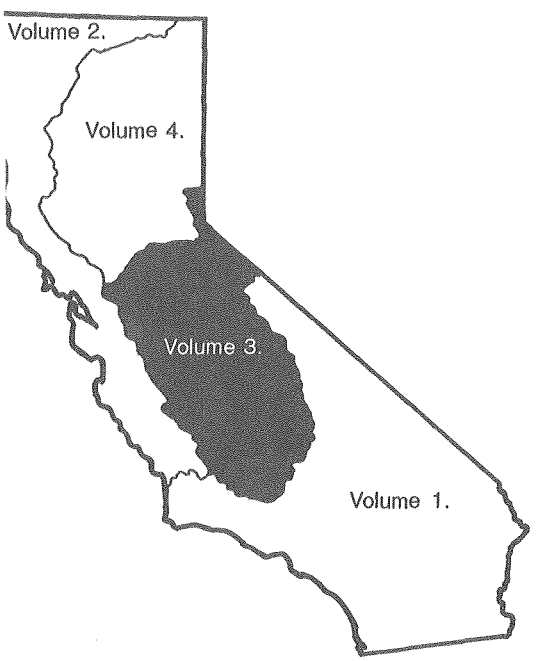
USGS
cience for a changing world

Pat Shaffer

Water Resources Data
California
Water Year 1998

olume 3. Southern Central Valley Basins and The Great asin from Walker River to Truckee River

ater-Data Report CA-98-3



. Department of the Interior
. Geological Survey

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

CALENDAR FOR WATER YEAR 1998

1997

OCTOBER

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

NOVEMBER

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

DECEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

1998

JANUARY

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

FEBRUARY

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

MARCH

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

APRIL

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

MAY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JUNE

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

JULY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

AUGUST

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

SEPTEMBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

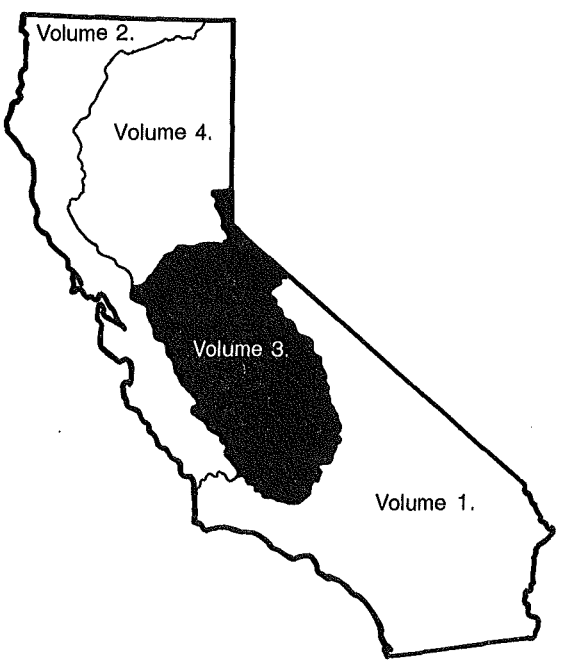
U.S. Department of the Interior
U.S. Geological Survey

Water Resources Data California Water Year 1998

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

By P.D. Hayes, G.L. Rockwell, S.W. Anderson, and J.R. Smithson

Water-Data Report CA-98-3



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

U.S. DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, Secretary

U.S. GEOLOGICAL SURVEY

Charles G. Groat, Director

For information on the water program in California write to:
District Chief, Water Resources Division
U.S. Geological Survey
Placer Hall, Suite 2012
6000 J Street
Sacramento, California 95819-6129

1999

PREFACE

This volume of the annual hydrologic data report of California is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and water quality provide the hydrologic information needed by Federal, State, and local agencies, and the private sector for developing and managing our Nation's land and water resources. Hydrologic data for California are contained in four volumes:

Volume 1. Southern Great Basin from Mexican Border to Mono Lake Basin and Pacific Slope Basins from the Tijuana River to Santa Maria River

Volume 2. Pacific Slope Basins from Arroyo Grande to Oregon State Line except Central Valley

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

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

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to U.S. Geological Survey policy and established guidelines, the individuals contributing significantly to the collection, processing, and tabulation of the data are given on page V.

This report was prepared in cooperation with the California Department of Water Resources and with other agencies, under the general supervision of Michael V. Shulters, District Chief, California.

REPORT DOCUMENTATION PAGE

Form Approved OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	May 1999	Annual—Oct. 1, 1997, to Sept. 30, 1998

4. TITLE AND SUBTITLE
Water Resources Data—California, Water Year 1998, Volume 3, Southern Central Valley Basins and The Great Basin from Walker River to Truckee River

5. FUNDING NUMBERS

6. AUTHOR(S)
P.D. Hayes, G.L. Rockwell, S.W. Anderson, J.R. Smithson, and L.A. Freeman

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
U.S. Geological Survey, Water Resources Division, California District
Placer Hall, Suite 2012
6000 J Street
Sacramento, CA 95819-6129

8. PERFORMING ORGANIZATION REPORT NUMBER
USGS-WDR-CA-98-3

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Geological Survey, Water Resources Division, California District
Placer Hall, Suite 2012
6000 J Street
Sacramento, CA 95819-6129

10. SPONSORING / MONITORING AGENCY REPORT NUMBER
USGS-WDR-CA-98-3

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

12a. DISTRIBUTION / AVAILABILITY STATEMENT
No restriction on distribution. This report may be purchased from the National Technical Information Service, Springfield, VA 22161

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

Water-resources data for the 1998 water year for California consist of records of stage, discharge, and water quality of streams, stage and contents in lakes and reservoirs, and water levels and water quality in wells. Volume 3 contains discharge records for 172 gaging stations, stage and contents for 43 lakes and reservoirs, and water quality for 36 stations. Also included is 1 crest-stage partial-record station and 3 miscellaneous partial-record site. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in California.

14. SUBJECT TERMS
*California, *Hydrologic data, *Surface water, *Water quality, Flow rate, Sampling sites, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediment, Water temperatures, Water analyses

15. NUMBER OF PAGES
506

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	

WATER RESOURCES DIVISION

Robert R. Mason, Chief, Operations
James C. Bowers, Assistant Chief, Operations

Allan J. Asquith, Hydrologic Technician
William R. Brazelton, Hydrologic Technician
Laureen J. Fong-Frydendal, Hydrologic Technician
Paula A. Grow, Office Automation Clerk
William J. Hardy, Hydrologic Technician
Stuart A. Hill, Hydrologic Technician
Paul D. Honeywell, Hydrologic Technician
Ernie W. Houston, Hydrologist
Joel D. Johnson, Supervisory Hydrologist
Mark V. Johnson, Hydrologic Technician
Kim L. Hanson, Computer Specialist
Roy Henry, Hydrologist
Michael P. Mann, Hydrologic Technician
Harold J. McIntyre, Hydrologic Technician
Delia A. Mento, Hydrologic Clerk
Allan C. Mlodnosky, Hydrologic Technician
Denis J. O'Halloran, Hydrologic Technician
Kristina Pruett, Editorial Assistant
Glenn G. Quy, II, Lead Hydrologic Technician
Matthew C. Scrudato, Hydrologic Technician
M. Kathy Shay, Computer Specialist
Larry R. Shelton, Hydrologic Technician
Carol J. Simons, Hydrologic Technician
Daryl R. Slawnikowski, Hydrologic Technician
David M. Sparks, Hydrologic Technician
Robert H. Taylor, Hydrologic Technician
Gloria Valdez, Office Automation Assistant
Jeffrey B. West, Hydrologic Technician
M. Kay Witter, Editor
Mark H. Woloszyk, Hydrologic Technician
David K. Yancey, Computer Specialist
George S. Yamamoto, Scientific Illustrator
Brian T. Yost, Hydrologic Technician

Richard A. Hunrichs, Surface Water Hydrologist
Robert W. Meyer, Surface Water Hydrologist

CONTENTS

ILLUSTRATIONS

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

SURFACE-WATER AND WATER-QUALITY STATIONS
IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THE VOLUME—Continued

DISCONTINUED GAGING STATIONS

The following continuous record streamflow stations in California have been discontinued or converted to partial record stations. Daily records were collected and are stored in USGS Water Data for the period of record shown for each station.

Station No.	Station name	Drainage area (mi^2)	Period of record
10295200	West Walker River at Leavitt Meadows, near Coleville	73.4	1945–64
10303000	Silver King Creek near Coleville	31.8	1947–51
10303500	East Fork Carson River at Silver King Valley, near Markleeville	—	1947–51
10336593	Grass Lake Creek near Meyers	6.99	1971–74
10336600	Upper Truckee River near Meyers	33.1	1961–86
10336625	Fallen Leaf Lake near Camp Richardson	16.7	1968–92
10336626	Taylor Creek near Camp Richardson	16.7	1968–92
10336759	Edgewood Creek near Stateline, NV	3.20	1983–87
10338100	Summit Creek above Donner Lake, near Truckee	4.96	1997–98
10339419	Truckee River above Prosser Creek, near Truckee	644	1994–98
10341950	Little Truckee River below diversion dam, near Sierraville	36.1	1993–98
10342000	Little Truckee River near Hobart Mills	37.1	1947–72
10343200	Little Truckee River at Highway 89, near Truckee	59.0	1993–94
10345700	Bronco Creek at Floriston	15.4	1993–98
11185000	Grayson Creek near Hookston	1.96	1955–60
11185100	Grayson Creek near Pacheco	4.35	1954–58
11185300	Golden Trout Creek near Cartago	23.6	1957–67, 1969
11185350	Kern River near Quaking Aspen Camp	530	1961–71, 1973–74
11185400	Little Kern River near Quaking Aspen Camp	132	1957–69
11185600	Packsaddle Canyon Creek near Fairview	4.05	1960–66
11186340	Salmon Creek Tributary B near Fairview	.46	1963–69
11186360	Salmon Creek Tributary C near Fairview	.30	1963–69
11186380	Salmon Creek Tributary E near Fairview	.23	1963–69
11186500	Salmon Creek near Kernville	25.8	1922–23
11187000	Kern River at Kernville	1,009	1905–12, 1953–93
11188000	Kern River at Isabella	1,068	1911, 1926–35
11188200	South Fork Kern River near Olancha	146	1956–67, 1969
11189700	Kelso Creek near Weldon	101	1958–66
11190000	South Fork Kern River at Isabella	982	1929–52
11191000	Kern River below Isabella Dam	2,074	1945–90
11193000	Kern River below Kern Canyon Powerhouse, near Bakersfield	2,307	1954–64
11194000	Kern River near Bakersfield	2,407	1894–1976
11194200	Wagon Wheel Creek near Reward	1.38	1966–71
11195500	San Emigdio Creek at San Emigdio Ranchhouse	48.8	1959–81
11195600	Pastoria Creek near Lebec	27.5	1965–71
11196000	Tejon Creek at Tejon Ranchhouse	48.7	1895–96
11196400	Caliente Creek above Tehachapi Creek, near Caliente	165	1962–83
11196420	Tehachapi Creek near Tehachapi	53.2	1963–85
11197250	Avenal Creek near Avenal	57.1	1962–86
11197800	Poso Creek near Oildale	230	1959–85
11199000	White River near Ornia Hot Springs	14.0	1911–13
11200000	Deer Creek at California Hot Springs	16.8	1911–15, 1917–34
11201200	Deer Creek Diversion near Terra Bella	—	1971–87
11201500	Pacific Gas & Electric Co. Conduit near Springville	—	1940–54, 1966–67, 1969–71, 1976–83
11201800	North Fork of Middle Fork Tule River below Hossack Creek, near Springville	33.8	1909–13
11202750	Middle Fork Tule River above Springville	92.4	1979–88
11203000	Bear Creek near Springville	13.5	1911–16
11203100	North Fork Tule River at Springville	97.6	1957–67
11203190	Tule River Diversion Ditch near Springville	—	1968–88
11203200	Tule River near Springville	247	1958–68
11203220	Tule River at Highway 190, near Springville	247	1968–90
11203500	Tule River near Porterville	253	1902–60
11204000	South Fork Tule River near Porterville	80.3	1911–23, 1925, 1928–32
11204500	South Fork Tule River near Success	109	1930–54, 1956–90
11204680	Pioneer Ditch below Success Dam	—	1959–90
11204900	Tule River below Success Dam	393	1953–90
11205000	Tule River at Worth Bridge, near Porterville	395	1954–60
11205680	Frazier Creek near Strathmore	3.05	1974–94
11208500	Middle Fork Kaweah River Tributary near Hammond	1.90	1967–70, 1972–73

DISCONTINUED GAGING STATIONS—Continued

Station No.	Station name	Drainage area (mi^2)	Period of record
11208610	Monarch Creek near Hammond	1.89	1968–73
11208620	East Fork Kaweah River below Mosquito Creek, near Hammond	16.0	1968–73
11208625	East Fork Kaweah River at Sequoia National Park boundary, near Hammond	23.7	1968–71
11209500	North Fork Kaweah River near Three Rivers	129	1911–60, 1980–81
11209900	Kaweah River at Three Rivers	418	1959–90
11210000	South Fork Kaweah River near Three Rivers	66.5	1912–24
11210100	South Fork Kaweah River at Three Rivers	86.7	1959–90
11210500	Kaweah River near Three Rivers	519	1904–18, 1921–61
11210850	Lemoncove Ditch below Terminus Dam	—	1962–90
11210930	Foothill Ditch below Terminus Dam	—	1962–90
11210950	Kaweah River below Terminus Dam	561	1962–90
11211300	Dry Creek near Lemoncove	75.6	1960–94
11211500	Kaweah River at McKay Point, near Lemoncove	647	1919–21
11211785	Cottonwood Creek above Collier Creek, near Elderwood	52.3	1985–94
11211790	Cottonwood Creek near Elderwood	60.4	1971–85
11212000	Sand Creek near Orange Cove	31.6	1944–54, 1956, 1967, 1969, 1971–84, 1985–94
11212500	South Fork Kings River near Cedar Grove	408	1951–57
11213000	Kings River near Hume	835	1922–36, 1952–58
11213500	Kings River above North Fork, near Trimmer	952	1927–28, 1932–82
11214000	North Fork Kings River below Meadowbrook	37.7	1922–35, 1957–81
11214200	Fleming Creek near Blackcap Mountain	15.0	1957–65
11214400	Post Corral Creek near Blackcap Mountain	27.9	1957–65
11214500	Helms Creek at Sand Meadows	34.7	1923–31, 1956–58
11215500	Rancheria Creek near Smith Meadows	21.3	1925–31
11215800	Teakettle Creek Tributary No. 3 near Dinkey Creek	.86	1958–69, 1977–83
11215810	Teakettle Creek Tributary No. 7 near Patterson Mountain	.11	1958–63
11215820	Teakettle Creek Tributary No. 2 near Dinkey Creek	.85	1958–69, 1977–83
11215830	Teakettle Creek Tributary No. 2a near Dinkey Creek	.27	1958–69, 1977–83
11215840	Teakettle Creek Tributary No. 1 near Dinkey Creek	.77	1958–69, 1977–83
11216000	North Fork Kings River below Rancheria Creek	229	1927–50
11216800	Rock Creek at Dinkey Creek	7.60	1961–70
11217000	Dinkey Creek at Dinkey Meadow, near Shaver Lake	50.7	1922–35, 1977–87
11217500	Deer Creek below east Fork, near Shaver Lake	19.0	1924–31
11218000	Dinkey Creek at mouth, near Trimmer	132	1920–37
11218500	Kings River below North Fork, near Trimmer	1,342	1951–93
11219000	Big Creek near Tollhouse	19.8	1911–13
11220000	Big Creek above Pine Flat Lake, near Trimmer	70.0	1954–73
11220500	Sycamore Creek above Pine Flat Lake, near Trimmer	56.1	1953–73
11221500	Kings River below Pine Flat Dam	1,545	1954–90
11221700	Mill Creek near Piedra	127	1958–94
11222000	Kings River at Piedra	1,693	1896–1959
11225000	Los Gatos Creek near Coalinga	105	1932–41
11226000	North Fork San Joaquin River below Iron Creek	35.5	1922–28, 1959–69
11226500	San Joaquin River at Miller Crossing	249	1921–28, 1951–91
11227000	West Fork Granite Creek near Timber Knob	26.4	1922–25
11227500	Middle Fork Granite Creek near Cattle Mountain	2.25	1922–23
11228000	East Fork Granite Creek near Cattle Mountain	14.6	1922–25
11228500	Granite Creek near Cattle Mountain	47.8	1922–28, 1966–86
11230000	South Fork San Joaquin River near Florence Lake	171	1922–81, 1984
11230650	Bolsillo Creek above diversion dam, near Big Creek	1.3	1986
11232000	South Fork San Joaquin River near Hoffman Meadow	424	1922–28
11232500	Jackass Creek near Bass Lake	12.1	1922–28, 1961–68
11234500	Chiquito Creek near Bass Lake	60.1	1922–28, 1956–70
11235000	San Joaquin River above Big Creek	1,050	1913–15, 1922–62
11236080	Huntington–Shaver Conduit at Huntington Lake	—	1975–83
11238000	Pitman Creek at Big Creek	23.7	1910–16, 1922–27
11239000	Huntington–Shaver Conduit near Shaver Lake	—	1929–85
11242350	Soquel diversion near Sugar Pine	—	1970–77
11243300	Brown's Creek Canal at Bass Lake	—	1987–98
11245000	South Fork Willow Creek near North Fork	39.8	1910–17
11245500	Whiskey Creek near North Fork	11.6	1911–16

DISCONTINUED GAGING STATIONS—Continued

Station No.	Station name	Drainage area (mi^2)	Period of record
11246000	Cascadel Creek near North Fork	3.31	1910–12
11247000	San Joaquin River below Kerckhoff Powerhouse, near Prather	1,480	1910–14, 1937, 1943–82, 1988–89
11247200	Big Sandy Creek Tributary near Tollhouse	.46	1969–71
11247500	Big Sandy Creek near Auberry	27.3	1947–51
11248000	Fine Gold Creek near Friant	92.7	1937–58
11250500	Cottonwood Creek near Friant	35.6	1942–51
11251500	Little Dry Creek near Friant	57.9	1942–56
11251600	Little Dry Creek at mouth, near Friant	77.4	1957–61
11252500	San Joaquin River at Herndon	1,802	1895–1901
11253000	San Joaquin River near Biola	1,811	1953–61
11254000	San Joaquin River near Mendota	3,940	1940–54
11255500	Panoche Creek below Silver Creek, near Panoche	293	1950–53, 1959–70
11255550	Little Panoche Creek Tributary No. 1, near Panoche	.33	1959–64
11256000	San Joaquin River near Dos Palos	4,669	1941–54
11257100	Miami Creek near Oakhurst	10.6	1961–80
11257500	Fresno River near Knowles	133	1911–13, 1915–90
11257700	Picayune Creek near Coarsegold	8.17	1965–68
11258000	Fresno River below Hidden Dam, near Daulton	237	1942–90
11258800	East Fork Chowchilla River near Ahwahnee	57.8	1958–67
11258900	West Fork Chowchilla River near Mariposa	33.6	1958–80
11258920	North Fork Chowchilla River near Nippinnawassee	13.6	1959–67
11258960	Chowchilla River above Willow Creek, near Raymond	173	1980–90
11258980	Chowchilla River near Raymond	201	1972–80
11259000	Chowchilla River below Buchanan Dam, near Raymond	236	1922–23, 1931–72, 1976–90
11259300	Chowchilla River below Raynor Creek, near Raymond	254	1973–75
11259900	Chamberlain Slough near El Nido	—	1940–49
11260000	San Joaquin River above Sand Slough, near El Nido	6,447	1940–49
11260000	San Joaquin River near El Nido	6,443	1940–49
11260001	San Joaquin River plus Chamberlain Slough, near El Nido	6,450	1940–49
11260200	Bear Creek near Catheys Valley	24.9	1958–69
11260225	Burns Creek at Hornitos	26.7	1965–69
11260480	Mariposa Creek near Catheys Valley	65.7	1959–80
11261000	Salt Slough near Los Banos	—	1941–68
11261500	San Joaquin River at Fremont Ford Bridge	7,615	1937–70, 1986–89
11262800	Los Banos Creek near Los Banos	159	1959–66
11263000	San Luis Creek near Los Banos	84.6	1950–63
11265000	Tenaya Creek near Yosemite	46.9	1912–58
11265500	Merced River at Yosemite	236	1912–17
11266000	Yosemite Creek at Yosemite	42.7	1912–16, 1918
11267300	South Fork Merced River at Wawona	100	1959–68
11267500	South Fork Merced River near Wawona	132	1912, 1914–15, 1918–21
11268000	South Fork Merced River near El Portal	241	1951–75
11268200	Merced River near Briceburg	691	1966–74
11268500	Merced River at Bagby	911	1923–30, 1932–66
11269300	Maxwell Creek at Coulterville	17	1960–74, 1976–80
11270000	Merced River at Exchequer	1,037	1901–14, 1916–64
11270800	Northside Canal at Merced Falls	—	1987–94
11271320	Dry Creek near Snelling	67.6	1966–92
11271500	Merced River near Livingston	1,259	1922–24, 1926–44
11272500	Merced River near Stevinson	1,273	1941–95
11273000	Merced River Slough near Newman	1,276	1942–72
11274554	Spanish Grant Combined Drain near Patterson	—	1993–95
11274560	Turlock Irrigation District Lateral No. 5 near Patterson	—	1992–95
11274600	Del Puerto Creek Tributary No. 1 near Patterson	.71	1964–69
11274610	Del Puerto Creek Tributary No. 2 near Patterson	.024	1959–63
11274710	Maclure Creek below Maclure Glacier, near Tuolumne Meadows	.37	1967–72
11274800	Tuolumne River at Hetch Hetchy Cabin, near Sequoia	404	1911–16
11275000	Falls Creek near Hetch Hetchy	46	1916–83
11277000	Cherry Creek near Hetch Hetchy	111	1910–55
11278200	Cherry Creek Canal near Early Intake	—	1956–71, 1987–96

DISCONTINUED GAGING STATIONS—Continued

Station No.	Station name	Drainage area (mi^2)	Period of record
11278500	Jawbone Creek near Tuolumne	19.1	1911
11279500	South Fork Toulumne River at Italian Flat, near Sequoia	64.9	1925–30, 1932–33
11280000	South Fork Tuolumne River near Sequoia	68.3	1914–17
11281500	Middle Tuolumne River near Mather	52.4	1925–29, 1932–33
11282500	South Fork Tuolumne River near Buck Meadows	164	1912, 1914, 1917–21
11283000	Tuolumne River near Buck Meadows	924	1908, 1911–36
11283100	Lily Creek near Pinecrest	11.9	1964–74
11283200	Bell Creek near Pinecrest	9.11	1964–79
11283250	Clavey River near Long Barn	48.9	1987–94
11283350	Reed Creek near Long Barn	27.2	1987–94
11283500	Clavey River near Buck Meadows	144	1960–84, 1987–94
11284500	Big Creek near Groveland	25	1932–33, 1960–74
11284700	North Fork Tuolumne River near Long Barn	23.1	1962–86
11285000	North Fork Tuolumne River above Dyer Creek, near Tuolumne	69.2	1959–66
11286500	Woods Creek near Jacksonville	97.2	1926–68
11288000	Tuolumne River above La Grange Dam, near La Grange	1,532	1896–1970
11288500	Tuolumne River at La Grange	1,539	1896–1911
11291500	Relief Creek near Baker Station	24.4	1911–18
11292500	Clark Fork Stanislaus River near Dardanelle	67.5	1951–94
11292680	Cascade Creek near Pinecrest	4.97	1963–65
11293000	Middle Fork Stanislaus River at Sand Bar Flat, near Avery	325	1906–66
11293500	North Fork Stanislaus River below Silver Creek	27.8	1953–88
11293650	North Fork Stanislaus River at Camp Wolfesboro, near Big Meadows	47.4	1994–96
11293700	Hobart Creek at North Fork Stanislaus River Diversion Tunnel Outlet, near New Spicer Meadow Dam	1.13	1989–94
11294300	North Fork Stanislaus River below Ganns Dam Site, near Big Meadow	111	1961–67
11294400	North Fork Stanislaus River at Sourgrass Campground, near Dorrington	149	1991–96
11295000	Utica Canal near Avery	—	1970, 1976–89
11295400	Stanislaus River near Hathaway Pines	629	1967–94
11299500	Stanislaus River below Melones Powerhouse, near Sonora	905	1931–67
11300000	Stanislaus River near Knights Ferry	980	1916–33
11300600	South San Joaquin Main Canal below diversion point, near Knights Ferry	—	1983–89
11300700	South San Joaquin Main Canal below Woodward Reservoir, near Oakdale	—	1982–89
11300800	North Main Canal below diversion point, near Knights Ferry	—	1983–89
11304000	Corral Hollow Creek near Tracy	61.6	1959–66
11305000	San Domingo Creek near San Andreas	26.2	1950–62
11305500	San Antonio Creek near San Andreas	48.0	1950–59
11306000	South Fork Calaveras River near San Andreas	118	1950–79
11306500	Calaveritas Creek near San Andreas	53	1950–66
11307000	Esperanza Creek near Mokelumne Hill	16.6	1951–59
11307500	Jesus Maria Creek near Mokelumne Hill	34.6	1950–59
11308000	North Fork Calaveras River near San Andreas	85.2	1950–79
11308500	Murray Creek near San Andreas	23.6	1950–59
11308900	Calaveras River below New Hogan Dam, near Valley Springs	363	1961–90
11309000	Cosgrove Creek near Valley Springs	21.6	1930–69
11309500	Calaveras River at Jenny Lind	393	1907–66
11310500	Calaveras River near Stockton	—	1926, 1944–50
11311000	Stockton Diverting Canal at Stockton	—	1944–53
11311500	Bear Creek near Clements	42.2	1927
11312000	Bear Creek near Lockeford	47.4	1931–85
11312500	Bear Creek at Harmony School, near Lockeford	51.1	1927–31
11315500	Bear River at Pardoe Camp	33	1928–51
11316000	Bear River near Salt Springs Dam	48	1952–87
11316500	North Fork Mokelumne River near West Point	273	1924–32
11317500	South Fork Mokelumne River near Railroad Flat	38.7	1912–34
11318000	Licking Fork Mokelumne River near Railroad Flat	6.32	1912–13, 1915–16
11321000	Mokelumne River at Lancha Plana	587	1926–63
11321500	Camanche Creek near Camanche	5.19	1933–34
11322000	Rabbit Creek near Camanche	8.55	1932–34
11326300	Dry Creek above Sutter Creek, near Ione	70.9	1960–70

DISCONTINUED GAGING STATIONS—Continued

Station No.	Station name	Drainage area (mi^2)	Period of record
11326500	Sutter Creek near Volcano	29.8	1924–27
11327000	Sutter Creek near Sutter Creek	48.1	1936–41, 1961–80
11327500	Sutter Creek at Sutter Creek	50.7	1922–36
11328000	Dry Creek near Ione	266	1912, 1926–32
11329000	Goose Creek near Elliott	8.26	1928–33
11329500	Dry Creek near Galt	324	1927–33, 1945–87, 1996–98
11330000	North Fork Cosumnes River at Cosumnes Mine	38.7	1949–53
11331000	Camp Creek near Sly Park	8.59	1924
11331500	Camp Creek near Camino	32.4	1949–56
11332500	Sly Park Creek near Pollock Pines	18.2	1947–55
11333500	North Fork Cosumnes River near El Dorado	205	1884, 1912–41, 1949–83, 1985–87
11334200	Middle Fork Cosumnes River near Somerset	107	1958–71
11334300	South Fork Cosumnes River near River Pines	64.3	1958–80
11334500	Cosumnes River near Plymouth	436	1952–60
11335700	Deer Creek near Sloughhouse	46	1961–66, 1968–77
11336000	Cosumnes River at McConnel	724	1942–82
11336500	Hadselville Creek at Clay	18.1	1931
11337500	Marsh Creek near Byron	42.6	1953–83

DISCONTINUED LAKES AND RESERVOIRS

The following continuous-record lake stations in California have been discontinued. Daily records were collected and are stored in USGS Water Data for the period of record shown for each location.

Station No.	Station name	Drainage area (mi^2)	Period of record
10336625	Fallen Leaf Lake near Camp Richardson	16.7	1968–92
10339380	Martis Creek Lake near Truckee	39.6	1972–90
11190500	Isabella Lake near Lake Isabella	2,074	1954–90
11197000	Tulare Lake in Kings County	—	1969–82
11204700	Success Lake near Success	391	1962–90
11210900	Lake Kaweah near Lemoncove	560	1962–90
11221000	Pine Flat Lake near Piedra	1,545	1952–90
11257950	Hensley Lake near Daulton	236	1976–90
11258990	H.V. Eastman Lake near Raymond	235	1976–90
11308700	New Hogan Lake near Valley Springs	362	1964–90
11320000	Pardee Reservoir near Valley Springs	578	1962–93
11322300	Camanche Reservoir near Clements	621	1964–93

DISCONTINUED WATER-QUALITY STATIONS

The following continuous water-quality stations in California have been discontinued. Daily records were collected and are stored in USGS Water Data for the period of record shown for each location.

Station No.	Station name	Drainage area (mi^2)	Type of record	Period of record
10336593	Grass Lake Creek near Meyers	6.99	T,S	1972–74
10336610	Upper Truckee River at South Lake Tahoe	54.9	C,T,S	1972–74, 1978, 1980–92
10336630	Eagle Creek near Camp Richardson	6.38	T,S	1972–74
10336640	Meeks Creek at Meeks Bay	8.08	T,S	1971–74
10336645	General Creek near Meeks Bay	7.44	C,T,S	1981–92

DISCONTINUED WATER-QUALITY STATIONS

Station No.	Station name	Drainage area (mi^2)	Type of record	Period of record
10336650	Quail Lake Creek at Homewood	.95	T,S	1972–74
10336655	Madden Creek near Homewood	1.40	T,S	1972–74
10336658	Madden Creek at Homewood	2.06	T,S	1972–73
10336670	Ward Creek near Tahoe Pines	2.03	T,S	1973–76
10336672	Ward Creek Tributary near Tahoe Pines	.91	T,S	1973–76
10336684	Dollar Creek near Tahoe City	1.07	T,S	1972–74
10336689	Snow Creek at Tahoe Vista	4.43	C,T,S	1981–85
10336740	Logan House Creek near Glenbrook, NV	2.08	S	1984–87
10336759	Edgewood Creek near Stateline, NV	3.20	S	1983–87
10336780	Trout Creek near Tahoe Valley	36.7	C,T,S	1971–74, 1978, 1980–85, 1987–88
10337000	Lake Tahoe at Tahoe City	506	WQ	1969, 1978–79
10337500	Truckee River at Tahoe City	507	WQ,T	1978–81, 1993–94
10338000	Truckee River near Truckee	553	WQ,C,T	1951–66, 1977–94
10338700	Donner Creek at Highway 89, near Truckee	29.1	T	1993–94
10339250	Martis Creek at State Highway 267, near Truckee	25.8	WQ,T,S	1975–95
10339380	Martis Creek Lake near Truckee	39.6	WQ,S	1975–95
10339400	Martis Creek near Truckee	—	WQ,S	1975–95
10339419	Truckee River above Prosser Creek, near Truckee	644	C,T	1994–98
10340500	Prosser Creek below Prosser Creek Dam, near Truckee	52.9	T	1993–98
10341950	Little Truckee River below Diversion Dam, near Sierraville	36.1	T	1993–94
10343200	Little Truckee River at Highway 89, near Truckee	59.0	T	1993–94
10343500	Sagehen Creek near Truckee	10.5	WQ,T,S	1968–75, 1981–96
10344500	Little Truckee River below Boca Dam, near Truckee	173	T	1993–98
10346000	Truckee River at Farad	—	WQ,B,C, T,S	1951–61, 1964–81, 1993–98
10345700	Bronco Creek at Floriston	15.4	T	1993–94
10345900	Truckee River at Floriston	932	T	1968–71
10346000	Truckee River at Farad	932	WQ,B,S	1951–61, 1964–81
11185350	Kern River near Quaking Aspen Camp	530	T	1966–74
11187000	Kern River at Kernville	1,009	WQ,B,T,S	1962–93
11191000	Kern River below Isabella Dam	2,074	WQ,T	1956–66, 1971–94
11204900	Tule River below Success Dam	393	WQ,T	1962–69, 1971–94
11206500	Middle Fork Kaweah River near Potwisha Camp	102	WQ,C,T	1958–63, 1972, 1980–81
11208000	Marble Fork Kaweah River at Potwisha Camp	51.4	C	1962–72, 1980–81
11208610	Monarch Creek near Hammond	1.89	T	1969–73
11208620	East Fork Kaweah River below Mosquito Creek, near Hammond	16.0	T	1968–73
11208625	East Fork Kaweah River at Sequoia National Park boundary, near Hammond	23.7	T	1968–71
11208730	East Fork Kaweah River near Three Rivers	85.8	T	1968–76
11209500	North Fork Kaweah River near Three Rivers	129	T	1980–81
11209900	Kaweah River at Three Rivers	418	T	1966, 1968–88
11210950	Kaweah River below Terminus Dam	561	WQ,T	1962–94
11213500	Kings River above North Fork, near Trimmer	952	T	1966–79
11216500	North Fork Kings River above Dinkey Creek, at Balch Camp	250	T	1968–79
11218500	Kings River below North Fork, near Trimmer	1,342	WQ,B,T,S	1956–93
11221500	Kings River below Pine Flat Dam	1,545	WQ,T	1956–66, 1970–94
11230000	South Fork San Joaquin River near Florence Lake	171	T	1961
11235000	San Joaquin River above Big Creek	1050	T	1961–62
11237000	Big Creek below Huntington Lake	81.1	T	1961–70
11245000	South Fork Willow Creek near North Fork	39.8	T	1961
11246500	Willow Creek at mouth, near Auberry	130	T	1961–72
11247000	San Joaquin River below Kerckhoff Powerhouse, near Prather	1,480	T	1961–68, 1970–74
11204900	Tule River below Success Dam	393	WQ,T	1962–69, 1971–94
11253500	James Bypass near San Joaquin	—	T	1969–71
11257500	Fresno River near Knowles	133	T	1971–88
11258000	Fresno River below Hidden Dam, near Daulton	237	T	1976–90
11258960	Chowchilla River above Willow Creek, near Raymond	173	T	1980–88
11258980	Chowchilla River near Raymond	201	T	1971–80
11259000	Chowchilla River below Buchanan Dam, near Raymond	236	WQ,T	1958–65, 1976–94
11260815	San Joaquin River near Stevinson	7,388	C,T	1989–96
11264500	Merced River at Happy Isles Bridge, near Yosemite	181	WQ,B,T,S	1966–96
11266500	Merced River at Pohono Bridge, near Yosemite	321	T	1995

DISCONTINUED WATER-QUALITY STATIONS

Station No.	Station name	Drainage area (mi^2)	Type of record	Period of record
11268000	South Fork Merced River near El Portal	241	T	1975–78
11268200	Merced River near Briceburg	691	T	1976–77
11272500	Merced River near Stevinson	1,273	C,T	1989–92
11274000	San Joaquin River near Newman	9,520	WQ,C,T,S	1989, 1992–95
11274538	Orestimba Creek at River Road, near Crows Landing	—	WQ,S	1992–95
11274554	Spanish Grant Combined Drain near Patterson	—	WQ,C,T,S	1993–95
11274560	Turlock Irrigation District Lateral No. 5 near Crows Landing	—	WQ,C,T,S	1992–95
11274570	San Joaquin River at Patterson Bridge, near Patterson	9,760	WQ,C,T,S	1989–95
11283100	Lily Creek near Pinecrest	11.9	T	1965–74
11290000	Tuolumne River at Modesto	1,884	WQ,C,T,S	1989–95
11292700	Middle Fork Stanislaus River at Hells Half Acre Bridge, near Pinecrest	287	T	1966–71, 1973–78
11294500	North Fork Stanislaus River near Avery	—	T	1990–98
11295400	Stanislaus River near Hathaway Pines	629	T	1970–83
11303000	Stanislaus River at Ripon	1,075	WQ,C,T,S	1989, 1993–94
11303500	San Joaquin River near Vernalis	13,536	B	1974–81
11306000	South Fork Calaveras River near San Andreas	118	T	1974–79
11308000	North Fork Calaveras River near San Andreas	85.2	T	1974–79
11308600	Calaveras River above New Hogan Reservoir, near San Andreas	307	T	1970–82, 1984–88
11308900	Calaveras River below New Hogan Dam, near Valley Springs	363	WQ,T	1964–66, 1971–94
11312000	Bear Creek near Lockeford	47.4	C	1976
11313010	Delta–Mendota Canal below Tracy Pump Plant, near Tracy	—	T	1960–66
11319500	Mokelumne River near Mokelumne Hill	544	WQ,T	1961–79
11323500	Mokelumne River below Camanche Dam	627	WQ,T,S	1906–07, 1956–76
11325500	Mokelumne River at Woodbridge	661	WQ,B,C,T,S	1951–94
11335000	Cosumnes River at Michigan Bar	536	WQ,T,S	1953–80

Type of record: WQ (Water-quality); B (Biological); C (Conductivity); T (Temperature); S (Sediment).

WATER RESOURCES DATA—CALIFORNIA, WATER YEAR 1998
VOLUME 3—SOUTHERN CENTRAL VALLEY BASINS AND THE GREAT BASIN FROM WALKER RIVER TO TRUCKEE RIVER

By P.D. Hayes, G.L. Rockwell, S.W. Anderson, J.R. Smithson, *and* L.A. Freeman

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 172 streamflow-gaging stations and 4 partial-record stations; (2) stage and content records for 43 lakes and reservoirs; and (3) water-quality records for 36 streamflow-gaging 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-98-3." 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:

Calaveras County Water District, Simon Granville, General Manager.

California Department of Water Resources, David N. Kennedy, Director.

East Bay Municipal Utility District, Richard G. Sykes, Manager, Operations and Maintenance Services.

Madera Irrigation District, Stephen H. Ottemoeller, General Manager-Chief Engineer.

San Luis and Delta–Mendota Water Authority, Daniel G. Nelson, Executive Director.

San Francisco, City and County, Hetch-Hetchy Water and Power, Lawrence T. Klein, General Manager.

Tulare County Resource Management Agency, Mike Coffield, Director.

Turlock Irrigation District, Chris L. Kiriakou, Assistant General Manager–Energy Resources.

Woodbridge Irrigation District, Anders Christensen, Manager.

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

The following organizations aided in collecting records: Calaveras County Water District; Olcese Water District; Pacific Gas & Electric Co.; Southern California Edison Co.; Merced and Oakdale–South San Joaquin Irrigation Districts; Northern California Power Agency; and Utica Power Authority.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark 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 SO2 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 SO2 and NOx 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

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1998 water year that began October 1, 1997, and ended September 30, 1998. 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 11238600, which appears just to the left of the station name, includes the two-digit part number "11" plus the six-digit downstream-order number "238600." 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).

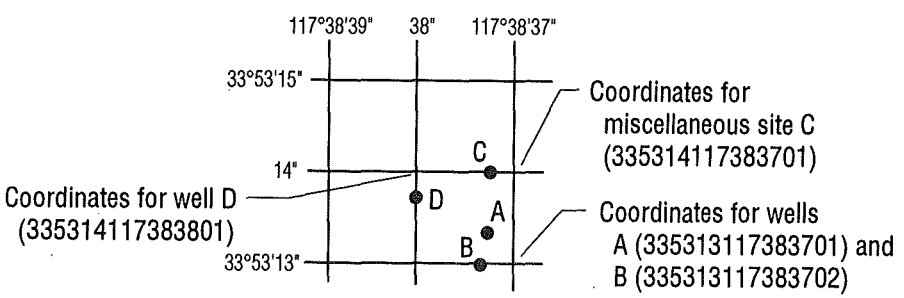


Figure 1. System for numbering miscellaneous sites (latitude and longitude).

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 21.

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 to follow clarify information presented under the various headings of the station description.

LOCATION.—Information on locations is obtained from the most accurate maps available. The location of the 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, possible, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District Office to determine if the published records were revised after the station was discontinued. If the data were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream-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 to follow 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 (ft^3/s) for values less than 1 ft^3/s, to the nearest tenth between 1.0 and 10 ft^3/s, to whole numbers between 10 and 1,000 ft^3/s, and to three significant figures

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

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the 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 21.

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 (1998) 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 (µg/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 Bench-Mark Stations during various seasons and surface-water discharges. Documentation of cross-section variation of water quality is essential in order to determine how many samples in a cross section are necessary to ensure a representative composite sample.

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the U.S Geological Survey's 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—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—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—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—a blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

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

Splitter blank—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—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 samples—a type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample—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 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.

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

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

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

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

Alkalinity is the capacity of solutes in an aqueous system to neutralize acid.

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, 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 which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory, these bacteria are defined as the organisms which produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35°C ± 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milligrams per liter of sample.

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

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

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 which 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 feacalis, Streptococcus feacium, Streptococcus avium, and their variants.

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 unconsolidated material 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 micro-organisms, such as bacteria.

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

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

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

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

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

Bottom material: See Bed material.

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

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

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

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

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with 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 pigments in plants.

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

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

Continuing-record station is a specified site which meets one or all conditions listed:

1. When chemical samples are collected daily or monthly for 10 or more months during the water year.
2. When water temperature records include observations taken one or more times daily.
3. When sediment discharge records include periods for which sediment loads are computed and are considered to be representative of the runoff for the water year.

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

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

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

Cubic foot per second per day (cfs/d or cfs-day) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, or about 646,000 gallons, or 2,447 cubic meters.

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

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

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

Annual 7-day minimum is the lowest mean discharge for 7 consecutive days for a calendar year or a water 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.)

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

Dissolved-solids concentration of water is determined either analytically or by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

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

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

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

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

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

Extractable organic halides (EOX) are organic compounds which contain halogen atoms such a 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.

Gage datum is the elevation of the zero point of the reference gage from which gage height is determined as compared to sea level. This elevation is established by a system of levels from known bench marks or by approximation from topographic maps.

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

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

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap that is required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate ($CaCO_3$).

High tide is the maximum height reached by each rising tide.

Hydrologic Bench-Mark Network is a network of approximately 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.

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

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

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

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

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

Low tide is the minimum height reached by each falling tide.

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

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 development process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-pupa-adult or egg-nymph-adult.

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

Micrograms per gram (UG/G, µg/g) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter.

Microsiemens per centimeter (µS/cm, US/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, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represents the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in milligrams per liter and is based on the mass of dry sediment per liter of water-sediment mixture.

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. It 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, 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.

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 SO2 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 SO2 and NOx scheduled to begin in 2000.

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

National Stream-Quality Accounting Network (NASQAN) 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 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.

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

Organism is any living entity.

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

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

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

Parameter code is a five-digit number used in the U.S. Geological Survey's computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent. The codes used in NWIS are the same as those used in the U.S. Environmental Protection Agency's data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

Partial-record station is a particular site where limited streamflow and (or) water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of a particle determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in 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 recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

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

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

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

Periphyton is the assemblage of 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. Insecticides and herbicides, which control insects and plants, respectively, are the two categories reported.

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

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

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

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

Blue-green algae are 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.

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

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

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

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

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

Milligrams of oxygen per area or volume per unit time [mg O_2 /(m^2/time)] for periphyton and macrophytes and [mg O_2 /(m^3/time)] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light- and dark-bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

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

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

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.

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

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.

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

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

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

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

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

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

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

Suspended-sediment load (tons per day) is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

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

Total sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total sediment discharge.

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions 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 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 concentration in water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

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

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

Substrate is the physical surface upon which an organism lives.

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

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

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

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

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

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment; thus, the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures 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 water-suspended sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

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

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	*Hexagenia*
Species	*Hexagenia limbata*

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

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

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

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

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determines all the constituent in the sample.)

Total discharge is the total quantity of any individual constituent, as measured by dry mass or volume, that passes through a stream cross-section per unit of time. This term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

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

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

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

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

Volatile Organic Compounds (VOCs) 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 VOCs 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 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, 1998, is called the "1998 water year."

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

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

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

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

The reports listed below are for sale by the U.S. Geological Survey, 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 pages.

1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W. Wood: USGS–TWRI Book 1, Chapter D2. 1976. 24 pages.

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 pages.

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

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 pages.

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

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 pages.

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 pages.

3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M.A. Benson: USGS–TWRI Book 3, Chapter A2. 1967. 12 pages.

3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G.L. Bodhaine: USGS–TWRI Book 3, Chapter A3. 1968. 60 pages.

3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H.F. Matthai: USGS-TWRI Book 3, Chapter A4. 1967. 44 pages.

3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS–TWRI Book 3. Chapter A5. 1967. 29 pages.

3-A6. *General procedure for gaging streams*, by R.W. Carter and Jacob Davidian: USGS–TWRI Book 3, Chapter A6. 1968. 13 pages.

3-A7. *Stage measurement at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI Book 3, Chapter A7. 1968. 28 pages.

3-A8. *Discharge measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI Book 3, Chapter A8. 1969. 65 pages.

3-A9. *Measurement of time of travel in streams by dye tracing*, by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS–TWRI Book 3, Chapter A9. 1989. 27 pages.

3-A10. *Discharge ratings at gaging stations*, by E.J. Kennedy: USGS–TWRI Book 3, Chapter A10. 1984. 59 pages.

3-A11. *Measurement of discharge by the moving-boat method*, by G.F. Smoot and C.E. Novak: USGS–TWRI Book 3, Chapter A11. 1969. 22 pages.

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 pages.

3-A13. *Computation of continuous records of streamflow*, by E.J. Kennedy: USGS–TWRI Book 3, Chapter A13. 1983. 53 pages.

3-A14. *Use of flumes in measuring discharge,* by F.A. Kilpatrick and V.R. Schneider: USGS–TWRI Book 3, Chapter A14. 1983. 46 pages.

3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS–TWRI Book 3, Chapter A15. 1984. 48 pages.

3-A16. *Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS–TWRI Book 3, Chapter A16. 1985. 52 pages.

3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS–TWRI Book 3, Chapter A17. 1985. 38 pages.

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 pages.

3-A19. *Levels at streamflow gaging stations,* by E.J. Kennedy: USGS–TWRI Book 3, Chapter A19. 1990. 31 pages.

3-A20. *Simulation of soluable waste transport and buildup in surface waters using tracers*, by F.A. Kilpatrick: USGS–TWRI Book 3, Chapter A20. 1993. 38 pages.

3-A21 *Stream-gaging cableways*, by C. Russell Wagner: USGS–TWRI Book 3, Chapter A21. 1995. 56 pages.

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 pages.

3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction,* by G.D. Bennett: USGS–TWRI Book 3, Chapter B2. 1976. 172 pages.

3-B3. *Type curves for selected problems of flow to wells in confined aquifers,* by J.E. Reed: USGS–TWRI Book 3, Chapter B3. 1980. 106 pages.

3-B4. *Regression modeling of ground-water flow,* by R.L. Cooley and R.L. Naff: USGS–TWRI Book 3, Chapter B4. 1990. 232 pages.

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 pages.

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 pages.

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 pages.

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 pages.

Section C. Sedimentation and Erosion Techniques

3-C1. *Fluvial sediment concepts,* by H.P. Guy: USGS–TWRI Book 3, Chapter C1. 1970. 55 pages.

3-C2. *Field methods for measurement of fluvial sediment,* by Thomas K. Edwards and G. Douglas Glysson: USGS–TWRI Book 3, Chapter C2. 1988. 80 pages.

3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS–TWRI Book 3, Chapter C3. 1972. 66 pages.

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 pages.

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

Section B. Surface Water

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

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

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

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 pages.

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 pages.

5-A2. *Determination of minor elements in water by emission spectroscopy,* by P.R. Barnett and E.C. Mallory, Jr.: USGS–TWRI Book 5, Chapter A2. 1971. 31 pages.

5-A3. *Methods for 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 pages.

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 pages.

5-A5. *Methods for determination of radioactive substances in water and fluvial sediments,* by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS–TWRI Book 5, Chapter A5. 1977. 95 pages.

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

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 pages.

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 pages.

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 pages.

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 pages.

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 pages.

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 pages.

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. 1996. 125 pages.

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 pages.

7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water,* by L.F. Konikow and J.D. Bredehoeft: USGS–TWRI Book 7, Chapter C2. 1978. 90 pages.

7-C3. *A model for simulation of flow in singular and interconnected channels,* by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS–TWRI Book 7, Chapter C3. 1981. 110 pages.

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 pages.

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

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 pages.

Book 9. Handbooks for Water-Resources Investigations

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

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. 1997. 49 pages.

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 pages.

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 pages.

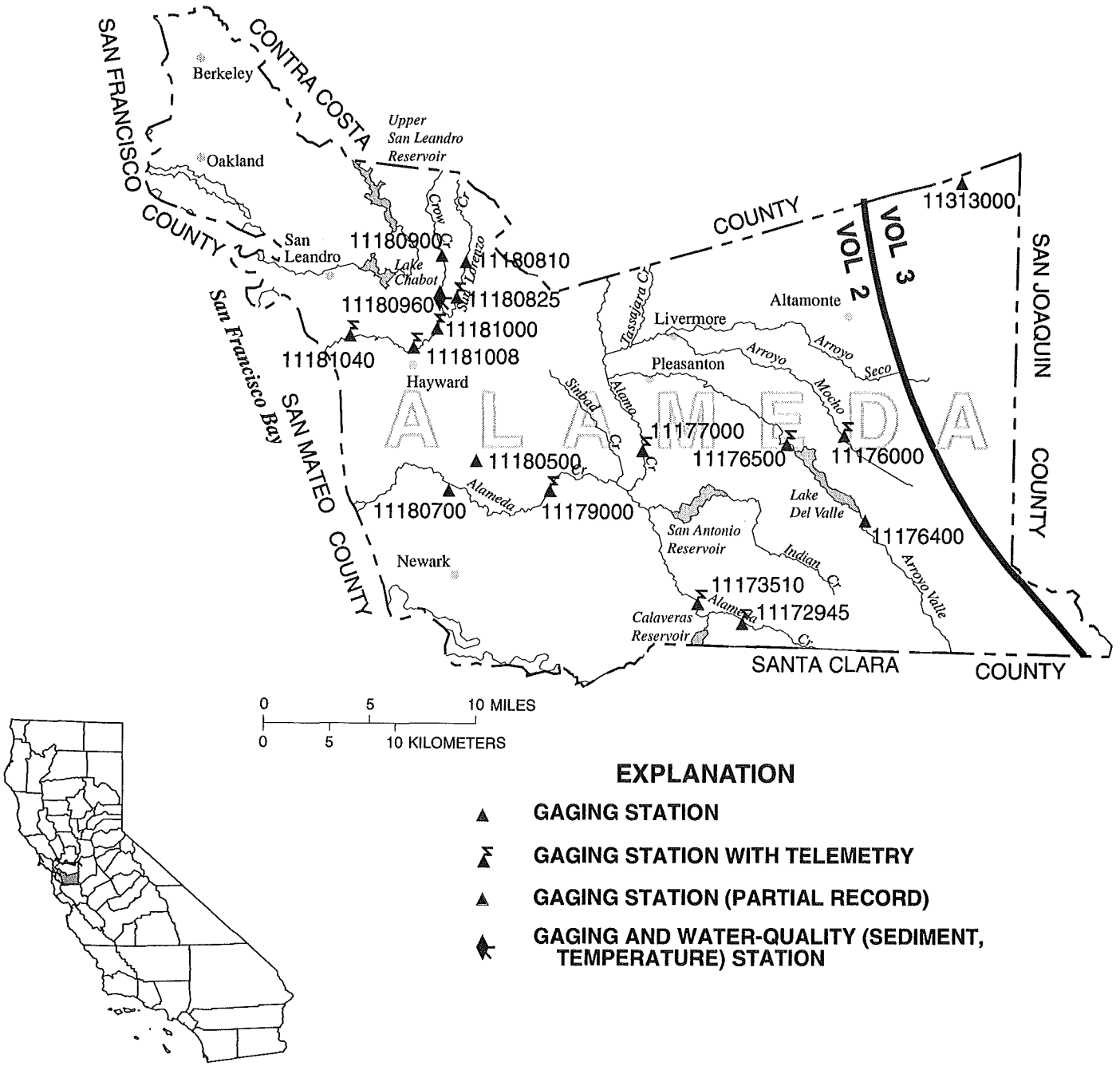


Figure 2. Location of discharge and water-quality stations in Alameda County.
(NOTE: Records for stations 11172945 through 11181040 published in volume 2.)

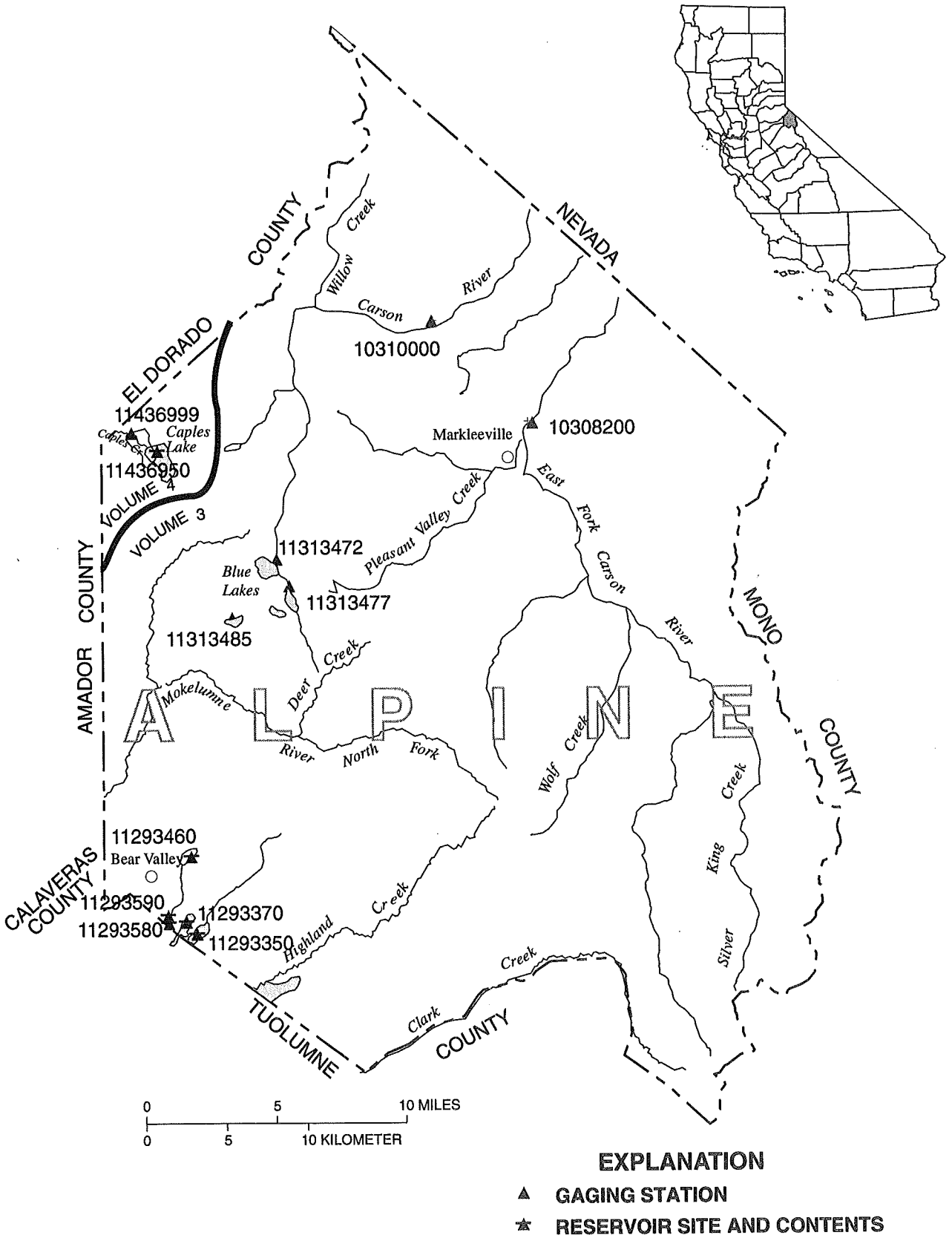


Figure 3. Location of discharge stations in Alpine County.
(NOTE: Station 10297000 in Douglas County, Nevada, shown on Mono County map.
Record for stations 11436950 and 11436999 published in volume 4.)

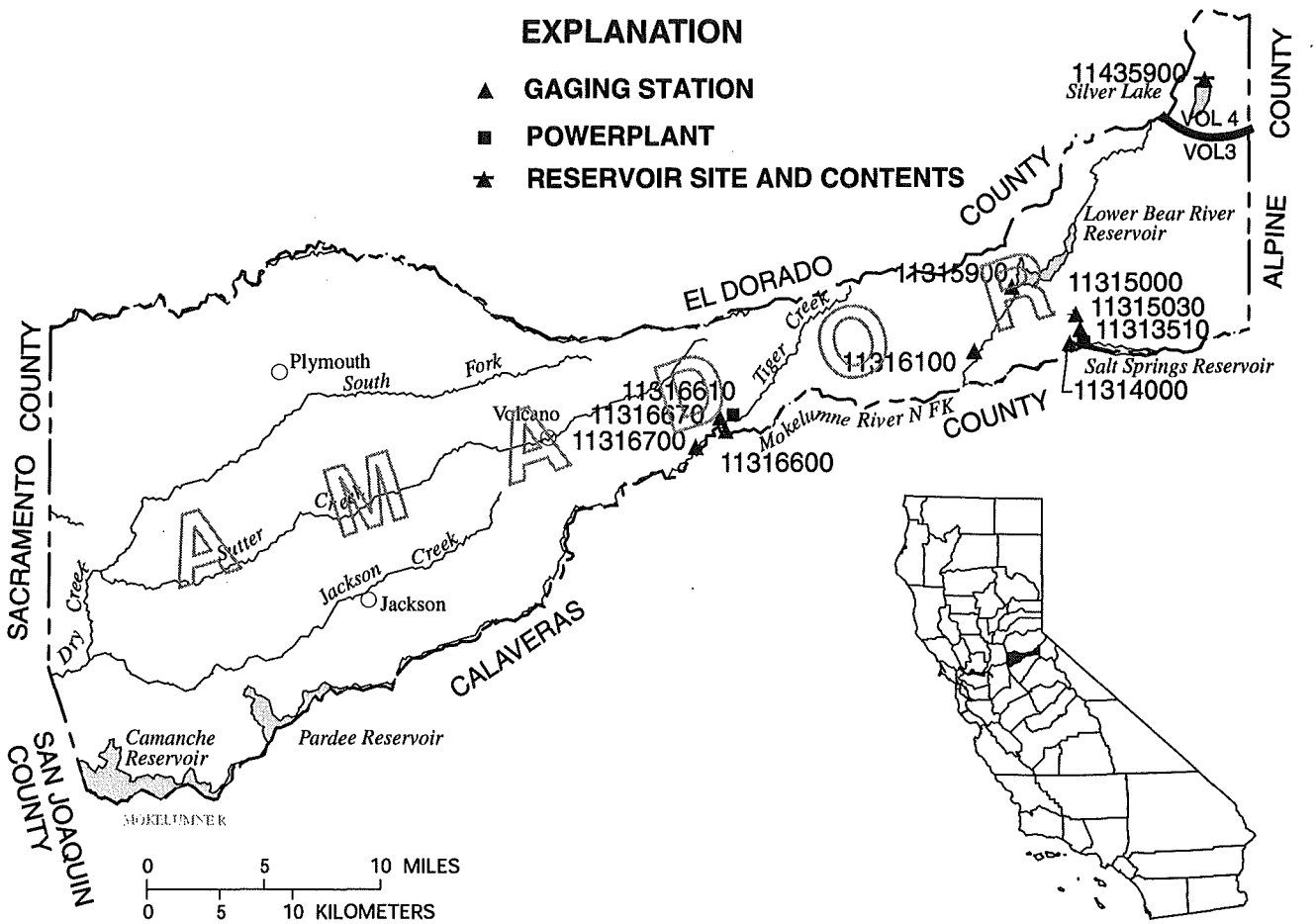


Figure 4. Location of discharge stations in Amador County.
(NOTE: Record for station 11435900 published in volume 4.)

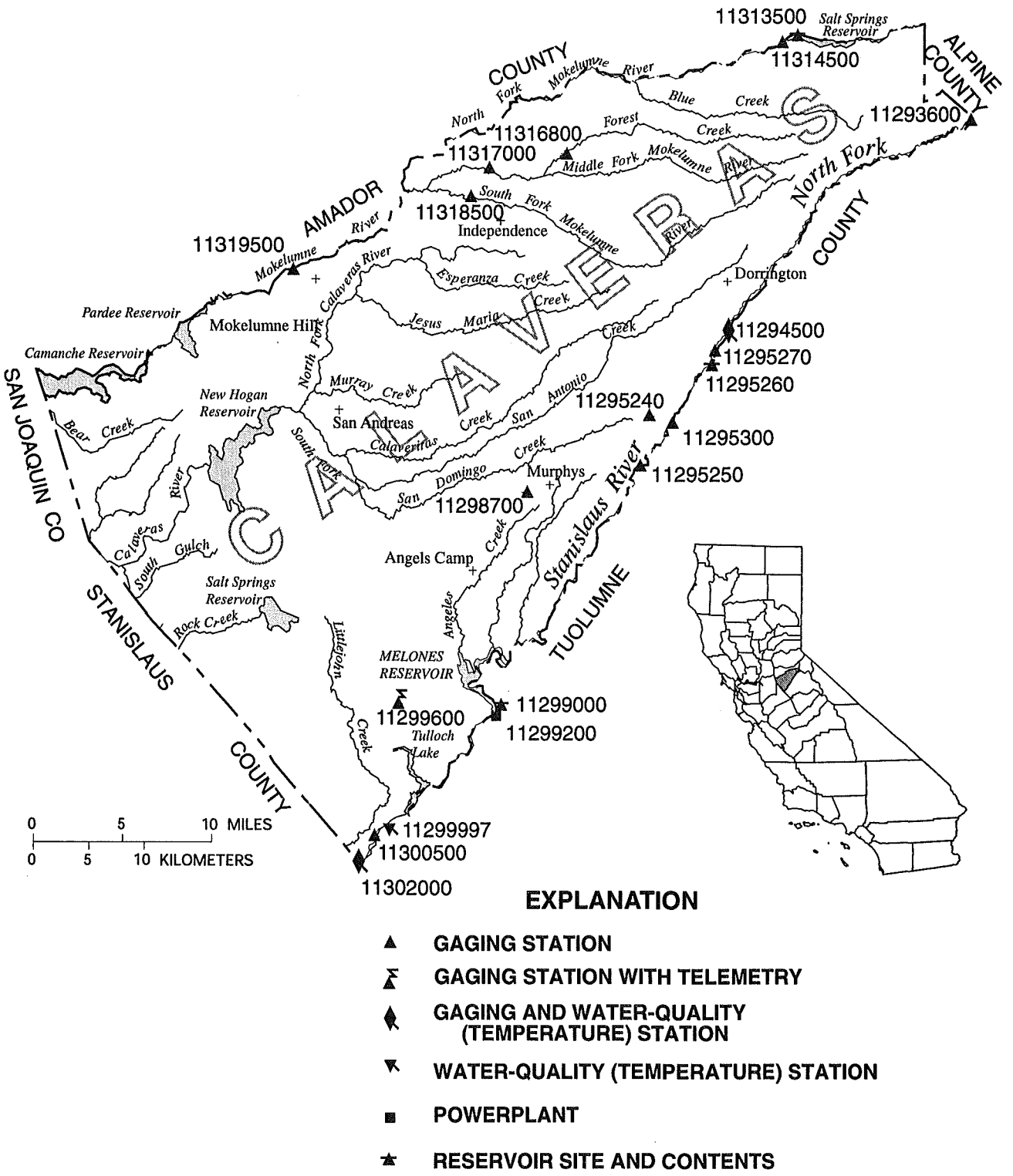


Figure 5. Location of discharge and water-quality stations in Calaveras County.

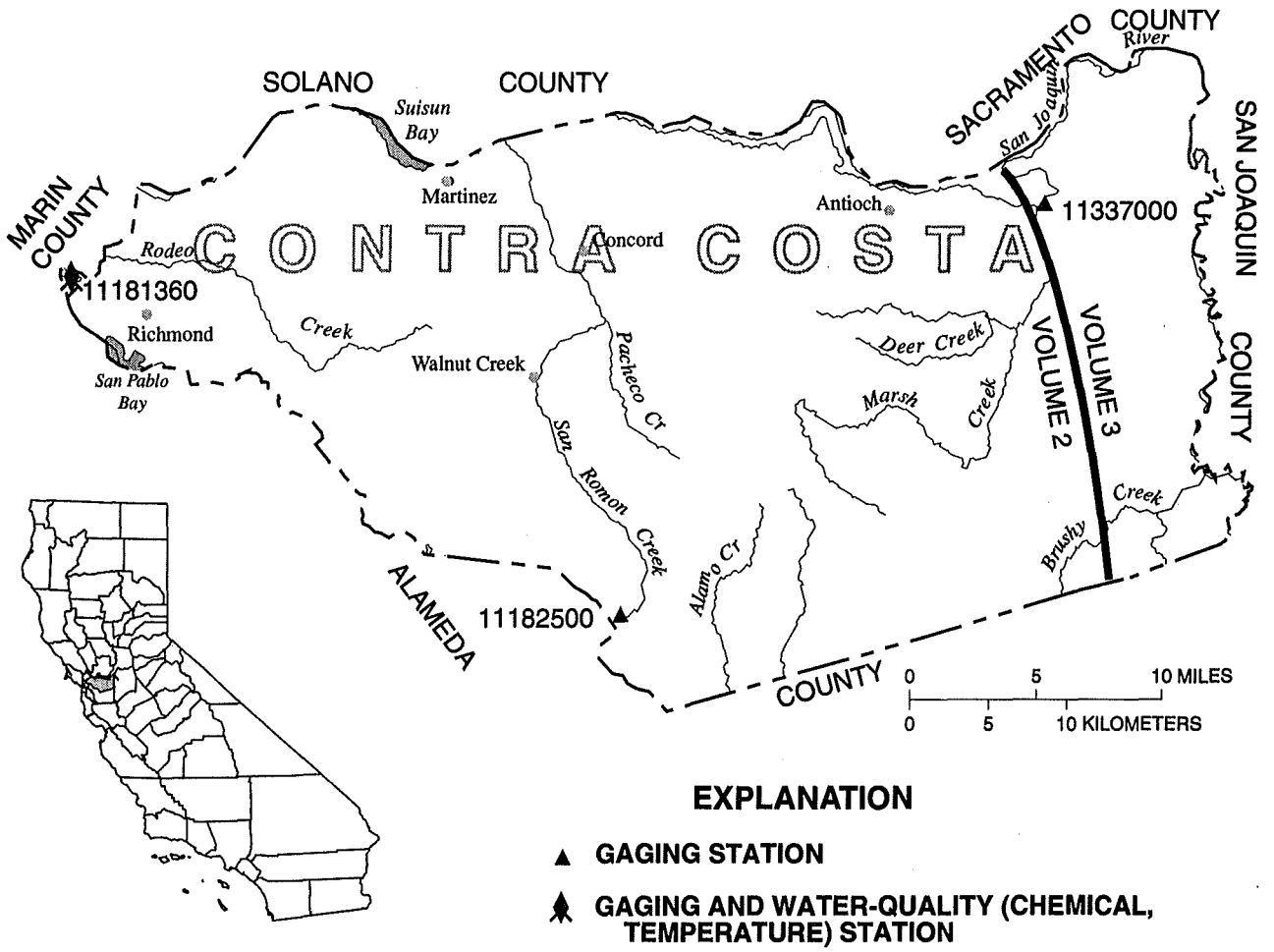


Figure 6. Location of discharge and water-quality stations in Contra Costa County. (NOTE: Records for stations 11181360 and 11182500 published in volume 2.)

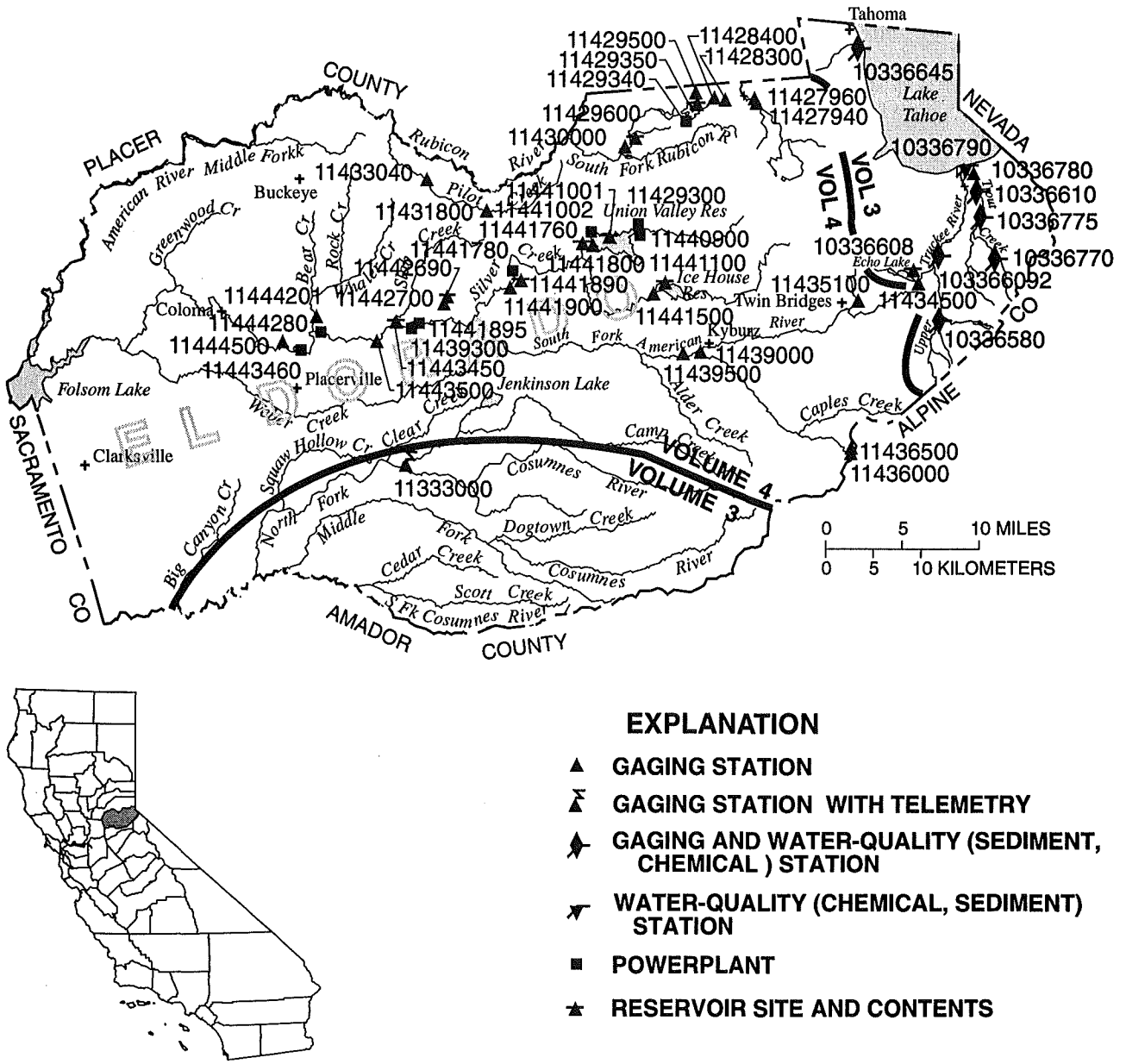


Figure 7. Location of discharge and water-quality stations in El Dorado County.
(NOTE: Records for stations 11427940 through 11444500 published in volume 4.)

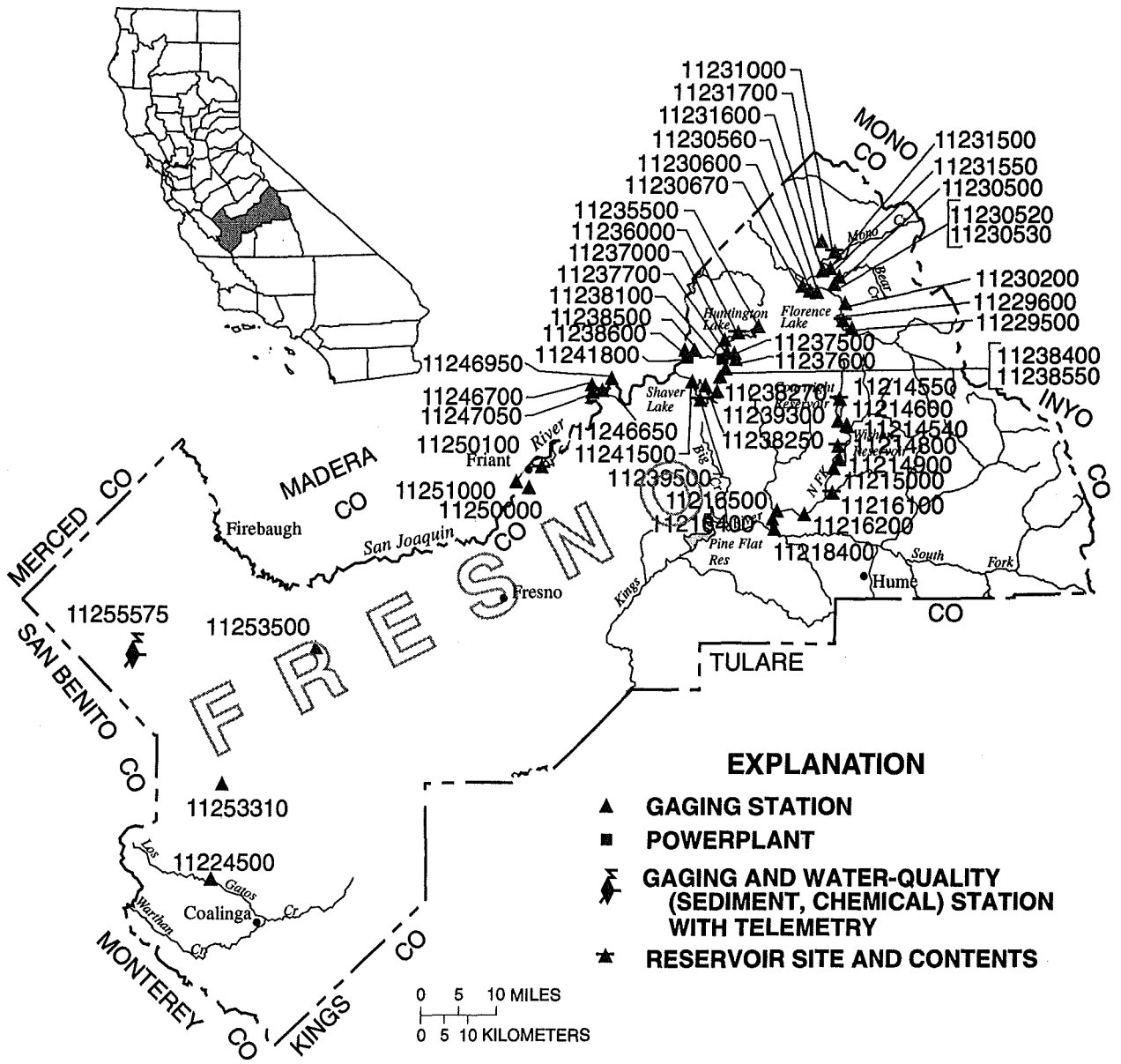


Figure 8. Location of discharge stations in Fresno County.

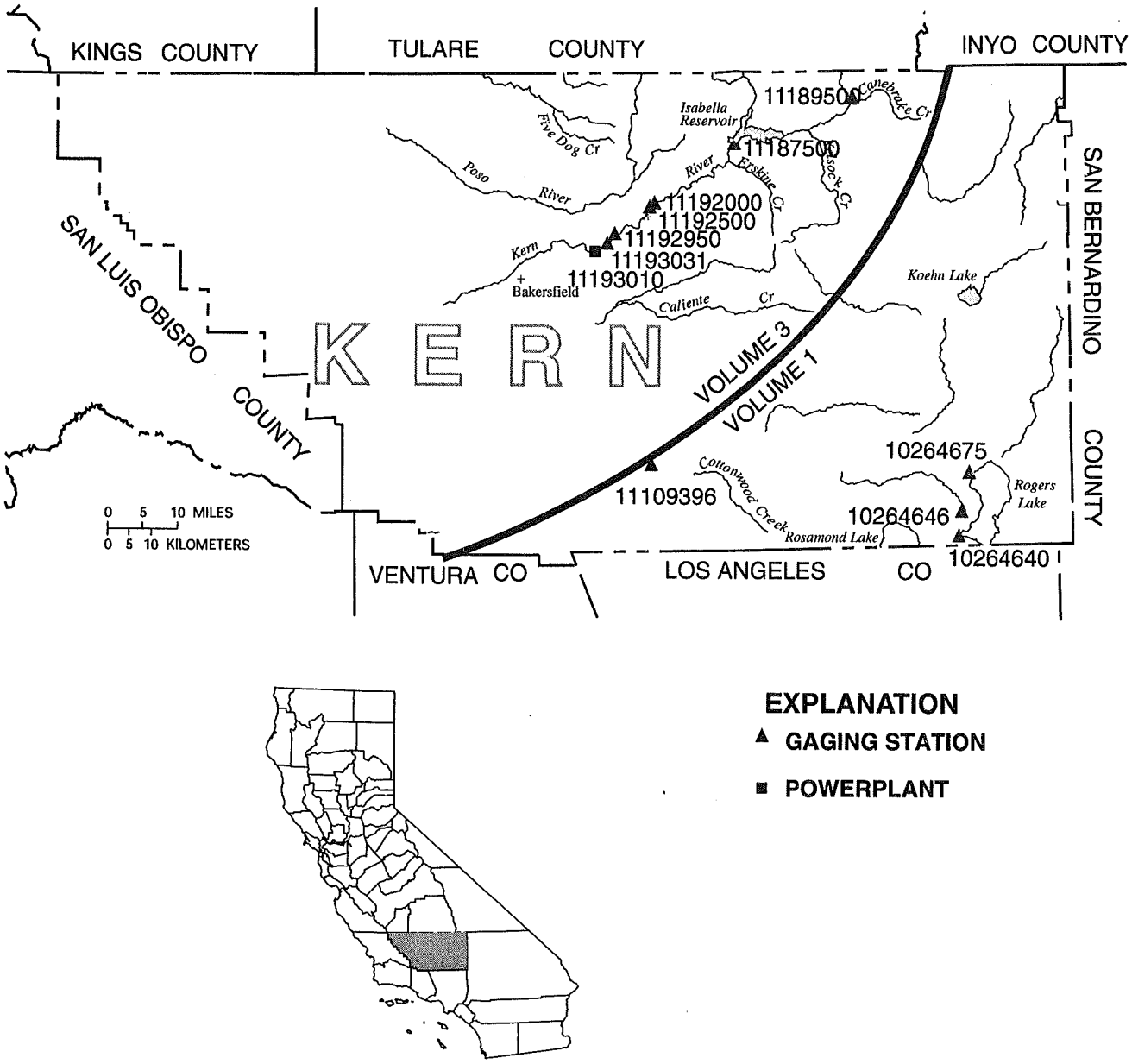


Figure 9. Location of discharge stations in Kern County.
(NOTE: Records for stations 10264640 through 10264675 and 11109396 published in volume 1.)

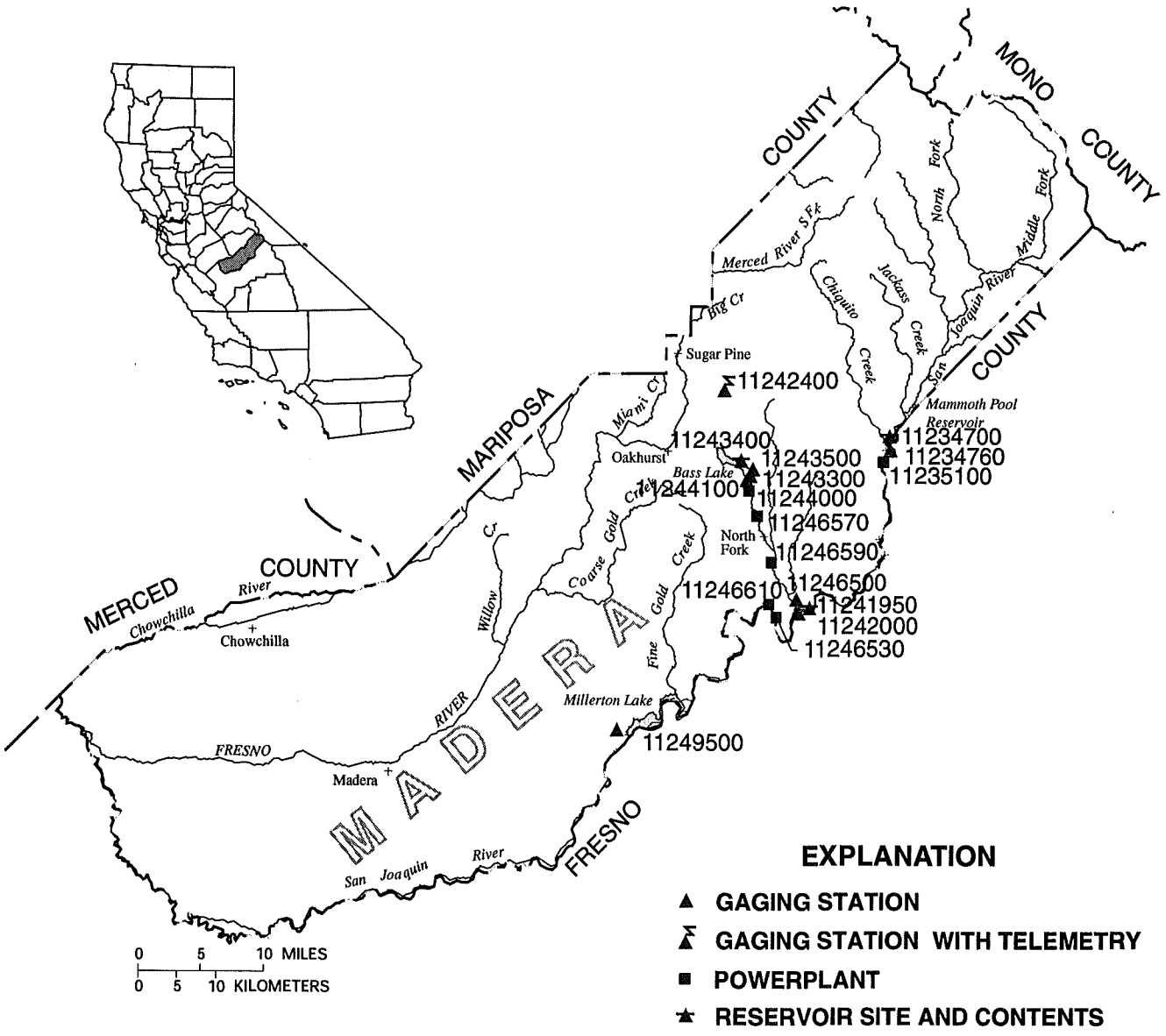


Figure 10. Location of discharge stations in Madera County.

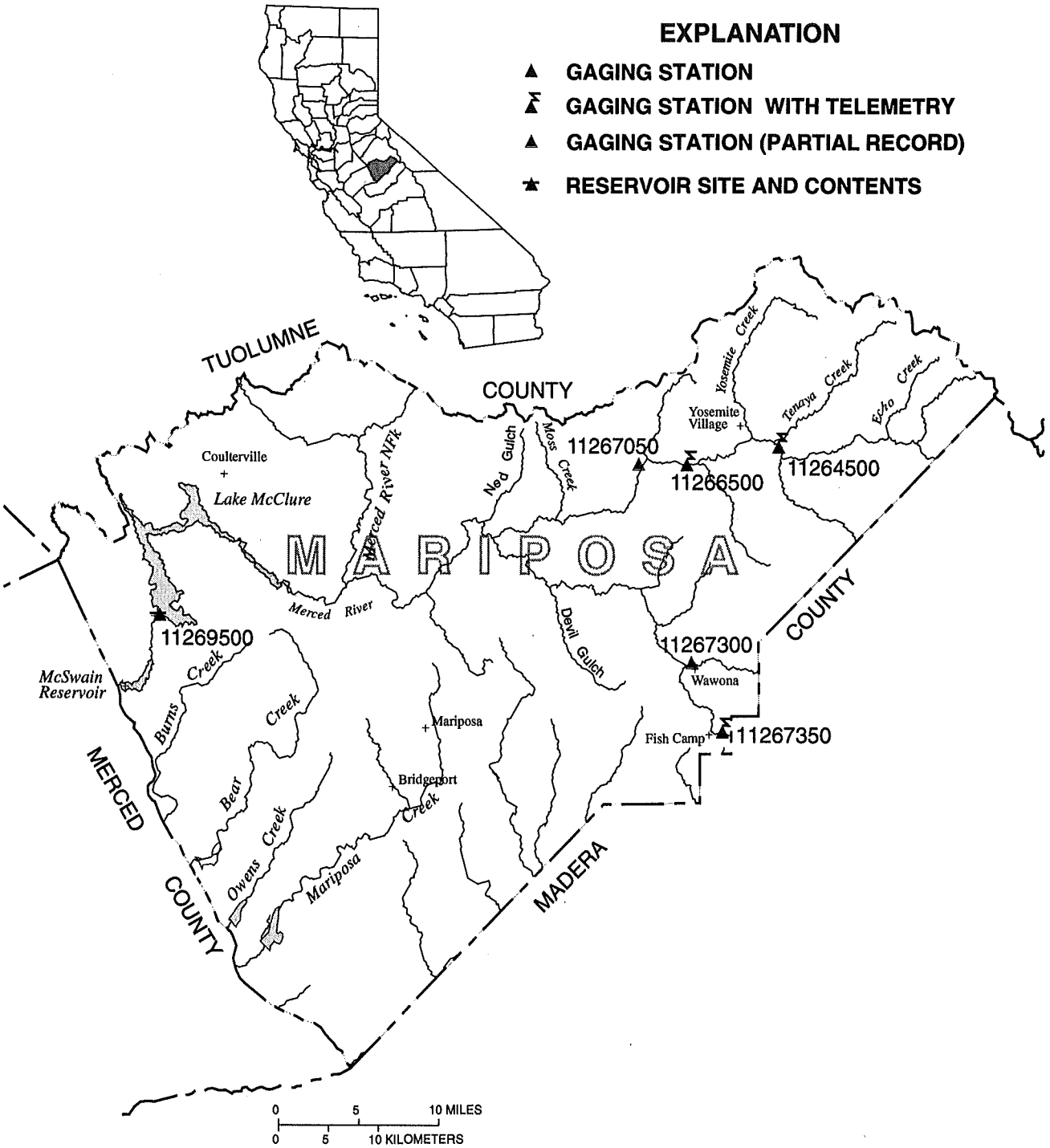


Figure 11. Location of discharge stations in Mariposa County.

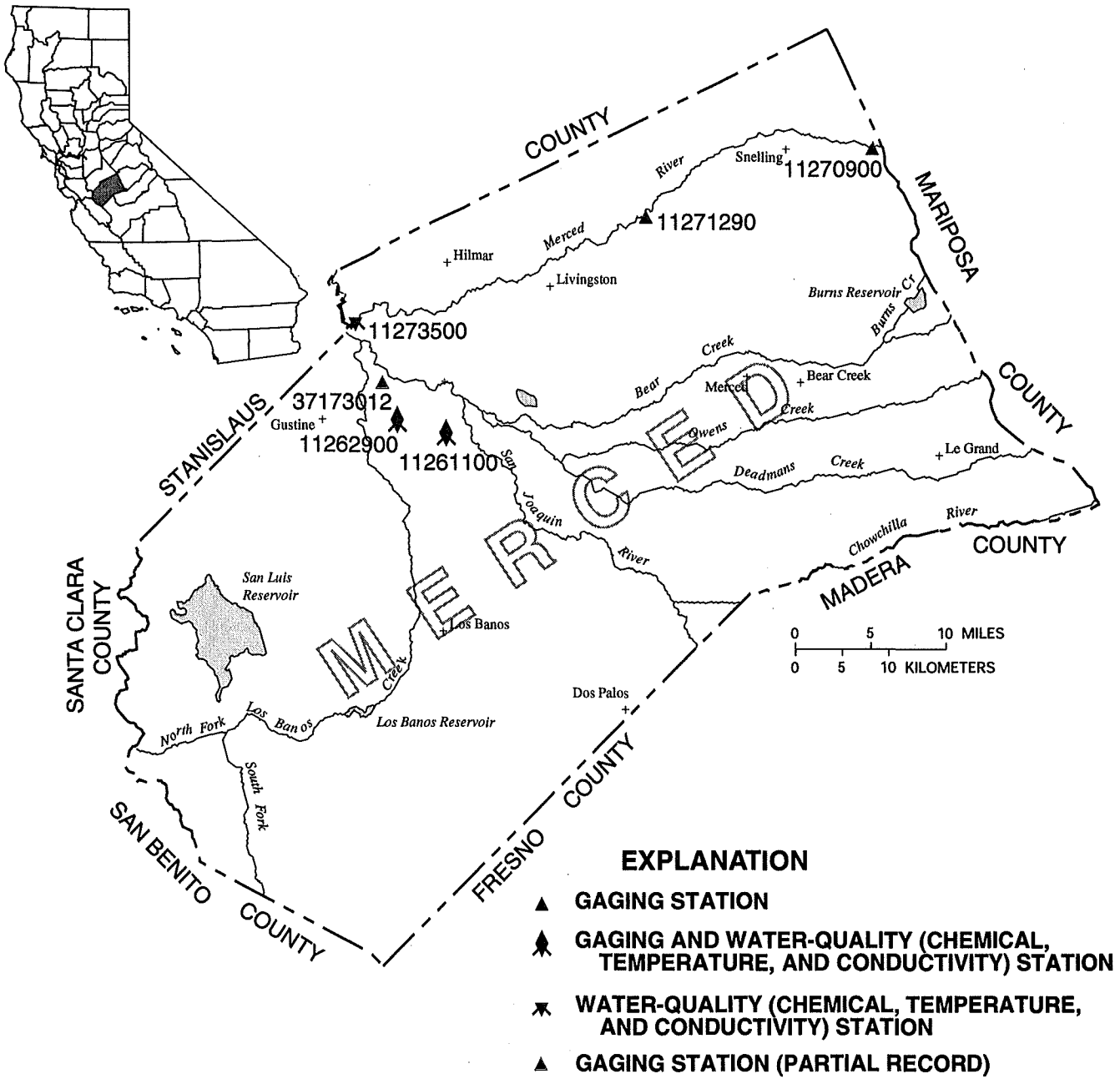


Figure 12. Location of discharge and water-quality stations in Merced County.

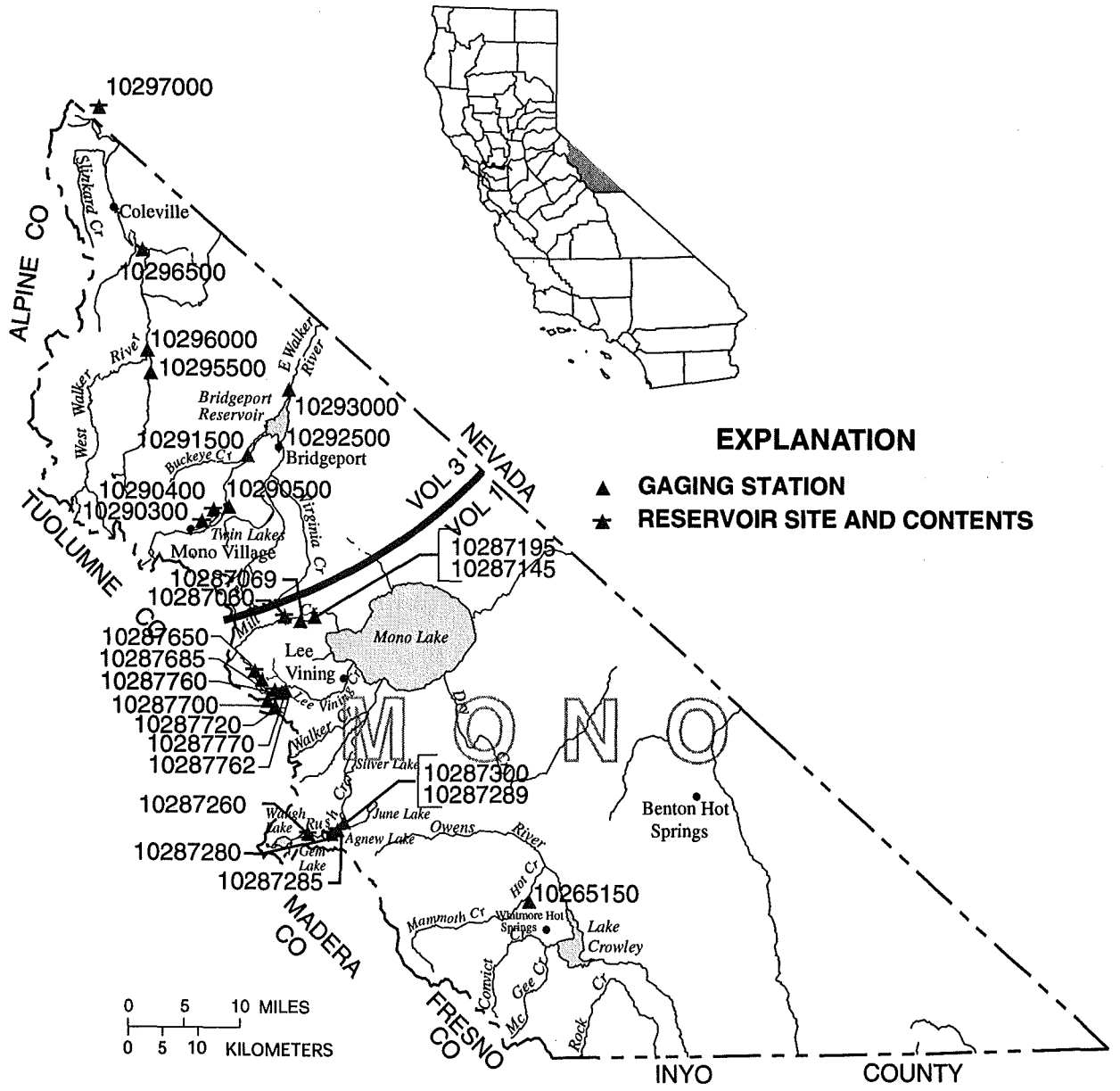


Figure 13. Location of discharge stations in Mono County.
(NOTE: Records for stations 10265150 through 10287770 published in volume 1.)

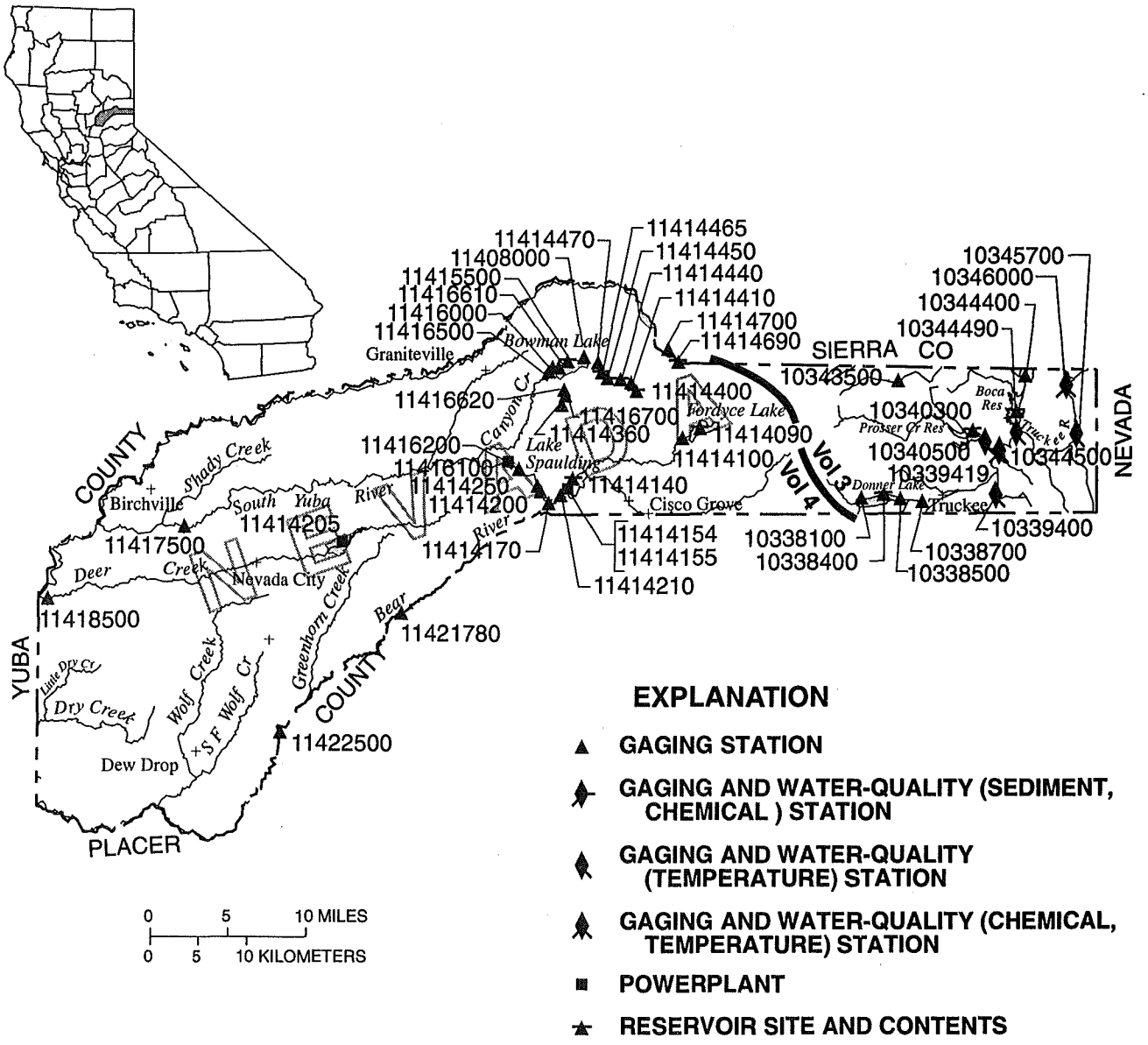


Figure 14. Location of discharge and water-quality stations in Nevada County.
(NOTE: Records for stations 11408000 through 11422500 published in volume 4.)

