |
| 30... | <.01 | .30  | <.02   | .2   | <.1   | .09  | .06  | .05  | 37  | 6   | --   | --  |  |

< Actual value known to be less than value shown.

375159122343801 REDWOOD CREEK AT BIG LAGOON BRIDGE, NEAR MUIR BEACH, CA

LOCATION.—Lat 37°51'59", long 122°34'38", in Point Reyes National Seashore, Marin County, Hydrologic Unit 18050005, downstream from Big Lagoon Bridge at Shoreline Highway.

DRAINAGE AREA.—Not determined.

PERIOD OF RECORD.— November 1998 to September 1999.

CHEMICAL DATA: November 1998 to September 1999.

SEDIMENT DATA: November 1998 to September 1999.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE | TIME | DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061) | SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095) | PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400) | TEMPER-ATURE WATER (DEG C) (00010) | BARO-METRIC PRES-SURE (MM OF HG) (00025) | OXYGEN, DIS-SOLVED (MG/L) (00300) | OXYGEN, (PER-CENT SATUR-ATION) (00301) | HARD-NESS TOTAL (MG/L CAC03) (00900) | HARD-NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L) (00904) | CALCIUM DIS-SOLVED (MG/L AS CA) (00915) | MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925) |
|------|------|---|---|--|------------------------------------|--|-----------------------------------|--|--------------------------------------|--|---|---|
|------|------|---|---|--|------------------------------------|--|-----------------------------------|--|--------------------------------------|--|---|---|

|     |       |      |      |     |     |      |     |      |     |    |    |     |     |
|-----|-------|------|------|-----|-----|------|-----|------|-----|----|----|-----|-----|
| NOV | 23... | 1440 | 21   | 237 | 7.7 | 12.1 | 759 | 9.9  | 92  | 90 | 8  | 14  | 13  |
| JAN | 28... | 1200 | 19   | 184 | 7.6 | 8.1  | 768 | 10.8 | 91  | 67 | 15 | 11  | 9.9 |
| MAR | 25... | 1600 | 46   | 199 | 7.7 | 12.0 | 758 | 11.9 | 111 | 58 | 4  | 8.8 | 8.6 |
| MAY | 20... | 1600 | 2.2  | 216 | 7.7 | 13.0 | 761 | 9.6  | 91  | 78 | 18 | 12  | 12  |
| JUL | 30... | 1150 | .58  | 234 | 7.6 | 13.3 | 763 | 7.9  | 75  | 86 | 7  | 13  | 13  |
| SEP | 30... | 1300 | e.49 | 254 | 7.4 | 13.7 | 760 | 6.5  | 63  | 90 | 6  | 14  | 14  |

| DATE | SODIUM, DIS-SOLVED (MG/L AS NA) (00930) | SODIUM PERCENT (00932) | SODIUM AD-SORP-TION RATIO (00931) | POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935) | ALKA-LINITY WAT.DIS GRAN T. FIELD CAC03 (MG/L) (29802) | SULFATE DIS-SOLVED (MG/L AS SO4) (00945) | CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940) | FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950) | SILICA, DIS-SOLVED (MG/L AS SIO2) (00955) | SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300) | SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301) | SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303) |
|------|---|------------------------|-----------------------------------|--|--|--|--|---|---|---|---|---|
|------|---|------------------------|-----------------------------------|--|--|--|--|---|---|---|---|---|

|     |       |    |    |    |     |    |     |    |     |    |     |     |     |
|-----|-------|----|----|----|-----|----|-----|----|-----|----|-----|-----|-----|
| NOV | 23... | 14 | 25 | .6 | 1.3 | 82 | 11  | 17 | <.1 | 15 | 154 | 139 | .21 |
| JAN | 28... | 11 | 26 | .6 | .6  | 52 | 8.4 | 15 | <.1 | 16 | 113 | 109 | .15 |
| MAR | 25... | 10 | 28 | .6 | .6  | 54 | 6.9 | 12 | <.1 | 15 | 112 | 96  | .15 |
| MAY | 20... | 12 | 25 | .6 | .7  | 60 | 10  | 14 | <.1 | 16 | 125 | 113 | .17 |
| JUL | 30... | 14 | 26 | .7 | .8  | 79 | 8.8 | 17 | <.1 | 17 | 142 | 131 | .19 |
| SEP | 30... | 14 | 25 | .6 | .8  | 84 | 12  | 17 | .1  | 16 | 143 | 139 | .19 |

| DATE | NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613) | NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631) | NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608) | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625) | NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623) | PHOS-PHORUS TOTAL (MG/L AS P) (00665) | PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666) | PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671) | IRON, DIS-SOLVED (UG/L AS FE) (01046) | MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056) | CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681) | CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689) |
|------|---|---|---|---|--|---------------------------------------|--|---|---------------------------------------|---|--|--|
|------|---|---|---|---|--|---------------------------------------|--|---|---------------------------------------|---|--|--|

|     |      |      |      |      |      |      |     |      |      |     |    |     |    |
|-----|------|------|------|------|------|------|-----|------|------|-----|----|-----|----|
| NOV | 23.. | <.01 | <.05 | .02  | 3.8  | <.1  | .33 | e.03 | .02  | 25  | 14 | --  | -- |
| JAN | 28.. | <.01 | .16  | <.02 | .1   | .1   | .02 | .01  | <.01 | <10 | <3 | --  | -- |
| MAR | 25.. | <.01 | .16  | <.02 | .3   | .2   | .07 | .01  | .01  | 38  | e2 | --  | -- |
| MAY | 20.. | <.01 | <.05 | .03  | e.06 | e.09 | .01 | .02  | .02  | e9  | e3 | --  | -- |
| JUL | 30.. | <.01 | .07  | <.02 | e.09 | <.1  | .02 | .02  | .01  | 12  | 6  | 1.8 | .2 |
| SEP | 30.. | <.01 | <.05 | <.02 | .1   | <.1  | .02 | .01  | .04  | 18  | 9  | --  | -- |

e Estimated.

< Actual value is known to be less than the value shown.

375159122343801 REDWOOD CREEK AT BIG LAGOON BRIDGE, NEAR MUIR BEACH, CA—Continued

## PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE          | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>SUS-<br>PENDEDED<br>(MG/L)<br>(80154) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDEDED<br>(T/DAY)<br>(80155) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) |
|---------------|------|---|---|---|---|--|
| NOV<br>23...N | 1440 | 21  | 12.1  | 204   | 12  | 89   |
| JAN<br>28...N | 1200 | 19  | 8.1   | 7   | .36   | 80   |
| MAR<br>25...N | 1600 | 46  | 12.0  | 16  | 2.0   | 100  |
| MAY<br>20...N | 1600 | 2.2   | 13.0  | 8   | .05   | 91   |
| JUL<br>30...N | 1150 | .58   | 13.3  | 3   | .00   | 60   |
| SEP<br>30...N | 1300 | e.49  | 13.7  | 1   | .00   | 100  |

e Estimated.

N Suspended-sediment concentration values determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.