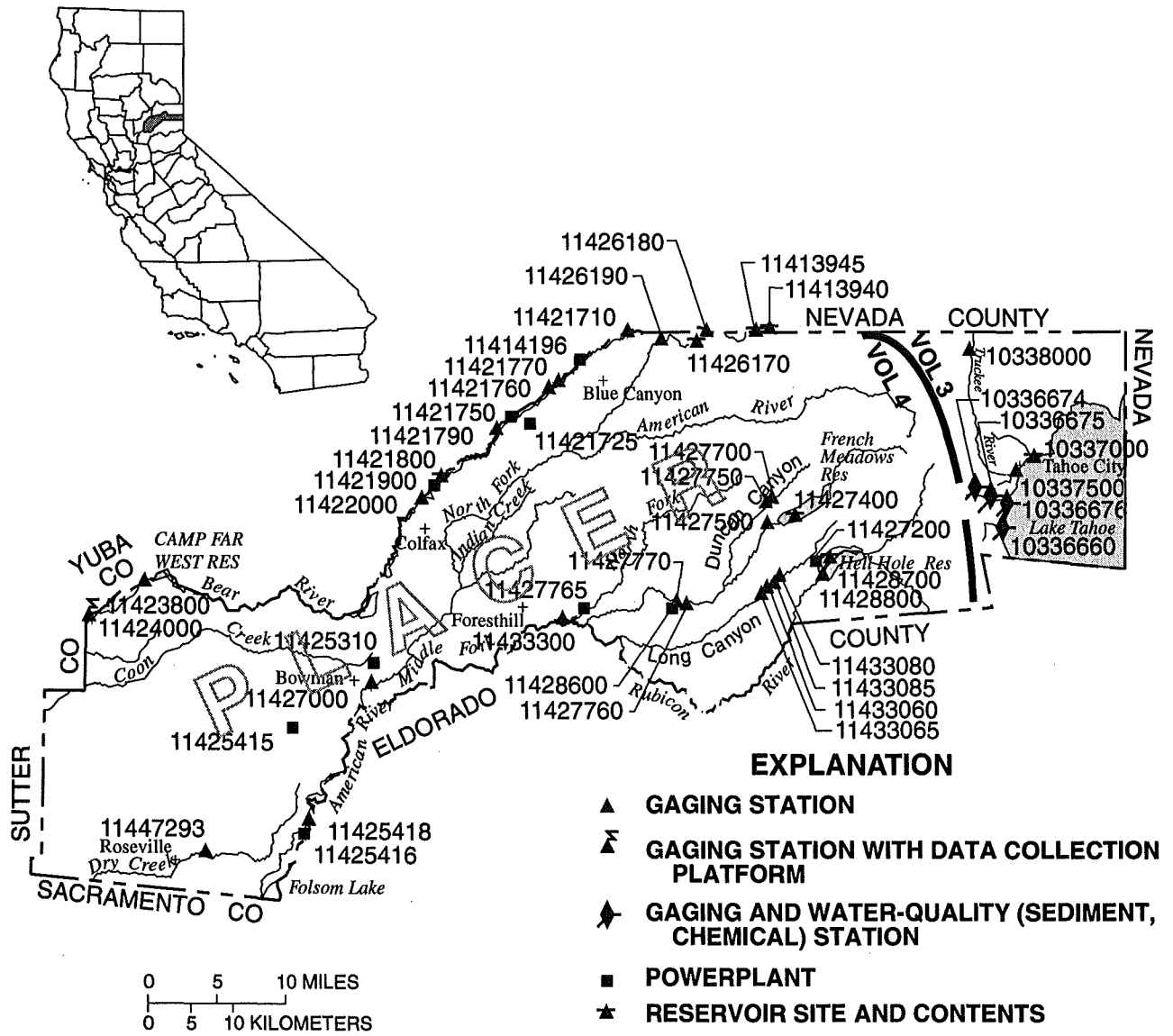


Figure 15. Location of discharge and water-quality stations in Placer County.
(NOTE: Records for stations 11413940 through 11447293 published in volume 4.)

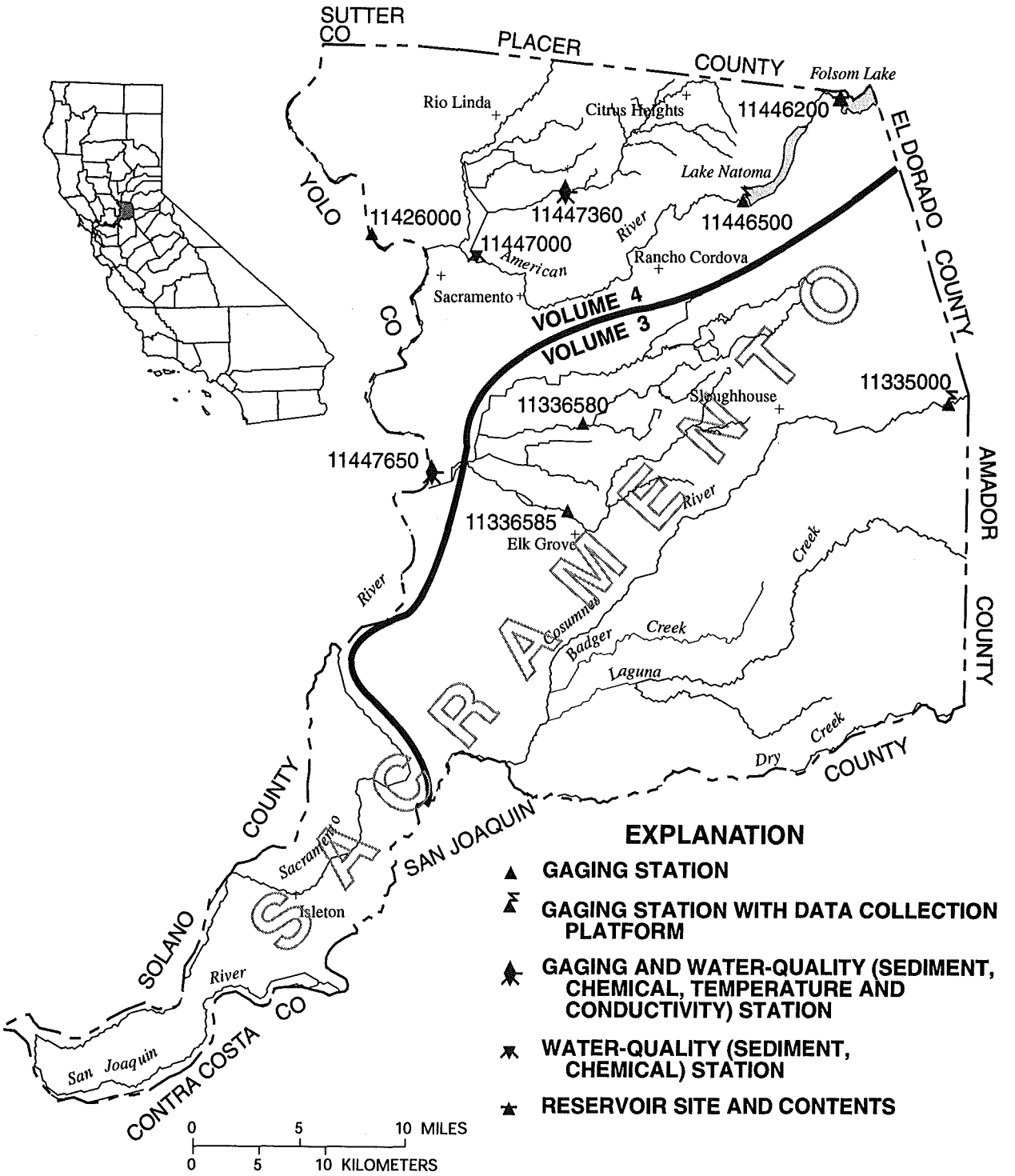


Figure 16. Location of discharge and water-quality stations in Sacramento County. (NOTE: Records for stations 11426000 through 11447650 published in volume 4.)

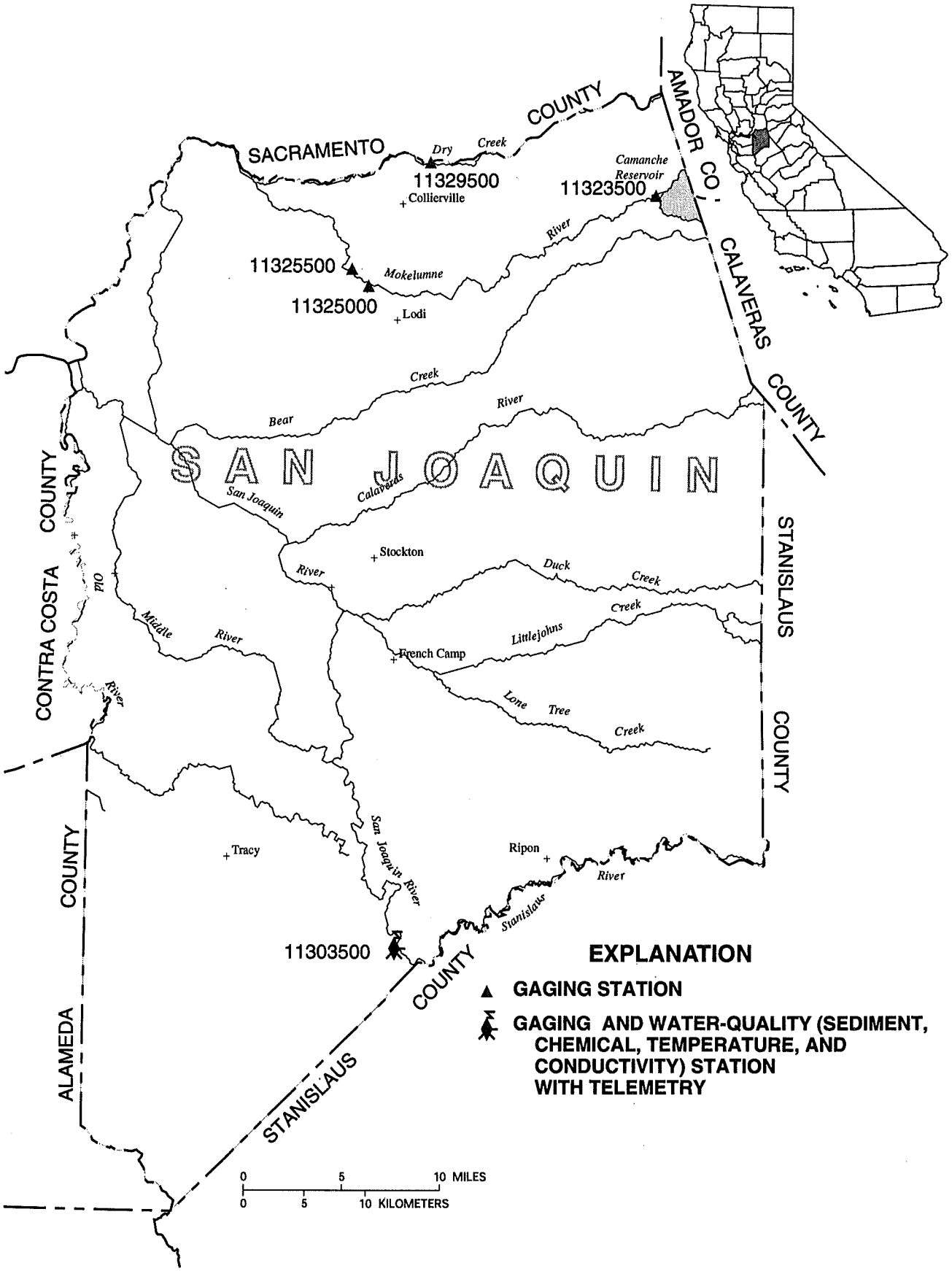


Figure 17. Location of discharge and water-quality stations in San Joaquin County.

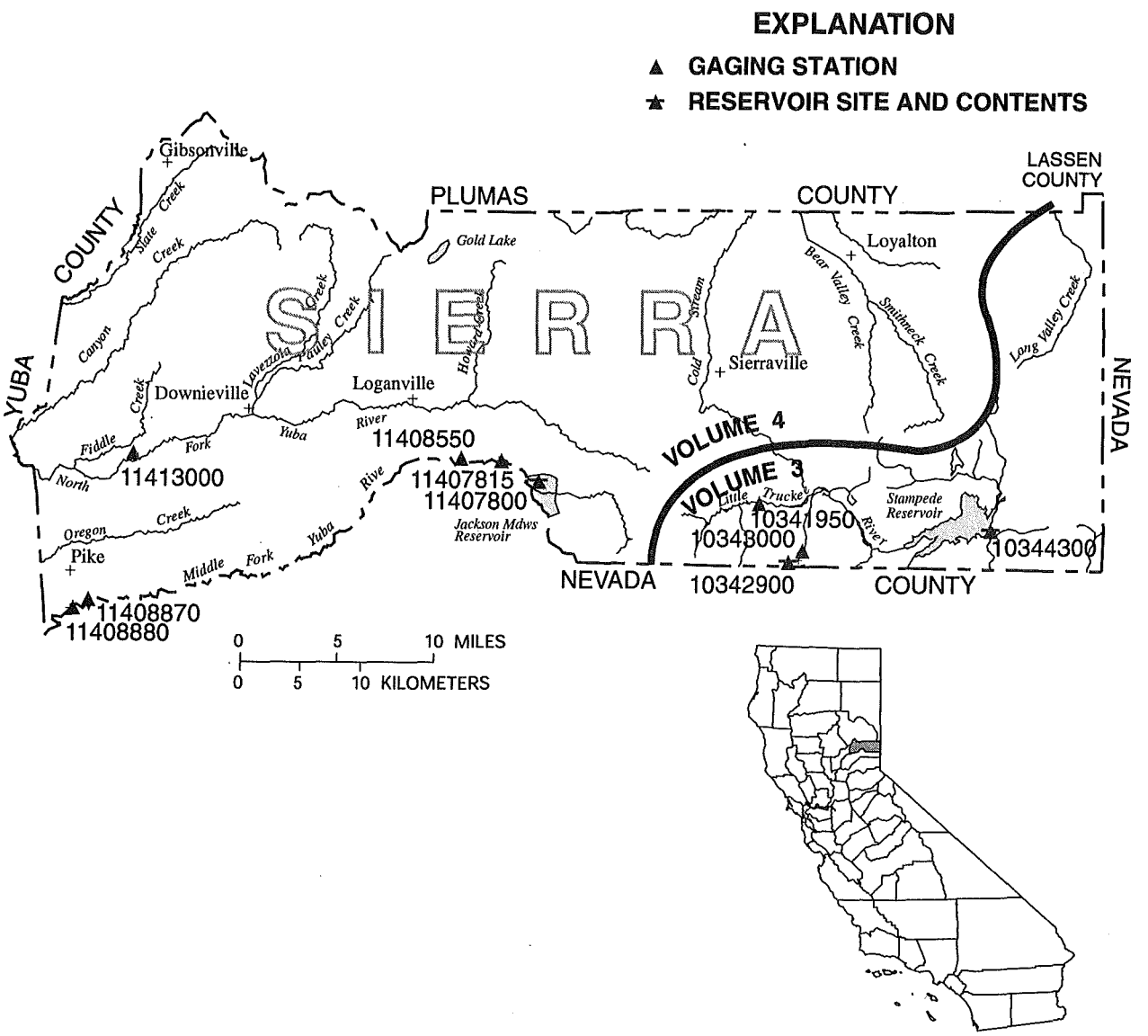


Figure 18. Location of discharge stations in Sierra County.
(NOTE: Records for stations 11407800 through 11413000 published in volume 4.)

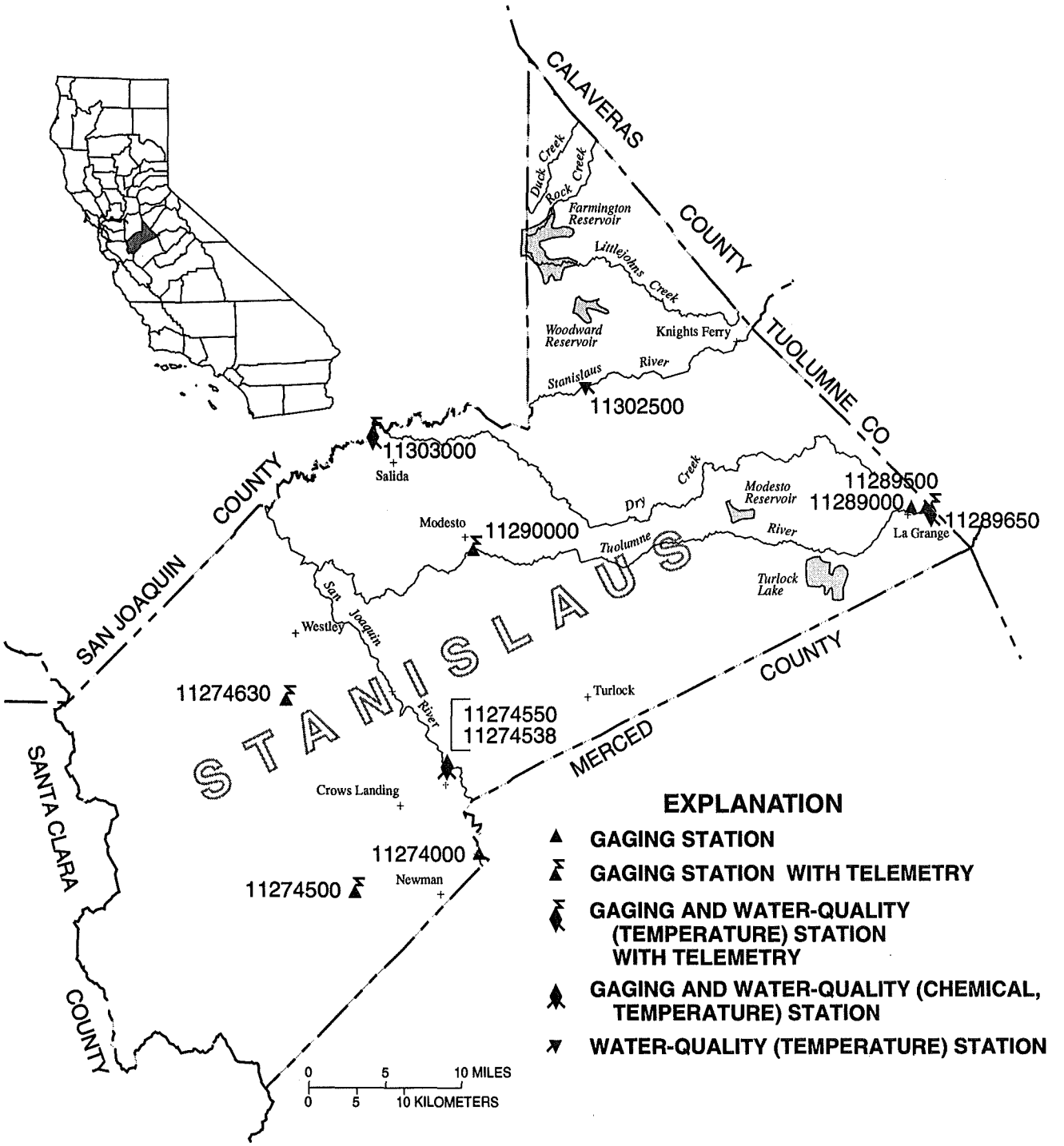


Figure 19. Location of discharge and water-quality stations in Stanislaus County.

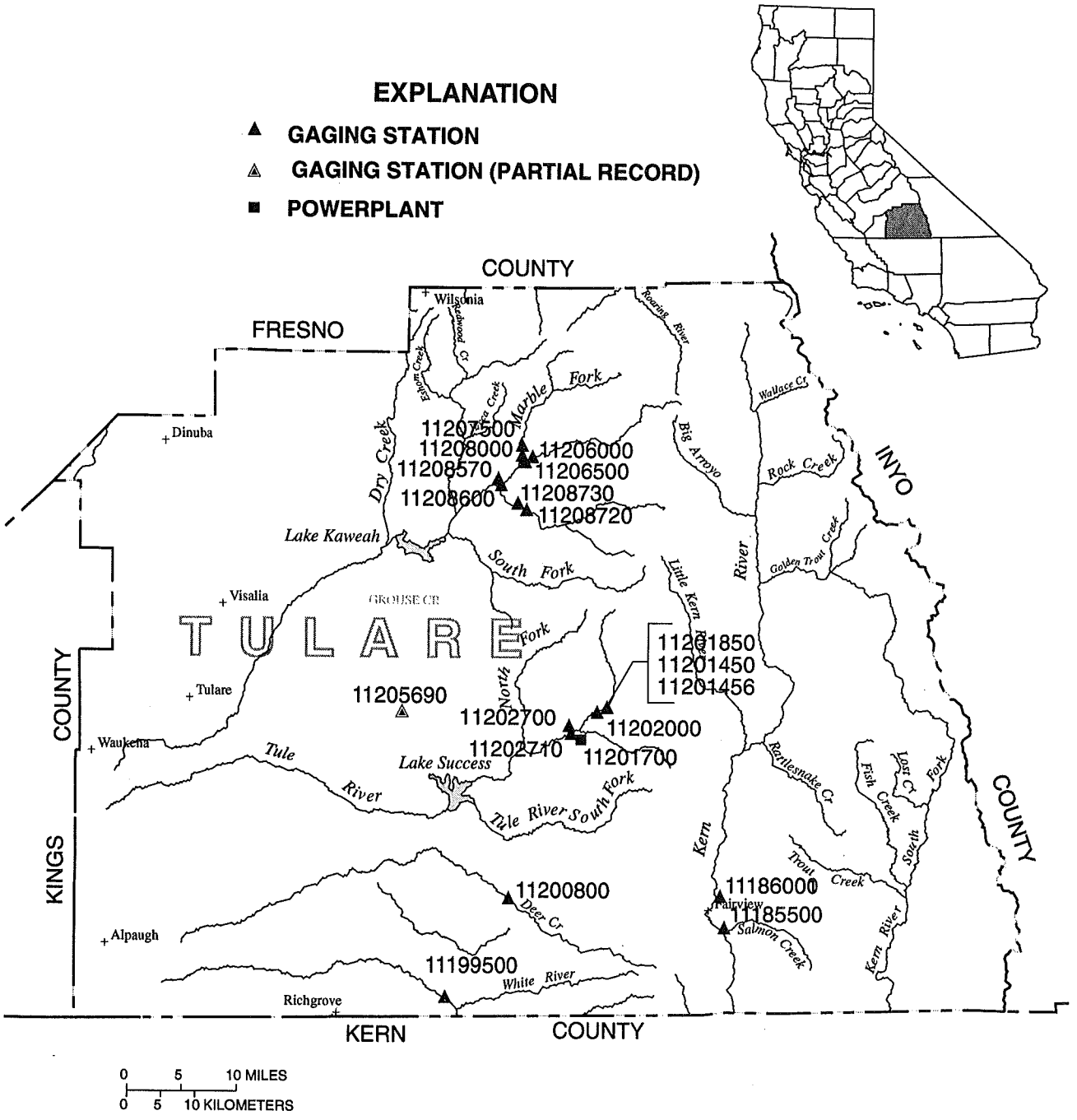


Figure 20. Location of discharge stations in Tulare County.

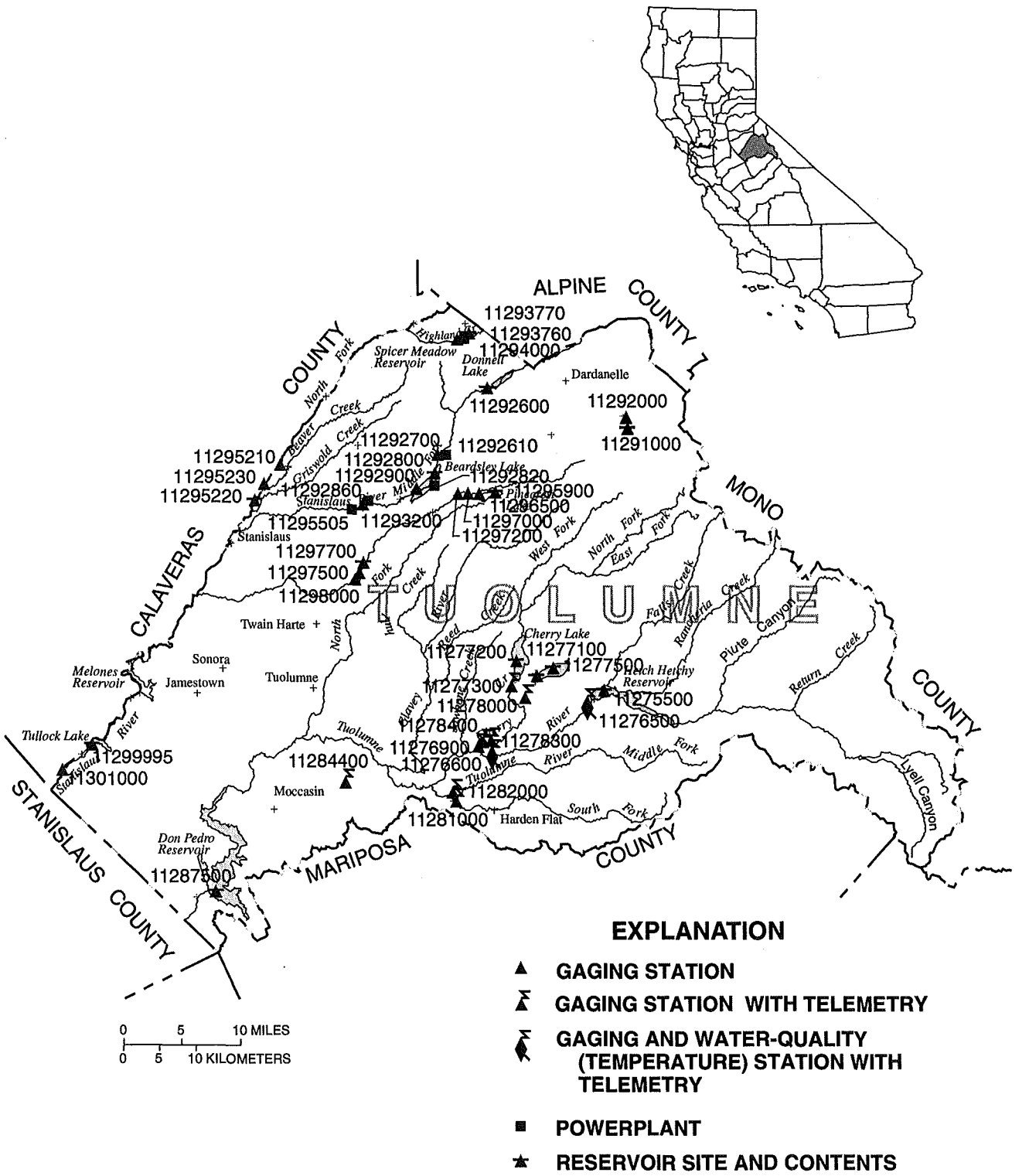


Figure 21. Location of discharge and water-quality stations in Tuolumne County.

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

Remark Codes

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

PRINTED OUTPUT	REMARK
e	Estimated value.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
K	Results based on colony count outside the acceptable range (non-ideal colony count).
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted).
D	Biological organism count equal to or greater than 15 percent (dominant).
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 (µg/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 (ng/L). Data above the µg/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).

10290300 UPPER TWIN LAKE NEAR BRIDGEPORT, CA

LOCATION.—Lat 38°09'15", long 119°20'58", in NW $^1/_4$ NE $^1/_4$ sec.5, T.3 N., R.24 E., Mono County, Hydrologic Unit 16050301, in Toiyabe National Forest, at outlet of upper lake dam on Robinson Creek, and 10 mi southwest of Bridgeport.

DRAINAGE AREA.—29.5 mi^2.

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

GAGE.—Non-recording gage. Datum of gage is 7,212.86 ft above sea level (project datum of U.S. Indian Irrigation Service).

REMARKS.—Contents regulated by dam at outlet. Figures given herein represent usable contents. Usable contents, 2,070 acre-ft between elevations 7,200 ft, natural rim, and 7,207 ft, spillway crest. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents observed, 2,990 acre-ft, July 7, 1983, elevation, 7,209.85 ft; minimum observed, 30 acre-ft, Nov. 1, 1990, elevation, 7,200.11 ft.

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

EXTREMES FOR CURRENT YEAR.—Maximum contents observed, 2,800 acre-ft, July 1, elevation, 7,209.28 ft; minimum observed, 1,750 acre-ft, Nov. 5, elevation, 7,206.00 ft.

MONTHEND ELEVATION, IN FEET ABOVE SEA LEVEL, AND TOTAL CONTENTS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

Date	Elevation (ft)	Contents (acre-ft)	Change in contents (acre-ft)
September 30	7206.92	2,040	—
October 31	7206.12	1,790	–250
November 30	7206.63	1,950	+160
December 31	7207.10	2,100	+150
CALENDAR YEAR 1997	—	—	–120
January 31	7207.00	2,070	–30
February 28	7206.19	1,810	–260
March 31	7207.04	2,080	+270
April 30	7207.90	2,360	+280
May 31	7207.09	2,100	–260
June 30	7209.20	2,780	+680
July 31	7208.62	2,590	–190
August 31	7207.89	2,360	–230
September 30	7207.70	2,290	–70
WATER YEAR 1998	—	—	+250

NOTE.—Monthend elevations are interpolated from readings made during the year.

10290400 LOWER TWIN LAKE NEAR BRIDGEPORT, CA

LOCATION.—Lat 38°10'05", long 119°19'33", in NE $^1/_4$ NE $^1/_4$ sec.33, T.4 N., R.24 E., Mono County, Hydrologic Unit 16050301, in Toiyabe National Forest, at outlet of lower lake dam on Robinson Creek, and 8 mi southwest of Bridgeport.

DRAINAGE AREA.—38.9 mi^2.

PERIOD OF RECORD.—December 1961 to current year.

GAGE.—Non-recording gage. Datum of gage is 7,205.45 ft above sea level (project datum of U.S. Indian Irrigation Service).

REMARKS.—Contents regulated by dam at outlet and by Upper Twin Lake. Figures given herein represent usable contents. Usable contents, 4,010 acre-ft between elevations 7,190 ft, natural rim, and 7,200 ft, spillway crest. One transarea diversion out of Tamarack Creek into Summers Creek. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 5,560 acre-ft, June 19, 1983, elevation, 7,203.58 ft; no contents, Nov. 17, 1966.

EXTREMES FOR CURRENT YEAR—Maximum contents observed, 5,090 acre-ft, July 1, elevation, 7,202.52 ft; minimum observed, 3,660 acre-ft, Nov. 5, elevation 7,199.16 ft.

MONTHEND ELEVATION AND CONTENTS, IN FEET ABOVE SEA LEVEL, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

Date	Elevation (ft)	Contents (acre-ft)	Change in contents (acre-ft)
September 30	7199.12	3,650	—
October 31	7199.15	3,660	+10
November 30	7199.99	4,010	+350
December 31	7200.58	4,250	+240
CALENDAR YEAR 1997	—	—	+120
January 31	7200.50	4,220	–30
February 28	7200.52	4,230	+10
March 31	7200.60	4,260	+30
April 30	7201.02	4,440	+180
May 31	7201.03	4,440	0
June 30	7202.48	5,070	+630
July 31	7201.82	4,780	–290
August 31	7200.80	4,350	–430
September 30	7200.58	4,250	–100
WATER YEAR 1998	—	—	+600

NOTE.—Monthend elevations are interpolated from readings made during the year.

10290500 ROBINSON CREEK AT TWIN LAKES OUTLET, NEAR BRIDGEPORT, CA

LOCATION.—Lat 38°10'20", long 119°19'25", in SE $^1/_4$ SE $^1/_4$ sec.28, T.4 N., R.24 E., Mono County, Hydrologic Unit 16050301, on left bank, 0.2 mi downstream from Lower Twin Lake, and 8 mi southwest of Bridgeport.

DRAINAGE AREA.—39.1 mi^2.

PERIOD OF RECORD.—October 1953 to September 1975, May 1992 to September 1994 (irrigation season only), October 1994 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 7,050 ft above sea level, from topographic map.

REMARKS.—Records good, except for estimated daily discharges, which are poor. Flow regulated by Upper and Lower Twin Lakes. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

REVISIONS.—WSP 1927: Drainage area.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,170 ft^3/s, Jan. 3, 1997, gage height, 5.44 ft; no flow many days, some years.

EXTREMES FOR CURRENT YEAR.—Maximum discharge, 396 ft^3/s, July 11, gage height, 3.79 ft; minimum daily, 9.1 ft^3/s, Nov. 20, 21.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	17	23	21	23	24	38	56	88	339	201	84
2	31	17	24	22	29	23	36	67	96	337	185	86
3	30	17	24	22	35	22	35	78	110	338	171	87
4	30	17	24	22	34	22	33	83	122	342	169	89
5	30	16	25	21	31	21	32	89	130	343	169	91
6	29	16	26	17	32	23	31	94	136	341	171	95
7	27	15	23	19	33	23	30	96	149	342	175	96
8	27	15	22	22	37	22	29	96	165	351	178	95
9	27	15	21	22	35	21	28	94	180	372	179	98
10	26	15	22	22	33	21	28	91	189	387	172	106
11	26	15	22	22	32	21	27	87	195	391	162	110
12	26	15	22	23	31	21	27	83	204	374	155	107
13	26	15	22	23	29	20	26	80	209	354	151	100
14	26	15	e24	22	31	20	26	78	208	342	148	92
15	26	14	29	24	31	20	25	74	218	330	146	85
16	26	13	27	25	30	20	25	71	245	307	145	80
17	26	13	26	25	31	20	25	69	282	292	142	76
18	26	13	25	25	29	20	25	68	334	307	137	73
19	26	12	24	28	28	20	25	66	336	326	132	68
20	26	9.1	24	28	28	20	25	74	321	335	125	65
21	26	9.1	22	27	28	21	26	85	319	339	118	62
22	26	9.7	22	26	28	21	27	81	327	335	110	60
23	25	12	21	26	28	24	31	78	338	322	103	58
24	25	12	21	25	28	31	35	78	338	306	94	56
25	24	11	21	25	27	41	38	79	334	299	90	54
26	21	18	21	25	26	44	40	83	336	282	86	54
27	18	21	21	21	25	44	41	85	339	263	84	55
28	18	22	20	21	24	44	43	86	335	241	82	55
29	18	23	20	23	---	42	45	89	333	231	81	56
30	18	23	20	23	---	40	49	87	336	220	81	56
31	17	---	20	22	---	39	---	86	---	214	81	---
TOTAL	785	454.9	708	719	836	815	951	2511	7252	9902	4223	2349
MEAN	25.3	15.2	22.8	23.2	29.9	26.3	31.7	81.0	242	319	136	78.3
MAX	32	23	29	28	37	44	49	96	339	391	201	110
MIN	17	9.1	20	17	23	20	25	56	88	214	81	54
AC-FT	1560	902	1400	1430	1660	1620	1890	4980	14380	19640	8380	4660

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1998, BY WATER YEAR (WY)

MEAN	21.0	8.60	7.43	16.7	16.2	17.2	46.9	106	192	168	99.5	52.2
MAX	37.5	25.0	36.1	166	63.4	44.8	79.4	187	349	400	199	89.0
(WY)	1970	1968	1997	1997	1963	1997	1959	1997	1969	1995	1995	1974
MIN	7.00	.67	.000	.000	.000	.000	22.3	59.1	68.2	62.0	35.1	15.9
(WY)	1995	1958	1954	1954	1954	1955	1975	1955	1992	1992	1992	1992

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1954 - 1998	
ANNUAL TOTAL	34763.9		31505.9			
ANNUAL MEAN	95.2		86.3		64.7	
HIGHEST ANNUAL MEAN					100	1995
LOWEST ANNUAL MEAN					33.8	1961
HIGHEST DAILY MEAN	998	Jan 3	391	Jul 11	998	Jan 3 1997
LOWEST DAILY MEAN	9.1	Nov 20	9.1	Nov 20	.00	Nov 3 1953
ANNUAL SEVEN-DAY MINIMUM	11	Nov 19	11	Nov 19	.00	Nov 3 1953
INSTANTANEOUS PEAK FLOW			396	Jul 11	1170	Jan 3 1997
INSTANTANEOUS PEAK STAGE			3.79	Jul 11	5.44	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	68950		62490		46900	
10 PERCENT EXCEEDS	224		302		164	
50 PERCENT EXCEEDS	65		31		31	
90 PERCENT EXCEEDS	21		20		.40	

e Estimated.

10291500 BUCKEYE CREEK NEAR BRIDGEPORT, CA

LOCATION.—Lat 38°14'20", long 119°19'30", in NE $^1/_4$ NE $^1/_4$ sec.04, T.4 N., R.24 E., Mono County, Hydrologic Unit 16050301, in Toiyabe National Forest, on right bank at Buckeye Hot Springs, 0.6 mi downstream from Eagle Creek, and about 5.5 mi southwest of Bridgeport.

DRAINAGE AREA.—44.1 mi^2.

PERIOD OF RECORD.—November 1910 to September 1914 (fragmentary), October 1953 to September 1979, October 1995 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 6,900 ft above sea level, from topographic map. November 1910 to September 1914, non-recording gage at site 0.5 mi downstream at different datum.

REMARKS.—Records fair except for estimated daily discharges, which are poor. No regulation or diversion above station. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

REVISIONS.—WSP 1927: Drainage area.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,750 ft^3/s, Jan. 2, 1997; gage height, 7.49 ft; minimum daily, 4.5 ft^3/s, Jan. 12, 1963.

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

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 30	2400	158	2.68	Sept. 9	1615	156	2.63
July 9	2400	*397	*3.39				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	25	23	24	19	19	34	142	150	325	152	62
2	27	25	22	24	18	20	33	137	177	333	148	63
3	27	25	27	22	20	20	33	130	161	338	146	63
4	25	25	24	20	18	19	33	133	150	333	143	63
5	25	25	24	e21	e18	18	32	126	161	335	144	67
6	25	24	23	e21	19	17	31	115	187	335	145	66
7	26	24	23	e22	17	21	31	107	199	340	146	63
8	26	22	22	23	e18	17	30	110	200	347	139	60
9	29	22	e22	23	e19	17	31	120	195	348	124	95
10	29	24	e22	23	e19	18	32	107	198	321	119	74
11	28	24	e22	22	19	19	32	102	182	304	118	64
12	26	22	e23	22	20	19	31	99	208	296	116	59
13	27	23	e23	23	20	19	30	89	201	291	114	55
14	27	22	e22	23	19	19	29	86	280	280	111	52
15	27	22	e22	e23	20	21	28	88	304	273	109	51
16	27	22	e22	e23	e18	23	29	93	322	283	107	51
17	28	23	e22	e22	e18	25	29	85	305	296	99	50
18	27	22	e23	e22	e18	26	33	86	298	297	94	48
19	26	25	e23	22	e18	27	41	94	312	287	90	46
20	26	23	e23	24	19	32	51	100	314	286	86	45
21	27	23	e25	23	18	35	70	99	323	281	79	44
22	26	23	26	23	19	52	92	97	324	249	75	43
23	26	23	e25	22	19	84	97	106	315	237	70	41
24	25	22	e25	21	e19	77	80	105	304	235	68	41
25	24	22	25	21	e19	58	75	133	321	216	64	42
26	26	25	e25	20	e19	49	73	117	318	200	67	48
27	26	24	e25	20	19	45	81	103	312	195	67	49
28	26	26	31	19	19	41	93	104	318	192	60	48
29	26	25	26	18	---	38	108	108	327	190	60	51
30	26	23	23	e18	---	38	131	104	336	182	64	51
31	25	---	23	e18	---	36	---	121	---	164	66	---
TOTAL	816	705	736	672	525	969	1553	3346	7702	8589	3190	1655
MEAN	26.3	23.5	23.7	21.7	18.8	31.3	51.8	108	257	277	103	55.2
MAX	29	26	31	24	20	84	131	142	336	348	152	95
MIN	24	22	22	18	17	17	28	85	150	164	60	41
AC-FT	1620	1400	1460	1330	1040	1920	3080	6640	15280	17040	6330	3280

e Estimated.

10291500 BUCKEYE CREEK NEAR BRIDGEPORT, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1998, BY WATER YEAR (WY)

MEAN	23.0	22.2	22.4	25.1	22.1	26.0	50.8	139	208	133	53.8	30.3
MAX	41.4	44.4	52.2	158	55.8	70.6	115	322	432	399	115	65.6
(WY)	1957	1974	1965	1997	1997	1997	1997	1969	1911	1911	1967	1911
MIN	7.43	11.6	10.2	10.2	10.2	11.7	22.3	32.2	43.4	18.8	9.76	7.55
(WY)	1978	1962	1978	1960	1977	1977	1967	1977	1976	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1911 - 1998	
ANNUAL TOTAL	38077		30458			
ANNUAL MEAN	104		83.4		61.6	
HIGHEST ANNUAL MEAN					114	1969
LOWEST ANNUAL MEAN					19.5	1977
HIGHEST DAILY MEAN	1050	Jan 2	348	Jul 9	1050	Jan 2 1997
LOWEST DAILY MEAN	22	Nov 8	17	Feb 7	4.5	Jan 12 1963
ANNUAL SEVEN-DAY MINIMUM	22	Nov 12	18	Mar 4	5.5	Jan 11 1963
INSTANTANEOUS PEAK FLOW			397	Jul 9	2750	Jan 2 1997
INSTANTANEOUS PEAK STAGE			3.39	Jul 9	7.49	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	75530		60410		44600	
10 PERCENT EXCEEDS	270		280		174	
50 PERCENT EXCEEDS	63		32		29	
90 PERCENT EXCEEDS	24		19		14	

10292500 BRIDGEPORT RESERVOIR NEAR BRIDGEPORT, CA

LOCATION.—Lat 38°19'30", long 119°12'40", in SE $^1/_4$ NE $^1/_4$ sec.34, T.6 N., R.25 E., Mono County, Hydrologic Unit 16050301, in Toiyabe National Forest, at Bridgeport Dam on East Walker River, and 4.5 mi north of Bridgeport.

DRAINAGE AREA.—358 mi^2.

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

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

GAGE.—Water-stage recorder. Datum of gage is 6,466.44 ft above sea level (project datum).

REMARKS.—Reservoir is formed by earthfill, rock-faced dam. Storage began Dec. 8, 1923. Dam completed in November 1924. Capacity, 42,460 acre-ft between elevations 6,415 ft, approximate elevation of bottom of reservoir, and 6,461 ft. Crest of spillway is at elevation 6,460.75 ft; however, there are four siphons that become operative prior to reaching this spillway. Elevation of sill of outlet gate, 6,412 ft. No dead storage. Figures given herein represent total contents. Water is used for irrigation by Walker River Irrigation District. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 44,880 acre-ft, June 16, 1974, elevation 6,460.78 ft; no contents at times in water years 1929, 1930, 1960, 1977, 1988, and 1989.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 42,880 acre-ft, Aug. 8, elevation, 6,460.14 ft; minimum 17,000 acre-ft, Oct. 13, elevation, 6,448.96 ft.

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

6,425	334	6,440	6,240	6,455	29,160
6,430	1,130	6,445	11,380	6,460	42,460
6,435	2,920	6,450	18,780	6,461	45,490

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18660	18130	22750	27640	34080	38540	35220	28910	21560	37320	42340	33700
2	18490	18250	22910	27920	34560	38320	34190	28840	21500	37870	42370	33140
3	18370	18350	23080	28010	34930	38070	33370	28750	21540	38540	42430	32610
4	18210	18470	23250	28220	35220	37840	32810	28630	21540	38960	42640	32180
5	18010	18590	23520	28360	35440	37620	32590	28840	21560	39260	42730	31770
6	17780	18690	23700	28470	35700	37510	32540	29070	21700	39540	42760	31500
7	17610	18850	23930	28610	36100	37260	32510	29280	22030	39690	42760	31210
8	17470	18980	24100	28790	36470	37010	32540	29550	22360	39890	42820	30940
9	17350	19130	24260	28910	36710	36870	32540	29640	22790	40180	42790	30800
10	17210	19280	24390	29050	36950	36820	32540	29430	23270	40390	42700	30750
11	17150	19460	24510	29210	37230	36820	32480	29300	23830	40680	42490	30850
12	17080	19630	24600	29450	37460	36900	32310	29110	24540	40880	42230	30900
13	17060	19790	24790	29670	37680	36950	32150	28860	25120	41030	41910	30870
14	17090	19880	24970	29830	38090	37070	31950	28560	25520	41230	41610	30800
15	17110	20010	25140	30120	38260	37180	31750	28170	25980	41470	41260	30630
16	17150	20140	25340	30510	38460	37340	31500	27850	26550	41760	40910	30580
17	17150	20270	25520	30900	38680	37540	31330	27370	27250	42050	40530	30580
18	17130	20550	25690	31470	38870	37730	31060	26880	27730	42110	40180	30530
19	17130	20560	25870	31700	39040	37710	30850	26380	28170	42080	39890	30480
20	17150	20720	25960	31950	39230	37430	30700	25910	28610	42110	39660	30360
21	17130	20840	26220	32130	39260	36730	30510	25410	28880	42200	39320	30290
22	17200	20910	26290	32360	39230	36820	30390	24920	29350	42260	39010	30220
23	17150	21130	26400	32540	39290	38460	30410	24490	30220	42170	38650	30170
24	17300	21270	26550	32740	39230	39830	30200	24040	31000	42200	38320	30080
25	17400	21420	26680	32970	39120	40150	29930	23680	31820	42170	37840	30150
26	17490	21760	26790	32990	39040	40010	29640	23310	32820	42050	37260	30080
27	17590	21990	26910	33200	38900	39600	29350	22980	33600	42170	36550	30460
28	17680	22170	27040	33420	38730	38870	29140	22620	34640	42340	36100	30630
29	17770	22360	27160	33600	---	37960	28980	22360	35700	42340	35540	30780
30	17830	22520	27320	33700	---	36980	28910	22090	36710	42340	34900	31280
31	17990	---	27480	33910	---	36150	---	21800	---	42370	34300	---
MAX	18660	22520	27480	33910	39290	40150	35220	29640	36710	42370	42820	33700
MIN	17060	18130	22750	27640	34080	36150	28910	21800	21500	37320	34300	30080
a	6450.67	6454.54	6456.19	6456.07	6453.88	6456.58	6456.57	6457.44	6459.56	6459.76	6454.41	6450.00
b	-350	+8090	+3950	-300	-5150	+6440	-20	+2260	+5900	+580	-13960	-9020

CAL YR 1997 MAX 43340 MIN 17060 b -4570
WTR YR 1998 MAX 42820 MIN 17060 b +12500

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

10293000 EAST WALKER RIVER NEAR BRIDGEPORT, CA

LOCATION.—Lat 38°19'40", long 119°12'50", in SW $^1/_4$ NE $^1/_4$ sec.34, T.6 N., R.25 E., Mono County, Hydrologic Unit 16050301, in Toiyabe National Forest, on right bank, 1,500 ft downstream from Bridgeport Reservoir, 5 mi north of Bridgeport, and 10 mi upstream from Sweetwater Creek.

DRAINAGE AREA.—359 mi^2.

PERIOD OF RECORD.—July 1911 to September 1914 (gage height only), October and November 1921, May 1922 to September 1924, March to July 1925, October 1925 to current year.

REVISED RECORDS.—WSP 1927: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 6,400 ft above sea level, from topographic map. Prior to Oct. 1, 1921, nonrecording gage at site 0.5 mi upstream at different datum. Oct. 1, 1921, to Feb. 21, 1924, water-stage recorder at site 1 mi downstream at different datum. Feb. 22, 1924, to Sept. 30, 1931, water-stage recorder, and Oct. 1, 1931, to May 25, 1939, nonrecording gage at present site at datum 2.34 ft lower. May 26, 1939, to Nov. 27, 1988, water-stage recorder at datum 2.00 ft higher.

REMARKS.—No estimated daily discharges. Records good. Diversions for irrigation of meadow pasturelands near Bridgeport. Flow regulated by Bridgeport Reservoir (station 10292500). These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,910 ft^3/s, Jan. 4, 1997, gage height, 6.74 ft; minimum daily, 0.20 ft^3/s, Nov. 2, 1955.

EXTREMES FOR CURRENT YEAR.—Maximum discharge, 865 ft^3/s, July 22, 23, gage height, 5.27 ft; minimum daily, 23 ft^3/s, several days in November and December.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	177	31	29	31	27	214	808	427	402	476	378	424
2	170	31	26	31	27	242	804	426	371	514	356	423
3	170	31	23	31	27	257	717	426	372	523	316	406
4	186	31	23	32	27	240	541	425	372	667	272	383
5	190	32	23	32	27	228	360	425	373	739	260	382
6	190	31	23	32	27	227	269	423	373	739	280	371
7	186	30	23	32	27	227	239	423	374	784	309	356
8	171	30	23	32	27	227	218	423	374	806	326	341
9	150	30	24	33	28	193	218	423	376	807	334	276
10	136	30	27	33	29	150	219	423	377	806	344	228
11	132	30	28	33	27	108	234	422	378	758	379	215
12	125	30	27	33	30	91	266	423	380	733	406	214
13	110	26	26	33	27	91	266	437	442	688	404	214
14	81	24	23	33	27	91	266	460	499	663	402	229
15	85	23	23	33	28	91	267	484	499	573	400	245
16	92	23	23	33	30	91	267	492	501	526	399	208
17	104	23	24	33	27	92	266	491	504	529	398	175
18	102	23	24	33	51	136	298	490	593	689	375	167
19	99	23	28	33	60	248	329	489	640	771	334	177
20	95	25	26	33	74	419	328	488	642	771	322	191
21	90	30	25	33	96	639	343	488	554	718	305	181
22	85	30	28	33	117	537	366	487	510	799	307	166
23	68	29	31	33	141	500	405	486	471	852	328	162
24	51	29	31	33	150	562	430	485	451	740	328	155
25	51	29	31	33	174	686	430	484	375	689	343	155
26	51	30	31	33	188	729	430	484	336	688	388	153
27	51	30	31	33	204	786	429	445	338	509	391	150
28	51	29	31	33	214	818	428	425	339	418	376	149
29	52	29	31	33	---	818	428	426	380	474	396	130
30	52	29	31	29	---	813	428	426	433	465	425	66
31	38	---	31	27	---	808	---	426	---	428	425	---
TOTAL	3391	851	828	1002	1938	11359	11297	13982	13029	20342	11006	7092
MEAN	109	28.4	26.7	32.3	69.2	366	377	451	434	656	355	236
MAX	190	32	31	33	214	818	808	492	642	852	425	424
MIN	38	23	23	27	27	91	218	422	336	418	260	66
AC-FT	6730	1690	1640	1990	3840	22530	22410	27730	25840	40350	21830	14070

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1998, BY WATER YEAR (WY)

MEAN	61.0	28.2	37.6	46.6	50.6	90.7	178	261	313	304	242	155
MAX	301	325	398	804	345	417	721	880	1001	797	638	406
(WY)	1984	1983	1984	1997	1997	1983	1952	1938	1938	1967	1983	1983
MIN	7.35	1.10	2.50	.50	.62	5.39	27.5	57.5	36.0	20.4	13.3	17.1
(WY)	1931	1956	1960	1950	1950	1927	1961	1991	1924	1924	1924	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1922 - 1998	
ANNUAL TOTAL	112863		96117			
ANNUAL MEAN	309		263		148	
HIGHEST ANNUAL MEAN					443	1983
LOWEST ANNUAL MEAN					37.5	1931
HIGHEST DAILY MEAN	1880	Jan 4	852	Jul 23	1880	Jan 4 1997
LOWEST DAILY MEAN	23	Nov 15	23	Nov 15	.20	Nov 2 1955
ANNUAL SEVEN-DAY MINIMUM	23	Dec 3	23	Dec 3	.20	Nov 2 1955
INSTANTANEOUS PEAK FLOW			865	Jul 22	1910	Jan 4 1997
INSTANTANEOUS PEAK STAGE			5.27	Jul 22	6.74	Jan 4 1997
ANNUAL RUNOFF (AC-FT)	223900		190600		106900	
10 PERCENT EXCEEDS	636		557		349	
50 PERCENT EXCEEDS	268		219		95	
90 PERCENT EXCEEDS	30		27		7.0	

10295500 LITTLE WALKER RIVER NEAR BRIDGEPORT, CA

LOCATION.—Lat 38°21'30", long 119°26'30", in NW $^1/_4$ NW $^1/_4$ sec.22, T.6 N., R.23 E., Mono County, Hydrologic Unit 16050302, in Toiyabe National Forest, on right bank, 0.8 mi North of Sonora Junction, 1.5 mi upstream from mouth, and 14 mi northwest of Bridgeport.

DRAINAGE AREA.—63.1 mi^2.

PERIOD OF RECORD.—April to August 1910, October 1944 to September 1986, October 1995 to current year. Prior to October 1958, published as East Fork Walker River near Bridgeport.

REVISED RECORDS.—WDR 82-1: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 6,790 ft above sea level, from topographic map. April to August 1910, nonrecording gage at site 1 mi upstream at different datum. Prior to Jan. 2, 1997, at same site, at datum 1.0 ft higher.

REMARKS.—Records fair except for estimated daily discharges, which are poor. Small diversions above station. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,540 ft^3/s, Jan. 2, 1997, gage height, 5.70 ft; minimum daily, 2.6 ft^3/s, Aug. 16, 1977.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 23	1415	279	2.63	July 10	0100	*359	*2.87

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	24	23	22	27	19	42	128	119	279	122	46
2	23	23	20	22	26	19	39	132	124	265	118	46
3	23	23	e20	20	29	20	38	124	119	273	113	49
4	22	23	e20	e20	27	23	35	121	115	273	109	51
5	22	22	e21	e20	29	23	34	128	112	270	109	56
6	23	23	e22	e20	24	21	34	128	137	270	108	55
7	23	24	e22	e21	24	27	32	137	159	279	106	52
8	23	21	22	e21	26	20	31	137	153	292	98	49
9	26	22	e21	22	26	21	34	132	159	295	80	80
10	25	24	e22	21	31	21	36	119	168	338	70	62
11	25	25	e19	21	26	21	36	106	164	311	71	57
12	24	23	e19	22	27	22	33	99	164	292	68	57
13	27	23	e18	26	25	22	31	82	164	273	68	50
14	29	22	e18	23	24	23	30	80	188	265	68	47
15	29	22	e18	32	28	25	30	78	228	242	62	45
16	28	25	e19	32	34	29	29	84	265	265	59	43
17	27	23	20	34	26	31	31	75	253	295	49	42
18	27	23	17	30	26	31	37	74	234	245	47	39
19	26	25	e17	26	20	33	48	76	250	220	46	38
20	26	22	e18	e26	21	38	64	84	250	228	46	38
21	27	23	e18	e25	19	43	85	83	259	226	46	37
22	26	23	e18	e25	20	81	106	84	265	218	46	36
23	26	23	e18	e25	19	172	106	83	262	195	42	35
24	25	21	e18	e25	31	150	90	93	265	195	44	36
25	24	22	e18	e23	25	119	82	104	268	190	45	37
26	25	27	e19	23	21	89	77	101	250	153	48	44
27	24	24	e19	23	19	71	86	87	242	147	47	47
28	24	27	e20	25	18	60	97	92	250	164	47	43
29	25	27	e20	23	---	50	112	96	259	135	46	48
30	25	24	e21	33	---	50	120	90	256	143	48	47
31	24	---	21	31	---	46	---	96	---	128	49	---
TOTAL	775	703	606	762	698	1420	1685	3133	6101	7364	2125	1412
MEAN	25.0	23.4	19.5	24.6	24.9	45.8	56.2	101	203	238	68.5	47.1
MAX	29	27	23	34	34	172	120	137	268	338	122	80
MIN	22	21	17	20	18	19	29	74	112	128	42	35
AC-FT	1540	1390	1200	1510	1380	2820	3340	6210	12100	14610	4210	2800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1998, BY WATER YEAR (WY)

MEAN	20.4	21.8	22.2	23.0	22.9	27.7	51.6	126	177	106	40.2	23.8
MAX	47.7	65.3	98.4	101	58.9	85.7	97.0	323	388	297	137	55.5
(WY)	1983	1951	1951	1997	1986	1986	1986	1969	1983	1967	1983	1983
MIN	6.79	9.84	9.10	9.26	11.0	10.8	20.9	16.5	36.6	9.48	5.41	4.95
(WY)	1978	1949	1949	1949	1977	1977	1976	1977	1976	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1945 - 1998	
ANNUAL TOTAL	31332		26784			
ANNUAL MEAN	85.8		73.4		55.4	
HIGHEST ANNUAL MEAN					113	1983
LOWEST ANNUAL MEAN					13.9	1977
HIGHEST DAILY MEAN	600	Jan 2	338	Jul 10	730	May 16 1996
LOWEST DAILY MEAN	17	Dec 18	17	Dec 18	2.6	Aug 16 1977
ANNUAL SEVEN-DAY MINIMUM	18	Dec 18	18	Dec 18	3.0	Aug 11 1977
INSTANTANEOUS PEAK FLOW			359	Jul 10	2540	Jan 2 1997
INSTANTANEOUS PEAK STAGE			2.87	Jul 10	5.70	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	62150		53130		40150	
10 PERCENT EXCEEDS	246		222		148	
50 PERCENT EXCEEDS	52		35		26	
90 PERCENT EXCEEDS	22		21		13	

e Estimated.

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

LOCATION.—Lat 38°22'47", long 119°26'57", in NE $^1/_4$ SE $^1/_4$ sec.9, T.6 N., R.23 E., Mono County, Hydrologic Unit 16050302, in Toiyabe National Forest, on left bank, 200 ft downstream from Little Walker River, 10 ft upstream from bridge on U.S. Highway 395, and 13 mi southeast of Coleville.

DRAINAGE AREA.—181 mi^2.

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

REVISED RECORDS.—WDR NV-79-1: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 6,591.39 ft above sea level. Prior to Oct. 1, 1939, at site, 125 ft downstream at datum 1.00 ft higher. Oct. 1, 1939, to Sept. 30, 1969, at present site and datum. Oct. 1, 1969, to July 10, 1987, at site 100 ft downstream at same datum. July 10, 1987, to Mar. 5, 1997, at site upstream 100 ft at same datum. Mar. 6, 1997, at site 150 ft downstream at datum 2.00 ft lower.

REMARKS.—Records fair except for estimated daily discharges, which are poor. Station is above diversions except for a few small ranch ditches. Flow slightly regulated by Poore Lake, capacity, 1,200 acre-ft, 7 mi upstream. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES OUTSIDE PERIOD OF RECORD.—Maximum discharge observed prior to 1938, 5,800 ft^3/s, Dec. 11, 1937, on basis of slope-area measurement of peak flow.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 12,300 ft^3/s, Jan. 2, 1997, gage height, 10.11 ft; minimum daily, 9.7 ft^3/s, Sept. 11, 1997.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharges of 1,120 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)
June 22	0145	*2,590	*5.61	No other peak greater than base discharge.		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	54	59	47	57	72	206	1010	946	1840	594	182
2	61	53	52	43	63	73	189	993	1150	1850	586	180
3	64	52	60	38	72	72	183	909	1050	1940	588	195
4	62	52	55	38	66	71	173	908	973	1860	573	205
5	61	51	51	64	82	72	168	866	1050	1840	577	207
6	60	52	59	50	57	70	164	764	1300	1900	598	216
7	63	54	58	e49	51	74	159	661	1600	2030	598	205
8	62	48	52	48	e58	68	156	720	1560	2140	544	179
9	69	48	51	47	63	66	161	807	1400	2220	445	306
10	70	55	e52	43	e59	69	166	677	1540	2060	408	283
11	72	57	e53	42	58	71	165	623	1300	1800	405	202
12	68	50	e54	46	e56	74	157	587	1530	1580	411	187
13	70	52	e54	64	e55	75	151	511	1550	1590	407	165
14	71	50	e55	46	54	77	148	459	1830	1470	425	153
15	68	46	57	79	e55	84	143	470	2100	1300	405	147
16	66	49	56	87	e55	101	142	525	2340	1340	392	140
17	64	52	51	90	e54	116	144	450	2130	1530	353	134
18	64	49	46	78	e54	126	160	427	1900	1620	309	129
19	62	57	43	66	55	131	196	483	2090	1490	281	124
20	61	53	47	84	60	153	260	548	2050	1490	260	119
21	61	52	48	84	51	175	378	539	2180	1520	236	115
22	60	54	e48	67	57	295	568	499	2280	1490	220	111
23	58	55	e47	63	56	668	670	567	2070	1270	203	107
24	57	51	e47	56	e59	652	540	568	1860	1300	191	111
25	53	52	e46	65	e62	486	473	800	2110	1080	183	115
26	55	67	47	52	e67	395	429	701	2130	933	184	128
27	54	58	53	50	e70	354	473	564	1860	874	179	148
28	53	e58	57	51	72	304	573	564	1890	862	175	139
29	55	e59	55	50	---	261	710	630	2010	853	176	176
30	54	60	53	81	---	241	894	573	2050	818	188	182
31	53	---	51	57	---	224	---	694	---	673	202	---
TOTAL	1909	1600	1617	1825	1678	5770	9099	20097	51829	46563	11296	4990
MEAN	61.6	53.3	52.2	58.9	59.9	186	303	648	1728	1502	364	166
MAX	72	67	60	90	82	668	894	1010	2340	2220	598	306
MIN	53	46	43	38	51	66	142	427	946	673	175	107
AC-FT	3790	3170	3210	3620	3330	11440	18050	39860	102800	92360	22410	9900

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1998, BY WATER YEAR (WY)

MEAN	55.4	68.6	72.6	80.1	76.0	111	300	768	959	506	155	75.6
MAX	219	539	448	854	246	369	609	1655	2066	1864	663	246
(WY)	1983	1951	1951	1997	1963	1986	1997	1969	1983	1995	1983	1983
MIN	16.6	22.2	20.0	18.1	26.0	32.1	108	139	189	41.1	18.5	12.4
(WY)	1978	1978	1991	1977	1991	1977	1975	1977	1976	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1938 - 1998	
ANNUAL TOTAL	169624		158273			
ANNUAL MEAN	465		434		266	
HIGHEST ANNUAL MEAN					537	1983
LOWEST ANNUAL MEAN					65.3	1977
HIGHEST DAILY MEAN	8660	Jan 2	2340	Jun 16	8660	Jan 2 1997
LOWEST DAILY MEAN	43	Dec 19	38	Jan 3	9.7	Sep 11 1977
ANNUAL SEVEN-DAY MINIMUM	47	Dec 18	46	Dec 29	10	Sep 5 1977
INSTANTANEOUS PEAK FLOW			2590	Jun 22	12300	Jan 2 1997
INSTANTANEOUS PEAK STAGE			5.61	Jun 22	10.11	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	336400		313900		193000	
10 PERCENT EXCEEDS	1320		1530		817	
50 PERCENT EXCEEDS	196		142		90	
90 PERCENT EXCEEDS	53		51		34	

e Estimated.

10296500 WEST WALKER RIVER NEAR COLEVILLE, CA

LOCATION.—Lat 38°30'55", long 119°27'15", in NW $^1/_4$ NE $^1/_4$ sec.28, T.8 N., R.23 E., Mono County, Hydrologic Unit 16050302, in Toiyabe National Forest, on left bank, 0.4 mi downstream from Rock Creek, and 5 mi southeast of Coleville.

DRAINAGE AREA.—250 mi^2.

PERIOD OF RECORD.—October 1902 to July 1908 (published as West Fork of Walker River near Coleville, 1903, 1905–8 and as Walker River (West Fork) near Coleville, 1904), March 1909 to September 1910, June 1915 to March 1938, May 1957 to current year.

REVISED RECORDS.—WSP 880: 1917 (runoff in acre-ft). WSP 1514: 1918, 1923. WDR NV-80-1: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 5,520 ft above sea level, from topographic map. See WSP 1927 for history of changes prior to July 25, 1964. July 26, 1964, to Jan. 2, 1997 (gage destroyed in '97 flood), at several sites and datums 2,000 ft downstream from present location, when re-established Oct. 28, 1997, at new datum.

REMARKS.—Records fair except for estimated daily discharges, which are poor. Station is above diversions except for a few small ranch ditches. Flow slightly regulated by Poore Lake, capacity, 1,200 acre-ft, 17 mi upstream. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 12,500 ft^3/s, Jan. 2, 1997, gage height, 10.23 ft; minimum daily, 14 ft^3/s, several days July–September 1924 and Sept. 12, 1977.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,120 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 1	0045	1,330	7.20	June 22	0045	*2,730	*8.81

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e70	63	67	e47	e64	77	246	1150	994	1910	624	181
2	e75	62	60	e44	e72	81	221	1130	1200	1900	611	178
3	e78	62	55	e40	e83	82	214	1020	987	1980	614	183
4	e74	62	63	e40	e79	78	200	1000	909	1870	606	220
5	e70	61	59	e71	e90	78	194	968	981	1840	606	212
6	e70	61	67	e56	e79	82	190	844	1180	1860	623	220
7	e73	64	68	e58	78	71	182	723	1560	1990	623	212
8	e75	59	62	e50	74	80	178	784	1610	2080	577	184
9	e85	58	57	e48	84	75	179	884	1440	2080	474	277
10	e86	64	53	e43	81	77	186	749	1620	1940	425	300
11	e86	67	57	e42	83	81	186	686	1330	1750	416	209
12	e81	61	52	e50	81	84	175	639	1560	1520	416	193
13	e85	62	59	e70	81	85	166	547	1560	1530	415	170
14	e81	61	62	e56	85	87	162	474	1820	1490	435	158
15	e83	57	61	e88	78	92	154	468	2020	1440	423	152
16	e80	55	61	e90	74	105	153	534	2380	1440	403	145
17	e78	61	63	e92	83	121	150	464	2180	1560	361	139
18	e77	58	63	e82	77	133	165	434	1880	1630	323	134
19	e73	64	57	e77	81	138	201	490	2150	1490	296	129
20	e74	62	58	e90	76	159	271	564	2080	1430	273	124
21	e75	61	52	e88	77	184	405	557	2250	1470	248	120
22	e73	62	e61	e79	76	289	627	508	2330	1460	228	117
23	e71	63	e66	e72	81	676	776	590	2110	1250	210	113
24	e69	59	e66	e62	69	655	611	570	1840	1270	197	116
25	e62	60	e59	e70	79	582	537	835	2130	1110	186	123
26	e66	77	e50	e58	78	478	474	756	2100	958	183	132
27	e65	66	e55	e52	77	433	518	593	1930	895	180	154
28	e63	64	e61	e53	77	371	621	572	1950	875	175	144
29	66	68	e57	e63	---	312	783	653	2090	865	175	171
30	65	68	e56	e88	---	283	991	581	2110	845	183	182
31	64	---	e53	e70	---	268	---	709	---	714	197	---
TOTAL	2293	1872	1840	1989	2197	6397	10116	21476	52281	46442	11706	5092
MEAN	74.0	62.4	59.4	64.2	78.5	206	337	693	1743	1498	378	170
MAX	86	77	68	92	90	676	991	1150	2380	2080	624	300
MIN	62	55	50	40	64	71	150	434	909	714	175	113
AC-FT	4550	3710	3650	3950	4360	12690	20070	42600	103700	92120	23220	10100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 1998, BY WATER YEAR (WY)

MEAN	70.5	71.2	68.1	79.9	82.2	128	306	784	997	539	170	85.0
MAX	299	214	270	905	280	403	636	1756	2055	2492	721	269
(WY)	1905	1974	1965	1997	1963	1986	1910	1969	1983	1907	1995	1907
MIN	21.5	25.4	28.7	26.9	32.0	42.1	118	149	106	26.9	17.4	16.1
(WY)	1978	1930	1960	1930	1929	1933	1975	1977	1924	1924	1924	1924

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1903 - 1998	
ANNUAL TOTAL	176413		163701			
ANNUAL MEAN	483		448		281	
HIGHEST ANNUAL MEAN					669	1907
LOWEST ANNUAL MEAN					74.5	1977
HIGHEST DAILY MEAN	9000	Jan 2	2380	Jun 16	9000	Jan 2 1997
LOWEST DAILY MEAN	50	Dec 26	40	Jan 3	14	Jul 24 1924
ANNUAL SEVEN-DAY MINIMUM	56	Dec 25	48	Dec 29	14	Aug 28 1924
INSTANTANEOUS PEAK FLOW			2730	Jun 22	12500	Jan 2 1997
INSTANTANEOUS PEAK STAGE			8.81	Jun 22	10.23	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	349900		324700		203900	
10 PERCENT EXCEEDS	1370		1520		850	
50 PERCENT EXCEEDS	206		150		98	
90 PERCENT EXCEEDS	62		59		37	

e Estimated.

10297000 TOPAZ LAKE NEAR TOPAZ, CA

LOCATION.—Lat 38°41'35", long 119°31'10", in NW $^1/_4$ NE $^1/_4$ sec.33, T.10 N., R.22 E., Douglas County, Hydrologic Unit 16050301, at outlet works of Topaz Lake on West Walker River, and 5.5 mi north of Topaz.

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

GAGE.—Water-stage recorder. Datum of gage is above sea level. Prior to October 1, 1978, at datum 4.62 ft higher.

REMARKS.—Topaz Lake, formerly known as Alkali Lake and Topaz Reservoir, was formed by the diversion of water from West Walker River through a feeder canal and the construction of an outlet tunnel through a low saddle in rim of lake. Storage began about December 1921. Usable capacity, 59,440 acre-ft, between elevations 4,967.68 ft (lowest practical elevation for diversion through tunnel) and 5,000.38 ft (3 ft below top of levee). Usable capacity of reservoir was increased from about 45,000 acre-ft to 59,440 acre-ft in October 1937 by an earthfill, rock-faced levee at south end. Figures given herein represent usable contents. There is 65,000 acre-ft of lake volume below the point of controllable storage. Water is used for irrigation in Walker River Irrigation District. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 60,680 acre-ft, July 3, 1980, July 10, 1995, elevation 5,000.92 ft, present datum; no usable contents at times in some years.

EXTREMES FOR CURRENT YEAR.—Maximum contents 60,010 acre-ft, Aug. 5, elevation, 5,000.63 ft; minimum contents, 12,490 acre-ft, Oct. 31, elevation 4,975.60 ft.

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

4,968	490	4,980	19,760	4,995	47,540
4,970	3,580	4,985	28,310	5,000	58,570
4,975	11,520	4,990	37,360	5,001	60,870

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15560	12600	16270	20190	25290	31760	42490	34620	22630	51370	59550	43310
2	15450	12680	16400	20310	25590	31920	42900	34510	22680	52910	59550	42880
3	15230	12760	16520	20460	25910	32120	43230	34380	22700	54460	59780	42240
4	15050	12860	16650	20540	26190	32260	43600	34270	22680	55160	59780	41680
5	14840	12980	16840	20650	26400	32420	43910	34310	22700	55830	60010	41150
6	14640	13070	16970	20730	26660	32660	44220	34250	22970	56500	59780	40650
7	14490	13190	17170	20880	26950	32780	44470	34000	23620	56960	59550	40270
8	14270	13300	17300	21020	27250	32980	44700	33780	24330	57410	59350	39910
9	14220	13400	17430	21150	27490	33140	44820	33620	24800	57860	58890	39670
10	14130	13510	17530	21290	27720	33310	44900	33330	25450	58090	58430	39570
11	14050	13630	17630	21390	27980	33490	44800	32980	25840	58340	57750	39490
12	14000	13740	17750	21590	28200	33670	44410	32590	26380	58570	56840	39410
13	13970	13870	17800	21760	28430	33850	43970	32170	26880	59030	56170	39350
14	13890	13990	17980	21910	28740	34010	43520	31670	27610	59030	55490	39370
15	13770	14070	18130	22080	28970	34200	43040	31140	28590	59030	54840	39370
16	13690	14180	18250	22270	29200	34400	42570	30710	29740	59030	54170	39350
17	13630	14280	18380	22490	29410	34640	42020	30240	30850	59260	53730	39230
18	13550	14410	18530	22800	29600	34870	41430	29720	31550	59280	53060	39150
19	13480	14480	18630	23040	29830	35110	40770	29180	32600	59280	52620	39030
20	13400	14610	18750	23220	29990	35370	40190	28590	33760	59280	52180	38840
21	13250	14760	18850	23390	30270	35630	39630	27980	34970	59280	51740	38640
22	13110	14950	18970	23560	30450	36070	39090	27320	36290	59050	51110	38370
23	12980	15000	19070	23730	30680	36750	38560	26730	37690	58820	50460	38060
24	12810	15120	19200	23920	30840	38040	37980	26140	39050	58820	49590	37770
25	12700	15280	19300	24010	31010	38940	37320	25740	40850	58620	48730	37480
26	12650	15530	19420	24280	31210	39590	36650	25310	42800	58840	47790	37320
27	12620	15700	19520	24440	31390	40180	36010	24800	44430	59300	46880	37170
28	12620	15830	19640	24610	31600	40690	35430	24280	46040	59530	46040	37070
29	12570	15980	19750	24780	---	41170	35020	23770	47810	59530	45260	37000
30	12570	16120	19890	24930	---	41590	34730	23270	49630	59530	44550	37070
31	12550	---	19990	25110	---	42040	---	22850	---	59530	43890	---
MAX	15560	16120	19990	25110	31600	42040	44900	34620	49630	59530	60010	43310
MIN	12550	12600	16270	20190	25290	31760	34730	22850	22630	51370	43890	37000
a	4975.64	4977.82	4980.04	4983.15	4986.86	4992.36	4988.60	4981.83	4995.98	5000.42	4993.26	4989.85
b	-3210	+3570	+3870	+5120	+6490	+10440	-7310	-11880	+26780	+9900	-15640	-6820

CAL YR 1997 MAX 59190 MIN 12550 b -15960
WTR YR 1998 MAX 60010 MIN 12550 b +21310

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

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

LOCATION.—Lat 38°42'50", long 119°45'50", in SW $^1/_4$ NE $^1/_4$ sec.15, T.10 N., R.20 E., Alpine County, Hydrologic Unit 16050201, on right bank, 0.5 mi downstream from Markleeville Creek, 1.5 mi northeast of Markleeville, and at mi 114.75 upstream from Lahontan Reservoir.

DRAINAGE AREA.—276 mi^2.

PERIOD OF RECORD.—August 1960 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 5,400 ft above sea level, from topographic map. Prior to Oct. 1, 1967, at present site at datum 2.00 ft higher.

REMARKS.—Records fair except for estimated daily discharges, which are poor. A few small diversions for irrigation above station. Flow slightly regulated by several small reservoirs, total capacity, about 5,000 acre-ft. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 18,900 ft^3/s, Jan. 2, 1997, gage height, 11.78 ft; minimum daily, 12 ft^3/s, Sept. 10–13, 23, 1987.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
March 24	0845	*2,640	*5.28	April 30	2400	1,600	4.34
April 23	0130	1,330	4.03	June 7	2400	2,370	5.06

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	69	93	91	114	130	446	1330	1230	1520	444	173
2	70	67	79	92	125	144	399	1330	1400	1510	423	168
3	75	67	68	85	195	152	374	1210	1310	1500	429	176
4	70	66	85	76	167	146	343	1170	1240	1460	388	e180
5	67	64	82	74	148	141	328	1140	1280	1440	373	e182
6	67	65	89	72	152	140	316	1020	1500	1460	359	e248
7	69	68	98	83	147	115	301	945	1970	1450	339	e191
8	71	62	84	88	139	123	290	1130	1770	1450	320	e160
9	87	59	68	84	140	117	291	1240	1650	1460	297	e199
10	92	72	62	87	134	121	295	1040	1660	1400	278	e201
11	89	71	82	94	135	138	291	946	1590	1250	271	e154
12	80	64	91	118	134	148	274	873	1590	1120	262	171
13	81	66	102	106	136	147	263	759	1680	1090	254	146
14	82	67	98	107	144	152	258	680	1830	1030	260	128
15	82	61	90	189	132	168	240	677	1880	937	259	118
16	79	62	93	180	119	194	232	736	2080	915	250	121
17	77	73	93	192	126	200	230	630	1870	957	234	112
18	75	69	88	183	115	204	259	610	1850	956	220	106
19	74	91	74	167	122	198	331	723	1930	892	204	102
20	72	84	85	150	117	218	453	793	1880	846	198	98
21	73	77	82	136	120	234	687	770	1920	829	188	101
22	72	79	89	136	113	450	970	696	1940	787	181	98
23	71	81	81	133	117	1030	1080	819	1810	755	184	98
24	69	76	98	129	113	1860	806	854	1720	856	178	111
25	63	84	91	121	121	1390	730	1110	1840	791	179	111
26	64	115	86	120	115	936	679	899	1790	641	176	129
27	69	93	88	118	116	776	755	738	1650	596	172	147
28	66	86	92	118	121	668	897	732	1630	562	176	124
29	70	93	90	127	---	565	1080	789	1670	552	174	134
30	70	92	90	109	---	510	1300	727	1610	528	166	115
31	70	---	88	114	---	480	---	902	---	488	172	---
TOTAL	2286	2243	2679	3679	3677	11995	15198	28018	50770	32028	8008	4302
MEAN	73.7	74.8	86.4	119	131	387	507	904	1692	1033	258	143
MAX	92	115	102	192	195	1860	1300	1330	2080	1520	444	248
MIN	63	59	62	72	113	115	230	610	1230	488	166	98
AC-FT	4530	4450	5310	7300	7290	23790	30150	55570	100700	63530	15880	8530

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1998, BY WATER YEAR (WY)

MEAN	81.0	112	138	204	212	293	550	1128	1012	413	149	91.2
MAX	346	476	718	1722	917	983	1121	2447	2996	1721	477	239
(WY)	1983	1984	1965	1997	1986	1986	1982	1969	1983	1995	1983	1983
MIN	24.0	32.6	41.4	44.2	43.9	58.7	183	197	135	58.0	33.0	18.0
(WY)	1978	1977	1991	1977	1991	1977	1977	1977	1992	1977	1977	1987

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1960 - 1998	
ANNUAL TOTAL	200833		164883			
ANNUAL MEAN	550		452		366	
HIGHEST ANNUAL MEAN					809	1983
LOWEST ANNUAL MEAN					83.7	1977
HIGHEST DAILY MEAN	12500	Jan 2	2080	Jun 16	12500	Jan 2 1997
LOWEST DAILY MEAN	59	Nov 9	59	Nov 9	12	Sep 10 1987
ANNUAL SEVEN-DAY MINIMUM	64	Nov 3	64	Nov 3	12	Sep 7 1987
INSTANTANEOUS PEAK FLOW			2640	Mar 24	18900	Jan 2 1997
INSTANTANEOUS PEAK STAGE			5.28	Mar 24	11.78	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	398400		327000		265000	
10 PERCENT EXCEEDS	1270		1400		970	
50 PERCENT EXCEEDS	274		168		147	
90 PERCENT EXCEEDS	71		72		50	

e Estimated.

10310000 WEST FORK CARSON RIVER AT WOODFORDS, CA

LOCATION.—Lat 38°46'11", long 119°49'58", in NW $^1/_4$ SE $^1/_4$ sec.34, T.11 N., R.19 E., Alpine County, Hydrologic Unit 16050201, in Toiyabe National Forest, on left bank, 0.3 mi downstream from bridge on State Highway 88–89, 0.6 mi southwest of Woodfords, 3.8 mi downstream from Willow Creek, and at mi 21.17 from mouth.

DRAINAGE AREA.—65.4 mi^2.

PERIOD OF RECORD.—October 1900 to May 1907, 1910–11 (fragmentary), October 1938 to current year. January 1890 to March 1892, June 1907 to September 1920 (except parts of 1910–11), at site 0.7 mi downstream; records not equivalent owing to diversions for irrigation.

REVISED RECORDS.—WDR NV-79-1: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 5,754.5 ft above sea level. Prior to Oct. 1, 1938, nonrecording gage at about the same site at different datum. Oct. 1, 1938, to Nov. 11, 1958, water-stage recorder at same site at datum 1.02 ft lower. Nov. 13, 1958, to Jan. 30, 1963, water-stage recorder at site 150 ft downstream at datum 3.06 ft lower. Gage moved 200 ft upstream March 1997 at same datum.

REMARKS.—Records fair. One small diversion above station for irrigation. Flow slightly regulated by several small reservoirs, total capacity, about 1,500 acre-ft. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 8,100 ft^3/s, Jan. 1, 1997, gage height, 15.36 ft; minimum daily, 5.3 ft^3/s, Sept. 2, 1997.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 11, 1937, reached a stage of 8.0 ft, at different datum, from floodmarks, discharge, 3,500 ft^3/s, on basis of slope-area measurement of peak flow.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 24	1800	562	12.40	June 7	0345	*1,130	*13.24
May 1	2230	873	12.96				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	35	28	28	40	54	140	699	523	402	99	38
2	26	28	25	27	40	55	131	695	596	391	94	37
3	27	25	26	25	48	58	127	644	549	391	90	38
4	25	25	28	20	48	57	121	626	518	364	86	41
5	24	24	26	29	48	56	117	561	502	354	83	42
6	25	24	29	35	47	56	114	465	594	367	81	54
7	26	24	28	28	43	60	108	424	866	360	78	48
8	26	24	24	28	39	56	105	531	723	350	75	42
9	29	23	26	28	43	54	106	584	639	342	70	71
10	33	24	28	28	44	56	108	497	630	328	67	56
11	33	25	28	29	45	60	105	423	609	292	66	47
12	29	24	27	30	46	63	98	367	603	256	64	62
13	28	24	29	28	46	63	93	309	647	249	63	57
14	28	24	27	31	45	63	92	287	667	235	66	42
15	28	24	26	50	45	70	86	321	678	213	70	40
16	27	25	28	62	49	78	82	345	712	202	62	38
17	27	26	28	85	48	82	82	276	649	209	59	37
18	26	25	27	72	47	88	96	284	615	210	57	36
19	26	30	26	52	47	96	130	348	653	196	55	35
20	26	29	26	55	47	110	190	378	631	186	53	35
21	26	28	28	54	43	119	285	351	623	185	51	35
22	25	28	25	50	44	155	404	316	609	195	49	35
23	25	27	26	47	46	362	449	371	539	186	47	45
24	25	27	26	44	48	523	329	394	492	188	46	59
25	25	29	26	42	50	402	310	531	533	170	44	64
26	25	35	e26	41	49	285	327	424	530	146	54	57
27	25	32	25	36	51	238	396	322	464	135	56	64
28	25	30	25	41	53	203	478	340	445	127	53	51
29	25	30	25	43	---	176	562	366	454	121	41	52
30	34	29	25	39	---	159	661	335	441	116	39	49
31	39	---	26	41	---	151	---	411	---	107	39	---
TOTAL	843	807	823	1248	1289	4108	6432	13225	17734	7573	1957	1407
MEAN	27.2	26.9	26.5	40.3	46.0	133	214	427	591	244	63.1	46.9
MAX	39	35	29	85	53	523	661	699	866	402	99	71
MIN	24	23	24	20	39	54	82	276	441	107	39	35
AC-FT	1670	1600	1630	2480	2560	8150	12760	26230	35180	15020	3880	2790

e Estimated.

10310000 WEST FORK CARSON RIVER AT WOODFORDS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1901 - 1998, BY WATER YEAR (WY)

MEAN	27.4	40.5	47.9	54.8	58.2	79.1	208	379	264	109	49.4	31.3
MAX	79.1	321	347	621	259	283	502	924	996	525	223	120
(WY)	1983	1951	1951	1997	1963	1986	1907	1906	1983	1907	1907	1983
MIN	8.27	13.1	12.8	13.7	16.3	18.2	46.6	56.4	37.4	18.1	11.1	7.00
(WY)	1989	1991	1991	1961	1977	1977	1975	1977	1992	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1901 - 1998	
ANNUAL TOTAL	64177		57446			
ANNUAL MEAN	176		157		112	
HIGHEST ANNUAL MEAN					290	1907
LOWEST ANNUAL MEAN					26.1	1977
HIGHEST DAILY MEAN	5500	Jan 2	866	Jun 7	5500	Jan 2 1997
LOWEST DAILY MEAN	23	Nov 9	20	Jan 4	5.3	Sep 2 1977
ANNUAL SEVEN-DAY MINIMUM	24	Nov 4	24	Nov 4	5.4	Sep 5 1977
INSTANTANEOUS PEAK FLOW			1130	Jun 7	8100	Jan 1 1997
INSTANTANEOUS PEAK STAGE			13.24	Jun 7	15.36	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	127300		113900		81490	
10 PERCENT EXCEEDS	384		499		300	
50 PERCENT EXCEEDS	89		55		47	
90 PERCENT EXCEEDS	26		26		17	

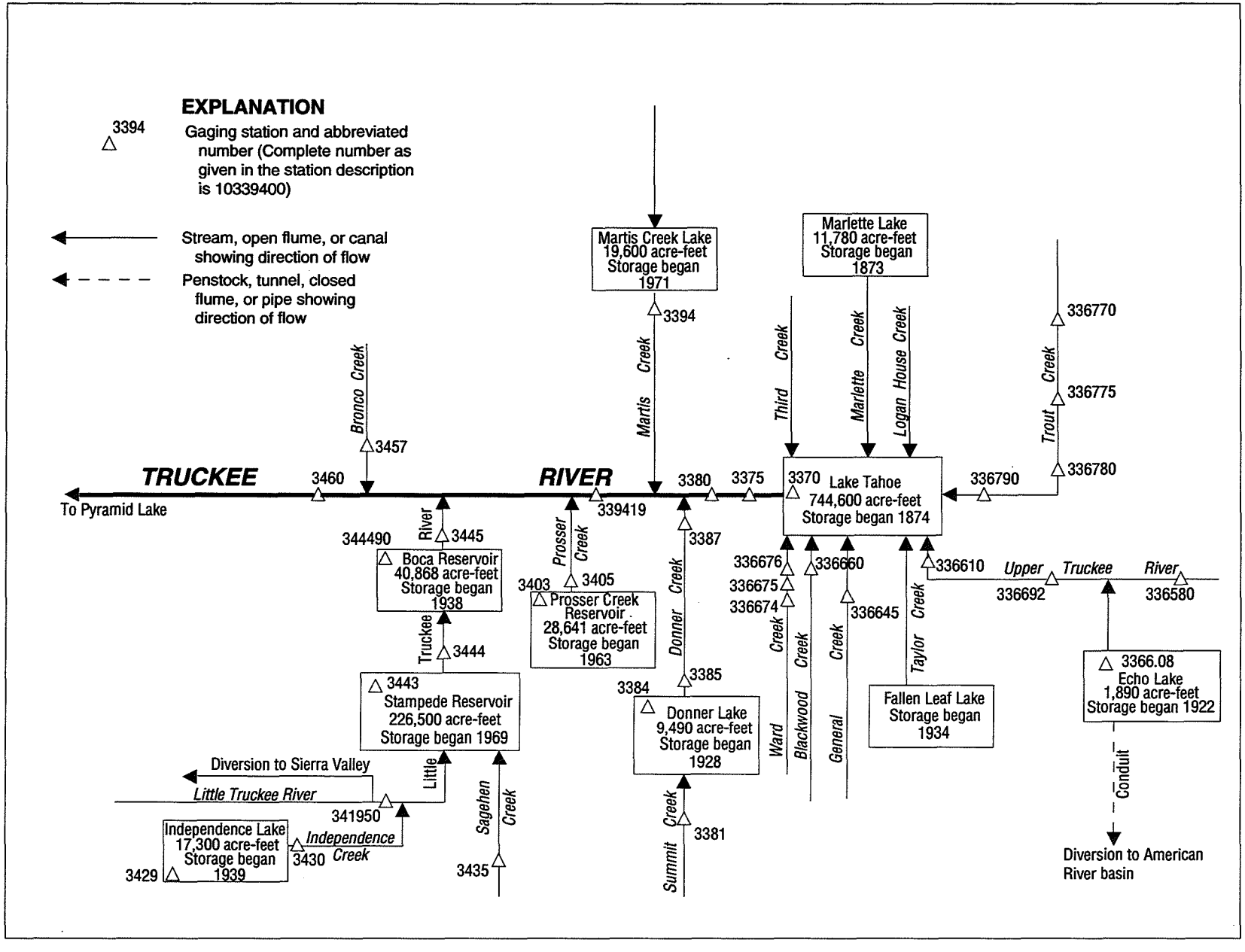


Figure 22. Diversions and storage in Truckee River Basin.

10336580 UPPER TRUCKEE RIVER AT SOUTH UPPER TRUCKEE ROAD, NEAR MEYERS, CA

LOCATION.—Lat 38°47'47", long 120°01'05", in NW $^1/_4$ SW $^1/_4$ sec.17, T.11 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on left bank, 0.25 mi upstream from bridge, 0.5 mi upstream of confluence of Big Meadow and Grass Lake Creeks, 0.5 mi west of State Highway 89, and 4.0 mi south of Meyers.

DRAINAGE AREA.—14.1 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—May 1990 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 6,490 ft above sea level, from topographic map. Prior to Oct. 1, 1991, at site 1,200 ft downstream at datum 2.54 higher.

REMARKS.—Records good except for estimated daily discharges, which are poor. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,010 ft^3/s, Jan. 2, 1997, gage height, 11.31 ft; minimum daily, 0.76 ft^3/s, Sept. 1, 1990.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharges of 150 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 24	0515	215	7.27	June 21	2000	*387	*8.28
Apr. 30	2045	209	7.23				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	3.3	3.4	3.5	6.2	7.3	34	147	195	238	45	9.3
2	2.4	2.9	3.6	3.6	10	7.8	32	139	188	246	43	9.1
3	2.7	2.8	3.8	3.3	25	7.9	31	124	160	238	41	9.1
4	2.3	2.8	3.9	3.3	17	8.2	30	124	154	228	38	11
5	2.1	2.6	4.0	e3.5	13	7.7	29	119	179	227	37	12
6	2.0	2.6	4.5	e4.0	12	8.0	28	99	228	228	35	16
7	2.1	2.6	5.5	e4.0	12	8.7	28	85	274	221	32	13
8	2.3	2.6	7.9	3.8	12	7.0	27	113	240	221	28	11
9	4.1	2.5	7.2	3.4	10	6.9	27	128	242	216	26	21
10	4.9	2.6	e7.0	3.1	9.3	7.3	27	100	267	202	25	13
11	4.4	2.7	e6.8	3.5	9.4	8.4	26	81	237	174	24	11
12	3.7	2.6	e6.5	6.5	8.7	9.7	25	74	246	161	23	11
13	3.3	2.5	e6.4	5.7	9.2	9.6	25	64	296	155	e22	10
14	3.6	2.3	e6.3	5.9	9.3	9.7	25	57	306	140	e22	9.4
15	3.8	2.1	e6.0	23	9.6	12	24	59	311	124	e23	9.0
16	3.9	2.2	e5.9	29	8.4	16	24	70	315	121	e24	8.6
17	3.6	2.2	e5.7	41	8.3	19	24	58	275	129	e22	8.0
18	3.5	2.2	e5.5	28	7.8	20	27	59	290	125	e21	7.9
19	3.6	3.6	5.4	22	7.9	21	33	76	307	116	e20	7.9
20	4.0	2.7	5.4	17	8.5	27	47	91	292	106	e18	7.6
21	3.3	2.4	5.2	13	8.5	31	80	85	311	99	e17	7.5
22	2.4	2.4	5.4	10	9.1	69	108	77	284	96	e16	7.4
23	2.5	2.5	e5.5	9.0	8.4	134	103	94	245	87	e15	7.7
24	2.8	2.4	e5.7	8.1	8.3	169	68	118	239	100	e14	8.5
25	3.0	2.9	5.8	7.3	7.5	89	56	139	288	87	e13	8.4
26	3.1	5.9	e5.5	6.9	7.1	59	60	103	270	71	e13	9.1
27	3.1	4.4	e5.3	6.7	7.1	50	76	83	252	66	e12	12
28	3.0	3.5	e5.0	6.4	7.1	44	98	92	266	63	e12	11
29	3.2	3.3	e4.6	7.1	---	39	117	99	278	60	e11	13
30	3.7	3.5	5.1	6.8	---	36	150	97	259	55	e11	11
31	3.5	---	4.2	6.1	---	35	---	139	---	48	e10	---
TOTAL	97.8	85.6	168.0	304.5	276.7	984.2	1489	2993	7694	4448	713	310.5
MEAN	3.15	2.85	5.42	9.82	9.88	31.7	49.6	96.5	256	143	23.0	10.4
MAX	4.9	5.9	7.9	41	25	169	150	147	315	246	45	21
MIN	1.9	2.1	3.4	3.1	6.2	6.9	24	57	154	48	10	7.4
AC-FT	194	170	333	604	549	1950	2950	5940	15260	8820	1410	616

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1998, BY WATER YEAR (WY)

MEAN	3.09	6.29	10.3	21.7	13.7	23.6	53.1	131	131	57.1	11.1	3.99
MAX	4.97	20.7	37.4	120	39.2	41.3	102	216	329	220	45.9	10.4
(WY)	1996	1997	1997	1997	1996	1995	1997	1996	1995	1995	1995	1998
MIN	2.12	2.13	1.69	1.57	3.06	6.64	15.1	51.2	12.1	3.40	1.64	1.30
(WY)	1993	1991	1991	1991	1991	1991	1991	1992	1992	1994	1994	1991

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1990 - 1998	
ANNUAL TOTAL	18539.2		19564.3			
ANNUAL MEAN	50.8		53.6		40.4	
HIGHEST ANNUAL MEAN					72.3	1995
LOWEST ANNUAL MEAN					14.1	1994
HIGHEST DAILY MEAN	1130	Jan 2	315	Jun 16	1130	Jan 2 1997
LOWEST DAILY MEAN	1.9	Sep 30	1.9	Oct 1	.76	Sep 1 1990
ANNUAL SEVEN-DAY MINIMUM	2.1	Aug 26	2.2	Oct 1	.97	Aug 29 1990
INSTANTANEOUS PEAK FLOW			387	Jun 21	2010	Jan 2 1997
INSTANTANEOUS PEAK STAGE			8.28	Jun 21	11.31	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	36770		38810		29250	
10 PERCENT EXCEEDS	158		191		122	
50 PERCENT EXCEEDS	19		12		8.6	
90 PERCENT EXCEEDS	2.4		3.1		2.1	

e Estimated.

10336580 UPPER TRUCKEE RIVER AT SOUTH UPPER TRUCKEE ROAD, NEAR MEYERS, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1990 to current year.

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water temperature recorder since September 1997 to current year, two times per hour.