## 380230122471901 OLEMA CREEK AT BEAR VALLEY ROAD BRIDGE, NEAR OLEMA, CA

LOCATION.—Lat 38°02'30", long 122°47'19", in Point Reyes National Seashore, Marin County, Hydrologic Unit 18050005, downstream from Bear Valley Road Bridge, east of Francis Drake Highway, near Olema.

DRAINAGE AREA.—Not determined.

PERIOD OF RECORD.— November 1998 to September 1999.

CHEMICAL DATA: November 1998 to September 1999.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE | TIME       | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061)    | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)<br>(00095)             | PH<br>WATER<br>WHOLE<br>FIELD<br>(STAND-<br>ARD<br>UNITS)<br>(00400)     | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010)                                | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG)<br>(00025)               | OXYGEN,<br>OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)<br>(00300) | OXYGEN,<br>(PER-<br>CENT<br>SATUR-<br>ATION)<br>(00301)        | HARD-<br>NESS<br>TOTAL<br>AS<br>CACO3)<br>(MG/L)<br>(00900)             | HARD-<br>NESS<br>NONCARB<br>DISSOLV<br>FLD. AS<br>CACO3<br>(MG/L)<br>(00904) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)<br>(00915)                       | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG)<br>(00925)                |   |
|------|------------|--|--|--|--|---|---|--|---|--|---|--|---|
| NOV  | 23... 1810 | 8.0  | 299  | 8.0  | 12.0   | 759   | 9.40  | 88   | 110   | 25   | 24  | 12   |   |
| JAN  | 28... 0840 | 37   | 162  | 7.4  | 6.4  | 768   | 11.6  | 93   | 54  | 16   | 12  | 6.1  |   |
| FEB  | 06... 1630 | --   | 64   | 7.2  | --   | --  | --  | --   | 18  | 7  | 3.7   | 2.2  |   |
| MAR  | 25... 1150 | 149  | 111  | 7.5  | 11.1   | 758   | 12.6  | 115  | 35  | 0  | 7.2   | 4.1  |   |
| MAY  | 20... 1110 | 5.2  | 253  | 7.9  | 12.6   | 761   | 11.3  | 106  | 90  | 21   | 19  | 10   |   |
| JUL  | 30... 1330 | 1.3  | 297  | 8.1  | 17.5   | 763   | 10.0  | 104  | 110   | 20   | 25  | 12   |   |
| SEP  | 30... 1100 | .69  | 333  | 7.6  | 14.2   | 760   | 8.2   | 80   | 120   | 20   | 26  | 14   |   |
| DATE |            | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)<br>(00930)                  | SODIUM<br>PERCENT<br>(00932)   | SODIUM<br>RATIO<br>(00931)   | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K)<br>(00935)                 | ALKA-<br>LINITY<br>WAT. DIS<br>GRAN T.<br>FIELD<br>CACO3<br>(MG/L)<br>(29802) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)<br>(00945)  | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)<br>(00940) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)<br>(00950)           | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2)<br>(00955)                 | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L)<br>(70300) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L)<br>(70301) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT)<br>(70303)            |
| NOV  | 23... 16   | 23   | .7   | 3.6  | 86   | 29  | 19  | <.1  | 13  | 206  | 175   | .28  |   |
| JAN  | 28... 10   | 29   | .6   | 1.0  | 38   | 10  | 13  | <.1  | 13  | 106  | 97  | .14  |   |
| FEB  | 06... 4.9  | 35   | .5   | 1.0  | 11   | 3.2   | 6.3   | <.1  | 6.8   | 54   | 42  | .07  |   |
| MAR  | 25... 8.1  | 33   | .6   | .8   | 35   | 5.6   | 7.7   | <.1  | 12  | 82   | 68  | .11  |   |
| MAY  | 20... 13   | 24   | .6   | 1.5  | 69   | 20  | 17  | .2   | 12  | 149  | 135   | .20  |   |
| JUL  | 30... 15   | 22   | .6   | 1.6  | 93   | 21  | 20  | .1   | 15  | 176  | 166   | .24  |   |
| SEP  | 30... 16   | 21   | .6   | 1.8  | 100  | 26  | 21  | .2   | 15  | 194  | 182   | .26  |   |
| DATE |            | NITRO-<br>GEN,<br>NITRITE<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00613) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00631) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00608) | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)<br>(00625) | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>DIS.<br>(MG/L<br>AS N)<br>(00623) | PHOS-<br>PHORUS<br>TOTAL<br>(MG/L<br>AS P)<br>(00665)     | PHOS-<br>PHORUS<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00666) | PHOS-<br>PHORUS<br>ORTH,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00671) | IRON,<br>DIS-<br>SOLVED<br>(MG/L<br>AS FE)<br>(01046)                        | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN)<br>(01056)               | CARBON,<br>ORGANIC<br>DIS-<br>SOLVED<br>(MG/L<br>AS C)<br>(00681)              | CARBON,<br>ORGANIC<br>SUS-<br>PENDE<br>TOTAL<br>(MG/L<br>AS C)<br>(00689) |
| NOV  | 23... <.01 | .78  | .09  | 1.3  | .5   | .39   | .17   | .13  | 240   | 29   | --  | --   |   |
| JAN  | 28... .01  | .88  | .03  | .2   | .2   | .06   | .04   | .04  | 57  | 11   | --  | --   |   |
| FEB  | 06... <.01 | .38  | <.02   | 4.4  | .3   | 1.3   | .04   | .02  | 130   | <3   | 5.7   | >10  |   |
| MAR  | 25... <.01 | .30  | <.02   | .5   | .2   | .16   | .03   | .03  | 73  | 9  | --  | --   |   |
| MAY  | 20... <.01 | .07  | .02  | .1   | .2   | .07   | .05   | .05  | 78  | 18   | --  | --   |   |
| JUL  | 30... <.01 | .10  | <.02   | .1   | e.1  | .07   | .06   | .05  | 20  | 24   | 2.1   | .2   |   |
| SEP  | 30... <.01 | .06  | <.02   | .1   | e.05   | .07   | .05   | .05  | 16  | 29   | --  | --   |   |

e Estimated.

< Actual value known to be less than value shown.

> Actual value known to be greater than value shown.

380633122564001 UNNAMED TRIBUTARY 7 TO LOWER ABBOTTS LAGOON, AT PT. REYES NATIONAL SEASHORE, CA

LOCATION.—Lat 38°06'33", long 122°56'40", in Point Reyes National Seashore, Marin County, Hydrologic Unit 18050005, intermittent tributary to lower Abbots Lagoon, Point Reyes National Seashore.

DRAINAGE AREA.—0.62 mi<sup>2</sup>.

PERIOD OF RECORD.—February 1998 to September 1999.

CHEMICAL DATA: February 1998 to September 1999.