REMARKS.—In November 1989, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. Water-temperature records represent water temperature at probe with 0.5°C. Interruptions in record due to loss of hydrologic communication with stream channel. Data for September 1997 are unpublished but available from U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum, 14.5°C, Aug. 12, 1998 (temperature presumably higher during period probe was out of water, Aug. 14 to Sept. 30); minimum, freezing point on many November 1997 to April 1998.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum, 14.5°C, Aug. 12 (temperature presumably higher during period probe was out of water, Aug. 14 to Sept. 30); minimum, freezing point, many days November to April.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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 AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
OCT									
07...	0940	2.2	54	--	4.0	5.0	--	--	--
21...	1235	2.4	48	--	15.0	4.0	--	--	--
NOV									
13...	1022	2.5	53	--	2.0	2.0	--	--	--
25...	1345	2.6	46	--	7.0	2.5	--	--	--
DEC									
15...	1600	2.5	46	7.0	-2.5	.5	599	11.3	100
JAN									
06...	1110	4.0	--	--	2.0	--	--	--	--
16...	1300	18	32	--	3.5	.5	--	--	--
22...	1110	8.5	33	--	1.0	.5	--	--	--
FEB									
02...	1000	7.3	37	--	4.0	1.5	--	--	--
25...	1400	7.0	34	--	1.5	.5	--	--	--
MAR									
09...	1020	6.7	40	--	4.0	1.0	--	--	--
19...	1350	14	27	--	11.0	2.5	--	--	--
25...	1540	56	21	--	3.5	1.5	--	--	--
APR									
21...	1810	82	20	--	4.0	2.5	--	--	--
28...	0911	83	46	--	7.0	2.5	--	--	--
30...	1630	139	18	--	15.0	3.5	--	--	--
MAY									
05...	1810	113	19	7.4	1.0	1.0	593	11.0	100
20...	1425	78	21	--	9.0	4.5	--	--	--
28...	1315	75	22	--	13.0	5.5	--	--	--
JUN									
03...	1620	145	19	--	6.5	4.0	--	--	--
09...	1030	210	22	--	18.0	4.5	--	--	--
11...	1640	229	16	--	7.0	3.5	--	--	--
17...	1435	230	17	--	17.5	6.5	--	--	--
23...	1750	232	16	--	14.0	6.0	--	--	--
30...	1820	281	16	--	15.0	8.0	--	--	--
JUL									
15...	1250	113	21	--	24.0	9.0	--	--	--
15...	1930	133	18	--	19.0	12.0	--	--	--
20...	1135	86	23	--	26.0	9.0	--	--	--
29...	1400	37	24	--	22.5	12.0	--	--	--
AUG									
13...	1440	30	30	--	24.5	14.0	--	--	--
SEP									
29...	1400	12	34	7.8	14.0	8.0	595	9.5	103

10336580 UPPER TRUCKEE RIVER AT SOUTH UPPER TRUCKEE ROAD, NEAR MEYERS, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	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)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	IRON, BIO. REACT-IVE TOTAL (UG/L AS FE) (46568)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT								
07...	--	--	--	--	--	--	--	--
21...	.003	.001	.06	.023	.014	91	<1	--
NOV								
13...	--	--	--	--	--	--	--	--
25...	.046	.011	.08	.035	.023	83	<1	--
DEC								
15...	.027	.003	.06	.022	.012	110	1	.01
JAN								
06...	--	--	--	--	--	--	--	--
16...	.023	<.001	.20	.030	.008	376	4	.20
22...	.018	<.001	.09	.012	.007	136	2	.05
FEB								
02...	--	--	--	--	--	--	--	--
25...	.079	<.001	.07	.018	.008	128	<1	--
MAR								
09...	--	--	--	--	--	--	--	--
19...	.019	<.001	.09	.015	.004	163	<1	--
25...	.012	<.001	.13	.030	.005	128	4	.60
APR								
21...	.017	.004	.07	.024	.004	231	7	1.5
28...	--	--	--	--	--	--	--	--
30...	.014	.002	.12	.011	.004	154	4	1.5
MAY								
05...	.019	<.001	.07	.014	.005	820	2	.61
20...	.038	.001	.05	.021	.005	101	<1	--
28...	.005	<.001	.05	.018	.006	114	2	.40
JUN								
03...	.010	.003	.09	.036	.005	123	4	1.6
09...	--	--	--	--	--	--	--	--
11...	.009	.001	.05	.018	.005	105	2	1.2
17...	.006	.002	.06	.042	.005	255	10	6.2
23...	.043	.001	.06	.029	.006	124	7	4.4
30...	.009	.010	.12	.047	.015	203	12	9.1
JUL								
15...	.006	.010	.05	.038	.007	141	9	2.7
15...	.005	.001	.09	.026	.006	103	4	1.4
20...	--	--	--	--	--	--	--	--
29...	.006	.002	.05	.035	.010	96	2	.20
AUG								
13...	.011	.004	.16	.031	.015	87	1	.08
SEP								
29...	.044	.010	.09	.020	.020	122	1	.03

10336580 UPPER TRUCKEE RIVER AT SOUTH UPPER TRUCKEE ROAD, NEAR MEYERS, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.0	8.5	9.5	5.0	3.0	4.0	1.0	.0	.5	.5	.5	.5
2	10.5	8.0	9.5	4.5	2.5	3.5	.5	.0	.0	.5	.0	.0
3	9.0	6.0	7.5	5.0	2.5	3.5	.5	.0	.0	.5	.0	.0
4	9.0	6.0	7.5	5.0	3.0	4.0	.5	.0	.0	.0	.0	.0
5	9.0	6.0	7.0	4.5	2.5	3.5	.5	.0	.0	.0	.0	.0
6	8.0	5.5	6.5	5.0	2.5	3.5	.5	.5	.5	.0	.0	.0
7	6.5	4.5	5.5	5.5	3.0	4.5	.5	.0	.5	.0	.0	.0
8	6.0	3.5	4.5	3.0	1.0	2.0	.0	.0	.0	.0	.0	.0
9	6.0	4.5	5.0	2.5	.5	1.5	.0	.0	.0	.5	.0	.0
10	5.5	3.5	4.5	3.0	2.0	2.5	.0	.0	.0	.5	.5	.5
11	4.5	3.0	3.5	3.0	2.0	2.5	.0	.0	.0	.5	.0	.5
12	4.0	1.5	2.5	2.0	1.0	1.5	.0	.0	.0	.5	.0	.0
13	5.0	2.0	3.0	2.0	.5	1.0	.0	.0	.0	.5	.0	.5
14	5.5	2.5	3.5	1.5	.5	1.0	.0	.0	.0	.5	.5	.5
15	6.0	3.0	4.5	1.0	.5	.5	.0	.0	.0	.5	.0	.5
16	6.5	4.0	5.0	.5	.0	.5	.0	.0	.0	.5	.5	.5
17	6.5	4.0	5.0	1.5	.5	.5	.5	.0	.0	.5	.5	.5
18	6.0	3.5	4.5	1.0	.5	.5	.5	.0	.5	1.0	.0	.5
19	5.5	3.5	4.5	2.5	1.0	1.5	.0	.0	.0	.5	.0	.0
20	5.5	3.0	4.0	2.0	1.0	1.5	.5	.0	.0	.5	.0	.0
21	5.5	3.0	4.0	2.5	1.0	1.5	.0	.0	.0	.0	.0	.0
22	5.5	3.0	4.0	3.0	1.5	2.5	.0	.0	.0	.5	.0	.5
23	6.0	4.0	4.5	3.5	2.0	2.5	.0	.0	.0	1.0	.5	.5
24	4.0	2.0	3.0	2.5	1.0	1.5	.0	.0	.0	1.0	.0	.5
25	3.0	1.0	2.0	2.0	1.0	1.0	.0	.0	.0	1.0	.0	.5
26	3.0	.5	1.5	1.5	.0	.5	.0	.0	.0	1.0	.5	.5
27	3.0	1.0	2.0	1.0	.5	.5	.0	.0	.0	1.5	.5	1.0
28	3.0	1.0	1.5	.5	.0	.5	.0	.0	.0	1.5	.5	.5
29	3.5	1.0	2.5	.5	.0	.5	.0	.0	.0	1.0	.0	.5
30	5.0	2.5	3.5	1.0	.5	.5	.0	.0	.0	.5	.0	.0
31	5.0	2.5	3.5	---	---	---	.5	.0	.0	1.0	.0	.5
MONTH	11.0	.5	4.5	5.5	.0	1.8	1.0	.0	.1	1.5	.0	.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.5	.0	.5	1.5	.5	1.0	2.0	.5	1.0	4.0	1.0	2.0
2	.5	.5	.5	1.5	.5	1.0	3.0	.5	1.5	3.0	1.5	2.0
3	1.0	.5	.5	2.0	.5	1.0	2.5	1.0	1.5	3.5	1.5	2.0
4	1.0	.5	.5	1.0	.0	.5	2.5	.5	1.5	3.5	1.5	2.5
5	1.0	.5	.5	1.0	.0	.5	2.0	.5	1.5	3.5	1.5	2.0
6	1.0	.5	.5	1.0	.0	.5	1.5	.5	1.0	2.5	1.0	2.0
7	1.0	.0	.5	.5	.0	.0	2.0	.0	1.0	3.5	2.0	2.5
8	.5	.0	.0	1.5	.5	1.0	2.0	.0	1.0	4.0	2.0	2.5
9	.5	.0	.5	1.5	.0	.5	3.5	1.0	2.0	4.0	1.5	2.5
10	.5	.0	.0	2.0	.5	1.0	2.5	1.0	1.5	4.0	1.0	2.0
11	1.0	.5	.5	2.0	1.0	1.0	2.0	1.0	1.0	4.0	1.0	2.5
12	1.0	.0	.5	1.5	.5	1.0	1.5	.5	1.0	3.5	1.0	2.0
13	1.5	1.0	1.0	1.5	1.0	1.0	1.0	.0	.5	4.0	1.0	2.0
14	1.0	.0	.5	2.5	1.0	1.5	1.5	.0	.5	4.0	2.0	2.5
15	1.0	.0	.5	2.5	1.0	1.5	1.0	.0	.5	5.5	1.5	3.0
16	.5	.0	.0	2.0	1.0	1.5	2.0	.0	.5	2.0	1.0	1.5
17	.5	.0	.5	2.0	.5	1.0	3.0	.0	1.0	5.0	.5	2.5
18	1.0	.0	.5	2.0	.5	1.5	3.5	.5	2.0	6.0	1.0	3.0
19	1.0	.0	.5	2.5	1.0	1.5	4.0	1.0	2.5	5.5	1.5	3.0
20	1.0	.0	.5	2.0	1.0	1.5	4.5	1.0	2.0	5.0	1.5	3.0
21	.5	.0	.5	2.5	1.0	1.5	4.0	1.0	2.0	3.0	1.0	2.0
22	1.0	.0	.5	1.0	.5	.5	3.5	1.0	2.0	6.0	1.0	3.0
23	.5	.0	.5	1.0	.5	.5	2.0	1.0	1.5	4.0	1.5	2.5
24	.5	.0	.0	1.0	.0	.5	3.0	1.0	2.0	6.0	1.5	3.0
25	.5	.0	.5	1.5	.5	1.0	4.0	1.5	2.0	3.0	1.5	2.0
26	1.0	.5	.5	2.5	1.0	1.5	4.0	1.0	2.0	3.0	1.0	1.5
27	1.0	.5	1.0	1.5	.0	1.0	4.0	1.0	2.5	4.5	1.0	2.5
28	1.5	.5	1.0	1.0	.0	.5	4.0	1.0	2.0	6.0	1.0	3.0
29	---	---	---	1.0	.0	.5	4.0	1.0	2.0	5.0	1.0	2.5
30	---	---	---	1.5	.0	1.0	4.0	1.0	2.0	6.5	1.0	3.0
31	---	---	---	2.0	1.0	1.5	---	---	---	6.0	1.5	3.0
MONTH	1.5	.0	.5	2.5	.0	1.0	4.5	.0	1.5	6.5	.5	2.4

10336580 UPPER TRUCKEE RIVER AT SOUTH UPPER TRUCKEE ROAD, NEAR MEYERS, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	6.0	1.5	3.0	10.0	3.5	6.0	12.5	8.0	10.0	---	---	---
2	3.0	1.5	2.5	10.0	4.0	6.5	13.5	8.5	11.0	---	---	---
3	4.5	2.0	2.5	10.5	3.5	6.5	13.5	9.0	11.5	---	---	---
4	4.5	2.0	3.0	10.5	4.5	7.0	14.0	9.0	11.5	---	---	---
5	5.0	1.5	3.0	11.5	4.5	7.5	14.0	10.0	12.0	---	---	---
6	4.5	1.5	2.5	10.5	5.5	7.5	14.0	10.0	12.5	---	---	---
7	5.0	1.5	3.0	11.5	5.5	8.0	14.0	10.5	12.0	---	---	---
8	4.5	2.0	3.0	12.5	5.5	8.5	13.0	8.5	10.5	---	---	---
9	5.5	2.0	3.0	11.5	6.0	8.5	13.0	9.0	11.0	---	---	---
10	3.5	2.0	2.5	11.5	6.0	8.5	13.5	9.0	11.5	---	---	---
11	3.5	2.0	2.5	12.0	5.5	8.0	14.0	10.0	12.0	---	---	---
12	5.5	2.5	3.0	12.5	6.0	9.0	14.5	10.5	12.5	---	---	---
13	6.0	2.5	3.5	12.0	6.5	9.0	14.0	10.5	12.5	---	---	---
14	6.5	2.0	3.5	12.0	5.5	8.5	---	---	---	---	---	---
15	6.0	2.0	3.5	12.5	5.5	9.0	---	---	---	---	---	---
16	6.0	2.0	3.5	13.5	7.0	10.0	---	---	---	---	---	---
17	6.5	1.5	3.5	13.5	7.5	10.0	---	---	---	---	---	---
18	7.0	2.5	4.0	13.5	7.5	10.0	---	---	---	---	---	---
19	7.0	2.5	4.0	14.0	7.5	10.5	---	---	---	---	---	---
20	7.5	2.5	4.0	13.5	7.5	10.5	---	---	---	---	---	---
21	7.5	3.0	4.5	14.0	8.0	10.5	---	---	---	---	---	---
22	7.5	2.5	4.5	11.5	9.5	10.5	---	---	---	---	---	---
23	7.0	2.0	4.0	11.5	9.0	10.0	---	---	---	---	---	---
24	8.0	3.0	4.5	10.5	8.0	9.0	---	---	---	---	---	---
25	7.5	3.5	4.5	12.5	7.5	10.0	---	---	---	---	---	---
26	8.0	2.5	4.5	11.5	8.0	10.0	---	---	---	---	---	---
27	9.0	3.0	5.0	12.0	8.0	10.5	---	---	---	---	---	---
28	9.0	3.5	5.5	13.0	8.5	10.5	---	---	---	---	---	---
29	9.0	3.5	5.5	13.0	8.5	11.0	---	---	---	---	---	---
30	9.5	3.5	5.5	11.5	7.5	9.5	---	---	---	---	---	---
31	---	---	---	11.5	6.5	9.0	---	---	---	---	---	---
MONTH	9.5	1.5	3.7	14.0	3.5	9.0	---	---	---	---	---	---

10336593 GRASS LAKE CREEK NEAR MEYERS, CA

LOCATION.—Lat 38°48'07", long 120°00'54", in SE $^1/_4$ NW $^1/_4$ sec.17, T.11 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on right bank, 50 ft upstream of Grass Lake Way, about 0.1 mi upstream from Upper Truckee River, and about 0.4 mi downstream of State Highway 89.

DRAINAGE AREA.—Not determined.

PERIOD OF RECORD.—September 1997 to current year.

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water-temperature recorder since September 1997, two times per hour.

REMARKS.—In September 1996, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor streamflows and water temperature within the Upper Truckee River–Trout Creek watershed. Records represent water temperature at probe within 0.5°C. Water temperature for September 1997 were not published but are available from U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum, 14.5°C, Aug. 12, 13, 1998; minimum, freezing point on many days from December 1997 to April 1998.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum, 14.5°C, Aug. 12, 13; minimum, freezing point on many days from December to April.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.5	8.5	9.5	5.0	3.5	4.0	1.0	.5	1.0	.5	.5	.5
2	9.5	8.0	9.0	4.5	3.0	3.5	.5	.0	.5	.5	.0	.5
3	8.5	6.5	7.5	5.0	3.0	4.0	.5	.0	.0	.5	.0	.5
4	8.5	6.5	7.5	5.0	3.5	4.0	1.0	.0	.5	.5	.0	.0
5	8.5	6.5	7.5	4.5	3.0	3.5	1.0	.5	.5	.0	.0	.0
6	7.5	6.0	7.0	5.0	3.0	4.0	1.0	1.0	1.0	.0	.0	.0
7	6.5	5.0	5.5	5.0	3.0	4.5	1.0	.0	.5	.0	.0	.0
8	6.0	4.0	5.0	3.0	1.5	2.0	.5	.0	.0	.5	.0	.0
9	6.0	5.0	5.5	3.0	1.0	2.0	.0	.0	.0	.5	.5	.5
10	5.5	4.0	5.0	3.5	2.5	3.0	.0	.0	.0	1.0	.5	.5
11	4.5	3.0	4.0	3.5	2.0	3.0	.0	.0	.0	.5	.5	.5
12	4.0	2.5	3.0	2.5	1.0	2.0	.0	.0	.0	.5	.0	.5
13	5.0	3.0	3.5	2.5	1.0	1.5	.0	.0	.0	.5	.5	.5
14	5.5	3.5	4.5	2.0	1.0	1.5	.0	.0	.0	.5	.5	.5
15	6.0	4.0	5.0	1.5	.5	1.0	.0	.0	.0	1.0	.5	.5
16	6.5	4.5	5.5	1.0	.5	1.0	.5	.0	.0	1.0	.5	1.0
17	6.0	4.0	5.0	2.0	1.0	1.0	.5	.5	.5	1.0	.5	1.0
18	6.0	4.0	5.0	1.5	.5	1.0	1.0	.5	.5	1.0	.0	.5
19	5.5	4.0	4.5	2.5	1.5	2.0	.5	.0	.0	.5	.0	.0
20	5.0	3.5	4.5	2.0	1.0	1.5	.5	.0	.0	.5	.0	.0
21	5.5	3.5	4.5	2.5	1.0	2.0	.0	.0	.0	.0	.0	.0
22	5.5	3.5	4.5	3.5	2.0	2.5	.0	.0	.0	.5	.0	.0
23	5.5	4.0	5.0	3.5	2.5	3.0	.0	.0	.0	.5	.0	.5
24	4.5	2.5	3.5	2.5	1.5	2.0	.0	.0	.0	.5	.0	.5
25	3.0	2.0	2.5	2.5	1.5	2.0	.0	.0	.0	.5	.0	.0
26	3.5	1.5	2.5	2.5	.5	1.0	.0	.0	.0	1.0	.5	.5
27	3.0	1.5	2.5	1.0	.5	1.0	.0	.0	.0	1.0	.5	1.0
28	3.0	1.5	2.0	1.0	.5	.5	.0	.0	.0	1.0	.5	.5
29	4.0	2.0	3.0	1.0	.5	.5	.0	.0	.0	1.0	.0	.5
30	4.5	3.0	3.5	1.5	.5	1.0	.5	.0	.0	.5	.0	.0
31	5.0	3.0	4.0	---	---	---	.5	.5	.5	.5	.0	.5
MONTH	10.5	1.5	4.9	5.0	.5	2.2	1.0	.0	.2	1.0	.0	.4

10336593 GRASS LAKE CREEK NEAR MEYERS, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.5	.0	.5	1.0	.5	.5	1.5	.5	1.0	4.0	1.5	2.5
2	.5	.0	.5	1.0	.5	1.0	2.5	.5	1.5	3.5	2.0	2.5
3	1.0	.5	.5	1.0	.5	1.0	2.0	1.0	1.5	3.0	1.5	2.5
4	1.0	.5	.5	.5	.0	.5	2.5	.5	1.0	4.0	1.5	2.5
5	1.0	.5	.5	.5	.0	.5	2.0	.5	1.0	3.5	1.5	2.0
6	1.0	.5	1.0	.5	.0	.5	1.5	.5	1.0	2.0	1.0	1.5
7	.5	.0	.5	.5	.0	.0	2.0	.0	1.0	3.5	1.5	2.5
8	.5	.0	.0	1.0	.5	.5	2.0	.0	1.0	4.0	2.0	3.0
9	.5	.0	.0	1.0	.5	.5	2.5	1.0	1.5	4.5	1.5	2.5
10	.5	.0	.0	1.0	.5	.5	2.0	1.0	1.5	3.5	1.0	2.0
11	.5	.0	.5	1.0	1.0	1.0	1.5	1.0	1.0	3.5	1.0	2.0
12	.5	.5	.5	1.0	1.0	1.0	1.5	.5	.5	3.0	1.0	2.0
13	1.0	.5	1.0	1.0	1.0	1.0	.5	.0	.0	3.5	1.0	2.0
14	1.0	.0	.5	1.5	1.0	1.0	1.5	.0	.5	3.5	1.5	2.5
15	.5	.0	.5	1.5	1.0	1.0	1.0	.0	.5	5.5	1.0	3.0
16	.5	.0	.0	1.5	1.0	1.5	2.0	.0	1.0	2.5	1.0	1.5
17	.5	.0	.5	1.5	.5	1.0	3.0	.0	1.0	4.5	.5	2.0
18	.5	.0	.5	1.5	1.0	1.5	3.0	.5	1.5	5.5	1.0	3.0
19	1.0	.5	.5	2.0	1.0	1.5	4.0	1.0	2.0	6.0	1.5	3.5
20	.5	.0	.5	2.0	1.0	1.5	4.0	1.0	2.0	5.5	1.5	3.0
21	.5	.0	.5	2.0	1.0	1.5	4.0	1.0	2.0	3.0	1.0	2.0
22	.5	.5	.5	1.5	1.0	1.5	3.0	1.0	2.0	6.0	1.0	3.0
23	.5	.0	.0	2.0	1.0	1.5	2.0	1.0	1.5	3.5	2.0	3.0
24	.5	.0	.0	1.0	.5	1.0	2.5	1.0	1.5	6.5	1.5	3.5
25	.5	.0	.0	1.0	.5	1.0	3.5	1.0	2.0	4.0	2.0	3.0
26	.5	.0	.5	2.0	1.0	1.0	4.0	1.0	2.0	2.5	1.0	2.0
27	1.0	.5	.5	1.5	.0	1.0	4.0	1.0	2.0	4.5	1.0	3.0
28	1.0	.5	.5	1.0	.0	.5	4.0	1.0	2.0	6.0	2.0	3.5
29	---	---	---	1.0	.0	.5	4.0	1.0	2.0	4.5	1.0	2.5
30	---	---	---	1.5	.0	.5	4.0	1.5	2.0	7.0	1.0	4.0
31	---	---	---	1.5	1.0	1.0	---	---	---	7.5	2.5	4.5
MONTH	1.0	.0	.4	2.0	.0	.9	4.0	.0	1.4	7.5	.5	2.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.5	2.5	4.5	13.0	7.5	10.0	---	---	---	13.5	10.5	12.0
2	5.0	3.0	4.0	13.5	8.5	10.5	---	---	---	13.0	10.5	11.5
3	6.0	3.0	4.5	13.5	7.5	10.5	---	---	---	13.0	10.5	11.5
4	7.0	3.0	5.0	13.5	8.5	11.0	---	---	---	13.0	11.5	12.0
5	8.0	3.0	5.5	14.0	8.5	11.0	---	---	---	13.5	11.5	12.5
6	7.5	4.0	5.5	---	---	---	---	---	---	13.0	12.0	12.5
7	8.5	4.0	5.5	---	---	---	14.0	12.0	13.0	13.0	11.5	12.5
8	8.5	4.0	5.5	---	---	---	13.0	10.0	11.5	12.5	11.0	12.0
9	9.0	4.0	6.0	---	---	---	13.0	10.0	12.0	12.0	10.5	11.5
10	6.0	4.5	5.0	---	---	---	13.5	10.0	12.0	10.5	8.0	9.5
11	6.0	4.5	5.5	---	---	---	14.0	11.0	12.5	10.5	9.0	10.0
12	8.5	4.5	6.0	---	---	---	14.5	11.0	13.0	11.5	9.0	10.5
13	9.5	5.0	6.5	---	---	---	14.5	11.5	13.0	12.0	9.5	11.0
14	10.5	4.5	7.5	---	---	---	13.5	12.0	13.0	12.0	10.0	11.0
15	10.5	5.0	7.5	---	---	---	14.0	11.0	12.5	12.0	10.5	11.5
16	10.0	5.5	7.5	---	---	---	13.5	11.0	12.5	12.0	10.0	11.0
17	11.0	4.5	7.5	---	---	---	13.0	10.5	12.0	12.0	10.0	11.0
18	11.5	5.5	8.0	---	---	---	12.0	8.5	10.5	10.5	9.5	10.0
19	11.5	6.0	8.0	---	---	---	12.0	9.5	11.0	10.0	8.0	9.0
20	11.5	6.0	8.5	---	---	---	11.5	8.5	10.5	10.0	8.0	9.0
21	11.5	7.0	9.0	---	---	---	11.5	8.0	10.0	9.0	7.0	8.0
22	11.5	6.5	8.5	---	---	---	11.5	8.0	10.0	9.0	6.5	8.0
23	11.0	5.5	8.5	---	---	---	11.5	8.5	10.5	9.0	7.0	8.0
24	11.5	6.5	9.0	---	---	---	11.5	8.5	10.0	9.0	7.0	8.0
25	11.5	7.5	9.0	---	---	---	12.0	9.0	10.5	8.5	6.5	8.0
26	11.5	6.0	8.5	---	---	---	11.5	9.0	10.5	8.0	6.5	7.5
27	12.0	6.5	9.0	---	---	---	12.0	9.0	10.5	7.0	6.0	6.5
28	12.5	7.0	9.5	---	---	---	13.0	10.0	11.5	8.0	6.0	7.0
29	13.0	7.5	10.0	---	---	---	13.5	10.5	12.0	8.5	7.0	8.0
30	13.0	7.5	10.0	---	---	---	14.0	11.5	12.5	9.0	7.0	8.0
31	---	---	---	---	---	---	13.5	10.5	12.0	---	---	---
MONTH	13.0	2.5	7.2	---	---	---	---	---	---	13.5	6.0	9.9

10336608 ECHO LAKE NEAR PHILLIPS, CA

LOCATION.—Lat 38°50'05", long 120°02'36", in NE 1/4 NE 1/4 sec.1, T.11 N., R.17 E., El Dorado County, Hydrologic Unit 16050101, Eldorado National Forest, at right end of dam on Lower Echo Lake near valve outlet to Echo Lake Conduit and 2.0 mi northeast of Phillips.

DRAINAGE AREA.—4.84 mi^2.

PERIOD OF RECORD.—October 1991 to current year. Unpublished records for 1981–91 water years are available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Prior to Dec. 3, 1991, nonrecording gage read periodically. Elevation of gage is 7,414 ft above sea level, from topographic map.

REMARKS.—Reservoir is formed by concrete dam completed in 1922 and rebuilt in 1992; storage began in 1922. Usable capacity, 1,890 acre-ft between gage heights 0.0 ft, spillway crest, and 6.0 ft, top of flashboards. Water is released via Echo Lake Conduit (station 11434500) to the South Fork American River for power and domestic use. Records from Dec. 3, 1991, including extremes, represent usable contents at 2400 hours. See schematic diagram of Truckee River Basin. Apr. 20 to May 19 data missing due to equipment malfunction.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 1,968 acre-ft, July 8, 9, 1997, gage height, 6.26 ft; minimum, 0 acre-ft, several days in most years, gage height, 0.0 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents recorded, 1,903 acre-ft, Aug. 4, 13, and 14, gage height, 6.04 ft; minimum contents recorded, 0 acre-ft, many days, gage height, 0.0 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co. in 1934)

0	0	4	1,255
1	310	5	1,570
2	625	6	1,890
3	940	6.7	2,118

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	593	63	33	69	0	0	114	---	223	1528	1880	1848
2	614	63	36	69	0	0	99	---	289	1638	1887	1844
3	572	60	36	72	0	0	99	---	316	1684	1890	1848
4	530	60	39	72	0	e3	93	---	316	1709	1903	1844
5	488	51	39	72	0	e12	87	---	316	1730	1900	1854
6	452	42	39	75	0	e48	93	---	385	1721	1887	1864
7	426	39	42	75	0	e57	90	---	470	1724	1900	1870
8	405	39	42	69	0	e57	81	---	461	1727	1890	1867
9	384	36	42	69	0	57	72	---	415	1745	1890	1900
10	363	30	45	108	0	57	75	---	415	1727	1893	1877
11	342	33	45	51	0	54	78	---	419	1727	1890	1844
12	321	36	45	21	0	54	78	---	402	1727	1890	1805
13	300	36	48	0	0	57	90	---	443	1739	1903	1770
14	279	36	48	24	0	57	87	---	455	1760	1903	1742
15	258	21	51	63	0	57	81	---	458	1760	1900	1700
16	237	24	51	72	0	57	75	---	461	1757	1874	1654
17	216	24	51	84	0	66	72	---	436	1783	1887	1654
18	195	27	54	108	0	69	69	---	422	1822	1887	1580
19	174	30	54	84	0	81	69	---	446	1835	1890	1550
20	153	30	54	48	0	96	78	123	449	1838	1883	1515
21	130	30	57	12	0	114	111	144	446	1835	1874	1487
22	120	27	57	3	0	185	192	141	446	1831	1867	1451
23	105	27	60	0	0	304	223	161	415	1828	1854	1421
24	99	27	60	0	0	e346	223	182	488	1825	1838	1399
25	93	27	60	0	0	e310	188	247	735	1828	1848	1341
26	87	30	63	0	0	e271	161	232	859	1844	1864	1335
27	81	30	63	0	0	e235	161	199	1016	1867	1867	1309
28	75	30	63	0	0	195	---	185	1184	1887	1870	1267
29	69	33	66	0	---	158	---	173	1295	1883	1867	1231
30	66	33	66	0	---	127	---	167	1408	1883	1867	1193
31	---	---	69	0	---	120	---	164	---	1880	1857	---
MAX	---	63	69	108	0	346	---	---	1408	1887	1903	1900
MIN	---	21	33	0	0	0	---	---	223	1528	1838	1193
a	.21	.11	.23	0	0	.40		.53	4.48	5.97	5.90	3.81
b	-616	-30	+36	-69	0	+120			+1244	+472	-23	-664
c	436	7.7	0	0	0	0	0	0	0	0	0	780

e Estimated.

a Gage height, in feet, at end of month.

b Change in contents, in acre-feet.

c Release, in acre-feet, through Echo Lake Conduit, provided by Pacific Gas & Electric Co.

103366092 UPPER TRUCKEE RIVER AT HIGHWAY 50, ABOVE MEYERS, CA

LOCATION.—Lat 38°50'55", long 120°01'34", in NE $^1/_4$ NE $^1/_4$ sec.31, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on left bank, 500 ft downstream of U.S. Highway 50 bridge, 1 mi southwest of Meyers, and 7.5 mi upstream of Lake Tahoe.

DRAINAGE AREA.—34.3 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—June 1990 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 6,310 ft above sea level, from topographic map. June 1990 to Sept. 5, 1997, at present site, datum 3.00 ft higher.

REMARKS.—Records fair except for estimated daily discharges, which are poor. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,120 ft^3/s, Jan. 2, 1997, gage height, 8.95 ft; minimum daily, 1.2 ft^3/s, Dec. 22, 1990.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 24	0645	512	6.90	June 14	2200	*853	*7.68
Apr. 30	2130	378	6.48				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.3	7.5	12	8.3	31	26	80	322	e320	e355	72	17
2	9.8	7.4	10	10	40	26	74	322	e400	e360	69	16
3	10	6.6	9.7	12	70	27	71	297	e370	371	68	16
4	9.9	6.1	9.8	13	53	25	68	285	e340	378	64	18
5	9.3	6.0	9.8	15	45	25	65	274	e380	384	58	19
6	8.2	7.2	11	15	43	27	64	252	e440	395	56	26
7	6.8	7.9	16	e15	42	26	62	220	e700	381	53	24
8	6.9	7.0	20	16	e46	25	60	240	e550	383	48	20
9	9.5	6.4	18	14	40	24	60	266	408	379	43	34
10	11	6.3	15	15	37	24	59	234	490	360	38	26
11	9.7	6.2	14	e15	37	26	59	207	504	308	35	21
12	15	5.7	13	e15	35	28	57	192	497	281	34	20
13	16	5.9	12	e15	36	28	57	178	630	261	33	19
14	16	6.5	12	e15	38	30	55	e168	660	238	33	18
15	16	6.1	12	73	37	33	52	e155	662	223	34	17
16	14	5.9	12	84	33	39	51	e170	678	212	36	16
17	8.7	6.2	12	102	32	43	52	e160	607	215	33	15
18	7.9	5.9	10	84	29	47	57	e150	601	216	30	15
19	7.4	10	9.0	77	30	51	71	e160	643	204	29	15
20	7.0	9.3	9.5	60	e31	62	97	e180	620	195	27	14
21	7.0	7.6	8.8	48	e31	72	148	e190	632	187	24	14
22	6.3	7.1	9.0	41	e30	138	197	e170	600	189	23	14
23	6.0	8.3	8.9	37	e30	247	218	e190	535	176	22	14
24	6.0	7.5	8.5	34	e29	429	180	e190	443	178	21	15
25	6.0	9.0	8.3	31	26	280	159	e290	455	157	20	15
26	5.9	20	7.7	29	26	192	156	e210	e420	122	20	16
27	7.7	19	7.4	28	27	155	174	e190	e360	110	19	20
28	7.9	16	6.8	28	26	128	208	e180	e320	95	19	19
29	8.0	14	6.8	32	---	106	248	e200	e350	91	18	20
30	8.6	13	6.7	31	---	92	300	e180	e355	86	18	20
31	8.1	---	7.0	30	---	86	---	e230	---	77	17	---
TOTAL	285.9	257.6	332.7	1042.3	1010	2567	3259	6652	14970	7567	1114	553
MEAN	9.22	8.59	10.7	33.6	36.1	82.8	109	215	499	244	35.9	18.4
MAX	16	20	20	102	70	429	300	322	700	395	72	34
MIN	5.9	5.7	6.7	8.3	26	24	51	150	320	77	17	14
AC-FT	567	511	660	2070	2000	5090	6460	13190	29690	15010	2210	1100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1998, BY WATER YEAR (WY)

MEAN	8.62	17.7	23.2	62.4	43.3	73.4	123	289	262	108	21.2	12.7
MAX	22.6	78.5	96.4	328	125	132	206	569	709	452	78.6	37.5
(WY)	1996	1997	1997	1997	1996	1995	1997	1993	1995	1995	1995	1995
MIN	3.39	3.33	3.15	4.37	6.69	28.2	47.2	85.0	20.4	4.81	2.28	2.50
(WY)	1995	1991	1991	1991	1991	1994	1991	1992	1992	1994	1994	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1990 - 1998	
ANNUAL TOTAL	42051.9		39610.5			
ANNUAL MEAN	115		109		90.3	
HIGHEST ANNUAL MEAN					169	1995
LOWEST ANNUAL MEAN					26.1	1994
HIGHEST DAILY MEAN	2000	Jan 2	700	Jun 7	2000	Jan 2 1997
LOWEST DAILY MEAN	5.7	Nov 12	5.7	Nov 12	1.2	Dec 22 1990
ANNUAL SEVEN-DAY MINIMUM	6.0	Nov 12	6.0	Nov 12	1.8	Dec 20 1990
INSTANTANEOUS PEAK FLOW			853	Jun 14	5120	Jan 2 1997
INSTANTANEOUS PEAK STAGE			7.68	Jun 14	8.95	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	83410		78570		65430	
10 PERCENT EXCEEDS	331		355		255	
50 PERCENT EXCEEDS	46		32		24	
90 PERCENT EXCEEDS	7.7		7.7		4.4	

e Estimated.

103366092 UPPER TRUCKEE RIVER AT HIGHWAY 50, ABOVE MEYERS, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1990 to current year.

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water temperature recorder since September 1997, two times per hour.

REMARKS.—In November 1989, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. Water temperature records represent water temperature at probe within 0.5°C. Water temperature data for September 1997 were not published but are available from the U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum, 17.5°C, Aug. 7, 30, 31, 1998; minimum, freezing point on many days from December 1997 to March 1998.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum, 17.5°C, Aug. 7, 30, 31; minimum, freezing point, many days from December to March.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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 AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
OCT									
07...	1130	6.5	90	--	6.5	8.5	--	--	--
21...	1255	8.8	82	--	16.0	6.5	--	--	--
NOV									
13...	1240	5.5	--	--	5.0	4.0	--	--	--
25...	1310	7.1	74	--	6.0	3.5	--	--	--
DEC									
15...	1445	6.5	61	7.0	.5	.5	604	11.2	98
JAN									
09...	1319	16	56	--	5.0	--	--	--	--
16...	1430	81	43	--	3.5	1.5	--	--	--
22...	1305	36	46	--	3.0	1.5	--	--	--
FEB									
03...	1100	77	--	--	2.0	--	--	--	--
25...	1310	10	65	--	2.0	1.5	--	--	--
MAR									
10...	1018	23	76	--	4.0	2.0	--	--	--
19...	1435	30	69	--	12.0	4.5	--	--	--
25...	1450	120	41	--	5.5	2.5	--	--	--
APR									
21...	1650	124	54	--	12.5	6.5	--	--	--
27...	1010	160	75	--	8.0	4.0	--	--	--
30...	1510	277	38	--	17.0	5.0	--	--	--
MAY									
05...	1640	269	35	7.8	2.0	3.5	598	10.2	98
20...	1245	173	40	--	10.0	5.0	--	--	--
28...	1230	179	38	--	10.5	5.5	--	--	--
JUN									
03...	1455	344	26	--	9.0	5.5	--	--	--
08...	1130	550	25	--	11.5	4.0	--	--	--
11...	1555	535	21	--	7.5	4.5	--	--	--
17...	1320	702	19	--	18.0	6.0	--	--	--
23...	1700	697	20	--	19.0	9.0	--	--	--
30...	1730	350	22	--	19.0	11.0	--	--	--
JUL									
15...	1140	220	25	--	23.5	10.0	--	--	--
21...	0933	180	28	--	20.0	12.0	--	--	--
29...	1220	102	35	--	22.0	12.5	--	--	--
AUG									
13...	1340	40	49	--	29.5	16.5	--	--	--
SEP									
29...	1245	22	63	7.7	16.0	9.5	600	9.4	105

103366092 UPPER TRUCKEE RIVER AT HIGHWAY 50, ABOVE MEYERS, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	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)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	IRON, BIO. REACT-IVE TOTAL (UG/L AS FE) (46568)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT								
07...	--	--	--	--	--	--	--	--
21...	.005	.001	.08	.015	.003	166	1	.02
NOV								
13...	--	--	--	--	--	--	--	--
25...	.003	<.001	.08	.012	.002	132	<1	--
DEC								
15...	.015	.004	.05	.017	.003	122	1	.02
JAN								
09...	--	--	--	--	--	--	--	--
16...	.028	.002	.16	.021	.004	202	4	.88
22...	.018	<.001	.09	.009	.003	217	1	.10
FEB								
03...	--	--	--	--	--	--	--	--
25...	.028	<.001	.06	.015	.003	163	<1	--
MAR								
10...	--	--	--	--	--	--	--	--
19...	.019	<.001	.05	.015	.003	133	1	.08
25...	.010	.001	.19	.020	.002	217	11	3.6
APR								
21...	.014	.002	.08	.019	.003	213	8	2.7
27...	--	--	--	--	--	--	--	--
30...	.015	.004	.13	.012	.003	239	11	8.2
MAY								
05...	.017	.003	.08	.015	.003	170	8	5.8
20...	.014	.002	.09	.020	.003	163	4	1.9
28...	.011	<.001	.07	.021	.003	132	3	1.4
JUN								
03...	.014	.006	.08	.017	.003	193	14	13
08...	--	--	--	--	--	--	--	--
11...	.011	.002	.07	.018	.004	136	44	64
17...	.006	.001	.11	.032	.004	435	82	155
23...	.003	<.001	.08	.027	.004	133	14	26
30...	.007	<.001	.09	.051	.003	247	14	13
JUL								
15...	.009	.001	.11	.023	.004	154	6	3.6
21...	--	--	--	--	--	--	--	--
29...	.011	.002	.06	.032	.006	172	3	.83
AUG								
13...	.043	.012	.08	.037	.007	152	4	.43
SEP								
29...	.006	.001	.14	.014	.005	160	1	.06

103366092 UPPER TRUCKEE RIVER AT HIGHWAY 50, ABOVE MEYERS, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.0	10.0	11.5	7.5	4.5	6.0	2.5	1.5	2.0	1.0	.5	.5
2	13.0	10.0	11.5	7.0	4.0	5.5	2.0	.5	1.0	.5	.0	.5
3	12.5	8.0	10.0	6.5	4.0	5.0	1.5	.5	1.0	.5	.0	.5
4	12.0	8.0	9.5	7.0	4.0	5.0	2.0	.5	1.5	.0	.0	.0
5	12.0	8.0	9.5	6.5	3.5	5.0	1.5	.5	1.0	.0	.0	.0
6	10.5	8.0	9.0	7.0	4.0	5.0	2.0	1.5	1.5	.5	.0	.0
7	9.0	7.0	7.5	7.0	5.0	6.0	2.0	.0	1.0	.5	.0	.0
8	8.0	5.5	6.5	5.0	2.5	4.0	.5	.0	.5	.5	.0	.5
9	8.0	6.0	7.0	4.5	2.0	3.5	.5	.0	.5	.5	.5	.5
10	8.0	5.5	6.5	5.0	3.5	4.0	.5	.0	.0	1.0	.0	.5
11	7.0	5.0	6.0	5.5	3.5	4.5	.5	.0	.0	.5	.0	.0
12	7.0	4.0	5.5	4.5	2.0	3.5	.5	.0	.5	.5	.0	.0
13	8.0	4.5	6.0	3.5	2.0	3.0	.5	.0	.5	1.0	.0	.5
14	8.5	5.0	6.5	3.5	2.0	2.5	1.0	.0	.5	1.0	.5	.5
15	9.0	5.5	7.0	2.5	1.5	2.0	.5	.0	.5	1.0	.5	.5
16	9.0	5.5	7.5	3.5	1.0	2.0	1.0	.5	.5	1.5	1.0	1.5
17	9.0	5.0	7.0	4.5	2.5	3.0	1.5	.5	1.0	2.0	1.0	1.5
18	8.5	5.0	7.0	3.0	1.5	2.5	1.5	.5	.5	2.0	.0	1.0
19	8.5	5.0	6.5	4.5	2.5	3.5	.5	.0	.5	.5	.0	.5
20	8.0	4.5	6.0	4.5	2.5	3.5	.5	.0	.5	1.0	.5	.5
21	8.0	4.5	6.0	4.5	2.5	3.5	.5	.0	.0	1.0	.0	.5
22	8.0	4.5	6.0	5.0	2.5	4.0	.5	.0	.0	2.0	.5	1.0
23	8.5	5.5	7.0	5.0	3.5	4.5	.5	.0	.0	2.0	.5	1.0
24	7.0	4.5	5.5	5.0	3.0	4.0	.5	.0	.0	2.0	.5	1.0
25	6.0	3.0	4.5	4.0	2.5	3.0	.5	.0	.0	1.5	.0	1.0
26	6.0	2.5	4.0	4.0	1.0	2.0	.5	.0	.0	2.0	.5	1.0
27	6.0	3.0	4.5	3.0	1.5	2.0	.5	.0	.0	3.0	1.5	2.0
28	5.0	2.5	4.0	3.0	1.0	2.0	.5	.0	.5	2.5	.5	2.0
29	6.5	3.5	4.5	2.5	1.0	2.0	.5	.0	.5	2.0	.0	.5
30	7.0	4.0	5.5	3.0	2.0	2.5	1.0	.0	.5	1.0	.0	.5
31	7.5	4.5	6.0	---	---	---	1.0	.5	.5	1.5	.0	.5
MONTH	14.0	2.5	6.8	7.5	1.0	3.6	2.5	.0	.5	3.0	.0	.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.5	.0	.5	3.5	.5	2.0	3.0	1.0	2.0	5.5	1.5	3.0
2	1.0	.0	.5	3.5	1.0	2.5	5.0	1.5	3.0	4.0	2.0	3.0
3	1.5	1.0	1.0	3.5	2.0	2.5	4.0	2.0	2.5	4.5	2.0	3.0
4	2.0	.5	1.0	3.0	.5	1.5	4.0	1.5	2.5	4.5	2.0	3.0
5	1.5	.5	1.0	1.5	.0	1.0	3.5	1.5	2.5	4.5	2.0	2.5
6	1.5	.0	1.0	1.0	.0	.5	3.0	1.0	2.0	2.5	1.5	2.0
7	1.0	.0	.5	1.5	.0	.5	4.5	1.0	2.5	4.5	2.0	3.0
8	.5	.0	.0	3.5	1.0	2.0	5.0	1.0	2.5	5.5	2.5	3.5
9	1.0	.0	.5	3.5	.5	2.0	5.5	2.0	3.5	5.5	2.0	3.5
10	1.0	.0	.5	4.0	.5	2.5	4.0	2.0	3.0	5.0	1.5	3.0
11	2.0	.0	1.0	5.0	2.0	3.0	3.0	2.0	2.5	4.5	1.5	3.0
12	1.5	.5	1.0	3.5	1.5	2.5	3.0	1.0	2.0	4.0	1.5	2.5
13	2.5	1.0	2.0	3.0	2.0	2.5	1.5	.5	1.0	4.5	1.5	2.5
14	2.0	.0	.5	5.0	1.5	3.0	5.0	.5	2.0	5.5	2.0	3.5
15	1.5	.0	.5	5.0	2.0	3.5	4.0	.5	2.0	7.0	2.0	4.0
16	.5	.0	.0	5.0	2.0	3.5	5.5	.5	3.0	4.0	1.5	2.0
17	2.0	.0	1.0	5.0	1.0	3.0	6.5	1.0	3.5	6.5	1.0	3.5
18	2.0	.0	1.0	5.0	1.5	3.0	6.5	1.5	4.0	7.5	1.5	4.0
19	1.5	.0	1.0	5.0	1.0	3.0	7.0	2.0	4.5	7.0	2.0	4.5
20	1.5	.0	.5	5.0	1.5	3.0	7.0	2.0	4.0	6.5	2.0	4.0
21	1.0	.0	.5	4.0	1.5	2.5	6.5	1.5	3.5	4.5	2.0	3.0
22	.5	.0	.0	2.5	1.5	2.0	5.0	1.5	3.0	7.0	2.0	4.0
23	.5	.0	.5	2.5	1.0	1.5	3.0	1.5	2.0	5.0	2.0	3.5
24	.5	.0	.0	1.5	.0	1.0	4.0	1.5	2.5	7.5	2.0	4.5
25	1.5	.0	.5	2.0	.5	1.5	5.0	1.5	3.0	4.0	2.0	3.0
26	2.0	.0	1.0	3.5	1.5	2.0	6.0	1.5	3.0	2.5	1.5	2.0
27	3.0	1.0	2.0	2.5	.5	1.5	6.0	1.5	3.5	5.0	1.5	3.0
28	3.0	1.0	2.0	2.0	.5	1.0	6.0	1.5	3.5	6.5	2.0	4.0
29	---	---	---	2.0	.5	1.0	6.0	1.5	3.5	5.0	1.0	3.0
30	---	---	---	4.0	.0	2.0	6.0	1.5	3.0	7.5	1.5	4.0
31	---	---	---	3.0	1.5	2.0	---	---	---	7.5	2.0	4.5
MONTH	3.0	.0	.8	5.0	.0	2.1	7.0	.5	2.8	7.5	1.0	3.3

103366092 UPPER TRUCKEE RIVER AT HIGHWAY 50, ABOVE MEYERS, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.5	2.5	4.5	11.0	5.0	8.0	15.0	10.0	12.5	17.0	11.5	14.0
2	4.5	2.5	3.5	11.5	6.5	9.0	16.0	11.0	13.0	17.0	11.5	14.0
3	5.5	2.5	3.5	11.5	6.0	8.5	16.5	11.0	14.0	15.0	11.5	13.5
4	6.0	2.5	4.0	12.0	7.0	9.5	16.5	11.5	14.0	14.5	12.0	13.5
5	6.0	2.0	4.0	12.5	7.5	10.0	17.0	12.0	14.5	16.5	12.5	14.0
6	5.5	2.5	4.0	12.0	8.5	10.5	17.0	12.5	14.5	15.0	12.5	13.5
7	6.0	2.5	4.0	13.0	8.5	10.5	17.5	12.5	14.5	16.5	11.5	14.0
8	5.5	2.5	4.0	13.5	8.5	11.0	16.0	10.5	13.0	14.5	11.5	13.0
9	6.5	2.5	4.5	13.5	9.5	11.5	16.0	11.0	13.5	13.0	11.0	12.5
10	4.0	3.0	3.5	13.0	9.0	11.0	16.0	11.0	13.5	13.0	8.5	11.0
11	4.5	3.0	3.5	13.0	8.5	11.0	16.5	11.0	14.0	12.0	9.0	10.5
12	6.0	3.0	4.0	14.0	9.0	11.5	17.0	11.5	14.5	14.5	9.0	11.5
13	7.0	3.0	4.5	13.5	9.5	11.5	17.0	12.0	14.5	14.5	9.5	12.0
14	7.5	3.0	5.0	13.5	8.5	11.5	16.0	12.5	14.0	15.0	10.0	12.5
15	7.0	3.0	5.0	13.5	9.0	11.5	16.5	11.0	13.5	15.0	11.0	13.0
16	7.0	3.5	5.0	14.5	10.5	12.5	16.5	11.0	14.0	14.0	10.5	12.5
17	7.5	2.5	5.0	15.0	10.5	13.0	16.0	11.0	13.5	15.0	11.0	12.5
18	8.0	3.5	5.5	15.0	10.5	13.0	15.0	10.0	12.5	14.0	10.0	12.0
19	8.0	3.5	5.5	15.5	11.0	13.5	15.5	10.5	12.5	13.0	8.5	11.0
20	8.0	3.5	5.5	15.5	11.5	13.5	15.0	9.5	12.5	13.0	9.0	11.0
21	8.5	4.0	6.0	16.0	11.5	14.0	15.0	9.0	12.0	12.0	8.5	10.0
22	8.5	4.0	6.0	15.0	13.0	14.0	15.0	8.5	11.5	11.0	7.5	9.5
23	8.5	3.5	6.0	15.0	13.0	13.5	15.0	9.5	12.0	11.0	8.5	9.5
24	9.5	4.5	6.5	13.0	11.5	12.5	15.0	9.5	12.5	11.0	8.0	9.5
25	9.5	5.0	6.5	15.0	11.0	12.5	15.0	10.0	12.5	11.0	7.5	9.0
26	9.0	4.0	6.5	13.0	10.5	12.0	15.5	10.0	12.5	9.5	8.0	9.0
27	10.5	4.5	7.0	13.5	10.5	12.0	15.5	10.0	13.0	9.0	7.0	8.0
28	11.0	5.0	7.5	15.0	10.5	12.5	16.5	11.0	13.5	9.5	6.0	8.0
29	11.0	5.5	7.5	15.0	11.0	13.0	17.0	11.5	14.0	10.5	7.5	9.0
30	11.0	5.5	8.0	14.0	10.5	12.0	17.5	12.0	14.5	11.0	7.5	9.5
31	---	---	---	14.0	9.5	11.5	17.5	12.0	14.5	---	---	---
MONTH	11.0	2.0	5.2	16.0	5.0	11.7	17.5	8.5	13.4	17.0	6.0	11.4
YEAR	17.5	.0	5.2									

103366098 UPPER TRUCKEE RIVER AT HIGHWAY 50 BRIDGE, BELOW MEYERS, CA

LOCATION.—Lat 38°52'32", long 120°00'16", in SE $^1/_4$ NE $^1/_4$ sec.20, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on right bank, 50 ft upstream of Highway 50 bridge, about 2 mi south of U.S. Highway 50 and California State Route 89 Intersection, in Tahoe Valley.

DRAINAGE AREA.—38 mi^2.

PERIOD OF RECORD.—September 1996 to current year.

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water- temperature recorder since September 1997, two times per hour.

REMARKS.—In September 1996, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor streamflows and water temperature within the Upper Truckee River–Trout Creek watershed. Records represent water temperature at probe within 0.5°C. Interruptions in record due to loss of hydrologic communication with stream channel and instrument malfunction. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum, 22.0°C, Aug. 12, 29–31, 1998; minimum, freezing point on many days during winter months in most years.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum, 22.0°C, Aug. 12, 29–31; minimum, freezing point, many days December to April.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.0	10.5	13.0	9.0	4.0	6.5	3.5	1.0	2.0	1.5	.5	1.0
2	15.5	11.0	12.5	8.5	3.5	6.0	2.5	.0	1.0	1.0	.0	.0
3	14.5	8.0	11.0	7.0	4.0	5.5	1.5	.0	1.0	.5	.0	.0
4	14.0	8.5	11.0	7.5	4.0	5.5	2.5	.5	1.5	.0	.0	.0
5	14.0	8.0	11.0	8.0	3.0	5.5	1.5	.5	1.0	.0	.0	.0
6	12.0	8.0	9.5	7.0	3.5	5.5	2.0	1.5	1.5	.0	.0	.0
7	11.5	7.0	8.5	8.0	5.0	6.0	1.5	.0	1.0	.0	.0	.0
8	10.0	5.5	7.5	6.0	2.0	4.0	.5	.0	.0	.0	.0	.0
9	8.5	6.0	7.0	5.0	1.5	3.5	.5	.0	.0	.0	.0	.0
10	9.0	5.5	7.0	5.0	3.5	4.0	.5	.0	.0	1.0	.0	.5
11	8.5	4.5	6.5	5.5	3.5	4.5	.5	.0	.0	.5	.0	.0
12	9.0	3.5	6.0	4.5	2.0	3.5	.5	.0	.0	.5	.0	.0
13	10.0	4.0	6.5	4.0	2.0	3.0	.5	.0	.0	.0	.0	.0
14	10.0	4.0	7.0	4.5	1.5	3.0	.5	.0	.0	1.0	.0	.5
15	10.5	4.5	7.5	2.5	1.5	2.0	.5	.0	.0	.5	.5	.5
16	11.0	5.0	8.0	3.5	.5	2.0	.5	.0	.5	2.0	.5	1.0
17	10.5	5.0	8.0	5.0	2.0	3.0	1.5	.5	1.0	2.0	1.0	1.0
18	10.0	5.0	7.5	3.5	1.5	2.5	1.5	.0	.5	2.0	.0	1.0
19	9.5	5.0	7.0	4.5	2.5	3.5	.5	.0	.0	.5	.0	.0
20	9.5	4.5	7.0	5.0	2.5	3.5	.5	.0	.0	1.5	.0	.5
21	10.0	4.5	7.0	5.5	2.5	4.0	.0	.0	.0	1.5	.0	.5
22	9.5	4.0	7.0	6.0	3.0	4.5	.5	.0	.0	2.5	.0	1.0
23	10.0	6.0	7.5	6.5	3.0	4.5	.5	.0	.0	2.5	.5	1.5
24	7.5	4.0	6.0	5.5	2.5	4.0	.5	.0	.0	3.0	.5	1.5
25	7.5	2.5	4.5	5.0	2.5	3.5	.5	.0	.0	2.5	.0	1.0
26	7.5	2.0	4.5	4.0	1.0	2.0	.5	.0	.0	2.5	.5	1.0
27	7.5	3.0	5.0	4.0	1.0	2.5	.5	.0	.0	4.5	1.0	2.5
28	5.5	2.0	4.0	4.0	.5	2.0	.5	.0	.0	4.0	.5	2.0
29	7.0	3.5	5.0	3.5	.5	2.0	.5	.0	.0	1.5	.0	.5
30	9.0	3.5	6.0	3.5	1.5	2.5	.5	.0	.0	1.5	.0	.5
31	9.5	4.5	7.0	---	---	---	1.0	.0	.5	2.0	.0	.5
MONTH	16.0	2.0	7.5	9.0	.5	3.8	3.5	.0	.4	4.5	.0	.6

103366098 UPPER TRUCKEE RIVER AT HIGHWAY 50 BRIDGE, BELOW MYERS, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.5	.0	.5	4.5	.5	2.5	3.5	.5	2.0	7.5	1.5	4.0
2	.5	.0	.5	6.0	1.0	3.0	7.0	1.0	3.5	6.0	2.5	4.0
3	1.5	.5	1.0	5.5	1.5	3.0	4.5	2.0	3.0	5.5	2.0	3.5
4	2.0	.5	1.0	4.5	.0	2.0	6.0	1.0	3.0	6.0	2.5	4.0
5	1.5	.5	1.0	2.5	.0	1.0	6.0	1.5	3.5	5.0	2.0	3.5
6	1.5	.0	1.0	3.0	.0	.5	4.5	1.0	2.5	3.5	2.0	2.5
7	1.0	.0	.5	1.5	.0	.5	7.0	1.5	3.5	6.0	2.5	4.0
8	.5	.0	.0	5.5	.5	2.5	7.5	1.0	3.5	7.0	3.0	4.5
9	2.0	.0	.5	5.5	.0	2.5	7.0	2.0	4.0	7.0	2.5	4.5
10	1.5	.0	.5	6.0	.5	3.0	5.0	2.0	3.5	6.0	1.5	3.5
11	3.0	.0	1.0	6.0	1.5	3.5	3.5	2.0	2.5	6.0	1.5	3.5
12	1.5	.5	1.0	4.0	1.5	3.0	5.5	1.0	2.5	5.0	2.0	3.0
13	4.0	1.0	2.0	3.5	2.0	2.5	2.5	.0	1.0	6.5	1.5	3.5
14	1.5	.0	.5	7.0	1.5	3.5	6.5	.5	3.0	7.5	2.5	4.5
15	2.5	.0	.5	7.0	1.5	3.5	4.5	.5	2.5	9.0	2.5	5.0
16	.5	.0	.0	6.5	2.0	4.0	7.5	.5	3.5	5.0	1.5	2.5
17	2.0	.0	1.0	6.0	1.0	3.0	8.5	1.0	4.5	8.0	1.0	4.0
18	3.5	.0	1.5	6.0	1.0	3.0	8.5	1.5	5.0	9.5	2.0	5.0
19	1.5	.0	1.0	6.5	1.0	3.0	9.0	2.0	5.5	9.0	2.5	5.5
20	2.5	.0	1.0	6.0	1.5	3.5	9.5	2.0	5.5	8.0	2.5	5.0
21	.5	.0	.0	5.5	1.5	3.0	9.5	2.0	5.0	5.0	2.0	3.5
22	.0	.0	.0	2.5	1.0	2.0	6.5	1.5	4.0	9.0	2.0	5.0
23	.0	.0	.0	2.5	1.0	1.5	4.0	2.0	3.0	6.5	2.5	4.5
24	.0	.0	.0	1.0	.0	.5	6.5	1.5	3.5	9.5	2.5	5.5
25	.5	.0	.0	2.5	.5	1.5	7.5	2.0	4.0	5.5	3.0	4.0
26	2.5	.0	1.0	4.5	1.0	2.5	8.0	1.5	4.5	3.5	1.5	2.5
27	4.0	.5	2.0	4.0	.5	2.0	8.5	1.5	4.5	6.5	1.5	3.5
28	4.5	.5	2.5	4.0	.5	1.5	8.5	1.5	4.5	8.0	3.0	4.5
29	---	---	---	2.5	.5	1.5	8.5	1.5	4.5	6.5	1.5	4.0
30	---	---	---	5.5	.0	2.0	7.5	2.0	4.0	9.0	2.0	5.0
31	---	---	---	3.5	1.0	2.5	---	---	---	9.0	3.0	5.5
MONTH	4.5	.0	.8	7.0	.0	2.4	9.5	.0	3.6	9.5	1.0	4.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.5	3.0	5.5	12.0	5.5	8.5	18.5	11.0	14.5	21.5	13.5	17.0
2	6.0	3.0	4.0	12.5	6.5	9.5	19.5	12.0	15.5	21.5	13.0	17.0
3	7.5	3.0	4.5	12.0	6.5	9.0	19.5	12.5	16.0	19.0	13.0	16.0
4	8.0	3.0	5.0	13.0	7.5	10.0	20.0	12.5	16.0	17.5	13.5	16.0
5	7.5	2.5	5.0	12.5	8.0	10.5	20.5	13.5	16.5	19.0	14.0	16.5
6	6.5	3.0	4.5	---	---	---	21.0	14.0	17.0	17.5	14.5	16.0
7	8.0	3.0	5.0	14.0	8.5	11.0	21.0	14.5	17.0	21.0	13.5	16.5
8	6.5	3.0	4.5	14.5	8.5	11.5	20.0	12.5	16.0	19.0	13.5	15.5
9	8.0	3.0	5.0	14.5	9.5	12.0	20.5	12.5	16.0	15.5	12.5	14.5
10	4.5	3.5	4.0	14.0	9.0	11.5	20.5	12.5	16.5	17.0	10.0	13.0
11	5.0	3.5	4.0	14.0	8.5	11.5	21.0	13.5	17.0	15.0	10.5	12.5
12	7.5	3.5	5.0	15.0	9.0	12.0	22.0	14.0	17.5	18.5	10.5	14.0
13	8.5	4.0	5.5	14.5	9.5	12.0	20.5	14.5	17.5	19.0	11.0	14.5
14	9.0	3.5	5.5	14.5	9.0	12.0	19.5	15.0	17.0	19.0	11.5	15.0
15	8.5	3.5	5.5	15.0	9.0	12.0	21.0	13.0	16.5	18.5	12.5	15.0
16	8.5	4.0	5.5	16.0	10.5	13.0	21.0	13.0	16.5	18.0	11.5	14.5
17	8.5	3.0	5.5	17.0	11.0	13.5	20.5	13.5	16.5	18.5	11.5	14.5
18	9.5	4.0	6.5	17.0	11.0	14.0	19.5	12.0	15.5	17.5	11.0	13.5
19	9.0	4.0	6.0	17.0	11.5	14.5	20.0	12.5	16.0	16.5	9.5	12.5
20	9.5	4.0	6.5	17.5	12.0	14.5	19.5	11.5	15.0	16.5	9.5	12.5
21	9.5	4.5	6.5	17.5	12.5	15.0	19.0	11.0	15.0	15.0	9.0	12.0
22	9.5	4.0	6.5	16.0	14.0	15.0	19.0	10.5	14.5	13.0	8.5	10.5
23	9.5	4.0	6.5	17.0	13.5	14.5	20.0	11.5	15.0	13.0	8.5	11.0
24	10.5	4.5	7.5	14.5	12.0	13.5	20.0	11.5	15.0	13.0	9.0	11.0
25	10.5	5.5	7.5	17.5	11.5	14.0	20.0	11.5	15.5	12.0	8.0	10.0
26	10.0	4.5	7.0	15.0	12.0	13.5	20.0	11.5	15.5	10.5	8.5	9.5
27	11.5	5.0	8.0	17.0	11.5	14.0	20.5	12.0	15.5	10.0	8.0	9.0
28	11.5	5.5	8.5	18.0	12.0	14.5	21.5	12.5	16.5	12.0	6.5	9.0
29	11.5	5.5	8.5	18.0	12.0	14.5	22.0	13.5	17.0	12.0	8.0	10.0
30	11.5	5.5	8.5	17.5	12.0	14.5	22.0	14.0	17.5	14.0	8.5	10.5
31	---	---	---	17.5	11.0	14.0	22.0	14.0	17.5	---	---	---
MONTH	11.5	2.5	5.9	---	---	---	22.0	10.5	16.1	21.5	6.5	13.3

10336610 UPPER TRUCKEE RIVER AT SOUTH LAKE TAHOE, CA

LOCATION.—Lat 38°55'21", long 119°59'26", in NW 1/4 SE 1/4 sec.4, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on left bank 200 ft downstream from U.S. Highway 50 Bridge, 1.0 mi northeast of South Lake Tahoe Post Office, and 1.4 mi upstream from Lake Tahoe.

DRAINAGE AREA.—54.9 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1971 to September 1974, October 1976 to June 1977, October 1977 to June 1978, March 1980 to current year.

GAGE.—Water-stage recorder. Datum of gage is 6,229.04 ft above sea level. Prior to Apr. 26, 1984, at datum 2.00 ft higher. Prior to Oct. 19, 1993, at site 200 ft upstream at same datum.

REMARKS.—Records good, including estimated daily discharges. Two small dams may cause slight regulation at times. Some small diversions for domestic use upstream from station. Echo Lake conduit (station 11434500) diverts from Echo Lake (station 10336608), to South Fork American River Basin. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,480 ft^3/s, Jan. 2, 1997, gage height, 9.95 ft; minimum daily, 0.70 ft^3/s, Aug. 22 to Sept. 5, 1994.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 300 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 19	0815	477	4.34	June 7	0915	897	6.04
Mar. 24	1315	1,480	6.89				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	12	16	16	e48	46	146	450	367	406	85	19
2	12	11	14	e17	e48	e46	135	452	452	398	82	19
3	12	11	e16	e17	e100	e46	131	418	402	427	79	18
4	13	11	14	e17	e75	e46	123	397	368	407	77	19
5	13	11	14	e17	e49	e45	118	382	404	414	69	22
6	12	11	14	e17	e49	e45	115	384	480	424	65	30
7	11	13	e14	e17	e49	e45	109	318	756	407	63	30
8	12	12	e18	e17	e49	45	107	324	671	408	58	24
9	17	12	e20	e17	e49	e44	109	383	558	398	54	36
10	18	12	e23	e17	e49	45	112	332	597	381	51	35
11	17	12	21	e17	e50	48	108	286	590	333	47	29
12	17	12	20	e25	e50	53	102	264	541	294	45	26
13	19	11	20	e25	e50	56	97	241	696	281	42	24
14	19	12	19	e25	e50	59	95	214	691	252	41	22
15	18	12	21	e100	e50	68	90	200	723	236	43	20
16	18	13	19	e250	e51	84	87	226	712	222	40	22
17	13	11	18	310	e51	97	89	206	647	217	37	19
18	12	11	18	164	e51	101	102	189	589	218	34	19
19	12	14	19	374	51	108	125	201	658	205	34	18
20	12	15	19	e200	e50	128	158	232	647	194	32	18
21	11	13	18	e90	e50	146	213	236	648	184	30	17
22	11	12	16	e70	e49	302	285	208	668	181	29	17
23	11	13	15	68	e49	584	338	240	585	169	27	18
24	11	13	15	62	e48	1260	276	240	478	164	26	20
25	12	15	15	e55	e48	728	238	344	454	166	25	21
26	12	e20	16	52	e47	384	227	288	528	131	24	22
27	12	22	16	49	e47	298	249	235	462	123	23	28
28	12	20	16	e49	46	243	285	221	435	108	22	27
29	13	18	16	e49	---	199	335	256	472	101	22	28
30	12	17	16	e49	---	175	404	223	484	98	21	29
31	12	---	15	e49	---	158	---	269	---	91	20	---
TOTAL	417	402	531	2301	1453	5732	5108	8859	16763	8038	1347	696
MEAN	13.5	13.4	17.1	74.2	51.9	185	170	286	559	259	43.5	23.2
MAX	19	22	23	374	100	1260	404	452	756	427	85	36
MIN	11	11	14	16	46	44	87	189	367	91	20	17
AC-FT	827	797	1050	4560	2880	11370	10130	17570	33250	15940	2670	1380

e Estimated.

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1998, BY WATER YEAR (WY)

MEAN	15.5	42.3	52.9	71.4	71.8	112	168	305	265	95.2	22.3	13.9
MAX	72.1	225	218	484	307	305	300	567	795	448	102	55.3
(WY)	1983	1984	1982	1997	1986	1986	1982	1982	1983	1995	1983	1983
MIN	2.60	7.36	8.07	8.00	10.5	21.2	64.0	55.3	23.5	4.65	1.15	1.39
(WY)	1989	1991	1991	1991	1991	1977	1977	1977	1992	1994	1994	1988

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1972 - 1998	
ANNUAL TOTAL	53013		51647			
ANNUAL MEAN	145		141		106	
HIGHEST ANNUAL MEAN					203	1983
LOWEST ANNUAL MEAN					29.2	1988
HIGHEST DAILY MEAN	3150	Jan 2	1260	Mar 24	3150	Jan 2 1997
LOWEST DAILY MEAN	10	Sep 13	11	Oct 1	.70	Aug 22 1994
ANNUAL SEVEN-DAY MINIMUM	11	Oct 31	11	Oct 31	.70	Aug 22 1994
INSTANTANEOUS PEAK FLOW			1480	Mar 24	5480	Jan 2 1997
INSTANTANEOUS PEAK STAGE			6.89	Mar 24	9.95	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	105200		102400		76510	
10 PERCENT EXCEEDS	383		407		292	
50 PERCENT EXCEEDS	77		49		40	
90 PERCENT EXCEEDS	12		13		7.9	

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

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1972–74, 1978, 1980 to current year.

PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: March 1981 to September 1983.
WATER TEMPERATURE: October 1971 to June 1974, October 1977 to June 1978, March 1980 to September 1992, September 1997 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1971 to June 1974, October 1977 to June 1978, March 1980 to September 1992.

INSTRUMENTATION.—Water-temperature recorder since September 1997 to current year, two times per hour.

REMARKS.—In October 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. Water temperature records represent water temperature at probe within 0.5°C. Interruptions in record due to loss of hydrologic communication with stream channel and(or) instrument malfunction. Water-temperature data for September 1997 were not published but are available from U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum, 26.0°C, Aug. 18, 1982; minimum, freezing point on many days during winter months in most years.
SEDIMENT CONCENTRATION: Maximum daily mean, 416 mg/L, Mar. 4, 1991; minimum daily mean, 0 mg/L, several days during most years.
SEDIMENT LOAD: Maximum daily, 781 tons, Mar. 8, 1986; minimum daily, 0 tons, several days during most years.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum, 21.0°C, Aug. 30, 31; minimum, freezing point, many days November to March.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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 AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
OCT									
07...	1309	8.6	95	--	8.0	10.5	--	--	--
21...	1130	12	88	--	13.5	7.5	--	--	--
NOV									
25...	1140	16	83	--	7.0	3.5	--	--	--
DEC									
15...	1310	38	135	7.0	1.5	.5	605	11.3	99
JAN									
16...	1330	250	54	--	5.0	.5	--	--	--
22...	1530	70	61	--	4.0	2.0	--	--	--
FEB									
25...	1200	48	87	--	2.5	.5	--	--	--
MAR									
18...	1230	98	81	--	7.5	4.5	--	--	--
25...	1330	643	44	--	5.0	2.5	--	--	--
APR									
21...	1420	190	58	--	18.0	7.5	--	--	--
30...	1315	313	39	--	16.0	6.0	--	--	--
MAY									
05...	1330	362	38	7.3	10.5	4.5	600	10.0	98
13...	1200	241	45	7.0	1.5	2.5	596	10.5	99
20...	1240	230	43	--	10.5	6.0	--	--	--
28...	1450	209	41	--	12.0	7.5	--	--	--
JUN									
03...	1255	396	27	--	12.0	4.5	--	--	--
07...	1415	793	25	--	16.5	8.5	--	--	--
11...	1415	552	23	--	10.0	5.5	--	--	--
17...	1120	679	20	--	12.5	4.5	--	--	--
23...	1540	541	22	--	19.0	8.5	--	--	--
30...	1610	433	22	--	20.0	11.0	--	--	--
JUL									
15...	1515	226	26	--	26.0	14.0	--	--	--
29...	1030	104	37	--	19.5	12.5	--	--	--
AUG									
13...	1245	42	56	--	24.5	18.0	--	--	--
SEP									
09...	1530	40	68	--	15.0	15.5	--	--	--
29...	1415	28	73	7.6	14.5	12.0	603	9.1	107

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	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)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	IRON, BIO. REACT-IVE TOTAL (UG/L AS FE) (46568)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT								
07...	--	--	--	--	--	--	--	--
21...	.016	.001	.11	.017	.005	290	5	.16
NOV								
25...	.009	.001	.10	.018	.004	323	2	.09
DEC								
15...	.025	.022	.10	.038	.003	433	15	1.5
JAN								
16...	.026	.001	.46	.111	.007	1060	77	52
22...	.032	.006	.21	.020	.005	366	14	2.6
FEB								
25...	.041	<.001	.14	.024	.016	437	29	3.8
MAR								
18...	.022	<.001	.16	.026	.005	464	10	2.6
25...	.029	.002	.47	.064	.011	933	63	109
APR								
21...	.015	.002	.12	.028	.005	340	17	8.7
30...	.016	.012	.15	.024	.014	341	20	17
MAY								
05...	.012	.006	.10	.019	.005	214	11	11
13...	.020	.002	.20	.023	.003	289	7	4.6
20...	.015	.001	.09	.026	.003	282	10	6.2
28...	.014	<.001	.10	.021	.004	266	6	3.4
JUN								
03...	.014	.004	.12	.031	.004	543	17	18
07...	.014	<.001	.21	.071	.010	704	66	141
11...	.009	.002	.16	.061	.013	535	45	67
17...	.007	.001	.12	.043	.004	454	22	40
23...	.003	<.001	.23	.036	.005	326	20	29
30...	.010	<.001	.14	.049	.003	373	17	20
JUL								
15...	.009	.001	.08	.033	.005	482	13	7.9
29...	.012	.002	.08	.034	.006	230	5	1.4
AUG								
13...	.006	.003	.05	.024	.006	201	3	.34
SEP								
09...	.003	<.001	.15	.029	.006	377	8	.86
29...	.009	.001	.13	.018	.006	305	4	.30

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.0	11.0	14.0	10.0	5.5	7.5	4.5	1.5	2.5	.5	.0	.0
2	16.0	11.5	13.0	9.5	5.0	7.0	2.5	.0	1.0	.0	.0	.0
3	16.0	9.5	12.5	8.5	5.0	6.5	1.5	.0	.5	.5	.0	.0
4	15.5	9.5	12.0	8.5	4.5	6.0	2.0	.0	1.0	.0	.0	.0
5	15.5	9.0	11.5	8.0	4.0	5.5	1.0	.0	.5	.0	.0	.0
6	13.0	8.5	10.5	8.5	4.0	6.5	1.0	.5	1.0	.0	.0	.0
7	12.5	7.5	9.5	8.5	5.0	6.5	1.5	.0	.5	.0	.0	.0
8	10.5	6.5	8.0	6.0	3.0	4.5	.0	.0	.0	.0	.0	.0
9	10.0	6.5	7.5	5.0	2.0	3.5	.0	.0	.0	.0	.0	.0
10	9.5	6.0	7.0	4.5	3.5	4.0	.0	.0	.0	.5	.0	.0
11	9.0	5.5	7.0	5.0	3.5	4.0	.5	.0	.0	.0	.0	.0
12	9.0	4.5	6.5	5.5	2.0	3.5	.5	.0	.0	.0	.0	.0
13	10.0	4.5	7.0	3.5	2.0	2.5	.5	.0	.0	.0	.0	.0
14	10.5	5.0	7.5	3.5	1.0	2.0	.0	.0	.0	.0	.0	.0
15	11.0	6.0	8.5	2.5	.5	1.5	.0	.0	.0	.0	.0	.0
16	11.5	6.5	9.0	2.0	.0	1.0	.5	.0	.0	.0	.0	.0
17	12.0	6.5	9.0	4.5	1.0	2.5	.5	.0	.0	1.0	.0	.5
18	11.5	6.5	8.5	3.0	1.5	2.0	.5	.0	.0	1.5	.0	.5
19	10.5	6.5	8.0	4.0	2.0	3.0	.5	.0	.0	.5	.0	.0
20	10.5	6.0	7.5	4.5	2.0	3.0	.5	.0	.0	1.0	.0	.5
21	10.5	5.5	7.5	5.5	2.5	4.0	.0	.0	.0	1.0	.0	.5
22	10.5	5.5	7.5	5.5	3.5	4.5	.5	.0	.0	2.5	.0	1.0
23	10.5	6.5	8.5	5.5	3.5	4.5	.5	.0	.0	3.5	.5	1.5
24	9.0	5.0	7.0	5.5	3.0	4.0	.0	.0	.0	3.0	.0	1.5
25	8.0	3.5	5.5	4.5	2.5	3.5	.0	.0	.0	2.0	.0	1.0
26	8.0	3.0	5.0	4.0	1.0	2.5	.0	.0	.0	2.0	.0	1.0
27	8.0	3.5	5.5	3.5	1.0	2.0	.0	.0	.0	4.5	1.0	2.5
28	6.5	3.5	4.5	3.5	1.0	2.0	.5	.0	.0	3.5	.5	2.5
29	7.0	3.0	4.5	3.0	.5	2.0	.5	.0	.0	2.5	.0	1.0
30	9.0	4.0	6.5	3.0	1.0	2.0	.5	.0	.0	1.0	.0	.0
31	10.0	5.5	7.5	---	---	---	.5	.0	.0	1.0	.0	.0
MONTH	17.0	3.0	8.2	10.0	.0	3.8	4.5	.0	.2	4.5	.0	.5

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

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.5	.0	.0	4.5	.5	2.5	4.0	1.0	2.0	8.5	2.0	5.0
2	.5	.0	.0	5.0	1.0	3.5	6.5	1.5	4.0	6.5	3.0	4.5
3	1.5	.0	1.0	6.0	2.0	4.0	5.5	2.5	3.5	6.0	2.5	4.0
4	2.0	.0	1.0	4.5	.0	2.5	6.0	1.5	4.0	6.5	3.0	4.5
5	1.0	.0	.5	2.5	.0	1.5	6.5	2.0	4.0	5.0	2.5	4.0
6	1.5	.5	1.0	1.5	.0	.5	5.0	1.5	3.5	3.5	2.0	3.0
7	.5	.0	.0	1.5	.0	.5	7.5	1.5	4.0	6.5	3.0	4.5
8	.0	.0	.0	5.5	.5	2.5	7.0	1.5	4.0	8.0	4.0	5.5
9	.0	.0	.0	5.5	.5	3.0	7.5	3.0	5.0	8.0	3.0	5.0
10	.0	.0	.0	6.0	.5	3.5	6.0	2.5	4.0	7.0	2.0	4.0
11	1.0	.0	.5	6.5	2.0	4.5	4.0	2.0	3.0	6.0	2.0	4.0
12	1.5	.0	1.0	5.0	2.0	3.5	5.5	1.0	3.0	5.0	2.5	3.5
13	4.5	.5	2.5	3.5	2.0	3.0	3.0	.5	1.5	6.5	2.0	4.0
14	2.5	.0	.5	7.0	1.0	4.0	5.5	.5	3.0	7.5	3.0	5.0
15	1.0	.0	.5	7.0	2.0	4.5	6.5	1.0	3.5	9.5	3.0	6.0
16	.5	.0	.0	7.0	2.5	4.5	7.5	1.0	4.5	6.5	2.5	3.5
17	1.0	.0	.5	6.5	1.0	4.0	9.0	2.0	5.5	8.5	1.0	4.5
18	2.5	.0	1.0	6.5	1.5	4.0	9.0	3.0	6.0	9.5	2.5	6.0
19	2.5	.0	1.0	6.5	1.0	4.0	10.0	3.5	6.5	9.5	3.5	6.5
20	1.5	.0	.5	7.0	2.0	4.0	10.0	3.0	6.5	9.0	3.5	6.0
21	1.0	.0	.0	6.0	1.5	3.5	10.5	3.0	6.5	6.5	3.0	4.0
22	.0	.0	.0	4.0	1.5	2.5	7.5	2.5	5.0	10.0	2.5	5.5
23	.0	.0	.0	3.0	1.0	2.0	5.5	2.5	4.0	7.0	3.5	5.0
24	.5	.0	.0	1.0	1.0	1.0	6.5	2.0	4.0	10.0	3.0	6.0
25	.5	.0	.0	2.5	.5	1.5	8.5	2.5	5.0	7.5	3.5	5.0
26	.5	.0	.0	4.5	1.0	2.5	8.5	2.0	5.0	4.0	2.0	3.0
27	1.5	.0	.5	4.5	1.0	2.5	9.0	2.5	5.5	7.0	1.5	4.0
28	4.5	.5	2.5	4.0	.0	2.0	9.0	2.0	5.5	8.0	3.5	5.5
29	---	---	---	2.5	.5	1.5	8.5	2.0	5.5	7.5	1.5	4.5
30	---	---	---	5.5	.0	2.5	8.5	2.0	5.0	9.5	2.5	6.0
31	---	---	---	4.0	1.5	2.5	---	---	---	10.0	3.5	7.0
MONTH	4.5	.0	.5	7.0	.0	2.8	10.5	.5	4.4	10.0	1.0	4.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.0	3.5	6.5	12.0	6.0	9.0	---	---	---	20.5	16.5	18.5
2	7.0	3.5	5.0	13.0	7.0	10.0	---	---	---	20.0	16.0	18.0
3	8.0	3.5	5.0	12.5	7.0	9.5	---	---	---	19.0	15.5	17.5
4	8.5	3.5	6.0	13.5	8.0	10.5	---	---	---	18.0	16.0	17.0
5	8.0	3.5	5.5	13.0	8.5	11.0	---	---	---	20.0	15.5	18.0
6	6.5	3.5	5.5	---	---	---	---	---	---	19.0	16.0	17.5
7	10.5	4.0	7.0	---	---	---	20.0	14.5	17.5	18.0	14.5	16.5
8	8.0	4.5	6.5	---	---	---	18.5	12.5	16.0	17.5	15.5	16.5
9	9.0	4.0	6.0	---	---	---	19.0	12.5	16.0	16.0	13.5	15.5
10	7.0	4.0	5.0	---	---	---	19.0	13.0	16.5	14.0	10.5	13.0
11	5.5	4.0	5.0	---	---	---	19.5	14.0	17.0	15.5	12.0	14.0
12	8.5	4.0	6.0	---	---	---	20.5	15.0	18.0	16.0	11.5	14.0
13	10.0	5.0	7.0	---	---	---	19.5	16.0	18.0	17.5	13.0	15.5
14	10.5	4.5	7.5	---	---	---	18.5	15.5	17.0	18.0	13.5	16.0
15	10.0	5.0	7.5	---	---	---	19.0	13.5	16.5	17.5	14.5	16.0
16	10.0	5.0	7.5	---	---	---	19.0	14.5	17.0	18.5	14.0	16.0
17	10.0	4.0	7.0	---	---	---	18.5	14.5	17.0	18.0	14.0	16.0
18	10.5	5.0	7.5	---	---	---	17.5	13.0	16.0	17.0	12.0	14.5
19	10.5	5.0	7.5	---	---	---	17.5	14.0	16.5	16.0	11.0	13.5
20	10.5	5.0	7.5	---	---	---	17.5	13.5	16.0	15.5	11.5	13.5
21	10.0	5.5	8.0	---	---	---	17.0	12.5	15.5	15.0	10.5	12.5
22	11.0	5.5	8.0	---	---	---	17.0	12.0	15.0	14.0	10.0	12.0
23	10.5	5.0	7.5	---	---	---	17.5	13.0	15.5	13.5	10.0	12.0
24	11.0	5.5	8.0	---	---	---	17.5	13.0	16.0	13.0	10.0	11.5
25	11.0	6.0	8.5	---	---	---	17.5	13.5	15.5	11.5	9.5	10.5
26	10.5	5.0	8.0	---	---	---	18.0	13.0	16.0	10.0	8.5	9.5
27	11.5	5.5	8.5	---	---	---	18.5	14.0	16.5	11.0	8.5	9.5
28	12.0	6.0	9.0	---	---	---	19.5	15.0	17.5	12.0	7.0	9.5
29	12.0	6.0	9.0	---	---	---	20.5	16.0	18.5	12.0	8.5	10.5
30	12.0	6.0	9.0	---	---	---	21.0	16.5	19.0	13.5	9.5	11.5
31	---	---	---	---	---	---	21.0	16.5	18.5	---	---	---
MONTH	12.0	3.5	7.1	---	---	---	---	---	---	20.5	7.0	14.2

10336612 UPPER TRUCKEE RIVER AT MOUTH, NEAR VENICE DRIVE, CA

LOCATION.—Lat 38°56'04", long 119°59'57", in NW $^1/_4$ NW $^1/_4$ sec.04, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on left bank, .25 mi upstream of mouth, and 1.0 mi west of South Lake Tahoe.

DRAINAGE AREA.—56.6 mi^2.

PERIOD OF RECORD.—September 1996 to current year.

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water-temperature recorder since September 1997, two times per hour.

REMARKS.—In September 1996, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor streamflows and water temperature within the Upper Truckee River–Trout Creek watershed. Records represent water temperature at probe within 0.5°C. Interruptions in record due to loss of hydrologic communication with stream channel and(or) instrument malfunction. Water-temperature data for September 1997 were not published but are available from U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum, 21.5°C, Aug. 30–31, 1998; minimum, freezing point on many days during December to April 1998.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum, 21.5°C, Aug. 30–31; minimum, freezing point, many days December to April.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.0	13.5	15.0	---	---	---	---	---	---	---	---	---
2	15.5	12.5	14.0	---	---	---	---	---	---	---	---	---
3	14.5	11.0	13.0	---	---	---	---	---	---	---	---	---
4	14.5	11.0	13.0	---	---	---	---	---	---	---	---	---
5	14.0	11.0	12.5	---	---	---	---	---	---	---	---	---
6	13.5	10.5	11.5	---	---	---	---	---	---	---	---	---
7	11.5	8.5	10.0	---	---	---	---	---	---	---	---	---
8	10.5	7.5	8.5	---	---	---	---	---	---	---	---	---
9	9.5	6.5	8.0	---	---	---	---	---	---	---	---	---
10	9.0	6.5	7.5	---	---	---	---	---	---	---	---	---
11	8.0	6.0	7.0	---	---	---	---	---	---	---	---	---
12	9.0	4.5	7.0	---	---	---	---	---	---	---	---	---
13	10.0	5.0	7.5	---	---	---	---	---	---	---	---	---
14	10.5	5.5	8.0	---	---	---	---	---	---	---	---	---
15	11.0	6.5	8.5	---	---	---	---	---	---	---	---	---
16	11.5	7.0	9.0	---	---	---	---	---	---	---	---	---
17	11.0	7.0	9.5	---	---	---	---	---	---	.5	.0	.0
18	11.0	7.0	9.0	---	---	---	---	---	---	2.5	.0	1.0
19	10.5	6.5	9.0	---	---	---	---	---	---	.0	.0	.0
20	---	---	---	---	---	---	---	---	---	.0	.0	.0
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	2.0	.0	1.0
23	---	---	---	---	---	---	---	---	---	3.0	1.0	2.0
24	---	---	---	---	---	---	---	---	---	2.5	.0	1.5
25	---	---	---	---	---	---	---	---	---	2.0	.0	1.0
26	---	---	---	---	---	---	---	---	---	2.0	.0	1.0
27	---	---	---	---	---	---	---	---	---	5.5	1.0	2.5
28	---	---	---	---	---	---	---	---	---	3.5	.5	2.5
29	---	---	---	---	---	---	---	---	---	2.5	.0	1.0
30	---	---	---	---	---	---	---	---	---	1.0	.0	.5
31	---	---	---	---	---	---	---	---	---	.5	.0	.0
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

10336612 UPPER TRUCKEE RIVER AT MOUTH, NEAR VENICE DRIVE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.5	.0	.0	4.5	1.0	3.0	3.5	1.0	2.5	8.5	2.0	5.0
2	.5	.0	.0	5.0	2.0	3.5	6.5	1.5	4.0	6.5	3.0	5.0
3	1.5	.0	1.0	6.0	3.0	4.0	5.5	3.0	4.0	6.0	2.5	4.5
4	2.0	.0	1.0	4.5	.5	3.0	6.5	1.5	4.0	6.5	3.0	4.5
5	1.5	.0	.5	3.0	1.0	1.5	6.0	2.5	4.5	5.0	2.5	4.0
6	1.5	.5	1.0	1.5	.0	.5	5.0	2.0	3.5	4.0	2.5	3.0
7	.5	.0	.0	1.5	.0	.5	7.0	2.0	4.0	6.5	3.0	4.5
8	.5	.0	.0	5.0	.5	2.5	6.5	1.5	4.5	8.0	4.0	5.5
9	.5	.0	.0	5.0	1.0	3.5	7.5	3.0	5.5	8.0	3.0	5.5
10	.0	.0	.0	6.0	1.5	3.5	6.0	2.5	4.5	7.0	2.0	4.5
11	.5	.0	.0	6.5	3.0	4.5	4.0	2.5	3.5	6.0	2.5	4.5
12	1.5	.0	.5	5.0	2.5	4.0	5.0	1.5	3.0	5.0	2.5	3.5
13	4.0	.5	2.0	4.0	2.5	3.0	4.0	.5	2.0	6.0	2.5	4.0
14	3.0	.0	1.0	6.5	1.5	4.0	5.0	.5	2.5	7.5	3.0	5.0
15	1.0	.0	.5	7.0	2.5	5.0	6.5	1.5	4.0	9.5	3.0	6.0
16	.5	.0	.0	7.0	3.0	5.0	8.0	1.5	4.5	7.5	2.5	4.0
17	1.0	.0	.5	6.5	1.5	4.0	8.5	2.5	5.5	8.5	1.5	4.5
18	2.5	.0	1.0	6.5	1.5	4.0	9.0	3.5	6.5	9.5	3.0	6.5
19	2.0	.0	1.5	6.5	1.5	4.0	10.0	4.0	7.0	9.5	4.0	7.0
20	2.0	.0	.5	7.0	2.0	4.5	10.0	4.0	7.0	8.5	4.0	6.5
21	1.0	.0	.5	6.0	2.0	4.0	10.0	3.5	7.0	7.0	3.0	4.5
22	.5	.0	.0	4.0	1.5	3.0	8.0	2.5	5.5	10.0	2.5	6.0
23	.0	.0	.0	3.5	1.0	2.0	6.0	2.5	4.5	8.0	4.0	5.5
24	.5	.0	.0	1.0	.0	.5	7.0	2.0	4.5	9.5	3.0	6.5
25	.5	.0	.0	2.5	.0	1.5	8.0	2.5	5.0	8.0	4.0	5.0
26	.5	.0	.0	5.0	1.5	3.0	8.5	2.5	5.5	4.5	2.0	3.5
27	1.0	.0	.5	4.5	1.5	2.5	9.0	2.5	6.0	7.0	1.5	3.5
28	4.0	.5	2.0	4.0	.0	2.0	9.0	2.5	6.0	8.5	4.0	6.0
29	---	---	---	2.5	.5	1.5	8.5	2.5	5.5	7.5	2.0	4.5
30	---	---	---	5.5	.0	2.5	8.5	2.5	5.5	9.5	3.0	6.0
31	---	---	---	4.0	1.5	2.5	---	---	---	10.0	4.0	7.0
MONTH	4.0	.0	.5	7.0	.0	3.0	10.0	.5	4.7	10.0	1.5	5.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.0	3.5	6.5	12.0	6.5	9.5	18.0	11.5	15.0	21.0	17.0	19.0
2	8.0	4.0	5.0	13.0	7.5	10.5	19.0	12.5	16.0	20.5	17.0	18.5
3	8.0	3.5	5.5	12.5	7.5	10.0	19.5	13.5	16.5	20.0	16.5	18.5
4	9.0	4.0	6.0	13.5	8.5	11.0	19.5	13.5	16.5	19.5	17.0	18.0
5	8.0	3.5	6.0	13.5	8.5	11.0	19.5	14.5	17.5	20.5	16.5	18.0
6	6.5	4.0	5.5	---	---	---	19.5	15.5	18.0	19.5	17.5	18.5
7	10.0	4.0	6.5	14.5	9.5	11.5	19.5	16.0	18.0	18.0	16.0	17.0
8	8.0	4.0	6.0	15.0	9.5	12.0	18.0	14.0	16.5	18.0	16.0	17.0
9	9.0	4.0	6.5	15.0	10.0	12.5	18.5	14.0	16.5	17.5	14.5	16.0
10	7.0	4.0	5.0	14.5	10.0	12.5	18.5	14.5	17.0	15.0	11.5	13.5
11	5.5	4.0	5.0	14.5	9.5	12.0	19.5	15.5	17.5	15.5	13.0	14.0
12	8.5	4.0	6.0	15.5	10.0	12.5	20.0	16.5	18.5	16.0	12.5	14.5
13	10.0	4.5	7.0	15.5	11.0	13.0	20.0	17.5	18.5	18.0	14.0	16.0
14	10.5	4.0	7.0	15.0	10.5	12.5	19.0	17.0	18.0	18.5	14.5	16.5
15	10.0	4.5	7.0	15.5	10.5	13.0	19.0	15.0	17.0	17.5	15.5	16.5
16	10.0	4.5	7.5	17.0	11.5	14.0	19.0	16.0	17.5	19.0	14.5	16.5
17	10.0	4.0	6.5	17.5	12.0	14.5	19.0	16.0	17.5	18.0	15.5	17.0
18	10.5	4.5	7.5	17.5	12.5	15.0	17.5	15.0	16.5	17.0	13.5	15.0
19	10.5	5.0	7.5	17.5	12.5	15.0	18.0	15.5	17.0	16.0	12.5	14.5
20	10.5	5.0	7.5	17.5	13.0	15.5	18.0	15.0	16.5	15.5	12.5	14.0
21	10.0	5.5	8.0	17.5	13.0	15.5	17.5	14.5	16.0	15.0	12.0	13.5
22	11.0	5.0	8.0	16.5	14.5	15.0	17.5	14.0	15.5	14.5	11.5	13.0
23	10.5	5.0	7.5	16.5	13.5	15.0	18.0	14.5	16.0	13.5	11.5	12.5
24	11.5	5.5	8.0	15.5	12.5	14.0	18.5	15.0	16.5	13.0	11.0	12.0
25	11.0	6.5	8.5	17.5	11.0	14.0	18.0	14.5	16.5	12.5	10.5	11.0
26	11.0	5.5	8.0	16.0	12.0	14.0	18.5	14.5	16.5	10.5	9.0	10.0
27	12.0	5.5	8.5	18.0	11.0	14.0	19.0	15.0	17.0	11.0	8.5	9.5
28	12.0	6.5	9.5	18.0	12.0	15.0	20.0	16.0	18.0	12.0	8.0	10.0
29	12.0	6.5	9.5	18.5	12.5	15.5	21.0	17.0	19.0	12.0	9.0	10.5
30	12.0	6.5	9.5	17.5	12.0	15.0	21.5	17.5	19.5	13.5	10.0	11.5
31	---	---	---	17.0	11.0	14.0	21.5	17.5	19.5	---	---	---
MONTH	12.0	3.5	7.1	---	---	---	21.5	11.5	17.2	21.0	8.0	14.7

10336645 GENERAL CREEK NEAR MEEKS BAY, CA

LOCATION.—Lat 39°03'07", long 120°07'03", in NE 1/4 NE 1/4 sec.20, T.14 N., R.17 E., El Dorado County, Hydrologic Unit 16050101, on right bank 200 ft upstream from State Highway 89, 0.4 mi upstream from Lake Tahoe, and 1.1 mi north of Meeks Bay.

DRAINAGE AREA.—7.44 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—July 1980 to current year.

GAGE.—Water-stage recorder. Datum of gage is 6,250.38 ft above sea level.

REMARKS.—Records good except for estimated daily discharges, which are fair. No known diversion or regulation upstream from station. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 797 ft^3/s, Jan. 2, 1997, gage height, 7.86 ft (backwater from plugged culvert), from rating curve extended above 180 ft^3/s on basis of computation of flow through culvert; minimum daily, 0.29 ft^3/s, July 28, Aug. 15, 1994.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 24	0900	148	2.48	June 7	0500	303	3.24
Apr. 30	2015	108	2.07				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	1.8	1.8	2.1	12	5.5	27	100	109	62	2.1	1.7
2	2.5	2.0	1.5	e2.1	12	6.0	24	100	119	58	2.0	1.7
3	2.0	2.1	1.5	e2.1	e12	6.0	22	92	104	54	1.6	1.7
4	1.6	2.1	1.2	e2.1	e12	e6.2	20	87	81	48	1.3	1.7
5	1.4	2.1	.97	e2.1	e11	6.4	18	78	93	46	1.1	3.3
6	1.3	2.1	.77	e2.1	e11	e6.2	18	72	120	44	.96	4.1
7	1.5	2.1	e2.4	e2.1	e11	e6.0	17	66	243	40	.82	2.9
8	1.6	2.1	e2.3	e2.1	e11	6.0	e17	83	135	36	.87	2.8
9	4.2	2.0	e2.2	e2.1	e10	e6.0	e16	89	120	33	.86	6.7
10	2.2	1.8	e2.0	e2.1	e10	6.0	15	73	119	29	.81	4.8
11	2.1	1.8	e1.9	e2.7	e10	6.0	15	58	105	25	.51	4.0
12	1.8	1.8	e2.0	10	e10	6.4	14	55	123	21	.56	2.5
13	1.7	1.8	e1.9	6.9	e9.5	6.4	14	48	166	19	.54	1.3
14	1.7	2.1	e1.9	7.4	e9.5	6.4	14	43	157	16	.91	1.3
15	1.8	2.1	e1.9	e20	e9.0	7.4	13	41	150	14	1.8	1.1
16	1.8	2.1	e1.9	27	e9.0	11	13	43	153	13	1.3	1.2
17	1.8	2.1	e1.9	36	e8.5	15	14	41	117	11	1.0	1.3
18	1.8	2.1	e1.9	29	e8.5	17	16	40	139	9.7	.93	1.2
19	1.9	3.1	e1.9	e27	e8.0	17	21	45	150	8.6	1.0	1.2
20	2.1	2.3	e2.0	e25	e8.0	21	28	54	133	7.5	.94	1.2
21	2.0	2.1	e1.8	e23	e7.5	23	40	53	131	6.2	1.0	1.2
22	1.8	2.1	1.8	21	e7.5	34	53	48	119	5.5	.99	1.2
23	1.8	2.1	1.8	19	e7.0	52	61	58	103	5.2	1.2	1.3
24	2.0	1.8	e1.9	18	e7.0	117	56	61	98	4.7	1.2	1.5
25	2.5	3.0	e1.9	18	e6.5	72	49	90	112	4.4	1.4	1.8
26	2.5	5.4	e1.9	15	6.4	62	44	67	97	5.4	1.7	3.6
27	2.0	3.0	e1.9	14	6.0	46	49	51	84	7.2	1.7	6.3
28	1.8	2.5	e2.0	14	5.5	35	61	47	84	5.1	1.7	4.0
29	1.8	2.2	e2.0	14	---	30	75	58	81	3.5	1.7	3.3
30	1.8	1.9	e2.1	13	---	29	91	52	72	2.8	1.8	3.7
31	1.8	---	2.1	12	---	28	---	72	---	2.4	1.9	---
TOTAL	60.3	67.6	57.04	393.0	255.4	701.9	935	1965	3617	647.2	38.20	75.6
MEAN	1.95	2.25	1.84	12.7	9.12	22.6	31.2	63.4	121	20.9	1.23	2.52
MAX	4.2	5.4	2.4	36	12	117	91	100	243	62	2.1	6.7
MIN	1.3	1.8	.77	2.1	5.5	5.5	13	40	72	2.4	.51	1.1
AC-FT	120	134	113	780	507	1390	1850	3900	7170	1280	76	150

e Estimated.

10336645 GENERAL CREEK NEAR MEEKS BAY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1998, BY WATER YEAR (WY)

MEAN	2.21	7.48	9.80	10.6	13.5	19.2	38.7	61.7	37.9	7.55	1.36	1.36
MAX	15.5	45.4	58.7	68.9	64.2	60.1	70.4	114	158	49.6	4.72	4.36
(WY)	1983	1982	1982	1997	1986	1986	1989	1993	1983	1983	1983	1983
MIN	.73	.84	.89	.90	.99	5.86	15.9	7.18	2.23	.49	.35	.39
(WY)	1993	1993	1991	1991	1991	1994	1991	1992	1992	1994	1994	1992

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1980 - 1998	
ANNUAL TOTAL	7591.54		8813.24			
ANNUAL MEAN	20.8		24.1		17.6	
HIGHEST ANNUAL MEAN					34.7	1982
LOWEST ANNUAL MEAN					4.96	1988
HIGHEST DAILY MEAN	600	Jan 1	243	Jun 7	600	Jan 1 1997
LOWEST DAILY MEAN	.77	Dec 6	.51	Aug 11	.29	Jul 28 1994
ANNUAL SEVEN-DAY MINIMUM	1.3	Sep 6	.71	Aug 7	.31	Aug 15 1994
INSTANTANEOUS PEAK FLOW			303	Jun 7	797	Jan 2 1997
INSTANTANEOUS PEAK STAGE			3.24	Jun 7	7.86	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	15060		17480		12750	
10 PERCENT EXCEEDS	53		82		52	
50 PERCENT EXCEEDS	4.6		6.2		3.3	
90 PERCENT EXCEEDS	1.6		1.4		.80	

10336645 GENERAL CREEK NEAR MEEKS BAY, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1981 to current year.

PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: October 1980 to September 1983.
WATER TEMPERATURE: October 1980 to September 1992.
SUSPENDED-SEDIMENT DISCHARGE: October 1980 to September 1992.

REMARKS.—In October 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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 AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
OCT									
02...	1240	3.2	70	--	10.5	11.0	--	7.7	89
09...	1530	4.1	66	--	6.5	8.0	--	--	--
29...	1450	1.8	65	--	9.0	6.5	--	9.1	93
NOV									
29...	1520	2.1	63	--	2.0	3.0	--	10.2	95
DEC									
31...	1600	2.1	52	--	3.0	0.5	--	10.8	94
JAN									
15...	1730	20	34	--	1.0	0	--	--	--
16...	1815	27	23	--	4.0	0	--	--	--
17...	1730	35	20	--	1.5	0	--	--	--
FEB									
24...	1245	30	36	--	2.5	0	--	--	--
MAR									
22...	1655	41	25	--	6.0	0.5	--	--	--
23...	1850	62	21	--	.5	0	--	--	--
24...	1755	45	20	--	0	0	--	--	--
30...	1815	34	23	--	-1.0	1.5	--	11.1	98
APR									
22...	1855	57	21	--	3.5	2.5	--	10.7	99
30...	2040	108	16	--	2.5	1.0	--	--	--
MAY									
12...	1440	54	16	7.1	3.0	2.0	591	10.6	99
15...	1740	42	22	--	7.0	6.0	--	9.8	99
25...	1525	93	16	--	3.5	3.0	--	10.5	99
29...	1725	57	19	--	4.5	4.5	--	--	--
JUN									
01...	2145	146	13	--	8.5	2.0	--	11.2	104
07...	0025	241	13	--	--	--	--	--	--
07...	1900	216	11	--	9.0	3.5	--	--	--
12...	1600	101	13	--	14.5	7.0	--	9.8	102
12...	2325	203	11	--	6.0	3.0	--	--	--
20...	0740	118	11	--	9.0	2.5	--	--	--
26...	2025	109	11	--	10.0	7.5	--	9.6	101
JUL									
02...	2035	58	14	--	11.0	10.5	--	--	--
13...	1600	19	23	--	24.0	16.0	--	7.7	97
AUG									
11...	1735	.51	52	--	24.5	17.5	--	6.9	91
SEP									
18...	1635	1.1	61	--	16.0	14.0	--	7.6	93

10336645 GENERAL CREEK NEAR MEEKS BAY, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	IRON, BIO. REACTIVE TOTAL (UG/L AS FE) (46568)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT								
02...	.007	.005	.10	.067	.018	285	7	.06
09...	.011	.004	.15	.049	.016	842	4	.04
29...	.009	.007	.20	.030	.014	447	3	.01
NOV								
29...	.008	.002	.06	.020	.013	413	6	.03
DEC								
31...	.004	<.001	.07	.020	.009	287	2	.01
JAN								
15...	.021	.001	.27	.061	.009	1230	16	.86
16...	.029	.001	.26	.044	.009	367	7	.51
17...	.020	.001	.15	.034	.006	251	6	.57
FEB								
24...	.011	<.001	.06	.015	.005	109	1	.08
MAR								
22...	.013	<.001	.15	.028	.004	375	18	2.0
23...	.014	.002	.18	.033	.004	435	26	4.4
24...	.013	.002	.22	.012	.013	645	133	16
30...	.008	<.001	.08	.009	.003	170	4	.37
APR								
22...	.011	.001	.09	.014	.004	112	14	2.2
30...	.009	<.001	.15	.017	.003	357	46	13
MAY								
12...	.005	.003	.05	.016	.002	83	5	.73
15...	.003	.001	.04	.014	.002	106	5	.57
25...	.007	.004	.09	.016	.002	218	12	3.0
29...	.006	.003	.05	.016	.002	85	13	2.0
JUN								
01...	.008	.003	.20	.052	.004	878	75	30
07...	.008	.002	.28	.096	.005	1410	138	90
07...	.005	<.001	.12	.039	.002	547	80	47
12...	.005	.001	.05	.015	.002	139	25	6.8
12...	.005	<.001	.07	.026	.003	453	39	21
20...	.005	.001	.08	.015	.002	147	10	3.5
26...	.005	.001	.08	.021	.003	284	18	5.3
JUL								
02...	.005	<.001	.07	.019	.001	84	10	2.0
13...	.007	<.001	.06	.036	.002	85	2	.10
AUG								
11...	.009	.006	.10	.040	.015	222	2	.00
SEP								
18...	.004	<.001	.09	.026	.014	262	3	.01

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA

LOCATION.—Lat 39°06'27", long 120°09'40", in NW 1/4 NE 1/4 sec.36, T.15 N., R.16 E., Placer County, Hydrologic Unit 16050101, on right bank 300 ft upstream from bridge on State Highway 89, 1,000 ft upstream from Lake Tahoe, and 4.6 mi south of Tahoe City.

DRAINAGE AREA.—11.2 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1960 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 6,234.59 ft above sea level. Oct. 1, 1960, to Sept. 30, 1964, at datum 10.25 ft lower and Oct. 1, 1964, to Aug. 27, 1970, at datum 12 ft lower, at site 400 ft downstream.

REMARKS.—Records fair, including estimated daily discharges. No known diversion or regulation upstream from station. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,940 ft^3/s, Jan. 1, 1997, gage height, 9.82 ft; maximum gage height, 9.90 ft, site and datum then in use, Dec. 22, 1964; minimum daily, 0.50 ft^3/s, Sept. 24, 1968.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 24	0515	390	2.89	June 7	0045	432	3.20

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	2.7	4.6	e4.4	e15	11	50	138	141	166	27	4.9
2	2.0	2.9	4.4	e4.4	e15	11	54	150	168	173	25	4.8
3	1.8	2.9	4.3	e4.4	e15	10	49	142	167	163	23	4.7
4	1.8	2.8	4.4	e4.4	e15	10	43	132	164	156	21	4.6
5	1.8	3.0	4.6	e4.4	e14	10	42	125	159	178	20	4.9
6	2.1	3.2	4.6	e4.4	e14	9.3	38	121	181	157	16	4.9
7	2.3	2.9	5.5	e4.4	e14	e8.8	34	112	315	145	14	4.6
8	2.3	2.9	6.1	e4.4	e14	8.3	30	125	266	143	13	4.6
9	4.7	3.0	5.3	e4.2	e14	8.2	28	142	246	140	12	6.2
10	3.4	2.9	5.1	e4.2	e14	8.5	28	118	242	132	11	6.1
11	2.9	3.0	5.4	e4.2	e14	9.2	27	102	235	117	10	5.0
12	2.5	3.1	e5.2	e12	e13	e9.4	26	92	256	102	10	5.0
13	2.3	3.2	5.1	e8.0	e13	9.6	27	81	299	111	10	5.0
14	2.0	3.2	5.1	e6.0	e13	9.8	25	72	286	107	11	4.8
15	1.8	3.5	e5.0	e30	e13	12	24	74	260	96	11	4.7
16	1.7	3.3	5.0	e40	e13	14	24	82	266	103	9.4	4.6
17	1.7	3.6	4.8	e60	e13	16	25	72	222	99	8.6	4.5
18	1.7	3.6	4.5	54	e12	17	26	72	226	90	7.3	4.2
19	2.0	4.4	e4.5	41	e12	19	31	86	255	84	7.0	4.1
20	2.2	3.3	e4.5	33	e12	27	40	104	254	75	6.7	3.9
21	2.2	3.2	e4.4	30	12	31	65	92	268	67	6.8	3.8
22	2.4	3.3	e4.2	29	e11	74	86	95	240	67	6.4	3.8
23	2.7	3.6	e4.2	26	e11	163	99	102	200	59	6.3	3.6
24	2.9	3.8	e4.4	23	e11	264	87	113	183	58	6.0	3.7
25	2.7	4.1	e4.6	23	e11	148	82	158	200	55	5.8	3.6
26	2.7	5.7	e4.8	18	11	107	78	121	195	47	5.5	3.7
27	2.5	4.5	e4.8	19	11	91	87	96	176	41	5.3	3.8
28	2.6	4.6	e4.8	18	11	79	96	88	184	40	5.3	3.8
29	2.7	4.4	e4.6	19	---	69	111	87	193	37	5.5	3.7
30	2.7	4.6	e4.6	17	---	65	128	85	182	33	5.1	3.7
31	2.7	---	e4.6	15	---	58	---	105	---	30	5.0	---
TOTAL	73.1	105.2	148.0	568.8	361	1387.1	1590	3284	6629	3071	336.0	133.3
MEAN	2.36	3.51	4.77	18.3	12.9	44.7	53.0	106	221	99.1	10.8	4.44
MAX	4.7	5.7	6.1	60	15	264	128	158	315	178	27	6.2
MIN	1.3	2.7	4.2	4.2	11	8.2	24	72	141	30	5.0	3.6
AC-FT	145	209	294	1130	716	2750	3150	6510	13150	6090	666	264

e Estimated.

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998, BY WATER YEAR (WY)

MEAN	4.97	13.1	20.8	26.5	22.1	31.2	61.0	128	103	30.2	5.92	2.92
MAX	28.1	94.8	157	201	116	122	124	312	320	149	36.1	10.3
(WY)	1963	1984	1965	1997	1986	1986	1989	1969	1983	1983	1983	1982
MIN	1.31	1.68	1.90	2.00	2.27	3.82	13.6	29.7	7.20	3.11	1.51	1.21
(WY)	1978	1978	1977	1991	1991	1977	1975	1977	1992	1987	1994	1992

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998	
ANNUAL TOTAL	18609.0		17686.5			
ANNUAL MEAN	51.0		48.5		37.5	
HIGHEST ANNUAL MEAN					73.4	1982
LOWEST ANNUAL MEAN					8.71	1977
HIGHEST DAILY MEAN	2000	Jan 1	315	Jun 7	2000	Jan 1 1997
LOWEST DAILY MEAN	1.0	Sep 28	1.3	Oct 1	.50	Sep 24 1968
ANNUAL SEVEN-DAY MINIMUM	1.1	Sep 23	1.9	Oct 1	.54	Sep 23 1968
INSTANTANEOUS PEAK FLOW			432	Jun 7	2940	Jan 1 1997
INSTANTANEOUS PEAK STAGE			3.20	Jun 7	9.90	Dec 22 1964
ANNUAL RUNOFF (AC-FT)	36910		35080		27180	
10 PERCENT EXCEEDS	131		157		108	
50 PERCENT EXCEEDS	19		12		10	
90 PERCENT EXCEEDS	2.3		3.0		2.1	

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1975–78, 1980 to current year.

PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: December 1980 to September 1983.
WATER TEMPERATURE: October 1974 to June 1978 (1977–78 storm season only), October 1979 to September 1992.
SUSPENDED-SEDIMENT DISCHARGE: October 1974 to June 1978 (1977–78 storm season only), October 1979 to September 1992.

REMARKS.—In October 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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 AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
OCT									
02...	1135	2.5	73	--	7.5	10.5	--	8.6	98
09...	1345	5.3	73	--	5.0	8.0	--	--	--
29...	1555	2.8	72	--	10.0	8.0	--	9.4	99
NOV									
29...	1415	4.6	68	--	3.0	3.0	--	10.6	100
DEC									
31...	1440	4.6	62	--	6.0	2.0	--	11.1	100
JAN									
15...	1635	30	49	--	--	1.0	--	--	--
16...	1650	40	31	--	3.5	1.0	--	11.0	97
17...	1630	60	29	--	2.5	1.0	--	--	--
FEB									
24...	1515	11	55	--	-2.0	.0	--	--	--
MAR									
22...	1550	97	39	--	5.0	1.0	--	--	--
23...	1735	173	40	--	1.0	.5	--	--	--
23...	2335	233	37	--	.0	.0	--	--	--
24...	1645	219	39	--	1.0	.5	--	--	--
30...	1705	67	51	--	.0	3.5	--	10.3	98
APR									
22...	1755	99	43	--	5.5	4.0	--	10.5	101
30...	1945	151	37	--	3.5	2.0	--	--	--
MAY									
12...	1300	92	39	7.0	1.5	2.5	592	10.5	99
15...	1640	78	48	--	8.5	7.5	--	9.4	100
25...	1410	166	37	--	2.5	4.0	--	10.2	99
29...	1635	82	45	--	1.5	5.5	--	--	--
JUN									
01...	2025	190	34	--	7.0	3.0	--	11.0	103
06...	2330	268	31	--	5.0	2.0	--	--	--
07...	1800	341	30	--	7.0	4.5	--	--	--
12...	1445	228	33	--	14.0	8.0	--	9.5	101
12...	2230	360	29	--	6.5	3.0	--	--	--
20...	0650	206	30	--	3.5	3.0	--	--	--
26...	1920	228	27	--	13.0	6.0	--	10.0	101
JUL									
02...	1940	244	27	--	14.5	7.5	--	--	--
13...	1445	110	31	--	24.5	13.0	--	8.4	100
AUG									
11...	1625	11	50	--	25.0	19.0	--	7.3	100
SEP									
09...	2020	7.5	59	--	8.0	11.5	--	--	--
18...	1535	4.2	64	--	14.0	14.5	--	8.1	100

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	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)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	IRON, BIO. REACT-IVE TOTAL (UG/L AS FE) (46568)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT								
02...	.004	<.001	.04	.056	.009	137	<1	--
09...	.017	.003	.09	.027	.010	184	2	.03
29...	.004	.001	.04	.019	.008	150	4	.03
NOV								
29...	.013	<.001	.03	.014	.006	112	5	.06
DEC								
31...	.005	.001	.04	.013	.005	102	4	.05
JAN								
15...	.042	<.001	.20	.071	.002	1620	39	3.2
16...	.070	.001	.31	.057	.005	874	37	4.0
17...	.091	.001	.17	.054	.005	324	25	4.1
FEB								
24...	.012	.001	.04	.027	.004	276	11	.33
MAR								
22...	.001	.118	.26	.135	.004	1140	127	33
23...	.063	.004	.13	.037	.005	449	32	15
23...	.053	.006	.47	.233	.005	3070	271	170
24...	.051	.006	.22	.136	.007	1960	205	121
30...	.050	.001	.52	.012	.005	123	7	1.3
APR								
22...	.039	.001	.08	.037	.005	577	41	11
30...	.039	.002	.22	.065	.005	1190	136	55
MAY								
12...	.024	.004	.04	.020	.003	130	7	1.7
15...	.006	.002	.21	.022	.001	219	10	2.1
25...	.027	.003	.09	.053	.003	471	42	19
29...	.017	.004	.05	.025	.004	190	3	.66
JUN								
01...	.025	.002	.13	.069	.004	897	94	48
06...	.026	.005	.75	.329	.005	5790	550	398
07...	.028	.001	.65	.339	.006	5270	520	479
12...	.018	<.001	.09	.059	.004	677	81	50
12...	.020	.001	.20	.124	.005	1670	175	170
20...	.019	.002	.08	.048	.004	400	49	27
26...	.015	<.001	.14	.051	.004	504	50	31
JUL								
02...	.010	<.001	.08	.043	.002	373	34	22
13...	.006	<.001	.04	.051	.002	147	10	3.0
AUG								
11...	.007	.004	.06	.032	.005	98	4	.12
SEP								
09...	.023	.002	.13	.031	.008	348	13	.26
18...	.002	<.001	.07	.016	.005	204	2	.02

10336674 WARD CREEK BELOW CONFLUENCE, NEAR TAHOE CITY, CA

LOCATION.—Lat 39°08'27", long 120°12'40", in SE 1/4 SE 1/4 sec.16, T.15 N., R.16 E., Placer County, Hydrologic Unit 16050101, Tahoe National Forest, on left bank 0.1 mi downstream from confluence with unnamed tributary, 3.2 mi west of William Kent Campground, and 4.8 mi southwest of Tahoe City.

DRAINAGE AREA.—4.96 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1991 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 6,600 ft above sea level, from topographic map.

REMARKS.—Records fair including estimated daily discharges. No storage or diversion upstream from station. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,220 ft^3/s, Jan. 1, 1997, gage height, 8.85 ft, from crest stage gage; no flow for some days in most years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 50 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 17	0200	56	4.44	May 25	0945	79	4.54
Mar. 24	0630	110	4.82	June 21	1645	222	5.33
May 2	1930	82	4.62				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.31	e.40	1.4	1.2	e4.9	e3.6	11	59	73	99	13	1.7
2	e.40	e.40	1.4	e1.1	e4.9	e3.5	10	69	93	99	12	1.5
3	e.35	e.40	1.4	e1.1	e4.9	e3.4	9.7	57	89	90	11	1.4
4	e.31	e.40	1.3	e1.2	e4.9	e3.3	9.2	51	87	91	10	1.4
5	e.31	e.40	1.4	e1.2	e4.9	e3.3	8.9	45	91	91	9.4	1.5
6	e.31	e.40	1.3	1.3	e4.9	e3.3	8.6	43	107	99	8.7	1.6
7	e.31	e.40	e2.0	1.3	e4.9	e3.3	8.3	40	166	96	8.0	1.4
8	e.31	e.40	e1.7	1.3	e4.9	e3.3	8.1	48	120	91	7.4	1.3
9	e.65	e.40	1.4	1.3	e4.9	e3.3	7.9	59	112	88	6.7	3.5
10	e.62	e.40	1.3	1.3	e4.9	e3.5	7.8	46	120	82	6.3	2.0
11	e.55	e.40	1.3	1.3	e4.9	4.3	7.6	37	112	68	5.9	1.6
12	e.50	e.40	1.3	e6.0	e4.9	4.6	7.4	33	131	61	5.5	1.5
13	e.50	e.40	1.2	e3.0	e4.9	4.4	7.5	29	154	59	5.3	1.4
14	e.50	e.45	1.3	2.8	e4.8	4.4	7.3	25	150	53	5.6	1.3
15	e.50	.53	1.2	7.5	e4.8	5.3	7.1	24	147	48	5.2	1.2
16	e.48	.60	1.3	17	4.7	6.6	7.1	26	156	48	4.6	1.2
17	e.48	.63	1.5	35	4.5	7.1	7.5	23	127	49	4.2	1.1
18	e.46	.57	1.4	15	4.5	7.3	8.8	23	145	47	4.0	1.0
19	e.46	2.0	1.3	9.1	4.5	7.7	11	28	158	43	3.8	1.0
20	e.46	1.4	1.3	7.5	4.4	9.2	14	32	148	39	3.5	1.0
21	e.44	1.2	1.3	6.7	e4.4	10	22	32	161	36	3.3	1.1
22	e.44	1.4	1.2	6.3	4.4	23	30	34	149	35	3.1	1.1
23	e.44	1.9	1.2	e6.0	e4.3	37	34	38	132	32	2.8	1.1
24	e.42	1.7	1.2	e5.6	4.1	78	26	46	128	30	2.7	1.1
25	e.42	1.6	1.2	e5.3	e4.0	33	21	67	142	28	2.5	1.1
26	e.42	2.4	1.1	e5.0	e3.9	22	22	47	134	24	2.4	1.6
27	e.40	1.9	1.1	e5.0	e3.8	18	26	36	116	22	2.3	2.2
28	e.40	1.7	1.1	e5.0	e3.7	16	34	33	119	19	2.1	1.6
29	e.40	1.7	1.2	e4.9	---	14	43	33	118	18	2.0	1.5
30	e.40	1.5	1.2	e4.9	---	12	52	34	112	16	1.9	1.5
31	e.40	---	1.2	e5.0	---	12	---	46	---	14	1.8	---
TOTAL	13.35	28.38	40.7	176.2	128.5	369.7	484.8	1243	3797	1715	167.0	43.5
MEAN	.43	.95	1.31	5.68	4.59	11.9	16.2	40.1	127	55.3	5.39	1.45
MAX	.65	2.4	2.0	35	4.9	78	52	69	166	99	13	3.5
MIN	.31	.40	1.1	1.1	3.7	3.3	7.1	23	73	14	1.8	1.0
AC-FT	26	56	81	349	255	733	962	2470	7530	3400	331	86

e Estimated.

10336674 WARD CREEK BELOW CONFLUENCE, NEAR TAHOE CITY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1998, BY WATER YEAR (WY)

MEAN	.51	2.03	6.19	14.2	8.44	13.8	26.8	57.8	57.6	26.8	3.88	.73
MAX	1.21	9.82	27.2	68.8	32.5	26.9	43.1	93.5	127	88.7	16.0	1.94
(WY)	1994	1997	1997	1997	1996	1995	1997	1996	1998	1995	1995	1995
MIN	.11	.45	.69	.82	.95	5.85	16.2	20.5	3.67	.81	.025	.008
(WY)	1993	1996	1995	1992	1994	1994	1998	1992	1992	1994	1992	1992

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1992 - 1998	
ANNUAL TOTAL	7130.94		8207.13			
ANNUAL MEAN	19.5		22.5		18.3	
HIGHEST ANNUAL MEAN					29.0	1995
LOWEST ANNUAL MEAN					5.56	1992
HIGHEST DAILY MEAN	720	Jan 2	166	Jun 7	720	Jan 2 1997
LOWEST DAILY MEAN	.21	Sep 1	.31	Oct 1	.00	Aug 21 1992
ANNUAL SEVEN-DAY MINIMUM	.25	Sep 8	.33	Oct 1	.00	Sep 9 1992
INSTANTANEOUS PEAK FLOW			222	Jun 21	1220	Jan 1 1997
INSTANTANEOUS PEAK STAGE			5.33	Jun 21	8.85	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	14140		16280		13230	
10 PERCENT EXCEEDS	53		88		57	
50 PERCENT EXCEEDS	5.6		4.9		4.0	
90 PERCENT EXCEEDS	.34		.47		.33	

10336674 WARD CREEK BELOW CONFLUENCE NEAR TAHOE CITY, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1993 to current year.

REMARKS.—In October 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
OCT							
09...	0945	.31	45	1.5	3.5	.013	.016
29...	1050	.40	45	4.0	4.0	.005	.006
NOV							
29...	1020	1.7	47	.0	.5	.016	.002
DEC							
31...	1005	1.2	41	7.0	.5	.002	.001
JAN							
17...	1300	31	22	4.0	.0	.034	.001
FEB							
25...	1235	4.0	39	-1.0	1.0	.022	<.001
MAR							
24...	1150	92	32	2.0	.0	.029	.005
30...	1250	12	36	--	--	.020	<.001
APR							
22...	1340	23	35	14.5	2.0	.030	.003
30...	1625	55	31	11.5	1.0	.031	.002
MAY							
15...	1225	23	36	--	--	.011	.002
25...	1705	68	30	-.5	1.0	.017	.002
JUN							
01...	1610	87	27	11.0	1.0	.021	.014
07...	1355	134	26	12.0	2.5	.023	.002
12...	1025	96	29	11.5	2.5	.014	.001
20...	0905	120	26	13.5	2.5	.017	.001
26...	1550	160	22	16.0	4.5	.012	.011
JUL							
02...	1640	121	22	18.0	6.0	.013	.001
13...	1100	56	26	21.5	7.0	.005	.002
AUG							
11...	1155	5.9	33	26.0	12.0	.005	.005
SEP							
18...	1125	1.1	43	13.5	10.5	.016	<.001

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	IRON, BIO. REACT-IVE TOTAL (UG/L AS FE) (46568)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT						
09...	.07	.033	.008	48	<1	--
29...	.06	.012	.004	28	3	0.01
NOV						
29...	.009	.009	.004	24	1	<0.01
DEC						
31...	.05	.010	.003	33	2	.01
JAN						
17...	.16	.031	.007	153	23	1.9
FEB						
25...	.03	.013	.004	19	1	.01
MAR						
24...	.12	.037	.006	252	34	8.4
30...	.04	.026	.003	18	2	.06
APR						
22...	.05	.012	.003	27	2	.12
30...	.06	.014	.004	128	11	1.6
MAY						
15...	.003	.012	.002	21	<1	--
25...	.04	.023	.003	37	1	.18
JUN						
01...	.09	.040	.003	401	31	7.3
07...	.06	.041	.005	216	24	8.7
12...	.03	.019	.004	45	5	1.3
20...	.05	.021	.005	67	8	2.6
26...	.05	.034	.005	177	17	7.3
JUL						
02...	.08	.033	.001	174	16	5.2
13...	.04	.047	.004	55	4	.60
AUG						
11...	.05	.027	.005	41	1	.02
SEP						
18...	.04	.011	.004	57	2	.01

10336675 WARD CREEK AT STANFORD ROCK TRAIL CROSSING, NEAR TAHOE CITY, CA

LOCATION.—Lat 39°08'13", long 120°10'48", in NE 1/4 NW 1/4 sec.23, T.15 N., R.16 E., Placer County, Hydrologic Unit 16050101, Tahoe National Forest, on left bank 1.5 mi west of William Kent Campground, 1.7 mi upstream from mouth, and 3.6 mi southwest of Tahoe City.

DRAINAGE AREA.—8.97 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1991 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 6,450 ft above sea level, from topographic map.

REMARKS.—Records fair except for daily discharges after Jan. 1, which are fair. No storage or diversion upstream from station. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,370 ft^3/s, Jan. 1, 1997, gage height, 7.58 ft; maximum gage height, 8.23 ft, Jan. 10, 1995, backwater from ice; minimum daily, 0.30 ft^3/s, Sept. 22, 1994.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 80 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 24	0615	Unknown	a5.71	June 7	0215	337	5.73
May 1	1900	178	5.40				

a Backwater from ice.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1.3	1.4	1.4	1.8	4.7	3.7	31	112	125	e108	17	e3.0
2	1.7	1.4	1.4	e1.8	e4.7	3.7	28	97	104	e106	15	e2.9
3	1.4	1.4	1.4	1.8	e4.7	3.8	27	92	106	e98	e14	e2.7
4	1.3	1.4	1.4	e1.8	e4.7	4.1	25	92	104	e95	e13	e2.7
5	1.2	1.4	1.4	e1.8	e4.6	3.6	24	91	107	e96	e13	e3.1
6	1.2	1.4	1.4	e1.8	e4.6	e3.6	20	89	132	e104	e12	e3.7
7	1.2	1.4	2.3	1.8	e4.6	e6.0	16	87	e266	e103	e11	e3.1
8	1.3	1.4	1.8	1.7	e4.6	3.5	15	100	e209	e97	10	e3.1
9	2.6	1.4	1.5	1.7	e4.5	3.6	15	114	e196	e94	9.5	e8.0
10	2.5	1.4	1.6	1.7	e4.5	3.6	15	93	e203	e85	8.9	e5.7
11	2.0	1.4	1.5	1.7	e4.5	3.9	15	77	e194	e71	8.4	e4.2
12	1.9	1.4	1.5	7.4	4.5	4.2	12	68	e214	e61	8.0	e3.7
13	2.0	1.4	1.5	3.7	4.3	4.1	11	58	e239	e60	7.5	e3.5
14	2.0	1.4	1.5	2.4	e4.3	4.2	10	50	e229	e54	9.1	e3.3
15	2.0	1.4	1.4	12	e4.3	5.2	10	60	e193	48	8.5	3.1
16	1.9	1.4	1.4	e24	e4.2	7.1	11	63	e207	48	7.2	2.9
17	1.8	1.4	1.5	e50	e4.2	8.1	14	53	e169	45	6.6	2.8
18	1.7	1.4	1.5	24	e4.1	8.6	17	53	e181	41	6.3	2.7
19	1.6	2.6	1.5	14	4.1	9.1	22	60	e196	41	5.9	2.7
20	1.5	1.9	1.5	11	4.2	11	30	71	e183	39	5.5	2.6
21	1.5	1.7	1.5	8.0	e4.2	13	45	67	e194	37	5.2	2.6
22	1.5	1.7	1.6	6.7	e4.2	35	61	66	e185	36	5.0	2.6
23	1.5	1.9	1.7	6.1	e4.2	63	65	72	e159	33	4.8	2.5
24	1.5	1.8	1.8	5.7	e4.0	e160	45	82	e153	31	4.6	2.5
25	1.4	1.8	1.8	e5.5	e3.8	68	37	98	e170	29	4.5	2.5
26	1.4	2.6	2.0	5.2	3.6	44	38	84	e154	26	4.3	3.3
27	1.5	1.9	2.0	5.2	3.6	40	46	65	e131	24	4.2	4.3
28	1.5	1.6	2.0	5.2	3.5	39	57	61	e131	21	4.0	3.5
29	1.5	1.6	1.9	e5.1	---	43	68	60	e130	20	e3.8	3.2
30	1.5	1.5	1.9	5.1	---	38	90	59	e122	19	e3.4	3.2
31	1.4	---	1.9	4.7	---	34	---	83	---	18	e3.1	---
TOTAL	50.3	47.8	50.5	230.4	120.0	681.7	920	2377	5086	1788	243.3	99.7
MEAN	1.62	1.59	1.63	7.43	4.29	22.0	30.7	76.7	170	57.7	7.85	3.32
MAX	2.6	2.6	2.3	50	4.7	160	90	114	266	108	17	8.0
MIN	1.2	1.4	1.4	1.7	3.5	3.5	10	50	104	18	3.1	2.5
AC-FT	100	95	100	457	238	1350	1820	4710	10090	3550	483	198

e Estimated.

10336675 WARD CREEK AT STANFORD ROCK TRAIL CROSSING, NEAR TAHOE CITY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1998, BY WATER YEAR (WY)

MEAN	1.54	3.70	10.7	26.9	15.1	24.7	45.7	94.9	85.1	31.3	5.48	1.73
MAX	2.52	14.5	47.5	135	51.2	52.1	70.0	168	182	107	20.1	3.36
(WY)	1994	1997	1997	1997	1996	1995	1997	1996	1995	1995	1995	1995
MIN	.73	1.59	1.47	2.26	2.19	9.10	26.2	22.7	4.60	1.41	.44	.36
(WY)	1995	1998	1995	1992	1994	1994	1994	1992	1992	1994	1994	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1992 - 1998	
ANNUAL TOTAL	12206.1		11694.7			
ANNUAL MEAN	33.4		32.0		28.9	
HIGHEST ANNUAL MEAN					47.5	1995
LOWEST ANNUAL MEAN					7.69	1994
HIGHEST DAILY MEAN	1300	Jan 1	266	Jun 7	1300	Jan 1 1997
LOWEST DAILY MEAN	1.2	Oct 5	1.2	Oct 5	.30	Sep 22 1994
ANNUAL SEVEN-DAY MINIMUM	1.3	Oct 1	1.3	Oct 1	.31	Sep 17 1994
INSTANTANEOUS PEAK FLOW			337	Jun 7	2370	Jan 1 1997
INSTANTANEOUS PEAK STAGE			5.73	Jun 7	8.23	Jan 10 1995
ANNUAL RUNOFF (AC-FT)	24210		23200		20970	
10 PERCENT EXCEEDS	84		103		92	
50 PERCENT EXCEEDS	11		4.7		5.4	
90 PERCENT EXCEEDS	1.4		1.5		1.2	

10336675 WARD CREEK AT STANFORD ROCK TRAIL CROSSING, NEAR TAHOE CITY, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1993 to current year.

REMARKS.—In October 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
OCT							
09...	1130	3.2	45	5.0	5.5	.020	.006
29...	1210	1.5	74	8.0	5.0	.004	.006
NOV							
29...	1150	1.7	65	3.0	1.5	.007	.002
DEC							
31...	1150	2.0	58	4.5	.0	.007	.001
JAN							
15...	1300	21	44	3.0	.0	.045	.012
16...	1445	24	30	4.0	.0	.036	.002
17...	1425	50	28	6.0	.0	.036	.001
FEB							
25...	1600	3.8	51	-1.5	.0	.011	.009
MAR							
24...	1355	160	38	4.0	.0	.031	.001
30...	1435	36	46	3.0	3.0	.015	<.001
APR							
22...	1520	52	42	13.5	3.5	.019	.001
30...	1755	125	37	5.5	1.5	.020	.002
MAY							
15...	1405	54	43	9.0	5.5	.003	.001
25...	1835	95	36	.5	1.5	.011	.004
JUN							
01...	1740	151	34	14.0	2.5	.012	.004
07...	1550	266	31	12.0	5.0	.020	<.001
12...	1200	243	34	16.0	6.0	.004	.001
20...	1005	243	32	--	4.5	.010	.010
26...	1715	259	27	16.5	6.5	.008	.002
JUL							
02...	1800	184	27	16.0	7.0	.007	<.001
13...	1235	70	31	--	10.0	.005	.001
AUG							
11...	1330	8.3	46	27.0	17.0	.045	.006
SEP							
18...	1245	2.8	69	15.5	14.0	.002	<.001

10336675 WARD CREEK AT STANFORD ROCK TRAIL CROSSING, NEAR TAHOE CITY, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	IRON, BIO. REACTIVE TOTAL (UG/L AS FE) (46568)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT						
09...	.10	.038	.020	63	2	.02
29...	.04	.027	.016	79	<1	--
NOV						
29...	--	.019	.013	48	<1	--
DEC						
31...	.02	.020	.013	27	<1	--
JAN						
15...	.25	.074	.011	623	80	4.5
16...	.25	.047	.009	282	25	1.6
17...	.21	.046	.009	331	56	7.6
FEB						
25...	.05	.019	.008	49	1	.01
MAR						
24...	.18	.238	.007	622	57	25
30...	.05	.013	.006	26	1	.10
APR						
22...	.17	.014	.005	50	3	.42
30...	.11	.026	.005	309	36	12
MAY						
15...	.03	.014	.001	59	2	.29
25...	.08	.030	.004	109	6	1.5
JUN						
01...	.14	.054	.005	488	52	21
07...	.19	.097	.007	1270	109	78
12...	.07	.023	.005	71	6	3.9
20...	.06	.024	.006	80	9.0	5.9
26...	.06	.035	.006	173	16	11
JUL						
02...	.07	.035	.004	128	10	5.0
13...	.04	.046	.005	38	3	.57
AUG						
11...	.06	.038	.010	36	2	.04
SEP						
18...	.14	.055	.012	66	2	.02

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

LOCATION.—Lat 39°07'56", long 120°09'24", in NW 1/4 SE 1/4 sec.24, T.15 N., R.16 E., Placer County, Hydrologic Unit 16050101, Tahoe National Forest, on right bank 165 ft downstream from State Highway 89 Bridge, 2.1 mi north of Tahoe Pines, and 2.6 mi southwest of Tahoe City.

DRAINAGE AREA.—9.70 mi^2.

PERIOD OF RECORD.—October 1972 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 6,230 ft above sea level, from topographic map.

REMARKS.—Records good except for estimated days, which are fair. Minor diversion for local water supply upstream from station. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,530 ft^3/s, Jan. 1, 1997, gage height, 9.36 ft; no flow for many days during 1977–78, 1981, 1988, 1994.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 24	0615	234	5.73	May 25	1100	154	5.45
May 2	2030	163	5.48	June 7	0030	370	6.11

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1.4	1.8	2.8	e2.7	e5.2	3.9	29	111	134	114	15	e2.7
2	1.7	1.7	2.5	e2.7	e5.2	3.9	27	132	159	112	14	e2.6
3	3.7	1.7	2.6	e2.7	e5.2	4.1	25	119	158	103	13	2.4
4	1.6	1.7	2.5	e2.7	e5.2	4.4	23	107	156	100	12	2.4
5	1.5	1.7	2.8	e2.7	e5.1	4.1	22	99	163	101	12	2.9
6	1.5	1.6	2.6	e2.7	e5.1	4.5	21	95	200	109	11	3.7
7	1.6	1.6	e3.0	e2.7	e5.1	7.8	20	85	280	108	10	2.8
8	1.6	1.6	e3.6	e2.5	e5.1	3.7	19	98	220	102	9.5	2.8
9	5.1	1.6	e3.6	e2.5	e5.1	3.6	19	121	206	98	8.9	8.0
10	4.6	1.6	3.5	e2.5	e5.0	3.8	19	99	214	89	8.4	5.7
11	3.4	1.7	e3.5	e2.5	e5.0	4.3	18	77	204	73	7.9	4.2
12	2.8	1.7	e3.4	e10	e5.0	4.8	17	75	225	63	7.5	3.7
13	2.6	1.7	e3.3	e7.0	e5.0	4.6	18	68	252	61	7.1	3.5
14	2.9	1.7	e3.3	e5.0	e5.0	4.7	16	60	241	55	8.8	e3.3
15	2.9	1.7	3.2	e15	e5.0	6.0	17	62	203	50	8.6	e3.1
16	2.6	1.7	2.8	e30	e5.0	8.1	15	65	218	49	7.2	2.8
17	2.4	1.7	3.0	e60	e5.0	9.3	16	54	178	49	6.6	2.6
18	2.2	1.7	2.5	e30	e5.0	10	19	56	191	47	6.2	2.5
19	2.1	5.1	2.5	e25	e5.0	11	25	65	206	44	5.9	2.4
20	2.0	3.4	e2.5	e18	e5.0	14	33	72	193	39	5.5	2.4
21	2.0	2.7	e2.5	17	e4.8	16	48	71	204	36	5.2	2.4
22	1.8	2.5	e2.5	11	e4.8	49	63	70	195	35	4.8	2.4
23	1.8	3.3	e2.5	7.2	e4.6	82	74	75	167	32	4.5	2.4
24	1.8	3.3	e2.7	6.6	e4.6	171	63	88	161	30	4.3	2.4
25	1.7	3.5	e2.7	6.3	e4.4	83	56	127	179	27	4.1	2.4
26	1.7	6.0	e2.9	6.0	e4.2	67	56	90	162	25	3.9	3.9
27	1.7	4.1	e3.1	6.0	e4.0	55	64	75	138	22	3.9	5.6
28	1.7	3.4	e3.1	5.8	e4.0	47	73	72	138	21	e3.8	4.1
29	1.8	3.3	e2.9	e5.6	---	39	83	72	137	19	e3.6	e3.9
30	1.8	3.0	e2.9	e5.4	---	35	97	70	129	18	e3.2	3.8
31	1.8	---	e2.9	5.2	---	32	---	89	---	17	e2.9	---
TOTAL	69.8	73.8	90.2	311.0	136.7	796.6	1095	2619	5611	1848	229.3	99.8
MEAN	2.25	2.46	2.91	10.0	4.88	25.7	36.5	84.5	187	59.6	7.40	3.33
MAX	5.1	6.0	3.6	60	5.2	171	97	132	280	114	15	8.0
MIN	1.4	1.6	2.5	2.5	4.0	3.6	15	54	129	17	2.9	2.4
AC-FT	138	146	179	617	271	1580	2170	5190	11130	3670	455	198

e Estimated.

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1998, BY WATER YEAR (WY)

MEAN	3.26	11.3	13.1	18.4	15.6	21.9	42.4	90.3	76.7	23.8	4.13	1.84
MAX	22.4	73.9	92.5	144	77.7	80.3	89.2	177	265	123	26.9	7.93
(WY)	1983	1982	1982	1997	1982	1986	1989	1996	1983	1983	1983	1983
MIN	.15	1.06	.80	1.10	1.24	2.52	8.06	18.7	4.59	1.10	.003	.005
(WY)	1978	1978	1977	1991	1991	1977	1975	1977	1992	1994	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1973 - 1998	
ANNUAL TOTAL	13451.2		12980.2			
ANNUAL MEAN	36.9		35.6		26.9	
HIGHEST ANNUAL MEAN					59.0	1983
LOWEST ANNUAL MEAN					5.29	1977
HIGHEST DAILY MEAN	1390	Jan 1	280	Jun 7	1390	Jan 1 1997
LOWEST DAILY MEAN	1.2	Sep 8	1.4	Oct 1	.00	Aug 4 1977
ANNUAL SEVEN-DAY MINIMUM	1.3	Sep 5	1.6	Nov 4	.00	Aug 4 1977
INSTANTANEOUS PEAK FLOW			370	Jun 7	2530	Jan 1 1997
INSTANTANEOUS PEAK STAGE			6.11	Jun 7	9.36	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	26680		25750		19490	
10 PERCENT EXCEEDS	92		113		77	
50 PERCENT EXCEEDS	12		5.2		6.8	
90 PERCENT EXCEEDS	1.6		2.0		.92	

10336770 TROUT CREEK AT U.S. FOREST SERVICE ROAD 12N01, NEAR MEYERS, CA

LOCATION.—Lat 38°51'48", long 119°57'26", in NE $^1/_4$ NW $^1/_4$ sec.26, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on right bank, 50 ft downstream from U.S. Forest Service Road 12N01, about 2.2 mi upstream from confluence of Saxon Creek, and 2.6 mi northeast of Meyers.

DRAINAGE AREA.—7.40 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—May 1990 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 6,850 ft above sea level, from topographic map.

REMARKS.—Records fair except for estimated daily discharges, which are poor. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 166 ft^3/s, June 27, 1995, gage height, 6.19 ft; minimum daily, 1.9 ft^3/s, Dec. 21, 1990.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge at 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
June 15	2115	*97	*5.65	No other peak greater than base discharge			

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	5.8	5.7	5.2	4.7	4.8	4.6	23	29	65	19	11
2	6.5	5.9	e5.7	5.3	e4.7	4.9	4.5	23	30	67	19	12
3	6.2	5.9	e5.7	5.2	e4.7	4.9	4.4	21	28	65	18	11
4	6.0	5.9	5.7	5.4	4.8	4.8	4.3	19	30	63	18	12
5	6.0	5.9	5.7	e5.3	4.8	4.8	4.3	18	38	64	17	11
6	6.0	5.9	5.7	e5.1	4.8	4.8	4.2	16	46	64	15	11
7	6.3	5.9	5.7	5.0	4.8	e4.8	4.2	16	50	62	14	12
8	6.3	5.7	5.9	4.9	4.9	4.8	4.3	18	48	60	14	11
9	7.4	5.8	6.0	5.0	4.7	4.8	4.3	20	49	57	13	15
10	6.9	5.9	e6.0	5.0	4.8	4.9	4.3	18	50	51	13	11
11	6.7	6.0	6.0	4.9	4.8	4.8	4.3	17	51	48	13	11
12	6.6	5.9	e5.8	4.9	4.8	4.7	4.2	15	53	46	12	11
13	6.6	5.8	5.6	4.8	4.8	4.6	4.2	14	62	43	13	11
14	6.4	5.7	5.7	5.0	4.9	4.6	4.3	14	67	41	14	10
15	6.1	5.7	5.6	e5.0	4.8	4.9	4.3	14	68	39	14	10
16	6.1	5.6	5.6	e5.0	e4.8	5.2	4.3	15	73	37	12	9.7
17	5.9	5.7	5.5	e5.1	4.8	5.2	4.4	14	68	35	12	9.7
18	5.9	5.6	5.5	e5.4	4.8	5.3	4.7	14	70	33	12	9.8
19	5.9	6.1	e5.5	e5.5	4.8	5.5	5.4	16	78	32	12	10
20	5.9	5.8	5.4	5.1	4.8	5.8	6.6	17	76	30	12	10
21	5.8	5.8	e5.4	e5.0	4.8	6.1	8.4	15	75	29	12	9.7
22	5.8	5.9	e5.3	5.0	4.6	9.6	10	16	73	29	11	9.6
23	5.8	5.8	e5.3	4.8	4.7	12	10	16	69	27	9.9	9.4
24	5.8	5.7	5.2	4.8	4.6	14	9.4	18	67	25	9.4	9.8
25	5.8	5.9	5.2	4.8	4.6	8.9	9.6	20	68	23	9.2	9.7
26	5.8	7.0	5.3	4.6	4.6	8.2	10	17	66	22	9.1	10
27	5.8	6.1	5.0	4.5	4.6	8.6	12	16	65	21	9.0	11
28	5.8	6.0	5.0	4.5	4.7	8.4	14	17	69	20	8.8	10
29	5.9	5.9	5.1	4.5	---	6.3	17	18	70	19	8.7	11
30	5.9	5.9	5.1	5.0	---	5.0	22	20	67	21	8.9	12
31	5.8	---	5.2	4.7	---	4.6	---	25	---	20	8.8	---
TOTAL	189.9	176.5	171.1	154.3	133.0	190.6	212.5	540	1753	1258	390.8	321.4
MEAN	6.13	5.88	5.52	4.98	4.75	6.15	7.08	17.4	58.4	40.6	12.6	10.7
MAX	7.4	7.0	6.0	5.5	4.9	14	22	25	78	67	19	15
MIN	5.8	5.6	5.0	4.5	4.6	4.6	4.2	14	28	19	8.7	9.4
AC-FT	377	350	339	306	264	378	421	1070	3480	2500	775	637

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1998, BY WATER YEAR (WY)

MEAN	4.87	5.24	5.99	7.32	5.53	7.12	10.8	25.7	33.1	18.4	7.98	5.86
MAX	7.83	8.20	14.2	24.9	11.4	14.2	22.3	48.1	84.9	62.1	20.0	10.7
(WY)	1996	1997	1997	1997	1997	1997	1997	1997	1995	1995	1995	1998
MIN	2.91	2.93	2.63	2.59	2.65	3.25	5.18	8.81	4.10	3.60	3.36	3.32
(WY)	1993	1993	1993	1991	1991	1991	1991	1992	1992	1992	1994	1990

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1990 - 1998	
ANNUAL TOTAL	6217.6		5491.1			
ANNUAL MEAN	17.0		15.0		12.0	
HIGHEST ANNUAL MEAN					19.8	1995
LOWEST ANNUAL MEAN					4.48	1992
HIGHEST DAILY MEAN	80	Jan 2	78	Jun 19	130	Jun 28 1995
LOWEST DAILY MEAN	5.0	Dec 27	4.2	Apr 6	1.9	Dec 21 1990
ANNUAL SEVEN-DAY MINIMUM	5.1	Dec 24	4.3	Apr 6	2.4	Dec 17 1990
INSTANTANEOUS PEAK FLOW			97	Jun 15	166	Jun 27 1995
INSTANTANEOUS PEAK STAGE			5.65	Jun 15	6.19	Jun 27 1995
ANNUAL RUNOFF (AC-FT)	12330		10890		8690	
10 PERCENT EXCEEDS	41		46		27	
50 PERCENT EXCEEDS	11		6.2		5.9	
90 PERCENT EXCEEDS	5.8		4.7		3.1	

e Estimated.

10336770 TROUT CREEK AT U.S. FOREST SERVICE ROAD 12N01, NEAR MEYERS, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1990 to current year.

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water-temperature recorder since September 1997 to current year, two times per hour.

REMARKS.—In November 1989, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. Water temperature records represent water temperature at probe within 0.5°C. Water-temperature records for September 1997 were not published but are available from the U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum, 12.5°C, July 16–20, Aug. 4–6 1998; minimum, freezing point on many days during winter months.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum, 12.5°C, July 16–20, Aug. 4–6; minimum, freezing point, many days November to April.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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 AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
OCT									
08...	1210	6.3	52	--	6.5	3.5	--	--	--
21...	1040	5.9	50	--	6.0	3.5	--	--	--
NOV									
12...	1120	5.6	56	--	1.0	1.0	--	--	--
25...	1445	5.9	50	--	4.5	2.0	--	--	--
DEC									
23...	1130	5.7	51	7.1	-3.5	.0	--	--	--
JAN									
03...	1018	6.2	--	--	-5.0	.0	--	--	--
30...	1010	6.2	50	--	-5.0	.0	--	--	--
MAR									
11...	1055	4.8	53	7.4	7.0	2.0	--	--	--
APR									
29...	1100	14	--	--	10.5	--	--	--	--
MAY									
28...	1110	16	33	--	9.0	3.5	--	--	--
JUN									
03...	1730	30	26	--	6.0	4.0	--	--	--
10...	0937	47	24	--	7.0	3.0	--	--	--
11...	1800	54	20	--	7.0	4.0	--	--	--
17...	1555	65	18	--	18.0	7.0	--	--	--
23...	1850	72	16	--	12.0	7.0	--	--	--
30...	1930	67	17	--	14.0	9.0	--	--	--
JUL									
15...	1035	37	23	--	18.5	6.0	--	--	--
23...	1023	27	31	--	17.0	10.0	--	--	--
30...	1035	20	31	--	16.5	8.0	--	--	--
AUG									
13...	1535	13	38	--	18.5	11.5	--	--	--
SEP									
29...	1135	8.9	45	7.8	9.5	5.5	585	9.7	100

10336770 TROUT CREEK AT U.S. FOREST SERVICE ROAD 12N01, NEAR MEYERS, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	IRON, BIO. REACTIVE TOTAL (UG/L AS FE) (46568)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT								
08...	--	--	--	--	--	--	--	--
21...	.003	.001	.05	.017	.008	79	<1	--
NOV								
12...	--	--	--	--	--	--	--	--
25...	.002	<.001	.12	.018	.009	70	1	.02
DEC								
23...	.045	.010	.05	.019	.008	90	7	.11
JAN								
03...	--	--	--	--	--	--	--	--
30...	.014	.001	.11	.017	.009	411	3	.05
MAR								
11...	.015	.002	.07	.016	.011	95	1	.01
APR								
29...	--	--	--	--	--	--	--	--
MAY								
28...	.004	<.001	.08	.025	.008	150	3	.13
JUN								
03...	.007	.005	.16	.032	.007	336	10	.80
10...	--	--	--	--	--	--	--	--
11...	.007	.002	.25	.039	.006	375	25	3.7
17...	.003	<.001	.16	.052	.008	436	32	5.6
23...	.003	.001	.10	.030	.008	157	27	5.2
30...	.005	<.001	.14	.047	.006	235	25	4.5
JUL								
15...	.004	.001	.08	.029	.017	166	5	.50
23...	--	--	--	--	--	--	--	--
30...	.004	.001	.08	.030	.008	125	2	.11
AUG								
13...	.002	.002	.04	.024	.010	121	8	.29
SEP								
29...	.005	<.001	.09	.017	.009	602	1	.02

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.0	6.5	8.0	4.5	2.5	3.5	1.5	.5	1.5	2.5	2.0	2.0
2	8.5	6.0	7.5	4.5	2.0	3.0	.5	.0	.0	2.0	.0	1.0
3	7.5	4.0	5.5	5.0	2.5	3.5	1.0	.0	.5	1.0	.5	1.0
4	7.5	5.0	6.0	5.0	2.5	3.5	1.5	.5	1.0	.5	.0	.0
5	7.0	4.5	5.5	4.0	2.0	3.0	1.5	1.0	1.5	.0	.0	.0
6	5.5	4.5	5.0	5.0	3.0	4.0	2.0	1.5	2.0	.5	.0	.0
7	4.5	3.5	4.0	4.5	2.0	4.0	2.0	.0	1.0	1.5	.5	1.0
8	5.0	2.5	3.5	2.0	.0	1.0	.5	.0	.0	1.5	.5	1.0
9	5.0	3.5	4.5	3.0	.5	1.5	.0	.0	.0	2.0	1.5	2.0
10	4.5	3.0	4.0	3.5	2.0	3.0	.0	.0	.0	2.0	2.0	2.0
11	3.5	2.5	3.0	3.0	2.0	2.5	.0	.0	.0	2.0	1.5	1.5
12	3.5	1.0	2.5	2.5	.5	1.5	1.0	.0	.5	1.5	.5	1.0
13	4.5	2.0	3.0	2.5	1.0	1.5	1.5	.5	1.0	1.5	.5	1.0
14	5.5	2.0	3.5	2.0	.5	1.5	1.5	1.0	1.5	2.0	1.0	1.5
15	5.5	3.0	4.0	1.5	.0	1.0	1.0	.0	.5	1.5	1.0	1.5
16	6.0	3.5	4.5	1.5	.0	1.0	2.0	.5	1.5	2.5	1.5	2.0
17	5.5	3.0	4.5	2.0	.5	1.0	2.0	1.5	1.5	2.5	1.5	2.0
18	5.5	3.0	4.0	2.0	.5	1.5	1.5	.5	1.0	2.0	.0	1.5
19	5.0	2.5	4.0	3.0	2.0	2.5	.5	.0	.0	.5	.0	.5
20	4.5	2.5	3.5	2.0	1.0	1.5	1.0	.0	.5	1.0	.0	.5
21	5.0	3.5	4.0	3.5	1.0	2.0	.5	.0	.0	1.0	.0	.5
22	5.0	2.5	3.5	3.5	2.0	3.0	.0	.0	.0	2.0	.5	1.0
23	5.0	3.5	4.0	3.5	2.0	3.0	.5	.0	.0	2.0	.5	1.5
24	3.5	1.5	2.5	2.5	1.5	2.0	.5	.0	.5	1.5	1.0	1.0
25	2.5	.5	1.5	2.5	1.5	2.0	.5	.0	.0	1.5	.5	1.0
26	3.0	.5	2.0	2.0	.0	1.0	.0	.0	.0	2.0	1.0	1.5
27	3.0	1.0	2.0	2.0	1.0	1.5	.5	.0	.0	2.5	1.5	2.0
28	3.0	.5	2.0	1.5	.5	1.0	1.5	.5	1.0	2.0	.5	1.5
29	4.5	1.5	3.0	2.0	.5	1.0	1.5	1.0	1.5	2.0	.5	1.5
30	4.5	2.5	3.5	2.0	1.0	1.5	2.0	1.0	1.5	1.0	.0	.5
31	5.0	2.5	3.5	---	---	---	2.5	1.5	2.0	1.5	.5	1.0
MONTH	9.0	.5	3.9	5.0	.0	2.1	2.5	.0	.7	2.5	.0	1.2

10336770 TROUT CREEK AT U.S. FOREST SERVICE ROAD 12N01, NEAR MEYERS, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1.5	.5	1.0	2.5	1.0	1.5	2.0	1.0	1.5	4.5	2.0	3.0
2	1.5	1.0	1.5	2.5	1.5	2.0	3.0	1.5	2.0	4.0	2.0	2.5
3	1.5	1.0	1.5	3.0	1.5	2.0	2.5	1.5	2.0	3.5	2.0	2.5
4	1.5	.5	1.5	1.5	.0	1.0	2.0	1.0	1.5	3.5	2.0	2.5
5	2.0	.5	1.0	1.5	.5	1.0	2.5	1.0	2.0	3.5	1.5	2.0
6	2.0	1.0	1.5	1.0	.5	1.0	2.0	1.0	1.5	2.0	1.0	1.5
7	1.5	.0	1.0	1.5	.0	.5	3.0	1.0	2.0	3.5	2.0	2.5
8	1.0	.0	.5	2.0	1.5	1.5	2.5	.5	1.5	4.0	2.5	3.0
9	1.0	.5	1.0	2.0	.5	1.5	3.5	2.0	2.5	4.0	2.0	2.5
10	1.0	.5	1.0	2.0	1.0	1.5	3.0	1.5	2.5	4.0	1.5	2.5
11	1.5	1.0	1.5	2.5	1.5	2.0	2.5	1.5	2.0	4.0	1.5	2.5
12	2.0	1.0	1.5	3.0	1.5	2.0	2.0	1.0	1.5	3.0	1.5	2.0
13	2.0	1.5	2.0	2.5	2.0	2.5	1.0	.5	1.0	3.5	1.0	2.0
14	2.0	.5	1.5	3.5	2.0	2.5	2.5	.5	1.0	4.5	2.0	3.0
15	1.5	.5	1.0	3.0	2.0	2.5	2.0	.0	1.0	5.5	1.5	3.0
16	1.0	.0	.5	3.0	2.0	2.5	2.5	.0	1.5	2.5	1.5	2.0
17	1.5	.5	1.0	3.0	1.0	2.0	3.0	.5	2.0	4.5	1.0	2.5
18	1.5	.0	1.0	3.0	1.5	2.5	3.5	1.5	2.5	5.5	1.0	3.0
19	2.0	1.5	1.5	3.0	1.5	2.5	4.0	2.0	3.0	5.5	1.5	3.0
20	1.5	.0	1.0	3.5	2.0	2.5	4.0	1.5	2.5	5.0	2.0	3.0
21	1.5	.5	1.0	3.5	2.0	2.5	4.0	2.0	3.0	3.0	1.5	2.5
22	1.5	1.0	1.5	2.5	2.0	2.5	4.0	2.0	2.5	5.5	1.5	3.0
23	1.5	.5	1.0	3.0	1.5	2.0	3.0	2.0	2.5	4.0	2.0	3.0
24	1.0	.0	.5	1.5	.5	1.0	3.5	2.0	2.5	6.5	2.0	3.5
25	1.5	.5	1.0	2.0	1.5	2.0	3.5	2.0	2.5	3.5	2.0	3.0
26	1.5	.5	1.0	3.0	2.0	2.5	4.0	1.5	3.0	2.5	1.0	2.0
27	2.0	1.5	1.5	2.5	.5	1.5	4.5	1.5	3.0	3.5	1.5	2.5
28	2.0	1.0	1.5	1.5	.5	1.0	4.5	2.0	3.0	5.5	2.0	3.0
29	---	---	---	1.5	.0	1.0	4.5	2.0	2.5	4.5	1.0	2.5
30	---	---	---	2.0	.0	1.0	4.5	2.0	2.5	6.5	1.5	3.5
31	---	---	---	2.5	1.5	2.0	---	---	---	6.5	2.0	3.5
MONTH	2.0	.0	1.2	3.5	.0	1.8	4.5	.0	2.1	6.5	1.0	2.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	6.5	2.0	3.5	10.5	4.0	7.0	11.5	6.5	8.5	11.5	8.0	9.5
2	4.0	2.5	3.0	11.0	5.0	7.5	12.0	7.5	9.5	11.0	8.0	9.5
3	5.0	2.5	3.0	10.5	4.0	7.0	12.0	7.5	9.5	10.5	8.0	9.0
4	6.0	2.5	3.5	11.0	5.0	8.0	12.5	7.5	10.0	10.5	8.0	9.5
5	5.5	2.0	3.5	11.0	5.5	8.0	12.5	8.0	10.0	10.5	8.5	9.5
6	5.5	2.0	3.5	10.0	6.0	8.0	12.5	8.0	10.0	10.5	8.5	9.5
7	6.0	2.0	3.5	11.0	5.5	8.0	12.0	9.0	10.0	10.5	8.0	9.5
8	4.5	2.5	3.0	11.5	5.5	8.5	11.5	7.0	9.0	10.0	8.0	9.0
9	6.0	2.5	3.5	11.5	6.5	9.0	11.5	7.0	9.0	10.0	8.0	9.0
10	3.5	2.5	3.0	11.0	6.0	8.0	11.5	7.0	9.0	8.5	5.5	7.0
11	4.0	3.0	3.0	11.5	5.5	8.0	12.0	8.0	9.5	9.0	6.0	7.5
12	6.5	2.5	4.0	12.0	6.0	8.5	12.0	8.0	10.0	10.0	6.5	8.0
13	6.5	2.5	4.0	11.5	6.5	9.0	12.0	8.5	10.0	10.0	7.5	8.5
14	7.5	2.5	4.0	11.5	5.5	8.5	11.0	9.0	9.5	10.0	7.5	8.5
15	6.5	2.5	4.0	11.5	5.5	8.5	12.0	8.0	9.5	10.0	8.0	9.0
16	7.0	3.0	4.0	12.5	7.0	9.5	11.5	7.5	9.5	10.0	7.5	8.5
17	7.5	2.0	4.0	12.5	8.0	10.0	10.5	7.5	9.0	10.0	7.5	8.5
18	8.0	3.0	4.5	12.5	8.0	10.0	10.0	5.5	8.0	8.5	6.5	7.5
19	8.0	3.0	5.0	12.5	7.5	10.0	10.0	6.5	8.5	8.0	5.0	6.5
20	8.0	3.0	4.5	12.5	7.5	10.0	10.0	6.0	8.0	8.0	5.5	6.5
21	6.5	3.5	4.5	12.0	8.0	10.0	10.0	6.0	8.0	7.5	4.5	6.0
22	8.5	3.0	5.0	10.5	9.0	10.0	10.0	5.5	7.5	7.5	5.0	6.0
23	8.0	2.5	5.0	11.0	9.0	9.5	10.0	6.0	8.0	7.5	5.5	6.5
24	8.5	3.0	5.5	9.5	8.0	9.0	10.0	6.0	8.0	7.5	5.5	6.5
25	8.0	4.5	5.5	11.5	7.5	9.5	10.0	6.0	8.0	7.0	5.0	6.0
26	9.0	3.0	5.5	11.0	7.5	9.0	10.0	6.0	8.0	6.0	5.0	5.5
27	9.5	3.5	6.0	11.0	7.5	9.5	10.5	6.5	8.5	6.0	4.5	5.0
28	10.0	4.0	6.5	11.5	7.5	9.5	11.5	7.0	9.0	6.5	4.0	5.5
29	10.0	4.0	7.0	12.0	7.5	9.5	11.5	8.0	9.5	7.0	5.5	6.0
30	10.5	4.0	7.0	10.5	6.5	8.5	11.5	8.5	10.0	7.5	5.5	6.5
31	---	---	---	10.5	5.5	8.0	11.5	7.5	9.5	---	---	---
MONTH	10.5	2.0	4.4	12.5	4.0	8.8	12.5	5.5	9.0	11.5	4.0	7.7
YEAR	12.5	.0	3.8									

10336775 TROUT CREEK AT PIONEER TRAIL, NEAR SOUTH LAKE TAHOE, CA

LOCATION.—Lat 38°54'13", long 119°58'04", in SE $^1/_4$ NE $^1/_4$ sec.10, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on left bank, 200 ft upstream of Pioneer Trail Road, 0.6 mi upstream of confluence of Cold Creek, and 2.8 mi south of South Lake Tahoe.

DRAINAGE AREA.—23.7 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—June 1990 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 6,270 ft above sea level, from topographic map. Prior to May 1, 1992, at datum 0.12 ft higher.

REMARKS.—Records good except for estimated daily discharge, which are poor. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 525 ft^3/s, Jan. 2, 1997, gage height, 7.59 ft; minimum daily, 2.0 ft^3/s, Dec. 22, 1990.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 24	1745	135	3.40	June 25	2345	*158	*3.60

CORRECTION.—The annual maximum gage height for water year 1997 is 7.59 ft; the previously published figure was not the maximum.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	12	12	e12	15	15	30	61	63	130	38	17
2	13	11	12	e12	17	14	29	62	68	130	37	17
3	13	11	e12	e12	26	14	28	61	68	129	35	17
4	12	11	12	e13	20	e14	26	59	68	126	34	19
5	12	11	12	e13	18	e15	26	59	71	125	33	19
6	12	11	12	e13	17	e15	25	65	81	123	32	20
7	13	11	12	e13	16	e16	25	59	113	119	31	19
8	13	11	12	e13	15	e16	25	62	97	116	30	18
9	15	12	11	e14	16	e15	25	63	97	115	29	23
10	14	11	12	14	16	15	26	57	100	110	28	18
11	14	11	e11	15	16	13	25	54	100	103	28	17
12	13	11	e11	18	16	13	24	52	103	97	27	17
13	13	11	e11	18	16	13	23	49	119	92	e27	16
14	13	11	e11	16	14	14	23	47	121	87	e27	16
15	13	12	e11	34	e14	15	22	47	127	82	27	15
16	13	14	e11	30	e14	17	22	49	133	78	25	15
17	13	12	e11	29	e14	17	23	48	127	75	24	15
18	12	12	e11	21	15	18	25	47	129	72	24	14
19	12	12	11	20	15	18	29	49	137	67	24	14
20	12	11	e11	18	15	20	34	51	139	64	23	14
21	12	11	e12	16	13	21	41	49	140	60	23	14
22	12	11	e12	e16	e13	28	48	47	141	60	22	14
23	12	11	e12	16	13	45	49	50	138	60	21	15
24	12	11	e12	16	e14	112	43	51	133	56	21	16
25	12	12	e12	e16	e14	79	41	58	140	53	20	16
26	12	15	e12	16	e14	52	41	53	139	49	20	16
27	12	13	e12	15	e14	44	44	48	134	47	19	19
28	12	12	e12	15	14	39	48	47	135	45	19	17
29	12	13	e12	15	---	35	53	50	137	42	19	17
30	12	12	e12	16	---	34	57	50	135	41	18	17
31	12	---	e12	15	---	32	---	56	---	40	18	---
TOTAL	389	350	361	520	434	828	980	1660	3433	2593	803	501
MEAN	12.5	11.7	11.6	16.8	15.5	26.7	32.7	53.5	114	83.6	25.9	16.7
MAX	15	15	12	34	26	112	57	65	141	130	38	23
MIN	12	11	11	12	13	13	22	47	63	40	18	14
AC-FT	772	694	716	1030	861	1640	1940	3290	6810	5140	1590	994

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1998, BY WATER YEAR (WY)

MEAN	8.70	9.64	11.9	20.2	15.6	23.1	32.5	59.3	65.7	38.9	14.3	9.86
MAX	14.4	18.7	34.2	87.8	38.2	42.0	54.9	107	158	142	35.8	19.0
(WY)	1996	1997	1997	1997	1997	1997	1996	1996	1995	1995	1995	1995
MIN	4.49	5.03	4.05	4.70	5.49	7.85	12.2	14.2	7.66	5.84	4.48	4.08
(WY)	1991	1991	1991	1991	1993	1992	1991	1992	1992	1992	1994	1992

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1990 - 1998	
ANNUAL TOTAL	14718		12852			
ANNUAL MEAN	40.3		35.2		26.8	
HIGHEST ANNUAL MEAN					46.9	1995
LOWEST ANNUAL MEAN					7.71	1992
HIGHEST DAILY MEAN	457	Jan 2	141	Jun 22	457	Jan 2 1997
LOWEST DAILY MEAN	11	Nov 2	11	Nov 2	2.0	Dec 22 1990
ANNUAL SEVEN-DAY MINIMUM	11	Nov 2	11	Nov 2	2.8	Dec 21 1990
INSTANTANEOUS PEAK FLOW			158	Jun 25	525	Jan 2 1997
INSTANTANEOUS PEAK STAGE			3.60	Jun 25	7.59	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	29190		25490		19450	
10 PERCENT EXCEEDS	89		97		68	
50 PERCENT EXCEEDS	32		18		13	
90 PERCENT EXCEEDS	12		12		4.9	

e Estimated.

10336775 TROUT CREEK AT PIONEER TRAIL, NEAR SOUTH LAKE TAHOE, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1990 to current year.

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water-temperature recorder since September 1997, two times per hour.

REMARKS.—In November 1989, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. Water-temperature records represent water temperature at probe within 0.5°C. Interruptions in record due to loss of hydrologic communications with stream channel, probe in ice and/or instrument malfunction. Water-temperature data for September 1997 were not published but are available from U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum, 16.0°C, Aug. 30, 1998; minimum, freezing point on many days from October 1997 to April 1998.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum, 16.0°C, Aug. 30; minimum, freezing point, many days October to April.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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 AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
OCT									
08...	0940	13	57	--	4.0	3.0	--	--	--
21...	0935	12	53	--	4.0	2.5	--	--	--
NOV									
12...	1345	11	--	--	8.0	3.0	--	--	--
25...	1530	11	59	--	4.0	3.0	--	--	--
DEC									
17...	1000	12	53	7.2	4.5	.5	604	11.2	98
31...	1250	12	--	--	7.5	1.5	--	--	--
JAN									
16...	1120	21	47	--	5.0	.0	--	--	--
22...	0910	16	53	--	-3.5	-.5	--	--	--
FEB									
04...	0955	20	56	--	.0	1.0	--	--	--
25...	1550	14	54	--	.5	.5	--	--	--
MAR									
09...	1340	16	60	--	5.0	2.0	--	--	--
19...	1530	18	56	--	11.5	5.0	--	--	--
25...	1700	68	45	--	1.5	2.0	--	--	--
APR									
21...	1550	36	52	--	19.0	7.5	--	--	--
28...	1140	46	47	--	13.0	5.0	--	--	--
30...	1400	53	42	--	17.5	6.5	--	--	--
MAY									
05...	1230	56	39	--	9.5	3.5	597	10.3	99
20...	1030	48	40	--	9.0	4.0	--	--	--
28...	1315	43	42	--	12.5	6.5	--	--	--
JUN									
03...	1830	60	34	--	6.5	6.0	--	--	--
10...	1310	99	32	--	9.0	--	--	--	--
11...	1530	100	27	--	5.5	5.0	--	--	--
18...	1420	124	24	--	20.5	7.5	--	--	--
23...	1935	146	20	--	13.5	8.0	--	--	--
30...	2010	142	20	--	13.5	9.5	--	--	--
JUL									
15...	0900	85	25	--	14.0	6.5	--	--	--
22...	1207	61	33	--	22.0	12.0	--	--	--
30...	0930	45	33	--	16.5	8.0	--	--	--
AUG									
13...	1630	29	40	--	27.5	14.0	--	--	--
31...	1248	18	--	--	20.0	10.0	--	--	--
SEP									
29...	1015	18	49	7.8	8.0	5.5	601	9.6	97

10336775 TROUT CREEK AT PIONEER TRAIL, NEAR SOUTH LAKE TAHOE, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	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)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	IRON, BIO. REACT-IVE TOTAL (UG/L AS FE) (46568)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT								
08...	--	--	--	--	--	--	--	--
21...	.005	.001	.08	.019	.008	169	<1	--
NOV								
12...	--	--	--	--	--	--	--	--
25...	.005	<.001	.16	.018	.009	238	1	.03
DEC								
17...	.010	.003	.05	.016	.008	161	1	.03
31...	--	--	--	--	--	--	--	--
JAN								
16...	.021	.001	.32	.064	.014	938	32	1.8
22...	.015	<.001	.09	.015	.009	214	3	.13
FEB								
04...	--	--	--	--	--	--	--	--
25...	.019	<.001	.11	.028	.008	294	4	.15
MAR								
09...	--	--	--	--	--	--	--	--
19...	.017	<.001	.16	.027	.009	394	7	.34
25...	.013	.002	.35	.064	.008	1060	31	5.7
APR								
21...	.015	.001	.14	.031	.019	382	7	.67
28...	--	--	--	--	--	--	--	--
30...	.012	.004	.18	.029	.008	410	14	2.0
MAY								
05...	.010	.002	.28	.028	.008	400	9	1.4
20...	.009	<.001	.10	.031	.007	337	5	.64
28...	.005	<.001	.07	.036	.007	285	4	.46
JUN								
03...	.006	.002	.14	.035	.007	381	7	1.1
10...	--	--	--	--	--	--	--	--
11...	.007	.002	.12	.029	.008	409	20	5.4
18...	.006	.001	.16	.042	.007	1080	18	6.0
23...	.005	.001	.23	.037	.008	292	16	6.3
30...	.005	<.001	.10	.047	.007	322	15	5.8
JUL								
15...	.005	.001	.23	.037	.007	351	7	1.6
22...	--	--	--	--	--	--	--	--
30...	.005	.002	.10	.037	.008	346	4	.48
AUG								
13...	.004	.002	.10	.036	.010	582	10	.78
31...	--	--	--	--	--	--	--	--
SEP								
29...	.006	<.001	.07	.019	.009	213	3	.15

10336775 TROUT CREEK AT PIONEER TRAIL, NEAR SOUTH LAKE TAHOE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.0	6.5	9.5	5.5	2.5	4.0	2.5	.5	1.5	.5	.0	.0
2	11.5	7.5	9.5	5.0	1.5	3.0	.5	.0	.0	---	---	---
3	9.5	5.0	7.5	5.0	2.0	3.5	.5	.0	.0	---	---	---
4	10.0	5.0	7.0	5.5	2.5	3.5	.5	.0	.0	---	---	---
5	9.5	5.0	7.0	5.0	1.5	3.0	.5	.0	.0	---	---	---
6	8.5	4.5	6.0	5.0	1.5	3.5	1.0	.5	.5	---	---	---
7	7.5	4.0	5.5	6.5	3.0	4.5	1.5	.0	.5	---	---	---
8	6.0	2.5	4.0	3.0	.5	1.5	.0	.0	.0	---	---	---
9	7.0	4.0	5.5	2.5	.0	1.0	.5	.0	.0	---	---	---
10	6.5	4.0	5.0	3.5	1.5	2.5	.0	.0	.0	---	---	---
11	5.5	2.5	4.0	3.5	2.0	3.0	.5	.0	.0	---	---	---
12	5.0	1.5	3.0	2.5	.5	1.5	.5	.0	.0	---	---	---
13	5.5	1.5	3.5	2.0	.5	1.5	.5	.0	.0	---	---	---
14	6.0	2.0	4.0	2.0	.5	1.0	.5	.0	.0	---	---	---
15	6.5	2.5	4.5	1.5	.0	.5	---	---	---	---	---	---
16	7.0	3.0	5.0	.5	.0	.0	---	---	---	1.0	.0	.5
17	7.0	3.0	5.0	3.0	.0	1.0	.5	.0	.0	2.0	1.0	1.5
18	6.5	3.0	4.5	1.5	.0	.5	.5	.0	.0	2.0	.0	1.0
19	6.5	2.5	4.5	3.5	1.5	2.5	.5	.0	.0	.0	.0	.0
20	6.0	2.5	4.0	3.0	1.0	2.0	.5	.0	.0	.0	.0	.0
21	6.5	2.5	4.0	3.5	1.0	2.0	---	---	---	.0	.0	.0
22	6.0	2.5	4.0	4.0	1.5	2.5	---	---	---	.5	.0	.0
23	7.0	4.0	5.0	4.5	2.5	3.5	.5	.0	.0	1.0	.0	.5
24	4.5	1.5	3.5	3.0	1.0	2.0	---	---	---	1.5	.0	.5
25	3.5	.5	2.0	3.0	1.0	2.0	---	---	---	.5	.0	.0
26	3.5	.0	1.5	2.5	.5	1.5	---	---	---	1.5	.0	.5
27	4.0	.5	2.0	2.5	.5	1.5	---	---	---	3.0	.5	1.5
28	3.0	.0	1.5	1.5	.0	.5	1.0	.0	.0	2.5	.0	1.0
29	4.5	1.0	3.0	1.5	.0	.5	.5	.0	.0	1.0	.0	.5
30	5.5	2.0	3.5	2.0	.0	1.0	.5	.0	.0	.5	.0	.0
31	6.0	2.5	4.0	---	---	---	.0	.0	.0	.5	.0	.0
MONTH	12.0	.0	4.6	6.5	.0	2.0	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.0	.0	.0	2.5	.0	1.0	2.5	.5	1.5	7.5	2.5	5.0
2	.0	.0	.0	3.5	.0	1.5	5.0	1.0	2.5	6.5	3.5	4.5
3	1.0	.0	.5	4.0	.5	2.0	4.0	1.5	2.5	5.5	3.0	4.0
4	2.0	.0	.5	1.5	.0	.5	4.0	1.0	2.0	6.5	3.0	4.5
5	1.0	.0	.5	.5	.0	.0	4.0	1.0	2.0	4.5	2.5	3.5
6	1.5	.5	1.0	.0	.0	.0	3.5	1.0	2.0	3.0	2.0	2.5
7	1.0	.0	.5	.5	.0	.0	5.0	1.0	2.0	5.5	2.5	4.0
8	.5	.0	.0	1.0	.0	.5	5.0	.5	2.0	6.5	3.5	4.5
9	.5	.0	.0	2.0	.0	.5	6.0	1.5	3.0	7.0	3.0	4.5
10	.0	.0	.0	3.5	.0	1.0	4.5	1.5	2.5	6.5	2.0	4.0
11	.5	.0	.0	4.0	.5	2.0	3.0	1.5	2.0	5.5	2.0	3.5
12	.5	.0	.0	3.5	.5	2.0	3.5	.5	2.0	4.0	2.0	3.0
13	1.5	.0	.5	3.0	1.0	1.5	1.5	.0	.5	4.0	2.0	3.0
14	1.0	.0	.5	5.5	1.0	2.5	4.0	.0	1.0	6.0	2.5	4.0
15	.5	.0	.0	5.0	1.0	2.5	4.0	.0	1.5	7.5	2.0	4.5
16	.0	.0	.0	5.0	1.5	2.5	5.0	.0	2.0	5.0	2.0	2.5
17	.5	.0	.0	5.0	.5	2.5	6.0	.0	2.5	6.5	1.0	3.5
18	.5	.0	.0	5.0	1.0	2.5	6.5	1.0	3.5	7.5	2.0	4.5
19	.5	.0	.0	5.0	1.0	2.5	7.5	1.5	4.0	8.0	2.5	5.0
20	.5	.0	.0	5.5	1.0	3.0	7.5	1.5	4.0	7.0	3.0	5.0
21	.5	.0	.0	5.0	1.0	3.0	8.0	2.0	4.5	4.5	2.5	3.5
22	.5	.0	.0	4.0	1.5	2.5	6.0	2.0	4.0	8.0	2.0	5.0
23	.0	.0	.0	3.5	1.0	2.5	4.5	2.5	3.5	5.5	3.0	4.5
24	1.0	.0	.0	1.0	.0	.5	6.0	2.0	3.5	8.5	2.5	5.5
25	.5	.0	.0	2.0	.5	1.5	6.5	2.0	4.0	6.0	3.5	4.5
26	.5	.0	.0	4.0	1.5	2.5	7.0	1.5	4.0	3.5	2.0	3.0
27	1.0	.0	.0	3.0	.5	2.0	7.0	2.0	4.5	5.5	2.0	3.5
28	1.0	.0	.5	3.0	.5	1.0	7.5	2.0	4.5	8.5	3.5	5.0
29	---	---	---	1.5	.5	1.0	8.0	2.0	4.5	6.5	2.0	4.0
30	---	---	---	3.5	.0	1.0	7.5	2.5	4.5	8.0	2.0	5.0
31	---	---	---	2.5	1.0	1.5	---	---	---	9.0	3.5	6.0
MONTH	2.0	.0	.2	5.5	.0	1.6	8.0	.0	2.9	9.0	1.0	4.2

10336775 TROUT CREEK AT PIONEER TRAIL, NEAR SOUTH LAKE TAHOE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.5	3.5	6.0	9.5	5.0	7.5	13.0	7.5	10.0	15.0	9.5	12.0
2	6.5	4.0	5.0	10.0	6.0	8.5	14.0	8.5	11.0	15.0	9.5	12.0
3	6.5	3.5	5.0	10.0	5.5	8.0	14.5	9.0	11.5	13.5	9.0	11.0
4	9.0	4.0	6.0	10.5	6.0	8.5	14.5	9.0	11.5	13.0	10.0	11.5
5	7.0	3.5	5.5	10.0	6.5	8.5	15.0	9.5	12.0	15.0	10.5	12.0
6	7.0	4.0	5.5	---	---	---	15.0	10.0	12.5	13.5	10.5	12.0
7	8.0	4.0	5.5	---	---	---	15.5	10.5	12.5	14.5	10.0	12.0
8	7.5	4.0	5.5	---	---	---	14.0	8.0	11.0	13.0	9.5	11.0
9	8.0	3.5	5.5	---	---	---	14.0	8.5	11.0	12.0	9.5	11.0
10	5.5	4.0	4.5	11.0	7.0	9.0	14.5	8.5	11.0	11.0	7.0	9.0
11	5.5	4.0	4.5	10.5	6.5	9.0	14.5	9.0	11.5	12.0	7.0	9.0
12	7.5	4.0	5.5	11.5	7.0	9.5	15.0	10.0	12.5	12.5	8.0	10.0
13	8.5	4.0	6.0	11.5	7.5	9.5	14.0	10.0	12.0	13.0	8.0	10.5
14	9.0	4.0	6.0	11.0	7.0	9.0	13.5	10.5	12.0	13.5	8.5	10.5
15	8.5	4.0	6.0	11.5	6.5	9.0	15.0	9.5	12.0	12.5	9.0	10.5
16	8.5	4.0	6.0	12.5	8.0	10.5	15.0	9.5	12.0	14.0	8.5	11.0
17	8.5	3.0	5.5	13.5	9.0	11.0	14.5	9.0	11.5	13.5	9.0	11.0
18	9.0	4.0	6.5	13.5	9.0	11.0	12.5	7.5	10.0	12.5	8.5	10.0
19	9.0	4.5	6.5	13.5	9.0	11.0	13.5	8.5	10.5	11.0	6.5	8.5
20	8.0	4.5	6.5	13.0	9.0	11.0	13.0	8.0	10.0	10.0	6.5	8.0
21	8.0	4.5	6.0	13.5	9.5	11.5	12.5	7.0	9.5	10.0	6.0	8.0
22	9.0	4.0	6.5	12.0	11.0	11.5	12.5	6.5	9.5	9.0	5.5	7.5
23	8.0	3.5	6.0	11.5	10.0	11.0	13.0	7.0	10.0	9.0	6.5	7.5
24	9.0	4.0	6.5	11.0	9.5	10.5	13.0	7.5	10.0	10.0	6.5	8.0
25	8.5	5.5	7.0	13.5	9.0	11.0	13.5	7.5	10.0	8.5	6.0	7.0
26	9.0	4.0	6.5	12.0	9.0	10.5	13.0	7.5	10.0	8.5	6.5	7.0
27	9.5	4.5	7.0	12.5	8.5	10.5	13.5	8.0	10.5	7.5	5.5	6.0
28	10.0	5.0	7.5	13.5	9.0	11.0	14.5	8.5	11.0	8.0	4.5	6.0
29	10.0	5.0	7.5	14.0	9.0	11.5	15.5	9.5	12.0	8.5	5.5	7.0
30	10.0	5.0	7.5	12.5	8.5	10.5	16.0	10.0	12.5	9.5	6.5	7.5
31	---	---	---	12.0	7.5	9.5	15.0	10.0	12.0	---	---	---
MONTH	10.0	3.0	6.0	---	---	---	16.0	6.5	11.1	15.0	4.5	9.5

10336779 COLD CREEK AT MOUTH, CA

LOCATION.—Lat 38°54'44", long 119°58'06", in SE $^1/_4$ SE$^1/_4$ sec.03, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on left bank, 600 ft upstream of mouth, about 0.5 mi downstream from Pioneer Trail Road, south of South Lake Tahoe, CA.

DRAINAGE AREA.—not determined.

PERIOD OF RECORD.—September 1996 to current year.

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water temperature recorder since September 1997, two times per hour.

REMARKS.—In September 1996, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor streamflows and water temperature within the Upper Truckee River–Trout Creek watershed. Records represent water temperature at probe within 0.5°C. Interruptions in record due to loss of hydrologic communication with stream channel and instrument malfunction. Water temperature data for September 1997 were not published but are available from the U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum, 13.5°C, Aug. 30, 1998; minimum, freezing point on many days during winter months in most years.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum, 13.5°C, Aug. 30; minimum, freezing point, many days November to April.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.5	7.5	9.5	6.5	3.5	4.5	4.0	1.5	2.5	3.5	2.0	2.5
2	10.5	7.0	9.0	5.5	2.5	4.0	2.0	.0	1.0	2.5	.5	1.5
3	8.5	5.0	7.0	6.0	3.0	4.5	2.0	.0	1.0	2.0	.5	1.0
4	9.5	5.5	7.0	5.5	3.0	4.5	2.5	.5	1.5	.5	.0	.0
5	9.5	5.5	7.0	5.5	2.5	4.0	2.0	1.0	1.5	.0	.0	.0
6	8.0	5.0	6.0	6.5	3.0	4.5	2.5	2.0	2.0	.0	.0	.0
7	7.0	4.0	5.0	6.0	3.0	4.5	2.5	1.0	2.0	2.0	.0	1.0
8	5.5	3.0	4.5	3.5	1.0	2.0	1.0	.0	.5	2.0	.0	1.0
9	7.0	5.0	5.5	3.5	1.0	2.5	1.0	.0	.0	3.0	1.5	2.0
10	7.0	4.0	5.0	4.0	2.5	3.5	.0	.0	.0	3.5	2.0	2.5
11	5.0	3.0	4.0	4.0	2.5	3.5	.0	.0	.0	3.0	1.5	2.0
12	5.0	2.0	3.5	3.5	1.5	2.5	.0	.0	.0	2.5	.5	2.0
13	5.5	2.5	4.0	3.0	1.5	2.0	1.0	.0	.5	2.0	1.0	1.5
14	6.0	3.0	4.5	3.0	1.0	2.0	2.5	1.0	1.5	2.5	1.0	1.5
15	7.0	3.5	5.0	2.5	.5	1.5	1.0	.0	.5	2.5	2.0	2.0
16	7.5	4.0	5.5	2.0	.0	1.0	2.5	.5	1.5	4.0	2.5	3.0
17	7.0	4.0	5.5	3.5	1.0	2.0	3.0	1.5	2.0	4.0	2.0	3.0
18	7.0	3.5	5.0	2.5	1.0	2.0	3.0	.5	1.5	3.5	.0	1.5
19	6.5	3.5	5.0	4.0	2.5	3.0	1.0	.0	.5	1.5	.0	1.0
20	6.5	3.0	4.5	3.0	1.5	2.5	1.5	.0	.5	1.5	.0	1.0
21	7.0	3.5	5.0	4.0	2.0	3.0	.5	.0	.0	1.0	.0	.5
22	6.5	3.0	4.5	4.5	2.5	3.5	.0	.0	.0	2.5	.5	1.5
23	7.0	4.5	5.5	5.0	3.0	4.0	.0	.0	.0	3.0	1.5	2.0
24	5.0	2.0	3.5	3.5	2.0	2.5	.5	.0	.0	2.5	1.0	1.5
25	4.5	1.0	2.5	3.5	2.0	2.5	.0	.0	.0	2.5	.5	1.0
26	4.5	1.0	2.5	3.0	2.0	2.0	.0	.0	.0	3.0	1.0	1.5
27	4.5	2.0	3.0	3.0	1.5	2.0	.5	.0	.0	4.0	2.0	2.5
28	4.0	1.5	2.5	2.5	.5	1.5	1.5	.5	1.0	3.5	1.0	2.0
29	5.5	2.0	3.5	2.5	1.0	1.5	2.0	1.0	1.5	2.5	.5	1.5
30	6.0	3.0	4.5	3.0	1.5	2.0	2.5	1.0	1.5	1.5	.0	.5
31	7.0	4.0	5.0	---	---	---	3.0	2.0	2.5	2.5	.5	1.5
MONTH	11.5	1.0	5.0	6.5	.0	2.8	4.0	.0	.9	4.0	.0	1.5

10336779 COLD CREEK AT MOUTH, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2.0	.5	1.0	4.0	1.0	2.0	4.0	1.0	2.0	8.5	3.0	5.5
2	2.0	1.0	1.5	4.0	1.5	2.5	6.0	1.5	3.5	7.5	4.0	5.0
3	3.0	1.5	2.0	4.5	1.5	2.5	5.0	2.0	3.0	6.5	3.0	4.5
4	3.0	1.0	1.5	3.0	.0	1.0	5.5	1.0	3.0	6.0	3.5	4.5
5	2.0	.5	1.0	2.5	.0	1.0	5.5	1.5	3.0	6.5	3.0	4.0
6	2.5	1.0	2.0	2.0	.0	.5	4.5	1.5	2.5	3.5	2.5	3.0
7	2.5	.0	1.5	1.5	.0	.5	4.5	1.5	2.5	6.5	3.0	4.5
8	2.0	.0	.5	4.0	1.0	2.0	6.0	1.0	3.0	7.5	4.0	5.0
9	2.0	.0	1.0	4.0	.0	1.5	7.0	2.5	4.0	7.5	3.5	5.0
10	1.5	.5	.5	4.5	.5	2.0	5.5	2.0	3.5	7.0	2.5	4.5
11	3.0	1.0	1.5	5.0	1.5	3.0	4.0	2.0	3.0	6.5	2.5	4.0
12	2.5	1.0	1.5	4.5	1.5	2.5	5.0	1.5	2.5	4.0	2.5	3.0
13	4.0	1.5	2.5	3.5	2.5	2.5	3.0	.5	1.5	4.5	2.0	3.0
14	2.5	.5	1.5	5.5	2.5	3.5	4.0	.5	2.0	5.5	2.5	4.0
15	2.5	.0	1.0	6.0	2.0	3.5	5.5	.5	2.5	8.5	2.5	5.0
16	1.0	.0	.5	6.0	2.5	3.5	6.5	.5	3.0	4.5	2.0	3.0
17	2.5	.5	1.5	5.5	1.5	3.0	7.5	1.0	3.5	7.5	1.5	4.0
18	2.5	.0	1.0	5.5	1.5	3.0	7.5	2.0	4.5	9.0	2.5	5.5
19	2.5	1.5	1.5	6.0	1.5	3.5	8.5	2.5	5.0	9.0	3.0	5.5
20	2.5	.0	1.0	6.0	2.0	3.5	9.0	2.5	5.0	7.5	3.0	5.0
21	1.5	.0	1.0	6.0	2.0	3.5	9.0	2.5	5.5	4.5	2.5	3.5
22	2.5	.5	1.5	4.5	2.5	3.5	7.5	3.0	5.0	9.0	2.5	5.5
23	1.5	.0	.5	5.0	2.5	3.5	5.5	3.5	4.5	6.5	3.0	5.0
24	1.5	.0	.5	2.5	.5	1.5	7.0	2.5	4.5	10.0	3.0	6.0
25	2.0	.0	1.0	3.5	1.0	2.5	7.5	2.5	4.5	6.0	3.5	5.0
26	2.5	.0	1.5	5.0	2.5	3.5	8.0	2.5	4.5	4.5	2.0	3.0
27	3.5	1.0	2.0	4.0	1.0	2.5	8.5	2.5	5.0	6.0	2.0	3.5
28	4.0	1.0	2.0	3.5	1.0	1.5	9.0	2.5	5.5	9.0	3.5	5.5
29	---	---	---	2.5	.5	1.5	9.0	3.0	5.5	7.0	2.0	4.5
30	---	---	---	4.5	.0	2.0	8.5	3.0	5.5	9.5	2.5	5.5
31	---	---	---	3.5	1.5	2.5	---	---	---	10.5	3.5	6.5
MONTH	4.0	.0	1.3	6.0	.0	2.4	9.0	.5	3.8	10.5	1.5	4.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.0	4.0	7.0	12.0	5.0	9.0	12.0	7.0	9.5	13.0	9.0	11.0
2	7.5	4.5	6.0	12.5	6.5	9.5	12.5	7.5	10.5	13.0	9.0	11.0
3	6.5	4.0	5.5	12.0	5.5	9.0	12.5	8.0	10.5	12.5	9.0	11.0
4	10.0	4.5	7.0	12.5	6.0	9.5	13.0	8.0	10.5	12.5	10.0	11.5
5	9.0	4.0	6.5	12.5	6.5	9.5	13.0	8.5	11.0	13.5	10.0	12.0
6	9.0	5.0	6.5	---	---	---	13.0	9.0	11.5	12.0	10.5	11.5
7	10.0	4.5	7.0	---	---	---	13.0	9.5	11.0	13.0	9.5	11.5
8	9.0	4.5	6.5	---	---	---	11.5	7.0	10.0	11.5	9.0	10.5
9	10.0	4.5	7.0	---	---	---	11.5	7.0	9.5	11.0	9.0	10.5
10	7.0	5.0	5.5	12.0	6.5	9.5	12.0	7.5	10.0	9.5	6.0	8.0
11	6.5	5.0	5.5	12.0	6.0	9.0	12.5	8.5	10.5	11.0	7.0	9.0
12	10.0	4.5	7.0	13.0	6.5	9.5	12.5	9.0	11.0	11.0	7.5	9.5
13	10.0	5.0	7.5	12.5	7.0	10.0	13.0	9.5	11.0	12.0	8.5	10.5
14	11.5	5.0	8.0	12.0	6.0	9.5	12.0	9.5	11.0	12.0	8.5	10.0
15	11.0	5.0	7.5	12.5	6.0	9.5	13.0	8.5	11.0	11.0	9.0	10.0
16	11.0	5.0	7.5	13.5	7.5	10.5	12.5	8.5	11.0	12.0	8.5	10.0
17	11.0	3.5	7.0	14.0	8.0	11.0	11.5	8.0	10.0	12.0	9.0	10.5
18	11.5	5.0	8.0	13.5	8.0	11.0	10.5	6.5	9.0	11.0	7.5	9.0
19	11.5	5.0	8.0	13.5	7.5	11.0	11.0	8.0	9.5	9.5	6.0	8.0
20	11.0	5.0	8.0	13.5	7.5	11.0	11.0	7.0	9.0	9.5	6.5	8.0
21	10.5	5.5	8.0	13.0	8.0	11.0	11.0	6.5	9.0	9.0	5.5	7.5
22	11.5	5.0	8.0	12.0	9.5	10.5	10.5	6.0	9.0	9.0	6.0	7.5
23	10.5	4.0	7.5	11.5	9.0	10.5	11.0	7.0	9.5	8.5	6.5	7.5
24	11.5	5.0	8.0	10.5	8.5	9.5	11.0	7.0	9.5	8.5	6.5	7.5
25	11.5	6.5	8.5	12.5	8.0	10.0	11.0	7.5	9.5	8.0	6.0	7.0
26	11.0	4.5	8.0	11.5	7.5	10.0	11.0	7.0	9.5	8.5	5.0	6.5
27	12.0	5.0	8.5	12.0	7.5	10.0	11.5	7.5	10.0	6.0	5.0	5.5
28	12.0	5.5	9.0	12.5	8.0	10.0	12.5	8.0	10.5	8.0	5.0	6.0
29	12.5	5.5	9.0	12.5	7.5	10.5	13.0	9.0	11.5	7.5	4.5	6.0
30	12.0	5.5	9.0	11.0	7.0	9.0	13.5	9.5	12.0	9.0	6.0	7.5
31	---	---	---	11.0	6.0	8.5	13.0	9.0	11.0	---	---	---
MONTH	12.5	3.5	7.4	---	---	---	13.5	6.0	10.3	13.5	4.5	9.1

10336780 TROUT CREEK NEAR TAHOE VALLEY, CA

LOCATION.—Lat 38°55'12", long 119°58'17", in NW 1/4 SE 1/4 sec.3, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on left bank 5 ft upstream from Martin Avenue Bridge, 500 ft upstream from Heavenly Valley Creek, and 1.8 mi east of Tahoe Valley.

DRAINAGE AREA.—36.7 mi^2.

PERIOD OF RECORD.—October 1960 to current year.
SPECIFIC CONDUCTANCE: March 1981 to September 1983.
WATER TEMPERATURE: October 1971 to June 1974, October 1977 to June 1978, March 1980 to September 1985, October 1987 to September 1988.
SUSPENDED-SEDIMENT DISCHARGE: October 1971 to June 1974, October 1977 to June 1978, March 1980 to September 1985, October 1987 to September 1988.

GAGE.—Water-stage recorder. Datum of gage is 6,241.57 ft above sea level.

REMARKS.—Records good. Minor diversions for local water supply upstream from station. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 535 ft^3/s, Feb. 1, 1963, gage height, 11.14 ft, and Jan. 2, 1997, gage height, 9.33 ft, from rating curve extended above 250 ft^3/s on basis of computation of peak flow (weir formula); minimum daily, 2.5 ft^3/s, Sept. 7, 1988.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 24	1430	217	8.13	June 22	0215	229	8.21

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	21	19	19	21	e23	42	95	88	200	78	34
2	20	21	18	19	e21	e23	40	97	93	198	75	33
3	21	21	e18	19	e30	e23	39	95	92	199	72	33
4	19	20	19	e19	e25	e23	37	91	92	192	69	35
5	19	21	19	e19	e21	e23	36	90	95	189	67	35
6	20	21	19	e19	e22	e23	35	100	108	188	65	36
7	20	20	18	e19	e22	e23	33	92	166	182	63	35
8	20	20	21	e19	e22	e23	33	95	132	178	60	33
9	22	20	e22	19	e22	e21	36	97	131	175	59	43
10	21	21	e22	19	e22	19	38	88	136	169	58	36
11	21	21	e21	19	e23	20	36	83	139	158	56	33
12	21	21	e20	23	e23	21	34	80	144	150	55	35
13	21	20	e19	22	e23	20	33	77	168	143	53	33
14	21	20	19	21	e23	21	32	72	168	136	52	32
15	21	19	e19	42	e23	23	32	71	180	131	53	31
16	21	21	19	38	e24	25	32	75	190	125	49	31
17	21	20	19	42	e24	26	33	70	184	121	47	30
18	21	20	18	32	e24	27	37	69	186	115	46	e29
19	21	21	e18	32	e24	28	44	73	200	110	45	e30
20	21	20	e18	30	e23	30	53	74	206	108	44	e31
21	21	20	e18	28	e23	33	63	71	209	108	43	e29
22	21	20	e18	24	e23	47	73	69	210	107	42	e29
23	21	20	e18	23	e23	77	77	72	206	108	41	e29
24	21	19	e18	23	e23	183	68	74	196	104	40	30
25	21	20	e19	e23	e23	121	65	84	206	101	39	30
26	21	e20	e19	22	e23	82	65	76	207	94	39	31
27	21	21	e19	22	e23	69	71	69	200	92	38	35
28	21	20	e19	22	e23	60	77	67	202	89	37	32
29	21	20	e19	21	---	52	84	71	206	86	37	34
30	21	19	19	e21	---	51	91	71	206	84	36	32
31	21	---	18	21	---	45	---	80	---	81	35	---
TOTAL	643	608	589	741	646	1285	1469	2488	4946	4221	1593	979
MEAN	20.7	20.3	19.0	23.9	23.1	41.5	49.0	80.3	165	136	51.4	32.6
MAX	22	21	22	42	30	183	91	100	210	200	78	43
MIN	19	19	18	19	21	19	32	67	88	81	35	29
AC-FT	1280	1210	1170	1470	1280	2550	2910	4930	9810	8370	3160	1940

e Estimated.