SEDIMENT DATA: February 1998 to September 1999.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)<br>(00095) | PH<br>WATER<br>WHOLE<br>FIELD<br>(STAND-<br>ARD<br>UNITS)<br>(00400) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | NITRO-<br>GEN,<br>NITRITE<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00613) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00631) |
|-------|------|---|--|--|---|--|--|
| FEB   |      |   |  |  |   |  |  |
| 06... | 2300 | e20   | 164  | 6.6  | 10.5  | <.01   | .07  |
| 07... | 1150 | e20   | 139  | 6.6  | 11.3  | <.01   | .45  |

| DATE  | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00608) | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)<br>(00625) | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>DIS.<br>(MG/L<br>AS N)<br>(00623) | PHOS-<br>PHORUS<br>TOTAL<br>(MG/L<br>AS P)<br>(00665) | PHOS-<br>PHORUS<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00666) | PHOS-<br>PHORUS<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00671) |
|-------|--|--|---|---|--|--|
| FEB   |  |  |   |   |  |  |
| 06... | <.02   | .9   | .8  | .09   | .04  | .02  |
| 07... | .02  | .9   | .8  | .10   | .05  | .03  |

## PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE   | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>DIS-<br>SUS-<br>PENDED<br>(MG/L)<br>(80154) | SEDI-<br>MENT,<br>DIS-<br>SUS-<br>PENDED<br>(T/DAY)<br>(80155) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) |
|--------|------|---|---|---|--|--|
| FEB    |      |   |   |   |  |  |
| 06...N | 2300 | e20   | 10.5  | 23  | 1.2  | 98   |
| 07...N | 1150 | e20   | 11.3  | 26  | 1.4  | 82   |

e Estimated.

&lt; Actual value is known to be less than the value shown.

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

380642122563601 UNNAMED TRIBUTARY 6 TO LOWER ABBOTTS LAGOON, BELOW H RANCH, AT PT. REYES NATIONAL SEASHORE, CA

LOCATION.—Lat 38°06'42", long 122°56'36", in Point Reyes National Seashore, Marin County, Hydrologic Unit 18050005, intermittent tributary to lower Abbots Lagoon below H Ranch, Point Reyes National Seashore.

DRAINAGE AREA.—0.42 mi<sup>2</sup>.

PERIOD OF RECORD.—February 1998 to September 1999.

CHEMICAL DATA: February 1998 to September 1999.

SEDIMENT DATA: February 1998 to September 1999.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061) | SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095) | PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400) | TEMPER-ATURE WATER (DEG C) (00010) | NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613) | NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631) |
|-------|------|---|---|--|------------------------------------|---|---|
| FEB   |      |   |   |  |                                    |   |   |
| 06... | 2100 | e2.0  | 159                                     | 6.5  | 9.5                                | <.01  | 1.2   |
| 06... | 2320 | e2.5  | 151                                     | 6.5  | 11.7                               | <.01  | 1.2   |
| 07... | 1210 | e2.5  | 189                                     | 6.5  | 12.7                               | .01   | 3.7   |

| DATE  | NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608) | NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625) | NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623) | PHOS-PHORUS TOTAL (MG/L AS P) (00665) | PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666) | PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671) |
|-------|---|---|--|---------------------------------------|--|---|
| FEB   |   |   |  |                                       |  |   |
| 06... | .04   | 1.2   | .7   | .13                                   | .04  | .02   |
| 06... | .04   | 1.0   | .8   | .14                                   | .05  | .03   |
| 07... | .06   | 1.0   | .9   | .15                                   | .10  | .10   |

PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE   | TIME | DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061) | TEMPER-ATURE WATER (DEG C) (00010) | SEDI-MENT, SUS-PENDED (MG/L) (80154) | SEDI-MENT, SUS-PENDED (T/DAY) (80155) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331) |
|--------|------|---|------------------------------------|--------------------------------------|---------------------------------------|---|
| FEB    |      |   |                                    |                                      |                                       |   |
| 06...N | 2100 | e2.0  | 9.5                                | 143                                  | .77                                   | 67  |
| 06...N | 2320 | e2.5  | 11.7                               | 67                                   | .45                                   | 82  |
| 07...N | 1210 | e2.5  | 12.7                               | 28                                   | .19                                   | 96  |

e Estimated.

< Actual value is known to be less than the value shown.

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

## 380652122570501 ABBOTTS LAGOON LOWER LAGOON AT PT. REYES NATIONAL SEASHORE, CA

LOCATION.—Lat 38°06'52", long 122°57'05", in Point Reyes National Seashore, Marin County, Hydrologic Unit 18050005, lower portion of Abbots Lagoon at Point Reyes National Seashore.

DRAINAGE AREA.—5.29 mi<sup>2</sup>.

PERIOD OF RECORD.— November 1998 to September 1999.

CHEMICAL DATA: November 1998 to September 1999.

SEDIMENT DATA: November 1998 to September 1999.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE | TIME  | SAM-<br>PLING<br>DEPTH<br>(FEET)<br>(00003) | DEPTH<br>AT<br>SAMPLE<br>LOC-<br>ATION,<br>TOTAL<br>(FEET)<br>(81903) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)<br>(00095) | PH<br>WATER<br>WHOLE<br>FIELD<br>(STAND-<br>ARD<br>UNITS)<br>(00400) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | BARO-<br>METRIC<br>PRES-<br>SURE<br>OF<br>(MM<br>HG)<br>(00025) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION)<br>(MG/L)<br>(00300) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION)<br>(MG/L)<br>(00301) | HARD-<br>NESS<br>TOTAL<br>AS<br>(MG/L<br>CACO3)<br>(00900) |
|------|-------|---|---|--|--|---|---|---|---|--|
| NOV  | 24... | 1.0   | 31.0  | 11000  | 8.8  | 13.2  | 766   | 11.0  | 108   | 1200   |
| JAN  | 27... | 1.0   | 34.0  | 10200  | 8.0  | 10.0  | 769   | 10.7  | 97  | 1200   |
| MAY  | 19... | 1.0   | 30.0  | 8030   | 7.8  | 15.5  | 762   | 9.4   | 97  | 830  |
| AUG  | 26... | 1.0   | 29.0  | 9070   | 8.4  | 19.8  | --  | --  | --  | 820  |

| DATE | HARD-<br>NESS<br>NONCARB<br>DISSOLV<br>FLD. AS<br>CACO3<br>(MG/L)<br>(00904) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)<br>(00915) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG)<br>(00925) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)<br>(00930) | SODIUM<br>PERCENT<br>(00932) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO<br>(00931) | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K)<br>(00935) | ALKA-<br>LINITY<br>WAT. DIS<br>GRAN T.<br>FIELD<br>CACO3<br>(MG/L)<br>(29802) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)<br>(00945) |
|------|--|---|---|---|------------------------------|--|--|---|--|
| NOV  | 24...  | 84  | 240   | 2000  | 77                           | 25   | 89   | 70  | 500  |
| JAN  | 27...  | 80  | 240   | 1900  | 77                           | 24   | 67   | 70  | 440  |
| MAY  | 19...  | 770   | 60  | 170   | 1400                         | 77   | 21   | 54  | 63   |
| AUG  | 26...  | 760   | 58  | 160   | 1300                         | 76   | 20   | 66  | 66   |

| DATE | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)<br>(00940) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)<br>(00950) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2)<br>(00955) | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>SOLVED<br>(MG/L)<br>(70300) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L)<br>(70301) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT)<br>(70303) | NITRO-<br>GEN,<br>NITRITE<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00613) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00631) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00608) |      |
|------|--|---|--|---|--|--|--|--|--|------|
| NOV  | 24...  | 3800  | .2   | 2.8   | 7310   | 6810   | 9.94   | <.01   | <.05   | .03  |
| JAN  | 27...  | 3300  | .2   | 5.5   | 6170   | 6060   | 8.39   | <.01   | <.05   | .03  |
| MAY  | 19...  | 2400  | .2   | 5.4   | 4580   | 4510   | 6.23   | <.01   | <.05   | <.02 |
| AUG  | 26...  | 2800  | .2   | 4.0   | 5130   | 4850   | 6.98   | <.01   | <.05   | <.02 |

| DATE | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)<br>(00625) | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>DIS.<br>(MG/L<br>AS N)<br>(00623) | PHOS-<br>PHORUS<br>TOTAL<br>(MG/L<br>AS P)<br>(00665) | PHOS-<br>PHORUS<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00666) | PHOS-<br>PHORUS<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00671) | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE)<br>(01046) | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN)<br>(01056) | CHLOR-A<br>PHYTO-<br>PLANK-<br>TON<br>CHROMO<br>FLUOROM<br>(UG/L)<br>(70953) | CHLOR-B<br>PHYTO-<br>PLANK-<br>TON<br>CHROMO<br>FLUOROM<br>(UG/L)<br>(70954) |     |
|------|--|---|---|--|--|---|---|--|--|-----|
| NOV  | 24...  | 1.9   | .6  | .44  | .29  | .25   | <200  | <60  | 24   | e.2 |
| JAN  | 27...  | .8  | .6  | .21  | .16  | .14   | <100  | <30  | 15   | .8  |
| MAY  | 19...  | .8  | .7  | .14  | .12  | .09   | <50   | e9   | 1.7  | <.1 |
| AUG  | 26...  | .6  | .5  | .22  | .21  | .23   | <50   | <11  | 1.8  | e.1 |

e Estimated.

< Actual value is known to be less than value shown.

380652122570501 ABBOTTS LAGOON LOWER LAGOON AT PT. REYES NATIONAL SEASHORE, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE          | TIME | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L)<br>(80154) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) |
|---------------|------|---|---|--|
| NOV<br>24...N | 1230 | 13.2  | 3   | 100  |

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

380708122563501 UNNAMED TRIBUTARY 5 TO MIDDLE ABBOTTS LAGOON, NEAR H RANCH, AT PT. REYES  
NATIONAL SEASHORE, CA

LOCATION.—Lat 38°07'08", long 122°56'35", in Point Reyes National Seashore, Marin County, Hydrologic Unit 18050005, intermittent tributary to middle Abbots Lagoon near H Ranch, Point Reyes National Seashore.

DRAINAGE AREA.—0.05 mi<sup>2</sup>.

PERIOD OF RECORD.—February 1998 to September 1999.

CHEMICAL DATA: February 1998 to September 1999.

SEDIMENT DATA: February 1998 to September 1999.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)<br>(00095) | PH<br>WATER<br>WHOLE<br>FIELD<br>(STAND-<br>ARD<br>UNITS)<br>(00400) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | NITRO-<br>GEN,<br>NITRITE<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00613) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00631) |
|-------|------|---|--|--|---|--|--|
| FEB   |      |   |  |  |   |  |  |
| 07... | 1020 | e3.0  | 202  | 6.4  | 11.4  | .01  | 4.4  |
| 07... | 1430 | e2.5  | 235  | 6.4  | --  | .01  | 5.0  |
| APR   |      |   |  |  |   |  |  |
| 11... | 0630 | e1.0  | 141  | 6.8  | 8.6   | <.01   | .07  |

| DATE  | NITRO-<br>GEN, AM-<br>MONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00608) | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)<br>(00625) | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>DIS.<br>(MG/L<br>AS N)<br>(00623) | PHOS-<br>PHORUS<br>TOTAL<br>(MG/L<br>AS P)<br>(00665) | PHOS-<br>PHORUS<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00666) | PHOS-<br>PHORUS<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00671) |
|-------|--|--|---|---|--|--|
| FEB   |  |  |   |   |  |  |
| 07... | .10  | 1.6  | 1.1   | .28   | .18  | .17  |
| 07... | .06  | 1.6  | 1.2   | .25   | .17  | .16  |
| APR   |  |  |   |   |  |  |
| 11... | <.02   | 1  | .7  | .08   | .04  | .02  |

## PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE   | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L)<br>(80154) | SEDI-<br>MENT,<br>CHARGE,<br>SUS-<br>PENDED<br>(T/DAY)<br>(80155) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) |
|--------|------|---|---|---|---|--|
| FEB    |      |   |   |   |   |  |
| 07...N | 1020 | e3.0  | 11.4  | 34  | .28   | 91   |
| 07...N | 1430 | e2.5  | --  | 22  | .15   | 92   |

e Estimated.

< Actual value is known to be less than the value shown.

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

380717122564101 ABBOTTS LAGOON MIDDLE LAGOON AT PT. REYES NATIONAL SEASHORE, CA

LOCATION.—Lat 38°07'17", long 122°56'41", in Point Reyes National Seashore, Marin County, Hydrologic Unit 18050005, center portion of Abbotts Lagoon at Point Reyes National Seashore.

DRAINAGE AREA.—2.47 mi<sup>2</sup>.

PERIOD OF RECORD.—November 1998 to September 1999.

CHEMICAL DATA: November 1998 to September 1999.

SEDIMENT DATA: November 1998 to September 1999.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | SAM-<br>PLING<br>DEPTH<br>(FEET)<br>(00003) | DEPTH<br>AT<br>SAMPLE<br>LOC-<br>ATION,<br>TOTAL<br>(FEET)<br>(81903) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)<br>(00095) | PH<br>WATER<br>WHOLE<br>FIELD<br>(STAND-<br>ARD<br>UNITS)<br>(00400) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG)<br>(00025) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION)<br>(00300) | HARD-<br>NESS<br>TOTAL<br>AS<br>CACO3<br>(00900) |     |
|-------|------|---|---|--|--|---|---|---|--|-----|
| NOV   |      |   |   |  |  |   |   |   |  |     |
| 24... | 1130 | 1.0   | 16.0  | 651  | 7.9  | 13.2  | 766   | 8.5   | 81   | 93  |
| JAN   |      |   |   |  |  |   |   |   |  |     |
| 27... | 1530 | 1.0   | 18.0  | 588  | 7.8  | 10.6  | 769   | 10.1  | 90   | 82  |
| FEB   |      |   |   |  |  |   |   |   |  |     |
| 07... | 1450 | --  | --  | 548  | 7.6  | --  | --  | --  | --   | --  |
| APR   |      |   |   |  |  |   |   |   |  |     |
| 10... | 1915 | --  | --  | 1790   | 7.9  | 11.4  | --  | --  | --   | --  |
| MAY   |      |   |   |  |  |   |   |   |  |     |
| 19... | 1500 | 1.0   | 16.0  | 1420   | 7.6  | 17.8  | 762   | 9.9   | 105  | 160 |
| AUG   |      |   |   |  |  |   |   |   |  |     |
| 26... | 1240 | 1.0   | 16.0  | 1350   | 8.1  | 20.9  | --  | --  | --   | 160 |