10336780 TROUT CREEK NEAR TAHOE VALLEY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998, BY WATER YEAR (WY)

MEAN	17.1	19.6	21.2	24.8	25.2	30.4	43.9	79.0	94.1	51.1	24.6	17.6
MAX	37.6	61.1	64.0	115	68.7	85.0	81.9	184	286	188	88.7	49.6
(WY)	1983	1984	1984	1997	1986	1986	1982	1969	1983	1995	1983	1983
MIN	5.19	7.43	8.18	8.00	8.02	11.0	15.7	14.2	10.9	5.21	3.43	3.71
(WY)	1989	1978	1991	1991	1991	1977	1988	1988	1988	1988	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998	
ANNUAL TOTAL	21826		20208			
ANNUAL MEAN	59.8		55.4		37.4	
HIGHEST ANNUAL MEAN					85.3	1983
LOWEST ANNUAL MEAN					10.2	1977
HIGHEST DAILY MEAN	501	Jan 2	210	Jun 22	501	Jan 2 1997
LOWEST DAILY MEAN	18	Dec 2	18	Dec 2	2.5	Sep 7 1988
ANNUAL SEVEN-DAY MINIMUM	18	Dec 18	18	Dec 18	3.0	Sep 9 1977
INSTANTANEOUS PEAK FLOW			229	Jun 22	535	Feb 1 1963
INSTANTANEOUS PEAK STAGE			8.21	Jun 22	11.14	Feb 1 1963
ANNUAL RUNOFF (AC-FT)	43290		40080		27100	
10 PERCENT EXCEEDS	124		136		85	
50 PERCENT EXCEEDS	50		32		22	
90 PERCENT EXCEEDS	20		19		8.8	

10336780 TROUT CREEK NEAR TAHOE VALLEY, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1974, 1978, 1980–85, 1988, 1997 to current year.

PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: March 1981 to September 1983.
WATER TEMPERATURE: September 1997 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1971 to June 1974, October 1977 to June 1978, March 1980 to September 1985, October 1987 to September 1988.

INSTRUMENTATION.—Water-temperature recorder since September 1997 to current year, two times per hour.

REMARKS.—In October 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. Water-temperature records represent water temperature probe within 0.5°C. Interruptions in record due to loss of hydrologic with stream channel and(or) instrument malfunction. Water-temperature data for September 1997 were not published but are available from the U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: March 1981 to September 1983.
WATER TEMPERATURE: Maximum, 20.5°C, July 25, 1988; minimum, freezing point on many days during winter months in most years.
SUSPENDED-SEDIMENT DISCHARGE: October 1971 to June 1974, October 1977 to June 1978, March 1980 to September 1985, October 1987 to September 1988.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum, 16.0°C, Aug. 30; minimum, freezing point, many days November to May.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.5	7.0	9.5	6.5	3.0	4.5	4.0	1.0	2.0	1.5	1.0	1.0
2	12.0	8.5	10.0	6.0	2.0	4.0	1.5	.0	1.0	1.0	.5	1.0
3	10.0	5.0	7.5	5.5	2.5	4.0	1.0	.0	.5	1.0	.5	.5
4	10.0	5.0	7.5	6.0	3.0	4.0	1.5	.5	1.0	.5	.0	.5
5	10.0	5.0	7.5	5.5	2.0	4.0	1.0	.5	.5	.5	.0	.0
6	8.5	5.0	6.5	6.0	2.5	4.0	1.5	1.0	1.5	.5	.0	.0
7	8.0	4.5	5.5	6.5	3.5	4.5	1.5	.5	1.0	.5	.0	.0
8	6.0	3.0	4.5	3.5	.5	2.0	.5	.0	.5	.5	.0	.5
9	7.5	4.5	5.5	3.0	.5	1.5	.5	.0	.5	1.5	.5	1.0
10	7.5	4.5	5.5	3.5	2.0	3.0	.5	.0	.0	1.5	1.0	1.0
11	5.5	3.5	4.5	4.0	2.5	3.0	.5	.0	.0	1.5	1.0	1.0
12	6.0	1.5	3.5	4.0	1.0	2.5	.0	.0	.0	1.0	.5	1.0
13	6.5	2.0	4.0	2.5	1.0	1.5	.5	.0	.0	1.0	.5	.5
14	6.5	2.5	4.5	2.5	.5	1.5	1.0	.5	.5	1.0	.5	1.0
15	7.5	3.0	5.0	1.5	.5	1.0	.5	.5	.5	1.0	1.0	1.0
16	8.0	3.5	5.5	1.0	.0	.5	1.5	.5	.5	1.5	1.0	1.0
17	7.5	3.5	5.5	3.0	.5	1.5	1.5	1.0	1.0	2.5	1.5	1.5
18	7.5	3.5	5.0	1.5	.5	1.0	1.5	.5	1.0	2.0	.5	1.5
19	7.0	3.0	5.0	4.0	1.5	3.0	.5	.5	.5	.5	.5	.5
20	6.5	3.0	4.5	3.0	1.5	2.0	1.0	.5	.5	1.0	.5	.5
21	7.0	3.0	5.0	4.0	1.5	2.5	.5	.0	.0	1.0	.0	.5
22	6.5	3.0	4.5	4.0	1.5	3.0	.5	.0	.0	1.5	.0	.5
23	7.5	4.0	5.5	5.0	2.5	3.5	.5	.0	.0	2.5	.5	1.0
24	5.5	2.5	4.0	3.5	1.5	2.5	.0	.0	.0	2.5	.0	1.0
25	4.5	1.0	2.5	3.5	1.5	2.5	.0	.0	.0	1.5	.0	.5
26	4.5	.5	2.5	2.5	1.5	2.0	.0	.0	.0	1.5	.0	1.0
27	4.5	1.5	2.5	3.0	1.5	2.0	.0	.0	.0	4.5	1.0	2.0
28	4.0	1.0	2.0	2.5	.5	1.5	.5	.0	.0	3.5	.5	1.5
29	5.0	1.5	3.0	2.0	.5	1.0	1.0	.5	.5	1.5	.0	1.0
30	6.5	2.5	4.0	2.5	.5	1.5	1.5	.5	.5	1.0	.0	.0
31	7.0	3.0	5.0	---	---	---	1.5	1.0	1.0	1.5	.0	.5
MONTH	12.5	.5	5.1	6.5	.0	2.5	4.0	.0	.5	4.5	.0	.8

10336780 TROUT CREEK NEAR TAHOE VALLEY, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.5	.0	.0	3.0	.0	1.5	3.0	.5	1.5	8.0	3.0	5.5
2	1.0	.0	.5	4.5	.5	2.0	6.0	1.0	3.0	7.0	3.5	5.0
3	1.5	.5	1.0	5.5	1.0	2.5	4.5	1.5	3.0	6.0	3.0	4.5
4	2.5	.0	1.0	3.5	.0	1.0	5.5	1.0	2.5	6.5	3.5	4.5
5	1.5	.0	.5	1.0	.0	.5	5.5	1.5	3.0	5.5	3.0	4.0
6	2.0	.5	1.5	1.0	.0	.0	4.5	1.0	2.5	3.5	2.0	2.5
7	1.5	.0	.5	.5	.0	.0	4.5	1.0	2.5	6.0	3.0	4.0
8	.0	.0	.0	4.0	.5	1.0	5.5	.5	2.5	7.0	3.5	5.0
9	1.5	.0	.5	3.0	.0	1.0	6.5	1.5	3.5	7.5	3.5	5.0
10	.5	.0	.0	4.0	.0	1.5	5.5	1.5	3.0	6.5	2.5	4.5
11	2.0	.0	.5	5.0	.5	2.5	3.5	1.5	2.5	5.5	2.0	4.0
12	1.5	.0	.5	4.0	.5	2.5	4.5	1.0	2.5	4.0	2.5	3.0
13	3.5	.5	1.5	3.0	1.5	2.0	2.5	.0	1.0	4.5	1.5	3.0
14	1.5	.0	.5	6.0	1.5	3.0	3.5	.0	1.5	6.0	2.5	4.0
15	2.0	.0	.5	6.5	1.5	3.5	5.0	.0	2.0	8.5	2.5	5.0
16	.0	.0	.0	6.5	1.5	3.5	6.5	.0	3.0	5.0	2.0	3.0
17	1.5	.0	.5	6.5	.5	3.0	7.5	.5	3.5	7.5	1.5	4.0
18	2.0	.0	.5	6.0	1.0	3.0	8.0	1.5	4.0	8.5	2.0	5.0
19	1.5	.5	.5	6.5	1.0	3.0	9.0	2.0	5.0	9.0	3.0	5.5
20	1.5	.0	.5	6.5	1.5	3.5	9.0	2.0	5.0	8.0	3.0	5.5
21	.5	.0	.0	6.5	1.5	3.5	9.0	2.0	5.0	5.0	2.5	3.5
22	1.0	.0	.5	4.5	2.0	3.0	6.5	2.5	4.5	9.0	2.0	5.0
23	.5	.0	.0	4.5	1.5	2.5	5.0	3.0	4.0	6.5	3.5	5.0
24	.0	.0	.0	1.5	.0	.5	6.5	2.5	4.0	9.0	3.0	6.0
25	1.0	.0	.5	2.5	.5	1.5	7.5	2.0	4.5	6.5	3.5	5.0
26	1.5	.0	.5	4.5	1.5	3.0	8.0	2.0	4.5	4.5	2.0	3.0
27	3.0	.5	1.0	3.5	.5	2.0	8.0	2.5	5.0	5.5	2.0	3.5
28	3.5	.0	1.0	3.5	.0	1.5	8.5	2.5	5.0	9.0	3.5	5.5
29	---	---	---	2.0	.5	1.0	8.5	2.5	5.0	7.0	2.0	4.5
30	---	---	---	4.0	.0	1.5	8.0	2.5	5.0	8.5	2.5	5.5
31	---	---	---	3.0	1.0	2.0	---	---	---	9.5	3.5	6.5
MONTH	3.5	.0	.5	6.5	.0	2.0	9.0	.0	3.5	9.5	1.5	4.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.0	4.0	6.5	10.5	5.5	8.0	13.5	7.5	10.5	15.5	9.5	12.0
2	7.0	4.5	5.5	11.0	6.5	9.0	14.0	8.0	11.0	15.0	9.0	12.0
3	6.5	4.0	5.0	10.5	5.5	8.5	14.5	8.5	11.5	14.5	9.0	11.5
4	9.5	4.0	6.5	11.0	6.5	9.0	14.5	8.5	11.5	13.5	10.0	11.5
5	8.0	4.0	6.0	11.0	6.5	9.0	14.5	9.5	12.0	16.0	10.5	12.5
6	8.0	4.5	6.0	---	---	---	15.0	9.5	12.0	13.5	10.5	12.0
7	9.0	4.5	6.5	---	---	---	15.0	10.0	12.5	15.5	10.0	12.0
8	8.0	4.0	6.0	---	---	---	13.5	8.0	11.0	13.5	9.5	11.0
9	9.0	4.0	6.5	---	---	---	13.5	8.0	10.5	12.0	9.5	11.0
10	6.5	4.5	5.0	11.5	7.0	9.5	14.0	8.0	11.0	11.5	6.5	9.0
11	6.0	4.5	5.0	11.5	6.5	9.0	14.5	9.0	11.5	12.5	7.0	9.5
12	9.0	4.5	6.0	12.0	7.0	9.5	15.0	9.5	12.0	13.0	8.0	10.0
13	9.5	4.5	6.5	12.0	7.5	10.0	13.5	10.0	12.0	14.0	8.5	10.5
14	10.0	4.5	7.0	12.0	7.0	9.5	13.5	10.5	12.0	14.0	8.5	11.0
15	9.0	4.5	6.5	12.0	6.5	9.5	15.0	9.0	12.0	12.5	9.0	10.5
16	9.5	4.5	7.0	13.0	8.0	10.5	14.5	9.0	11.5	14.0	8.5	11.0
17	9.0	3.5	6.0	14.0	9.0	11.5	14.0	8.5	11.0	14.0	9.0	11.0
18	10.0	4.5	7.0	14.0	9.0	11.5	12.5	7.5	10.0	13.0	8.0	10.0
19	10.0	4.5	7.0	14.0	9.0	11.5	13.0	8.5	10.5	11.5	6.0	8.5
20	9.0	4.5	7.0	13.5	9.0	11.5	13.0	7.5	10.0	11.5	6.5	8.5
21	9.0	5.0	7.0	13.5	9.0	11.5	12.5	6.5	9.5	11.0	6.0	8.0
22	10.0	4.5	7.0	12.0	10.5	11.0	12.5	6.5	9.5	10.0	5.5	7.5
23	9.0	4.0	6.5	12.0	10.0	11.0	13.0	7.0	10.0	9.5	6.5	8.0
24	9.5	4.5	7.0	11.0	9.0	10.0	13.5	7.0	10.0	9.5	6.5	8.0
25	10.0	5.5	7.5	13.5	8.5	11.0	13.5	7.5	10.0	8.5	6.0	7.0
26	9.5	4.5	7.0	12.0	8.5	10.5	13.0	7.5	10.0	9.0	6.0	7.0
27	10.5	4.5	7.5	13.0	8.5	10.5	14.0	7.5	10.5	7.5	5.5	6.0
28	10.5	5.5	8.0	13.5	8.5	11.0	14.5	8.5	11.5	9.0	4.5	6.5
29	10.5	5.5	8.0	14.0	8.5	11.0	15.5	9.5	12.0	9.0	4.5	6.5
30	10.5	5.5	8.0	12.5	8.0	10.0	16.0	10.0	12.5	10.0	6.0	8.0
31	---	---	---	11.5	7.0	9.5	15.5	9.5	12.0	---	---	---
MONTH	10.5	3.5	6.6	---	---	---	16.0	6.5	11.1	16.0	4.5	9.6

10336790 TROUT CREEK AT SOUTH LAKE TAHOE, CA

LOCATION.—Lat 38°55'56", long 119°58'40", in SE 1/4 NW 1/4 sec.3, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on right bank, downstream side of U.S. Highway 50 bridge, 1.2 mi upstream from Lake Tahoe, and 1.4 mi southwest of South Lake Tahoe Post Office.

DRAINAGE AREA.—40.4 mi^2.

PERIOD OF RECORD.—Water years 1972–74, 1989 to current year.

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Instantaneous, October 1971 to June 1974, October 1988 to September 1992. Continuous: September 1997 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1971 to June 1974, October 1988 to September 1992.

INSTRUMENTATION.—Water-temperature recorder since September 1997, two times per hour.

REMARKS.—In October 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. Water-temperature records represent water temperature within 0.5°C. Interruptions in record due to loss of hydrologic communication with stream channel and for instrument malfunction. Water- temperature data for September 1997 were not published but are available from the U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum, 22.0°C, July 8, 1990; minimum, freezing point on many days during winter months in most years.
SEDIMENT CONCCENTRATION: Maximum daily mean, 300 mg/L, Jan. 15, 1974; minimum daily mean, 0 mg/L, at times in most years.
SEDIMENT LOAD: Maximum daily, 52 tons, Jan. 15, 1974; minimum daily, 0 ton, at times in most years.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum, 17.0°C, Aug. 30; minimum, freezing point, many days October to April.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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 AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
OCT									
08...	1502	24	52	--	12.0	6.5	--	--	--
21...	1050	26	50	--	13.0	4.5	--	--	--
NOV									
25...	1100	23	51	--	6.0	2.5	--	--	--
DEC									
15...	1200	20	51	7.0	1.0	.5	605	11.2	98
JAN									
16...	1245	38	51	--	5.0	2.0	--	--	--
22...	1445	28	54	--	3.5	2.0	--	--	--
FEB									
25...	1045	24	70	--	3.0	.5	--	--	--
MAR									
18...	1150	29	61	--	7.0	4.5	--	--	--
25...	1230	115	49	--	4.5	2.5	--	--	--
APR									
21...	1350	56	51	--	19.0	7.5	--	--	--
30...	1230	87	42	--	16.0	6.0	--	--	--
MAY									
05...	1545	86	41	7.6	5.5	5.5	599	9.8	99
20...	1130	76	42	--	10.0	5.5	--	--	--
28...	1420	68	43	--	14.0	8.5	--	--	--
JUN									
03...	1125	93	36	--	10.5	5.5	--	--	--
07...	1300	141	32	--	16.5	8.0	--	--	--
11...	1315	133	30	--	10.0	6.0	--	--	--
17...	0955	186	24	--	11.5	4.5	--	--	--
23...	1415	201	24	--	20.0	9.5	--	--	--
30...	1510	200	23	--	22.5	11.0	--	--	--
JUL									
15...	1445	134	26	--	24.0	11.0	--	--	--
29...	0925	94	30	--	19.0	9.0	--	--	--
AUG									
13...	1135	58	34	--	24.5	12.0	--	--	--
SEP									
09...	1500	53	42	--	15.0	12.0	--	--	--
29...	1320	35	45	7.6	17.0	9.0	603	8.4	92

10336790 TROUT CREEK AT SOUTH LAKE TAHOE, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	IRON, BIO. REACTIVE TOTAL (UG/L AS FE) (46568)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT								
08...	--	--	--	--	--	--	--	--
21...	.008	.001	.06	.018	.007	226	3	.21
NOV								
25...	.003	<.001	.09	.020	.006	289	4	.25
DEC								
15...	.015	.004	.10	.023	.006	256	6	.32
JAN								
16...	.020	.001	.33	.045	.011	948	37	3.8
22...	.020	.003	.25	.020	.010	469	15	1.1
FEB								
25...	.030	.002	.09	.032	.007	454	10	.65
MAR								
18...	.020	<.001	.14	.023	.009	728	8	.63
25...	.019	<.001	.57	.059	.013	1950	57	18
APR								
21...	.018	.004	.16	.046	.007	563	15	2.3
30...	.017	.002	.36	.027	.008	740	19	4.5
MAY								
05...	.041	.007	.31	.054	.008	571	15	3.5
20...	.012	.001	.12	.038	.007	556	17	3.5
28...	.009	<.001	.10	.039	.007	437	13	2.4
JUN								
03...	.011	.003	.15	.040	.007	582	12	3.0
07...	.015	<.001	.54	.106	.010	1170	46	18
11...	.009	.003	.22	.043	.007	468	23	8.3
17...	.006	<.001	.16	.058	.008	601	21	11
23...	.004	<.001	.10	.038	.008	283	14	7.6
30...	.004	<.001	.10	.054	.007	389	12	6.5
JUL								
15...	.007	.001	.13	.032	.003	286	16	5.8
29...	.009	.002	.09	.048	.008	448	14	3.6
AUG								
13...	.009	.003	.09	.034	.010	413	9	1.4
SEP								
09...	.021	<.001	.66	.086	.013	1460	33	4.7
29...	.013	.001	.15	.029	.009	349	7	.66

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	13.5	7.0	10.0	7.5	2.5	4.5	4.0	.5	2.0	2.0	.5	1.0
2	13.0	8.5	10.5	6.5	2.0	4.0	2.5	.0	.5	1.0	.0	.5
3	11.5	5.5	8.0	6.5	2.0	4.0	1.0	.0	.0	2.0	.0	.5
4	11.5	5.5	8.0	6.5	2.5	4.0	2.0	.0	.5	.0	.0	.0
5	11.5	5.5	8.0	6.5	2.0	4.0	1.0	.0	.5	.0	.0	.0
6	9.5	5.0	7.0	7.0	2.0	4.0	1.5	.5	1.0	.0	.0	.0
7	9.0	4.5	6.0	7.0	3.0	4.5	1.5	.0	1.0	.0	.0	.0
8	6.5	3.0	4.5	4.5	.5	2.0	.0	.0	.0	.0	.0	.0
9	8.0	4.5	6.0	3.0	.0	1.5	.0	.0	.0	1.0	.0	.0
10	8.0	4.5	5.5	4.0	2.0	3.0	.0	.0	.0	2.5	.5	1.0
11	6.5	3.0	4.5	4.0	2.5	3.0	.0	.0	.0	1.5	.5	1.0
12	7.0	1.5	3.5	4.5	1.0	2.5	.0	.0	.0	1.5	.0	.5
13	7.5	1.5	4.0	2.5	.5	1.5	.0	.0	.0	1.0	.0	.5
14	8.0	2.0	4.5	3.0	.5	1.5	.0	.0	.0	1.0	.0	.5
15	8.5	2.5	5.0	1.5	.0	.5	.0	.0	.0	1.0	.5	.5
16	9.0	3.5	6.0	1.5	.0	.5	.0	.0	.0	2.0	.5	1.0
17	8.5	3.5	5.5	4.0	.0	1.5	1.5	.0	.5	3.0	1.0	1.5
18	8.5	3.0	5.5	1.5	.0	1.0	2.0	.0	.5	2.5	.0	1.0
19	8.0	2.5	5.0	4.0	1.5	3.0	.5	.0	.0	.0	.0	.0
20	8.0	2.5	5.0	4.0	1.0	2.0	.0	.0	.0	1.0	.0	.0
21	8.0	2.5	5.0	4.0	1.0	2.5	.0	.0	.0	1.0	.0	.0
22	8.0	2.5	5.0	4.0	1.5	3.0	.0	.0	.0	2.5	.0	.5
23	8.5	4.0	5.5	5.5	2.5	3.5	.0	.0	.0	3.0	.0	1.0
24	6.5	2.0	4.0	4.0	1.0	2.5	.0	.0	.0	2.5	.0	1.0
25	5.5	.5	2.5	4.0	1.0	2.5	.0	.0	.0	2.5	.0	.5
26	5.5	.0	2.5	2.5	1.0	1.5	.0	.0	.0	2.0	.0	.5
27	5.5	1.0	3.0	4.0	1.0	2.0	.0	.0	.0	4.5	1.0	2.0
28	4.0	.5	2.0	3.0	.0	1.0	.0	.0	.0	3.5	.0	1.5
29	6.0	1.5	3.5	2.5	.0	1.0	.0	.0	.0	1.5	.0	1.0
30	7.5	2.0	4.5	2.5	.5	1.5	.0	.0	.0	.5	.0	.0
31	8.0	3.0	5.0	---	---	---	.5	.0	.0	1.5	.0	.0
MONTH	13.5	.0	5.3	7.5	.0	2.5	4.0	.0	.2	4.5	.0	.6

10336790 TROUT CREEK AT SOUTH LAKE TAHOE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.5	.0	.0	4.0	.0	1.5	3.5	.5	1.5	9.0	3.0	5.5
2	1.0	.0	.5	5.0	.0	2.5	6.5	1.0	3.5	7.5	3.5	5.5
3	1.5	.5	1.0	5.0	1.0	2.5	5.0	2.0	3.0	6.5	3.0	4.5
4	2.5	.0	1.0	4.0	.0	1.0	6.0	1.0	3.0	6.5	3.5	4.5
5	1.0	.0	.5	2.0	.0	.5	6.0	1.0	3.0	5.5	3.0	4.0
6	2.0	.5	1.5	.5	.0	.0	5.0	1.0	2.5	4.0	2.5	3.0
7	1.0	.0	.5	.5	.0	.0	5.0	1.0	3.0	6.5	3.0	4.5
8	.0	.0	.0	4.5	.0	1.5	6.5	.5	3.0	7.5	4.0	5.5
9	.5	.0	.0	4.0	.0	1.5	7.0	1.5	4.0	8.0	3.5	5.5
10	.0	.0	.0	4.5	.0	2.0	6.0	1.5	3.5	7.0	2.5	4.5
11	2.5	.0	.5	6.0	.5	3.0	4.0	1.5	2.5	6.0	2.5	4.0
12	1.5	.0	.5	4.5	.5	2.5	5.0	1.0	3.0	4.0	2.5	3.5
13	4.0	.0	1.5	3.5	1.5	2.5	3.0	.0	1.5	5.0	1.5	3.0
14	1.5	.0	.5	6.5	1.0	3.5	3.5	.0	1.5	6.0	3.0	4.0
15	2.5	.0	.5	7.0	1.0	3.5	5.5	.0	2.5	9.0	2.5	5.5
16	.0	.0	.0	7.0	1.5	4.0	7.0	.5	3.5	5.5	2.0	3.5
17	1.5	.0	.5	6.5	1.0	3.5	8.0	.5	4.0	8.0	1.5	4.0
18	3.0	.0	.5	6.5	1.0	3.5	8.5	1.5	4.5	9.0	2.5	5.5
19	1.0	.0	.5	7.0	1.0	3.5	9.5	2.0	5.5	9.5	3.0	6.0
20	2.5	.0	.5	6.5	1.5	4.0	9.5	2.0	5.5	8.5	3.5	6.0
21	.5	.0	.0	7.0	1.5	4.0	9.5	2.5	5.5	5.5	2.5	4.0
22	.5	.0	.0	5.0	2.5	3.5	7.0	2.5	5.0	9.5	2.5	5.5
23	.5	.0	.0	4.5	2.0	3.0	6.0	3.0	4.5	6.5	3.5	5.0
24	.5	.0	.0	2.0	.0	1.0	7.0	2.5	4.5	10.0	3.0	6.0
25	.5	.0	.0	3.0	.5	1.5	8.0	2.0	4.5	7.0	4.0	5.0
26	3.0	.0	.5	5.0	1.5	3.0	8.5	2.0	5.0	5.0	2.0	3.5
27	4.0	.0	1.5	4.0	1.0	2.5	8.5	2.5	5.5	6.0	2.0	3.5
28	4.0	.0	1.5	4.0	.0	1.5	9.0	2.5	5.5	9.0	3.5	6.0
29	---	---	---	2.0	.0	1.0	9.0	2.5	5.5	7.5	2.0	5.0
30	---	---	---	4.5	.0	2.0	8.5	3.0	5.5	9.5	2.5	5.5
31	---	---	---	3.0	1.0	2.0	---	---	---	10.0	4.0	7.0
MONTH	4.0	.0	.5	7.0	.0	2.3	9.5	.0	3.8	10.0	1.5	4.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.0	4.0	7.0	11.5	6.0	9.0	---	---	---	16.0	10.0	12.5
2	7.5	4.5	6.0	12.0	7.0	9.5	---	---	---	16.0	9.5	12.5
3	6.5	4.0	5.5	11.0	6.5	9.0	---	---	---	15.0	9.5	12.0
4	10.5	4.5	7.0	12.0	7.0	9.5	---	---	---	14.0	10.5	12.0
5	8.5	4.0	6.5	---	---	---	---	---	---	16.5	10.5	13.0
6	8.5	4.5	6.5	---	---	---	---	---	---	14.5	11.0	12.5
7	9.5	4.5	7.0	---	---	---	16.0	10.5	12.5	16.0	10.0	12.5
8	8.5	4.5	6.5	---	---	---	14.5	8.5	11.0	14.0	10.0	11.5
9	9.5	4.0	6.5	---	---	---	14.5	8.5	11.0	12.5	10.0	11.5
10	7.0	4.5	5.0	---	---	---	14.5	8.5	11.5	12.0	7.0	9.5
11	6.0	4.5	5.5	---	---	---	15.5	9.5	12.0	12.5	7.5	9.5
12	9.5	4.5	6.5	---	---	---	16.0	10.0	12.5	13.5	8.0	10.5
13	10.0	5.0	7.5	---	---	---	14.0	10.5	12.5	14.5	8.5	11.0
14	10.5	4.5	7.5	---	---	---	14.5	10.5	12.0	15.0	8.5	11.5
15	10.0	4.5	7.5	---	---	---	15.5	9.5	12.0	13.0	9.5	11.0
16	10.0	5.0	7.5	---	---	---	15.5	9.5	12.0	15.0	8.5	11.5
17	10.0	3.5	6.5	---	---	---	14.5	9.0	11.5	15.0	9.0	11.5
18	11.0	5.0	8.0	---	---	---	13.0	8.0	10.5	14.0	8.5	10.5
19	11.0	5.0	8.0	---	---	---	13.5	8.5	11.0	12.5	6.5	9.0
20	10.5	5.0	8.0	---	---	---	13.5	8.0	10.5	12.0	6.5	9.0
21	9.0	5.5	7.5	---	---	---	13.5	7.0	10.0	11.5	6.0	8.5
22	10.5	5.0	8.0	---	---	---	13.5	7.0	10.0	10.0	6.0	8.0
23	9.5	4.5	7.5	---	---	---	14.0	7.0	10.5	10.5	6.5	8.0
24	10.0	5.0	8.0	---	---	---	14.0	7.5	10.5	10.0	6.5	8.0
25	10.5	6.5	8.5	---	---	---	14.0	7.5	10.5	8.5	6.5	7.5
26	10.5	5.0	8.0	---	---	---	14.0	7.5	10.5	8.5	6.5	7.0
27	11.0	5.0	8.0	---	---	---	14.5	8.0	11.0	8.0	5.5	6.5
28	11.5	6.0	8.5	---	---	---	15.5	8.5	11.5	9.5	4.5	6.5
29	11.5	6.0	9.0	---	---	---	16.5	9.5	12.5	9.0	4.5	7.0
30	11.5	6.0	9.0	---	---	---	17.0	10.0	13.0	10.5	6.5	8.0
31	---	---	---	---	---	---	16.5	10.0	13.0	---	---	---
MONTH	11.5	3.5	7.3	---	---	---	---	---	---	16.5	4.5	10.0

10336795 TROUT CREEK NEAR MOUTH EAST, NEAR BELLEVUE/ELDORADO AVENUE, CA

LOCATION.—Lat 38°56'12", long 119°59'23", in NE$^1/_4$ NE$^1/_4$ sec.04, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on right bank, east channel, about 0.4 mi upstream from Lake Tahoe and about 0.8 mi downstream of U.S. Highway 50.

DRAINAGE AREA.—41 mi^2.

PERIOD OF RECORD.—September 1997 to current year.

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water-temperature recorder since September 1997, two times per hour.

REMARKS.—In September 1996, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor streamflows and water temperature within the Upper Truckee River–Trout Creek watershed. Records represent water temperature at probe within 0.5°C. Interruptions in record due to loss of hydrologic communication with stream channel and instrument malfunction. Water- temperature records for September 1997 were not published but are available from the U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum, 17.5°C, Aug. 30, Sept. 5, 1998; minimum, freezing point on many days October 1997 to April 1998.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum, 17.5°C, Aug. 30, Sept. 5; minimum, freezing point, many days October to April.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.5	7.5	10.5	8.0	3.0	5.0	4.0	.5	2.0	1.0	.0	.5
2	14.0	8.5	11.0	7.5	2.0	4.5	2.5	.0	.5	1.0	.0	.5
3	13.0	5.5	9.0	6.5	2.0	4.0	1.0	.0	.5	1.0	.5	.5
4	12.5	6.0	8.5	6.5	2.5	4.5	2.0	.0	.5	1.0	.5	.5
5	12.5	5.5	8.5	7.0	2.0	4.0	1.0	.0	.5	.5	.0	.5
6	10.5	5.0	7.0	7.5	2.0	4.5	1.5	.5	1.0	.0	.0	.0
7	9.5	4.5	6.5	7.5	3.0	5.0	1.5	.0	1.0	.0	.0	.0
8	7.5	3.0	5.0	5.0	.5	2.5	.0	.0	.0	.0	.0	.0
9	9.0	4.5	6.0	3.5	.0	1.5	.0	.0	.0	.0	.0	.0
10	9.0	4.5	6.0	4.0	2.0	3.0	.0	.0	.0	2.0	.0	.5
11	7.0	3.0	4.5	4.5	2.5	3.5	.0	.0	.0	2.0	.5	1.0
12	8.0	1.0	4.0	5.0	1.0	2.5	.0	.0	.0	1.5	.0	.5
13	8.5	1.5	4.5	3.0	.5	1.5	.0	.0	.0	1.0	.0	.5
14	9.0	2.0	5.0	3.5	.5	1.5	.0	.0	.0	1.5	.0	.5
15	9.5	2.5	5.5	2.0	.0	.5	.0	.0	.0	1.0	.5	.5
16	10.0	3.0	6.0	1.5	.0	.5	.0	.0	.0	2.5	.5	1.5
17	10.0	3.5	6.0	4.0	.0	1.5	.0	.0	.0	3.0	1.0	1.5
18	9.5	3.0	6.0	2.0	.0	1.0	1.0	.0	.0	2.5	.0	1.0
19	8.5	2.5	5.5	4.5	1.5	3.0	.0	.0	.0	.0	.0	.0
20	9.0	2.5	5.5	4.0	1.0	2.5	.0	.0	.0	.0	.0	.0
21	9.0	2.5	5.5	4.5	1.0	2.5	.0	.0	.0	1.0	.0	.0
22	8.5	2.5	5.0	4.5	1.5	3.0	.0	.0	.0	2.5	.0	1.0
23	9.0	4.0	6.0	6.0	2.5	4.0	.0	.0	.0	3.0	.0	1.0
24	7.0	2.5	4.5	4.5	1.0	2.5	.0	.0	.0	3.0	.0	1.0
25	6.5	.5	3.0	4.0	1.0	2.5	.0	.0	.0	3.0	.0	.5
26	6.0	.0	2.5	2.5	1.0	1.5	.0	.0	.0	2.5	.0	1.0
27	6.5	1.0	3.0	4.0	1.0	2.0	.0	.0	.0	5.0	.5	2.5
28	4.5	.5	2.0	3.5	.0	1.5	.0	.0	.0	4.0	.0	1.5
29	6.0	1.5	3.5	3.0	.0	1.0	.0	.0	.0	2.0	.0	1.0
30	8.0	2.5	5.0	3.0	.5	1.5	.0	.0	.0	.5	.0	.0
31	8.5	3.0	5.5	---	---	---	.0	.0	.0	1.0	.0	.5
MONTH	14.5	.0	5.7	8.0	.0	2.6	4.0	.0	.2	5.0	.0	.6

10336795 TROUT CREEK NEAR MOUTH EAST NEAR BELLEVUE/ELDORADO AVENUE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.5	.0	.0	4.5	.0	1.5	4.0	.5	2.0	9.5	3.5	6.5
2	1.0	.0	.5	6.0	.0	2.5	7.0	1.0	3.5	8.5	4.0	6.0
3	2.0	.5	1.0	5.0	1.0	3.0	5.5	2.0	3.5	7.0	3.5	5.0
4	3.0	.0	1.0	4.5	.0	1.5	6.5	1.0	3.5	6.5	3.5	5.0
5	1.0	.0	.5	2.0	.0	.5	6.5	1.5	3.5	7.0	3.5	4.5
6	2.0	.5	1.5	.5	.0	.0	5.5	1.0	3.0	4.0	2.5	3.0
7	1.0	.0	.5	.5	.0	.0	6.0	1.0	3.0	7.5	3.0	5.0
8	.0	.0	.0	5.5	.0	1.5	8.0	.5	3.5	8.5	4.0	6.0
9	.0	.0	.0	5.0	.0	1.5	8.0	2.0	4.5	9.0	4.0	6.0
10	.0	.0	.0	5.5	.0	2.0	6.5	1.5	4.0	7.5	2.5	5.0
11	1.0	.0	.0	6.5	.5	3.0	4.0	2.0	3.0	6.5	2.5	4.5
12	1.5	.0	.5	4.5	.5	2.5	6.0	1.0	3.0	4.5	2.5	3.5
13	4.5	.0	1.5	4.0	1.5	2.5	4.0	.0	1.5	5.5	2.0	3.5
14	1.5	.0	.5	7.0	1.0	3.5	4.0	.0	2.0	6.0	3.0	4.5
15	2.5	.0	.5	7.5	1.0	4.0	7.0	.0	3.0	9.5	2.5	6.0
16	.5	.0	.0	7.5	2.0	4.0	8.5	.5	4.0	6.0	2.5	3.5
17	1.0	.0	.0	7.5	1.0	3.5	9.0	.5	4.5	8.5	1.5	4.5
18	3.0	.0	1.0	7.5	1.0	3.5	9.5	1.5	5.0	9.5	2.5	6.0
19	1.5	.0	.5	7.5	1.0	4.0	10.0	2.5	6.0	10.0	3.5	6.5
20	3.0	.0	.5	7.5	1.5	4.0	10.0	2.5	6.0	9.0	3.5	6.5
21	.0	.0	.0	7.5	1.5	4.0	10.5	2.5	6.0	5.5	3.0	4.0
22	.0	.0	.0	5.0	2.5	3.5	7.5	3.0	5.5	10.0	2.5	6.0
23	.0	.0	.0	5.0	1.5	3.0	6.5	3.0	4.5	7.5	4.0	5.5
24	.0	.0	.0	1.5	.0	.5	7.5	2.5	5.0	10.5	3.5	6.5
25	.0	.0	.0	3.0	.0	1.5	8.5	2.5	5.0	7.5	4.0	5.5
26	1.0	.0	.5	5.5	1.5	3.0	9.0	2.0	5.5	6.0	2.5	4.0
27	4.5	.0	1.5	5.0	1.0	2.5	9.5	2.5	6.0	6.0	2.0	4.0
28	4.5	.0	1.5	4.5	.0	1.5	10.0	3.0	6.0	10.0	4.0	6.0
29	---	---	---	3.0	.0	1.0	10.0	3.0	6.0	8.5	2.5	5.5
30	---	---	---	5.0	.0	2.0	9.0	3.0	6.0	10.0	2.5	6.0
31	---	---	---	3.0	1.0	2.0	---	---	---	11.0	4.0	7.5
MONTH	4.5	.0	.5	7.5	.0	2.4	10.5	.0	4.3	11.0	1.5	5.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.5	4.5	7.5	13.5	6.5	10.0	---	---	---	16.5	10.0	13.0
2	8.0	5.0	6.5	14.0	7.5	10.5	---	---	---	16.5	10.0	13.0
3	8.5	4.5	6.0	13.5	7.0	10.5	---	---	---	16.0	10.0	12.5
4	11.5	4.5	7.5	14.0	7.5	10.5	---	---	---	14.5	11.0	12.5
5	9.0	4.5	7.0	---	---	---	---	---	---	17.5	11.0	13.5
6	9.5	5.0	7.0	---	---	---	---	---	---	15.5	11.5	13.0
7	11.5	5.0	8.0	---	---	---	16.5	10.5	13.5	16.5	10.5	13.0
8	10.5	5.0	7.5	---	---	---	15.0	8.5	12.0	14.5	10.0	12.0
9	11.0	4.5	8.0	---	---	---	15.0	8.5	11.5	13.0	10.5	11.5
10	7.5	5.0	5.5	---	---	---	15.0	9.0	12.0	13.0	7.5	10.0
11	7.0	5.0	6.0	---	---	---	16.0	9.5	12.5	12.5	7.5	10.0
12	11.0	4.5	7.5	---	---	---	16.5	10.0	13.0	14.5	8.0	11.0
13	12.0	5.5	8.5	---	---	---	15.5	10.5	13.0	15.5	8.5	11.5
14	12.5	5.0	8.5	---	---	---	15.0	11.0	13.0	15.5	9.0	12.0
15	11.5	5.0	8.5	---	---	---	16.0	10.0	12.5	13.5	9.5	11.5
16	12.5	5.5	8.5	---	---	---	16.0	10.0	13.0	16.0	9.0	12.0
17	11.5	4.0	8.0	---	---	---	15.0	9.5	12.0	15.5	9.5	12.0
18	12.5	5.5	9.0	---	---	---	14.0	8.5	11.0	14.5	8.5	11.0
19	13.0	5.5	9.0	---	---	---	14.0	9.0	11.5	13.0	6.5	9.5
20	12.5	5.5	9.0	---	---	---	14.0	8.5	11.0	12.5	7.0	9.0
21	11.5	6.0	9.0	---	---	---	14.0	7.5	10.5	12.0	6.0	9.0
22	12.5	6.0	9.0	---	---	---	13.5	7.5	10.5	11.0	6.0	8.5
23	12.0	5.0	8.5	---	---	---	14.0	7.5	11.0	10.5	6.5	8.5
24	12.0	5.5	9.0	---	---	---	14.5	8.0	11.0	10.5	6.5	8.5
25	12.5	7.0	9.5	---	---	---	14.5	8.0	11.0	9.0	6.5	7.5
26	12.5	6.0	9.0	---	---	---	14.5	8.0	11.0	8.5	6.5	7.5
27	13.0	6.0	9.5	---	---	---	15.0	8.5	11.5	8.0	5.5	6.5
28	13.5	6.5	10.0	---	---	---	16.0	9.0	12.0	10.0	5.0	7.0
29	14.0	6.5	10.0	---	---	---	17.0	10.0	13.0	9.5	5.0	7.0
30	13.5	6.5	10.0	---	---	---	17.5	10.5	13.5	11.5	6.5	8.5
31	---	---	---	---	---	---	17.0	10.5	13.5	---	---	---
MONTH	14.0	4.0	8.2	---	---	---	---	---	---	17.5	5.0	10.4

10337000 LAKE TAHOE AT TAHOE CITY, CA

LOCATION.—Lat 39°10'51", long 120°07'06", in NE 1/4 NE 1/4 sec.5, T.15 N., R.17 E., Placer County, Hydrologic Unit 16050101, on U.S. Coast Guard pier at Lake Forest, 1.1 mi northeast of Tahoe City, and 1.8 mi northeast of Lake Tahoe outlet dam on Truckee River at Tahoe City.

DRAINAGE AREA.—506 mi^2, at lake outlet.

PERIOD OF RECORD.—April 1900 to current year. Monthend elevations only for October 1943 to September 1957, published in WSP 1734. Prior to October 1961, published as "at Tahoe."
CHEMICAL DATA: Water year 1969, bimonthly; 1978, biannually; 1979, annually.

REVISED RECORDS.—WDR CA-78-3: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 6,220.00 ft above U.S. Bureau of Reclamation datum, 6,218.86 ft above sea level. Prior to Oct. 1, 1957, nonrecording gages at several sites near outlet of lake at same datum except for water years 1907 and 1908, which were at a datum 5.5 ft higher. Oct. 1, 1957, to May 8, 1958, water-stage recorder on left wingwall of dam at outlet of lake at same datum. May 9, 1958, to Sept. 30, 1968, water-stage recorder on pier, 1,000 ft east of dam at lake outlet.

REMARKS.—Lake levels regulated by a 17-gate concrete dam at outlet of lake; storage began about 1874. Monthly figures given represent usable contents. Usable capacity, 744,600 acre-ft between elevations 6,223 ft, natural rim of lake, and 6,229.1 ft, maximum permissible elevation by Federal Court decree. Lake elevations are referred to U.S. Bureau of Reclamation datum because that datum is used as the official reference point by all local, State, and Federal agencies. There are minor diversions for domestic purposes, irrigation, and power. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum elevation, 6,231.26 ft, July 14, 15, 17, 18, 1907; minimum, 6,220.26 ft, Nov. 30, 1992.

EXTREMES FOR CURRENT YEAR.—Maximum elevation, 6,229.05 ft, July 26, 27; minimum, 6,226.84 ft, Dec. 31, Jan. 1.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on topographic information available in April 1959)

6,223	0	6,227	486,800
6,224	121,400	6,228	609,300
6,225	243,000	6,229.1	744,600
6,226	364,800		

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.64	7.17	7.01	6.84	7.39	7.99	8.26	8.07	8.38	8.94	8.99	8.56
2	7.61	7.18	6.99	6.90	7.51	7.99	8.23	8.08	8.40	8.96	9.00	8.54
3	7.61	7.17	6.99	6.90	7.53	7.97	8.22	8.12	8.41	8.96	8.99	8.53
4	7.58	7.17	6.98	6.92	7.53	7.95	8.19	8.13	8.44	8.98	8.99	8.52
5	7.56	7.16	7.02	6.91	7.56	7.98	8.18	8.19	8.45	9.00	8.97	8.57
6	7.55	7.13	7.02	6.91	7.60	7.98	8.15	8.21	8.55	9.00	8.95	8.56
7	7.48	7.14	7.12	6.91	7.66	7.96	8.13	8.23	8.59	9.02	8.92	8.54
8	7.49	7.12	7.12	6.91	7.72	7.95	8.11	8.24	8.63	9.02	8.89	8.55
9	7.49	7.12	7.11	6.92	7.72	7.94	8.07	8.23	8.65	9.02	8.89	8.54
10	7.47	7.09	7.09	6.91	7.77	7.94	8.05	8.25	8.69	9.01	8.86	8.52
11	7.43	7.10	7.08	6.94	7.78	7.93	8.06	8.25	8.72	9.03	8.88	8.53
12	7.44	7.10	7.06	7.03	7.79	7.92	8.01	8.28	8.80	9.02	8.86	8.51
13	7.40	7.08	7.05	7.02	7.79	7.92	8.05	8.31	8.83	9.03	8.86	8.48
14	7.40	7.08	7.05	7.07	7.90	7.91	8.04	8.30	8.83	9.02	8.88	8.47
15	7.39	7.04	7.06	7.15	7.89	7.90	8.02	8.30	8.84	9.04	8.84	8.44
16	7.39	7.04	7.03	7.19	7.90	7.90	8.02	8.32	8.86	9.04	8.80	8.43
17	7.38	7.02	7.03	7.19	7.91	7.88	8.00	8.33	8.84	9.03	8.79	8.42
18	7.37	7.00	7.02	7.31	7.89	7.88	8.01	8.34	8.85	9.04	8.74	8.39
19	7.36	7.00	6.99	7.32	7.94	7.88	8.00	8.33	8.87	9.04	8.76	8.35
20	7.35	7.01	6.98	7.32	7.92	7.87	8.00	8.31	8.87	9.03	8.72	8.32
21	7.33	6.99	6.98	7.33	8.01	7.87	8.00	8.32	8.88	9.03	8.71	8.33
22	7.33	6.97	6.95	7.32	8.00	7.91	8.00	8.32	8.88	9.04	8.67	8.27
23	7.30	6.97	6.94	7.33	8.05	8.01	8.01	8.33	8.88	9.03	8.67	8.31
24	7.27	6.97	6.91	7.32	8.05	8.28	8.02	8.32	8.88	9.04	8.64	8.29
25	7.25	7.00	6.89	7.30	8.04	8.31	8.02	8.34	8.86	9.04	8.61	8.25
26	7.23	7.04	6.88	7.30	8.01	8.30	8.02	8.36	8.89	9.05	8.60	8.28
27	7.22	7.05	6.87	7.31	8.01	8.32	8.02	8.36	8.90	9.05	8.59	8.29
28	7.20	7.05	6.86	7.30	8.01	8.29	8.03	8.36	8.89	9.04	8.59	8.27
29	7.21	7.03	6.86	7.34	---	8.29	8.04	8.36	8.93	9.00	8.59	8.29
30	7.17	7.03	6.85	7.34	---	8.26	8.05	8.37	8.94	8.99	8.57	8.26
31	7.19	---	6.84	7.35	---	8.26	---	8.37	---	8.99	8.56	---
MEAN	7.39	7.07	6.99	7.13	7.82	8.02	8.07	8.28	8.75	9.02	8.79	8.42
MAX	7.64	7.18	7.12	7.35	8.05	8.32	8.26	8.37	8.94	9.05	9.00	8.57
MIN	7.17	6.97	6.84	6.84	7.39	7.87	8.00	8.07	8.38	8.94	8.56	8.25
a	510,100	490,500	467,300	529,700	610,500	641,300	615,400	654,800	724,900	731,100	678,200	641,300
b	-55100	-19600	-23200	+62400	+80800	+30800	-25900	+39400	+70100	+6200	-52900	-36900

CAL YR 1997 MEAN 8.14 MAX 9.40 MIN 6.84 b -192400
WTR YR 1998 MEAN 7.98 MAX 9.05 MIN 6.84 b +76100

a Usable contents, in acre-feet, at end of month.
b Change in contents, in acre-feet.
NOTE.—Add 6,220 ft to obtain elevation, U.S. Bureau of Reclamation datum, at 2400 hours.

10337500 TRUCKEE RIVER AT TAHOE CITY, CA

LOCATION.—Lat 39°09'59", long 120°08'36", in NE 1/4 NW 1/4 sec.7, T.15 N., R.17 E., Placer County, Hydrologic Unit 16050102, on left bank 510 ft downstream from dam at outlet of Lake Tahoe at Tahoe City.

DRAINAGE AREA.—507 mi^2.

PERIOD OF RECORD.—July 1895 to February 1896, March 1900 to current year. Monthly discharge only for some periods, published in WSP 1314 and 1734. Prior to October 1961, published as "at Tahoe."
WATER TEMPERATURE: June 1993 to September 1994.

REVISED RECORDS.—WDR CA-78-3: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 6,216.59 ft above sea level. Prior to Nov. 12, 1912, nonrecording gage at site 370 ft upstream at different datum. Nov. 12, 1912, to Sept. 30, 1937, nonrecording gage; Oct. 1, 1937, to Aug. 21, 1957, water-stage recorder at datum 2.26 ft higher; and Aug. 22, 1957, to July 10, 1960, at datum 2.42 ft higher; all at site 270 ft upstream.

REMARKS.—Records good including estimated daily discharges. Flow completely regulated by dam at outlet of Lake Tahoe (station 10337000), 510 ft upstream. There are several diversions for irrigation, power, and domestic water supply. In addition, sewer effluent is pumped from the Lake Tahoe Basin. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,690 ft^3/s, Jan. 2, 1997, gage height, 9.59 ft; no flow for parts of many years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	153	105	182	297	44	560	1340	627	697	662	250	315
2	124	105	146	283	43	557	1490	627	697	595	248	340
3	120	123	146	270	43	555	1480	627	697	595	244	340
4	117	167	147	271	42	581	1480	627	696	597	261	339
5	119	198	147	271	47	596	1470	629	696	598	309	341
6	121	205	147	270	50	598	1470	631	698	599	309	342
7	e119	205	148	270	48	598	1470	608	706	670	309	343
8	e119	204	149	270	48	594	1460	592	752	785	309	342
9	e118	203	148	270	48	591	1300	592	1190	784	308	343
10	e118	202	147	270	47	589	1180	591	1470	785	308	341
11	e117	203	146	271	67	589	1180	590	1480	786	307	338
12	e117	203	143	221	119	596	1180	589	1490	785	309	337
13	e116	202	143	153	141	600	1180	590	1640	669	310	338
14	e116	202	142	181	141	600	1180	589	1760	602	310	338
15	e115	201	173	117	141	598	968	589	1770	555	309	339
16	e115	201	240	53	154	598	668	590	1770	353	308	341
17	e114	201	241	49	169	595	667	589	1770	337	308	341
18	113	201	242	47	168	594	667	591	1770	338	308	341
19	e113	199	252	46	188	589	668	591	1770	317	308	338
20	e113	197	260	46	196	590	670	589	1780	270	309	339
21	e113	197	260	45	196	589	673	589	1770	249	308	341
22	e113	197	259	46	196	595	674	587	1770	249	307	337
23	e113	195	257	47	227	604	677	589	1770	249	307	339
24	e112	194	256	47	402	623	675	589	1700	249	307	341
25	e111	194	256	47	551	918	673	589	1480	249	306	341
26	e110	196	256	47	570	1200	672	589	1280	249	306	341
27	e109	195	255	47	566	1200	659	653	1180	248	306	338
28	e108	195	255	48	562	1200	624	696	1050	248	307	338
29	108	194	270	48	---	1200	625	699	865	248	308	338
30	108	194	297	47	---	1200	626	699	788	249	304	337
31	106	---	297	46	---	1200	---	697	---	251	304	---
TOTAL	3588	5678	6407	4441	5214	22297	29746	19024	38952	14420	9311	10167
MEAN	116	189	207	143	186	719	992	614	1298	465	300	339
MAX	153	205	297	297	570	1200	1490	699	1780	786	310	343
MIN	106	105	142	45	42	555	624	587	696	248	244	315
AC-FT	7120	11260	12710	8810	10340	44230	59000	37730	77260	28600	18470	20170

e Estimated.

10337500 TRUCKEE RIVER AT TAHOE CITY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1998, BY WATER YEAR (WY)

MEAN	180	197	231	241	287	257	178	163	235	275	313	267
MAX	413	1575	2209	2561	2375	2235	1806	1746	1673	1071	638	687
(WY)	1910	1983	1984	1997	1997	1986	1983	1958	1969	1983	1918	1983
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1932	1927	1925	1925	1925	1925	1919	1919	1921	1931	1931	1931

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1909 - 1998	
ANNUAL TOTAL	245241		169245			
ANNUAL MEAN	672		464		233	
HIGHEST ANNUAL MEAN					1150	1983
LOWEST ANNUAL MEAN					.15	1994
HIGHEST DAILY MEAN	2630	Jan 3	1780	Jun 20	2630	Jan 3 1997
LOWEST DAILY MEAN	60	Apr 25	42	Feb 4	.00	Jan 4 1914
ANNUAL SEVEN-DAY MINIMUM	62	Apr 19	45	Jan 30	.00	Jan 23 1914
INSTANTANEOUS PEAK FLOW			1780	Jun 16	2690	Jan 2 1997
INSTANTANEOUS PEAK STAGE			7.93	Jun 16	9.59	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	486400		335700		168700	
10 PERCENT EXCEEDS	2480		1180		476	
50 PERCENT EXCEEDS	270		309		138	
90 PERCENT EXCEEDS	70		112		.00	

10338000 TRUCKEE RIVER NEAR TRUCKEE, CA

LOCATION.—Lat 39°17'17", long 120°12'16", in SW 1/4 NE 1/4 sec.28, T.17 N., R.16 E., Placer County, Hydrologic Unit 16050102, Tahoe National Forest, on left bank 1.4 mi downstream from Cabin Creek and 2.5 mi southwest of Truckee.

DRAINAGE AREA.—553 mi^2.

PERIOD OF RECORD.—December 1944 to September 1961, June 1977 to September 1982, October 1992 to September 1995, October 1996 to current year. Monthly discharge only for some periods, published in WSP 1314.
SPECIFIC CONDUCTANCE: July 1977 to September 1982.
WATER TEMPERATURE: July 1977 to September 1982, March 1993 to September 1994.

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

GAGE.—Water-stage recorder. Datum of gage is 5,857.66 ft above sea level.

REMARKS.—Records good. Flow regulated by Lake Tahoe (station 10337000), operating capacity, 744,600 acre-ft. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 11,900 ft^3/s, Jan. 2, 1997, gage height, 9.97 ft, from rating curve extended above 3,100 ft^3/s on basis of slope-area measurements at gage heights 7.62 ft and 7.92 ft; minimum daily, 3.4 ft^3/s, several days in August 1994.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	181	116	204	308	92	607	1390	1140	1090	973	304	327
2	151	116	162	307	100	611	1600	1200	1180	879	300	354
3	139	116	159	285	140	616	1590	1160	1150	862	295	354
4	136	165	157	288	119	628	1580	1100	1130	858	296	356
5	129	193	159	285	109	646	1570	1060	1140	857	351	363
6	133	205	159	284	113	647	1570	1040	1190	875	350	367
7	133	205	170	284	108	644	1560	997	1460	917	348	360
8	133	205	167	284	108	645	1560	1030	1330	1030	345	360
9	154	205	164	285	105	644	1410	1070	1670	1020	341	391
10	142	205	160	289	99	645	1230	982	2080	1010	341	371
11	137	205	157	294	96	650	1230	919	2060	969	337	362
12	136	205	157	294	165	666	1220	884	2110	946	338	360
13	134	205	157	207	194	674	1220	850	2340	869	338	357
14	132	205	158	225	198	678	1220	819	2490	773	379	357
15	133	205	166	329	193	697	1080	813	2470	740	355	357
16	133	203	248	248	197	718	728	817	2490	534	341	357
17	132	203	252	338	215	734	727	793	2380	497	338	355
18	130	202	255	218	216	738	743	787	2400	491	337	352
19	130	215	259	162	235	744	774	810	2430	465	335	352
20	130	205	270	131	240	768	821	834	2390	411	333	352
21	129	202	271	116	244	783	911	828	2410	368	332	352
22	125	202	271	109	239	997	992	825	2370	366	331	352
23	123	204	268	105	252	1170	1060	842	2300	356	329	353
24	121	206	267	101	404	1550	996	868	2230	357	329	355
25	121	212	267	97	567	1280	950	993	2010	347	329	355
26	121	240	267	95	597	1490	942	904	1730	337	327	359
27	120	216	267	95	602	1420	961	890	1520	330	327	367
28	117	211	267	95	602	1370	974	927	1410	322	325	357
29	116	208	272	100	---	1330	1030	930	1220	317	324	359
30	116	205	301	94	---	1310	1100	928	1100	314	324	362
31	116	---	303	94	---	1290	---	974	---	309	324	---
TOTAL	4083	5890	6761	6446	6549	27390	34739	29014	55280	19699	10303	10735
MEAN	132	196	218	208	234	884	1158	936	1843	635	332	358
MAX	181	240	303	338	602	1550	1600	1200	2490	1030	379	391
MIN	116	116	157	94	92	607	727	787	1090	309	295	327
AC-FT	8100	11680	13410	12790	12990	54330	68900	57550	109600	39070	20440	21290

10338000 TRUCKEE RIVER NEAR TRUCKEE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1998, BY WATER YEAR (WY)

MEAN	195	208	289	349	342	330	409	562	490	305	281	258
MAX	387	551	1483	3190	2537	1421	1734	2403	1843	635	492	453
(WY)	1948	1951	1997	1997	1997	1952	1958	1958	1998	1998	1959	1954
MIN	7.27	11.3	14.2	8.82	12.3	58.1	98.3	122	34.5	6.40	3.56	4.72
(WY)	1995	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1945 - 1998	
ANNUAL TOTAL	301372		216889			
ANNUAL MEAN	826		594		340	
HIGHEST ANNUAL MEAN					941	1997
LOWEST ANNUAL MEAN					32.4	1994
HIGHEST DAILY MEAN	8900	Jan 1	2490	Jun 14	8900	Jan 1 1997
LOWEST DAILY MEAN	116	Oct 29	92	Feb 1	3.4	Aug 18 1994
ANNUAL SEVEN-DAY MINIMUM	116	Oct 28	95	Jan 26	3.4	Aug 22 1994
INSTANTANEOUS PEAK FLOW			2600	Jun 13	11900	Jan 2 1997
INSTANTANEOUS PEAK STAGE			4.62	Jun 13	9.97	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	597800		430200		246600	
10 PERCENT EXCEEDS	2600		1320		540	
50 PERCENT EXCEEDS	318		351		236	
90 PERCENT EXCEEDS	157		130		45	

10338100 SUMMIT CREEK ABOVE DONNER LAKE, NEAR TRUCKEE, CA

LOCATION.—Lat 39°19'14", long 120°17'47", in NW 1/4 SE 1/4 sec.15, T.17 N., R.15 E., Nevada County, Hydrologic Unit 16050102, Tahoe National Forest, on right bank at old Highway 40, 0.5 mi west of Donner Lake, and 1.5 mi east of Donner Pass.

DRAINAGE AREA.—4.96 mi^2.

PERIOD OF RECORD.—February 1997 to September 1998 (discontinued).

GAGE.—Water-stage recorder. Elevation of gage is 5,960 ft above sea level, from topographic map.

REMARKS.—Records good, including estimated daily discharges. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 246 ft^3/s, Mar. 24, 1998, gage height, 6.20 ft; no flow on several days in 1997 and 1998.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	e.09	2.1	e4.3	16	7.9	19	109	115	34	2.1	.24
2	e.00	e.09	1.8	e4.3	17	9.1	18	131	112	32	1.9	.23
3	e.00	e.09	1.9	e4.3	24	11	18	105	86	29	e1.7	.15
4	e.00	e.09	1.5	e4.3	17	9.4	17	84	85	28	e1.6	.13
5	e.00	e.09	1.5	e4.3	15	8.7	17	76	88	27	e1.5	.58
6	e.01	e.09	1.4	e4.3	16	8.5	16	71	105	27	e1.4	1.6
7	e.03	e.09	e4.8	e4.3	16	9.1	16	80	147	26	e1.3	1.3
8	e.10	e.09	e4.6	e4.2	17	7.8	16	98	92	25	e1.2	1.1
9	e.23	e.09	e4.3	4.4	13	8.6	16	97	98	23	e1.1	2.5
10	e.15	e.09	e3.9	e4.1	11	11	16	61	92	22	e1.0	1.5
11	e.13	e.09	e3.8	e5.2	10	14	16	44	86	18	e.90	1.2
12	e.11	e.09	e4.1	e33	9.9	16	16	38	102	16	e.80	.98
13	e.10	e.10	e4.0	e27	9.9	14	16	31	111	16	e.70	.71
14	e.10	e.09	e3.9	23	13	17	15	28	106	14	e1.0	.34
15	e.09	e.09	3.8	e125	10	24	15	31	97	12	.62	.16
16	e.09	e.09	e4.1	94	9.7	32	15	33	92	11	.39	.11
17	e.09	e.10	e4.5	105	9.7	33	17	27	72	11	.25	.09
18	e.09	e.20	e4.3	47	8.3	32	22	32	92	11	.19	.07
19	e.09	e.80	e4.0	32	9.0	33	31	49	90	9.1	.18	.06
20	e.09	e1.0	e3.9	22	8.5	40	45	56	77	7.7	.11	.06
21	e.09	.85	e3.8	19	13	45	75	45	84	6.8	.09	.05
22	e.09	1.2	e3.7	18	13	132	88	47	73	6.4	.07	.05
23	e.09	4.8	e3.6	17	10	136	86	51	59	5.5	.04	.05
24	e.09	2.9	e3.6	17	9.1	151	55	73	59	6.8	.03	.10
25	e.09	5.3	e3.7	16	7.8	59	45	106	67	6.0	.02	e.10
26	e.09	8.7	e3.7	16	7.1	39	50	48	54	4.7	.01	e.10
27	e.09	3.5	e3.8	16	7.0	34	67	33	44	4.3	.00	e.20
28	e.09	3.0	e3.9	17	7.2	28	87	34	47	3.5	.00	e.15
29	e.09	3.0	e4.0	17	---	23	97	35	44	3.3	.00	e.15
30	e.09	2.4	e4.2	16	---	21	112	41	40	3.0	.08	e.20
31	e.09	---	e4.3	15	---	21	---	74	---	2.6	.30	---
TOTAL	2.49	39.20	110.5	740.0	334.2	1035.1	1139	1868	2516	451.7	20.58	14.26
MEAN	.080	1.31	3.56	23.9	11.9	33.4	38.0	60.3	83.9	14.6	.66	.48
MAX	.23	8.7	4.8	125	24	151	112	131	147	34	2.1	2.5
MIN	.00	.09	1.4	4.1	7.0	7.8	15	27	40	2.6	.00	.05
AC-FT	4.9	78	219	1470	663	2050	2260	3710	4990	896	41	28

e Estimated.

10338100 SUMMIT CREEK ABOVE DONNER LAKE, NEAR TRUCKEE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1998, BY WATER YEAR (WY)

MEAN	.080	1.31	3.56	23.9	15.6	32.5	46.2	45.6	49.3	7.70	.35	.24
MAX	.080	1.31	3.56	23.9	19.4	33.4	54.5	60.3	83.9	14.6	.66	.48
(WY)	1998	1998	1998	1998	1997	1998	1997	1998	1998	1998	1998	1998
MIN	.080	1.31	3.56	23.9	11.9	31.7	38.0	30.9	14.8	.83	.033	.000
(WY)	1998	1998	1998	1998	1998	1997	1998	1997	1997	1997	1997	1997

SUMMARY STATISTICS	FOR 1998 WATER YEAR		WATER YEARS 1997 - 1998	
ANNUAL TOTAL	8271.03			
ANNUAL MEAN	22.7		22.7	
HIGHEST ANNUAL MEAN			22.7	1998
LOWEST ANNUAL MEAN			22.7	1998
HIGHEST DAILY MEAN	151	Mar 24	179	Apr 19 1997
LOWEST DAILY MEAN	.00	Oct 1	.00	Aug 17 1997
ANNUAL SEVEN-DAY MINIMUM	.01	Oct 1	.00	Aug 17 1997
INSTANTANEOUS PEAK FLOW	246	Mar 24	246	Mar 24 1998
INSTANTANEOUS PEAK STAGE	6.20	Mar 24	6.20	Mar 24 1998
ANNUAL RUNOFF (AC-FT)	16410		16420	
10 PERCENT EXCEEDS	84		64	
50 PERCENT EXCEEDS	8.5		10	
90 PERCENT EXCEEDS	.09		.04	

10338400 DONNER LAKE NEAR TRUCKEE, CA

LOCATION.—Lat 39°19'30", long 120°16'53", in SE 1/4 NW 1/4 sec.14, T.17 N., R.15 E., Nevada County, Hydrologic Unit 16050102, on north shore, 2.5 mi upstream from outlet gates and 4.9 mi west of Truckee.

DRAINAGE AREA.—14.0 mi^2.

PERIOD OF RECORD.—January 1989 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Westpac Utilities).

REMARKS.—Lake levels regulated by a concrete dam at the outlet constructed in 1928. Usable capacity, 9,490 acre-ft between elevations 5,923.8 and 5,935.8 ft, maximum storage level. Water is used for irrigation and power development downstream. Records, including extremes, represent usable contents. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 12,800 acre-ft, Jan. 2, 1997, elevation, 5,938.64 ft; minimum, 2,510 acre-ft, Jan. 24, 28–31, 1991, elevation, 5,927.23 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 9,530 acre-ft, July 26, elevation, 5,935.84 ft; minimum, 3,110 acre-ft, Dec. 29, elevation, 5,927.99 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Westpac Utilities, dated Aug. 22, 1980)

5,923.8	0	5,934	7,970
5,926.0	1,600	5,936	9,670
5,928.0	3,120	5,938	12,000
5,930.0	4,690	5,940	14,700
5,932	6,310		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5100	3570	3260	3120	3720	3460	4400	5640	7640	9030	9470	8990
2	4970	3520	3240	3190	3770	3430	4310	5990	7820	9000	9460	8980
3	4780	3480	3230	3180	3810	3440	4230	6260	7940	9000	9450	8980
4	4590	3430	3210	3260	3780	3430	4160	6450	8060	9020	9420	8960
5	4440	3410	3220	3260	3790	3430	4070	6600	8150	9040	9410	9060
6	4300	3370	3210	3260	3810	3450	4030	6720	8300	9080	9400	9040
7	4140	3350	3340	3250	3860	3440	3970	6870	8530	9100	9360	9010
8	4050	3320	3380	3240	3850	3420	3920	7070	8530	9160	9340	8990
9	4090	3310	3320	3250	3810	3420	3880	7250	8480	9210	9320	9030
10	4100	3290	3320	3280	3790	3410	3870	7320	8480	9270	9300	8990
11	4090	3270	3290	3400	3760	3430	3860	7320	8460	9340	9270	8950
12	4060	3240	3270	3550	3720	3450	3810	7330	8450	9370	9270	8920
13	4070	3220	3240	3600	3680	3460	3840	7310	8460	9400	9260	8880
14	4050	3210	3230	3670	3760	3470	3800	7250	8470	9430	9310	8860
15	4030	3200	3230	3910	3710	3510	3780	7180	8420	9450	9280	8830
16	4030	3190	3220	4090	3680	3560	3730	7160	8370	9470	9260	8780
17	4020	3190	3220	4370	3660	3640	3700	7100	8260	9480	9230	8690
18	4010	3190	3200	4510	3630	3690	3710	7040	8330	9480	9200	8590
19	4000	3190	3200	4440	3630	3740	3750	7020	8530	9480	e9170	8480
20	4000	3190	3180	4340	3550	3820	3820	7050	8750	9480	e9160	8380
21	3990	3200	3160	4260	3650	3870	3980	7060	8950	9490	e9150	8220
22	3980	3170	3150	4180	3640	4340	4190	7040	9130	9500	e9150	8070
23	3950	3160	3180	4090	3650	4850	4390	7060	9220	9480	e9140	7940
24	3910	3200	3190	4030	3610	5370	4460	7140	9270	9520	e9120	7810
25	3900	3210	3160	3930	3580	5340	4480	7400	9270	9510	9110	7650
26	3870	3350	3140	3870	3530	5180	4550	7450	9280	9530	9100	7590
27	3850	3330	3180	3840	3490	5060	4680	7440	9250	9520	9070	7470
28	3820	3310	3140	3780	3480	4930	4830	7380	9200	9520	9060	7350
29	3780	3300	3110	3800	---	4770	5090	7370	9160	9490	9040	7260
30	3690	3270	3140	3750	---	4610	5380	7340	9090	9480	9030	7150
31	3630	---	3130	3690	---	4510	---	7440	---	9470	9000	---
MAX	5100	3570	3380	4510	3860	5370	5380	7450	9280	9530	9470	9060
MIN	3630	3160	3110	3120	3480	3410	3700	5640	7640	9000	9000	7150
a	5928.68	5928.21	5928.02	5928.75	5928.48	5929.79	5930.87	5933.38	5935.33	5935.78	5935.23	5933.02
b	-1670	-360	-140	+560	-210	+1030	+870	+2060	+1650	+380	-470	-1850

CAL YR 1997 MAX 12800 MIN 3110 b -3260
WTR YR 1998 MAX 9530 MIN 3110 b +1850

e Estimated.

10338500 DONNER CREEK AT DONNER LAKE, NEAR TRUCKEE, CA

LOCATION.—Lat 39°19'25", long 120°14'00", in SW 1/4 NW 1/4 sec.17, T.17 N., R.16 E., Nevada County, Hydrologic Unit 16050102, in Donner Memorial State Park, on left bank 10 ft downstream from bridge on Donner Memorial State Park road, 0.2 mi downstream from outlet of Donner Lake, 0.7 mi upstream from Cold Creek, and 2.5 mi west of Truckee.

DRAINAGE AREA.—14.3 mi^2.

PERIOD OF RECORD.—November 1909 to August 1910, January 1929 to October 1935, January 1936 to March 1938, July to October 1938, January 1939 to February 1943, June 1943 to December 1953, May 1955 to December 1957, October 1958 to current year. Monthly discharge only prior to October 1958, published in WSP 1314 and 1734.

REVISED RECORDS.—WDR CA-79-3: Drainage area.

GAGE.—Water-stage recorder and concrete control, completed Oct. 3, 1989. Datum of gage is 5,924.40 ft above sea level. Nov. 1, 1909, to Aug. 31, 1910, nonrecording gage at different datum. January 1929 to December 1957, water-stage recorder at same site at unknown datum.

REMARKS.—Records good. Flow completely regulated at dam at outlet of Donner Lake (station 10338400) since 1928. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 863 ft^3/s, Jan. 2, 1997; gage height, 6.69 ft; no flow at times in many years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	29	12	6.7	39	26	109	88	114	92	5.9	4.4
2	84	26	12	8.6	43	25	99	91	118	68	5.6	4.4
3	91	24	11	9.8	49	25	92	96	121	54	5.6	4.4
4	89	22	11	10	49	25	84	94	122	43	5.6	6.8
5	79	19	11	12	47	25	80	97	133	43	5.6	8.8
6	75	17	11	11	48	25	74	99	153	41	5.6	10
7	68	16	13	11	51	25	69	101	196	29	5.6	12
8	41	15	16	11	54	24	64	104	243	15	5.4	12
9	20	14	15	11	52	24	60	106	241	11	5.6	11
10	12	13	14	11	49	23	58	109	238	10	5.4	11
11	8.0	12	14	13	48	24	57	109	236	8.8	5.6	11
12	7.5	11	13	18	45	25	55	109	235	8.5	5.6	11
13	7.5	11	12	22	43	25	54	109	235	8.5	5.6	11
14	7.5	11	12	23	45	25	54	109	235	7.9	5.7	11
15	7.4	10	12	34	46	27	53	109	232	7.9	5.6	15
16	6.9	9.1	11	47	42	30	50	109	231	7.5	5.4	18
17	6.5	8.2	11	69	41	35	48	108	230	7.5	5.0	25
18	5.3	8.1	11	82	37	41	47	107	143	7.5	4.7	31
19	4.7	10	11	88	35	44	48	105	62	7.5	4.7	47
20	4.7	10	10	82	34	49	51	105	47	7.5	4.7	60
21	3.6	9.5	10	75	37	54	59	106	49	7.5	4.6	71
22	2.9	9.0	9.1	68	39	73	74	107	49	7.5	4.4	77
23	5.8	9.8	8.7	62	38	116	93	109	74	7.5	4.4	75
24	8.5	9.4	8.5	58	37	218	105	108	97	7.3	4.4	73
25	8.5	11	8.5	54	34	258	99	111	93	6.9	4.4	71
26	8.3	15	8.2	49	31	224	89	113	101	7.1	4.4	71
27	8.0	15	7.9	47	29	196	94	113	113	7.1	4.2	70
28	13	15	7.3	45	28	175	87	113	113	7.1	4.2	68
29	29	14	7.1	44	---	155	81	113	113	7.1	4.4	67
30	36	14	6.9	42	---	136	84	113	113	7.1	4.4	65
31	32	---	6.5	40	---	122	---	113	---	6.1	4.4	---
TOTAL	864.6	417.1	331.7	1164.1	1170	2299	2171	3283	4480	563.4	156.7	1032.8
MEAN	27.9	13.9	10.7	37.6	41.8	74.2	72.4	106	149	18.2	5.05	34.4
MAX	91	29	16	88	54	258	109	113	243	92	5.9	77
MIN	2.9	8.1	6.5	6.7	28	23	47	88	47	6.1	4.2	4.4
AC-FT	1710	827	658	2310	2320	4560	4310	6510	8890	1120	311	2050

10338500 DONNER CREEK AT DONNER LAKE, NEAR TRUCKEE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1998, BY WATER YEAR (WY)

MEAN	29.4	27.5	31.2	33.8	32.4	37.1	52.5	86.3	47.5	12.5	8.03	25.1
MAX	85.7	195	214	284	198	182	144	243	244	67.2	52.7	99.1
(WY)	1973	1951	1951	1997	1986	1986	1940	1952	1983	1934	1932	1983
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1930	1930	1930	1929	1929	1929	1929	1929	1929	1937	1936	1930

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1929 - 1998	
ANNUAL TOTAL	19677.2		17933.4			
ANNUAL MEAN	53.9		49.1		36.2	
HIGHEST ANNUAL MEAN					83.3	1982
LOWEST ANNUAL MEAN					7.71	1977
HIGHEST DAILY MEAN	820	Jan 2	258	Mar 25	820	Jan 2 1997
LOWEST DAILY MEAN	1.5	Aug 26	2.9	Oct 22	.00	Jan 1 1929
ANNUAL SEVEN-DAY MINIMUM	1.7	Aug 26	4.3	Aug 22	.00	Jan 1 1929
INSTANTANEOUS PEAK FLOW			265	Mar 25	863	Jan 2 1997
INSTANTANEOUS PEAK STAGE			4.49	Mar 25	6.69	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	39030		35570		26220	
10 PERCENT EXCEEDS	102		113		100	
50 PERCENT EXCEEDS	28		29		13	
90 PERCENT EXCEEDS	3.2		5.6		.00	

10338700 DONNER CREEK AT HIGHWAY 89, NEAR TRUCKEE, CA

LOCATION.—Lat 39°19'16", long 120°12'25", in NE 1/4 SW 1/4 sec.16, T.17 N., R.16 E., Nevada County, Hydrologic Unit 16050102, on right bank 50 ft upstream from State Highway 89 bridge, 0.5 mi upstream from mouth, and 1.4 mi southwest of Truckee.

DRAINAGE AREA.—29.1 mi^2.

PERIOD OF RECORD.—March 1993 to current year.
WATER TEMPERATURE: August 1993 to September 1994.

GAGE.—Water-stage recorder. Elevation of gage is 5,870 ft above sea level, from topographic map.

REMARKS.—Records good. About half the drainage area is regulated at dam at outlet of Donner Lake (station 10338400) 2.0 mi upstream. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, about 2,500 ft^3/s, Jan. 2, 1997, gage height, 12.76 ft, backwater from debris, on the basis of the flood routing the peak discharge between Truckee River near Truckee and Truckee River above Prosser Creek; minimum daily, 2.3 ft^3/s, Aug. 21, 22, 1994.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	30	16	8.6	60	46	181	252	247	233	24	8.1
2	81	27	15	11	66	47	164	283	275	210	23	7.9
3	85	24	14	13	89	48	152	270	269	188	22	8.0
4	84	21	13	12	81	45	139	252	263	173	20	11
5	75	18	13	16	76	44	131	236	277	171	19	18
6	71	17	13	14	77	46	122	230	305	175	18	22
7	65	16	17	15	76	43	113	230	452	165	17	16
8	41	14	21	14	79	43	105	255	430	146	16	16
9	22	13	19	14	75	43	100	282	428	134	15	25
10	12	12	18	16	70	43	96	236	431	125	14	19
11	7.0	11	17	20	69	45	93	216	426	103	13	17
12	6.4	11	16	34	66	48	87	204	443	90	13	16
13	6.2	10	15	35	64	49	86	193	470	90	13	16
14	6.0	9.6	16	37	66	51	83	183	467	82	20	15
15	5.9	9.1	16	78	66	58	79	181	428	74	15	20
16	5.7	8.3	15	109	62	67	76	182	406	72	13	24
17	5.2	7.4	15	154	61	75	74	172	360	73	12	31
18	4.5	7.4	15	129	58	81	76	171	340	70	11	38
19	4.2	12	14	120	57	87	86	179	311	65	11	54
20	4.1	11	14	110	56	99	101	189	280	61	11	68
21	3.7	10	13	101	57	115	130	186	281	56	10	79
22	3.3	9.9	12	95	60	190	167	184	275	56	9.9	87
23	5.3	11	11	91	58	301	197	190	267	52	9.6	86
24	7.7	12	11	85	56	590	192	199	281	50	9.4	85
25	7.5	16	10	77	52	462	183	251	296	47	9.5	84
26	7.5	28	9.2	70	50	391	175	211	293	44	9.2	83
27	7.3	23	9.8	69	49	342	190	194	280	41	8.9	84
28	13	20	8.3	66	48	286	196	189	280	36	8.7	82
29	29	19	8.2	67	---	245	206	190	276	34	8.6	80
30	37	17	8.1	63	---	220	234	189	268	30	8.4	80
31	33	---	8.2	60	---	199	---	207	---	27	8.2	---
TOTAL	825.5	454.7	420.8	1803.6	1804	4449	4014	6586	10105	2973	420.4	1280.0
MEAN	26.6	15.2	13.6	58.2	64.4	144	134	212	337	95.9	13.6	42.7
MAX	85	30	21	154	89	590	234	283	470	233	24	87
MIN	3.3	7.4	8.1	8.6	48	43	74	171	247	27	8.2	7.9
AC-FT	1640	902	835	3580	3580	8820	7960	13060	20040	5900	834	2540

10338700 DONNER CREEK AT HIGHWAY 89, NEAR TRUCKEE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1998, BY WATER YEAR (WY)

MEAN	27.4	20.6	59.4	132	88.3	128	157	262	197	67.1	13.3	47.9
MAX	43.3	40.9	201	438	200	251	220	379	398	180	38.1	60.2
(WY)	1994	1997	1997	1997	1996	1995	1993	1995	1995	1995	1995	1993
MIN	15.8	8.35	10.4	9.27	11.6	30.9	39.8	64.8	19.8	14.2	3.24	40.9
(WY)	1995	1994	1994	1994	1994	1994	1994	1994	1994	1997	1994	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1993 - 1998	
ANNUAL TOTAL	35990.6		35136.0			
ANNUAL MEAN	98.6		96.3		96.7	
HIGHEST ANNUAL MEAN					142	1995
LOWEST ANNUAL MEAN					25.9	1994
HIGHEST DAILY MEAN	2380	Jan 2	590	Mar 24	2380	Jan 2 1997
LOWEST DAILY MEAN	3.3	Oct 22	3.3	Oct 22	2.3	Aug 21 1994
ANNUAL SEVEN-DAY MINIMUM	3.9	Aug 27	4.3	Oct 17	2.5	Aug 19 1994
INSTANTANEOUS PEAK FLOW			657	Mar 24	2500	Jan 2 1997
INSTANTANEOUS PEAK STAGE			5.93	Mar 24	12.76	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	71390		69690		70080	
10 PERCENT EXCEEDS	196		267		268	
50 PERCENT EXCEEDS	58		58		53	
90 PERCENT EXCEEDS	6.0		9.3		8.1	

10339400 MARTIS CREEK NEAR TRUCKEE, CA

LOCATION.—Lat 39°19'44", long 120°07'00", in NE 1/4 NW 1/4 sec.17, T.17 N., R.17 E., Nevada County, Hydrologic Unit 16050102, on left bank 0.2 mi downstream from Martis Creek Lake Dam, 1.8 mi upstream from mouth, and 3.5 mi east of Truckee.

DRAINAGE AREA.—39.9 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1958 to November 1990, June 1993 to current year.

REVISED RECORDS.—WDR CA-79-3: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 5,730 ft above sea level, from topographic map. Prior to July 10, 1972, at site 1.0 mi downstream at different datum.

REMARKS.—Records good including estimated daily discharges. Flow is completely regulated by Martis Creek Lake since Oct. 7, 1971. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,880 ft^3/s, Feb. 1, 1963, gage height, 6.16 ft, site and datum then in use; minimum, 1.3 ft^3/s, July 30, 1961. Maximum discharge since construction of Martis Creek Lake Dam in 1971, 663 ft^3/s, Feb. 28, 1986, gage height, 5.66 ft; maximum gage height, 6.01 ft, Apr. 2, 1974; minimum daily, 0.20 ft^3/s, Nov. 9–14, 1977.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.7	11	12	11	17	19	186	77	88	82	14	10
2	9.9	11	12	13	24	21	345	79	88	81	14	10
3	10	11	11	13	61	23	336	80	88	80	14	10
4	10	11	12	12	66	24	323	82	88	79	14	7.8
5	10	11	12	e11	44	22	309	83	88	77	12	11
6	10	11	12	12	41	22	295	85	88	76	15	18
7	10	11	15	12	42	18	152	86	88	77	13	14
8	10	11	18	12	31	19	54	87	88	76	13	13
9	13	11	14	12	29	18	50	88	88	74	12	15
10	13	11	13	12	25	19	51	89	88	71	12	16
11	12	12	12	13	25	21	54	91	89	35	12	13
12	11	13	12	21	23	25	52	91	89	22	12	12
13	11	13	12	26	23	27	46	92	89	20	12	12
14	11	12	11	20	25	28	46	92	89	18	12	12
15	11	12	11	40	24	36	44	92	89	18	14	12
16	11	12	12	47	21	49	43	92	89	17	13	11
17	11	11	12	54	22	61	42	92	90	17	13	11
18	10	11	12	51	20	64	44	92	90	16	12	9.5
19	10	13	11	50	21	63	54	92	89	16	12	10
20	10	13	11	e36	23	63	61	92	89	15	12	10
21	10	12	11	e25	20	64	62	92	89	15	12	10
22	10	12	10	22	20	65	64	92	88	14	12	11
23	10	12	10	20	22	70	66	92	88	15	12	13
24	10	12	11	20	20	80	68	91	87	15	11	15
25	10	13	11	17	18	82	69	91	86	15	11	17
26	10	13	10	16	18	85	71	91	86	14	11	15
27	10	13	10	17	18	88	72	91	85	14	11	19
28	10	13	10	18	18	90	73	91	84	15	11	18
29	10	13	10	21	---	91	74	90	84	14	11	16
30	10	13	10	20	---	92	76	89	83	14	11	16
31	10	---	11	17	---	93	---	89	---	13	11	---
TOTAL	323.6	358	361	691	761	1542	3282	2753	2632	1125	381	387.3
MEAN	10.4	11.9	11.6	22.3	27.2	49.7	109	88.8	87.7	36.3	12.3	12.9
MAX	13	13	18	54	66	93	345	92	90	82	15	19
MIN	9.7	11	10	11	17	18	42	77	83	13	11	7.8
AC-FT	642	710	716	1370	1510	3060	6510	5460	5220	2230	756	768

e Estimated.

10339400 MARTIS CREEK NEAR TRUCKEE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1971, BY WATER YEAR (WY)

MEAN	8.05	12.0	18.5	30.6	28.0	36.5	60.2	59.5	22.6	6.40	4.90	5.51
MAX	16.4	18.0	86.5	116	83.4	78.8	148	202	96.6	18.0	10.8	10.1
(WY)	1963	1971	1965	1970	1963	1967	1969	1967	1967	1967	1967	1967
MIN	3.73	4.81	5.38	4.28	9.60	11.1	15.4	9.80	3.21	1.79	1.81	2.37
(WY)	1962	1962	1962	1962	1964	1961	1961	1961	1960	1961	1964	1960

SUMMARY STATISTICS	WATER YEARS 1959 - 1971		
ANNUAL MEAN	24.4		
HIGHEST ANNUAL MEAN	47.2		1969
LOWEST ANNUAL MEAN	6.89		1961
HIGHEST DAILY MEAN	903	Jan 31	1963
LOWEST DAILY MEAN	1.3	Jul 30	1961
ANNUAL SEVEN-DAY MINIMUM	1.4	Jul 29	1961
INSTANTANEOUS PEAK FLOW	1880	Feb 1	1963
INSTANTANEOUS PEAK STAGE	6.16	Feb 1	1963
ANNUAL RUNOFF (AC-FT)	17650		
10 PERCENT EXCEEDS	57		
50 PERCENT EXCEEDS	11		
90 PERCENT EXCEEDS	2.7		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1998, BY WATER YEAR (WY)

MEAN	8.96	16.8	21.7	31.2	35.9	47.8	53.0	57.6	37.6	15.3	10.4	9.24
MAX	20.8	80.0	95.5	214	149	181	139	219	169	75.0	76.0	40.2
(WY)	1983	1984	1982	1997	1986	1986	1982	1983	1983	1986	1995	1995
MIN	3.09	1.57	1.25	6.42	8.10	8.35	8.52	7.40	3.96	2.67	2.01	2.40
(WY)	1972	1978	1978	1978	1994	1974	1980	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1972 - 1998	
ANNUAL TOTAL	16921.9		14596.9			
ANNUAL MEAN	46.4		40.0		28.8	
HIGHEST ANNUAL MEAN					74.5	1983
LOWEST ANNUAL MEAN					6.90	1977
HIGHEST DAILY MEAN	357	Jan 16	345	Apr 2	626	Mar 1 1986
LOWEST DAILY MEAN	4.7	Sep 3	7.8	Sep 4	.20	Nov 9 1977
ANNUAL SEVEN-DAY MINIMUM	8.6	Aug 29	9.9	Oct 1	.21	Nov 9 1977
INSTANTANEOUS PEAK FLOW			356	Apr 1	663	Feb 28 1986
INSTANTANEOUS PEAK STAGE			4.49	Apr 1	6.01	Apr 2 1974
ANNUAL RUNOFF (AC-FT)	33560		28950		20880	
10 PERCENT EXCEEDS	111		89		72	
50 PERCENT EXCEEDS	15		18		12	
90 PERCENT EXCEEDS	10		10		4.4	

10339400 MARTIS CREEK NEAR TRUCKEE, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—
CHEMICAL DATA: Water years 1975–95.
WATER TEMPERATURE: Water years 1975 to current year.
SEDIMENT DATA: Water years 1975–95.

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: October 1974 to current year.

INSTRUMENTATION.—Digital water-temperature recorder since October 1974.

REMARKS.—Missing days due to vandalization of equipment. Water temperature is affected by regulation from Martis Creek Lake Dam (station 10339380). Unpublished chemical-quality, water-temperature, and sediment data prior to October 1974, available at the U.S. Geological Survey office in Carson City, NV.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum recorded, 25.5°C, July 11, 12, 1993; minimum recorded, 0.0°C, Feb. 16, 17, 1982, Jan. 11–13, 16, 1995.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum recorded, 21.0°C, July 9; minimum recorded, 1.0°C, Feb. 4, 7, 8, 14.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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

10339400 MARTIS CREEK NEAR TRUCKEE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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

10339419 TRUCKEE RIVER ABOVE PROSSER CREEK, NEAR TRUCKEE, CA

LOCATION.—Lat 39°22'07", long 120°06'50", in SE 1/4 NW 1/4 sec.32, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, on right bank 0.2 mi upstream from Prosser Creek, and 4.5 mi northeast of Truckee.

DRAINAGE AREA.—644 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1993 to September 1998 (discontinued).

GAGE.—Water-stage recorder. Elevation of gage is 5,560 ft above sea level, from topographic map

REMARKS.—Records good. Flow regulated by Lake Tahoe, Donner Lake, and Martis Creek Lake (station numbers 10337000, 10338400, and 10339380). See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 14,500 ft^3/s, Jan. 2, 1997, gage height, 15.89 ft; minimum daily, 11 ft^3/s, July 28, Aug. 11, 15, 19, 1994.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	286	175	258	358	196	680	1810	1690	1530	1310	362	357
2	261	172	218	370	212	685	2140	1780	1660	1160	356	389
3	246	169	209	340	322	694	2110	1730	1640	1130	350	391
4	248	210	207	345	307	703	2070	1640	1590	1100	346	391
5	231	241	209	345	268	724	2050	1580	1630	1100	398	413
6	229	256	210	346	270	726	2020	1580	1700	1120	402	432
7	227	255	229	344	270	713	1890	1500	2090	1150	398	410
8	206	253	232	341	271	713	1800	1550	1940	1260	393	407
9	208	251	220	342	242	713	1680	1630	2190	1240	388	447
10	190	252	214	348	229	718	1490	1490	2580	1220	386	425
11	176	251	214	362	223	731	1490	1400	2550	1130	383	411
12	170	254	208	395	271	751	1470	1340	2590	1070	381	406
13	167	252	208	297	311	764	1470	1290	2800	996	382	404
14	166	251	207	304	327	773	1460	1230	2910	866	418	401
15	165	249	207	477	317	813	1350	1220	2870	827	411	404
16	165	247	293	444	311	870	930	1240	2890	631	387	406
17	164	246	305	632	332	909	929	1190	2750	587	380	409
18	162	245	308	477	324	925	950	1170	2710	579	378	413
19	161	264	309	398	341	938	1010	1200	2690	552	376	425
20	160	254	322	322	352	989	1100	1240	2620	501	374	439
21	159	249	323	281	357	1020	1240	1230	2630	454	372	446
22	155	247	321	257	351	1330	1400	1220	2610	452	370	453
23	156	250	319	243	357	1690	1530	1250	2530	439	368	456
24	161	250	318	232	486	2480	1470	1270	2500	437	366	463
25	158	270	317	219	650	1970	1400	1500	2330	430	364	460
26	156	330	316	209	679	2070	1370	1350	2100	410	363	464
27	154	289	315	208	676	1950	1420	1300	1870	404	362	480
28	158	271	312	208	678	1860	1440	1320	1780	392	361	464
29	172	265	313	219	---	1770	1510	1320	1600	384	360	462
30	184	261	354	206	---	1710	1620	1310	1460	379	359	467
31	179	---	357	197	---	1680	---	1370	---	369	358	---
TOTAL	5780	7429	8352	10066	9930	35062	45619	43130	67340	24079	11652	12795
MEAN	186	248	269	325	355	1131	1521	1391	2245	777	376	427
MAX	286	330	357	632	679	2480	2140	1780	2910	1310	418	480
MIN	154	169	207	197	196	680	929	1170	1460	369	346	357
AC-FT	11460	14740	16570	19970	19700	69550	90490	85550	133600	47760	23110	25380

10339419 TRUCKEE RIVER ABOVE PROSSER CREEK, NEAR TRUCKEE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1998, BY WATER YEAR (WY)

MEAN	119	167	484	912	778	870	872	1206	1035	427	253	270
MAX	186	369	1750	3693	2580	1692	1521	2436	2245	777	376	427
(WY)	1998	1997	1997	1997	1997	1997	1998	1996	1998	1998	1998	1998
MIN	34.3	46.6	50.7	52.5	55.9	137	180	224	72.6	41.2	12.1	54.1
(WY)	1995	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1994 - 1998	
ANNUAL TOTAL	360577		281234			
ANNUAL MEAN	988		771		615	
HIGHEST ANNUAL MEAN					1122	1997
LOWEST ANNUAL MEAN					85.0	1994
HIGHEST DAILY MEAN	11000	Jan 2	2910	Jun 14	11000	Jan 2 1997
LOWEST DAILY MEAN	154	Oct 27	154	Oct 27	11	Jul 28 1994
ANNUAL SEVEN-DAY MINIMUM	157	Oct 22	157	Oct 22	12	Aug 9 1994
INSTANTANEOUS PEAK FLOW			3090	Jun 14	14500	Jan 2 1997
INSTANTANEOUS PEAK STAGE			9.43	Jun 14	15.89	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	715200		557800		445600	
10 PERCENT EXCEEDS	2700		1770		1680	
50 PERCENT EXCEEDS	414		404		322	
90 PERCENT EXCEEDS	212		208		48	

10339419 TRUCKEE RIVER ABOVE PROSSER CREEK, NEAR TRUCKEE, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—
SPECIFIC CONDUCTANCE: October 1994 to September 1998 (discontinued).
WATER TEMPERATURE: March 1993 to September 1998 (discontinued).

PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: October 1994 to September 1998.
WATER TEMPERATURE: March 1993 to September 1998.

INSTRUMENTATION.—Water-temperature recorder since March 1993. Specific conductance recorder since October 1994.

REMARKS.—Water temperature and specific conductance are affected by regulation from Lake Tahoe, Donner Lake, and Martis Creek Lake. Interruptions in record were due to malfunction of the recording equipment.

EXTREMES FOR PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: Maximum recorded, 333 micromhos, Nov. 1, 1994; minimum recorded, 34 micromhos, Jan. 2, 1997.
WATER TEMPERATURE: Maximum recorded, 25.0°C, July 13, 15, 20, 1994; minimum recorded, 0.0°C, many days most years.

EXTREMES FOR CURRENT YEAR.—
SPECIFIC CONDUCTANCE: Maximum recorded, 138 micromhos, Feb. 1; minimum recorded 73 micromhos, Mar. 24, May 2, 3.
WATER TEMPERATURE: Maximum recorded, 23.5°C, Aug. 12; minimum recorded, 0.5°C, many days.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	110	106	122	119	116	109	105	98	138	121	107	97
2	109	107	122	118	117	109	104	97	136	116	101	97
3	111	109	122	119	120	114	107	97	132	118	103	99
4	110	108	122	113	114	113	106	96	120	114	100	98
5	112	109	117	111	115	111	105	99	126	113	101	98
6	112	110	114	110	118	111	107	97	128	117	100	96
7	112	110	114	110	113	107	107	98	123	114	99	98
8	118	111	115	110	112	108	106	99	122	114	101	98
9	118	110	116	111	114	112	107	99	119	111	101	99
10	121	118	119	110	113	111	106	99	119	113	101	99
11	122	120	118	111	116	111	113	102	127	111	103	100
12	123	121	120	111	118	112	114	106	128	108	102	100
13	124	122	118	111	117	112	117	109	124	111	103	101
14	124	122	113	110	116	113	113	108	118	104	106	102
15	124	122	117	110	120	112	116	99	119	105	104	102
16	125	122	120	111	122	106	106	97	119	107	103	102
17	125	122	122	111	109	105	105	87	114	108	103	101
18	125	122	116	110	106	102	105	92	115	107	103	101
19	125	122	119	111	112	103	109	99	121	105	102	100
20	126	122	115	112	111	103	109	104	121	108	100	98
21	126	122	119	112	115	104	112	108	116	102	99	96
22	126	123	120	112	116	103	117	111	112	104	96	83
23	127	124	120	111	113	99	120	112	114	106	86	82
24	125	122	114	110	105	99	121	113	107	95	84	73
25	125	122	117	110	101	99	123	116	98	94	92	84
26	126	123	126	113	107	98	124	117	100	96	95	91
27	126	123	121	112	108	99	129	118	105	97	94	92
28	126	121	119	111	104	99	126	120	107	98	99	93
29	123	117	120	111	102	99	126	118	---	---	98	94
30	120	116	118	110	105	99	127	120	---	---	96	93
31	121	118	---	---	105	98	128	122	---	---	94	93
MONTH	127	106	126	110	122	98	129	87	138	94	107	73

10339419 TRUCKEE RIVER ABOVE PROSSER CREEK, NEAR TRUCKEE, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	97	91	80	74	---	---	95	87	101	97	109	105
2	92	90	77	73	---	---	95	83	102	99	107	105
3	93	90	78	73	---	---	92	81	103	100	107	105
4	91	89	79	75	---	---	90	82	104	101	107	105
5	91	89	81	78	---	---	88	81	103	100	107	101
6	95	89	81	77	---	---	86	80	102	99	108	101
7	97	89	83	79	---	---	87	80	102	99	109	106
8	93	87	81	78	---	---	88	81	102	100	108	105
9	93	87	79	76	---	---	88	82	103	100	105	102
10	92	91	82	77	---	---	87	82	103	100	107	102
11	93	91	83	81	---	---	89	83	104	102	107	105
12	93	91	84	82	---	---	91	86	104	101	109	105
13	92	91	90	84	---	---	92	87	104	102	109	105
14	95	91	87	86	---	---	92	87	104	94	109	106
15	96	92	88	86	---	---	93	88	104	90	109	106
16	100	96	87	85	---	---	94	90	106	103	108	106
17	98	96	88	86	---	---	93	88	106	103	108	106
18	97	95	90	87	---	---	93	87	105	102	107	105
19	96	93	89	86	---	---	94	88	105	102	107	104
20	95	90	---	---	---	---	95	90	106	103	106	104
21	92	83	---	---	---	---	---	---	106	103	106	104
22	88	82	---	---	---	---	---	---	106	103	105	103
23	83	81	---	---	---	---	---	---	107	103	106	103
24	86	82	---	---	---	---	---	---	106	103	106	102
25	87	84	---	---	---	---	---	---	107	103	106	104
26	88	84	---	---	83	76	---	---	107	103	105	102
27	87	82	---	---	86	78	---	---	107	104	104	102
28	85	79	---	---	86	80	---	---	107	104	105	103
29	83	77	---	---	87	79	99	95	108	105	105	103
30	81	74	---	---	91	80	99	96	107	104	106	103
31	---	---	---	---	---	---	99	96	109	105	---	---
MONTH	100	74	---	---	---	---	---	---	109	90	109	101

10339419 TRUCKEE RIVER ABOVE PROSSER CREEK, NEAR TRUCKEE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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

10340300 PROSSER CREEK RESERVOIR NEAR TRUCKEE, CA

LOCATION.—Lat 39°22'46", long 120°08'12", in NW 1/4 SW 1/4 sec.30, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, in control house on Prosser Creek Dam on Prosser Creek, 1.4 mi upstream from mouth, and 4.2 mi northeast of Truckee.

DRAINAGE AREA.—50.3 mi^2.

PERIOD OF RECORD.—January 1963 to current year. January 1963 to September 1987 (monthend elevations and contents only). Prior to October 1976, published as "near Boca."

REVISED RECORDS.—WDR CA-76-3: 1975. WDR CA-79-3: Drainage area.

GAGE.—Nonrecording gage read most days. Datum of gage is sea level (levels by U.S. Bureau of Reclamation).

REMARKS.—Reservoir is formed by rolled-earth and rockfill dam. Storage began Jan. 30, 1963. Usable capacity, 28,641 acre-ft between elevations 5,660.6 ft, top of inactive contents, and 5,741.2 ft, crest of spillway. Inactive contents, 1,201 acre-ft, includes 83 acre-ft dead contents below elevation 5,637.0 ft. Figures given represent total contents at 0800 hours. Reservoir is used for flood control, enhancement of fishery, and recreation. See schematic diagram of Truckee River Basin.

COOPERATION.—Gage readings and capacity table were provided by U.S. Bureau of Reclamation, not rounded to U.S. Geological Survey standards.

EXTREMES (at 0800 hours) FOR PERIOD OF RECORD.—Maximum contents, 33,719 acre-ft, May 19, 1996, elevation, 5,746.11 ft; minimum since reservoir first filled, 66 acre-ft, Oct. 10–12, 1983, elevation, 5,635.75 ft.

EXTREMES (at 0800 hours) FOR CURRENT YEAR.—Maximum contents observed, 29,298 acre-ft, July 11, elevation, 5,740.47 ft; minimum observed, 9,438 acre-ft, Mar. 30, elevation, 5,702.52 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by U.S. Bureau of Reclamation, dated August 1962)

5,630	17	5,680	3,791	5,720	16,643
5,640	143	5,690	5,901	5,730	22,220
5,650	491	5,700	8,636	5,740	28,949
5,660	1,148	5,710	12,147	5,750	37,046
5,670	2,230				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14912	9936	9777	9882	9595	9774	9539	19162	16573	28971	26748	19772
2	14805	9901	9794	9908	9605	9794	9542	20046	16694	29016	26562	19558
3	14608	9868	9814	9932	9629	9828	9536	20934	16877	29030	26389	19322
4	14417	9841	9841	9956	9696	9848	9497	21673	16968	29008	26195	19106
5	14218	9851	9845	9964	9733	9868	9497	22239	17152	29001	25997	18880
6	14018	9862	9848	9939	9754	9908	9490	22765	17505	28979	25793	18858
7	13823	9872	9862	9922	9780	9922	9471	23205	17989	29046	25577	18715
8	13628	9882	9908	9895	9817	9942	9555	23689	18558	29135	25360	18510
9	13455	9895	9922	9868	9828	9956	9642	24309	18974	29194	25147	18336
10	13301	9908	9905	9848	9814	9970	9824	24821	19373	29253	24914	18185
11	13132	9895	9882	9828	9800	9950	10071	25127	19761	29298	24682	17994
12	12946	9882	9858	9848	9767	9939	10292	25367	20178	29268	24460	17781
13	12773	9868	9834	9901	9740	9936	10477	25583	20764	29209	24231	17567
14	12591	9855	9814	9922	9713	9936	10663	25725	21278	29150	24004	17354
15	12397	9831	9794	9977	9679	9950	10845	25746	21734	29068	23778	17152
16	12204	9814	9771	10060	9639	10008	10998	25610	22177	28956	23554	16922
17	12013	9800	9774	10130	9612	10004	11162	25288	22696	28855	23325	16714
18	11829	9787	9800	10275	9585	10008	11345	24927	23066	28768	23105	16468
19	11636	9780	9811	10130	9582	9977	11563	24401	23650	28680	22827	16204
20	11444	9800	9821	9841	9572	9936	11912	23618	24316	28571	22579	15950
21	11244	9800	9828	9771	9592	9925	12349	22852	24868	28433	22363	15687
22	11054	9794	9841	9767	9605	10001	13005	22050	25434	28301	22104	15425
23	10859	9790	9841	9750	9639	10591	13766	21230	25963	28171	21849	15173
24	10664	9794	9848	9710	9672	11222	14548	20460	26410	28014	21600	14940
25	10509	9821	9855	9659	9693	12612	15191	19857	26852	27845	21356	14699
26	10367	9885	9855	9612	9713	11856	15735	19407	27323	27669	21129	14444
27	10234	9908	9858	9609	9740	10655	16244	18704	27714	27484	20893	14390
28	10130	9888	9858	9605	9761	10078	16846	17936	28057	27357	20671	13996
29	10046	9855	9862	9612	---	9595	17541	17421	28396	27225	20448	13801
30	9998	9817	9868	9615	---	9438	18321	17081	28724	27098	20224	13576
31	9964	---	9875	9605	---	9497	---	16775	---	26937	20000	---
MAX	14912	9936	9922	10275	9828	12612	18321	25746	28724	29298	26748	19772
MIN	9964	9780	9771	9605	9572	9438	9471	16775	16573	26937	20000	13576
a	5704.09	5703.66	5703.83	5703.03	5703.49	5702.70	5723.22	5720.26	5739.69	5737.19	5726.25	5713.44
b	-5032	-147	+58	-270	+156	-264	+8824	-1546	+11949	-1787	-6937	-6424

CAL YR 1997 MAX 32229 MIN 9300 b -1418
WTR YR 1998 MAX 29298 MIN 9438 b -1420

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

10340500 PROSSER CREEK BELOW PROSSER CREEK DAM, NEAR TRUCKEE, CA

LOCATION.—Lat 39°22'24", long 120°07'50", in NW 1/4 NE 1/4 sec.31, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, on left bank 300 ft downstream from Station Creek, 0.5 mi downstream from Prosser Creek Dam, 0.9 mi upstream from mouth, and 4.2 mi northeast of Truckee.

DRAINAGE AREA.—52.9 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1902 to June 1903 (gage heights only), October 1942 to December 1950, June 1951 to current year. Prior to October 1976, published as "near Boca." Monthly discharge only for October 1942 to December 1950 published in WSP 1734; daily discharge in files of U.S. Geological Survey. Records for April 1889 to November 1890, published in the 11th and 12th Annual Reports, Part 2, have been found to be unreliable and should not be used.

REVISED RECORDS.—WDR CA-79-3: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 5,602.31 ft above sea level (levels by U.S. Bureau of Reclamation). See WSP 2127 for history of changes prior to September 1956. October 1956 to May 1976, water-stage recorder at site 0.8 mi downstream at datum 29.69 ft lower.

REMARKS.—Records good. Flow regulated by Prosser Creek Reservoir (station 10340300) since Jan. 30, 1963. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Water years 1943–63, prior to construction of Prosser Creek Dam, maximum discharge, 4,560 ft^3/s, Dec. 23, 1955, gage height, 10.13 ft, present datum, from rating curve extended above 910 ft^3/s on basis of slope-area measurement of peak flow; maximum gage height, 11.0 ft from floodmarks, present datum, Nov. 20, 1950; minimum discharge, 0.4 ft^3/s, July 18, 1961, result of work on dam upstream. Maximum discharge since construction of Prosser Creek Dam in 1963, 2,030 ft^3/s, Jan. 3, 1997, gage height, 6.72 ft, from rating curve extended above 880 ft^3/s on basis of valve setting at Prosser Creek Dam; minimum daily, 0.02 ft^3/s, Jan. 2, 1975, result of temporary closing of Prosser Creek Dam for spillway maintenance.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	31	27	21	52	33	154	120	310	156	137	123
2	94	31	15	21	52	33	153	130	277	199	137	123
3	100	29	14	21	52	33	147	130	278	198	137	123
4	99	18	18	21	50	33	139	159	250	198	137	122
5	99	15	23	27	49	33	140	182	196	197	137	124
6	98	15	23	36	50	33	140	183	181	181	137	123
7	98	15	24	36	49	33	109	183	184	168	137	123
8	100	15	24	36	49	33	89	183	184	168	136	122
9	100	15	29	36	54	33	62	183	184	167	136	124
10	97	23	32	36	59	43	36	184	185	167	136	124
11	97	28	32	36	59	50	31	185	186	167	136	123
12	98	28	32	37	59	50	30	185	188	167	137	123
13	96	28	32	36	59	50	31	186	188	168	137	123
14	97	28	32	36	59	50	31	205	188	167	137	124
15	108	28	32	52	59	51	32	288	189	167	136	130
16	105	28	26	94	59	81	32	373	164	167	135	134
17	102	26	21	129	52	98	33	422	147	167	135	134
18	103	25	21	171	47	106	34	486	112	167	137	138
19	102	26	21	219	47	131	36	599	80	166	136	144
20	102	25	21	154	41	143	37	636	81	166	136	144
21	102	25	21	67	33	143	38	632	82	166	136	143
22	102	25	21	67	33	150	49	628	83	165	135	143
23	100	25	21	67	33	356	72	625	84	165	137	144
24	85	26	21	68	33	135	86	620	84	165	138	145
25	75	26	21	67	33	491	85	619	84	165	133	144
26	74	36	21	58	33	918	85	614	84	164	125	143
27	63	42	21	52	33	679	85	610	84	148	126	143
28	52	42	21	52	33	440	85	516	84	137	125	143
29	43	42	21	52	---	329	85	391	90	137	124	143
30	31	42	21	52	---	176	94	353	108	137	125	142
31	31	---	21	51	---	155	---	352	---	137	124	---
TOTAL	2707	808	730	1908	1321	5122	2260	11162	4619	5154	4157	3981
MEAN	87.3	26.9	23.5	61.5	47.2	165	75.3	360	154	166	134	133
MAX	108	42	32	219	59	918	154	636	310	199	138	145
MIN	31	15	14	21	33	33	30	120	80	137	124	122
AC-FT	5370	1600	1450	3780	2620	10160	4480	22140	9160	10220	8250	7900

10340500 PROSSER CREEK BELOW PROSSER CREEK DAM, NEAR TRUCKEE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1962, BY WATER YEAR (WY)

MEAN	13.1	34.5	47.9	36.1	45.1	75.4	203	261	157	48.5	12.1	8.45
MAX	22.4	268	321	155	89.7	175	406	669	395	176	44.5	19.6
(WY)	1946	1951	1956	1956	1943	1943	1952	1952	1952	1952	1952	1952
MIN	6.63	8.62	9.81	10.0	11.0	20.0	94.5	106	55.9	10.0	3.79	3.90
(WY)	1961	1960	1960	1948	1948	1948	1955	1959	1947	1961	1961	1947

SUMMARY STATISTICS	WATER YEARS 1943 - 1962		
ANNUAL MEAN	76.8		
HIGHEST ANNUAL MEAN	162		1952
LOWEST ANNUAL MEAN	38.1		1961
HIGHEST DAILY MEAN	3490	Dec 23	1955
LOWEST DAILY MEAN	2.7	Aug 24	1961
ANNUAL SEVEN-DAY MINIMUM	3.1	Aug 19	1947
INSTANTANEOUS PEAK FLOW	4560	Dec 23	1955
INSTANTANEOUS PEAK STAGE	11.00	Nov 20	1950
ANNUAL RUNOFF (AC-FT)	55620		
10 PERCENT EXCEEDS	212		
50 PERCENT EXCEEDS	27		
90 PERCENT EXCEEDS	7.0		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1998, BY WATER YEAR (WY)

MEAN	94.4	40.9	57.6	81.0	76.1	118	125	214	111	57.1	47.3	110
MAX	282	214	361	564	397	371	372	545	494	167	151	477
(WY)	1983	1982	1965	1997	1986	1986	1969	1983	1983	1985	1995	1983
MIN	5.41	6.84	5.32	7.96	17.5	27.1	21.7	17.2	8.39	6.33	2.55	1.96
(WY)	1989	1989	1989	1989	1991	1977	1977	1985	1966	1966	1994	1992

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1964 - 1998	
ANNUAL TOTAL	49046		43929			
ANNUAL MEAN	134		120		94.5	
HIGHEST ANNUAL MEAN					214	1983
LOWEST ANNUAL MEAN					24.4	1977
HIGHEST DAILY MEAN	1560	Jan 4	918	Mar 26	1790	Feb 21 1986
LOWEST DAILY MEAN	14	Dec 3	14	Dec 3	.02	Jan 2 1975
ANNUAL SEVEN-DAY MINIMUM	17	Nov 4	17	Nov 4	.30	Apr 13 1977
INSTANTANEOUS PEAK FLOW			954	Mar 25	2030	Jan 3 1997
INSTANTANEOUS PEAK STAGE			5.49	Mar 25	6.72	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	97280		87130		68430	
10 PERCENT EXCEEDS	192		188		221	
50 PERCENT EXCEEDS	92		98		47	
90 PERCENT EXCEEDS	26		25		9.2	

10340500 PROSSER CREEK BELOW PROSSER CREEK DAM, NEAR TRUCKEE, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—
WATER TEMPERATURE: June 1993 to September 1998 (discontinued).

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: June 1993 to September 1998 (discontinued).

INSTRUMENTATION.—Water-temperature recorder since June 1993.

REMARKS.—Water temperature is affected by regulation from Prosser Creek Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum recorded, 27.0°C, Aug. 13–15, 1994; minimum recorded, 0.0°C, Jan. 26, 1997.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum recorded, 19.0°C, several days in September; minimum recorded, 0.5°C, Jan. 4.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.5	15.0	12.5	8.5	8.5	3.5	5.5	2.5	4.5	3.0	6.0	3.0
2	17.0	15.5	12.5	8.5	8.0	3.0	4.0	1.5	4.0	2.5	6.5	3.0
3	17.0	15.0	11.0	8.5	7.5	3.0	4.5	2.5	5.0	3.5	5.5	2.5
4	16.5	15.0	13.0	7.5	7.0	3.0	4.5	.5	5.0	3.0	6.5	2.0
5	16.5	14.5	13.5	6.5	5.0	4.5	5.0	1.0	4.0	3.0	5.5	2.0
6	15.5	14.5	11.5	6.5	5.0	4.0	4.5	2.0	4.5	2.5	6.5	2.0
7	15.5	14.0	12.5	7.0	5.0	3.0	5.0	3.0	4.0	1.5	6.0	2.0
8	15.0	14.0	12.0	6.0	5.5	2.5	4.5	3.0	5.0	2.0	7.0	2.5
9	15.0	13.5	10.5	6.0	5.5	3.0	4.5	3.5	5.0	3.0	7.0	2.5
10	14.5	13.0	9.5	7.0	5.5	3.0	4.5	3.5	4.0	3.0	6.0	2.5
11	14.0	12.5	10.0	7.5	5.5	3.0	4.5	3.5	5.0	3.0	6.0	3.0
12	14.0	12.0	10.5	7.5	4.5	3.0	4.5	2.5	4.5	3.5	5.5	3.0
13	13.5	12.0	9.0	7.5	4.5	3.0	4.5	3.0	5.5	3.0	4.5	3.0
14	13.5	12.0	9.0	7.0	4.0	2.0	4.0	3.0	4.5	2.5	6.0	3.0
15	13.5	12.0	8.0	7.0	5.0	2.5	4.5	3.5	5.5	3.0	6.0	3.0
16	13.5	12.0	9.0	6.5	5.0	3.0	4.0	3.5	4.5	3.0	4.5	3.0
17	13.5	12.0	9.0	6.0	5.5	2.5	4.5	3.5	6.0	3.0	4.5	3.0
18	13.0	11.5	8.0	6.0	6.0	2.0	4.0	3.0	5.5	2.5	4.5	2.5
19	13.0	11.5	9.0	6.5	5.0	1.5	4.0	3.5	4.5	3.0	4.0	2.5
20	13.0	11.5	8.5	6.0	5.5	2.0	4.0	3.5	6.0	2.5	4.0	2.5
21	12.5	11.5	8.5	5.5	4.0	1.5	4.5	3.5	3.5	2.0	4.0	2.5
22	12.5	11.0	8.0	5.5	5.0	1.5	4.5	3.5	5.5	3.0	4.0	3.0
23	12.5	11.0	9.0	6.0	5.0	1.0	5.0	3.5	3.5	2.5	3.5	2.5
24	12.5	10.5	9.0	5.5	5.0	1.5	5.0	3.0	5.0	2.5	6.0	1.0
25	12.5	10.0	9.0	6.0	5.5	1.5	5.0	3.0	5.0	2.5	4.0	2.0
26	12.0	10.0	7.0	5.5	5.0	1.5	5.0	3.5	6.0	2.5	2.5	2.0
27	12.0	9.5	7.0	6.0	5.0	1.5	5.5	3.5	6.0	3.0	2.5	2.0
28	11.0	9.5	7.5	5.5	5.5	2.0	5.0	3.5	6.5	3.0	2.5	2.0
29	11.5	9.5	7.0	5.5	5.5	2.0	5.0	3.0	---	---	3.5	2.0
30	12.5	9.0	7.0	5.5	5.5	2.0	5.0	3.0	---	---	4.0	2.5
31	12.5	9.0	---	---	4.5	2.5	4.5	3.0	---	---	3.0	2.5
MONTH	17.5	9.0	13.5	5.5	8.5	1.0	5.5	.5	6.5	1.5	7.0	1.0

10340500 PROSSER CREEK BELOW PROSSER CREEK DAM, NEAR TRUCKEE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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

10341950 LITTLE TRUCKEE RIVER BELOW DIVERSION DAM, NEAR SIERRAVILLE, CA

LOCATION.—Lat 39°29'29", long 120°17'39", in SE 1/4 SE 1/4 sec.15, T.19 N., R.15 E., Sierra County, Hydrologic Unit 16050102, Tahoe National Forest, on left bank 50 ft upstream from Independence Lake Road Bridge, 0.7 mi downstream from diversion dam, and 7.8 mi southeast of Sierraville.

DRAINAGE AREA.—36.1 mi^2.

PERIOD OF RECORD.—June 1993 to September 1998 (discontinued).
WATER TEMPERATURE: October 1993 to September 1994.

GAGE.—Water-stage recorder. Elevation of gage is 6,380 ft above sea level, from topographic map.

REMARKS.—Records fair including estimated daily discharge. Some water diverted to Sierra Valley about 0.7 mi upstream for irrigation in the summer months. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,980 ft^3/s, Jan. 2, 1997, gage height, 12.50 ft from crest-stage gage; minimum daily, 1.5 ft^3/s, Aug. 17–19, 29, 1994.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	5.7	9.3	11	31	26	124	459	334	338	10	2.8
2	5.6	5.6	8.4	12	e50	24	113	555	423	309	8.6	2.8
3	5.3	5.7	9.7	11	82	24	109	519	413	289	7.8	3.1
4	4.7	5.6	8.8	12	57	e28	99	439	347	286	6.1	3.5
5	4.4	5.6	8.7	27	44	e28	92	386	388	276	5.2	11
6	4.4	5.5	9.5	37	42	28	89	360	419	283	4.8	21
7	4.6	6.6	11	27	45	e27	82	340	476	307	4.6	4.2
8	4.7	6.1	16	24	54	26	80	434	505	301	5.3	3.3
9	11	5.9	17	21	e42	e25	78	451	496	291	5.3	5.8
10	11	6.2	16	19	e40	e25	81	370	510	278	4.8	3.7
11	9.2	6.5	14	17	e39	24	77	295	466	253	5.0	3.3
12	7.6	6.7	16	20	38	27	74	258	490	214	4.9	3.5
13	6.9	6.5	16	28	33	25	74	229	542	196	4.4	3.7
14	6.8	6.6	12	29	30	26	71	199	555	171	4.8	3.7
15	7.0	6.5	15	39	e34	27	67	191	522	140	5.4	3.7
16	7.4	6.8	15	54	e36	30	62	202	602	129	2.5	3.5
17	7.4	6.9	15	77	39	34	64	173	515	141	2.0	3.6
18	6.7	6.8	13	71	35	34	71	166	496	122	1.9	3.7
19	6.5	12	14	62	29	35	84	198	566	130	2.5	4.2
20	6.2	10	13	59	32	44	104	227	548	111	2.6	4.1
21	6.1	8.3	13	55	41	54	146	220	527	103	2.2	4.0
22	5.9	8.1	12	45	47	118	212	193	517	86	2.0	4.0
23	5.8	12	13	42	e45	198	289	225	467	66	1.8	4.1
24	5.6	10	12	41	e44	367	258	245	440	52	2.1	3.8
25	5.5	14	12	e38	e42	340	230	405	470	76	2.8	3.7
26	5.6	26	14	35	40	268	226	327	456	45	2.7	4.2
27	5.8	14	16	34	34	235	257	246	390	35	2.5	19
28	5.7	11	15	e34	29	202	309	207	381	21	2.7	8.1
29	5.9	10	14	34	---	171	364	197	384	29	2.8	4.6
30	5.9	9.8	12	e34	---	149	415	187	366	22	2.6	7.1
31	5.8	---	12	e34	---	135	---	235	---	15	2.7	---
TOTAL	194.9	257.0	402.4	1083	1154	2804	4401	9138	14011	5115	125.4	160.8
MEAN	6.29	8.57	13.0	34.9	41.2	90.5	147	295	467	165	4.05	5.36
MAX	11	26	17	77	82	367	415	555	602	338	10	21
MIN	3.9	5.5	8.4	11	29	24	62	166	334	15	1.8	2.8
AC-FT	387	510	798	2150	2290	5560	8730	18130	27790	10150	249	319

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1998, BY WATER YEAR (WY)

MEAN	5.61	13.2	39.5	98.8	71.1	104	176	368	321	98.9	8.85	4.40
MAX	7.50	40.3	122	376	183	179	253	555	821	345	31.9	6.48
(WY)	1994	1997	1997	1997	1996	1995	1997	1996	1995	1995	1995	1993
MIN	2.52	4.58	5.50	8.14	8.94	26.9	90.1	100	16.5	4.63	2.22	2.04
(WY)	1995	1995	1995	1994	1994	1994	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1993 - 1998	
ANNUAL TOTAL	40260.6		38846.5			
ANNUAL MEAN	110		106		110	
HIGHEST ANNUAL MEAN					183	1995
LOWEST ANNUAL MEAN					23.5	1994
HIGHEST DAILY MEAN	2400	Jan 2	602	Jun 16	2400	Jan 2 1997
LOWEST DAILY MEAN	2.1	Aug 6	1.8	Aug 23	1.5	Aug 17 1994
ANNUAL SEVEN-DAY MINIMUM	2.7	Aug 21	2.1	Aug 17	1.6	Aug 15 1994
INSTANTANEOUS PEAK FLOW			697	Jun 16	3980	Jan 2 1997
INSTANTANEOUS PEAK STAGE			6.02	Jun 16	12.50	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	79860		77050		79490	
10 PERCENT EXCEEDS	304		374		330	
50 PERCENT EXCEEDS	15		28		20	
90 PERCENT EXCEEDS	3.3		4.1		3.3	

e Estimated.

10342900 INDEPENDENCE LAKE NEAR TRUCKEE, CA

LOCATION.—Lat 39°27'07", long 120°17'23", in NW 1/4 SW 1/4 sec.35, T.19 N., R.15 E., Sierra County, Hydrologic Unit 16050102, on right bank of outlet channel, 60 ft upstream from outlet gates, and 10.5 mi northwest of Truckee.

DRAINAGE AREA.—7.51 mi^2.

PERIOD OF RECORD.—November 1988 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Sierra Pacific Power Co.).

REMARKS.—Lake levels regulated by an earthfill dam at the outlet constructed in 1939. Usable capacity, 17,300 acre-ft between elevations 6,921.0 ft, invert of outlet gate and 6,949.0 ft, normal maximum storage level. Water is used for irrigation and power development downstream. Records, including extremes, represent usable contents. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 17,700 acre-ft, Aug. 4, 1995, elevation, 6,949.51 ft; minimum, 4,750 acre-ft, Nov. 10, 11, 1988, elevation, 6,929.39 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 17,600 acre-ft, July 15, elevation, 6,949.36 ft; minimum, 12,200 acre-ft, several days in December and January, minimum elevation, 6,941.44 ft, Jan. 1.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Sierra Pacific Power Co., dated Nov. 5, 1941)

6,921	0	6,940	11,240
6,925	2,220	6,945	14,530
6,930	5,110	6,950	18,000
6,935	8,110		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14000	13000	12600	12200	12700	13100	13700	14700	14200	16700	17400	16600
2	14000	12900	12500	12200	12800	13100	13700	14900	14200	16700	17300	16500
3	14000	12900	12500	12200	12800	13100	13800	15100	14200	16700	17300	16500
4	13900	12900	12500	12300	12800	13100	13800	15200	14300	16800	17300	16500
5	13900	12900	12500	12300	12800	13100	13800	15300	14300	16800	17300	16500
6	13800	12800	12500	12300	12900	13100	13800	15300	14400	16900	17300	16500
7	13800	12800	12600	12300	13000	13100	13800	15300	14500	17000	17200	16500
8	13700	12800	12600	12300	13000	13100	13800	15300	14600	17000	17200	16500
9	13800	12700	12600	12300	13000	13100	13700	15400	14700	17100	17200	16400
10	13700	12700	12500	12300	13100	13100	13800	15300	14800	17300	17200	16400
11	13700	12700	12500	12300	13000	13100	13800	15300	14900	17300	17100	16400
12	13700	12700	12500	12400	13100	13000	13800	15200	15000	17400	17100	16300
13	13600	12700	12500	12400	13000	13000	13800	15200	15200	17500	17100	16300
14	13600	12700	12500	12400	13100	13000	13800	15100	15300	17500	17200	16200
15	13600	12700	12500	12400	13100	13000	13800	15000	15500	17600	17100	16200
16	13500	12600	12500	12500	13100	13000	13800	14900	15600	17500	17100	16100
17	13500	12600	12500	12500	13100	13000	13800	14900	15700	17500	17000	16100
18	13500	12600	12400	12700	13100	13000	13800	14800	15800	17500	17000	16000
19	13400	12600	12400	12700	13100	13000	13800	14700	15900	17500	17000	16000
20	13400	12600	12400	12700	13100	13000	13800	14600	16000	17500	16900	15900
21	13400	12600	12400	12700	13200	13000	13900	14600	16200	17500	16900	15900
22	13300	12600	12400	12700	13200	13100	14000	14500	16300	17500	16900	15800
23	13300	12600	12400	12700	13200	13300	14100	14400	16400	17500	16800	15800
24	13200	12600	12300	12700	13200	13500	14100	14400	16500	17500	16800	15700
25	13200	12600	12300	12600	13200	13500	14100	14400	16500	17500	16800	15700
26	13200	12700	12300	12600	13200	13600	14200	14400	16600	17500	16700	15700
27	13100	12600	12300	12600	13200	13700	14200	14400	16600	17500	16700	15600
28	13100	12600	12300	12600	13200	13700	14300	14300	16700	17400	16700	15600
29	13000	12600	12200	12600	---	13700	14400	14200	16700	17400	16600	15600
30	13000	12600	12200	12600	---	13700	14600	14200	16700	17400	16600	15500
31	13000	---	12200	12600	---	13700	---	14200	---	17400	16600	---
MAX	14000	13000	12600	12700	13200	13700	14600	15400	16700	17600	17400	16600
MIN	13000	12600	12200	12200	12700	13000	13700	14200	14200	16700	16600	15500
a	6942.65	6942.04	6941.45	6942.11	6942.93	6943.78	6945.09	6944.43	6948.17	6949.09	6947.97	6946.46
b	-1000	-400	-400	+400	+600	+500	+900	-400	+2500	+700	-800	-1100

CAL YR 1997 MAX 17600 MIN 10700 b -2800
WTR YR 1998 MAX 17600 MIN 12200 b +1500

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

10343000 INDEPENDENCE CREEK NEAR TRUCKEE, CA

LOCATION.—Lat 39°27'24", long 120°17'10", in SW 1/4 NW 1/4 sec.35, T.19 N., R.15 E., Sierra County, Hydrologic Unit 16050102, on left bank 0.4 mi downstream from Independence Lake outlet and 10.5 mi northwest of Truckee.

DRAINAGE AREA.—8.10 mi^2.

PERIOD OF RECORD.—November 1902 to September 1907, November 1909 to June 1910, August 1968 to current year.

REVISED RECORDS.—WDR CA-79-3: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 6,920 ft above sea level, from topographic map. July 1, 1904, to June 30, 1910, nonrecording gage 75 ft downstream from Independence Lake outlet; prior to July 1, 1904, nonrecording gage 600 ft downstream at approximately same datum.

REMARKS.—Records good. Flow regulated by Independence Lake (station 10342900) since 1939. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 325 ft^3/s, Jan. 3, 1997, gage height, 6.17 ft; maximum gage height, 8.16 ft, Apr. 16, 1993, backwater from snow and ice; no flow Sept. 28 to Nov. 10, 1905, June 1, 1906.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	14	14	14	14	14	16	21	79	88	22	17
2	21	14	14	14	14	14	16	21	79	79	21	17
3	21	14	14	14	14	14	16	21	79	73	20	17
4	21	14	14	14	14	14	16	20	79	64	20	17
5	21	14	14	14	14	14	15	20	79	59	19	18
6	21	14	14	14	14	14	15	56	79	55	19	17
7	20	14	14	14	14	14	15	86	80	55	19	17
8	20	14	14	14	14	14	15	85	79	51	19	17
9	20	14	14	14	14	14	15	85	79	34	18	22
10	20	14	14	14	14	14	15	83	79	24	18	28
11	20	14	14	14	14	14	15	82	80	23	18	28
12	20	14	14	14	14	14	15	82	80	23	18	28
13	20	14	14	14	14	15	15	81	80	23	18	27
14	20	14	14	14	14	15	15	81	79	23	19	27
15	20	14	14	14	14	15	15	81	79	39	18	27
16	20	14	14	14	14	15	15	80	79	62	18	27
17	20	14	14	14	14	15	15	80	79	49	18	27
18	20	14	14	14	14	15	15	80	79	41	18	27
19	20	14	14	14	14	15	16	80	79	38	18	27
20	20	14	14	14	14	15	16	80	80	37	18	27
21	20	14	14	14	14	15	16	79	80	37	18	26
22	19	14	14	14	14	15	17	79	80	43	18	26
23	19	14	14	14	14	16	17	79	80	42	17	26
24	19	14	14	14	14	16	17	80	80	44	17	26
25	19	14	14	14	14	16	18	80	80	44	17	26
26	19	14	14	14	14	16	18	79	79	38	17	26
27	19	14	14	13	14	16	18	78	80	36	17	26
28	19	14	14	14	14	16	19	79	82	36	17	26
29	19	14	14	14	---	16	19	78	93	33	17	26
30	17	14	14	14	---	16	20	78	93	26	17	26
31	14	---	14	14	---	16	---	79	---	22	17	---
TOTAL	609	420	434	433	392	462	485	2173	2412	1341	565	719
MEAN	19.6	14.0	14.0	14.0	14.0	14.9	16.2	70.1	80.4	43.3	18.2	24.0
MAX	21	14	14	14	14	16	20	86	93	88	22	28
MIN	14	14	14	13	14	14	15	20	79	22	17	17
AC-FT	1210	833	861	859	778	916	962	4310	4780	2660	1120	1430

10343000 INDEPENDENCE CREEK NEAR TRUCKEE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1998, BY WATER YEAR (WY)

MEAN	15.7	21.8	12.3	13.5	11.7	15.0	19.1	44.0	56.0	27.6	20.5	21.5
MAX	45.8	97.6	58.2	161	58.0	94.5	72.9	112	188	89.2	114	133
(WY)	1976	1984	1982	1997	1986	1996	1986	1982	1983	1983	1988	1973
MIN	.47	1.36	.70	1.04	1.07	1.45	1.50	1.51	2.09	1.78	2.05	.58
(WY)	1980	1989	1993	1993	1974	1977	1977	1977	1977	1977	1976	1979

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1968 - 1998	
ANNUAL TOTAL	12957		10445			
ANNUAL MEAN	35.5		28.6		23.2	
HIGHEST ANNUAL MEAN					46.7	1983
LOWEST ANNUAL MEAN					7.63	1989
HIGHEST DAILY MEAN	295	Jan 4	93	Jun 29	295	Jan 4 1997
LOWEST DAILY MEAN	11	Feb 7	13	Jan 27	.02	Sep 26 1973
ANNUAL SEVEN-DAY MINIMUM	11	Feb 7	14	Jan 21	.02	Sep 26 1973
INSTANTANEOUS PEAK FLOW			94	Jun 28	325	Jan 3 1997
INSTANTANEOUS PEAK STAGE			3.83	Jun 28	8.16	Apr 16 1993
ANNUAL RUNOFF (AC-FT)	25700		20720		16820	
10 PERCENT EXCEEDS	125		79		63	
50 PERCENT EXCEEDS	17		17		11	
90 PERCENT EXCEEDS	11		14		2.0	

10343500 SAGEHEN CREEK NEAR TRUCKEE, CA
(Hydrologic Benchmark Station)

LOCATION.—Lat 39°25'54", long 120°14'13", in NE 1/4 NE 1/4 sec.7, T.18 N., R.16 E., Nevada County, Hydrologic Unit 16050102, on left bank 2.2 mi upstream from bridge on State Highway 89 and 7.5 mi north of Truckee.

DRAINAGE AREA.—10.5 mi^2.

PERIOD OF RECORD.—October 1953 to current year.
PRECIPITATION DATA: Water years 1990–96.
CHEMICAL DATA: Water years 1968–72, 1986–96.
WATER TEMPERATURE: Water years 1970–74.
SEDIMENT DATA: Water years 1968–75, 1981–96.

REVISED RECORDS.—WDR CA-79-3: Drainage area.

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 6,320 ft above sea level, from topographic map. Prior to Dec. 2, 1953, nonrecording gage at site 100 ft upstream at different datum.

REMARKS.—Records good including estimated periods. No storage or diversion upstream from station. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,230 ft^3/s, Jan. 1, 1997, gage height, 5.20 ft, from poor high-water mark on gage house. Rating curve extended above 160 ft^3/s on basis of slope-area measurement at gage height 4.28 ft; minimum daily, 1.0 ft^3/s, Sept. 13, 1960.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 50 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 24	0515	54	2.69	June 12	1745	147	3.34
May 2	1730	110	3.13				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	4.3	4.8	4.1	5.3	5.2	11	71	65	32	7.1	4.0
2	4.4	4.3	4.5	4.4	5.1	5.2	11	82	71	30	6.7	3.9
3	4.0	4.4	4.4	4.3	7.7	5.3	11	76	67	28	6.5	3.9
4	3.7	4.5	4.4	4.4	6.8	5.2	10	68	68	27	6.2	4.0
5	3.6	4.5	4.4	4.4	6.1	5.1	9.9	65	69	25	5.8	8.1
6	3.6	4.5	4.5	4.6	6.0	5.1	9.7	67	73	24	5.7	8.0
7	3.7	4.7	4.7	4.3	5.7	e5.0	9.3	70	89	24	5.6	5.3
8	3.8	4.3	4.7	4.3	5.8	5.0	9.1	79	82	23	5.4	5.0
9	8.1	4.3	4.5	4.4	5.5	4.9	9.3	83	77	22	5.2	9.5
10	6.0	4.4	4.5	4.4	5.4	5.1	9.4	66	74	21	5.2	6.4
11	5.1	4.5	4.4	4.5	5.3	5.4	9.3	59	77	19	5.0	5.7
12	4.7	4.7	4.6	6.7	5.3	5.8	8.8	50	89	17	4.9	5.6
13	4.6	4.5	4.4	6.0	5.2	5.8	8.7	44	89	16	4.9	5.0
14	4.4	4.5	4.3	5.8	5.3	5.9	8.3	40	82	15	8.1	4.7
15	4.3	4.3	4.3	13	5.2	6.9	8.0	43	76	14	7.0	4.5
16	4.2	4.4	4.3	12	5.2	7.9	7.9	42	74	14	5.5	4.4
17	4.1	4.5	4.6	14	5.1	8.3	8.4	35	66	13	5.1	4.3
18	4.1	4.4	4.5	10	5.0	8.3	9.9	39	64	12	5.0	4.2
19	4.0	7.0	4.5	8.7	5.0	8.4	12	47	64	12	4.9	4.1
20	4.0	5.2	4.3	7.2	5.1	9.7	15	50	60	11	4.8	4.3
21	4.0	4.9	4.2	6.6	5.2	11	21	44	57	10	4.7	4.3
22	3.9	5.2	4.1	6.3	5.3	21	28	46	53	10	4.5	4.1
23	4.0	6.7	e4.1	6.1	5.2	32	33	48	49	10	4.4	4.3
24	4.0	5.8	4.0	5.9	5.1	48	33	55	47	11	4.4	4.7
25	4.0	6.4	4.0	5.8	5.1	30	32	77	47	10	4.3	4.4
26	4.1	8.5	e4.0	5.7	5.0	22	33	59	43	9.4	4.2	4.9
27	4.1	6.2	4.0	5.7	5.1	20	38	50	39	9.1	4.2	8.1
28	4.1	5.5	4.1	5.6	5.2	17	45	48	37	8.4	4.1	5.5
29	4.1	5.2	4.0	5.8	---	14	53	45	35	8.0	4.0	5.0
30	4.1	5.0	4.0	5.5	---	13	62	47	33	7.8	3.9	5.3
31	4.2	---	4.0	5.3	---	12	---	56	---	7.5	4.0	---
TOTAL	132.4	151.6	134.1	195.8	152.3	363.5	574.0	1751	1916	500.2	161.3	155.5
MEAN	4.27	5.05	4.33	6.32	5.44	11.7	19.1	56.5	63.9	16.1	5.20	5.18
MAX	8.1	8.5	4.8	14	7.7	48	62	83	89	32	8.1	9.5
MIN	3.4	4.3	4.0	4.1	5.0	4.9	7.9	35	33	7.5	3.9	3.9
AC-FT	263	301	266	388	302	721	1140	3470	3800	992	320	308

e Estimated.

10343500 SAGEHEN CREEK NEAR TRUCKEE, CA—Continued
(Hydrologic Benchmark Station)

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1998, BY WATER YEAR (WY)

MEAN	3.46	5.11	7.32	8.83	8.34	10.9	24.6	43.9	25.9	7.42	3.16	2.76
MAX	11.9	27.7	44.0	87.3	51.0	50.1	51.6	117	142	37.4	11.8	7.56
(WY)	1963	1984	1965	1997	1963	1986	1986	1969	1983	1983	1983	1983
MIN	1.46	1.83	2.03	1.81	2.54	2.74	6.13	3.45	1.82	1.36	1.20	1.11
(WY)	1995	1993	1977	1962	1994	1962	1975	1988	1992	1994	1994	1960

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1954 - 1998	
ANNUAL TOTAL	7682.2		6187.7			
ANNUAL MEAN	21.0		17.0		12.7	
HIGHEST ANNUAL MEAN					30.0	1983
LOWEST ANNUAL MEAN					2.65	1977
HIGHEST DAILY MEAN	800	Jan 1	89	Jun 7	800	Jan 1 1997
LOWEST DAILY MEAN	2.7	Aug 22	3.4	Oct 1	1.0	Sep 13 1960
ANNUAL SEVEN-DAY MINIMUM	2.8	Aug 5	3.8	Oct 1	1.1	Sep 9 1960
INSTANTANEOUS PEAK FLOW			147	Jun 12	1230	Jan 1 1997
INSTANTANEOUS PEAK STAGE			3.34	Jun 12	5.20	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	15240		12270		9170	
10 PERCENT EXCEEDS	47		55		33	
50 PERCENT EXCEEDS	7.5		5.7		4.5	
90 PERCENT EXCEEDS	3.2		4.1		1.9	

10344300 STAMPEDE RESERVOIR NEAR TRUCKEE, CA

LOCATION.—Lat 39°28'14", long 120°06'11", in SE 1/4 NE 1/4 sec.29, T.19 N., R.17 E., Sierra County, Hydrologic Unit 16050102, Tahoe National Forest, in control house near base of spillway of Stampede Dam on Little Truckee River, 0.2 mi upstream from Worn Mill Canyon, and 11.0 mi northeast of Truckee.

DRAINAGE AREA.—136 mi^2.

PERIOD OF RECORD.—August 1969 to current year. August 1969 to September 1977 (monthend elevations and contents only). October 1977 to September 1987 (daily contents). Prior to October 1976, published as "near Boca."

GAGE.—Nonrecording gage read most days. Datum of gage is sea level (levels by U.S. Bureau of Reclamation).

REMARKS.—Reservoir is formed by rolled-earth and rockfill dam. Storage began Aug. 1, 1969. Total capacity, 226,500 acre-ft at elevation 5,948.7 ft, spillway crest. Inactive contents, 5,010 acre-ft, includes 660 acre-ft dead contents below elevation 5,798.3 ft. Figures given, including extremes, represent total contents at 0800 hours. Reservoir is used for flood control, municipal water supply, enhancement of fishery, and recreation. See schematic diagram of Truckee River Basin.

COOPERATION.—Records and capacity table were provided by U.S. Bureau of Reclamation, not rounded to U.S. Geological Survey standards.

EXTREMES (at 0800 hours) FOR PERIOD OF RECORD.—Maximum contents, 254,493 acre-ft, June 1, 1983, elevation, 5,956.55 ft; minimum since reservoir first filled, 30,772 acre-ft, Jan. 31, Feb. 1, 1978, elevation, 5,853.60 ft.

EXTREMES (at 0800 hours) FOR CURRENT YEAR.—Maximum contents observed, 235,176 acre-ft, July 13, elevation, 5,951.19 ft; minimum observed, 181,290 acre-ft, Oct. 8, elevation, 5,934.74 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by U.S. Bureau of Reclamation, dated July 1971)

5,850	27,915	5,880	60,185	5,910	115,865	5,940	197,630
5,860	36,470	5,890	76,008	5,920	140,141	5,950	231,005
5,870	47,090	5,900	94,535	5,930	167,355	5,960	267,386

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	181562	181351	182288	183229	187611	192499	203203	213416	212086	231040	224058	208454
2	181532	181351	182288	183412	187920	192594	203203	214617	212285	231633	223270	208289
3	181471	181351	182258	183564	188415	192719	203300	215922	212817	232192	222553	208125
4	181471	181351	182288	183655	188631	192751	203300	217165	213216	232647	221735	207994
5	181411	181351	182379	183655	188724	192814	203300	217872	213782	233068	220952	207863
6	181411	181381	182471	183655	189034	193065	203268	218581	214583	233488	220172	208191
7	181351	181411	182592	183746	189406	193065	203203	219189	215755	233839	219358	208092
8	181290	181351	182895	183807	189780	193191	203106	219900	216997	234296	218480	207961
9	181471	181351	182835	183868	189967	193191	203106	220782	218243	234718	217603	207961
10	181562	181441	182743	183929	190091	193254	203074	221463	219358	234964	216829	207863
11	181562	181441	182714	183990	190278	193380	203074	221871	220545	235035	216023	207699
12	181502	181502	182804	184143	190341	193474	203041	222110	221360	235141	215252	207600
13	181441	181502	182834	184387	190497	193600	203009	222451	221769	235176	214617	207502
14	181441	181502	182926	184448	190777	193727	202944	222485	221735	234964	214082	207371
15	181441	181471	182926	184753	190934	193853	202847	222212	221599	234683	213682	207273
16	181471	181471	183016	184906	190996	194010	202686	221973	221531	234120	213249	207142
17	181471	181502	183047	185151	191215	194042	202524	221633	221463	233558	212783	207044
18	181471	181471	183077	185519	191215	193979	202427	221224	221599	232927	212285	206815
19	181471	181562	183047	186009	191309	193979	202427	220511	222280	232297	211853	206618
20	181471	181532	183077	186163	191496	194042	202621	219731	223099	231668	211389	206520
21	181441	181562	183138	186317	191559	194137	202977	219020	223886	231040	210992	206357
22	181441	181622	183229	186440	191872	194453	203754	218243	224606	230447	210628	206226
23	181502	181653	183047	186593	191966	195339	204925	217468	225224	229821	210331	206096
24	181502	181622	183108	186686	192186	197375	206063	216694	225912	229231	210001	206031
25	181411	181713	183108	186778	192186	199565	207109	216157	226705	228641	209671	205998
26	181381	182197	183016	186870	192311	200656	207961	215956	227430	228018	209408	205835
27	181411	182167	183047	186963	192405	201492	208749	215386	228225	227464	209177	206063
28	181381	182197	183077	187086	192437	202169	209671	214717	228988	226843	209012	206063
29	181441	182258	183077	187302	---	202557	210827	214049	229613	226256	208881	206096
30	181411	182319	183138	187333	---	202750	212152	213316	230343	225568	208749	206063
31	181351	---	183229	187425	---	202977	---	212617	---	224881	208585	---
MAX	181562	182319	183229	187425	192437	202977	212152	222485	230343	235176	224058	208454
MIN	181290	181351	182258	183229	187611	192499	202427	212617	212086	224881	208585	205835
a	5934.76	5935.08	5935.38	5936.75	5938.36	5941.66	5944.46	5944.60	5949.81	5948.23	5943.38	5942.61
b	-151	+968	+910	+4196	+5012	+10540	+9175	+465	+17726	-5462	-16296	-2522

CAL YR 1997 MAX 240387 MIN 181290 b -22834
WTR YR 1998 MAX 235176 MIN 181290 b +24561

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

10344400 LITTLE TRUCKEE RIVER ABOVE BOCA RESERVOIR, NEAR TRUCKEE, CA

LOCATION.—Lat 39°26'09", long 120°05'00", in SW 1/4 SW 1/4 sec.3, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, on left bank 1 mi upstream from Boca Reservoir, 1.5 mi upstream from Dry Creek, 3.0 mi downstream from Stampede Dam, and 5.5 mi northeast of Truckee.

DRAINAGE AREA.—146 mi^2.

PERIOD OF RECORD.—June 1903 to October 1910, September 1939 to current year. Monthly discharge only for some periods, published in WSP 1314 and 1734. Published as "at Pine Station," June 1903 to December 1907, as "at Starr," January 1908 to October 1910, and as "near Boca," September 1939 to September 1976.

REVISED RECORDS.—WSP 1564: 1903–4, 1906–7, 1910, drainage area at site used in 1903–7.

GAGE.—Water-stage recorder and concrete control. Datum of gage is 5,618.67 ft above sea level (U.S. Bureau of Reclamation Benchmark). June 1903 to October 1910, nonrecording gages at different sites and datums.

REMARKS.—Records good. Flow regulated by Independence Lake (station 10342900) since 1939 and Stampede Reservoir (station 10344300) since 1969. There is one transbasin diversion to Sierra Valley. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 13,300 ft^3/s, Feb. 1, 1963, gage height, 9.00 ft, from rating curve extended above 1,600 ft^3/s on basis of slope-area measurement of peak flow; minimum daily, 0.30 ft^3/s, Sept. 16–21, 1969.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	31	32	31	33	33	265	480	664	175	421	90
2	32	31	31	32	34	33	262	531	503	159	421	90
3	32	31	31	31	37	34	263	532	503	158	420	90
4	32	31	31	32	36	35	261	581	459	164	420	90
5	32	31	31	e32	34	e35	262	621	347	166	420	96
6	32	31	32	e31	35	35	261	627	276	178	420	97
7	32	31	33	31	35	e34	259	623	252	174	419	95
8	32	31	33	31	e34	33	259	624	251	176	421	94
9	33	31	32	31	33	34	260	622	249	187	419	96
10	33	31	31	31	34	35	262	621	249	207	416	96
11	32	32	31	32	33	35	263	620	323	226	415	93
12	32	32	31	35	33	36	260	620	543	230	367	93
13	32	32	31	33	33	37	260	624	798	273	304	92
14	32	32	31	33	34	39	259	673	881	317	261	91
15	32	32	32	36	34	45	258	686	881	387	230	91
16	32	32	32	36	e33	97	257	689	881	480	230	90
17	32	32	32	38	32	171	258	685	766	492	230	90
18	32	32	31	37	e33	170	260	767	539	495	230	90
19	32	32	31	36	33	170	265	879	404	476	230	90
20	32	32	31	e36	33	176	270	877	401	459	213	90
21	32	32	31	33	33	181	280	877	400	444	179	90
22	32	32	e31	32	33	206	290	877	400	430	166	90
23	32	32	e31	32	e33	227	290	878	356	418	166	83
24	32	32	e31	32	e33	239	284	878	267	406	166	78
25	32	32	e31	e32	e33	206	279	879	252	397	147	77
26	32	35	e31	32	32	297	275	878	212	388	120	78
27	32	32	e31	32	34	292	301	878	188	382	99	80
28	32	32	31	32	33	281	323	831	201	374	90	78
29	32	32	31	33	---	275	324	798	189	371	90	78
30	31	32	31	32	---	270	372	797	170	370	90	78
31	31	---	31	32	---	269	---	797	---	400	90	---
TOTAL	991	953	971	1019	940	4060	8242	22350	12805	9959	8310	2654
MEAN	32.0	31.8	31.3	32.9	33.6	131	275	721	427	321	268	88.5
MAX	33	35	33	38	37	297	372	879	881	495	421	97
MIN	31	31	31	31	32	33	257	480	170	158	90	77
AC-FT	1970	1890	1930	2020	1860	8050	16350	44330	25400	19750	16480	5260

e Estimated.

10344400 LITTLE TRUCKEE RIVER ABOVE BOCA RESERVOIR, NEAR TRUCKEE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1968, BY WATER YEAR (WY)

MEAN	76.0	83.5	123	87.3	131	170	399	543	310	78.1	29.8	25.8
MAX	394	630	725	264	835	374	855	1304	1045	433	180	76.5
(WY)	1963	1951	1965	1956	1963	1967	1952	1952	1967	1967	1940	1959
MIN	13.5	13.0	11.6	9.45	22.0	39.0	106	171	45.7	6.06	4.45	5.93
(WY)	1962	1940	1960	1962	1948	1948	1961	1961	1954	1949	1949	1948

SUMMARY STATISTICS	WATER YEARS 1939 - 1968		
ANNUAL MEAN	170		
HIGHEST ANNUAL MEAN	321		1952
LOWEST ANNUAL MEAN	58.9		1961
HIGHEST DAILY MEAN	8810	Feb 1	1963
LOWEST DAILY MEAN	3.0	Nov 30	1954
ANNUAL SEVEN-DAY MINIMUM	4.0	Jul 17	1949
INSTANTANEOUS PEAK FLOW	13300	Feb 1	1963
INSTANTANEOUS PEAK STAGE	9.00	Feb 1	1963
ANNUAL RUNOFF (AC-FT)	123200		
10 PERCENT EXCEEDS	454		
50 PERCENT EXCEEDS	70		
90 PERCENT EXCEEDS	13		

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

MEAN	75.8	42.2	73.7	109	82.4	136	305	556	342	174	119	56.1
MAX	503	132	711	1089	400	418	923	1371	1733	1301	573	359
(WY)	1974	1975	1984	1997	1996	1996	1986	1969	1983	1983	1975	1971
MIN	.56	.75	2.85	16.7	10.6	13.8	25.6	30.6	28.1	24.1	1.65	.47
(WY)	1970	1970	1970	1980	1970	1970	1970	1988	1988	1981	1969	1969

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1969 - 1998	
ANNUAL TOTAL	94801		73254			
ANNUAL MEAN	260		201		173	
HIGHEST ANNUAL MEAN					427	1983
LOWEST ANNUAL MEAN					53.4	1992
HIGHEST DAILY MEAN	2590	Jan 12	881	Jun 14	2590	Jan 12 1997
LOWEST DAILY MEAN	30	Sep 11	31	Oct 1	.30	Sep 16 1969
ANNUAL SEVEN-DAY MINIMUM	30	Sep 11	31	Oct 30	.31	Sep 15 1969
INSTANTANEOUS PEAK FLOW			892	May 27	13300	Feb 1 1963
INSTANTANEOUS PEAK STAGE			2.50	May 27	9.00	Feb 1 1963
ANNUAL RUNOFF (AC-FT)	188000		145300		125400	
10 PERCENT EXCEEDS	534		535		494	
50 PERCENT EXCEEDS	135		90		45	
90 PERCENT EXCEEDS	31		31		27	

10344490 BOCA RESERVOIR NEAR TRUCKEE, CA

LOCATION.—Lat 39°23'20", long 120°05'43", in NE 1/4 NW 1/4 sec.28, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, in control house at Boca Dam on Little Truckee River, 1,800 ft upstream from mouth, and 6.3 mi northeast of Truckee.

DRAINAGE AREA.—172 mi^2.

PERIOD OF RECORD.—December 1938 to current year. Prior to October 1976 published as "at Boca." Monthend contents only for December 1938 to September 1957, published in WSP 1734.

REVISED RECORDS.—WSP 1634: Drainage area.

GAGE.—Pressure gage with mercury column read most days. Datum of gage is sea level (levels by U.S. Bureau of Reclamation).

REMARKS.—Reservoir is formed by earthfill, rock-faced dam. Storage began Dec. 8, 1938. Usable capacity, 40,868 acre-ft between elevations 5,521 ft, outlet sill, and 5,605 ft, top of spillway gates. Elevation of spillway (gate open) is 5,589.01 ft. Dead contents, 241 acre-ft. Records, including extremes, represent usable contents at 0800 hours. Water is used for irrigation in the State of Nevada and for power development. See schematic diagram of Truckee River Basin.

COOPERATION.—Records and capacity table were provided by U.S. Bureau of Reclamation; not rounded to U.S. Geological Survey standards.

EXTREMES (at 0800 hours) FOR PERIOD OF RECORD.—Maximum contents, 41,440 acre-ft, Dec. 23, 1955, elevation, 5,605.55 ft; minimum, 37 acre-ft, Mar. 4–9, 1955, elevation, 5,521.65 ft.

EXTREMES (at 0800 hours) FOR CURRENT YEAR.—Maximum contents observed, 39,704 acre-ft, May 15, elevation, 5,603.80 ft; minimum, 18,425 acre-ft, Dec. 30, elevation, 5,577.65 ft.

Capacity table (elevation, in feet, and contents in acre-feet)
(Based on table provided by U.S. Bureau of Reclamation, dated November 1970)

5,540	2,356	5,570	13,768
5,545	3,513	5,580	20,002
5,550	4,970	5,590	27,488
5,555	6,725	5,600	36,128
5,560	8,778	5,605	40,868

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31394	26683	22298	18491	19088	20278	32719	35260	32135	36737	35514	38443
2	31394	26404	22189	18556	18921	20382	32719	35670	32544	36793	35492	38272
3	31351	26127	21936	18655	18854	20451	32719	36036	33423	36848	35469	38178
4	31351	25851	21648	18755	18954	20520	32719	36497	34376	36960	35488	38102
5	31438	25655	21398	18821	19021	20625	32675	37053	35269	37072	35588	38131
6	31438	25445	21150	18854	19021	20765	32719	37398	35870	37202	35807	38320
7	31351	25258	20904	18921	19021	20835	32719	37726	36478	37351	35990	38462
8	31307	25064	20799	19021	19088	20940	32719	38036	36988	37595	36197	38500
9	31177	24872	20625	19054	19088	21010	32675	38348	37492	37735	36386	38585
10	31048	24695	20416	19121	19088	21081	32675	38595	38008	37952	36561	38709
11	30909	24549	20174	19188	19021	21187	32894	38832	38197	38178	36821	38823
12	30763	24412	19967	19289	18921	21279	33114	39080	38008	38452	37118	38794
13	30591	24275	19729	19390	18921	21392	33290	39396	37886	38652	37314	38756
14	30429	24131	19491	19424	18988	21513	33556	39675	37623	38623	37454	38728
15	30275	23972	19289	19525	19088	21663	33689	39704	37398	38699	37520	38699
16	30147	23836	19054	19627	19188	21821	33867	38547	37193	38557	37557	38661
17	29943	23679	19013	19763	19255	22225	34045	37510	37034	38414	37632	38623
18	29774	23514	18988	19913	19323	22685	33644	36534	37034	38282	37764	38585
19	29613	23328	18954	20106	19424	23149	33246	35789	36969	38131	37923	38538
20	29445	23179	18888	20209	19525	23634	32982	35142	36876	37942	38131	38500
21	29277	22994	18854	20278	19593	24154	32894	34492	36793	37726	38310	38452
22	29118	22847	18788	20278	19729	24879	33070	33849	36719	37548	38424	38386
23	28934	22736	18755	20243	19797	25616	33246	33211	36617	37351	38538	38320
24	28752	22553	18689	20174	19900	27285	33511	32579	36580	37118	38642	38272
25	28511	22407	18655	20106	19968	28511	33778	32023	36626	36858	38747	38178
26	28264	22356	18622	20037	20071	29470	34045	31568	36635	36589	38842	38093
27	28026	22371	18556	19900	20140	30446	34224	31647	36617	36367	38880	38055
28	27756	22407	18524	19729	20209	31264	34492	31746	36635	36165	38880	37980
29	27488	22407	18491	19593	---	32023	34762	31867	36672	35981	38794	37829
30	27205	22371	18425	19424	---	32675	35079	31953	36719	35789	38709	37735
31	26963	---	18458	19255	---	32719	---	32049	---	35542	38614	---
MAX	31438	26683	22298	20278	20209	32719	35079	39704	38197	38699	38880	38823
MIN	26963	22356	18425	18491	18854	20278	32675	31568	32135	35542	35469	37735
a	5589.35	5583.35	5577.70	5578.90	5580.30	5596.20	5598.85	5595.43	5600.64	5599.36	5602.66	5601.73
b	-4431	-4592	-3913	+797	+954	+12510	+2360	-3030	+4670	-1177	+3072	-879

CAL YR 1997 MAX 39272 MIN 18425 b -4610
WTR YR 1998 MAX 39704 MIN 18425 b +6341

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

10344500 LITTLE TRUCKEE RIVER BELOW BOCA DAM, NEAR TRUCKEE, CA

LOCATION.—Lat 39°23'13", long 120°05'40", in NE 1/4 NW 1/4 sec.28, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, on right bank 800 ft upstream from mouth, 1,000 ft downstream from Boca Dam, and 6.2 mi northeast of Truckee.

DRAINAGE AREA.—173 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—April to October 1890 (monthly discharge only), January 1911 to September 1915, January 1939 to current year. Prior to October 1976 published as "at Boca." Monthly discharge only for January 1939 to September 1957, published in WSP 1734.

REVISED RECORDS.—WDR CA-79-3: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 5,500 ft above sea level, from topographic map. Jan. 1, 1911, to Sept. 30, 1915, nonrecording gage at site 650 ft downstream at different datum. January 1939 to September 1957, records computed from daily log of rated settings of needle valve in dam, and from computed flow over spillway.

REMARKS.—Records good except for flow less than 5 ft^3/s, which are fair. Flow regulated by Boca Reservoir (station 10344490) since 1938, Independence Lake (station 10342900) since 1939, and Stampede Reservoir (station 10344300) since 1969. There is one transmountain diversion to Sierra Valley of about 6,000 acre-ft per year. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 8,800 ft^3/s, Dec. 24, 1955, from records of Washoe County Water Conservation District; no flow for many days in many years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	168	90	10	126	.61	297	328	e588	153	445	179
2	35	168	147	4.6	126	.65	297	347	e98	120	447	150
3	31	168	170	.52	63	.70	297	347	e1.2	101	432	133
4	20	168	170	.51	5.6	.71	297	348	.98	101	400	96
5	28	151	170	8.8	42	.68	297	441	1.0	102	353	70
6	49	135	170	16	53	.71	297	486	1.2	102	332	70
7	57	129	156	6.4	53	.68	297	487	1.2	102	332	69
8	72	129	136	.51	53	.68	297	488	1.0	64	332	69
9	96	129	142	.50	53	.68	297	489	1.1	68	333	39
10	96	117	149	.50	76	.69	237	490	90	85	311	18
11	96	107	152	.57	90	.72	201	491	369	85	281	79
12	109	107	151	.68	62	.74	201	492	618	104	251	105
13	118	107	151	30	24	.74	201	493	890	234	240	105
14	110	107	151	42	10	.73	201	593	1020	280	225	105
15	103	107	150	15	5.7	.78	201	1100	1020	402	216	105
16	110	112	99	.61	.73	.87	201	1270	1010	534	199	105
17	114	119	55	.61	.62	.92	336	1260	834	557	173	105
18	114	119	55	.66	.58	.92	479	1250	547	557	146	104
19	114	119	55	.65	.60	.92	478	1250	442	557	120	104
20	114	119	55	.58	.63	1.0	420	1240	442	557	111	104
21	113	119	55	13	.69	1.2	324	1240	442	536	111	114
22	119	119	55	33	.71	1.3	289	1240	442	550	111	120
23	122	118	55	59	.64	1.4	257	1230	404	528	110	119
24	138	118	55	70	.61	2.7	238	1230	276	528	96	119
25	154	107	54	70	.60	2.4	238	1220	238	529	87	119
26	154	53	54	106	.57	2.1	238	e1050	220	512	87	119
27	162	24	54	127	.59	1.8	238	e890	186	493	87	119
28	170	40	54	126	.60	1.7	238	e820	186	477	119	128
29	169	67	54	126	---	1.6	238	e780	165	471	139	133
30	169	75	33	126	---	178	273	762	153	500	138	133
31	168	---	14	126	---	297	---	760	---	453	164	---
TOTAL	3259	3425	3111	1121.70	850.47	506.33	8400	24912	10687.68	10442	6928	3137
MEAN	105	114	100	36.2	30.4	16.3	280	804	356	337	223	105
MAX	170	168	170	127	126	297	479	1270	1020	557	447	179
MIN	20	24	14	.50	.57	.61	201	328	.98	64	87	18
AC-FT	6460	6790	6170	2220	1690	1000	16660	49410	21200	20710	13740	6220

e Estimated.

10344500 LITTLE TRUCKEE RIVER BELOW BOCA DAM, NEAR TRUCKEE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1915, BY WATER YEAR (WY)

MEAN	22.8	38.1	29.2	83.4	75.5	196	721	790	582	169	36.5	26.3
MAX	34.2	58.4	39.3	283	173	558	1367	1260	1211	435	66.3	35.7
(WY)	1915	1913	1914	1914	1914	1914	1914	1911	1911	1911	1911	1912
MIN	14.1	28.4	23.2	20.5	28.4	56.3	106	379	212	50.7	20.1	14.4
(WY)	1914	1915	1912	1913	1912	1912	1912	1912	1913	1912	1915	1915

SUMMARY STATISTICS	WATER YEARS 1911 - 1915		
ANNUAL MEAN	193		
HIGHEST ANNUAL MEAN	387		1914
LOWEST ANNUAL MEAN	94.7		1912
HIGHEST DAILY MEAN	2360	Apr 15	1914
LOWEST DAILY MEAN	.00	Sep 26	1911
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 26	1911
ANNUAL RUNOFF (AC-FT)	140100		
10 PERCENT EXCEEDS	800		
50 PERCENT EXCEEDS	49		
90 PERCENT EXCEEDS	16		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1969, BY WATER YEAR (WY)

MEAN	89.7	106	144	156	160	132	264	426	315	159	146	120
MAX	303	611	856	649	606	442	808	1647	974	389	408	414
(WY)	1968	1951	1951	1965	1963	1967	1952	1952	1967	1967	1958	1952
MIN	.000	.12	.20	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1940	1967	1960	1939	1939	1939	1939	1939	1939	1939	1939	1939

SUMMARY STATISTICS	WATER YEARS 1939 - 1969		
ANNUAL MEAN	190		
HIGHEST ANNUAL MEAN	435		1952
LOWEST ANNUAL MEAN	65.8		1961
HIGHEST DAILY MEAN	5520	Dec 24	1955
LOWEST DAILY MEAN	.00	Jan 1	1939
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	1939
INSTANTANEOUS PEAK FLOW	8800	Dec 24	1955
ANNUAL RUNOFF (AC-FT)	137700		
10 PERCENT EXCEEDS	430		
50 PERCENT EXCEEDS	107		
90 PERCENT EXCEEDS	.02		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1998, BY WATER YEAR (WY)

MEAN	107	73.6	92.0	121	90.3	126	275	493	316	208	158	108
MAX	441	327	568	1296	433	522	975	1148	1788	1131	585	418
(WY)	1972	1984	1984	1997	1997	1996	1986	1985	1983	1983	1975	1971
MIN	.000	.020	.11	.001	1.60	.13	.39	.31	2.63	.75	13.6	.55
(WY)	1995	1991	1978	1995	1995	1995	1988	1988	1977	1981	1984	1970

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1970 - 1998	
ANNUAL TOTAL	120966.43		76780.18			
ANNUAL MEAN	331		210		181	
HIGHEST ANNUAL MEAN					470	1983
LOWEST ANNUAL MEAN					55.6	1992
HIGHEST DAILY MEAN	2530	Jan 9	1270	May 16	2530	Jan 9 1997
LOWEST DAILY MEAN	.79	Jun 15	.50	Jan 9	.00	Sep 13 1994
ANNUAL SEVEN-DAY MINIMUM	.86	Jun 14	.60	Feb 23	.00	Sep 13 1994
INSTANTANEOUS PEAK FLOW			1290	May 15	2720	Jan 8 1997
INSTANTANEOUS PEAK STAGE			4.73	May 15	6.14	Jan 8 1997
ANNUAL RUNOFF (AC-FT)	239900		152300		131300	
10 PERCENT EXCEEDS	753		518		476	
50 PERCENT EXCEEDS	144		119		82	
90 PERCENT EXCEEDS	32		.73		.53	

10344500 LITTLE TRUCKEE RIVER BELOW BOCA DAM, NEAR TRUCKEE, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—
WATER TEMPERATURE: April 1993 to September 1998 (discontinued).

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: April 1993 to September 1998 (discontinued).

INSTRUMENTATION.—Water-temperature recorder since April 1993.

REMARKS.—Water temperature is affected by regulation from Boca Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum recorded, 21.5°C, June 20, 1997; minimum recorded, 1.5°C, Jan. 5, 1998.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum recorded, 18.5°C, June 9; minimum recorded, 1.5°C, Jan. 5.

WATER TEMPERATURE, DEGREES CELCIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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

10344500 LITTLE TRUCKEE RIVER BELOW BOCA DAM, NEAR TRUCKEE, CA—Continued

WATER TEMPERATURE, DEGREES CELCIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	4.0	3.5	7.5	6.5	8.5	8.0	9.5	9.0	13.5	13.0	13.5	13.0
2	4.0	4.0	7.5	6.5	12.5	8.0	10.0	9.0	13.5	13.0	13.5	13.0
3	4.5	4.0	7.5	6.5	13.0	10.5	10.0	9.0	13.5	13.0	13.5	13.0
4	4.5	4.0	7.0	6.5	15.5	11.5	10.0	9.0	13.5	13.0	13.5	13.0
5	4.5	4.0	7.0	6.5	15.5	12.5	10.0	9.0	13.5	13.0	13.5	13.0
6	4.5	4.0	7.0	6.5	16.0	13.0	10.0	9.0	13.5	13.0	14.0	13.0
7	4.5	4.5	7.0	6.5	18.0	12.5	10.0	9.0	13.5	13.0	14.0	13.0
8	5.0	4.5	7.0	7.0	16.5	13.5	10.5	9.0	13.5	13.0	13.5	13.0
9	5.0	4.5	7.5	6.5	18.5	13.5	10.5	9.0	13.5	13.0	15.0	12.5
10	5.0	4.5	7.5	7.0	16.0	8.0	10.5	9.0	13.5	13.0	15.0	12.5
11	5.5	5.0	7.5	7.0	8.5	8.0	10.5	9.0	13.5	13.0	13.5	12.5
12	5.5	5.0	7.0	7.0	8.5	8.5	10.5	9.0	13.5	13.0	13.5	13.0
13	5.5	5.0	7.5	7.0	8.5	8.5	10.0	9.0	13.0	13.0	13.5	13.0
14	5.5	5.0	7.5	7.0	9.0	8.5	10.0	9.5	13.5	12.5	14.0	13.0
15	5.5	5.0	7.5	7.0	9.0	8.5	10.0	9.5	13.5	12.5	14.0	13.0
16	5.5	5.0	8.0	7.0	9.0	8.5	10.0	9.5	13.5	13.0	13.5	13.0
17	5.5	5.0	8.0	7.0	9.0	8.5	10.0	9.5	13.5	13.0	13.5	13.0
18	5.5	5.0	8.0	7.5	9.0	8.5	10.5	9.5	13.5	13.0	13.5	13.0
19	5.5	5.0	8.5	7.5	9.0	8.5	10.5	10.0	13.5	13.0	13.5	13.0
20	5.5	5.0	8.5	7.5	9.0	8.5	10.5	10.0	13.5	13.0	13.5	13.0
21	5.5	5.0	8.0	7.5	9.0	8.5	11.0	10.5	13.5	13.0	13.5	13.0
22	5.5	5.0	8.5	8.0	9.0	8.5	11.0	10.5	13.5	12.5	13.5	13.0
23	7.0	5.0	8.5	8.0	9.0	8.5	11.0	10.5	13.5	12.5	13.5	13.0
24	6.5	5.5	8.5	8.0	9.5	8.5	12.0	11.0	13.5	12.5	13.5	13.0
25	6.5	5.5	9.0	8.0	9.5	9.0	12.0	11.0	13.5	12.5	13.5	13.0
26	6.5	5.5	9.0	8.0	9.5	8.5	12.5	11.5	13.5	12.5	13.5	13.0
27	6.5	6.0	9.0	8.0	9.5	9.0	13.0	12.0	13.5	12.5	13.5	13.0
28	6.5	6.0	9.0	8.0	9.5	9.0	13.0	12.5	13.5	12.5	13.5	13.0
29	6.5	6.0	9.0	8.0	9.5	9.0	13.0	12.5	13.5	12.5	13.5	13.0
30	6.5	6.0	9.0	8.0	9.5	9.0	13.5	13.0	13.5	13.0	13.5	13.0
31	---	---	8.5	8.0	---	---	13.5	13.0	13.5	12.5	---	---
MONTH	7.0	3.5	9.0	6.5	18.5	8.0	13.5	9.0	13.5	12.5	15.0	12.5

10345700 BRONCO CREEK AT FLORISTON, CA

LOCATION.—Lat 39°23'02", long 120°01'11", in SE 1/4 NW 1/4 sec.31, T.18 N., R.18 E., Nevada County, Hydrologic Unit 16050102, on right bank 80 ft upstream from railroad bridge, 200 ft upstream from mouth, and 0.7 mi north of Floriston.

DRAINAGE AREA.—15.4 mi^2.

PERIOD OF RECORD.—April 1993 to September 1998 (discontinued).
WATER TEMPERATURE: April 1993 to September 1994.

GAGE.—Water-stage recorder. Elevation of gage is 5,350 ft above sea level, from topographic map.

REMARKS.—Records fair except June 6 to Sept 30, which is poor. No storage or diversion upstream from station. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 261 ft^3/s, Jan. 2, 1997, gage height, 4.74 ft, maximum gage height, 5.71 ft, May 12, 1997; minimum daily, 2.8 ft^3/s, several days in 1994.

EXTRENES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 40 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 30	2000	65	5.50	(a)June	Unknown	Unknown	Unknown

(a) Peak of the year occurred in June during the estimated period.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	7.7	13	7.9	7.8	4.7	7.3	44	32	56	17	12
2	8.7	7.8	11	8.1	8.3	4.8	6.5	44	35	57	17	12
3	7.4	8.0	e11	7.8	8.6	4.9	6.3	38	33	55	16	12
4	7.0	8.1	e11	7.8	7.4	e5.0	5.8	34	29	53	16	13
5	6.8	7.9	e11	e8.0	7.1	e5.0	5.5	30	37	57	15	15
6	7.1	7.6	e11	e8.0	7.5	5.3	5.2	29	e48	55	16	14
7	8.4	7.2	e11	7.2	7.3	e5.0	4.9	30	e35	52	15	13
8	8.1	6.0	e11	6.7	e7.5	4.5	4.7	32	e37	56	15	13
9	9.2	7.8	e11	7.0	6.7	5.0	4.8	32	e40	53	15	22
10	9.0	8.1	e11	7.1	5.9	5.0	4.7	29	e43	51	14	12
11	8.2	8.0	11	7.3	5.8	5.8	4.8	29	e50	48	14	12
12	7.2	8.8	e11	7.6	5.8	6.0	4.5	28	e55	42	14	12
13	7.6	8.0	e11	7.0	5.7	5.5	4.3	27	e58	38	15	12
14	7.4	7.7	e11	7.1	6.1	6.1	4.2	25	e63	36	17	e12
15	7.2	7.2	10	8.4	5.7	8.1	4.1	25	e63	34	16	e11
16	6.9	7.4	11	9.4	e5.5	9.6	4.3	26	e65	30	15	e10
17	6.9	6.9	10	11	5.4	9.4	4.8	24	e70	30	15	e9.0
18	6.8	6.8	9.6	9.0	e5.5	8.6	6.0	23	e80	28	15	e8.0
19	6.8	7.3	e10	8.4	5.5	9.7	8.6	25	e74	26	14	7.2
20	6.9	6.9	e10	e8.0	5.4	12	13	25	e70	24	14	8.9
21	7.0	7.0	9.4	e8.0	5.5	12	19	24	69	23	13	9.4
22	7.0	7.1	e9.0	8.1	5.4	18	25	24	67	22	12	8.8
23	7.2	7.4	e9.0	7.6	5.4	22	27	24	60	22	12	8.8
24	7.0	6.9	8.6	7.5	5.3	27	23	26	59	21	13	e9.0
25	7.5	8.9	7.9	7.4	e5.2	20	21	25	57	19	13	e9.0
26	8.9	16	e7.5	7.2	5.1	16	23	25	57	18	12	e15
27	8.2	14	7.4	7.7	5.1	14	29	25	53	18	13	e14
28	8.1	13	7.5	7.5	5.1	12	33	25	51	17	13	e12
29	8.5	14	7.6	7.8	---	9.9	36	25	58	17	14	e10
30	8.4	13	7.5	7.6	---	8.6	44	26	56	17	13	e12
31	8.0	---	7.7	7.5	---	7.7	---	27	---	18	12	---
TOTAL	235.7	258.5	305.7	242.7	172.6	297.2	394.3	875	1604	1093	445	348.1
MEAN	7.60	8.62	9.86	7.83	6.16	9.59	13.1	28.2	53.5	35.3	14.4	11.6
MAX	9.2	16	13	11	8.6	27	44	44	80	57	17	22
MIN	6.3	6.0	7.4	6.7	5.1	4.5	4.1	23	29	17	12	7.2
AC-FT	468	513	606	481	342	589	782	1740	3180	2170	883	690

e Estimated.

10345700 BRONCO CREEK AT FLORISTON, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1998, BY WATER YEAR (WY)

MEAN	7.23	7.19	7.87	10.3	7.70	10.4	18.0	35.2	38.0	28.0	11.3	8.10
MAX	9.84	8.62	9.86	26.0	10.7	14.6	32.4	56.3	62.2	73.7	23.0	13.6
(WY)	1996	1998	1998	1997	1996	1997	1997	1996	1995	1995	1995	1995
MIN	4.08	5.34	4.66	4.81	5.31	5.87	8.63	11.7	6.81	4.05	3.25	3.13
(WY)	1995	1995	1995	1994	1994	1994	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1993 - 1998	
ANNUAL TOTAL	6525.1		6271.8			
ANNUAL MEAN	17.9		17.2		15.9	
HIGHEST ANNUAL MEAN					21.3	1995
LOWEST ANNUAL MEAN					6.06	1994
HIGHEST DAILY MEAN	149	Jan 2	80	Jun 18	152	Jul 5 1995
LOWEST DAILY MEAN	4.8	Sep 9	4.1	Apr 15	2.8	Aug 30 1994
ANNUAL SEVEN-DAY MINIMUM	5.2	Sep 7	4.4	Apr 10	2.9	Aug 27 1994
INSTANTANEOUS PEAK FLOW			Unknown		261	Jan 2 1997
INSTANTANEOUS PEAK STAGE			Unknown		5.71	May 12 1997
ANNUAL RUNOFF (AC-FT)	12940		12440		11530	
10 PERCENT EXCEEDS	42		42		41	
50 PERCENT EXCEEDS	11		11		9.0	
90 PERCENT EXCEEDS	6.8		5.5		4.7	

10346000 TRUCKEE RIVER AT FARAD, CA

LOCATION.—Lat 39°25'41", long 120°01'59", in SE 1/4 NE 1/4 sec.12, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, on left bank 0.5 mi upstream from Mystic Canyon, 0.7 mi downstream from Farad Powerplant, 2.5 mi north of Floriston, and 3.5 mi upstream from California–Nevada State line.

DRAINAGE AREA.—932 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—March to October 1890 (monthly discharge only), September 1899 to current year. Monthly discharge only for January 1944 to July 1957, published in WSP 1734. Published as "near Boca," March to October 1890, "at or near Nevada–California State Line," September 1899 to August 1912, and as "at Iceland," August 1912 to December 1937.

REVISED RECORDS.—WSP 1714: Drainage area. WDR CA-88-3: 1906–07 (monthly runoff).

GAGE.—Water-stage recorder. Datum of gage is 5,153.21 ft above sea level (U.S. Bureau of Reclamation benchmark). See WSP 2127 for history of changes prior to Aug. 26, 1957.

REMARKS.—Records good except estimated daily discharges, which are fair. Flow regulated by Lake Tahoe and Donner, Martis Creek, and Independence Lakes, and Prosser Creek, Stampede, and Boca Reservoirs (stations 10337000, 10338400, 10339380, 10342900, 10340300, 10344300, and 10344490), and by several powerplants. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 17,500 ft^3/s, Nov. 21, 1950, gage height, 14.5 ft, present datum, from floodmarks, from slope-area measurement of peak flow; minimum, 37 ft^3/s, Sept. 15, 1933.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	392	384	389	398	383	716	2380	2340	2570	e1960	949	656
2	410	377	380	420	407	718	2750	2450	2250	e1770	942	657
3	396	373	394	378	462	730	2730	2410	2110	e1690	918	645
4	386	394	396	383	396	733	2670	2330	2020	e1610	881	633
5	372	403	409	e380	385	756	2630	2350	2040	e1580	880	638
6	390	409	412	e429	394	763	2600	2420	2110	e1560	864	658
7	401	401	425	407	403	744	2460	2320	2620	e1560	856	623
8	396	397	408	396	388	743	2310	2390	2440	1690	848	613
9	422	398	396	397	376	745	2190	2470	2600	1650	845	648
10	409	397	396	402	387	758	1920	2330	3150	1650	823	600
11	392	395	400	417	396	783	1880	2220	3380	1550	792	638
12	393	398	397	467	412	803	1870	2150	3690	1490	767	665
13	402	395	395	397	414	819	1870	2110	4180	1530	753	662
14	396	393	396	407	423	824	1860	2130	4480	1460	760	659
15	392	389	397	547	406	869	1840	2620	4430	1510	780	668
16	395	394	428	580	388	959	e1230	2900	4410	1460	726	672
17	398	399	392	788	408	1030	1330	2890	4050	1430	698	677
18	397	396	395	700	389	1050	1530	2900	3690	1410	674	685
19	395	415	391	666	400	1090	1590	3040	3520	1380	650	698
20	393	407	406	543	417	1160	1650	3120	3420	1320	638	712
21	393	398	408	391	411	1200	1710	3100	3410	1240	633	722
22	392	397	404	383	401	1570	1910	3060	3390	1240	629	730
23	396	399	409	389	409	2220	2050	3100	3270	1200	627	730
24	400	397	407	391	505	3190	1960	3110	3120	1200	616	747
25	401	413	406	378	678	2740	1850	3380	2910	1190	602	741
26	398	445	406	388	716	3250	1800	3080	2650	1130	593	752
27	395	383	407	398	714	2940	1860	2790	2380	1080	591	780
28	393	368	403	397	714	2580	1910	2700	2300	1030	609	761
29	396	389	401	408	---	2390	1990	2560	2110	1010	627	766
30	395	394	411	396	---	2270	2160	2510	e1960	1030	624	774
31	390	---	403	384	---	2320	---	2570	---	973	641	---
TOTAL	12276	11897	12467	13805	12582	43463	60490	81850	90660	43583	22836	20610
MEAN	396	397	402	445	449	1402	2016	2640	3022	1406	737	687
MAX	422	445	428	788	716	3250	2750	3380	4480	1960	949	780
MIN	372	368	380	378	376	716	1230	2110	1960	973	591	600
AC-FT	24350	23600	24730	27380	24960	86210	120000	162300	179800	86450	45300	40880

e Estimated.

10346000 TRUCKEE RIVER AT FARAD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1998, BY WATER YEAR (WY)

MEAN	381	422	536	604	655	800	1281	1734	1277	659	511	465
MAX	982	2469	3596	6115	3254	4073	3887	5674	5214	2921	1084	1482
(WY)	1972	1984	1984	1997	1997	1986	1952	1952	1983	1983	1975	1983
MIN	51.0	55.6	80.4	77.7	85.3	142	369	349	142	53.9	53.9	47.3
(WY)	1978	1991	1991	1991	1933	1933	1977	1934	1931	1931	1931	1933

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1909 - 1998	
ANNUAL TOTAL	574398		426519			
ANNUAL MEAN	1574		1169		770	
HIGHEST ANNUAL MEAN					2443	1983
LOWEST ANNUAL MEAN					184	1931
HIGHEST DAILY MEAN	12400	Jan 2	4480	Jun 14	13400	Dec 23 1955
LOWEST DAILY MEAN	368	Nov 28	368	Nov 28	37	Sep 15 1933
ANNUAL SEVEN-DAY MINIMUM	385	Nov 27	385	Nov 27	40	Sep 9 1933
INSTANTANEOUS PEAK FLOW			4720	Jun 14	17500	Nov 21 1950
INSTANTANEOUS PEAK STAGE			7.67	Jun 14	14.50	Nov 21 1950
ANNUAL RUNOFF (AC-FT)	1139000		846000		557800	
10 PERCENT EXCEEDS	3780		2660		1720	
50 PERCENT EXCEEDS	739		714		505	
90 PERCENT EXCEEDS	396		393		197	

10346000 TRUCKEE RIVER AT FARAD, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—
CHEMICAL DATA: Water years 1951–61, 1964–81. Published as Truckee River at Floriston (station 10345900) January 1964 to September 1971.
BIOLOGICAL DATA: Water years 1975–77.
SPECIFIC CONDUCTANCE: Water years 1964–80, July 1993 to September 1998 (discontinued).
WATER TEMPERATURE: Water years 1964–81, July 1993 to September 1998 (discontinued).
SUSPENDED SEDIMENT: Water years 1974, 1978.

PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: January 1964 to September 1980, July 1993 to September 1998.
WATER TEMPERATURE: January 1964 to September 1981, July 1993 to September 1998.

INSTRUMENTATION.—Water-quality monitor since July 1993.

REMARKS.—Water temperature and specific conductance are affected by upstream reservoirs and several powerplants.

EXTREMES FOR PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: Maximum daily recorded, 377 micromhos, Dec. 27, 1979; minimum daily recorded, 30 microsiemens, Jan. 1, 1997.
WATER TEMPERATURE: Maximum recorded, 23.0°C, Aug. 5, 1994; minimum recorded, –0.5°C, Nov. 25, 1993.

EXTREMES FOR CURRENT YEAR.—
SPECIFIC CONDUCTANCE: Maximum recorded, 140 microsiemens, Feb. 14; minimum recorded, 61 microsiemens, June 8.
WATER TEMPERATURE: Maximum recorded, 20.5°C, Sept. 6; minimum recorded, 0.0°C, several days.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	106	102	95	94	103	100	108	107	112	107	108	106
2	105	97	100	94	103	97	117	107	121	107	108	106
3	100	97	96	94	97	96	111	107	131	110	110	108
4	103	99	99	95	97	96	113	108	130	123	109	106
5	108	98	98	95	96	95	111	96	125	118	108	105
6	102	96	98	97	96	94	108	96	131	119	108	104
7	101	96	100	98	101	95	109	106	131	117	108	105
8	100	94	106	98	100	96	111	108	132	106	107	104
9	94	92	108	98	100	98	110	109	123	118	107	104
10	99	93	101	98	100	97	111	109	124	115	107	104
11	100	96	100	99	98	96	118	111	117	113	107	105
12	100	94	101	98	98	96	125	117	120	115	107	105
13	96	94	101	99	98	96	124	118	124	117	107	105
14	98	94	101	100	98	96	120	115	140	120	107	105
15	97	95	101	99	98	96	123	113	125	120	108	106
16	100	94	100	98	104	97	114	106	130	121	108	104
17	100	96	99	98	106	104	109	86	122	118	105	103
18	104	95	100	98	107	105	103	93	125	120	104	102
19	103	94	100	98	107	105	104	97	125	121	102	100
20	103	94	102	99	106	104	116	104	128	119	101	99
21	95	94	100	99	106	104	119	115	130	118	99	98
22	95	94	100	99	105	104	117	113	120	117	98	81
23	98	94	100	99	106	81	114	109	122	117	85	80
24	103	92	100	98	106	103	112	110	118	109	82	70
25	100	92	103	98	106	104	113	111	110	103	91	80
26	99	92	126	102	106	86	112	105	104	103	85	82
27	97	92	119	110	105	79	110	106	105	103	88	83
28	95	93	111	105	105	104	110	107	107	104	97	86
29	96	93	105	103	106	104	113	107	---	---	97	87
30	102	93	104	102	108	103	113	107	---	---	92	86
31	99	94	---	---	109	106	110	108	---	---	89	86
MONTH	108	92	126	94	109	79	125	86	140	103	110	70

10346000 TRUCKEE RIVER AT FARAD, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	92	84	77	70	74	69	82	69	74	73	89	86
2	85	83	76	70	73	68	81	68	75	73	90	86
3	85	84	78	69	74	69	79	68	76	73	90	88
4	86	84	76	71	77	72	78	69	82	74	93	88
5	86	84	78	72	76	70	73	68	82	75	93	82
6	86	84	77	71	74	69	73	68	81	77	94	86
7	89	85	78	74	69	64	71	67	80	78	98	89
8	89	87	76	71	70	61	74	67	81	77	95	88
9	90	88	80	72	72	66	74	69	80	78	97	91
10	93	89	81	73	74	70	75	69	81	78	99	94
11	94	90	81	73	72	71	77	70	82	79	99	92
12	93	92	83	74	72	67	77	73	83	80	93	91
13	94	92	87	74	70	66	78	73	83	82	94	91
14	96	92	78	73	72	66	75	70	84	82	94	92
15	98	92	74	70	71	66	78	71	85	76	95	93
16	99	95	71	69	71	66	72	69	86	83	95	92
17	98	87	70	69	73	66	74	68	86	84	94	93
18	95	86	71	69	75	69	70	66	87	85	94	92
19	90	86	70	68	75	68	72	67	88	86	93	91
20	88	84	68	67	74	67	69	67	89	87	92	89
21	93	84	67	66	74	68	69	67	89	87	92	89
22	86	80	68	67	73	67	72	67	89	87	90	88
23	83	79	68	66	74	69	70	68	89	87	90	88
24	86	79	69	67	76	72	71	66	90	87	92	89
25	87	82	68	64	74	69	70	68	91	88	91	90
26	90	82	69	65	82	68	71	69	92	90	91	89
27	88	81	70	68	82	69	72	70	92	90	93	89
28	84	78	72	69	82	71	73	72	92	88	91	90
29	82	76	73	71	84	70	73	72	90	88	91	89
30	82	73	75	72	82	68	73	71	90	88	92	89
31	---	---	74	72	---	---	74	72	90	80	---	---
MONTH	99	73	87	64	84	61	82	66	92	73	99	82

10346000 TRUCKEE RIVER AT FARAD, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	16.0	13.5	11.0	8.0	6.5	5.0	5.5	3.5	4.0	2.5	6.5	4.5
2	16.0	13.5	10.0	7.5	5.0	3.5	5.0	3.0	3.5	1.5	7.5	4.5
3	15.0	11.5	10.0	7.5	5.0	3.0	4.0	2.0	4.0	2.5	7.5	5.0
4	14.5	11.5	9.5	7.5	5.0	4.0	3.0	1.5	3.5	2.0	5.5	2.5
5	14.0	11.0	9.5	7.0	5.0	4.5	1.5	.0	3.5	2.0	5.0	3.0
6	13.5	11.0	10.0	7.5	4.5	4.5	1.5	.0	4.0	3.0	5.5	2.5
7	13.5	11.0	10.0	8.5	5.0	3.0	3.5	1.5	3.5	.5	4.5	1.0
8	12.0	10.0	8.5	7.0	3.5	2.0	3.5	2.0	3.0	.0	7.0	4.0
9	12.0	10.5	7.5	6.0	3.5	2.5	5.0	3.5	4.0	1.5	6.5	3.0
10	12.0	11.0	8.0	7.5	2.5	1.0	5.5	4.5	3.5	2.0	7.0	3.5
11	11.0	9.5	9.0	7.5	2.5	1.0	5.5	4.5	4.5	2.5	8.0	5.0
12	11.0	8.0	8.5	7.5	2.5	.5	5.0	3.5	4.0	2.5	7.0	4.5
13	11.5	8.5	8.0	7.0	3.0	1.0	3.5	2.0	5.0	3.0	6.5	5.5
14	12.0	8.5	7.5	6.5	4.5	2.5	4.5	3.0	4.5	2.0	8.0	5.0
15	12.5	9.0	6.5	5.5	3.5	2.0	5.0	4.0	3.5	.5	8.5	5.0
16	13.0	9.0	7.0	5.5	4.5	2.5	5.0	3.5	2.5	1.0	8.0	6.0
17	12.5	9.0	8.0	6.5	5.5	4.0	4.5	3.5	4.0	1.5	8.0	4.5
18	12.5	8.5	6.5	5.5	5.5	3.5	4.0	2.0	4.5	1.5	7.5	4.5
19	11.5	8.5	7.5	6.5	3.5	1.5	3.5	1.0	5.0	3.5	8.0	4.5
20	11.5	9.0	7.0	5.5	3.0	1.0	3.0	1.0	4.0	1.5	8.5	5.5
21	11.5	8.5	7.0	5.5	2.5	1.0	3.5	1.5	4.0	1.5	8.0	5.5
22	11.5	8.5	7.5	6.0	2.0	.5	4.0	2.0	3.0	.5	7.5	5.5
23	12.0	9.5	8.5	7.0	1.0	.0	5.5	3.0	3.0	1.0	6.0	4.5
24	10.5	8.5	7.5	6.0	1.5	.5	4.0	2.5	3.5	.5	5.0	3.0
25	9.5	7.0	7.0	5.5	1.5	.5	3.5	2.0	3.5	1.0	5.5	3.5
26	10.0	6.5	6.5	5.5	1.0	.0	4.0	2.5	5.5	2.5	6.0	4.0
27	10.0	7.5	6.0	5.0	1.5	.0	5.5	3.5	6.5	4.0	6.0	4.5
28	9.0	7.0	6.5	4.5	3.0	1.0	5.0	3.0	6.5	4.0	4.5	3.5
29	10.0	7.5	6.5	5.0	3.0	2.0	5.0	3.5	---	---	5.5	3.5
30	11.0	8.0	6.5	5.0	3.5	2.0	4.0	2.0	---	---	6.5	3.0
31	11.0	8.0	---	---	4.5	3.0	3.5	2.0	---	---	6.0	5.0
MONTH	16.0	6.5	11.0	4.5	6.5	.0	5.5	.0	6.5	.0	8.5	1.0
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.0	4.5	10.0	6.0	11.5	8.0	15.0	10.5	18.0	13.5	19.5	15.0
2	7.0	4.5	9.0	6.5	11.0	8.0	15.5	11.0	18.5	13.5	19.5	15.0
3	6.5	5.0	8.0	6.5	10.0	7.0	15.0	10.5	19.0	14.0	19.0	15.0
4	6.5	4.5	8.5	5.5	10.5	7.5	15.5	11.0	19.0	14.0	20.0	16.5
5	7.0	5.0	8.0	5.5	11.0	7.5	15.5	11.0	19.5	15.0	20.0	17.5
6	6.5	5.0	7.5	6.0	11.0	8.0	15.5	12.0	19.5	15.0	20.5	17.5
7	7.0	5.0	9.0	7.0	11.0	8.0	16.5	12.0	19.0	15.0	20.0	17.5
8	7.0	4.5	9.0	7.0	10.5	8.0	17.0	12.5	18.0	13.5	19.0	16.5
9	8.0	5.0	9.0	6.5	11.5	8.0	17.0	13.0	18.5	13.5	18.0	16.5
10	7.0	5.5	8.5	5.5	10.5	9.0	17.0	13.0	19.0	14.0	17.5	13.5
11	6.0	5.0	8.0	5.5	10.0	8.5	16.0	11.5	19.0	14.5	17.5	14.0
12	7.0	4.5	7.0	6.0	11.5	9.0	17.0	12.0	20.0	15.0	19.0	15.0
13	5.5	4.0	8.0	5.0	12.0	9.0	16.5	13.0	20.0	16.0	19.0	15.5
14	7.0	4.0	8.5	6.5	12.5	9.0	16.5	12.0	19.5	16.0	19.0	15.5
15	7.0	4.0	9.5	6.5	12.5	9.0	16.0	12.0	19.5	15.0	19.0	16.0
16	8.0	4.5	8.0	7.0	12.0	9.0	16.5	12.5	19.5	15.0	19.0	15.5
17	8.5	5.0	8.5	6.5	12.5	8.5	16.5	12.5	19.0	14.5	19.0	16.0
18	9.0	5.5	9.5	6.5	13.5	9.5	16.5	12.5	18.5	13.5	18.0	15.0
19	9.0	6.0	10.0	7.5	13.0	9.0	16.5	12.5	19.0	14.5	17.5	13.5
20	10.0	6.0	10.0	7.5	13.0	8.5	16.5	12.5	19.0	14.5	17.5	14.5
21	10.5	6.5	8.5	7.0	13.0	10.0	16.5	12.5	18.5	14.0	17.0	13.5
22	9.5	6.5	10.0	7.0	13.5	9.5	14.5	14.0	18.5	13.5	16.5	13.5
23	8.5	6.5	9.0	7.5	13.5	9.0	16.5	13.5	18.5	14.0	16.5	14.0
24	8.5	5.5	10.0	7.5	14.0	10.0	16.0	13.5	18.5	14.0	16.5	14.0
25	8.5	5.5	9.0	8.0	13.5	11.0	17.0	13.5	19.0	14.0	15.5	14.0
26	9.0	5.0	8.5	7.0	13.0	9.0	16.0	13.5	18.5	14.5	14.5	13.5
27	10.0	5.5	8.0	7.0	13.5	9.0	17.5	13.5	19.0	14.0	14.0	13.0
28	10.0	5.5	9.5	7.5	15.0	10.5	18.0	14.0	19.0	15.0	15.0	12.5
29	10.0	5.5	10.0	7.0	15.0	10.5	18.0	14.0	20.0	15.0	15.5	13.0
30	10.0	6.5	10.5	7.5	15.0	10.5	16.5	13.5	20.0	15.5	16.0	13.5
31	---	---	11.0	8.0	---	---	17.5	13.5	19.5	15.5	---	---
MONTH	10.5	4.0	11.0	5.0	15.0	7.0	18.0	10.5	20.0	13.5	20.5	12.5

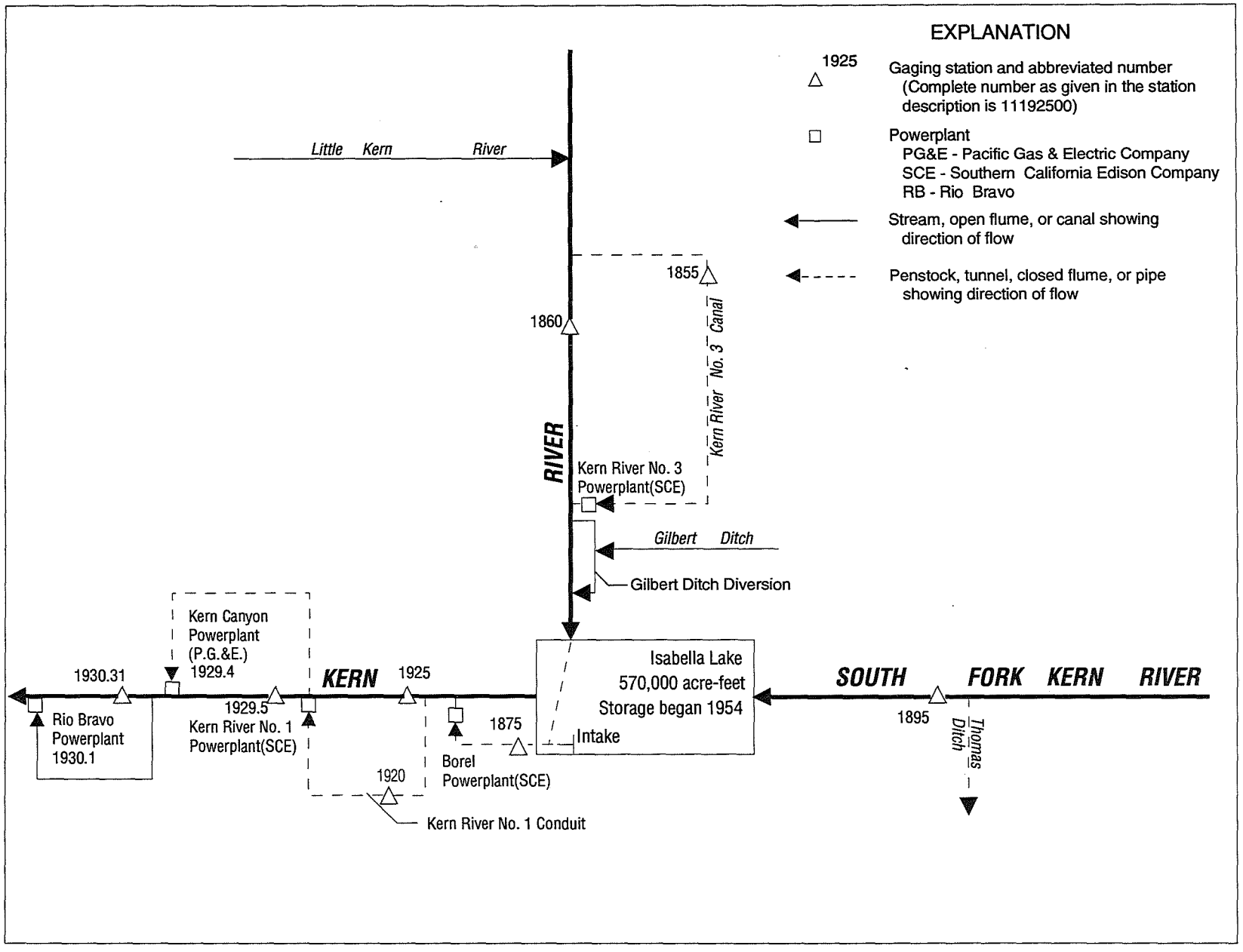


Figure 23. Diversions and storage in Kern River Basin.