| DATE  | HARD-<br>NESS<br>NONCARB<br>DISSOLV<br>FLD. AS<br>CACO3<br>(MG/L)<br>(00904) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L)<br>AS CA<br>(00915) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L)<br>AS MG<br>(00925) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L)<br>AS NA<br>(00930) | SODIUM<br>PERCENT<br>(00932) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO<br>(00931) | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L)<br>AS K<br>(00935) | ALKA-<br>LITY<br>WAT. DIS<br>GRAN T.<br>FIELD<br>CACO3<br>(MG/L)<br>(29802) | SULFATE<br>DIS-<br>SOLVED<br>AS SO4<br>(00945) |
|-------|--|---|---|---|------------------------------|--|--|---|--|
| NOV   |  |   |   |   |                              |  |  |   |  |
| 24... | 23   | 12  | 15  | 88  | 65                           | 4  | 6.7  | 70  | 21   |
| JAN   |  |   |   |   |                              |  |  |   |  |
| 27... | 21   | 11  | 13  | 73  | 64                           | 3  | 5.8  | 61  | 28   |
| FEB   |  |   |   |   |                              |  |  |   |  |
| 07... | --   | --  | --  | --  | --                           | --   | --   | --  | --   |
| APR   |  |   |   |   |                              |  |  |   |  |
| 10... | --   | --  | --  | --  | --                           | --   | --   | --  | --   |
| MAY   |  |   |   |   |                              |  |  |   |  |
| 19... | 110  | 17  | 28  | 200   | 72                           | 7  | 11   | 50  | --   |
| AUG   |  |   |   |   |                              |  |  |   |  |
| 26... | 91   | 18  | 27  | 180   | 70                           | 6  | 11   | 65  | 51   |

| DATE  | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L)<br>AS CL<br>(00940) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L)<br>AS F<br>(00950) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L)<br>AS<br>SIO2<br>(00955) | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L)<br>(70300) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L)<br>(70301) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT)<br>(70303) | NITRO-<br>GEN,<br>NITRITE<br>DIS-<br>SOLVED<br>(MG/L)<br>AS N<br>(00613) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L)<br>AS N<br>(00631) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L)<br>AS N<br>(00608) |
|-------|--|---|--|---|--|--|--|--|--|
| NOV   |  |   |  |   |  |  |  |  |  |
| 24... | 150  | <.1   | 14   | 389   | 349  | .53  | <.01   | <.05   | .03  |
| JAN   |  |   |  |   |  |  |  |  |  |
| 27... | 120  | .1  | 15   | 340   | 306  | .46  | <.01   | .11  | .02  |
| FEB   |  |   |  |   |  |  |  |  |  |
| 07... | --   | --  | --   | --  | --   | --   | <.01   | .14  | .08  |
| APR   |  |   |  |   |  |  |  |  |  |
| 10... | --   | --  | --   | --  | --   | --   | .01  | .13  | <.02   |
| MAY   |  |   |  |   |  |  |  |  |  |
| 19... | --   | .1  | 10   | 802   | --   | --   | <.01   | <.05   | .03  |
| AUG   |  |   |  |   |  |  |  |  |  |
| 26... | 340  | .1  | 14   | 706   | 679  | .96  | <.01   | <.05   | <.02   |

< Actual value is known to be less than value shown.

## 380717122564101 ABBOTTS LAGOON MIDDLE LAGOON AT PT. REYES NATIONAL SEASHORE, CA—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE         | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)<br>(00625) | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>DIS.<br>(MG/L<br>AS N)<br>(00623) | PHOS-<br>PHORUS<br>TOTAL<br>(MG/L<br>AS P)<br>(00665) | PHOS-<br>PHORUS<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00666) | PHOS-<br>PHORUS<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00671) | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE)<br>(01046) | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN)<br>(01056) | CHLOR-A<br>PHYTO-<br>PLANK-<br>TON<br>CHROMO<br>FLUOROM<br>(UG/L)<br>(70953) | CHLOR-B<br>PHYTO-<br>PLANK-<br>TON<br>CHROMO<br>FLUOROM<br>(UG/L)<br>(70954) |
|--------------|--|---|---|--|--|---|---|--|--|
| NOV<br>24... | 1.3  | .7  | .38   | .31  | .27  | 27  | 4   | 15   | e.7  |
| JAN<br>27... | 1.0  | .6  | .21   | .18  | .16  | 36  | 3   | 11   | 1  |
| FEB<br>07... | .9   | .7  | .22   | .16  | .14  | --  | --  | --   | --   |
| APR<br>10... | 1.2  | .8  | .25   | .17  | .13  | --  | --  | --   | --   |
| MAY<br>19... | 1.0  | .8  | .27   | .21  | .16  | 51  | <15   | 2.6  | .3   |
| AUG<br>26... | .8   | .7  | .51   | .52  | .45  | 14  | e2  | 2.1  | e.2  |

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE          | TIME | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L)<br>(80154) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) |
|---------------|------|---|---|--|
| NOV<br>24...N | 1130 | 13.2  | 6   | 97   |

e Estimated.

&lt; Actual value is known to be less than value shown.

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.



380722122561601 UNNAMED TRIBUTARY 4 TO MIDDLE ABBOTTS LAGOON, BELOW H RANCH,  
AT PT. REYES NATIONAL SEASHORE, CA

LOCATION.—Lat 38°07'22", long 122°56'16", in Point Reyes National Seashore, Marin County, Hydrologic Unit 18050005, intermittent tributary to middle Abbots Lagoon below H Ranch, Point Reyes National Seashore.

DRAINAGE AREA.—0.12 mi<sup>2</sup>.

PERIOD OF RECORD.—February 1998 to September 1999.

CHEMICAL DATA: February 1998 to September 1999.