11186000 KERN RIVER NEAR KERNVILLE, CA

LOCATION.—Lat 35°56'43", long 118°28'36", unsurveyed, Tulare County, Hydrologic Unit 18030001, on left bank at Packsaddle Canyon Creek, 100 ft downstream from diversion dam, and 13.4 mi north of Kernville.

DRAINAGE AREA.—846 mi^2.

PERIOD OF RECORD.—January 1912 to current year. Records for water year 1912 incomplete; yearly estimates published in WSP 1315-A. March 1921 to October 1953, records for river and canal published separately; combined flow only, October 1953 to September 1960.

REVISED RECORDS.—WSP 1445: 1912, 1916(M). WSP 1930: 1914(M), 1918(M).

GAGE.—Water-stage recorder on river; water-stage recorder and rectangular concrete-lined flume for canal diversion. Elevation of gage is 3,620 ft above sea level, from topographic map. Prior to Apr. 1, 1913, at site 1.4 mi downstream at different datum. Apr. 1 to Sept. 14, 1913, nonrecording gage, and Sept. 15, 1913, to Sept. 30, 1967, water-stage recorder, at site 1.2 mi downstream at different datum.

REMARKS.—Since 1921, Kern River No. 3 Canal (station 11185500) diverts up to 630 ft^3/s 100 ft upstream from station, from left bank of Kern River for power development; water is returned to river 15 mi downstream from station. See schematic diagram of Kern River Basin. For records of combined discharge of river and canal, see station 11186001.

COOPERATION.—Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—River only: Maximum discharge, 60,000 ft^3/s, Dec. 6, 1966, gage height, 22.77 ft, site and datum then in use, from floodmarks, from rating curve extended above 6,000 ft^3/s on basis of computed flow over dam at gage height 17.55 ft (basic data for computation provided by Southern California Edison Co.) and slope-area measurement of peak flow; no flow for many days in 1924 and 1925.

Combined river and diversion: Maximum discharge, 60,000 ft^3/s, Dec. 6, 1966; minimum daily, 76 ft^3/s, Dec. 22, 1990.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	307	67	48	51	52	162	751	2920	3020	4920	1160	239
2	195	52	50	51	130	168	644	2890	3420	5370	1160	186
3	100	51	51	51	123	194	687	2850	3670	5140	1080	174
4	100	51	51	51	70	217	622	2920	3210	4450	1090	242
5	100	51	52	53	49	192	565	3040	3190	4210	1080	345
6	98	51	54	54	63	197	544	2590	3490	3990	1100	338
7	98	51	54	54	69	116	485	2360	3660	3930	1100	269
8	97	50	54	52	130	110	465	2160	3710	4070	1070	232
9	97	52	53	52	90	122	492	2290	3730	4290	921	208
10	95	53	53	52	57	153	572	2270	3730	4370	791	145
11	97	53	53	52	51	225	659	2140	3680	3860	784	117
12	96	51	52	52	47	317	576	2130	3650	3610	874	116
13	96	51	52	78	48	344	536	1910	3290	3600	776	118
14	96	51	52	70	406	315	524	1690	3400	3410	759	116
15	96	51	51	127	436	406	459	1610	4070	3320	711	115
16	100	50	51	416	168	553	414	1690	6020	3400	870	112
17	102	50	51	97	149	593	490	1630	7120	3430	668	108
18	98	50	51	55	73	746	534	1720	5600	3400	534	111
19	104	50	50	98	74	850	740	1820	5640	3230	421	109
20	104	51	50	53	94	916	1060	1990	6120	2990	332	109
21	97	50	51	50	67	967	1470	2040	6190	3240	268	109
22	94	51	52	55	592	1010	1940	2060	5340	2930	226	109
23	91	49	54	51	593	1320	2290	2240	5300	3060	193	108
24	88	50	52	50	415	1460	2200	2500	5400	2770	166	106
25	86	51	53	50	288	1650	2020	2810	5500	2480	153	106
26	87	52	52	53	206	1320	1900	2820	6220	2060	156	104
27	87	53	54	51	160	1180	2040	2510	5260	1860	143	104
28	88	51	53	52	143	1180	2290	2470	5080	1760	121	106
29	89	53	52	52	---	930	2550	2520	5410	1620	114	104
30	88	51	51	51	---	817	2820	2490	5130	1460	125	103
31	88	---	52	50	---	780	---	2700	---	1260	165	---
TOTAL	3259	1548	1609	2184	4843	19510	33339	71780	138250	103490	19111	4568
MEAN	105	51.6	51.9	70.5	173	629	1111	2315	4608	3338	616	152
MAX	307	67	54	416	593	1650	2820	3040	7120	5370	1160	345
MIN	86	49	48	50	47	110	414	1610	3020	1260	114	103
AC-FT	6460	3070	3190	4330	9610	38700	66130	142400	274200	205300	37910	9060

11186000 KERN RIVER NEAR KERNVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	57.0	51.2	131	188	160	284	627	1540	1720	801	224	110
MAX	197	197	2488	2619	967	1480	2631	5874	6819	3482	1583	538
(WY)	1983	1997	1967	1997	1986	1986	1969	1969	1983	1983	1983	1982
MIN	2.01	1.36	.98	2.01	1.51	1.84	1.93	6.68	7.22	2.66	12.5	2.70
(WY)	1961	1961	1961	1961	1961	1961	1961	1961	1961	1961	1961	1963

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998	
ANNUAL TOTAL	325881		403491			
ANNUAL MEAN	893		1105		492	
HIGHEST ANNUAL MEAN					1727	1969
LOWEST ANNUAL MEAN					3.65	1961
HIGHEST DAILY MEAN	25100	Jan 3	7120	Jun 17	33600	Dec 6 1966
LOWEST DAILY MEAN	48	Dec 1	47	Feb 12	.20	Dec 16 1960
ANNUAL SEVEN-DAY MINIMUM	50	Nov 17	50	Nov 17	.26	Dec 12 1960
INSTANTANEOUS PEAK FLOW			8810	Jun 17	60000	Dec 6 1966
INSTANTANEOUS PEAK STAGE			10.10	Jun 17	22.77	Dec 6 1966
ANNUAL RUNOFF (AC-FT)	646400		800300		356500	
10 PERCENT EXCEEDS	2280		3530		1600	
50 PERCENT EXCEEDS	464		197		80	
90 PERCENT EXCEEDS	52		51		27	

11186001 KERN RIVER NEAR KERNVILLE, CA—Continued

KERN RIVER AND KERN RIVER NO. 3 CANAL NEAR KERNVILLE

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	310	257	325	322	395	742	1330	3500	3600	5500	1740	823
2	298	264	309	338	691	750	1220	3470	4000	5950	1740	770
3	311	255	301	341	706	779	1270	3430	4250	5720	1660	758
4	302	253	299	322	631	800	1200	3500	3790	5030	1670	825
5	295	250	319	275	546	775	1150	3620	3770	4790	1660	928
6	286	248	390	300	618	778	1120	3170	4070	4570	1680	920
7	286	248	399	333	640	694	1070	2940	4240	4510	1680	854
8	289	249	453	333	718	691	1050	2740	4290	4660	1650	818
9	286	246	360	330	671	703	1070	2870	4310	4880	1500	793
10	281	260	337	431	608	735	1160	2850	4310	4950	1370	729
11	319	304	353	391	586	816	1240	2730	4260	4440	1370	672
12	322	284	343	420	562	895	1160	2710	4230	4200	1460	627
13	326	297	349	551	533	919	1120	2490	3870	4190	1360	593
14	323	301	346	427	950	895	1110	2270	3980	4000	1340	571
15	312	276	350	564	1010	989	1040	2190	4650	3910	1300	555
16	300	262	341	996	746	1140	995	2270	6610	3990	1450	547
17	289	268	343	669	726	1180	1030	2210	7700	4010	1250	533
18	284	275	342	550	639	1330	1120	2300	6180	3990	1120	514
19	280	303	326	678	655	1440	1320	2400	6220	3820	1000	506
20	274	341	320	542	678	1500	1640	2580	6700	3580	914	493
21	275	300	319	497	646	1550	2050	2620	6770	3830	847	485
22	276	295	299	462	1170	1590	2520	2640	5920	3520	805	474
23	275	295	302	443	1170	1900	2870	2820	5890	3650	773	463
24	274	291	304	425	1000	2040	2780	3080	5980	3360	745	456
25	269	284	283	410	867	2240	2600	3390	6080	3070	730	453
26	267	357	280	401	785	1900	2480	3400	6800	2650	735	450
27	266	354	295	391	737	1760	2620	3090	5840	2450	724	452
28	266	333	308	381	719	1770	2870	3050	5660	2350	705	441
29	266	345	309	414	---	1510	3130	3100	5990	2210	682	430
30	266	342	309	395	---	1400	3400	3070	5710	2050	694	481
31	263	---	314	397	---	1370	---	3280	---	1840	746	---
TOTAL	8936	8637	10227	13729	20403	37581	50735	89780	155670	121670	37100	18414
MEAN	288	288	330	443	729	1212	1691	2896	5189	3925	1197	614
MAX	326	357	453	996	1170	2240	3400	3620	7700	5950	1740	928
MIN	263	246	280	275	395	691	995	2190	3600	1840	682	430
AC-FT	17720	17130	20290	27230	40470	74540	100600	178100	308800	241300	73590	36520

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	246	268	369	480	529	723	1155	2107	2269	1227	531	319
MAX	634	715	2696	3161	1524	2075	3235	6475	7401	4059	2175	934
(WY)	1983	1984	1967	1997	1980	1986	1969	1969	1983	1983	1983	1978
MIN	106	112	109	121	120	181	333	373	303	133	114	100
(WY)	1962	1991	1991	1991	1991	1977	1976	1977	1976	1961	1990	1990

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998	
ANNUAL TOTAL	482749		572882			
ANNUAL MEAN	1323		1570		853	
HIGHEST ANNUAL MEAN					2264	1983
LOWEST ANNUAL MEAN					228	1961
HIGHEST DAILY MEAN	25200	Jan 3	7700	Jun 17	33600	Dec 6 1966
LOWEST DAILY MEAN	246	Nov 9	246	Nov 9	76	Dec 22 1990
ANNUAL SEVEN-DAY MINIMUM	250	Nov 3	250	Nov 3	84	Sep 11 1990
ANNUAL RUNOFF (AC-FT)	957500		1136000		617800	
10 PERCENT EXCEEDS	2850		4120		2180	
50 PERCENT EXCEEDS	1030		778		394	
90 PERCENT EXCEEDS	280		286		158	

11187500 BOREL CANAL BELOW ISABELLA DAM, CA

LOCATION.—Lat 35°38'32", long 118°28'09", in SW 1/4 NE 1/4 sec.30, T.26 S., R.33 E., Kern County, Hydrologic Unit 18030001, on right bank 500 ft downstream from Isabella Dam and 3 mi upstream from point where canal crosses Erskine Creek.

PERIOD OF RECORD.—January 1910 to September 1914, October 1925 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as Kern River Power Co.'s Canal at or near Kernville,1910–14. Published as "at Tillie Creek," 1925–51.

GAGE.—Water-stage recorder and concrete-lined channel with Ogee weir and AVM in syphon pipe 6 mi downstream. Elevation of gage is 2,540 ft above sea level, from topographic map. Prior to Apr. 29, 1952, at site 4 mi upstream at different datum.

REMARKS.—Canal diverts from right bank of Kern River 5.5 mi upstream from Isabella Dam and above South Fork Kern River. When contents of Isabella Reservoir are above 110,000 acre-ft, diversion is at the dam. Canal is used to supply Borel Powerplant of Southern California Edison Co., 6 mi downstream from station, at which point water is returned to the Kern River. See schematic diagram of Kern River Basin.

COOPERATION.—Records were provided by Southern California Edison Co., under the 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, 634 ft^3/s, Mar. 13, 14, 1952; no flow at times in most years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	559	.00	.00	.00	.00	e114	608	e309	e583	579	e576	579
2	553	.00	.00	.00	.00	e473	609	e311	e581	580	e574	582
3	547	.00	.00	.00	.00	e471	607	e308	e575	580	e574	581
4	518	.00	.00	.00	e.00	e471	604	e305	e576	582	e572	580
5	489	.00	.00	.00	e.00	e472	603	e307	e577	584	e574	580
6	490	.00	.00	.00	e.00	e474	600	e308	e577	585	e572	581
7	469	.00	.00	.00	e.00	e474	599	e446	e580	584	e571	580
8	131	.00	.00	.00	e.00	e475	600	e546	e579	582	e570	579
9	.00	.00	.00	.00	e.80	e475	604	e462	e580	582	e569	580
10	.00	.00	.00	.00	e.00	e492	606	e464	e576	583	e568	581
11	.00	.00	.00	.00	e1.0	e532	609	e466	e578	584	e567	580
12	.00	.00	.00	.00	e207	e606	611	e468	e578	585	e570	578
13	.00	.00	.00	.00	e447	e608	614	e471	e573	586	e574	576
14	.00	.00	.00	.00	e448	e608	613	e518	e575	583	579	574
15	.00	.00	.00	.00	e452	e610	612	e579	e577	583	578	574
16	.00	.00	.00	.00	e451	e189	614	e580	e576	584	579	574
17	.00	.00	.00	.00	e477	e588	613	e581	581	584	579	574
18	.00	.00	.00	.00	e465	e608	615	e581	581	584	579	572
19	.00	.00	.00	.00	e470	e604	616	e582	577	585	582	573
20	.00	.00	.00	.00	e470	e604	615	e584	574	584	582	571
21	.00	.00	.00	.00	e470	e604	617	e577	578	582	580	570
22	.00	.00	.00	.00	e474	e600	613	e577	575	584	578	572
23	.00	.00	.00	.00	e480	e604	615	e577	575	583	578	570
24	.00	.00	.00	.00	e488	e603	611	e578	576	584	580	571
25	.00	.00	.00	.00	e492	e603	605	e580	577	584	580	570
26	.00	.00	.00	.00	e100	e605	607	e581	575	582	579	572
27	.00	.00	.00	.00	e.00	e605	606	e580	575	582	579	573
28	.00	.00	.00	.00	e.00	e604	605	e576	576	585	581	572
29	.00	.00	.00	.00	---	e605	446	e576	577	e582	580	570
30	.00	.00	.00	.00	---	e601	e308	e576	576	e579	580	570
31	.00	---	.00	.00	---	610	---	e578	---	e579	579	---
TOTAL	3756.00	0.00	0.00	0.00	6392.80	16592	17805	15532	17314	18069	17863	17259
MEAN	121	.000	.000	.000	228	535	594	501	577	583	576	575
MAX	559	.00	.00	.00	492	610	617	584	583	586	582	582
MIN	.00	.00	.00	.00	.00	114	308	305	573	579	567	570
AC-FT	7450	.00	.00	.00	12680	32910	35320	30810	34340	35840	35430	34230

e Estimated.

11187500 BOREL CANAL BELOW ISABELLA DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	244	239	266	305	384	464	508	519	536	485	394	300
MAX	588	584	576	584	590	611	605	607	614	605	607	586
(WY)	1979	1984	1951	1984	1984	1985	1984	1989	1989	1985	1952	1993
MIN	.000	.000	.000	.000	.000	.000	.000	.000	9.23	2.25	.000	.000
(WY)	1973	1946	1973	1952	1951	1973	1990	1914	1914	1990	1972	1931

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1910 - 1998	
ANNUAL TOTAL	157317.00		130582.80			
ANNUAL MEAN	431		358		386	
HIGHEST ANNUAL MEAN					585	1984
LOWEST ANNUAL MEAN					106	1990
HIGHEST DAILY MEAN	584	Mar 1	617	Apr 21	634	Mar 13 1952
LOWEST DAILY MEAN	.00	Oct 9	.00	Oct 9	.00	Oct 23 1910
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 9	.00	Oct 9	.00	May 24 1912
ANNUAL RUNOFF (AC-FT)	312000		259000		279700	
10 PERCENT EXCEEDS	578		604		587	
50 PERCENT EXCEEDS	554		570		444	
90 PERCENT EXCEEDS	.00		.00		126	

11189500 SOUTH FORK KERN RIVER NEAR ONYX, CA

LOCATION.—Lat 35°44'15", long 118°10'22", unsurveyed, T.25 S., R.35 E., Kern County, Hydrologic Unit 18030002, on left bank 0.8 mi north of State Highway 178, 1.6 mi upstream from Canebrake Creek, and 5 mi northeast of Onyx.

DRAINAGE AREA.—530 mi^2.

PERIOD OF RECORD.—September 1911 to August 1914, January 1919 to September 1942, October 1947 to June 1994, July 1995 to current year. Yearly estimate for water year 1927 (incomplete) and monthly discharges for incomplete water years 1914, 1919, 1926, 1928, 1929, published in WSP 1315-A.

REVISED RECORDS.—WSP 1151: 1948(M). WSP 1445: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 2,900 ft above sea level, from topographic map. Sept. 12, 1911, to Aug. 31, 1914, nonrecording gage, and Jan. 23, 1919, to Apr. 17, 1936, water-stage recorder, 140 ft upstream at datum 2.88 ft lower. Apr. 18, 1936, to September 1942, and October 1947 to Feb. 8, 1967, at datum 6.88 ft higher. Feb. 9, 1967, to May 31, 1972, at datum 2.00 ft higher.

REMARKS.—Records good. Lowell and Thomas Ditches divert upstream from station for irrigation downstream of station, combined capacity, 7 ft^3/s. See schematic diagram of Kern River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 28,700 ft^3/s, Dec. 6, 1966, gage height, 18.9 ft, from floodmarks, present datum, from rating curve extended above 3,000 ft^3/s on basis of slope-area measurement of peak flow; no flow for several days in 1929, 1934, 1960–61.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 3	1800	246	4.82	Mar. 24	0215	1,270	6.98
Feb. 7	2145	288	4.98	Apr. 30	1600	2,520	8.10
Feb. 14	1930	987	6.46	May 26	1700	1,680	7.41
Feb. 23	1745	1,530	7.26				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	28	48	49	61	217	577	2200	1140	499	126	64
2	31	28	47	56	136	227	510	2200	1210	474	124	69
3	30	28	42	55	183	250	544	2020	1220	443	114	60
4	30	28	41	52	145	270	494	2030	1160	434	111	72
5	29	28	43	44	122	253	460	2100	1110	422	105	78
6	29	28	50	42	136	250	461	1690	1090	397	101	76
7	28	28	60	50	169	201	426	1510	1050	367	98	83
8	29	32	69	57	222	190	406	1370	1060	362	93	80
9	30	34	49	54	173	201	408	1490	1020	338	88	77
10	31	34	37	70	140	226	438	1640	1030	329	88	73
11	34	41	39	61	130	265	483	1530	1000	306	85	68
12	36	40	42	64	130	321	460	1490	990	289	103	63
13	33	41	47	77	118	338	442	1330	1000	277	100	60
14	28	43	52	66	414	319	427	1140	1050	259	94	58
15	27	39	52	68	424	382	400	1090	1000	248	104	55
16	26	37	48	123	235	467	394	1210	1000	237	103	54
17	26	32	51	102	218	512	396	1180	995	230	94	53
18	25	34	53	91	170	563	430	1180	959	207	81	47
19	25	39	50	109	166	558	528	1220	920	192	74	42
20	21	50	45	87	182	560	795	1280	881	202	70	42
21	17	47	50	79	173	549	1120	1300	857	211	67	42
22	20	45	46	75	584	614	1400	1290	792	245	64	42
23	24	47	45	74	789	888	1780	1410	737	282	61	42
24	24	48	43	72	516	1070	1850	1430	696	266	63	42
25	26	44	40	68	317	1160	1890	1490	651	217	62	42
26	28	56	38	66	249	915	1750	1490	625	180	60	43
27	27	59	40	65	219	821	1820	1330	592	160	58	44
28	28	44	46	64	206	830	2000	1260	565	156	57	45
29	28	40	51	66	---	677	2220	1220	541	146	55	48
30	28	44	47	63	---	610	2390	1160	516	138	54	53
31	29	---	47	61	---	586	---	1140	---	127	54	---
TOTAL	859	1166	1458	2130	6727	15290	27699	45420	27457	8640	2611	1717
MEAN	27.7	38.9	47.0	68.7	240	493	923	1465	915	279	84.2	57.2
MAX	36	59	69	123	789	1160	2390	2200	1220	499	126	83
MIN	17	28	37	42	61	190	394	1090	516	127	54	42
AC-FT	1700	2310	2890	4220	13340	30330	54940	90090	54460	17140	5180	3410

11189500 SOUTH FORK KERN RIVER NEAR ONYX, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	24.3	36.2	58.3	67.1	97.7	166	360	446	180	51.6	24.7	19.5
MAX	98.9	143	942	500	448	686	1583	2896	1311	349	184	90.2
(WY)	1984	1984	1967	1997	1980	1978	1969	1969	1983	1983	1983	1978
MIN	1.00	8.92	12.4	14.0	17.3	24.1	23.4	9.52	1.00	.19	.20	.10
(WY)	1962	1930	1949	1931	1961	1961	1961	1961	1924	1961	1934	1961

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1912 - 1998	
ANNUAL TOTAL	65736		141174			
ANNUAL MEAN	180		387		128	
HIGHEST ANNUAL MEAN					605	1969
LOWEST ANNUAL MEAN					11.5	1961
HIGHEST DAILY MEAN	3310	Jan 3	2390	Apr 30	14000	Dec 6 1966
LOWEST DAILY MEAN	10	Sep 24	17	Oct 21	.00	Sep 1 1934
ANNUAL SEVEN-DAY MINIMUM	14	Sep 18	22	Oct 18	.00	Jul 23 1961
INSTANTANEOUS PEAK FLOW			2520	Apr 30	28700	Dec 6 1966
INSTANTANEOUS PEAK STAGE			8.10	Apr 30	18.90	Dec 6 1966
ANNUAL RUNOFF (AC-FT)	130400		280000		93080	
10 PERCENT EXCEEDS	430		1190		303	
50 PERCENT EXCEEDS	60		118		42	
90 PERCENT EXCEEDS	21		32		7.5	

11192500 KERN RIVER NEAR DEMOCRAT SPRINGS, CA

LOCATION.—Lat 35°31'15", long 118°40'34", in NE 1/4 SE 1/4 sec.6, T.28 S., R.31 E., Kern County, Hydrologic Unit 18030003, on left bank 1.0 mi southwest of Democrat Springs and 2.1 mi upstream from Cow Creek.

DRAINAGE AREA.—2,258 mi^2.

PERIOD OF RECORD.—July 1950 to current year. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder on river; water-stage recorder for conduit diversion. Datum of gage is 1,837.7 ft above sea level.

REMARKS.—Kern River No. 1 Conduit (station 11192000) diverts up to about 420 ft^3/s from left bank of Kern River 0.4 mi upstream from station in sec.13, T.28 S., R.30 E., for power development; water is returned to river 10 mi downstream from station. Flow regulated by Isabella Lake 22 mi upstream beginning in 1954. Many diversions upstream from station for irrigation. See schematic diagram of Kern River Basin. For records of combined discharge of river and conduit, see station 11192501.

COOPERATION.—Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—River only, prior to regulation by Isabella Lake in 1954: Maximum discharge, 40,000 ft^3/s, Nov. 19, 1950, gage height, 30.7 ft, from rating curve extended above 8,700 ft^3/s on basis of computation of peak flow over dam (basic data for computation provided by Southern California Edison Co.); minimum daily, 0.7 ft^3/s, Nov. 17–19, 1951. Since regulation by Isabella Lake: Maximum discharge, 10,100 ft^3/s, Dec. 6, 1966, gage height, 18.55 ft; no flow May 26–28, 1977.

Combined flow, prior to regulation by Isabella Lake: Maximum discharge, 40,000 ft^3/s, Nov. 19, 1950; minimum daily, 123 ft^3/s, Sept. 22, 1951. Since regulation by Isabella Lake: Maximum discharge, 10,100 ft^3/s, Dec. 6, 1966; minimum daily, 10 ft^3/s, Dec. 17, 1968.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	496	396	206	19	353	941	972	2980	e3850	e4380	e2580	e2510
2	485	387	97	19	583	967	952	2980	e3870	e4390	e2480	e2430
3	365	735	31	19	911	940	1020	2990	e4030	e4380	e1650	e2300
4	198	843	22	19	1100	909	1010	2990	e4040	e4390	e1780	e2090
5	109	889	53	20	1090	933	991	3060	e4030	e4380	e1880	e1830
6	135	875	122	69	1100	1060	1000	3040	e4040	e4320	e2190	e1730
7	86	886	79	65	1170	1010	1090	3000	e4030	e3950	e3000	e1750
8	148	924	125	35	1280	1060	1150	3000	e4030	e3870	e2960	e1780
9	99	892	87	37	1170	1170	1220	2990	e4030	e3830	e2930	e1760
10	171	904	73	61	1110	1240	1260	2980	e4020	e3550	e3090	e1590
11	146	906	123	57	1090	1240	1340	2970	e4030	e3500	e3020	e1500
12	168	874	173	67	1020	1240	1320	2990	e4030	e3410	e3040	e1460
13	278	914	166	125	935	1230	1400	3030	e4030	e3400	e3100	e1460
14	293	725	150	387	1300	983	1540	2980	e4040	e3080	e3130	e1560
15	328	484	155	355	1460	1090	1540	3210	e4230	e3030	e3090	e1570
16	327	457	122	482	1000	1170	1530	3230	e4230	e3000	e3120	e1360
17	287	405	197	588	1230	1110	1580	3220	e4220	e3080	e3110	e1410
18	264	374	199	720	1350	1000	1570	3470	e4210	e3050	e3090	e1310
19	285	419	157	1220	1270	963	1540	3490	e4220	e2990	e2990	e1160
20	311	438	53	1130	1190	1000	1650	e3460	e4220	e3010	e2870	e1100
21	292	457	60	857	1000	1000	1820	e3460	e4230	e3170	e2800	e1170
22	308	480	59	605	1550	993	1940	e3440	e4410	e3280	e2610	e1180
23	257	482	19	414	2070	1100	1890	e3440	e4390	e3140	e2580	e1160
24	384	490	19	386	1660	1140	2190	e3450	e4390	e3090	e2630	e1090
25	674	392	18	357	925	1090	2160	e3480	e4400	e3000	e2660	e1030
26	686	339	19	337	813	1040	2150	e3650	e4390	e2910	e2720	e932
27	667	242	19	347	822	1040	2140	e3660	e4400	e2850	e2690	e902
28	568	229	390	445	904	1060	2340	e3660	e4410	e2600	e2610	e966
29	588	226	404	447	---	973	2710	e3650	e4400	e2700	e2490	e994
30	651	232	366	413	---	964	2980	e3660	e4400	e2740	e2530	e1030
31	571	---	21	397	---	964	---	e3680	---	e2700	e2630	---
TOTAL	10625	17296	3784	10499	31456	32620	47995	101290	125250	105170	84050	44114
MEAN	343	577	122	339	1123	1052	1600	3267	4175	3393	2711	1470
MAX	686	924	404	1220	2070	1240	2980	3680	4410	4390	3130	2510
MIN	86	226	18	19	353	909	952	2970	3850	2600	1650	902
AC-FT	21070	34310	7510	20820	62390	64700	95200	200900	248400	208600	166700	87500

e Estimated.

11192500 KERN RIVER NEAR DEMOCRAT SPRINGS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	320	234	148	185	317	547	803	1078	1589	1541	1108	491
MAX	1455	1298	1052	1967	2046	3289	5306	5512	6446	5712	3435	2115
(WY)	1984	1983	1984	1967	1997	1969	1969	1983	1983	1983	1967	1983
MIN	.53	.18	.13	.16	2.19	2.37	1.94	1.69	50.5	57.6	53.1	50.4
(WY)	1978	1977	1977	1977	1977	1961	1961	1977	1961	1961	1961	1981

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998	
ANNUAL TOTAL	414931		614149			
ANNUAL MEAN	1137		1683		699	
HIGHEST ANNUAL MEAN					2837	1983
LOWEST ANNUAL MEAN					23.7	1961
HIGHEST DAILY MEAN	3100	Mar 5	4410	Jun 22	6640	Jun 7 1969
LOWEST DAILY MEAN	18	Dec 25	18	Dec 25	.00	May 26 1977
ANNUAL SEVEN-DAY MINIMUM	30	Dec 21	27	Dec 31	.01	May 16 1977
INSTANTANEOUS PEAK FLOW			e4500	Jul 4	10100	Dec 6 1966
INSTANTANEOUS PEAK STAGE			unknown	Jul 4	18.55	Dec. 6 1996
ANNUAL RUNOFF (AC-FT)	823000		1218000		506200	
10 PERCENT EXCEEDS	2070		3870		2030	
50 PERCENT EXCEEDS	1150		1170		260	
90 PERCENT EXCEEDS	203		131		2.0	

e Estimated.

11192501 KERN RIVER NEAR DEMOCRAT SPRINGS, CA—Continued

KERN RIVER AND KERN RIVER NO. 1 CONDUIT NEAR DEMOCRAT SPRINGS,

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	866	751	609	396	692	1280	1310	3370	e4250	e4780	e2980	e2910
2	854	741	500	396	922	1260	1290	3370	e4270	e4790	e2880	e2830
3	734	842	434	398	1250	1210	1350	3380	e4430	e4780	e2050	e2680
4	567	843	414	405	1440	1250	1340	3380	e4440	e4790	e2180	e2470
5	478	889	455	404	1430	1270	1330	3450	e4430	e4780	e2280	e2210
6	503	875	524	468	1440	1400	1330	3430	e4440	e4720	e2590	e2110
7	452	886	482	466	1510	1350	1450	3390	e4430	e4350	e3400	e2130
8	511	924	528	436	1620	1400	1530	3390	e4430	e4270	e3360	e2160
9	464	892	490	438	1510	1510	1610	3390	e4430	e4230	e3330	e2150
10	533	904	476	462	1450	1580	1650	3380	e4420	e3950	e3490	e1970
11	508	906	524	458	1430	1580	1730	3370	e4430	e3900	e3420	e1880
12	530	874	574	466	1360	1580	1710	3390	e4430	e3810	e3440	e1840
13	638	914	567	523	1270	1570	1790	3430	e4430	e3800	e3500	e1840
14	653	775	551	785	1640	1320	1930	3380	e4440	e3480	e3530	e1940
15	688	869	527	753	1800	1420	1930	3610	e4630	e3430	e3490	e1950
16	684	845	495	880	1340	1500	1920	3630	e4630	e3400	e3520	e1740
17	646	797	570	986	1570	1440	1970	3620	e4620	e3480	e3510	e1790
18	625	770	597	1120	1690	1330	1960	3870	e4610	e3450	e3490	e1690
19	646	817	555	1590	1610	1300	1930	3890	e4620	e3390	e3390	e1540
20	672	836	451	1470	1530	1330	2040	e3860	e4620	e3410	e3270	e1480
21	652	855	458	1200	1340	1330	2210	e3860	e4630	e3570	e3200	e1550
22	668	878	457	946	1890	1330	2330	e3840	e4810	e3680	e3010	e1560
23	617	880	405	755	2410	1430	2280	e3840	e4790	e3540	e2980	e1540
24	745	889	393	727	2000	1470	2580	e3850	e4790	e3490	e3030	e1470
25	1030	793	371	697	1260	1420	2550	e3880	e4800	e3400	e3060	e1410
26	1040	739	368	676	1150	1370	2540	e4050	e4790	e3310	e3120	e1310
27	1030	643	368	686	1160	1370	2530	e4060	e4800	e3250	e3090	e1280
28	925	630	785	784	1240	1390	2730	e4060	e4810	e3000	e3010	e1340
29	944	627	800	786	---	1310	3100	e4050	e4800	e3100	e2890	e1370
30	1010	634	764	752	---	1300	3370	e4060	e4800	e3140	e2920	e1410
31	926	---	403	736	---	1300	---	e4080	---	e3100	e3030	---
TOTAL	21839	24518	15895	22045	40954	42900	59320	113610	137250	117570	96440	55550
MEAN	704	817	513	711	1463	1384	1977	3665	4575	3793	3111	1852
MAX	1040	924	800	1590	2410	1580	3370	4080	4810	4790	3530	2910
MIN	452	627	368	396	692	1210	1290	3370	4250	3000	2050	1280
AC-FT	43320	48630	31530	43730	81230	85090	117700	225300	272200	233200	191300	110200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1998, BY WATER YEAR (WY)

MEAN	560	463	407	473	634	862	1114	1410	1942	1851	1406	746
MAX	1835	1689	1432	2338	2439	3644	5695	5922	6850	6110	3824	2501
(WY)	1984	1983	1984	1967	1997	1969	1969	1983	1983	1983	1967	1983
MIN	116	127	131	154	152	221	260	256	311	400	334	127
(WY)	1962	1991	1991	1991	1991	1961	1961	1961	1961	1961	1961	1990

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1955 - 1998	
ANNUAL TOTAL	550846		747891			
ANNUAL MEAN	1509		2049		991	
HIGHEST ANNUAL MEAN					3173	1983
LOWEST ANNUAL MEAN					246	1961
HIGHEST DAILY MEAN	3500	Mar 5	4810	Jun 22	7030	Jun 7 1969
LOWEST DAILY MEAN	368	Dec 26	368	Dec 26	10	Dec 17 1968
ANNUAL SEVEN-DAY MINIMUM	403	Dec 21	403	Dec 21	12	Dec 11 1968
ANNUAL RUNOFF (AC-FT)	1093000		1483000		717900	
10 PERCENT EXCEEDS	2460		4270		2280	
50 PERCENT EXCEEDS	1530		1530		613	
90 PERCENT EXCEEDS	604		524		202	

e Estimated.

11192950 KERN RIVER BELOW KERN CANYON POWERHOUSE DIVERSION DAM, NEAR BAKERSFIELD, CA

(Formerly published as Kern River Fishwater Release at Kern Canyon Powerhouse Diversion Dam, near Bakersfield.)

LOCATION.—Lat 35°27'37", long 118°46'43", in SE 1/4 SE 1/4 sec.29, T.28 S., R.30 E., Kern County, Hydrologic Unit 18030003, Sequoia National Forest, on right bank 100 ft downstream of diversion dam, 16.4 mi northeast of Bakersfield.

DRAINAGE AREA.—Not determined.

PERIOD OF RECORD.—October 1987 to June 1995, October 1995 to September 1996 (low-flow records only to 35 ft^3/s), October 1996 to current year. Prior to October 1, 1993, at site 100 ft upstream and did not include leakage through diversion dam radial gates. Bypass flow would enter the main channel immediately downstream from the gage.

GAGE.—Water-stage recorder. Elevation of gage is 975 ft above sea level, from topographic map.

REMARKS.—Flow regulated at diversion dam 100 ft upstream from gage. See schematic diagram of Kern River Basin.

COOPERATION.—Records were provided 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, 4,770 ft^3/s, July 3, 1998, gage height, 7.61 ft; minimum daily, 6 ft^3/s, Dec. 18, 1988.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	123	61	37	31	771	733	827	3150	4010	4360	2560	2460
2	108	30	35	31	1020	752	852	3160	4030	4430	2480	2430
3	42	99	35	31	1410	725	871	3120	4170	4440	1860	2270
4	28	98	35	31	1620	720	836	3090	4170	4480	1710	2120
5	28	143	36	31	1510	684	811	3170	4180	4520	1900	1820
6	29	130	36	31	1320	854	800	3130	4170	4460	2020	1650
7	29	135	35	31	972	789	888	3030	4160	4090	2860	1700
8	51	176	35	31	1120	834	939	3000	4160	3950	2940	1700
9	29	146	33	31	975	932	1030	3010	4150	3940	2880	1760
10	29	156	32	31	896	1020	1060	3030	4140	3610	3050	1540
11	29	165	32	320	866	1010	1160	3030	4150	3560	2940	1480
12	29	126	32	512	964	1010	1250	3040	4130	3410	2960	1440
13	30	166	31	558	950	1010	1200	3130	4120	3410	3020	1390
14	29	154	31	785	1360	773	1380	3070	4090	3090	3100	1500
15	29	151	103	776	1780	845	1420	3250	4220	2980	3010	1560
16	29	145	31	962	1100	948	1530	3300	4220	2880	3070	1330
17	28	78	100	1020	1310	866	1550	3320	4200	2980	3060	1400
18	29	51	31	1140	1440	789	1570	3590	4210	2960	3050	1310
19	29	86	31	1700	1380	722	1570	3650	4170	2890	3030	1150
20	29	113	31	1600	1120	753	1710	3600	4130	2900	2820	1040
21	29	130	31	1350	807	752	1890	3600	4130	3030	2810	1120
22	29	152	32	1090	1620	735	2010	3580	4240	3240	2600	1130
23	29	155	31	852	2300	771	1980	3570	4260	3090	2500	1150
24	50	172	31	824	2530	890	2280	3590	4250	3010	2580	1070
25	300	101	31	785	1230	938	2250	3590	4270	2950	2580	1030
26	325	68	31	757	754	883	2210	3790	4280	2850	2650	947
27	314	41	32	746	737	834	2190	3820	4290	2810	2630	876
28	201	40	95	875	677	942	2360	3820	4320	2540	2560	937
29	201	38	88	892	---	983	2760	3840	4340	2560	2470	976
30	285	38	87	850	---	972	3110	3840	4360	2620	2390	979
31	218	---	33	835	---	947	---	3820	---	2580	2590	---
TOTAL	2767	3344	1324	19539	34539	26416	46294	104730	125720	104620	82680	43265
MEAN	89.3	111	42.7	630	1234	852	1543	3378	4191	3375	2667	1442
MAX	325	176	103	1700	2530	1020	3110	3840	4360	4520	3100	2460
MIN	28	30	31	31	677	684	800	3000	4010	2540	1710	876
AC-FT	5490	6630	2630	38760	68510	52400	91820	207700	249400	207500	164000	85820

11192950 KERN RIVER BELOW KERN CANYON POWERHOUSE DIVERSION DAM, NEAR BAKERSFIELD, CA—Continued

(Formerly published as Kern River Fishwater Release at Kern Canyon Powerhouse Diversion Dam, near Bakersfield.)

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	42.7	31.5	156	180	274	268	264	479	647	615	428	205
MAX	140	111	1212	630	1234	1634	1543	3378	4191	3375	2667	1442
(WY)	1997	1998	1997	1998	1998	1997	1998	1998	1998	1998	1998	1998
MIN	11.5	12.3	14.6	15.6	12.3	12.4	11.2	9.87	10.5	11.2	12.8	12.0
(WY)	1989	1988	1989	1991	1988	1988	1988	1988	1988	1988	1988	1988

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1988 - 1998	
ANNUAL TOTAL	298921		595238			
ANNUAL MEAN	819		1631		857	
HIGHEST ANNUAL MEAN					1631	1998
LOWEST ANNUAL MEAN					24.8	1994
HIGHEST DAILY MEAN	2490	Mar 20	4520	Jul 5	4520	Jul 5 1998
LOWEST DAILY MEAN	28	Sep 28	28	Oct 4	6.0	Dec 18 1988
ANNUAL SEVEN-DAY MINIMUM	29	Oct 14	29	Oct 14	9.5	May 20 1988
INSTANTANEOUS PEAK FLOW			4770	Jul 3	4770	Jul 3 1998
INSTANTANEOUS PEAK STAGE			7.61	Jul 3	7.61	Jul 3 1998
ANNUAL RUNOFF (AC-FT)	592900		1181000		621000	
10 PERCENT EXCEEDS	1640		4020		1030	
50 PERCENT EXCEEDS	816		1120		28	
90 PERCENT EXCEEDS	31		31		13	

11193031 KERN RIVER AT RIO BRAVO POWERPLANT, NEAR BAKERSFIELD, CA

LOCATION.—Lat 35°25'49", long 118°49'18", in NE 1/4 SW 1/4 SW 1/4 sec.1, T.29 S., R.29 E., Kern County, Hydrologic Unit 18030012, on left bank at diversion to Rio Bravo Powerplant and 15.5 mi northeast of Bakersfield.

DRAINAGE AREA.—Not determined.

PERIOD OF RECORD.—October 1989 to current year.

GAGE.—Water-stage recorder and broad-crested weir; water-stage recorder, Parshall flume and drain gate. Datum of gage is 678.17 ft above sea level.

REMARKS.—Flow regulated by Isabella Lake, capacity 570,000 acre-ft. Flow at this station has three components which are combined for publication: flow over a broad-crested weir (station 11193020), flow through a Parshall flume (station 11193030) and bypass flow through a sand ejector and drain gate in dam (station 11193032). Water is diverted upstream from weir through a channel to Rio Bravo Powerplant (station 11193010), returning to Kern River about 1 mi downstream. See schematic diagram of Kern River Basin.

COOPERATION.—Records provided by Rio Bravo Hydro Project, under the general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,160 ft^3/s, Feb. 23, 1998; minimum daily, 46 ft^3/s, Feb. 22, 1996.

REVISIONS.—Revised figures of discharge for the water year 1997 superseding those published in the report for 1997 are given below.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	189	939	905	1490	2420	960	798	568	624	687	512
2	74	311	874	1250	1490	2400	1090	700	719	625	692	611
3	70	314	88	937	1280	2540	1230	110	604	626	664	592
4	70	312	302	206	1420	2620	1770	108	560	626	745	533
5	67	311	597	154	1420	2710	1740	108	711	626	815	494
6	65	134	515	85	1410	2350	1540	107	809	626	792	303
7	68	84	281	78	1420	2230	1610	118	908	626	732	224
8	66	71	255	76	1420	2220	1700	259	804	626	742	451
9	101	70	619	71	1420	2060	1860	774	773	626	747	459
10	136	70	763	71	1420	2100	1810	520	709	627	659	494
11	199	70	673	71	1670	1860	1640	433	658	628	704	523
12	141	69	836	71	1730	1680	1390	553	602	628	609	484
13	77	69	1670	71	1760	1620	1280	920	697	627	428	160
14	80	69	2040	71	1670	1560	1430	880	469	628	316	65
15	107	67	2100	71	1810	1320	1490	859	468	628	270	65
16	74	67	1920	71	1750	1280	1490	1140	468	628	180	69
17	71	68	1350	71	1840	1340	1480	1160	627	628	150	65
18	71	64	1280	71	1690	1450	1460	1120	625	628	349	65
19	70	64	1160	72	1650	1450	1390	1370	625	628	345	65
20	69	64	1140	72	1830	1470	1330	1600	625	627	372	64
21	69	63	1130	72	2010	1500	1380	1860	625	627	278	64
22	68	60	1030	72	1990	1430	867	1930	624	628	169	68
23	68	78	146	73	2000	1280	586	1930	624	743	153	76
24	67	77	191	84	2260	1110	617	1600	624	756	119	76
25	67	67	168	95	2230	1100	616	1260	625	624	252	76
26	68	503	166	214	2390	1120	309	908	624	570	681	76
27	66	700	194	231	2410	1020	123	760	624	569	764	76
28	58	935	232	328	2460	1020	120	851	624	643	789	76
29	56	950	206	476	---	825	120	837	625	570	660	77
30	59	945	212	931	---	731	116	667	624	648	494	77
31	59	---	459	1220	---	979	---	510	---	661	426	---
TOTAL	2452	6915	23536	8341	49340	50795	34544	26750	19272	19575	15783	7040
MEAN	79.1	231	759	269	1762	1639	1151	863	642	631	509	235
MAX	199	950	2100	1250	2460	2710	1860	1930	908	756	815	611
MIN	56	60	88	71	1280	731	116	107	468	569	119	64
AC-FT	4860	13720	46680	16540	97870	100800	68520	53060	38230	38830	31310	13960
a	39480	28990	31360	45780	48490	51990	24240	95330	95210	94410	83740	44890

a Diversion, in acre-feet, through Rio Bravo Powerplant, provided by Rio Bravo Hydro Project.

11193031 KERN RIVER AT RIO BRAVO POWERPLANT, NEAR BAKERSFIELD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1997, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	132	175	263	199	399	424	439	467	634	551	582	218
MAX	258	261	759	348	1762	1639	2014	1555	1890	1764	2665	405
(WY)	1990	1990	1997	1995	1997	1997	1995	1995	1995	1995	1995	1995
MIN	60.5	63.1	77.0	62.9	59.2	59.8	49.5	51.5	51.6	52.1	63.1	61.0
(WY)	1994	1996	1996	1996	1994	1994	1991	1991	1991	1991	1994	1993

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1990 - 1997	
ANNUAL TOTAL	195654		264343			
ANNUAL MEAN	535		724		388	
HIGHEST ANNUAL MEAN					1056	1995
LOWEST ANNUAL MEAN					106	1994
HIGHEST DAILY MEAN	2610	Jul 10	2710	Mar 5	3870	Aug 17 1995
LOWEST DAILY MEAN	46	Feb 22	56	Oct 29	46	Feb 22 1996
ANNUAL SEVEN-DAY MINIMUM	53	Feb 21	62	Oct 25	47	Jun 14 1991
INSTANTANEOUS PEAK FLOW			3130	Mar 5	3930	Aug 17 1995
ANNUAL RUNOFF (AC-FT)	388100		524300		280700	
TOTAL DIVERSION (AC-FT) a	560900		683900		403000	
10 PERCENT EXCEEDS	1590		1690		1270	
50 PERCENT EXCEEDS	164		625		133	
90 PERCENT EXCEEDS	58		69		56	

a Diversion, in acre-feet, through Rio Bravo Powerplant, provided by Rio Bravo Hydro Project.

11193031 KERN RIVER AT RIO BRAVO POWERPLANT, NEAR BAKERSFIELD, CA—Continued

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132	54	170	54	52	77	67	1680	2250	2970	1200	1250
2	133	56	54	54	55	69	67	1620	2360	2990	1280	1350
3	133	87	54	54	217	54	67	1630	2410	2990	2060	1380
4	132	158	54	53	196	69	67	1900	2510	3030	2080	1220
5	132	169	53	53	58	65	67	2100	2490	3020	1350	857
6	125	53	54	53	223	94	67	2520	2460	3000	612	704
7	121	54	54	53	90	63	68	2520	2480	2480	1400	760
8	113	55	54	53	176	82	80	2520	2460	2370	1540	770
9	54	54	55	53	96	559	136	2410	2720	2370	2030	835
10	54	54	55	53	72	998	151	2360	2860	2070	2660	594
11	54	54	55	54	70	1670	200	2520	2880	2080	2620	499
12	55	53	55	54	69	1690	203	2130	2610	1950	2630	456
13	233	54	55	53	66	1690	241	1650	2350	1960	2680	396
14	427	65	54	58	339	1450	374	1630	2360	1720	2780	542
15	56	54	57	54	650	1450	353	1810	2520	1610	2700	620
16	57	54	53	60	119	885	359	1840	2600	1520	2760	353
17	57	54	56	54	155	529	376	1830	2640	1590	2710	415
18	56	54	53	55	202	59	356	2020	2630	1580	2680	316
19	56	55	54	192	159	60	307	2060	2660	1500	2580	171
20	57	55	54	78	120	59	400	2030	2770	1490	1600	120
21	57	55	56	57	62	59	577	1840	2810	1600	1500	147
22	57	56	54	52	1710	59	736	1720	3040	1790	1290	389
23	57	56	54	52	2870	65	655	1710	3370	1650	1310	815
24	57	57	53	52	2740	62	916	1700	3070	1560	2230	701
25	103	58	54	52	1370	80	820	1920	3040	1510	2290	666
26	126	57	53	52	546	66	824	2070	2930	1460	2380	559
27	113	54	54	52	169	55	815	2130	2930	1420	2370	319
28	61	54	53	52	142	75	995	2120	2950	1210	2290	131
29	54	54	52	52	---	65	1300	2130	3000	1210	2210	124
30	98	54	53	52	---	66	1720	2090	2980	1270	1980	131
31	66	---	53	52	---	67	---	2060	---	1250	1560	---
TOTAL	3086	1901	1792	1822	12793	12391	13364	62270	81140	60220	63362	17590
MEAN	99.5	63.4	57.8	58.8	457	400	445	2009	2705	1943	2044	586
MAX	427	169	170	192	2870	1690	1720	2520	3370	3030	2780	1380
MIN	54	53	52	52	52	54	67	1620	2250	1210	612	120
AC-FT	6120	3770	3550	3610	25370	24580	26510	123500	160900	119400	125700	34890
a	35440	42550	27960	40640	62270	64650	90800	90090	96080	101600	63340	74450

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	128	162	237	182	406	421	440	660	893	705	744	259
MAX	258	261	759	348	1762	1639	2014	2009	2705	1943	2665	586
(WY)	1990	1990	1997	1995	1997	1997	1995	1998	1998	1998	1995	1998
MIN	60.5	63.1	57.8	58.8	59.2	59.8	49.5	51.5	51.6	52.1	63.1	61.0
(WY)	1994	1996	1998	1998	1994	1994	1991	1991	1991	1991	1994	1993

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1990 - 1998	
ANNUAL TOTAL	238219		331731			
ANNUAL MEAN	653		909		453	
HIGHEST ANNUAL MEAN					1056	1995
LOWEST ANNUAL MEAN					106	1994
HIGHEST DAILY MEAN	2710	Mar 5	3370	Jun 23	3870	Aug 17 1995
LOWEST DAILY MEAN	52	Dec 29	52	Dec 29	46	Feb 22 1996
ANNUAL SEVEN-DAY MINIMUM	53	Dec 24	52	Jan 22	47	Jun 14 1991
INSTANTANEOUS PEAK FLOW			5160	Feb 23	5160	Feb 23 1998
ANNUAL RUNOFF (AC-FT)	472500		658000		327900	
TOTAL DIVERSION (AC-FT) a	690000		789900		451400	
10 PERCENT EXCEEDS	1670		2590		1500	
50 PERCENT EXCEEDS	570		233		137	
90 PERCENT EXCEEDS	54		54		55	

a Diversion, in acre-feet, through Rio Bravo Powerplant, provided by Rio Bravo Hydro Project.

11199500 WHITE RIVER NEAR DUCOR, CA

LOCATION.—Lat 35°48'36", long 118°55'03", in NW 1/4 SE 1/4 sec.26, T.24 S., R.28 E., Tulare County, Hydrologic Unit 18030012, on left bank 0.6 mi upstream from Tyler Gulch and 9.0 mi southeast of Ducor.

DRAINAGE AREA.—90.6 mi^2.

PERIOD OF RECORD.—October 1942 to September 1953, February 1971 to current year. Monthly discharge only for October 1942 to September 1944, published in WSP 1315-A.

GAGE.—Water-stage recorder. Elevation of gage is 715 ft above sea level, from topographic map. October 1942 to September 1946, at site 3,800 ft downstream; October 1946 to September 1953, at site 4,300 ft downstream; and October 1971 to November 1978, at site 4,000 ft downstream, all at different datums.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,720 ft^3/s, Feb. 23, 1998, gage height, 4.53 ft from rating curve extended above 646 ft^3/s on basis of slope area measurement; no flow for several months in most years.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 16	0515	102	1.81	Feb. 20	0030	297	2.83
Jan. 19	0600	123	1.94	Feb. 23	1745	2,720	4.53
Jan. 29	2400	65	1.53	Mar. 6	1200	169	1.17
Feb. 4	0200	106	1.82	Mar. 28	0530	534	2.95
Feb. 8	0115	98	1.77	Apr. 1	0630	362	1.90
Feb. 17	0830	295	2.82				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	4.3	3.1	19	117	319	82	62	34	12	3.5
2	.00	.00	3.6	3.3	48	104	249	85	63	33	11	3.5
3	.00	.00	2.8	4.8	64	95	245	107	72	32	10	3.8
4	.00	.00	2.6	6.0	69	88	252	102	70	31	9.6	4.7
5	.00	.00	3.0	8.3	44	81	236	120	66	30	9.2	7.5
6	.00	.00	13	5.3	40	120	254	110	66	29	8.6	7.1
7	.00	.00	14	4.7	55	91	263	109	77	27	8.1	6.7
8	.00	.00	20	4.3	84	82	231	105	72	26	7.5	5.3
9	.00	.00	21	5.1	73	74	190	100	67	26	7.1	5.0
10	.00	.00	11	11	60	69	160	96	63	25	7.0	5.6
11	.00	.27	8.0	13	55	67	154	90	83	24	6.5	6.0
12	.00	1.4	5.9	12	46	66	187	101	73	24	6.5	5.4
13	.00	1.1	4.7	31	43	64	168	122	70	23	6.8	4.9
14	.00	1.4	5.0	19	74	62	166	104	66	22	6.8	4.3
15	.00	1.3	5.0	18	150	58	161	95	65	21	6.3	4.2
16	.00	1.0	4.4	76	86	56	148	92	65	20	5.9	4.2
17	.00	.85	4.3	38	187	55	140	86	61	19	5.6	4.0
18	.00	.85	4.3	25	117	54	134	83	57	18	5.7	4.1
19	.00	1.2	3.9	76	102	50	130	83	56	17	6.0	5.2
20	.00	4.6	3.8	43	205	49	126	81	55	16	6.4	5.1
21	.00	6.2	3.8	29	129	56	122	79	52	15	6.6	5.0
22	.00	3.8	3.5	23	274	62	118	76	50	15	6.5	4.8
23	.00	2.9	3.3	20	833	70	113	73	48	14	6.4	4.4
24	.00	2.6	3.2	17	616	78	116	72	46	13	6.4	5.3
25	.00	2.6	3.0	15	307	121	110	73	44	13	5.8	6.1
26	.00	4.3	2.8	14	229	227	100	71	43	13	5.3	6.5
27	.00	12	2.6	13	180	186	94	66	41	13	5.0	7.2
28	.00	6.2	2.6	12	139	350	89	65	38	12	5.3	6.6
29	.00	4.7	2.7	29	---	240	85	67	37	11	5.1	7.2
30	.00	4.5	2.9	38	---	208	80	66	35	12	4.9	7.6
31	.00	---	2.9	25	---	221	---	63	---	12	4.4	---
TOTAL	0.00	63.77	177.9	641.9	4328	3321	4940	2724	1763	640	214.3	160.8
MEAN	.000	2.13	5.74	20.7	155	107	165	87.9	58.8	20.6	6.91	5.36
MAX	.00	12	21	76	833	350	319	122	83	34	12	7.6
MIN	.00	.00	2.6	3.1	19	49	80	63	35	11	4.4	3.5
AC-FT	.00	126	353	1270	8580	6590	9800	5400	3500	1270	425	319

11199500 WHITE RIVER NEAR DUCOR, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.39	2.27	6.04	14.2	21.3	35.4	24.3	13.1	5.48	1.35	.40	.33
MAX	8.05	20.6	36.5	97.0	155	260	165	87.9	58.8	20.6	8.30	5.36
(WY)	1984	1984	1984	1997	1998	1943	1998	1998	1998	1998	1983	1998
MIN	.000	.000	.000	.084	.76	1.79	.85	.19	.000	.000	.000	.000
(WY)	1943	1943	1948	1949	1991	1977	1977	1992	1950	1947	1943	1943

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1943 - 1998	
ANNUAL TOTAL	5678.74		18974.67			
ANNUAL MEAN	15.6		52.0		10.5	
HIGHEST ANNUAL MEAN					52.0	1998
LOWEST ANNUAL MEAN					.58	1977
HIGHEST DAILY MEAN	380	Jan 3	833	Feb 23	1320	Mar 9 1943
LOWEST DAILY MEAN	.00	Jul 5	.00	Oct 1	.00	Oct 1 1942
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 5	.00	Oct 1	.00	Oct 1 1942
INSTANTANEOUS PEAK FLOW			2720	Feb 23	2720	Feb 23 1998
INSTANTANEOUS PEAK STAGE			4.53	Feb 23	4.53	Feb 23 1998
ANNUAL RUNOFF (AC-FT)	11260		37640		7590	
10 PERCENT EXCEEDS	48		127		23	
50 PERCENT EXCEEDS	3.0		18		2.1	
90 PERCENT EXCEEDS	.00		.00		.00	

11200800 DEER CREEK NEAR FOUNTAIN SPRINGS, CA

LOCATION.—Lat 35°56'30", long 118°49'19", in SE 1/4 NE 1/4 sec.10, T.23 S., R.29 E., Tulare County, Hydrologic Unit 18030005, on left bank 1.0 mi upstream from Pothole Creek, 6.3 mi northeast of Fountain Springs, and 12 mi east of Terra Bella.

DRAINAGE AREA.—83.3 mi^2.

PERIOD OF RECORD.—August 1968 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 980 ft above sea level, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,790 ft^3/s, Jan. 3, 1997, gage height, 10.32 ft, from rating curve extended above 600 ft^3/s on basis of slope-area measurements at gage heights 8.83 ft in gage well, 9.18 ft from floodmarks, and 12.54 ft from floodmarks; no flow for periods in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 6, 1966, reached a stage of 12.54 ft, from floodmarks, discharge, 5,330 ft^3/s.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 16	0100	699	6.12	Mar. 6	1015	331	5.18
Feb. 2	1215	203	4.46	Mar. 28	0500	1,230	7.05
Feb. 14	2300	1,520	7.47	Apr. 1	0345	695	6.11
Feb. 23	1815	3,710	10.24	May 12	2145	350	5.21

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	7.9	19	17	52	243	573	222	162	107	43	18
2	3.9	5.8	16	17	136	223	431	220	162	105	41	18
3	4.7	6.5	15	20	124	202	430	230	175	101	41	19
4	5.2	7.0	13	22	128	184	388	242	164	97	38	21
5	4.1	7.0	14	24	100	173	347	279	160	92	36	25
6	5.6	6.9	66	20	100	233	373	251	161	90	35	24
7	5.9	7.2	39	19	127	177	379	242	190	86	35	31
8	7.5	8.1	78	18	173	165	336	231	173	83	32	22
9	6.6	8.7	46	20	154	155	315	245	160	80	30	20
10	6.9	9.7	31	59	134	151	309	228	153	76	33	22
11	13	25	26	44	140	149	317	215	183	75	32	21
12	12	15	23	46	117	149	393	248	177	71	30	19
13	10	12	22	99	108	147	320	267	172	69	33	18
14	9.1	20	21	56	484	143	319	244	164	68	31	19
15	8.2	13	24	132	500	138	292	229	165	65	28	17
16	7.4	12	22	342	237	141	272	226	167	62	27	17
17	7.0	12	21	110	366	137	262	213	160	59	28	17
18	6.8	11	20	80	245	135	261	205	155	57	27	17
19	5.9	13	20	205	267	134	268	199	153	54	27	19
20	6.0	25	19	104	397	131	278	196	152	54	28	16
21	7.2	18	18	80	268	128	296	189	145	53	27	19
22	7.6	14	18	70	1360	126	305	182	143	52	25	19
23	7.3	13	17	60	1770	128	295	178	139	51	24	19
24	7.4	13	17	55	1180	129	299	175	133	51	26	20
25	7.7	12	16	50	566	202	276	178	131	48	23	20
26	5.7	31	16	46	383	303	256	178	127	46	22	21
27	7.4	50	16	43	303	298	247	166	124	45	23	20
28	7.6	26	16	40	264	760	241	164	116	46	22	21
29	7.6	22	16	74	---	453	237	171	114	44	20	21
30	7.7	20	16	73	---	355	229	166	111	43	18	22
31	7.8	---	16	57	---	403	---	163	---	44	20	---
TOTAL	220.8	451.8	737	2102	10183	6595	9544	6542	4591	2074	905	602
MEAN	7.12	15.1	23.8	67.8	364	213	318	211	153	66.9	29.2	20.1
MAX	13	50	78	342	1770	760	573	279	190	107	43	31
MIN	3.9	5.8	13	17	52	126	229	163	111	43	18	16
AC-FT	438	896	1460	4170	20200	13080	18930	12980	9110	4110	1800	1190

11200800 DEER CREEK NEAR FOUNTAIN SPRINGS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.78	13.4	24.5	58.2	78.5	85.6	71.8	45.5	25.1	10.3	4.58	3.80
MAX	23.5	62.8	145	440	364	443	318	211	153	66.9	32.1	20.1
(WY)	1984	1984	1997	1997	1998	1983	1998	1998	1998	1998	1983	1998
MIN	.77	3.35	4.88	6.69	4.65	8.38	4.12	2.96	.71	.000	.000	.000
(WY)	1978	1991	1991	1991	1991	1977	1977	1992	1992	1972	1972	1972

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1968 - 1998	
ANNUAL TOTAL	25064.7		44547.6			
ANNUAL MEAN	68.7		122		35.4	
HIGHEST ANNUAL MEAN					143	1983
LOWEST ANNUAL MEAN					4.29	1977
HIGHEST DAILY MEAN	2080	Jan 3	1770	Feb 23	2080	Jan 3 1997
LOWEST DAILY MEAN	2.9	Aug 31	3.9	Oct 2	.00	Jun 24 1972
ANNUAL SEVEN-DAY MINIMUM	3.7	Sep 7	4.8	Oct 1	.00	Jun 30 1972
INSTANTANEOUS PEAK FLOW			3710	Feb 23	3790	Jan 3 1997
INSTANTANEOUS PEAK STAGE			10.24	Feb 23	10.32	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	49720		88360		25610	
10 PERCENT EXCEEDS	174		284		80	
50 PERCENT EXCEEDS	19		57		11	
90 PERCENT EXCEEDS	4.5		8.9		.90	

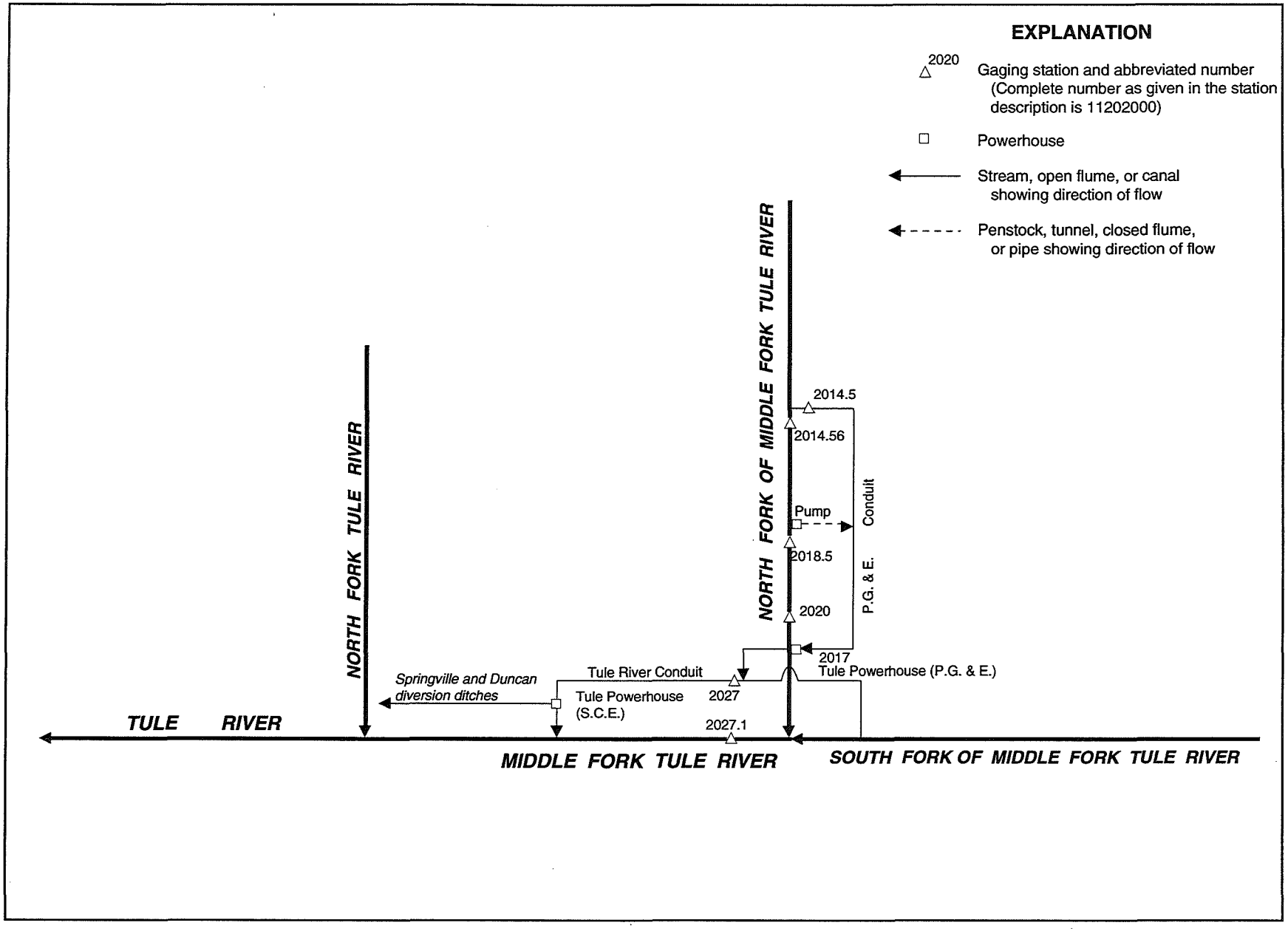


Figure 24. Diversions and storage in Tule River Basin.

11201450 PACIFIC GAS & ELECTRIC CO. TULE RIVER CONDUIT BELOW DIVERSION DAM, NEAR SPRINGVILLE, CA

LOCAT ION.—Lat 36°11'32", long 118°39'24", in SW 1/4 SE 1/4 sec. 7, T.20 S., R.31 E., Tulare County, Hydrologic Unit 18030006, on left bank 75 ft downstream from diversion dam and 11 mi east of Springville.

PERIOD OF RECORD.—October 1994 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 4,040 ft above sea level, from topographic map.

REMARKS.—Water is returned to river 3.6 mi downstream after passing through Tule River Powerplant (station 11201700). See schematic diagram of Tule River Basin.

COOPERATION.—Records were provided 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 daily discharge, 63 ft^3/s, many days in 1995, minimum daily, 0.17 ft^3/s, Aug. 8, 1996.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	4.5	12	14	28	46	57	59	59	58	52	19
2	8.6	4.4	12	16	60	46	56	59	59	58	49	19
3	8.7	4.6	11	14	56	46	56	58	59	58	46	19
4	8.3	4.8	11	14	47	44	54	58	59	58	43	22
5	8.2	4.7	15	13	40	43	52	59	59	58	41	22
6	3.7	4.7	29	12	45	43	50	58	59	59	40	20
7	2.1	4.9	22	13	50	39	49	58	59	59	39	20
8	2.4	5.1	21	13	55	38	48	58	59	56	37	22
9	2.2	5.0	17	16	45	38	51	58	59	58	35	21
10	2.5	7.3	14	28	39	40	59	58	59	58	35	19
11	3.8	9.8	13	21	39	45	61	58	59	59	37	18
12	3.2	7.6	13	29	36	52	61	58	59	59	35	18
13	2.9	11	13	35	35	55	60	58	59	59	34	17
14	2.1	11	14	26	48	55	60	58	59	59	34	17
15	2.1	10	15	31	41	56	59	58	59	59	33	18
16	2.4	9.6	14	27	45	59	57	58	54	59	31	19
17	3.1	9.4	14	36	53	59	57	57	49	59	30	19
18	2.6	9.2	13	38	46	60	59	58	59	59	29	19
19	2.5	17	13	38	46	60	61	58	59	59	28	19
20	2.7	13	12	39	43	60	61	58	59	59	27	19
21	3.0	11	12	35	43	60	61	58	59	59	26	19
22	2.5	11	11	32	61	61	61	58	58	59	25	19
23	3.6	11	11	31	56	61	58	58	56	59	24	19
24	5.5	10	11	30	54	61	58	58	58	59	23	19
25	5.6	9.6	10	28	58	60	58	58	58	58	23	19
26	5.5	18	10	27	54	59	57	58	58	58	22	19
27	5.0	16	10	25	48	59	58	58	58	58	22	19
28	4.7	15	11	24	45	59	58	58	58	58	21	19
29	4.7	15	11	31	---	58	58	58	58	56	21	19
30	4.7	13	12	29	---	57	59	58	58	55	20	19
31	4.6	---	13	28	---	57	---	59	---	54	20	---
TOTAL	131.9	287.2	420	793	1316	1636	1714	1801	1744	1803	982	576
MEAN	4.25	9.57	13.5	25.6	47.0	52.8	57.1	58.1	58.1	58.2	31.7	19.2
MAX	8.7	18	29	39	61	61	61	59	59	59	52	22
MIN	2.1	4.4	10	12	28	38	48	57	49	54	20	17
AC-FT	262	570	833	1570	2610	3250	3400	3570	3460	3580	1950	1140

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1998, BY WATER YEAR (WY)

MEAN	4.93	10.1	20.2	31.2	49.4	57.0	59.9	60.7	53.5	39.5	18.9	13.4
MAX	6.62	20.0	50.0	55.0	58.5	59.8	61.1	62.4	62.8	59.3	31.7	19.2
(WY)	1997	1997	1997	1997	1997	1997	1996	1995	1995	1995	1998	1998
MIN	3.35	4.05	6.46	17.5	40.9	52.8	57.1	58.1	44.6	19.0	3.42	8.72
(WY)	1995	1995	1995	1996	1995	1998	1998	1998	1997	1997	1996	1997

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1995 - 1998	
ANNUAL TOTAL	12293.6		13204.1			
ANNUAL MEAN	33.7		36.2		34.8	
HIGHEST ANNUAL MEAN					37.8	1997
LOWEST ANNUAL MEAN					29.4	1996
HIGHEST DAILY MEAN	61	Jan 5	61	Feb 22	63	Apr 5 1995
LOWEST DAILY MEAN	2.1	Oct 7	2.1	Oct 7	.17	Aug 8 1996
ANNUAL SEVEN-DAY MINIMUM	2.5	Oct 14	2.5	Oct 14	.21	Oct 4 1995
ANNUAL RUNOFF (AC-FT)	24380		26190		25200	
10 PERCENT EXCEEDS	61		59		61	
50 PERCENT EXCEEDS	24		39		35	
90 PERCENT EXCEEDS	5.9		7.5		5.9	

11201456 NORTH FORK OF MIDDLE FORK TULE RIVER BELOW DIVERSION DAM, NEAR SPRINGVILLE, CA

LOCATION.—Lat 36°11'33", long 118°39'25", in SW 1/4 SE 1/4 sec. 7, T.20 S., R.31 E., Tulare County, Hydrologic Unit 18030006, on left bank 375 ft downstream from diversion dam, 0.3 mi upstream from Hossack Creek, and 11 mi east of Springville.

DRAINAGE AREA.—30.9 mi^2.

PERIOD OF RECORD.—October 1994 to current year (low flow records only).

GAGE.—Water-stage recorder and sharp-crested V-notch weir in concrete control. Elevation of gage is 4,000 ft above sea level, from topographic map.

REMARKS.—No records computed above 80 ft^3/s. Most of the flow is diverted at the diversion dam to Pacific Gas and Electric Co. Tule River Conduit (station 11201450). Water is returned to river 3.6 mi downstream after passing through Tule River Powerplant (station 11201700). See schematic diagram of Tule River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., 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 1997 TO SEPTEMBER 1998

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	8.1	4.8	5.4	5.3	5.4	33	---	---	---	11	8.0
2	4.5	8.1	4.8	5.5	31	5.3	29	---	---	---	10	8.0
3	4.5	7.8	4.8	5.4	17	5.3	28	---	---	---	10	8.0
4	4.5	7.6	4.8	5.4	5.8	5.2	26	---	---	---	11	8.1
5	4.5	7.5	4.9	5.4	5.4	5.2	24	---	---	---	11	8.1
6	9.3	7.5	22	5.4	5.9	5.2	23	---	---	---	9.8	8.0
7	12	7.5	11	5.4	6.8	5.2	23	---	---	---	9.9	8.0
8	12	7.5	12	5.4	8.2	5.2	23	---	---	---	9.9	8.1
9	11	7.5	5.6	5.5	5.7	5.1	21	---	---	---	9.8	8.0
10	12	7.6	5.4	5.8	5.5	5.1	18	---	---	---	9.2	8.0
11	16	7.6	5.4	5.5	5.5	5.3	22	---	---	---	8.9	7.9
12	14	7.5	5.4	7.5	5.4	6.3	21	---	---	---	8.9	7.9
13	14	7.6	5.4	14	5.4	8.7	16	---	---	---	8.3	7.9
14	14	6.0	5.4	5.5	69	8.6	13	77	---	---	7.7	7.9
15	13	4.9	5.4	47	65	14	9.0	73	---	---	7.5	6.2
16	12	4.9	5.4	---	28	22	7.1	72	---	---	7.5	4.8
17	11	4.9	5.4	29	8.5	21	7.1	67	---	---	7.5	4.7
18	11	4.9	5.4	12	5.3	27	11	70	---	---	7.5	4.8
19	11	5.0	5.4	29	5.3	34	24	---	---	75	7.4	4.7
20	11	4.9	5.4	6.8	5.2	40	50	---	---	70	7.6	4.6
21	11	4.9	5.4	5.4	7.1	45	---	---	---	64	7.7	4.5
22	11	4.9	5.4	5.4	32	51	---	78	---	56	7.6	4.6
23	9.7	4.9	5.4	5.4	72	75	---	---	---	49	7.6	4.5
24	7.8	4.9	5.4	5.3	56	---	---	---	---	44	7.6	4.6
25	7.7	4.9	5.4	5.3	22	---	---	---	---	36	7.5	4.6
26	7.5	5.1	5.4	5.2	8.9	---	---	---	---	31	7.5	4.7
27	8.0	5.0	5.4	5.2	5.5	75	---	---	---	28	7.5	4.6
28	8.2	4.9	5.4	5.2	5.3	67	---	---	---	24	7.5	4.6
29	8.2	4.9	5.4	5.4	---	51	---	---	---	20	7.6	4.6
30	8.1	4.9	5.4	5.3	---	43	---	---	---	16	7.8	4.5
31	8.1	---	5.4	5.3	---	38	---	---	---	13	8.0	---
TOTAL	301.1	184.2	193.5	---	508.0	---	---	---	---	---	264.3	187.5
MEAN	9.71	6.14	6.24	---	18.1	---	---	---	---	---	8.53	6.25
MAX	16	8.1	22	---	72	---	---	---	---	---	11	8.1
MIN	4.5	4.9	4.8	---	5.2	---	---	---	---	---	7.4	4.5
AC-FT	597	365	384	---	1010	---	---	---	---	---	524	372

11201850 NORTH FORK OF MIDDLE FORK TULE RIVER BELOW DOYLE SPRINGS DIVERSION, NEAR SPRINGVILLE, CA

LOCATION.—Lat 36°11'19", long 118°40'01", unsurveyed, in T.20 S., R.31 E., Tulare County, Hydrologic Unit 18030006, on right bank 600 ft downstream from diversion, 0.2 mi upstream from Meadow Creek, and 10 mi east of Springville.

DRAINAGE AREA.—34.1 mi^2.

PERIOD OF RECORD.—October 1994 to current year (low-flow records only).

GAGE.—Water-stage recorder and broad-crested weir in concrete control. Elevation of gage is 3,740 ft above sea level, from topographic map.

REMARKS.—No records computed above 5 ft^3/s. Pacific Gas and Electric Co. pumps up to 5 ft^3/s from river at Doyle Springs Diversion to Tule River Conduit (station 11201450); water is returned to river 2.6 mi downstream after passing through Tule River Powerplant (station 11201700). See schematic diagram of Tule River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with the Federal Energy Regulatory Commission project.

NOTE.—No daily discharges below 5 ft^3/s for the 1998 water year.

11202000 NORTH FORK OF MIDDLE FORK TULE RIVER NEAR SPRINGVILLE, CA

LOCATION.—Lat 36°10'29", long 118°41'41", unsurveyed, in T.20 S., R.30 E., Tulare County, Hydrologic Unit 18030006, on right bank 1.2 mi upstream from mouth, 2.2 mi downstream from Hossack Creek, and 7.4 mi northeast of Springville.

DRAINAGE AREA.—39.3 mi^2.

PERIOD OF RECORD.—October 1939 to current year. Monthly discharge only for some periods, published in WSP 1315-A. January 1909 to December 1912 at site 2 mi upstream, records not equivalent. Prior to October 1954, records for river and Pacific Gas & Electric Co. Conduit published separately; combined flow only, October 1954 to September 1960. Prior to October 1982, combined flow consisted of river and conduit. October 1982 to present, combined flow consists of river and Pacific Gas & Electric Co. Tule River Powerplant near Springville (station 11201700).

REVISED RECORDS.—WSP 1445: 1951. WSP 1930: Drainage area. WDR CA-91-3: Adjusted data for 1990.

GAGE.—Water-stage recorder. Concrete control on river since Aug. 6, 1958. Rectangular weir and concrete control on river since July 10, 1991. Elevation of gage is 2,920 ft above sea level, from topographic map.

REMARKS.—Pacific Gas and Electric Co. Conduit diverts 2.5 mi upstream from station; water is returned to river 1.1 mi downstream after passing through Tule River Powerplant (11201700). See schematic diagram of Tule River Basin. For records of combined discharge of river and powerplant, see station 11202001.

COOPERATION.—Records were provided 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.—River only, maximum discharge, 16,900 ft^3/s, Dec. 6, 1966, gage height, 13.83 ft, from floodmarks, from rating curve extended above 1,820 ft^3/s on basis of critical-depth determinations at gage heights 9.67 and 12.47 ft; minimum daily, 0.06 ft^3/s Nov. 2, 1979.

Combined flow: Maximum discharge, 16,900 ft^3/s, Dec. 6, 1966; minimum daily, 5.0 ft^3/s, Oct. 1, 1987.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	9.9	8.0	7.5	11	33	77	234	235	297	21	14
2	7.0	10	7.8	7.6	49	31	68	224	253	292	20	14
3	7.2	9.5	7.8	7.6	36	29	69	210	251	273	19	14
4	7.0	9.4	7.8	8.7	27	27	65	211	211	249	19	14
5	7.2	10	8.4	8.3	21	26	62	242	221	234	19	15
6	12	10	37	7.8	27	31	63	202	259	222	18	15
7	17	9.2	20	7.8	37	26	62	178	269	210	18	15
8	18	9.2	27	7.8	41	25	57	160	252	212	18	14
9	17	9.2	12	8.3	30	24	54	159	249	205	17	14
10	18	11	9.3	15	25	24	54	152	277	188	17	14
11	23	12	8.7	10	23	24	62	139	343	166	16	14
12	20	9.5	8.4	13	20	25	67	149	296	155	16	14
13	20	12	8.2	29	17	28	56	137	255	147	15	14
14	20	9.8	8.2	12	117	27	56	120	270	140	14	15
15	19	8.0	8.4	69	125	30	49	112	335	134	14	13
16	18	7.8	8.0	134	66	40	44	112	408	126	14	11
17	17	7.8	8.0	48	44	38	44	104	399	119	14	11
18	17	7.8	7.8	25	34	45	47	105	370	108	14	11
19	17	8.3	7.8	61	36	55	62	115	370	98	14	10
20	17	8.2	7.8	23	40	64	93	125	379	92	14	10
21	17	8.0	7.8	18	43	71	153	117	365	86	14	11
22	16	8.0	7.8	13	133	77	216	112	333	76	14	9.9
23	16	8.0	7.6	11	186	102	225	113	303	69	14	10
24	12	8.0	7.5	10	146	116	190	134	285	61	14	10
25	11	7.9	7.5	9.7	79	146	159	163	290	51	14	10
26	9.8	17	7.5	9.3	53	132	141	153	292	43	14	10
27	11	15	7.5	9.1	40	123	153	132	297	38	14	10
28	10	12	7.5	8.8	35	123	178	141	299	33	14	10
29	9.9	11	7.5	16	---	95	206	173	305	29	14	10
30	9.8	9.4	7.5	13	---	85	229	174	301	25	14	10
31	9.7	---	7.5	11	---	80	---	203	---	23	14	---
TOTAL	437.6	292.9	309.6	639.3	1541	1802	3061	4805	8972	4201	485	366.9
MEAN	14.1	9.76	9.99	20.6	55.0	58.1	102	155	299	136	15.6	12.2
MAX	23	17	37	134	186	146	229	242	408	297	21	15
MIN	7.0	7.8	7.5	7.5	11	24	44	104	211	23	14	9.9
AC-FT	868	581	614	1270	3060	3570	6070	9530	17800	8330	962	728

11202000 NORTH FORK OF MIDDLE FORK TULE RIVER NEAR SPRINGVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.25	12.6	27.2	30.3	28.3	35.1	51.6	84.3	50.6	12.9	4.63	3.63
MAX	19.1	362	786	353	182	337	229	381	316	136	16.2	22.7
(WY)	1953	1951	1967	1997	1986	1943	1969	1969	1983	1998	1996	1952
MIN	.53	.76	.73	.81	.80	1.21	1.13	1.03	.61	.34	.32	.31
(WY)	1965	1963	1991	1991	1991	1977	1977	1992	1992	1961	1964	1961

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1940 - 1998	
ANNUAL TOTAL	21029.3		26913.3			
ANNUAL MEAN	57.6		73.7		28.4	
HIGHEST ANNUAL MEAN					129	1967
LOWEST ANNUAL MEAN					1.25	1961
HIGHEST DAILY MEAN	2290	Jan 2	408	Jun 16	13300	Dec 6 1966
LOWEST DAILY MEAN	5.5	Jul 14	7.0	Oct 1	.06	Nov 2 1979
ANNUAL SEVEN-DAY MINIMUM	6.9	Sep 25	7.5	Dec 24	.20	Aug 24 1964
INSTANTANEOUS PEAK FLOW			456	Jun 16	16900	Dec 6 1966
INSTANTANEOUS PEAK STAGE			5.04	Jun 16	13.83	Dec 6 1966
ANNUAL RUNOFF (AC-FT)	41710		53380		20610	
10 PERCENT EXCEEDS	101		227		82	
50 PERCENT EXCEEDS	13		24		5.0	
90 PERCENT EXCEEDS	7.7		8.0		.80	

11202001 NORTH FORK OF MIDDLE FORK TULE RIVER NEAR SPRINGVILLE, CA—Continued

NORTH FORK OF MIDDLE FORK TULE RIVER AND PACIFIC GAS & ELECTRIC CO. TULE RIVER POWERPLANT NEAR SPRINGVILLE

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	17	28	26	43	92	145	302	302	364	85	40
2	19	17	26	26	117	89	134	293	321	359	82	40
3	20	17	25	39	104	90	136	279	319	340	80	41
4	20	18	25	31	90	42	132	280	279	316	74	42
5	20	17	29	25	71	52	124	310	289	301	72	45
6	16	17	72	27	84	87	127	270	327	289	69	43
7	17	17	42	28	98	77	124	246	337	277	69	41
8	18	17	60	28	109	74	119	227	320	277	65	42
9	17	17	45	28	91	72	118	227	317	272	64	42
10	18	20	20	52	58	75	122	220	345	255	62	41
11	23	23	28	37	73	75	131	207	411	234	61	39
12	20	27	26	46	67	76	136	217	364	222	61	38
13	20	29	26	79	63	96	125	205	323	214	65	36
14	20	26	27	44	173	95	124	189	338	207	59	36
15	19	24	30	113	173	98	118	180	403	201	59	38
16	18	23	24	166	128	108	111	180	476	193	54	36
17	17	15	29	79	112	106	110	172	454	186	53	36
18	17	22	27	59	92	113	114	173	438	174	51	36
19	17	31	25	95	93	122	129	183	438	165	51	35
20	17	27	25	57	97	131	161	193	447	158	50	34
21	17	25	25	57	96	140	222	185	433	153	49	34
22	16	24	24	53	201	145	284	180	401	143	46	35
23	16	25	25	48	254	170	293	181	368	136	46	35
24	12	23	25	47	208	184	259	202	353	128	45	35
25	15	22	24	45	147	214	228	231	358	118	46	35
26	17	42	24	42	121	200	209	221	360	110	44	35
27	17	33	25	40	102	191	222	200	365	104	44	35
28	17	31	25	40	93	192	247	209	366	99	42	34
29	17	29	26	57	---	163	274	241	371	95	42	34
30	17	27	25	47	---	153	296	242	368	91	42	35
31	18	---	26	46	---	148	---	271	---	89	40	---
TOTAL	551	702	913	1607	3158	3670	5074	6916	10991	6270	1772	1128
MEAN	17.8	23.4	29.5	51.8	113	118	169	223	366	202	57.2	37.6
MAX	23	42	72	166	254	214	296	310	476	364	85	45
MIN	12	15	20	25	43	42	110	172	279	89	40	34
AC-FT	1090	1390	1810	3190	6260	7280	10060	13720	21800	12440	3510	2240

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1998, BY WATER YEAR (WY)

MEAN	17.7	28.2	50.0	56.0	62.1	76.3	106	143	96.3	41.7	22.3	18.3
MAX	44.3	375	794	417	241	381	296	445	384	202	72.3	42.6
(WY)	1983	1951	1967	1997	1980	1943	1969	1969	1983	1998	1983	1983
MIN	8.66	10.5	11.9	13.3	12.5	16.7	21.8	25.1	16.4	10.1	8.99	8.63
(WY)	1962	1962	1991	1961	1991	1977	1977	1977	1992	1961	1977	1961

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1940 - 1998	
ANNUAL TOTAL	35284		42752			
ANNUAL MEAN	96.7		117		59.7	
HIGHEST ANNUAL MEAN					157	1983
LOWEST ANNUAL MEAN					15.1	1977
HIGHEST DAILY MEAN	2340	Jan 2	476	Jun 16	13300	Dec 6 1966
LOWEST DAILY MEAN	12	Oct 24	12	Oct 24	5.0	Oct 1 1987
ANNUAL SEVEN-DAY MINIMUM	16	Oct 19	16	Oct 19	5.2	Oct 1 1987
INSTANTANEOUS PEAK FLOW			524	Jun 16	16900	Dec 6 1966
ANNUAL RUNOFF (AC-FT)	69990		84800		43270	
10 PERCENT EXCEEDS	168		294		138	
50 PERCENT EXCEEDS	42		72		29	
90 PERCENT EXCEEDS	18		20		13	

11202710 MIDDLE FORK TULE RIVER BELOW INTAKE, ABOVE SPRINGVILLE, CA

LOCATION.—Lat 36°09'41", long 118°42'31", unsurveyed, T.20 S., R.30 E., Tulare County, Hydrologic Unit 18030006, Sequoia National Forest, on right bank 700 ft downstream from confluence of North Fork Middle Fork Tule River and South Fork Middle Fork Tule River, and 6.5 mi northeast of Springville.

DRAINAGE AREA.—85.3 mi^2.

PERIOD OF RECORD.—October 1988 to September 1990, October 1991 to current year.

REVISED RECORD.—WDR CA-95-3: 1993(M).

GAGE.—Water-stage recorder and V-notch sharp-crested weir in concrete control on river; water-stage recorder and metal flume for conduit diversion. Elevation of gage is 2,370 ft above sea level, from topographic map.

REMARKS.—Southern California Edison Co.'s Tule River Conduit (station 11202700) diverts from the right bank of Middle Fork Tule River upstream from station. Flow from this conduit passes through Tule River Powerplant of Southern California Edison Co. Diversions are made from powerplant tailrace ditch to Springville Diversion and Duncan Diversion Ditches. Remaining water is returned to the Tule River 1.5 mi upstream from confluence of Middle and North Forks. See schematic diagram of Tule River Basin. For records of combined discharge of river and conduit, see station 11202711.

COOPERATION.—Records collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—River only; maximum discharge, 19,400 ft^3/s, Jan. 2, 1997, gage height, 11.82 ft; minimum daily, 4.8 ft^3/s, Oct. 3, 1996.

Combined flow, maximum daily discharge, 6,030 ft^3/s, Jan. 3, 1997; minimum daily, 6.5 ft^3/s, Dec. 12, 1991.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	39	51	53	62	167	262	548	496	579	112	45
2	40	39	50	56	219	158	240	524	527	568	106	45
3	40	40	49	56	182	150	247	508	526	540	101	45
4	40	40	48	58	143	138	235	523	467	505	95	46
5	40	39	56	55	114	135	229	588	482	478	90	54
6	36	39	151	53	148	149	235	485	547	457	85	51
7	38	39	93	53	190	124	240	432	568	436	83	48
8	40	40	106	54	223	117	224	403	536	433	81	47
9	40	40	72	58	167	114	219	424	527	424	76	48
10	41	45	62	113	132	114	225	396	590	397	74	46
11	52	53	58	83	124	121	241	365	752	361	86	44
12	47	47	56	106	109	131	254	398	651	336	83	43
13	47	55	55	154	100	138	229	368	576	321	72	42
14	46	54	56	76	416	136	231	326	605	306	70	40
15	44	48	60	272	358	141	211	310	713	293	68	40
16	43	46	57	355	214	156	199	304	814	278	64	38
17	41	44	55	154	204	157	196	286	771	263	63	37
18	40	44	54	120	163	170	204	288	723	245	63	38
19	40	53	54	207	173	182	231	312	722	230	62	38
20	40	56	52	116	179	193	281	333	736	221	60	37
21	40	50	52	94	198	200	382	317	706	213	58	37
22	39	47	52	78	544	207	490	304	651	199	56	37
23	39	46	51	69	871	249	507	305	603	188	56	37
24	39	46	50	63	566	284	467	350	584	177	54	38
25	39	45	50	59	332	376	405	392	588	161	53	39
26	40	81	50	53	247	351	363	370	591	149	52	40
27	40	65	50	49	202	338	386	322	594	141	51	40
28	40	57	50	47	176	362	425	343	592	136	49	39
29	40	56	50	87	---	282	487	408	594	129	47	38
30	39	54	51	67	---	259	544	404	587	124	46	38
31	39	---	53	60	---	259	---	445	---	119	45	---
TOTAL	1269	1447	1854	2978	6756	6058	9089	12081	18419	9407	2161	1255
MEAN	40.9	48.2	59.8	96.1	241	195	303	390	614	303	69.7	41.8
MAX	52	81	151	355	871	376	544	588	814	579	112	54
MIN	36	39	48	47	62	114	196	286	467	119	45	37
AC-FT	2520	2870	3680	5910	13400	12020	18030	23960	36530	18660	4290	2490

11202710 MIDDLE FORK TULE RIVER BELOW INTAKE, ABOVE SPRINGVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	18.7	23.8	39.4	143	96.3	116	135	171	146	63.7	20.0	16.5
MAX	40.9	94.4	236	976	241	239	303	390	614	303	69.7	41.8
(WY)	1998	1997	1997	1997	1998	1995	1998	1998	1998	1998	1998	1998
MIN	6.30	6.04	5.75	6.41	8.21	15.5	32.9	22.6	12.1	11.2	10.8	10.4
(WY)	1997	1995	1995	1994	1990	1992	1990	1992	1992	1994	1996	1996

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1989 - 1998	
ANNUAL TOTAL	61851		72774			
ANNUAL MEAN	169		199		82.4	
HIGHEST ANNUAL MEAN					199	1998
LOWEST ANNUAL MEAN					15.6	1990
HIGHEST DAILY MEAN	6030	Jan 3	871	Feb 23	6030	Jan 3 1997
LOWEST DAILY MEAN	10	Aug 27	36	Oct 6	4.8	Oct 3 1996
ANNUAL SEVEN-DAY MINIMUM	10	Aug 26	37	Sep 17	5.1	Oct 2 1996
INSTANTANEOUS PEAK FLOW			2100	Feb 23	19400	Jan 2 1997
INSTANTANEOUS PEAK STAGE			5.66	Feb 23	11.82	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	122700		144300		59700	
10 PERCENT EXCEEDS	272		525		220	
50 PERCENT EXCEEDS	56		116		21	
90 PERCENT EXCEEDS	11		40		6.5	

11202711 MIDDLE FORK TULE RIVER BELOW INTAKE, ABOVE SPRINGVILLE, CA—Continued

MIDDLE FORK TULE RIVER BELOW INTAKE AND
SOUTHERN CALIFORNIA EDISON CO.'S TULE RIVER CONDUIT ABOVE SPRINGVILLE,

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	39	51	53	97	203	298	548	531	616	148	81
2	40	39	50	56	252	194	276	524	563	605	142	81
3	40	40	49	56	205	186	284	508	562	577	137	81
4	40	40	48	58	173	174	272	523	503	542	131	82
5	40	39	56	55	144	171	266	588	518	515	126	90
6	36	39	151	53	178	186	271	496	583	493	121	87
7	38	39	93	53	220	161	276	468	604	472	119	84
8	40	40	106	54	253	154	260	440	572	469	117	83
9	40	40	72	58	197	150	255	461	563	460	112	84
10	41	45	62	113	163	150	261	432	626	433	110	82
11	52	53	58	83	155	157	277	402	788	397	122	80
12	47	47	56	106	140	168	290	435	687	373	119	79
13	47	55	55	154	131	175	265	405	612	358	108	78
14	46	54	56	91	448	173	267	363	641	343	106	76
15	44	48	60	299	389	178	247	347	749	330	104	76
16	43	46	57	372	245	193	235	341	850	314	100	74
17	41	44	55	183	236	194	232	323	807	299	99	73
18	40	44	54	149	195	207	239	325	759	281	99	74
19	40	53	54	237	204	219	267	349	758	266	98	74
20	40	56	52	145	211	230	317	370	772	257	96	73
21	40	50	52	123	230	237	417	354	742	249	94	73
22	39	47	52	108	576	244	526	341	687	235	92	73
23	39	46	51	101	897	286	544	342	639	224	92	73
24	39	46	50	95	582	319	504	387	621	213	90	74
25	39	45	50	91	368	412	442	429	625	197	89	75
26	40	81	50	87	283	386	400	407	628	185	88	76
27	40	65	50	85	238	373	423	359	631	177	87	76
28	40	57	50	83	212	398	462	379	626	172	85	75
29	40	56	50	123	---	317	507	444	631	165	83	74
30	39	54	51	102	---	291	544	440	624	160	82	74
31	39	---	53	95	---	294	---	481	---	155	81	---
TOTAL	1269	1447	1854	3521	7622	7180	10124	13011	19502	10532	3277	2335
MEAN	40.9	48.2	59.8	114	272	232	337	420	650	340	106	77.8
MAX	52	81	151	372	897	412	544	588	850	616	148	90
MIN	36	39	48	53	97	150	232	323	503	155	81	73
AC-FT	2520	2870	3680	6980	15120	14240	20080	25810	38680	20890	6500	4630

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1998, BY WATER YEAR (WY)

MEAN	27.2	39.8	59.9	170	129	152	172	206	177	87.1	38.5	30.6
MAX	40.9	121	266	999	275	276	337	420	650	340	106	77.8
(WY)	1998	1997	1997	1997	1997	1995	1998	1998	1998	1998	1998	1998
MIN	18.2	22.7	21.4	28.5	34.7	48.2	69.6	53.3	26.6	19.2	15.8	14.8
(WY)	1989	1990	1990	1992	1990	1992	1990	1992	1992	1990	1990	1992

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1989 - 1998	
ANNUAL TOTAL	70393		81674			
ANNUAL MEAN	193		224		107	
HIGHEST ANNUAL MEAN					224	1998
LOWEST ANNUAL MEAN					34.0	1990
HIGHEST DAILY MEAN	6030	Jan 3	897	Feb 23	6030	Jan 3 1997
LOWEST DAILY MEAN	27	Sep 24	36	Oct 6	6.5	Dec 12 1991
ANNUAL SEVEN-DAY MINIMUM	32	Sep 24	39	Oct 1	13	Oct 5 1992
ANNUAL RUNOFF (AC-FT)	139600		162000		77700	
10 PERCENT EXCEEDS	308		544		257	
50 PERCENT EXCEEDS	75		150		46	
90 PERCENT EXCEEDS	38		44		19	

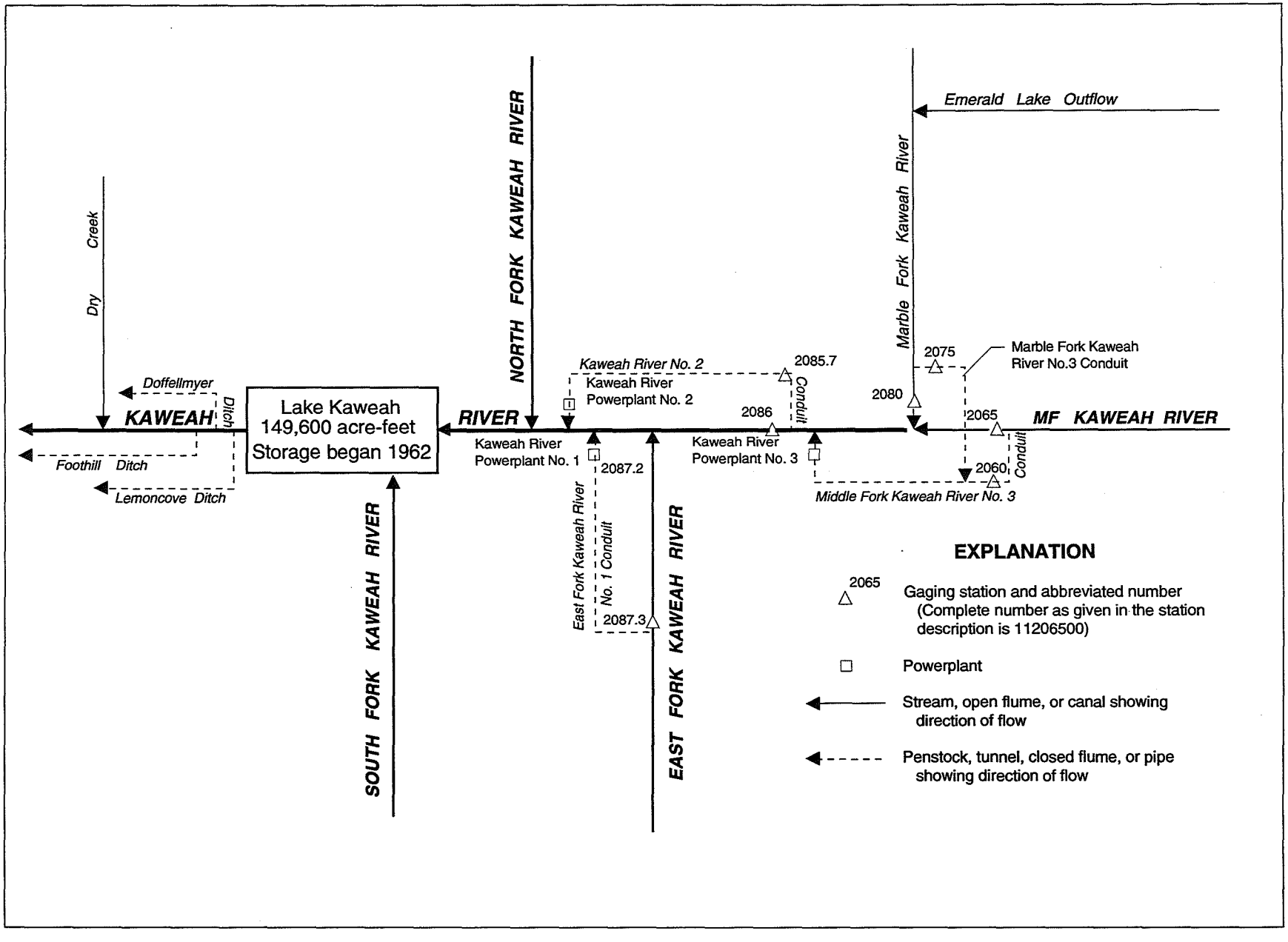


Figure 25. Diversions and storage in Kaweah River Basin.