SEDIMENT DATA: February 1998 to September 1999.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)<br>(00095) | PH<br>WATER<br>WHOLE<br>FIELD<br>(STAND-<br>ARD<br>UNITS)<br>(00400) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | NITRO-<br>GEN,<br>NITRITE<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00613) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00631) |
|-------|------|---|--|--|---|--|--|
| FEB   |      |   |  |  |   |  |  |
| 06... | 1850 | e.10  | 172  | 7.1  | 9.9   | <.01   | .10  |
| 06... | 2150 | e.50  | 192  | 7.0  | 9.8   | <.01   | .10  |
| 07... | 1000 | e1.2  | 183  | 6.8  | 10.6  | <.01   | .14  |

| DATE  | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>AS N)<br>(00608) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)<br>(00625) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>DIS.<br>(MG/L<br>AS N)<br>(00623) | PHOS-<br>PHORUS<br>TOTAL<br>(MG/L<br>AS P)<br>(00665) | PHOS-<br>PHORUS<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00666) | PHOS-<br>PHORUS<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00671) |
|-------|---|---|--|---|--|--|
| FEB   |   |   |  |   |  |  |
| 06... | .06   | .6  | .6   | .08   | .05  | .02  |
| 06... | .07   | .7  | .6   | .08   | .05  | .03  |
| 07... | .06   | .9  | .7   | .13   | .07  | .05  |

PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE   | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>00061) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L)<br>(80154) | SEDI-<br>MENT,<br>DIS-<br>SUS-<br>PENDED<br>(T/DAY)<br>(80155) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) |
|--------|------|--|---|---|--|--|
| FEB    |      |  |   |   |  |  |
| 06...N | 1850 | e.10   | 9.9   | 5   | .01  | 100  |
| 06...N | 2150 | e.50   | 9.8   | 4   | .01  | 91   |
| 07...N | 1000 | e1.2   | 10.6  | 14  | .05  | 73   |

e Estimated.

< Actual value is known to be less than the value shown.

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

## 380736122562401 ABBOTTS LAGOON UPPER SMALL LAGOON AT PT. REYES NATIONAL SEASHORE, CA

LOCATION.—Lat 38°07'36", long 122°56'24", in Point Reyes National Seashore, Marin County, Hydrologic Unit 18050005, northernmost portion of Abbotts Lagoon at Point Reyes National Seashore.

DRAINAGE AREA.—1.92 mi<sup>2</sup>.

PERIOD OF RECORD.—November 1998 to September 1999.

CHEMICAL DATA: November 1998 to September 1999.

SEDIMENT DATA: November 1998 to September 1999.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE         | TIME | SAM-<br>PLING<br>DEPTH<br>(FEET)<br>(00003) | DEPTH<br>AT<br>SAMPLE<br>LOC-<br>ATION,<br>TOTAL<br>(FEET)<br>(81903) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)<br>(00095) | PH<br>WATER<br>WHOLE<br>FIELD<br>(STAND-<br>ARD<br>UNITS)<br>(00400) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG)<br>(00025) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION)<br>(MG/L)<br>(00300) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION)<br>(MG/L)<br>(00301) | HARD-<br>NESS<br>TOTAL<br>AS<br>(MG/L<br>CACO3)<br>(00900) |
|--------------|------|---|---|--|--|---|---|---|---|--|
| NOV<br>24... | 1030 | 1.0   | 6.0   | 362  | 8.0  | 12.9  | 766   | 7.2   | 68  | 89   |
| JAN<br>27... | 1600 | 1.0   | 6.0   | 360  | 7.3  | 9.8   | 769   | 6.8   | 59  | 76   |
| MAY<br>19... | 1530 | 1.0   | 6.0   | 310  | 9.1  | 18.8  | 762   | 12.4  | 133   | 68   |
| AUG<br>26... | 1320 | 1.0   | 6.0   | 377  | 7.3  | 21.0  | --  | --  | --  | 100  |

| DATE         | HARD-<br>NESS<br>NONCARB<br>DISSOLV<br>FLD. AS<br>CACO3<br>(MG/L)<br>(00904) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)<br>(00915) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG)<br>(00925) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)<br>(00930) | SODIUM<br>PERCENT<br>(00932) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO<br>(00931) | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K)<br>(00935) | ALKA-<br>LILITY<br>WAT. DIS<br>GRAN T.<br>FIELD<br>CACO3<br>(MG/L)<br>(29802) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)<br>(00945) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)<br>(00940) |
|--------------|--|---|---|---|------------------------------|--|--|---|--|--|
| NOV<br>24... | 6  | 16  | 12  | 36  | 45                           | 2  | 5.7  | 83  | 19   | 49   |
| JAN<br>27... | 17   | 13  | 10  | 30  | 43                           | 2  | 8.5  | 59  | 26   | 48   |
| MAY<br>19... | 3  | 11  | 9.6   | 33  | 50                           | 2  | 3.3  | 65  | 15   | 41   |
| AUG<br>26... | --   | 18  | 13  | 35  | 42                           | 2  | 4.3  | 110   | 9.7  | 42   |

| DATE         | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)<br>(00950) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2)<br>(00955) | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>SOLVED<br>(MG/L)<br>(70300) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L)<br>(70301) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT)<br>(70303) | NITRO-<br>GEN,<br>NITRITE<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00613) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00631) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00608) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)<br>(00625) |
|--------------|---|--|---|--|--|--|--|--|---|
| NOV<br>24... | <.1   | 21   | 250   | 210  | .34  | .02  | .33  | .27  | 2.0   |
| JAN<br>27... | <.1   | 18   | 238   | 198  | .32  | .05  | 1.5  | .74  | 2.3   |
| MAY<br>19... | .1  | 6.4  | 196   | 161  | .27  | <.01   | <.05   | <.02   | 1.9   |
| AUG<br>26... | .1  | 12   | 215   | 205  | .29  | <.01   | .11  | .54  | 2.1   |

| DATE         | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00623) | PHOS-<br>PHORUS<br>TOTAL<br>(MG/L<br>AS P)<br>(00665) | PHOS-<br>PHORUS<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00666) | PHOS-<br>PHORUS<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00671) | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE)<br>(01046) | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN)<br>(01056) | CARBON,<br>ORGANIC<br>DIS-<br>SOLVED<br>(MG/L<br>AS C)<br>(00681) | CHLOR-A<br>PHYTO-<br>PLANK-<br>TON<br>CHROMO<br>FLUOROM<br>(UG/L)<br>(70953) | CHLOR-B<br>PHYTO-<br>PLANK-<br>TON<br>CHROMO<br>FLUOROM<br>(UG/L)<br>(70954) |
|--------------|--|---|--|--|---|---|---|--|--|
| NOV<br>24... | 1.3  | .57   | .34  | .27  | 180   | 81  | 10  | 21   | e.5  |
| JAN<br>27... | 1.9  | .50   | .25  | .24  | 330   | 96  | 14  | 7.4  | e.2  |
| MAY<br>19... | 1.1  | .57   | .30  | .27  | 380   | 3   | 17  | 21   | 3.1  |
| AUG<br>26... | 1.6  | --  | 1.4  | 1.3  | 370   | 160   | 14  | 6.2  | 1.3  |

e Estimated.

< Actual value is known to be less than value shown.

380736122562401 ABBOTTS LAGOON UPPER SMALL LAGOON AT PT. REYES NATIONAL SEASHORE, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE          | TIME | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L)<br>(80154) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) |
|---------------|------|---|---|--|
| NOV<br>24...N | 1030 | 12.9  | 13  | 99   |

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

380738122560701 UNNAMED TRIBUTARY 1 TO UPPER ABBOTTS LAGOON, AT PT. REYES NATIONAL SEASHORE, CA

LOCATION.—Lat 38°07'38", long 122°56'07", in Point Reyes National Seashore, Marin County, Hydrologic Unit 18050005, in northernmost portion of Abbots Lagoon at Point Reyes National Seashore.

DRAINAGE AREA.—0.98 mi<sup>2</sup>.

PERIOD OF RECORD.—November 1998 to September 1999.

CHEMICAL DATA: November 1998 to September 1999.

SEDIMENT DATA: November 1998 to September 1999.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)<br>(00095) | PH<br>WATER<br>FIELD<br>(STAND-<br>ARD<br>UNITS)<br>(00400) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010)                | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG)<br>(00025)      | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SOLVED<br>(MG/L)<br>(00300) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION)<br>(00301) | HARD-<br>NESS<br>TOTAL<br>AS<br>CACO3<br>(MG/L)<br>(00900)    | HARD-<br>NESS<br>NONCARB<br>DISSOLV<br>FLD. AS<br>CACO3<br>(MG/L)<br>(00904) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)<br>(00915)               | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG)<br>(00925)                |
|-------|------|--|---|--|--|---|---|---|--|---|--|
| NOV   |      |  |   |  |  |   |   |   |  |   |  |
| 24... | 1010 | 339  | 7.5   | 10.6   | 766  | 9.5   | 85  | 85  | 39   | 17  | 10   |
| JAN   |      |  |   |  |  |   |   |   |  |   |  |
| 27... | 1430 | 261  | 7.3   | 8.7  | 769  | 10.7  | 91  | 61  | 33   | 13  | 7.2  |
| FEB   |      |  |   |  |  |   |   |   |  |   |  |
| 06... | 1810 | 148  | 6.9   | 10.2   | --   | --  | --  | --  | --   | --  | --   |
| 06... | 2200 | 141  | 7.0   | 9.9  | --   | --  | --  | --  | --   | --  | --   |
| 07... | 1000 | 132  | 7.0   | 12.2   | --   | --  | --  | --  | --   | --  | --   |
| 07... | 1420 | 132  | 7.0   | 10.8   | --   | --  | --  | --  | --   | --  | --   |
| APR   |      |  |   |  |  |   |   |   |  |   |  |
| 10... | 1840 | 173  | 7.4   | 9.3  | --   | --  | --  | --  | --   | --  | --   |
| 11... | 0545 | 118  | 7.1   | 8.6  | --   | --  | --  | --  | --   | --  | --   |
| MAY   |      |  |   |  |  |   |   |   |  |   |  |
| 19... | 1220 | 212  | 7.7   | 14.1   | 762  | 9.3   | 90  | 61  | --   | 13  | 7.2  |
| AUG   |      |  |   |  |  |   |   |   |  |   |  |
| 26... | 1040 | 219  | 7.3   | 14.9   | --   | 4.6   | --  | 47  | 1  | 9.1   | 5.8  |
|       |      |  |   |  |  |   |   |   |  |   |  |
| DATE  |      | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)<br>(00930)      | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO<br>(00931)          | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K)<br>(00935) | ALKA-<br>LINITY<br>WAT. DIS<br>GRAN T.<br>CACO3<br>(MG/L)<br>(29802) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)<br>(00945)                  | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)<br>(00940)            | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)<br>(00950) | SILICA,<br>DIS-<br>SOLVED<br>AS<br>SIO2)<br>(MG/L)<br>(00955)                | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>SOLVED<br>(MG/L)<br>(70300) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L)<br>(70301) |
| NOV   |      |  |   |  |  |   |   |   |  |   |  |
| 24... | 33   | 44   | 2   | 3.8  | 46   | 31  | 51  | <.1   | 17   | 242   | 193  |
| JAN   |      |  |   |  |  |   |   |   |  |   |  |
| 27... | 23   | 44   | 1   | 1.3  | 28   | 17  | 39  | .1  | 16   | 174   | 145  |
| FEB   |      |  |   |  |  |   |   |   |  |   |  |
| 06... | --   | --   | --  | --   | --   | --  | --  | --  | --   | --  | --   |
| 06... | --   | --   | --  | --   | --   | --  | --  | --  | --   | --  | --   |
| 07... | --   | --   | --  | --   | --   | --  | --  | --  | --   | --  | --   |
| 07... | --   | --   | --  | --   | --   | --  | --  | --  | --   | --  | --   |
| APR   |      |  |   |  |  |   |   |   |  |   |  |
| 10... | --   | --   | --  | --   | --   | --  | --  | --  | --   | --  | --   |
| 11... | --   | --   | --  | --   | --   | --  | --  | --  | --   | --  | --   |
| MAY   |      |  |   |  |  |   |   |   |  |   |  |
| 19... | 21   | 42   | 1   | .5   | 62   | 7.5   | 20  | .1  | 16   | 157   | 125  |
| AUG   |      |  |   |  |  |   |   |   |  |   |  |
| 26... | 26   | 54   | 2   | .5   | 46   | 14  | 21  | .1  | 23   | 139   | 134  |

&lt; Actual value is known to be less than the value shown.

380738122560701 UNNAMED TRIBUTARY 1 TO UPPER ABBOTTS LAGOON, AT PT. REYES NATIONAL SEASHORE, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE         | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT)<br>(70303) | NITRO-<br>GEN,<br>NITRITE<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00613) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00631) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00608) | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)<br>(00625) | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>DIS.<br>(MG/L<br>AS N)<br>(00623) | PHOS-<br>PHORUS<br>TOTAL<br>(MG/L<br>AS P)<br>(00665) | PHOS-<br>PHORUS<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00666) | PHOS-<br>PHORUS<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00671) | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE)<br>(01046) | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN)<br>(01056) |
|--------------|--|--|--|--|--|---|---|--|--|---|---|
| NOV<br>24... | .33  | .01  | .26  | .10  | 1.8  | 1.5   | .13   | .06  | .03  | 550   | 160   |
| JAN<br>27... | .24  | .01  | .25  | .08  | .9   | .7  | .08   | .03  | .02  | 510   | 92  |
| FEB<br>06... | --   | <.01   | .17  | .03  | 1.9  | .7  | .33   | .04  | .02  | --  | --  |
| 06...        | --   | <.01   | .18  | .03  | 1.3  | .7  | .21   | .05  | .03  | --  | --  |
| 07...        | --   | <.01   | .37  | .04  | 1.0  | .7  | .16   | .19  | .06  | --  | --  |
| 07...        | --   | <.01   | .41  | .02  | 1.2  | .7  | .17   | .05  | .05  | --  | --  |
| APR<br>10... | --   | <.01   | .14  | .02  | 1.3  | .7  | .12   | .04  | .02  | --  | --  |
| 11...        | --   | <.01   | .10  | <.02   | 1.7  | .7  | .29   | .29  | .23  | --  | --  |
| MAY<br>19... | .21  | <.01   | .38  | .05  | 1.0  | .7  | .12   | .06  | .06  | 1100  | 55  |
| AUG<br>26... | .19  | .01  | 1.6  | .06  | .7   | .5  | .13   | .06  | .05  | 800   | 49  |

PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE          | TIME | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>SUS-<br>PENDE<br>(MG/L)<br>(80154) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) |
|---------------|------|---|--|--|
| NOV<br>24...N | 1010 | 10.6  | 33   | 97   |
| JAN<br>27...N | 1430 | 8.7   | 19   | 91   |
| FEB<br>06...N | 1810 | 10.2  | 242  | 92   |
| 06...N        | 2200 | 9.9   | 171  | 75   |
| 07...N        | 1000 | 12.2  | 121  | 90   |
| 07...N        | 1420 | 10.8  | 99   | 89   |
| APR<br>10...N | 1840 | 9.3   | --   | --   |
| 11...N        | 0545 | 8.6   | --   | --   |
| MAY<br>19...N | 1220 | 14.1  | 28   | 97   |
| AUG<br>26...N | 1040 | 14.9  | 12   | 95   |

< Actual value is known to be less than the value shown.

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

380752122562501 UNNAMED TRIBUTARY 3 TO UPPER ABBOTTS LAGOON, BELOW MCCLURE'S RANCH, AT PT. REYES NATIONAL SEASHORE, CA

LOCATION.—Lat 38°07'52", long 122°56'25", in Point Reyes National Seashore, Marin County, Hydrologic Unit 18050005, intermittent tributary to upper Abbots Lagoon below McClure's Ranch, Point Reyes National Seashore.

DRAINAGE AREA.—0.07 mi<sup>2</sup>.

PERIOD OF RECORD.—February 1998 to September 1999.

CHEMICAL DATA: February 1998 to September 1999.

SEDIMENT DATA: February 1998 to September 1999.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE         | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)<br>(00095) | PH<br>WATER<br>WHOLE<br>FIELD<br>(STAND-<br>ARD<br>UNITS)<br>(00400) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | NITRO-<br>GEN,<br>NITRITE<br>SOLVED<br>(MG/L<br>AS N)<br>(00613) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00631) |
|--------------|------|---|--|--|---|--|--|
| FEB<br>07... | 1300 | e.70  | 636  | 7.2  | 13.6  | .22  | 8.7  |
| APR<br>11... | 0715 | e1.5  | 506  | 7.5  | 8.1   | .09  | 3.5  |

| DATE         | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>AS N)<br>(00608) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)<br>(00625) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>DIS.<br>(MG/L<br>AS N)<br>(00623) | PHOS-<br>PHORUS<br>TOTAL<br>(MG/L<br>AS P)<br>(00665) | PHOS-<br>PHORUS<br>DIS-<br>SOLVED<br>AS P)<br>(00666) | PHOS-<br>PHORUS<br>ORTHO,<br>DIS-<br>SOLVED<br>AS P)<br>(00671) |
|--------------|---|---|--|---|---|---|
| FEB<br>07... | 3.5   | 9.9   | 7.2  | 5.2   | 3.7   | 4.4   |
| APR<br>11... | 1.7   | 13  | 5.1  | 5.2   | 2.3   | 2.5   |

PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE          | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L)<br>(80154) | SEDI-<br>MENT,<br>CHARGE,<br>SUS-<br>PENDED<br>(T/DAY)<br>(80155) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) |
|---------------|------|---|---|---|---|--|
| FEB<br>07...N | 1300 | e.70  | 13.6  | 148   | .28   | 87   |

e Estimated.

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

380753122561501 UNNAMED TRIBUTARY 2 TO UPPER ABBOTTS LAGOON, AT PT. REYES NATIONAL SEASHORE, CA

LOCATION.—Lat 38°07'53", long 122°56'15", in Point Reyes National Seashore, Marin County, Hydrologic Unit 18050005, intermittent tributary to upper Abbots Lagoon near McClure's Ranch, Point Reyes National Seashore.

DRAINAGE AREA.—0.18 mi<sup>2</sup>.

PERIOD OF RECORD.—February 1998 to September 1999.

CHEMICAL DATA: February 1998 to September 1999.

SEDIMENT DATA: February 1998 to September 1999.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE  | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)<br>(00095) | PH<br>WATER<br>WHOLE<br>FIELD<br>(STAND-<br>ARD<br>UNITS)<br>(00400) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | NITRO-<br>GEN,<br>NITRITE<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00613) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00631) |
|-------|------|---|--|--|---|--|--|
| FEB   |      |   |  |  |   |  |  |
| 06... | 1850 | e5.0  | 386  | 7.0  | 10.5  | .08  | 3.4  |
| 06... | 2150 | e5.0  | 388  | 7.2  | 9.3   | .06  | 2.9  |
| 07... | 1030 | e5.0  | 321  | 7.0  | 10.4  | .07  | 3.3  |
| 07... | 1440 | e3.0  | 372  | 7.0  | 11.3  | .09  | 4.6  |
| APR   |      |   |  |  |   |  |  |
| 11... | 0600 | e5.0  | 330  | 7.4  | 9.1   | .10  | 5.0  |

| DATE  | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N)<br>(00608) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)<br>(00625) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>DIS.<br>(MG/L<br>AS N)<br>(00623) | PHOS-<br>PHORUS<br>TOTAL<br>(MG/L<br>AS P)<br>(00665) | PHOS-<br>PHORUS<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00666) | PHOS-<br>PHORUS<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)<br>(00671) |
|-------|--|---|--|---|--|--|
| FEB   |  |   |  |   |  |  |
| 06... | 1.0  | 5.2   | 3.3  | 2.1   | 1.6  | 1.5  |
| 06... | 1.3  | 6.4   | 3.7  | 3.2   | 2.2  | 2.0  |
| 07... | .83  | 4.5   | 2.8  | 1.8   | 1.8  | 2.2  |
| 07... | .72  | 3.0   | 2.6  | 1.3   | 1.0  | 1.1  |
| APR   |  |   |  |   |  |  |
| 11... | .79  | 7.8   | 3.0  | 2.7   | 1.5  | 1.5  |

PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

| DATE   | TIME | DIS-<br>CHARGE,<br>INST.<br>CUBIC<br>FEET<br>PER<br>SECOND<br>(00061) | TEMPER-<br>ATURE<br>WATER<br>(DEG C)<br>(00010) | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L)<br>(80154) | SEDI-<br>MENT,<br>CHARGE,<br>SUS-<br>PENDED<br>(T/DAY)<br>(80155) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM<br>(70331) |
|--------|------|---|---|---|---|--|
| FEB    |      |   |   |   |   |  |
| 06...N | 1850 | e5.0  | 10.5  | 118   | 1.6   | 78   |
| 06...N | 2150 | e5.0  | 9.3   | 163   | 2.2   | 82   |
| 07...N | 1030 | e5.0  | 10.4  | 96  | 1.3   | 83   |
| 07...N | 1440 | e3.0  | 11.3  | 88  | .71   | 64   |

e Estimated.

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.





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