11206500 MIDDLE FORK KAWEAH RIVER NEAR POTWISHA CAMP, CA

LOCATION.—Lat 36°30'48", long 118°47'27", unsurveyed, T.16 S., R.29 E., Tulare County, Hydrologic Unit 18030007, Sequoia National Park, on right bank 0.5 mi southeast of Potwisha Camp and 0.7 mi upstream from confluence with Marble Fork Kaweah River.

DRAINAGE AREA.—102 mi^2.

PERIOD OF RECORD.—July 1949 to current year. Monthly discharge only for water years 1956–57, published in WSP 1735. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960.
CHEMICAL ANALYSES: June to September 1980.
SPECIFIC CONDUCTANCE: October 1979 to September 1981.
WATER TEMPERATURE: October 1979 to September 1981.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder and rectangular flume on river; water-stage recorder and concrete-lined channel for conduit diversion. Elevation of gage is 2,100 ft above sea level, from topographic map. Prior to October 1955, at datum 0.70 ft higher.

REMARKS.—Middle Fork Kaweah River No. 3 Conduit (station 11206000) diverts from left bank of Middle Fork Kaweah River, 0.1 mi upstream from station. Flow from this conduit joins with that of Marble Fork Kaweah River No. 3 Conduit, and passes through Kaweah River No. 3 Powerplant of Southern California Edison Co. Water is returned to Kaweah River 2.7 mi downstream from confluence of Marble and Middle Forks. See schematic diagram of Kaweah River Basin. For records of combined discharge of river and diversion to Middle Fork Kaweah No. 3 Conduit, see station 11206501.

COOPERATION.—Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—River only, maximum discharge, 46,800 ft^3/s, Dec. 23, 1955, gage height, 29.0 ft, from floodmarks, datum then in use, on basis of slope-area measurement of peak flow; minimum daily, 0.1 ft^3/s, Nov. 12–15, 1949.
Combined flow, maximum discharge, 46,800 ft^3/s, Dec. 23, 1955; minimum daily, 7.0 ft^3/s, Sept. 16, 17, 1990.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	13	18	22	55	137	243	682	729	1140	280	92
2	13	13	16	24	199	132	227	646	767	1170	264	73
3	13	13	15	22	153	130	238	642	1000	1100	272	149
4	13	13	15	21	124	126	229	602	716	1040	270	137
5	13	13	23	19	100	122	218	646	675	1020	271	120
6	13	13	105	19	131	130	216	546	782	986	263	95
7	14	13	60	20	155	112	202	468	831	997	245	107
8	14	13	62	20	157	109	192	427	793	1050	229	107
9	14	13	37	22	125	111	198	437	806	1080	196	95
10	14	14	32	52	108	116	214	437	857	977	172	71
11	15	14	29	28	99	130	242	408	900	885	189	57
12	14	14	24	49	87	142	249	436	883	887	194	48
13	15	15	23	71	80	146	225	402	773	837	176	41
14	14	14	29	40	280	140	226	357	885	814	166	36
15	14	14	37	203	207	151	207	340	1160	836	158	32
16	14	13	24	166	145	164	200	353	1280	836	157	30
17	14	14	24	91	155	160	199	325	1200	854	135	28
18	14	13	22	77	127	170	216	341	1150	780	118	26
19	14	28	18	155	136	192	262	385	1170	735	106	24
20	13	18	17	85	143	216	357	410	1200	753	95	20
21	13	14	16	70	157	224	481	389	1150	700	88	19
22	13	14	15	62	284	244	622	380	1080	698	79	19
23	13	15	15	57	439	307	636	414	1010	616	78	17
24	13	14	14	52	332	348	523	502	1010	568	74	16
25	13	14	13	47	223	438	435	590	1050	504	74	16
26	13	46	13	44	181	347	413	590	1060	451	69	17
27	13	37	13	39	152	326	479	466	1070	446	66	17
28	13	28	13	37	138	335	560	481	1100	427	64	15
29	13	27	14	73	---	275	628	522	1120	409	62	20
30	13	23	16	58	---	254	686	533	1120	361	67	20
31	13	---	20	51	---	247	---	633	---	310	90	---
TOTAL	418	520	792	1796	4672	6181	10023	14790	29327	24267	4767	1564
MEAN	13.5	17.3	25.5	57.9	167	199	334	477	978	783	154	52.1
MAX	15	46	105	203	439	438	686	682	1280	1170	280	149
MIN	13	13	13	19	55	109	192	325	675	310	62	15
AC-FT	829	1030	1570	3560	9270	12260	19880	29340	58170	48130	9460	3100

11206500 MIDDLE FORK KAWEAH RIVER NEAR POTWISHA CAMP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	16.5	27.0	58.3	97.9	108	141	240	437	410	188	50.8	23.5
MAX	125	145	732	743	489	504	630	1178	1271	786	354	157
(WY)	1983	1983	1967	1997	1986	1986	1982	1969	1983	1983	1983	1982
MIN	.92	1.07	1.08	.36	.60	12.8	64.3	78.6	27.1	1.07	2.43	1.56
(WY)	1962	1962	1962	1961	1961	1961	1976	1977	1976	1961	1962	1962

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998	
ANNUAL TOTAL	84642		99117			
ANNUAL MEAN	232		272		150	
HIGHEST ANNUAL MEAN					417	1983
LOWEST ANNUAL MEAN					25.2	1961
HIGHEST DAILY MEAN	5480	Jan 2	1280	Jun 16	10500	Dec 6 1966
LOWEST DAILY MEAN	12	Sep 8	13	Oct 1	.30	Dec 27 1960
ANNUAL SEVEN-DAY MINIMUM	13	Sep 6	13	Oct 20	.30	Dec 27 1960
INSTANTANEOUS PEAK FLOW			1470	Jun 15	46800	Dec 23 1955
INSTANTANEOUS PEAK STAGE			7.98	Jun 15	29.00	Dec 23 1955
ANNUAL RUNOFF (AC-FT)	167900		196600		108600	
10 PERCENT EXCEEDS	503		836		441	
50 PERCENT EXCEEDS	188		135		36	
90 PERCENT EXCEEDS	13		14		10	

11206501 MIDDLE FORK KAWEAH RIVER NEAR POTWISHA CAMP, CA—Continued

MIDDLE FORK KAWEAH RIVER AND MIDDLE FORK KAWEAH RIVER NO. 3 CONDUIT NEAR POTWISHA CAMP,

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	24	64	60	106	189	296	735	781	1190	340	146
2	27	23	59	65	252	184	280	698	820	1220	324	127
3	26	23	56	58	206	182	291	694	1050	1150	333	203
4	25	23	54	56	177	177	282	654	768	1090	332	192
5	24	23	64	50	152	174	272	698	727	1070	334	175
6	24	22	156	52	183	182	270	598	834	1040	326	150
7	26	23	109	55	208	164	256	520	883	1050	309	162
8	26	23	110	55	210	161	246	478	845	1100	293	162
9	25	23	85	58	177	163	252	488	858	1130	260	150
10	40	29	79	99	160	168	268	488	909	1030	236	125
11	48	45	76	71	151	182	296	459	953	939	254	111
12	46	39	70	94	138	194	304	487	935	943	257	102
13	46	42	69	118	131	198	279	453	825	894	239	95
14	43	45	75	85	332	192	280	408	938	872	228	90
15	39	40	84	251	259	203	261	391	1210	894	219	85
16	37	35	70	214	197	217	253	404	1330	894	218	83
17	35	38	69	142	208	213	252	376	1250	913	195	81
18	33	36	67	128	179	223	269	392	1200	838	177	79
19	32	64	62	207	188	245	315	435	1220	793	165	77
20	30	57	60	136	195	269	411	460	1250	811	153	72
21	29	49	58	120	209	278	535	439	1200	758	145	70
22	28	49	52	113	337	298	676	430	1130	756	135	70
23	28	52	52	108	491	361	690	465	1060	674	133	68
24	28	48	48	103	383	403	576	553	1060	626	128	67
25	28	44	43	97	276	493	488	641	1100	563	127	67
26	27	87	43	94	234	401	466	641	1110	510	122	68
27	26	81	44	89	205	380	532	517	1120	505	118	68
28	25	74	44	87	190	389	613	532	1150	486	116	66
29	25	76	49	124	---	329	681	573	1170	469	114	72
30	25	71	55	109	---	307	739	584	1170	421	120	71
31	25	---	58	102	---	300	---	685	---	369	143	---
TOTAL	954	1308	2084	3200	6134	7819	11629	16376	30856	25998	6593	3154
MEAN	30.8	43.6	67.2	103	219	252	388	528	1029	839	213	105
MAX	48	87	156	251	491	493	739	735	1330	1220	340	203
MIN	24	22	43	50	106	161	246	376	727	369	114	66
AC-FT	1890	2590	4130	6350	12170	15510	23070	32480	61200	51570	13080	6260

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1998, BY WATER YEAR (WY)

MEAN	32.4	50.3	98.8	128	146	184	286	483	455	218	74.1	41.1
MAX	177	201	743	746	540	556	683	1225	1318	839	395	202
(WY)	1983	1983	1956	1997	1986	1986	1982	1969	1983	1998	1983	1982
MIN	9.58	11.1	12.2	18.9	17.2	40.4	124	139	75.6	25.1	13.7	8.93
(WY)	1991	1960	1991	1991	1991	1977	1976	1977	1976	1961	1990	1990

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1955 - 1998	
ANNUAL TOTAL	88781		116105			
ANNUAL MEAN	243		318		183	
HIGHEST ANNUAL MEAN					468	1983
LOWEST ANNUAL MEAN					53.5	1977
HIGHEST DAILY MEAN	5510	Jan 2	1330	Jun 16	10500	Dec 6 1966
LOWEST DAILY MEAN	22	Nov 6	22	Nov 6	7.0	Sep 16 1990
ANNUAL SEVEN-DAY MINIMUM	23	Nov 2	23	Nov 2	7.1	Sep 11 1990
INSTANTANEOUS PEAK FLOW			1520	Jun 15	46800	Dec 23 1955
ANNUAL RUNOFF (AC-FT)	176100		230300		132700	
10 PERCENT EXCEEDS	506		894		488	
50 PERCENT EXCEEDS	190		188		87	
90 PERCENT EXCEEDS	31		37		17	

11208000 MARBLE FORK KAWEAH RIVER AT POTWISHA CAMP, CA

LOCATION.—Lat 36°31'08", long 118°48'03", in NE 1/4 SW 1/4 sec. 23, T.16 S., R.29 E. , Tulare County, Hydrologic Unit 18030007, Sequoia National Park, on left bank 0.1 mi north of Potwisha Camp, 0.3 mi upstream from confluence with Middle Fork Kaweah River, and 7.9 mi northeast of Three Rivers.

DRAINAGE AREA.—51.4 mi^2.

PERIOD OF RECORD.—March 1950 to current year. Monthly discharge only for March 1950, published in WSP 1315-A. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960.
CHEMICAL ANALYSES: June to September 1980.
SPECIFIC CONDUCTANCE: October 1979 to September 1981.
WATER TEMPERATURE: October 1979 to September 1981.

REVISED RECORDS.—WP1930: Drainage area.

GAGE.—Water-stage recorder on river; water-stage recorder and concrete control for conduit diversion. Elevation of gage is 2,150 ft above sea level, from topographic map.

REMARKS.—Marble Fork Kaweah River No. 3 Conduit (station 11207500) diverts from left bank of Marble Fork 0.3 mi upstream from station. Water is returned to Kaweah River 2.7 mi downstream from confluence of Marble and Middle Forks. See schematic diagram of Kaweah River Basin. For records of combined discharge of river and conduit, see station 11208001.

COOPERATION.—Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—River only, maximum discharge, 12,500 ft^3/s, Dec. 23, 1955, gage height, 13.4 ft, from rating curve extended above 1,100ft^3/s, on basis of slope-area measurement of peak flow; minimum daily, 0.10 ft^3/s at times in 1961–64.
Combined flow, maximum discharge, 12,500 ft^3/s, Dec. 23, 1955; minimum daily, 0.82 ft^3/s, Oct. 4, 5, 1977.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	2.7	2.9	12	10	34	82	397	586	925	142	12
2	2.9	2.7	3.0	12	79	32	74	359	637	969	146	e1.6
3	2.7	2.7	3.1	12	82	31	76	328	787	888	151	186
4	2.7	2.7	3.5	12	62	28	71	322	513	847	143	129
5	2.6	2.7	6.4	12	48	36	66	344	495	823	139	96
6	2.5	2.7	42	12	56	28	61	266	621	784	129	69
7	2.5	2.7	22	12	61	23	58	231	652	795	115	69
8	2.6	2.8	18	12	65	21	56	213	646	852	104	78
9	2.5	2.9	8.7	12	54	22	60	218	649	880	83	64
10	2.5	3.4	3.4	14	46	23	68	224	678	745	72	22
11	2.7	3.8	2.6	11	44	28	78	203	803	661	84	7.0
12	2.7	3.8	2.6	17	41	34	76	201	728	681	90	4.5
13	2.7	4.1	2.5	21	38	35	69	177	615	632	77	4.4
14	2.5	4.4	2.9	9.2	104	31	68	156	753	629	69	2.9
15	2.3	4.4	3.2	83	87	38	61	154	1000	640	62	1.6
16	2.3	4.4	2.8	78	64	50	57	172	1030	619	66	1.6
17	2.5	4.4	2.9	41	63	50	57	153	952	640	58	2.3
18	2.7	4.4	3.0	34	52	57	66	158	948	556	41	3.9
19	2.5	8.0	3.0	62	53	71	94	189	966	521	28	3.9
20	2.6	5.2	3.0	33	53	86	145	215	985	562	24	4.2
21	2.8	2.5	3.0	25	55	92	220	201	968	461	23	3.2
22	2.7	2.8	3.2	19	82	100	296	195	906	454	21	1.7
23	2.7	4.1	3.5	15	129	138	293	219	838	383	19	2.0
24	2.7	3.0	3.6	11	111	172	215	299	837	354	19	2.5
25	2.7	2.6	3.5	9.3	61	189	173	359	868	282	12	2.5
26	2.8	14	3.5	8.8	42	128	167	331	868	253	7.1	2.6
27	2.8	5.4	3.5	8.9	34	118	225	259	872	264	5.9	2.8
28	2.8	7.1	3.7	8.9	31	114	277	292	913	249	5.8	3.0
29	2.7	4.7	3.7	16	---	94	322	366	922	223	5.5	17
30	2.7	3.2	3.7	11	---	86	383	370	922	182	6.0	25
31	2.7	---	8.3	8.7	---	84	---	477	---	153	6.2	---
TOTAL	82.1	124.3	184.7	652.8	1707	2073	4014	8048	23958	17907	1953.5	825.2
MEAN	2.65	4.14	5.96	21.1	61.0	66.9	134	260	799	578	63.0	27.5
MAX	3.0	14	42	83	129	189	383	477	1030	969	151	186
MIN	2.3	2.5	2.5	8.7	10	21	56	153	495	153	5.5	1.6
AC-FT	163	247	366	1290	3390	4110	7960	15960	47520	35520	3870	1640

e Estimated.

11208000 MARBLE FORK KAWEAH RIVER AT POTWISHA CAMP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6.24	10.4	30.8	44.5	47.5	65.1	140	287	262	103	20.4	9.63
MAX	60.5	72.5	385	417	259	278	396	812	799	578	135	103
(WY)	1983	1983	1956	1997	1986	1986	1982	1969	1998	1998	1983	1978
MIN	.38	.39	.44	.15	.17	.92	32.7	46.5	9.58	.57	.83	.38
(WY)	1963	1963	1962	1961	1961	1961	1975	1977	1976	1961	1962	1962

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1955 - 1998	
ANNUAL TOTAL	51707.1		61529.6			
ANNUAL MEAN	142		169		85.7	
HIGHEST ANNUAL MEAN					235	1969
LOWEST ANNUAL MEAN					10.9	1961
HIGHEST DAILY MEAN	2630	Jan 2	1030	Jun 16	5700	Dec 23 1955
LOWEST DAILY MEAN	1.6	Sep 14	1.6	Sep 2	.10	Jan 10 1961
ANNUAL SEVEN-DAY MINIMUM	1.6	Sep 14	2.4	Sep 22	.10	Jan 10 1961
INSTANTANEOUS PEAK FLOW			2100	Sep 3	12500	Dec 23 1955
INSTANTANEOUS PEAK STAGE			7.80	Sep 3	13.40	Dec 23 1955
ANNUAL RUNOFF (AC-FT)	102600		122000		62070	
10 PERCENT EXCEEDS	363		642		258	
50 PERCENT EXCEEDS	83		50		13	
90 PERCENT EXCEEDS	2.6		2.7		1.7	

11208001 MARBLE FORK KAWEAH RIVER AT POTWISHA CAMP, CA—Continued

MARBLE FORK KAWEAH RIVER AND MARBLE FORK KAWEAH RIVER CONDUIT NO. 3 AT POTWISHA CAMP, CA

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	6.5	25	30	44	69	115	443	633	973	180	60
2	6.2	6.2	23	33	113	68	107	402	682	1020	184	e46
3	6.2	6.2	22	30	108	69	109	370	827	937	190	228
4	6.2	6.0	23	29	82	68	104	364	553	893	184	174
5	6.0	6.0	27	26	67	64	102	387	541	867	180	142
6	5.6	5.7	76	28	75	64	101	307	668	826	169	117
7	5.7	5.8	53	28	80	58	98	271	699	837	154	122
8	6.1	6.3	49	28	84	56	96	253	689	894	142	131
9	6.3	6.5	39	29	73	57	101	258	690	924	122	115
10	6.7	8.4	30	41	65	62	110	264	719	790	112	71
11	12	14	29	34	63	72	118	242	844	704	125	53
12	10	13	27	43	60	80	115	242	769	723	133	45
13	12	15	27	53	57	82	107	218	654	674	117	38
14	14	15	28	36	125	77	106	197	795	669	108	36
15	12	14	29	114	108	85	100	195	1040	681	99	35
16	11	13	27	112	84	96	97	213	e1070	663	105	35
17	11	14	28	75	83	93	97	196	e994	682	91	32
18	10	14	27	68	72	102	107	202	e991	598	77	30
19	9.2	23	25	96	72	118	135	234	e10	563	71	29
20	8.9	24	25	67	72	135	187	261	e1030	604	65	26
21	9.6	19	25	59	74	142	258	247	e1010	502	60	26
22	8.9	20	22	53	102	150	331	241	e950	495	56	26
23	8.6	23	23	49	145	185	334	265	e882	425	53	26
24	8.4	20	22	45	120	212	254	346	e882	399	51	26
25	8.1	19	19	43	92	227	214	407	e913	325	48	25
26	8.0	35	21	43	78	166	210	379	e913	295	47	26
27	7.7	25	22	43	69	155	270	306	e918	307	44	27
28	7.3	31	21	43	66	150	323	339	e959	292	42	26
29	7.0	31	22	50	---	128	369	414	e969	265	42	32
30	7.0	28	25	45	---	121	430	418	969	222	43	39
31	6.7	---	28	43	---	118	---	526	---	192	44	---
TOTAL	258.8	473.6	889	1516	2333	3329	5205	9407	24263	19241	3138	1844
MEAN	8.35	15.8	28.7	48.9	83.3	107	174	303	809	621	101	61.5
MAX	14	35	76	114	145	227	430	526	1070	1020	190	228
MIN	5.6	5.7	19	26	44	56	96	195	10	192	42	25
AC-FT	513	939	1760	3010	4630	6600	10320	18660	48130	38160	6220	3660

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1998, BY WATER YEAR (WY)

MEAN	13.0	21.9	44.8	60.2	69.8	92.4	169	317	289	123	32.0	17.8
MAX	88.8	103	385	419	295	315	426	840	840	621	184	134
(WY)	1983	1983	1956	1997	1986	1986	1982	1969	1983	1998	1983	1978
MIN	2.02	2.77	2.61	5.25	6.67	16.9	57.2	78.4	24.9	4.09	2.43	1.40
(WY)	1962	1991	1991	1991	1991	1977	1975	1977	1976	1961	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1955 - 1998	
ANNUAL TOTAL	53662.9		71897.4			
ANNUAL MEAN	147		197		104	
HIGHEST ANNUAL MEAN					257	1969
LOWEST ANNUAL MEAN					24.7	1977
HIGHEST DAILY MEAN	2660	Jan 2	1070	Jun 16	5700	Dec 23 1955
LOWEST DAILY MEAN	5.6	Oct 6	5.6	Oct 6	.82	Oct 4 1977
ANNUAL SEVEN-DAY MINIMUM	6.0	Oct 2	6.0	Oct 2	1.0	Sep 2 1977
ANNUAL RUNOFF (AC-FT)	106400		142600		75530	
10 PERCENT EXCEEDS	364		682		288	
50 PERCENT EXCEEDS	84		77		35	
90 PERCENT EXCEEDS	7.7		11		5.1	

e Estimated.

11208600 KAWEAH RIVER BELOW NO. 2 CONDUIT, NEAR HAMMOND, CA

LOCATION.—Lat 36°29'04", long 118°50'06", in NW 1/4 NW 1/4 sec. 37, T.17 S., R.29 E., Tulare County, Hydrologic Unit 18030007, on right bank 0.4 mi upstream of confluence with East Fork Kaweah River, 1.9 mi northeast of Hammond, and 5.2 miles northeast of Three Rivers.

DRAINAGE AREA.—342 mi^2.

PERIOD OF RECORD.—October 1993 to current year.

GAGE.—Water-stage recorders on river and conduit diversion. Elevation of gage is 1,360 ft above sea level, from topographic map.

REMARKS.—Kaweah River No. 2 conduit (station 11208570) diverts up to 130 ft^3/s from right bank of river near diversion dam. Water is returned to Kaweah River 3.8 mi downstream of diversion and 1.9 mi upstream of confluence with North Fork Kaweah River. For records of combined discharges of river and conduit, see station 11208601. See schematic diagram of Kaweah River Basin.

COOPERATION.—Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—River only, maximum discharge, 29,000 ft^3/s, Jan. 2, 1997; minimum daily, 5.5 ft^3/s, for several days in December 1994.

Combined flow, maximum daily discharge, 9,810 ft^3/s, Jan. 2, 1997; minimum daily 12 ft^3/s, Oct. 23, 24, 1996.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	13	13	22	65	229	448	1220	1420	2330	498	189
2	12	13	12	23	325	217	395	1150	1540	2440	492	104
3	12	13	12	22	288	213	413	1110	1970	2300	514	300
4	12	13	12	23	230	200	398	1080	1450	2180	506	322
5	12	12	14	24	179	188	375	1160	1250	2120	485	241
6	12	13	159	23	218	209	430	932	1510	2050	471	178
7	12	13	79	24	272	171	424	814	1690	2070	430	184
8	12	13	99	23	276	161	400	746	1600	2160	395	214
9	12	13	46	24	216	162	358	770	1640	2240	326	184
10	11	13	30	62	183	168	354	773	1730	2030	287	109
11	12	14	25	29	171	192	404	708	1930	1810	297	77
12	12	13	18	47	147	213	466	763	1810	1830	347	55
13	12	14	17	112	131	221	445	704	1580	1710	291	41
14	12	14	19	46	444	208	429	651	1820	1670	269	34
15	12	13	34	324	384	225	349	638	2390	1710	242	28
16	12	13	18	320	256	258	371	637	2590	1690	257	25
17	12	13	17	168	283	245	402	586	2400	1730	206	21
18	12	13	16	134	216	268	425	605	2390	1580	174	18
19	12	25	13	276	220	310	503	679	2410	1470	153	16
20	12	22	13	186	242	358	653	747	2460	1530	137	13
21	11	14	13	171	248	379	855	706	2410	1360	122	13
22	11	13	12	127	477	407	1070	683	2320	1300	110	13
23	11	14	12	80	787	522	1100	739	2190	1130	101	13
24	11	13	13	68	659	608	885	898	2190	1030	92	12
25	11	13	13	60	470	788	761	1050	2230	902	89	12
26	11	59	14	55	362	606	721	1040	2210	811	86	12
27	11	35	14	48	259	562	839	813	2210	809	78	13
28	12	27	14	44	228	619	968	832	2300	781	72	63
29	13	26	14	116	---	493	1090	987	2310	736	68	93
30	13	19	15	90	---	443	1220	960	2310	644	111	107
31	13	---	19	76	---	435	---	1170	---	550	156	---
TOTAL	367	516	819	2847	8236	10278	17951	26351	60260	48703	7862	2704
MEAN	11.8	17.2	26.4	91.8	294	332	598	850	2009	1571	254	90.1
MAX	13	59	159	324	787	788	1220	1220	2590	2440	514	322
MIN	11	12	12	22	65	161	349	586	1250	550	68	12
AC-FT	728	1020	1620	5650	16340	20390	35610	52270	119500	96600	15590	5360

11208600 KAWEAH RIVER BELOW NO. 2 CONDUIT, NEAR HAMMOND, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	15.2	39.4	71.4	315	258	338	494	841	995	603	115	30.5
MAX	27.0	152	271	1250	439	521	633	1051	2009	1571	254	90.1
(WY)	1994	1997	1997	1997	1996	1995	1996	1996	1998	1998	1998	1998
MIN	11.8	5.70	5.93	20.1	32.1	108	249	451	250	11.7	11.2	8.05
(WY)	1996	1995	1995	1994	1994	1994	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1994 - 1998	
ANNUAL TOTAL	125957		186894			
ANNUAL MEAN	345		512		343	
HIGHEST ANNUAL MEAN					512	1998
LOWEST ANNUAL MEAN					99.2	1994
HIGHEST DAILY MEAN	9800	Jan 2	2590	Jun 16	9800	Jan 2 1997
LOWEST DAILY MEAN	11	Oct 10	11	Oct 10	5.5	Dec 21 1994
ANNUAL SEVEN-DAY MINIMUM	11	Oct 21	11	Oct 21	5.6	Dec 17 1994
INSTANTANEOUS PEAK FLOW			3170	Jul 2	29000	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	249800		370700		248600	
10 PERCENT EXCEEDS	782		1700		978	
50 PERCENT EXCEEDS	212		218		124	
90 PERCENT EXCEEDS	12		12		11	

11208601 KAWEAH RIVER BELOW NO. 2 CONDUIT, NEAR HAMMOND, CA—Continued

KAWEAH RIVER BELOW NO. 2 CONDUIT AND KAWEAH RIVER NO. 2 CONDUIT, NEAR HAMMOND

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	29	84	84	139	298	531	1250	1490	2420	580	217
2	30	28	77	91	395	286	478	1180	1610	2530	574	174
3	31	27	74	85	348	283	497	1140	2040	2390	597	382
4	29	27	73	82	288	275	482	1110	1520	2260	589	398
5	28	25	77	73	234	267	458	1210	1320	2210	568	322
6	28	26	243	80	276	289	468	1010	1580	2140	554	259
7	29	26	159	80	332	250	444	896	1760	2160	513	266
8	30	27	177	79	336	240	421	830	1670	2240	477	296
9	30	27	124	82	274	241	418	854	1700	2310	409	267
10	29	34	108	139	240	248	439	857	1780	2100	370	191
11	60	61	103	101	228	273	490	793	1980	1880	381	160
12	54	49	95	122	206	296	530	852	1870	1900	433	138
13	59	54	94	191	193	304	481	794	1640	1780	376	124
14	58	61	97	122	509	291	488	715	1880	1740	354	116
15	55	52	114	392	442	309	434	692	2460	1780	326	110
16	50	47	95	377	315	343	420	727	2660	1760	342	107
17	46	51	95	229	344	329	422	675	2470	1800	292	103
18	42	49	93	197	281	353	446	685	2470	1650	260	101
19	40	77	85	337	294	394	525	763	2490	1540	238	99
20	38	81	82	213	317	444	677	831	2540	1600	219	94
21	38	67	80	182	323	465	881	789	2490	1430	202	93
22	35	66	74	167	557	494	1090	766	2370	1380	192	91
23	34	71	72	158	845	610	1120	823	2210	1210	183	90
24	34	65	69	145	666	687	905	982	2210	1110	174	88
25	33	60	63	137	477	854	783	1130	2290	982	174	88
26	32	120	64	131	387	681	744	1120	2300	891	172	90
27	31	103	66	124	329	637	863	896	2300	889	164	92
28	30	98	66	120	297	695	992	914	2390	862	158	89
29	30	101	69	194	---	570	1120	1070	2400	819	155	97
30	30	95	76	164	---	521	1250	1040	2400	727	159	111
31	29	---	80	150	---	516	---	1250	---	633	174	---
TOTAL	1153	1704	2928	4828	9872	12743	19297	28644	62290	51123	10359	4853
MEAN	37.2	56.8	94.5	156	353	411	643	924	2076	1649	334	162
MAX	60	120	243	392	845	854	1250	1250	2660	2530	597	398
MIN	28	25	63	73	139	240	418	675	1320	633	155	88
AC-FT	2290	3380	5810	9580	19580	25280	38280	56820	123600	101400	20550	9630

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1998, BY WATER YEAR (WY)

MEAN	37.3	72.3	127	367	327	415	567	917	1070	675	164	69.5
MAX	55.8	192	341	1283	514	600	710	1124	2076	1649	334	162
(WY)	1995	1997	1997	1997	1996	1995	1996	1996	1998	1998	1998	1998
MIN	22.6	30.7	46.6	44.6	86.4	188	330	532	324	55.5	20.8	19.7
(WY)	1997	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1994 - 1998	
ANNUAL TOTAL	146330		209794			
ANNUAL MEAN	401		575		401	
HIGHEST ANNUAL MEAN					575	1998
LOWEST ANNUAL MEAN					142	1994
HIGHEST DAILY MEAN	9810	Jan 2	2660	Jun 16	9810	Jan 2 1997
LOWEST DAILY MEAN	25	Nov 5	25	Nov 5	12	Oct 23 1996
ANNUAL SEVEN-DAY MINIMUM	26	Nov 3	26	Nov 3	14	Sep 2 1994
ANNUAL RUNOFF (AC-FT)	290200		416100		290400	
10 PERCENT EXCEEDS	853		1770		1060	
50 PERCENT EXCEEDS	293		294		201	
90 PERCENT EXCEEDS	33		48		30	

11208730 EAST FORK KAWEAH RIVER NEAR THREE RIVERS, CA

LOCATION.—Lat 36°27'06", long 118°47'18", in NW 1/4 sec. 14, T.17 S., R.29 E., Tulare County, Hydrologic Unit 18030007, 1.9 miles downstream of Grunigen Creek confluence, and 8.2 miles east of Three Rivers.

DRAINAGE AREA.—85.8 mi^2.

PERIOD OF RECORD.—May 1952 to September 1955, October 1957 to September 1977, October 1993 to current year. Prior to October 1962, combined, only.
CHEMICAL ANALYSES: July 1968 to September 1971.
WATER TEMPERATURE: August 1968 to September 1976.
SEDIMENT DATA: August 1968 to September 1971.

GAGE.—Water-stage recorder and acoustic-flow meter on river; water-stage recorder and Parshall flume for conduit diversion. Elevation of gage is 2,500 ft above sea level, from topographic map.

REMARKS.—East Fork Kaweah River No. 1 Conduit (station 11208720) diverts up to 30 ft^3/s from left bank of river near diversion dam. Water is returned to Middle Fork Kaweah River, 1.9 mi downstream from mouth of East Fork. See schematic diagram of Kaweah River Basin. For records of combined discharges of river and conduit, see station 11208731.

COOPERATION.—Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—River only, maximum discharge, 13,000 ft^3/s, Dec. 6, 1966, gage height, 21 ft, from floodmarks, from rating curve extended above 850 ft^3/s, on basis of critical-depth measurement of peak flow over diversion dam; minimum daily, no flow, Jan. 22, Oct. 18–20, 1962.
Combined flow, maximum discharge, 13,000 ft^3/s, Dec. 6, 1966; minimum daily, 3.5 ft^3/s, Sept. 28, 29, 1960.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e9.0	9.1	17	18	68	121	184	407	531	1310	224	50
2	e11	9.1	16	20	147	109	168	397	614	1320	225	50
3	9.4	9.1	15	18	125	94	171	390	881	1260	222	56
4	9.1	9.1	15	19	94	83	169	381	498	1200	216	75
5	9.0	9.1	35	17	77	83	166	419	544	1150	209	88
6	8.9	9.1	84	18	143	92	170	372	701	1110	201	66
7	9.6	9.1	62	19	142	79	159	330	822	1100	194	60
8	10	9.1	47	18	115	74	150	318	797	1130	187	58
9	10	9.3	29	34	92	73	155	331	849	1140	165	61
10	11	14	24	52	86	73	168	330	806	1050	147	59
11	20	17	23	31	76	80	185	314	876	951	140	55
12	12	11	23	79	71	89	192	331	877	935	139	49
13	14	18	23	52	e68	92	174	313	739	893	131	45
14	14	14	33	40	e230	90	179	284	895	867	127	42
15	13	11	30	242	e185	94	161	276	1150	863	120	39
16	11	10	23	122	e135	105	152	281	1350	843	111	40
17	9.9	10	22	71	e155	103	155	279	1300	826	105	37
18	9.1	9.9	21	97	104	112	165	283	1280	727	97	36
19	9.2	20	18	78	114	120	192	297	1280	626	88	35
20	9.1	18	18	60	117	132	245	312	1280	599	83	33
21	12	13	17	55	136	136	296	302	1270	537	78	33
22	11	13	14	49	239	148	345	301	1250	483	74	32
23	11	14	15	45	432	190	355	317	1190	460	71	32
24	11	12	14	37	275	223	323	355	1170	418	68	32
25	8.8	11	13	34	189	293	288	400	1230	393	65	32
26	7.7	53	16	33	157	262	281	382	1240	362	56	33
27	7.5	34	16	31	136	248	314	334	1240	346	52	32
28	7.7	27	14	32	125	251	338	356	1280	326	50	31
29	9.1	22	14	72	---	208	365	387	1290	301	50	33
30	9.4	19	15	49	---	191	395	402	1280	256	50	30
31	9.2	---	17	43	---	189	---	472	---	234	50	---
TOTAL	322.7	453.0	743	1585	4033	4237	6760	10653	30510	24016	3795	1354
MEAN	10.4	15.1	24.0	51.1	144	137	225	344	1017	775	122	45.1
MAX	20	53	84	242	432	293	395	472	1350	1320	225	88
MIN	7.5	9.1	13	17	68	73	150	276	498	234	50	30
AC-FT	640	899	1470	3140	8000	8400	13410	21130	60520	47640	7530	2690

e Estimated.

11208730 EAST FORK KAWEAH RIVER NEAR THREE RIVERS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.26	9.46	40.4	66.4	58.8	76.3	154	356	372	142	28.4	10.7
MAX	22.4	83.9	594	674	219	251	350	944	1017	775	148	73.9
(WY)	1970	1997	1967	1997	1969	1995	1969	1969	1998	1998	1967	1978
MIN	.32	.48	.23	.55	.37	2.28	45.2	54.8	21.3	.85	.34	.23
(WY)	1959	1963	1959	1961	1961	1977	1977	1977	1976	1959	1955	1953

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1952 - 1998	
ANNUAL TOTAL	66560.1		88461.7			
ANNUAL MEAN	182		242		109	
HIGHEST ANNUAL MEAN					300	1969
LOWEST ANNUAL MEAN					15.9	1977
HIGHEST DAILY MEAN	4420	Jan 2	1350	Jun 16	8000	Dec 6 1966
LOWEST DAILY MEAN	4.8	Sep 29	7.5	Oct 27	.00	Jan 22 1962
ANNUAL SEVEN-DAY MINIMUM	5.2	Sep 9	8.5	Oct 25	.10	Sep 28 1953
INSTANTANEOUS PEAK FLOW			1530	Jul 1	13000	Dec 6 1966
INSTANTANEOUS PEAK STAGE			7.22	Jul 1	21.00	Dec 6 1966
ANNUAL RUNOFF (AC-FT)	132000		175500		79010	
10 PERCENT EXCEEDS	394		845		334	
50 PERCENT EXCEEDS	91		94		22	
90 PERCENT EXCEEDS	6.8		11		.70	

11208731 EAST FORK KAWEAH RIVER NEAR THREE RIVERS, CA—Continued

EAST FORK KAWEAH RIVER AND EAST FORK KAWEAH RIVER NO. 1 CONDUIT NEAR THREE RIVERS, CA

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e22	22	36	40	89	140	204	430	555	1330	247	73
2	e23	21	34	42	166	129	189	420	638	1340	248	73
3	23	21	33	40	142	116	193	413	905	1280	245	80
4	23	21	33	39	111	106	191	400	522	1220	239	99
5	22	20	54	37	94	107	188	433	568	1170	232	112
6	22	20	102	39	161	116	192	394	725	1130	222	89
7	24	20	81	41	160	103	181	352	846	1120	213	83
8	24	21	66	40	133	98	172	340	820	1150	205	81
9	24	20	50	55	110	97	177	353	869	1160	184	84
10	26	26	45	74	103	97	191	352	823	1070	166	82
11	40	35	44	52	93	104	208	336	892	971	159	77
12	30	28	43	98	88	e113	215	354	892	955	160	71
13	33	36	42	70	e85	116	197	336	752	912	142	67
14	33	33	53	61	e249	114	202	307	907	884	141	64
15	32	28	51	256	e203	118	184	299	1160	880	142	61
16	29	26	43	133	e152	129	175	304	1360	861	132	62
17	27	26	42	91	e172	127	178	302	1320	845	125	59
18	25	26	41	118	123	136	188	306	1300	744	118	58
19	25	38	38	98	134	144	215	320	1300	643	108	57
20	24	38	38	81	138	156	268	335	1300	616	103	55
21	28	32	37	76	156	160	319	325	1290	554	98	55
22	27	31	33	70	261	173	368	324	1260	499	94	54
23	26	33	35	66	445	214	378	339	1210	476	91	55
24	26	30	33	59	283	245	346	378	1190	435	87	55
25	24	29	31	56	208	313	311	423	1250	410	86	55
26	23	70	33	55	176	281	304	405	1260	378	79	56
27	23	45	34	53	155	267	337	357	1260	362	75	55
28	23	42	33	54	144	270	361	380	1300	342	73	54
29	23	40	36	93	---	227	388	411	1310	320	73	56
30	22	37	37	70	---	209	418	426	1300	279	73	53
31	22	---	39	64	---	208	---	496	---	256	73	---
TOTAL	798	915	1350	2221	4534	4933	7438	11350	31084	24592	4433	2035
MEAN	25.7	30.5	43.5	71.6	162	159	248	366	1036	793	143	67.8
MAX	40	70	102	256	445	313	418	496	1360	1340	248	112
MIN	22	20	31	37	85	97	172	299	522	256	73	53
AC-FT	1580	1810	2680	4410	8990	9780	14750	22510	61660	48780	8790	4040

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1998, BY WATER YEAR (WY)

MEAN	20.9	26.8	58.4	83.9	80.6	98.5	177	380	396	165	49.1	28.7
MAX	42.2	98.2	597	674	223	270	368	966	1036	793	174	99.5
(WY)	1970	1997	1967	1997	1969	1995	1969	1969	1998	1998	1967	1978
MIN	10.2	9.37	10.2	14.5	17.8	22.9	68.1	79.5	47.4	18.4	10.8	10.2
(WY)	1960	1960	1960	1961	1961	1977	1977	1977	1976	1977	1994	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1952 - 1998	
ANNUAL TOTAL	71257		95683			
ANNUAL MEAN	195		262		129	
HIGHEST ANNUAL MEAN					317	1969
LOWEST ANNUAL MEAN					34.0	1977
HIGHEST DAILY MEAN	4420	Jan 2	1360	Jun 16	8000	Dec 6 1966
LOWEST DAILY MEAN	18	Sep 24	20	Nov 5	3.5	Sep 28 1960
ANNUAL SEVEN-DAY MINIMUM	20	Sep 19	20	Nov 3	6.3	Sep 27 1960
ANNUAL RUNOFF (AC-FT)	141300		189800		93780	
10 PERCENT EXCEEDS	402		864		353	
50 PERCENT EXCEEDS	112		116		46	
90 PERCENT EXCEEDS	23		27		15	

e Estimated.

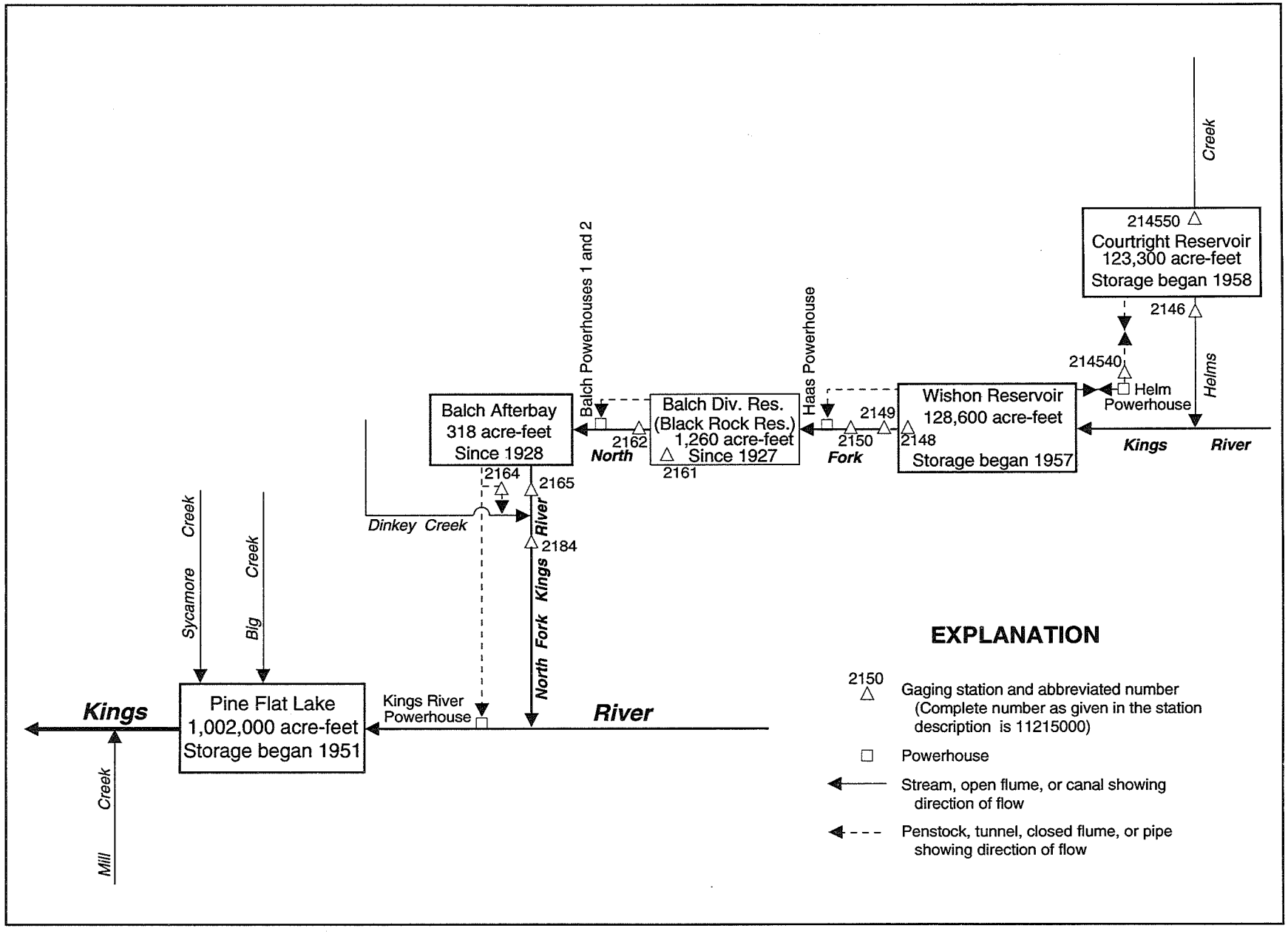


Figure 26. Diversions and storage in Kings River Basin.

11214540 HELMS POWERPLANT NEAR WISHON RESERVOIR, CA

LOCATION.—Lat 37°02'22", long 118°57'16", unsurveyed, T.10 S., R.28 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, underground facility, 2.4 mi north of Wishon Dam, and 2.8 mi south of Courtright Dam.

PERIOD OF RECORD.—October 1989 to current year.

GAGE.—Acoustic-velocity meter in penstock. Elevation of powerplant, approximately 1,000 ft below land surface, is 6,286.0 ft above sea level (levels by Pacific Gas & Electric Co.)

REMARKS.—Flow is diverted from Courtright Reservoir (station 11214550) through a tunnel to the powerplant which generates electricity during peak power demand, then to Wishon Reservoir (station 11214800). During periods of low power demand, reversible turbines pump water from Wishon Reservoir to Courtright Reservoir. Turbines draft up to 9,000 ft^3/s and pump up to 7,200 ft^3/s. Figures shown represent the net daily flow from Courtright Reservoir to Wishon Reservoir. Negative values represent net flow pumped to Courtright Reservoir. See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided 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 daily discharge, 4,250 ft^3/s, Nov. 1, 1991; maximum daily pumpage, 6,860 ft^3/s, Jan. 5, 1997.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	-953.37	.00	-126.04	.00	-33.78	881.27	873.2	-459.29	-262.16	-275.78	296.45	1383.92
2	.00	293.42	654.40	.00	942.27	217.80	-103.35	-1176.71	-990.67	300.48	-13.61	2488.53
3	.00	1848.25	-599.45	.00	45.37	66.55	-44.87	-1594.15	-731.03	-616.59	1823.04	3049.66
4	.00	596.92	-112.43	430.05	-673.56	1629.95	1682.88	-587.85	-859.09	135.11	1249.81	756.24
5	.00	40.33	-524.33	1804.39	594.91	1087.98	286.87	68.06	-712.88	111.92	-116.96	-1303.76
6	.00	-79.66	-353.42	1331.99	-316.61	1152.00	1584.07	1027.98	-997.23	2608.52	599.45	-651.88
7	.00	-457.27	-783.97	1584.57	-312.58	960.93	-349.89	-514.24	-1335.52	1829.59	-1276.03	1746.91
8	.00	-623.65	286.87	723.97	-797.08	-527.85	404.34	-368.04	-402.82	1033.02	-1568.44	823.80
9	.00	-617.09	-254.10	1261.91	-418.96	1922.86	2573.73	367.03	-974.04	-89.24	-745.65	311.07
10	.00	-118.98	83.69	.00	-361.48	1931.94	3109.15	129.57	260.15	-2410.89	1480.72	-315.10
11	.00	-244.52	-434.59	-472.90	205.19	2406.86	672.55	665.99	194.10	-1304.76	1592.64	-893.37
12	.00	68.06	-430.55	98.82	-237.96	1407.61	-1124.28	540.46	1284.60	-1322.41	833	-190.57
13	.00	-442.65	-383.67	69.07	-449.21	-8.57	1359.72	702.29	-347.87	-829.85	1415.18	-578.27
14	.00	-333.75	-426.52	-670.53	688.68	570.20	148.73	-83.19	-52.94	-1444.42	1190.32	205.70
15	.00	-35.8	-267.71	-707.84	141.16	168.89	-202.67	430.55	2013.11	-1251.32	-957.90	459.29
16	.00	251.58	-345.35	-1100.08	1468.62	854.05	548.53	-1581.55	1163.60	-162.34	-1498.87	881.77
17	.00	1289.64	-400.30	-951.35	550.04	-158.31	970.51	-865.14	1273.51	72.09	-1323.42	1084.45
18	.00	872.88	-207.71	-1858.84	-152.26	-299.47	-785.48	1738.85	1569.45	-955.38	-862.62	330.22
19	.00	106.88	-187.55	-893.87	870.68	-698.76	-42.85	353.42	1380.89	-222.33	-131.08	978.07
20	.00	-113.94	.00	-321.15	239.48	-1184.27	631.71	718.43	212.25	83.19	907.99	-312.58
21	.00	-509.20	-225.36	-200.66	22.69	-1305.77	-256.62	624.65	8.07	-354.93	858.58	894.88
22	.00	-442.65	196.62	843.46	.00	-1406.60	11.09	-304.01	-191.08	739.10	1618.86	701.29
23	.00	-1031.51	.00	318.12	495.59	-1030.50	-16.64	-1074.87	-300.98	144.19	1591.13	807.66
24	.00	-751.70	.00	-206.20	398.29	-1068.31	-986.64	-557.10	135.62	772.37	2190.07	388.20
25	.00	-698.76	-364.51	-140.16	-222.33	-1063.78	-480.46	-1079.41	335.27	243.00	1957.65	-12.10
26	.00	-703.81	.00	-66.55	204.69	-727.00	-394.76	489.03	330.73	-309.55	815.73	-2242.00
27	.00	-790.02	.00	72.09	-45.88	-518.78	-364.51	669.52	1048.15	-83.69	401.81	-385.68
28	789.01	-1500.88	.00	413.41	-62.01	-60.50	419.46	-57.98	-1984.88	-176.96	440.64	79.66
29	1629.95	-1064.28	.00	118.48	---	-1033.53	575.25	-504.16	-1299.72	-272.75	-511.72	500.13
30	740.11	-665.49	.00	1100.08	---	400.30	289.89	-2234.94	-753.72	-201.16	-455.76	284.85
31	.00	---	.00	110.92	---	1135.87	---	-743.64	---	74.62	1489.29	---
TOTAL	2205.70	-5857.65	-5205.98	2691.20	2783.96	5703.06	10988.66	-5260.44	-987.13	-4137.15	13290.30	11270.99
MEAN	71.2	-195	-168	86.8	99.4	184	366	-170	-32.9	-133	429	376
MAX	1630	1850	654	1800	1470	2410	3110	1740	2010	2610	2190	3050
MIN	-953	-1500	-784	-1860	-797	-1410	-1120	-2230	-1980	-2410	-1570	-2240
AC-FT	4380	-11620	-10330	5340	5520	11310	21800	-10430	-1960	-8210	26360	22360

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	148	-70.8	-.91	-42.1	108	57.3	94.8	-317	-33.3	177	301	379
MAX	499	247	220	245	433	371	370	194	242	627	429	894
(WY)	1996	1994	1989	1995	1989	1995	1995	1995	1992	1989	1998	1991
MIN	-110	-734	-203	-844	-84.6	-315	-311	-722	-239	-209	177	51.6
(WY)	1993	1992	1996	1997	1997	1989	1989	1992	1997	1997	1990	1990

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1989 - 1998	
ANNUAL TOTAL	-35681.93		27485.52			
ANNUAL MEAN	-97.8		75.3		66.2	
HIGHEST ANNUAL MEAN					177	1995
LOWEST ANNUAL MEAN					-77.5	1997
HIGHEST DAILY MEAN	3450	Jan 1	3110	Apr 10	4250	Nov 1 1991
LOWEST DAILY MEAN	-6860	Jan 5	-2410	Jul 10	-6860	Jan 5 1997
ANNUAL SEVEN-DAY MINIMUM	-2530	Jan 3	-1250	Jul 10	-2530	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	-70780		54520		47940	
10 PERCENT EXCEEDS	999		1290		1150	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	-1050		-979		-933	

11214550 COURTRIGHT RESERVOIR NEAR NELSON MOUNTAIN, CA

LOCATION.—Lat 37°04'45", long 119°58'07", in NW 1/4 NW 1/4 sec.7, T.10 S., R.28 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, at left end of dam on Helms Creek, 2.5 mi upstream from mouth, 4.6 mi east of Nelson Mountain, and 9.7 mi west of Blackcap Mountain.

DRAINAGE AREA.—39.7 mi^2.

PERIOD OF RECORD.—October 1958 to September 1982 (monthend elevation and contents only), October 1982 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by rockfill dam completed in 1958. Usable capacity, 123,286 acre-ft between elevations 7,902 ft, invert of tunnel, and 8,184 ft, elevation of spillway. Dead storage negligible. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Records not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 124,220 acre-ft, Sept. 26, 1982, elevation, 8,184.57 ft; no contents in 1961–62, 1968, 1970.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 121,888 acre-ft, July 30, elevation, 8,183.14 ft; minimum, 8,130 acre-ft, Apr. 20, elevation, 8,044.14 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated Apr. 13, 1959)

7,902	0	7,970	736	8,035	6,269	8,115	42,141
7,950	267	7,990	1,617	8,060	12,298	8,150	75,878
7,960	462	8,010	3,129	8,085	22,584	8,184	123,286

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41812	34710	46634	56503	51710	44250	33534	16691	45172	95605	121177	93024
2	41776	34108	45344	56552	49941	42873	33820	19836	48424	96624	121226	88174
3	41730	30464	46518	56512	50011	43769	34032	23854	51081	99149	117726	82268
4	41711	29291	46718	55690	51391	40475	30631	25688	53798	100081	115244	80799
5	41688	29191	47862	52104	50255	38287	30088	26072	56237	101048	115525	83358
6	41649	29353	48621	49179	51125	35996	26797	24400	59636	97164	114356	84660
7	41633	30190	50203	46061	51898	34080	27584	25859	63703	94689	116905	81262
8	41023	31427	49707	44625	53615	35134	26850	26973	66026	93847	119907	79674
9	41579	32663	50203	42212	54442	31251	21711	26715	69362	95140	121339	79013
10	41602	32945	49985	42212	55222	27144	15306	26944	70043	100734	118360	79686
11	41602	33425	50790	43161	54840	22043	13963	26072	70960	104033	115384	91384
12	41571	33242	51675	43042	54970	18882	16428	25444	69559	107380	113736	81702
13	41542	34142	52427	42899	55878	18850	13622	24302	71528	109679	111184	82799
14	41532	34807	53314	44242	54618	17778	13402	24788	73409	113041	108804	82391
15	41509	34870	53844	45771	54368	17541	13901	24225	71863	116104	110772	81531
16	41493	34356	54516	47956	51479	15813	12778	27692	71685	116937	113720	79806
17	41470	31794	55297	49881	50316	16216	10790	29747	71116	117237	116245	77670
18	41439	30063	55596	53670	50685	16847	9205	27512	70032	119299	117964	77022
19	41423	29886	56048	55474	49050	18341	9371	27209	69352	120083	118154	75091
20	41393	30107	56025	56114	48595	20844	8130	26308	71049	120340	116355	75704
21	41639	31128	56452	56512	48655	23594	8989	25631	73080	120967	114745	73910
22	41322	32018	56039	54822	48049	26552	9331	26809	75310	120694	111505	72515
23	41260	34067	56010	54193	46668	28698	9770	29660	77611	120887	108173	70916
24	41183	35472	55982	54590	45829	31245	12151	31584	79181	119635	103945	70186
25	41113	36877	56684	54877	46293	33398	13465	34612	80301	119347	100095	70175
26	41059	38464	56665	54952	45846	35002	14618	34218	81286	120115	98503	74620
27	41005	40056	56627	54868	45986	36224	15774	33391	80787	120340	97678	75368
28	39450	43042	56608	54046	46135	36417	15423	34122	86270	120806	96776	75195
29	36231	45123	56275	53926	---	38538	14898	35755	90425	121419	97776	74138
30	34758	46418	56553	51746	---	37130	14997	40982	93455	121888	98601	73523
31	34737	---	56541	51524	---	35524	---	43432	---	121742	95742	---
MAX	41812	46418	56684	56552	55878	44250	34032	43432	93455	121888	121339	93024
MIN	34737	29191	45344	42212	45829	15813	8130	16691	45172	93847	95742	70175
a	8104.99	8120.29	8131.69	8126.23	8119.95	8106.11	8068.02	8116.63	8164.00	8183.05	8165.68	8147.95
b	-5106	+11861	+10123	-5017	-5389	-10611	-20527	+28435	+50023	+28287	-26000	-22219

CAL YR 1997 b +29207
WTR YR 1998 b +33680

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

11214600 HELMS CREEK BELOW COURTRIGHT DAM, CA

LOCATION.—Lat 37°04'35", long 118°58'04", in SW 1/4 NW 1/4 sec.7, T.10 S., R.28 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on left bank 500 ft downstream from Courtright Dam, 2.5 mi upstream from North Fork Kings River, and 17 mi southeast of town of Huntington Lake.

DRAINAGE AREA.—39.7 mi^2.

PERIOD OF RECORD.—October 1958 to February 1986. May 8, 1986, to current year.

REVISED RECORDS.—WSP 1715: 1959. WSP 2130: 1959.

GAGE.—Water-stage recorder and broad-crested weir (with low-water 90° V-notch weir since Nov. 13, 1990). Elevation of gage is 7,836 ft above sea level, from photogrammetry survey.

REMARKS.—Flow regulated since October 1958 by Courtright Reservoir (station 11214550) 500 ft upstream. Water bypasses this gage through Helms Powerplant (station 11214540). See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided 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, 1,340 ft^3/s, Aug. 29, 1969, gage height, 5.81 ft; maximum gage height, 7.70 ft, Aug. 23, 1978; no flow on several days in 1970.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.4	8.1	11	12	12	12	5.7	3.9	9.8	20	34	28
2	9.5	7.8	10	13	12	12	5.6	4.6	11	20	34	27
3	9.5	7.1	10	13	12	12	5.6	5.2	11	20	33	26
4	9.5	7.0	10	13	13	11	5.4	5.1	11	21	33	26
5	9.5	7.1	11	13	13	11	5.1	5.0	13	22	33	26
6	9.5	7.1	11	13	13	11	4.8	5.0	14	22	33	26
7	9.5	7.4	11	11	14	10	4.6	5.0	14	21	33	26
8	9.5	7.4	11	11	14	10	4.3	5.3	15	21	33	26
9	9.5	7.8	11	11	14	10	4.0	5.5	16	21	34	25
10	9.5	7.8	11	11	14	6.7	3.3	5.5	15	22	33	26
11	9.4	7.8	11	11	14	5.8	1.8	5.1	15	22	33	26
12	9.3	7.8	11	11	13	5.0	2.8	4.9	16	23	33	26
13	9.5	8.1	11	11	13	4.5	2.8	4.6	16	24	32	26
14	9.5	7.8	11	11	13	2.8	2.8	4.8	16	25	31	26
15	9.5	7.8	11	11	13	2.8	2.8	5.0	16	26	31	26
16	9.5	7.8	11	12	13	1.7	1.2	5.1	16	27	32	26
17	9.5	7.1	11	12	13	2.1	.90	5.2	15	27	33	25
18	9.5	6.9	12	12	13	2.3	.94	5.3	15	28	33	24
19	9.5	6.9	12	13	13	2.6	1.0	5.4	15	30	33	24
20	9.5	6.9	12	13	13	3.1	1.9	5.3	15	31	33	24
21	9.2	6.7	12	13	12	3.6	2.1	5.1	16	31	32	24
22	9.1	6.9	12	13	12	4.2	2.2	5.5	16	32	32	23
23	9.1	7.1	12	13	12	4.6	1.7	5.8	16	32	31	23
24	9.1	7.4	12	13	12	5.2	2.3	7.4	17	32	30	23
25	9.1	7.8	12	13	12	5.6	2.7	6.5	17	32	30	23
26	9.1	8.1	12	13	12	5.9	3.6	6.5	17	33	29	23
27	9.2	8.6	12	13	12	6.0	3.9	6.4	17	33	29	24
28	9.5	9.1	12	13	13	6.0	4.0	6.9	17	34	29	24
29	9.5	9.5	12	13	---	6.0	3.6	7.1	18	34	29	24
30	9.1	11	12	12	---	6.0	3.7	8.7	19	34	29	24
31	8.1	---	12	12	---	5.8	---	10	---	34	29	---
TOTAL	289.7	231.7	352	379	359	197.3	97.14	176.7	454.8	834	986	750
MEAN	9.35	7.72	11.4	12.2	12.8	6.36	3.24	5.70	15.2	26.9	31.8	25.0
MAX	9.5	11	12	13	14	12	5.7	10	19	34	34	28
MIN	8.1	6.7	10	11	12	1.7	.90	3.9	9.8	20	29	23
AC-FT	575	460	698	752	712	391	193	350	902	1650	1960	1490

11214600 HELMS CREEK BELOW COURTRIGHT DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	10.7	6.32	5.47	5.58	5.96	5.57	5.83	8.53	13.9	15.4	13.5	10.1
MAX	58.3	8.88	11.4	12.2	12.8	7.75	8.27	12.8	21.6	26.9	31.8	25.0
(WY)	1985	1992	1998	1998	1998	1997	1989	1997	1997	1998	1998	1998
MIN	5.32	4.15	2.92	3.47	3.30	3.48	3.24	5.15	6.80	6.82	6.07	5.71
(WY)	1991	1986	1987	1987	1991	1991	1998	1990	1990	1990	1992	1990

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1985 - 1998	
ANNUAL TOTAL	4626.6		5107.34			
ANNUAL MEAN	12.7		14.0		9.02	
HIGHEST ANNUAL MEAN					14.0	1998
LOWEST ANNUAL MEAN					5.65	1987
HIGHEST DAILY MEAN	25	Jul 27	34	Jul 28	679	Oct 13 1984
LOWEST DAILY MEAN	4.4	Jan 3	.90	Apr 17	.90	Apr 17 1998
ANNUAL SEVEN-DAY MINIMUM	6.3	Jan 16	1.5	Apr 16	1.5	Apr 16 1998
INSTANTANEOUS PEAK FLOW			35	Jul 29	1340	Aug 29 1969
INSTANTANEOUS PEAK STAGE			4.41	Jul 29	7.70	Aug 23 1978
ANNUAL RUNOFF (AC-FT)	9180		10130		6530	
10 PERCENT EXCEEDS	23		30		16	
50 PERCENT EXCEEDS	9.5		12		6.7	
90 PERCENT EXCEEDS	7.4		4.6		4.0	

11214800 WISHON RESERVOIR NEAR CLIFF CAMP, CA

LOCATION.—Lat 37°00'19", long 118°58'07", in NW 1/4 NW 1/4 sec.6, T.11 S., R.28 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right end of dam on North Fork Kings River, 1.2 mi north of Cliff Camp, and 20 mi southeast of Big Creek.

DRAINAGE AREA.—177 mi^2.

PERIOD OF RECORD.—December 1957 to September 1982 (monthend elevation and contents only), October 1982 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by rockfill dam completed in 1957. Capacity, 128,600 acre-ft between elevations 6,317 ft, bottom of slide gates, and 6,550 ft, operating crest of spillway gates. Dead storage negligible. Water is diverted to Haas Powerplant (station 11216050). Records, including extremes, represent contents at 2400 hours. See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Records not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 129,700 acre-ft, July 29, 1958, elevation, 6,551.1 ft; no contents in 1960.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 127,942 acre-ft, July 25, elevation, 6,549.35 ft; minimum, 34,281 acre-ft, Apr. 3, elevation, 6,430.94 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated Apr. 13, 1959)

6,317	40	6,385	11,618	6,440	39,471	6,520	99,807
6,360	2,810	6,400	18,359	6,460	51,900	6,550	129,118
6,370	5,738	6,420	28,362	6,490	74,128	6,551.1	129,733

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115075	79811	48914	35652	45200	36808	37060	39553	38279	105165	120985	116411
2	113520	79371	49712	35771	47433	36568	35437	38105	38950	106935	120322	120095
3	111919	81837	48111	35873	47787	36203	34281	35454	39848	108503	120322	125197
4	110318	81812	47616	36865	46566	38862	36591	34611	39026	111681	123962	125328
5	109019	80718	46441	40582	47914	40445	35890	34897	38300	114690	125509	121381
6	107820	79288	45768	43604	47566	42318	38018	36688	38938	122813	124062	118637
7	106572	77102	44331	46848	47143	43555	36000	35573	38617	126621	124032	120717
8	105432	75606	44509	48359	45762	41626	35279	35234	40202	125913	120510	121242
9	104078	74103	43823	50980	45119	45168	39260	36568	40285	124633	116314	118952
10	103180	73047	43683	51071	44154	49422	44602	37290	42451	120174	115288	118863
11	102668	71711	42692	50204	43848	54610	45032	38570	44252	119099	117111	116023
12	101365	71155	41596	50575	42959	57960	41710	39506	47673	118176	117570	114671
13	100123	69202	40855	50790	41261	58224	43087	40546	47616	118333	119050	112566
14	98879	67690	39960	49525	42022	59493	42209	39966	49563	117043	120441	111881
15	97659	67102	39430	48595	40843	60010	40689	40350	57424	116120	117404	111824
16	96345	67140	38640	46572	42517	61688	40427	37296	63642	117384	113530	112594
17	94853	68811	37596	44792	42469	61681	41171	35302	69413	119217	109611	113731
18	93642	69531	37170	41309	41344	61340	41374	37331	75801	118971	106693	113329
19	92533	68631	36482	39636	41908	59864	40445	37735	81955	119601	105192	114277
20	91255	67628	36482	39096	41554	57144	41542	39037	86014	120816	105719	112594
21	89567	66354	35970	38809	40748	53702	41064	40410	89507	121689	106219	113339
22	88244	65442	36237	40599	40510	50035	41177	39895	91955	124342	108381	113664
23	86886	63371	36226	41338	41542	47559	41140	38239	93871	125499	110677	114354
24	85230	61258	36277	41046	41500	45446	38809	38186	96773	127464	113750	114123
25	83468	59522	35556	40861	40196	43245	37342	37296	100341	127942	116440	113358
26	81720	57953	35590	40891	39354	40873	36112	39172	103271	126783	116975	108269
27	79960	56359	35618	41082	37833	38827	35274	41147	106832	125721	116644	106814
28	80060	53245	35664	42016	36568	38012	36317	41542	104602	124754	116488	106025
29	82072	51183	35714	42457	---	35229	37960	41243	103775	123561	114546	106386
30	82265	49777	35522	44774	---	35483	39471	37417	103940	122295	112652	106222
31	80960	---	35573	45094	---	36106	---	36974	---	121470	114661	---
MAX	115075	81837	49712	51071	47914	61688	45032	41542	106832	127942	125509	125328
MIN	79960	49777	35522	35652	36568	35229	34281	34611	38279	105165	105192	106025
a	6498.31	6456.75	6433.24	6449.33	6434.99	6434.18	6440.00	6435.70	6524.54	6542.91	6535.95	6527.01
b	-37805	-31183	-14204	+9521	-8526	-462	+3365	-2497	+66966	+17530	-6809	-8439

CAL YR 1997 b -49529
WTR YR 1998 b -12543

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

11214900 NORTH FORK KINGS RIVER BELOW WISHON RESERVOIR, CA

LOCATION.—Lat 37°00'05", long 118°58'20", in SE 1/4 NE 1/4 sec.1, T.11 S., R.27 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right bank 1,700 ft downstream from Wishon Dam and 20 mi southeast of Big Creek.

DRAINAGE AREA.—178 mi^2.

PERIOD OF RECORD.—October 1986 to current year (since October 1990, low flow records only).

GAGE.—Water-stage recorder and 90° V-notch steel weir and concrete control. Elevation of gage is 6,300 ft above sea level, from topographic map.

REMARKS.—No records computed above 25 ft^3/s. Flow regulated by Wishon Reservoir (station 11214800) and Courtright Reservoir (station 11214550). Water diverted for power from Wishon Reservoir by tunnel to Haas Powerplant (station 11216050). See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., 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 1997 TO SEPTEMBER 1998

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	24	20	17	19	18	18	---	17	---	---	---
2	---	24	20	17	21	18	18	---	17	---	---	---
3	---	24	20	17	22	18	18	21	---	---	---	---
4	---	24	20	17	20	18	18	21	18	---	---	---
5	---	24	20	17	20	18	18	20	18	---	---	---
6	---	24	21	18	20	19	18	20	18	---	---	---
7	---	24	20	19	20	19	18	20	18	---	---	---
8	---	24	19	19	20	19	18	19	18	---	---	---
9	---	24	19	20	19	19	18	19	---	---	---	---
10	---	24	19	20	19	20	18	19	---	---	---	---
11	---	24	19	20	19	21	18	19	---	---	---	---
12	---	23	18	21	19	22	18	19	---	---	---	---
13	---	23	18	21	19	23	18	19	---	---	---	---
14	---	23	18	20	19	23	18	19	---	---	---	---
15	---	23	18	---	19	24	18	20	---	---	---	---
16	---	23	18	22	19	24	18	19	---	---	---	---
17	---	23	18	20	19	---	18	18	---	---	---	---
18	---	23	18	---	19	---	18	19	---	---	---	---
19	---	23	18	---	19	---	18	19	---	---	---	---
20	---	23	17	19	19	---	---	19	---	---	---	---
21	---	23	17	18	19	---	---	19	---	---	---	---
22	---	22	17	18	19	---	---	19	---	---	---	---
23	25	22	17	18	19	---	22	18	---	---	---	---
24	25	22	17	18	19	---	21	18	---	---	---	---
25	25	22	17	18	19	21	21	18	---	---	---	---
26	24	22	17	18	18	20	---	19	---	---	---	---
27	24	21	17	18	18	19	---	18	---	---	---	---
28	24	21	17	18	18	19	---	19	---	---	---	---
29	24	21	17	19	---	18	---	20	---	---	---	---
30	24	20	17	19	---	18	---	18	---	---	---	---
31	24	---	17	19	---	18	---	17	---	---	---	---
TOTAL	---	687	565	---	539	---	---	---	---	---	---	---
MEAN	---	22.9	18.2	---	19.3	---	---	---	---	---	---	---
MAX	---	24	21	---	22	---	---	---	---	---	---	---
MIN	---	20	17	---	18	---	---	---	---	---	---	---
AC-FT	---	1360	1120	---	1070	---	---	---	---	---	---	---

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1990, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	17.7	18.2	16.5	16.5	16.6	17.3	16.7	19.5	20.0	15.3	13.5	13.6
MAX	22.9	23.5	22.8	22.0	21.5	22.5	20.3	25.6	28.3	19.5	17.0	17.1
(WY)	1987	1987	1987	1987	1987	1987	1989	1987	1987	1989	1989	1989
MIN	14.9	16.2	8.60	8.23	8.52	9.84	8.74	10.2	8.67	9.01	8.40	8.20
(WY)	1988	1988	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990

SUMMARY STATISTICS	WATER YEARS 1987 - 1990	
ANNUAL MEAN	16.8	
HIGHEST ANNUAL MEAN	20.9	1987
LOWEST ANNUAL MEAN	10.1	1990
HIGHEST DAILY MEAN	30	Mar 6 1987
LOWEST DAILY MEAN	7.2	Feb 18 1990
ANNUAL SEVEN-DAY MINIMUM	7.8	Jan 5 1990
INSTANTANEOUS PEAK FLOW	35	Nov 23 1988
INSTANTANEOUS PEAK STAGE	3.59	Nov 23 1988
ANNUAL RUNOFF (AC-FT)	12150	
10 PERCENT EXCEEDS	23	
50 PERCENT EXCEEDS	17	
90 PERCENT EXCEEDS	8.6	

11215000 NORTH FORK KINGS RIVER NEAR CLIFF CAMP, CA

LOCATION.—Lat 36°59'38", long 118°58'49", in NE 1/4 NW 1/4 sec.12, T.11 S., R.27 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right bank at Cliff Camp Bridge, 1 mi northwest of Cliff Camp, 1.2 mi downstream from Wishon Dam, and 2 mi downstream from Woodchuck Creek.

DRAINAGE AREA.—181 mi^2.

PERIOD OF RECORD.—August 1921 to current year (since October 1990, high-flow records only). Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.—WSP 1715: 1951, drainage area.

GAGE.—Water-stage recorder. Datum of gage is 6,143.95 ft above sea level (levels by San Joaquin Light and Power Corp.). Prior to Nov. 24, 1922, at site 1 mi upstream at different datum.

REMARKS.—No records computed below 25 ft^3/s. Flow regulated since Dec. 5, 1957, by Wishon Reservoir (station 11214800) 1.2 mi upstream, and since Oct. 17, 1958, by Courtright Reservoir (station 11214550). Water diverted for power from Wishon Reservoir by tunnel to Haas Powerplant (station 11216050) since Dec. 10, 1958. Monthly chemical, trace-element, biological, and sediment data are available in files of the U.S. Geological Survey and in U.S. Geological Survey Open-File Report 88-479. Also available in the same report are daily maximum, minimum, and mean specific-conductance and water-temperature values. See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided 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 (Prior to regulation by Wishon Reservoir).—Maximum discharge, 14,000 ft^3/s, Dec. 11, 1937, gage height, 18.0 ft, from floodmarks, from rating curve extended above 4,200 ft^3/s on basis of velocity-area studies.
From 1957 to 1990.—Maximum discharge, 5,110 ft^3/s, Sept. 5, 1978, gage height, 11.96 ft.

EXTREME FOR CURRENT YEAR (Maximum only).— Maximum discharge, 4,060 ft^3/s, July 7, gage height 11.01 ft.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	25	---	---	---	---	27	78	52	1080	34	33
2	29	25	---	---	34	25	26	75	54	1090	34	33
3	29	25	---	---	46	26	27	69	91	800	34	33
4	29	25	---	---	32	26	26	77	53	42	34	34
5	29	25	---	---	28	25	26	73	49	42	34	34
6	29	25	32	---	28	---	25	64	52	41	34	34
7	29	25	---	---	27	---	25	59	56	1490	34	34
8	29	---	---	---	26	---	25	57	44	3430	33	34
9	29	---	---	---	---	25	31	55	157	2590	33	34
10	29	---	---	---	---	28	38	50	266	1230	32	34
11	29	---	---	---	---	31	37	44	284	255	33	34
12	28	---	---	31	---	34	32	45	451	158	33	33
13	28	---	---	28	---	34	30	40	569	49	33	33
14	28	---	---	---	25	35	29	39	567	37	33	33
15	28	---	---	81	25	41	27	43	582	37	33	33
16	28	---	---	40	---	42	27	41	598	36	33	33
17	27	---	---	31	---	43	30	38	609	36	32	33
18	27	---	---	37	---	47	39	43	622	35	32	33
19	27	---	---	42	---	51	52	49	635	35	32	33
20	27	---	---	27	---	53	65	48	645	35	31	33
21	27	---	---	---	---	50	80	47	652	35	31	33
22	26	---	---	---	---	51	86	46	657	35	32	33
23	26	---	---	---	25	65	65	47	659	35	32	33
24	26	---	---	---	26	76	55	54	662	36	32	33
25	26	---	---	---	---	66	52	50	667	40	33	33
26	25	---	---	---	---	45	58	53	810	118	33	33
27	25	---	---	---	---	42	65	44	1090	286	33	32
28	25	---	---	---	---	36	70	52	1090	54	33	32
29	25	---	---	---	---	31	77	61	1090	35	33	32
30	25	---	---	---	---	29	82	50	1080	35	32	32
31	25	---	---	---	---	29	---	51	---	34	33	---
TOTAL	849	---	---	---	---	---	1334	1642	14893	13291	1018	994
MEAN	27.4	---	---	---	---	---	44.5	53.0	496	429	32.8	33.1
MAX	30	---	---	---	---	---	86	78	1090	3430	34	34
MIN	25	---	---	---	---	---	25	38	44	34	31	32
AC-FT	1680	---	---	---	---	---	2650	3260	29540	26360	2020	1970
a	41210	19150	5830	81	20080	22500	43090	40580	49910	52770	43680	33600

a Diversion, in acre-feet, to Haas Powerplant, provided by Pacific Gas and Electric Co.

11215000 NORTH FORK KINGS RIVER NEAR CLIFF CAMP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1957, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	18.3	49.3	84.9	62.2	93.6	197	709	1670	1177	211	27.7	9.45
MAX	121	550	605	300	212	402	1210	3232	3395	1161	131	37.4
(WY)	1946	1951	1956	1956	1945	1956	1926	1952	1938	1938	1938	1938
MIN	5.54	6.25	7.00	11.6	20.3	36.0	306	357	35.7	5.52	1.83	1.60
(WY)	1956	1930	1931	1924	1948	1924	1948	1934	1924	1924	1924	1924

SUMMARY STATISTICS	WATER YEARS 1922 - 1957	
ANNUAL MEAN	360	
HIGHEST ANNUAL MEAN	749	1938
LOWEST ANNUAL MEAN	80.2	1924
HIGHEST DAILY MEAN	7460	Dec 23 1955
LOWEST DAILY MEAN	1.3	Sep 9 1924
ANNUAL SEVEN-DAY MINIMUM	1.4	Sep 9 1924
INSTANTANEOUS PEAK FLOW	14000	Dec 11 1937
INSTANTANEOUS PEAK STATE	18.00	Dec 11 1937
ANNUAL RUNOFF (AC-FT)	260600	
10 PERCENT EXCEEDS	1240	
50 PERCENT EXCEEDS	63	
90 PERCENT EXCEEDS	6.5	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1990, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	16.3	17.5	15.8	17.8	18.4	20.7	36.1	96.1	173	97.3	17.9	19.1
MAX	24.5	29.4	41.0	49.8	66.9	49.2	298	1170	1339	918	27.0	84.1
(WY)	1987	1966	1967	1969	1986	1986	1986	1969	1983	1967	1986	1978
MIN	7.67	7.53	7.45	7.62	8.20	9.21	8.62	8.45	8.21	7.37	7.56	7.83
(WY)	1960	1960	1963	1964	1964	1961	1961	1961	1961	1964	1961	1964

SUMMARY STATISTICS	WATER YEARS 1960 - 1990		FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR
ANNUAL MEAN	45.5			
HIGHEST ANNUAL MEAN	241	1969		
LOWEST ANNUAL MEAN	10.0	1964		
HIGHEST DAILY MEAN	3040	Jul 1 1967		
LOWEST DAILY MEAN	3.9	Dec 9 1967		
ANNUAL SEVEN-DAY MINIMUM	4.2	Dec 6 1967		
INSTANTANEOUS PEAK FLOW	5110	Sep 5 1978		
INSTANTANEOUS PEAK STAGE	11.96	Sep 5 1978		
ANNUAL RUNOFF (AC-FT)	32970			
TOTAL DIVERSION (AC-FT) a			364500	372500
10 PERCENT EXCEEDS	29			
50 PERCENT EXCEEDS	17			
90 PERCENT EXCEEDS	8.6			

a Diversion, in acre-feet, to Haas Powerplant, provided by Pacific Gas and Electric Co.

11216100 BLACK ROCK RESERVOIR NEAR BALCH CAMP, CA

LOCATION.—Lat 36°55'13", long 119°01'20", in NW 1/4 NW 1/4 sec.6, T.12 S., R.27 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right bank at intake tower on North Fork Kings River, 5.6 mi east-northeast of Balch Camp.

DRAINAGE AREA.—233 mi^2.

PERIOD OF RECORD.—October 1986 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by concrete arch-type dam, completed to elevation 4,054 ft in 1927 and raised to 4,098 ft in 1958. Storage began in 1927. Spillway is ungated. Capacity, 1,260 acre-ft between elevation 4,054 ft, fish release valve, and 4,098 ft, top of spillway crest. Water is diverted from reservoir through tunnel to Balch Powerplant 3.7 mi downstream and returns to the North Fork Kings River at Balch Afterbay. Flow is again diverted from Balch Afterbay in a closed conduit to Kings River Powerplant. Records, including extremes, represent contents at 2400 hours. See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Records not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 1,324 acre-ft, July 7, 1998, elevation, 4,099.81 ft; minimum, 359 acre-ft, Nov. 3, 1986, elevation 4,064.51 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 1,324 acre-ft, July 7, elevation, 4,099.81 ft; minimum, 605 acre-ft, Jan. 2, elevation, 4,076.10 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas and Electric Co., dated Dec. 1, 1958)

4,050	165	4,065	367	4,080	706	4,095	1,157
4,055	219	4,070	465	4,085	846	4,100	1,331
4,060	286	4,075	579	4,090	996	4,108	1,635

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	999	914	902	849	736	1015	778	1285	1288	1285	1271	620
2	1005	959	896	605	640	1107	938	1281	1288	1285	1043	896
3	996	981	962	704	769	996	838	1281	1281	1285	1015	1228
4	1027	1069	878	792	717	996	861	1281	1278	1281	1127	1111
5	911	1015	893	873	905	1024	930	1281	1281	1281	1271	969
6	920	996	843	950	781	873	902	1278	1288	1281	1271	938
7	969	1012	908	1002	867	950	911	1208	1281	1324	1104	878
8	873	911	819	1065	767	938	1083	972	1281	1320	998	864
9	926	849	864	1157	881	1069	1117	1242	1288	1281	1087	764
10	961	873	1065	1167	1037	1088	1027	1245	1282	1292	1150	908
11	812	849	1024	1085	881	1088	950	1278	1285	1238	1150	932
12	925	733	1059	1024	908	1144	815	1264	1278	1238	1201	953
13	1104	893	1027	1012	701	1018	1008	1225	1278	1274	1235	947
14	1049	881	1030	996	809	947	1166	1278	1285	1274	1204	953
15	1027	993	1027	941	944	972	1021	1015	1288	1274	1160	947
16	908	878	1005	969	876	1194	1075	739	1285	1271	781	965
17	917	873	981	959	1037	1088	1002	1137	1283	1271	728	965
18	881	876	870	993	815	987	1264	1282	1287	1271	838	978
19	914	823	887	1012	1056	887	1228	1282	1287	1267	661	972
20	968	861	887	1024	1059	840	1171	1282	1287	1267	698	972
21	1027	878	959	1021	1056	881	1278	1278	1287	1267	693	993
22	1091	829	1094	1094	1078	953	1282	1281	1285	1267	722	1008
23	1024	772	1088	1094	947	975	1274	1281	1281	1264	775	1085
24	990	908	962	1075	932	878	1274	1264	1285	1264	1140	1154
25	1046	792	864	1075	867	820	1274	1249	1285	1245	1005	1121
26	1040	832	890	1065	1218	938	1276	1164	1285	1264	978	1174
27	1088	783	911	1015	1164	1157	1276	1271	1288	1267	959	1194
28	941	899	858	1005	876	996	1281	1281	1288	1271	926	1164
29	1018	959	861	1154	---	809	1281	1267	1288	1271	809	1094
30	1021	953	867	981	---	864	1285	1288	1285	1271	767	1022
31	1030	---	838	849	---	1104	---	1288	---	1271	693	---
MAX	1104	1069	1094	1167	1218	1194	1285	1288	1288	1324	1271	1228
MIN	812	733	819	605	640	809	778	739	1278	1238	661	620
a	4091.09	4088.59	4084.71	4085.09	4086.02	4093.40	4098.71	4098.79	4098.71	4098.32	4079.51	4090.84
b	+98	-77	-115	+11	+27	+228	+181	+3	-3	-14	-578	+329

CAL YR b +118
WTR YR b +90

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

11216200 NORTH FORK KINGS RIVER BELOW BALCH DIVERSION DAM, CA

LOCATION.—Lat 36°54'10", long 119°03'00", in NE 1/4 sec.8, T.12 S., R.27 E., Fresno County, Hydrologic Unit 18030010, on right bank 2.0 mi downstream from Balch Diversion Dam (Black Rock Reservoir), 400 ft upstream from Weir Creek, and 4 mi east of Balch Camp.

DRAINAGE AREA.—238 mi^2.

PERIOD OF RECORD.—October 1983 to current year.

GAGE.—Water-stage recorder and sharp-crested rectangular weir. Elevation of gage is 2,890 ft above sea level, from topographic map.

REMARKS.—Flow regulated by Courtright Reservoir (station 11214550), Wishon Reservoir (station 11214800), and Black Rock Reservoir (station 11216100). Water diverted past station from Black Rock Reservoir through tunnel to Balch Powerplant (station 11216300) 1.7 mi downstream and returns to the North Fork Kings River at Balch Afterbay. Flow is again diverted from Balch Afterbay in a closed conduit to Kings River Powerplant. See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided 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, 7,690 ft^3/s, Jan.2, 1997, gage height, 10.54 ft, from rating curve extended above 827 ft^3/s on basis of computation of spill over Balch Diversion Dam; minimum daily, 0.89 ft^3/s, Oct. 21, 1984.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	8.8	10	4.0	10	25	37	860	873	2610	207	10
2	9.0	8.8	9.6	4.3	51	24	34	845	542	2620	32	10
3	8.9	9.1	9.5	4.0	52	24	39	831	1340	2380	9.8	12
4	9.1	9.5	9.3	4.5	33	22	38	855	968	1090	9.4	12
5	9.1	9.9	5.7	4.4	20	21	36	895	868	1060	41	12
6	8.5	9.3	19	4.3	52	23	36	786	1090	1050	186	11
7	8.7	9.4	15	4.5	55	20	34	507	1300	2150	34	11
8	8.4	9.5	16	4.5	68	20	30	60	1040	4990	8.6	11
9	8.2	8.7	7.8	5.7	35	20	29	31	1140	4290	8.3	11
10	9.3	11	6.1	11	27	20	30	28	1360	2650	8.3	11
11	9.6	9.2	5.7	6.6	27	20	33	225	1580	1320	8.3	11
12	8.2	8.4	5.4	17	23	21	39	365	1680	1060	8.2	11
13	8.9	8.9	5.3	16	21	21	32	250	1840	771	8.1	11
14	9.3	9.4	5.8	9.8	41	21	32	63	1910	741	7.7	10
15	9.4	9.0	6.7	61	40	20	28	30	2110	720	7.4	10
16	8.9	9.3	3.0	27	30	20	26	111	2200	685	5.3	10
17	8.4	8.8	2.5	13	35	20	25	25	2080	652	4.7	10
18	8.1	8.7	4.6	12	29	20	25	24	2090	608	4.6	10
19	8.2	9.0	4.5	22	33	19	199	310	2160	566	4.9	10
20	8.6	8.5	4.4	12	39	20	27	619	2210	534	11	10
21	9.1	8.7	4.4	11	42	20	69	291	2200	522	11	10
22	9.4	8.9	4.3	10	82	19	718	526	2140	489	11	10
23	9.3	8.5	4.4	9.2	97	20	714	271	2090	452	11	10
24	9.3	7.9	4.4	8.4	57	39	494	217	2090	414	11	11
25	9.3	8.6	4.2	7.5	38	96	506	480	2100	383	11	11
26	9.4	19	4.0	7.2	32	52	506	193	2190	373	11	11
27	9.6	12	3.9	7.0	29	46	620	22	2610	783	11	11
28	9.2	10	4.0	6.7	26	50	678	245	2640	341	11	11
29	9.1	9.9	4.0	16	---	37	753	623	2650	254	11	11
30	9.5	10	4.0	11	---	34	835	526	2660	235	10	10
31	9.3	---	4.0	9.2	---	35	---	749	---	221	11	---
TOTAL	278.0	286.7	201.5	350.8	1124	869	6702	11863	53751	37014	734.6	320
MEAN	8.97	9.56	6.50	11.3	40.1	28.0	223	383	1792	1194	23.7	10.7
MAX	9.6	19	19	61	97	96	835	895	2660	4990	207	12
MIN	8.1	7.9	2.5	4.0	10	19	25	22	542	221	4.6	10
AC-FT	551	569	400	696	2230	1720	13290	23530	106600	73420	1460	635
a	10360	3860	93	163	2980	11610	12640	13190	13160	13540	11810	8730

a Diversion, in acre-feet, to Balch Powerplant, provided by Pacific Gas and Electric Co.

11216200 NORTH FORK KINGS RIVER BELOW BALCH DIVERSION DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6.16	8.23	7.40	37.7	38.2	56.9	94.4	206	359	170	7.44	6.32
MAX	9.13	26.4	23.5	440	201	441	541	1004	1792	1194	23.7	10.7
(WY)	1997	1984	1997	1997	1997	1986	1986	1995	1998	1998	1998	1998
MIN	3.48	3.54	3.18	3.16	4.69	4.61	3.59	3.25	2.84	3.10	3.14	3.06
(WY)	1988	1991	1987	1987	1985	1994	1987	1987	1987	1987	1987	1987

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1984 - 1998	
ANNUAL TOTAL	24282.8		113494.6			
ANNUAL MEAN	66.5		311		83.1	
HIGHEST ANNUAL MEAN					353	1995
LOWEST ANNUAL MEAN					3.97	1987
HIGHEST DAILY MEAN	3550	Jan 2	4990	Jul 8	4990	Jul 8 1998
LOWEST DAILY MEAN	2.5	Dec 17	2.5	Dec 17	.89	Oct 21 1984
ANNUAL SEVEN-DAY MINIMUM	4.0	Dec 16	4.0	Dec 16	2.5	May 24 1984
INSTANTANEOUS PEAK FLOW			5550	Jul 8	7690	Jan 2 1997
INSTANTANEOUS PEAK STAGE			8.72	Jul 8	10.54	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	48160		225100		60180	
TOTAL DIVERSION (AC-FT)a	376700		102100		271800	
10 PERCENT EXCEEDS	191		1050		118	
50 PERCENT EXCEEDS	8.8		20		6.4	
90 PERCENT EXCEEDS	6.1		6.7		3.6	

a Diversion, in acre-feet, to Balch Powerplant, provided by Pacific Gas and Electric Co.

11216400 DINKEY CREEK SIPHON FISH RELEASE AT BALCH CAMP, CA

LOCATION.—Lat 36°54'29", long 119°07'27", in NW 1/4 NE 1/4 sec.10, T.12 S., R.26 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, in concrete vault on right bank of Dinkey Creek, 200 ft downstream from Dinkey Creek Siphon at invert of Kings River Powerplant Conduit, and 1,700 ft northwest of Balch Camp.

PERIOD OF RECORD.—October 1986 to current year.

GAGE.—Ultra sonic flowmeter. Elevation of gage is 1,320 ft above sea level, from topographic map. Prior to August 1995, pressure-differential flowmeter at same site and datum.

REMARKS.—Water diverted from the North Fork Kings River is released into Dinkey Creek for fishery enhancement from June 1 to Sept. 30 when natural flow of Dinkey Creek is equal to or less than 60 ft^3/s. See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided 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 daily discharge, 25 ft^3/s, several days in June and July 1997; no flow many days most years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	9.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.2
2	9.0	9.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.2
3	7.9	9.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.2
4	7.0	9.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.2
5	8.9	9.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.2
6	9.6	9.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.2
7	9.2	9.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.2
8	9.4	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.2
9	9.4	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.2
10	9.4	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.2
11	9.4	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.2
12	9.4	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.2
13	9.4	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.4
14	9.4	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.5
15	9.4	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.4
16	9.4	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.7
17	9.4	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.0
18	9.4	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.8
19	9.4	3.1	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.7
20	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.0
21	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.9
22	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.8
23	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.9
24	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.9
25	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.5	5.9
26	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.2	5.9
27	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.2	5.9
28	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.2	5.9
29	9.4	.00	.00	.00	---	.00	.00	.00	.00	.00	5.2	5.9
30	9.4	.00	.00	.00	---	.00	.00	.00	.00	.00	5.2	5.9
31	9.4	---	.00	.00	---	.00	---	.00	---	.00	5.2	---
TOTAL	288.2	173.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.70	166.8
MEAN	9.30	5.79	.000	.000	.000	.000	.000	.000	.000	.000	1.09	5.56
MAX	11	9.6	.00	.00	.00	.00	.00	.00	.00	.00	5.2	6.0
MIN	7.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.2
AC-FT	572	345	.00	.00	.00	.00	.00	.00	.00	.00	67	331

11216400 DINKEY CREEK SIPHON FISH RELEASE AT BALCH CAMP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.89	1.44	.44	.15	.12	.000	.000	.000	2.27	6.25	8.01	9.15
MAX	14.4	7.09	3.20	1.71	1.41	.000	.000	.000	5.63	16.6	14.4	15.0
(WY)	1991	1991	1991	1990	1991	1987	1987	1987	1992	1997	1994	1992
MIN	.15	.000	.000	.000	.000	.000	.000	.000	.000	.000	1.09	5.33
(WY)	1996	1987	1987	1987	1987	1987	1987	1987	1991	1993	1998	1987

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998	
ANNUAL TOTAL	1750.80		662.40			
ANNUAL MEAN	4.80		1.81		2.83	
HIGHEST ANNUAL MEAN					4.76	1991
LOWEST ANNUAL MEAN					.73	1995
HIGHEST DAILY MEAN	25	Jun 28	11	Oct 1	25	Jun 28 1997
LOWEST DAILY MEAN	.00	Jan 1	.00	Nov 20	.00	Oct 3 1986
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Nov 20	.00	Oct 3 1986
ANNUAL RUNOFF (AC-FT)	3470		1310		2050	
10 PERCENT EXCEEDS	12		9.4		10	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

11216500 NORTH FORK KINGS RIVER ABOVE DINKEY CREEK, AT BALCH CAMP, CA

LOCATION.—Lat 36°54'12", long 119°07'14", in SE 1/4 NE 1/4 sec.10, T.12 S., R.26 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on left bank 12 ft downstream from bridge at Balch Camp, 300 ft upstream from Dinkey Creek, and 9.3 mi east of Trimmer.

DRAINAGE AREA.—250 mi^2.

PERIOD OF RECORD.—October 1919 to September 1930 (published as "above Dinkey Creek"), March 1960 to current year. Records for water year 1920 incomplete; yearly estimate and monthly discharge only for some months, published in WSP 1315-A.
WATER TEMPERATURE: Water years 1968–79.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder and Cippoletti weir since May 9, 1988. Concrete control Apr. 15, 1966, to May 9, 1988. Elevation of gage is 1,240 ft above sea level, from river-profile map. October 1919 to Sept. 30, 1930, and Mar. 24, 1960, to Apr. 14, 1966, at site 100 ft downstream at different datum.

REMARKS.—Flow regulated by Courtright Reservoir (station 11214550), Wishon Reservoir (station 11214800), and Black Rock Reservoir (station 11216100); Balch Afterbay, capacity, 318 acre-ft; and Haas and Balch Powerplants. Water is diverted from Balch Afterbay to Kings River Powerplant, beginning Mar. 1, 1962. See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided 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 (prior to regulation by Wishon and Courtright Reservoirs).—Maximum discharge, 6,080 ft^3/s, June 4, 1922, gage height, 12.18 ft, site and datum then in use; minimum, 4.0 ft^3/s, Aug. 29 to Sept. 1, 1924. From 1960 to current year: Maximum discharge, 14,000 ft^3/s, Feb. 1, 1963, gage height, 13.24 ft, site and datum then in use, backwater from Dinkey Creek, from rating curve extended above 890 ft^3/s; minimum daily, 0.30 ft^3/s, Nov. 3, 1964.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	18	18	18	146	21	27	476	508	1790	55	17
2	17	17	18	18	366	21	25	464	314	1800	47	17
3	18	17	18	17	371	20	27	459	890	1540	25	20
4	17	18	18	17	252	20	27	487	556	562	24	17
5	17	18	18	17	80	20	25	528	488	545	23	17
6	18	18	19	16	37	21	25	429	671	534	22	17
7	17	18	20	16	29	20	25	254	420	1490	53	17
8	18	18	20	17	32	19	23	24	285	3450	28	17
9	18	18	19	17	26	19	22	19	319	2750	20	17
10	17	17	18	17	23	19	22	19	392	1730	18	17
11	18	18	19	65	22	19	23	65	484	671	17	17
12	17	17	18	194	22	19	24	178	388	520	17	17
13	17	18	18	169	21	19	23	100	325	342	17	17
14	17	18	18	121	23	18	23	32	287	320	17	17
15	17	18	18	750	24	18	22	19	259	308	17	17
16	18	18	19	350	22	18	22	19	259	287	17	17
17	17	18	18	171	24	18	21	19	748	269	17	17
18	17	18	18	163	22	19	21	19	1360	245	17	17
19	17	18	18	256	24	18	31	111	1420	219	16	17
20	18	18	18	128	24	18	20	293	1470	205	16	17
21	17	18	18	118	27	18	24	111	1450	199	16	17
22	17	18	18	66	34	18	388	239	1390	186	17	17
23	17	18	17	92	40	18	361	99	1330	169	18	17
24	18	18	18	91	32	20	228	83	1330	148	18	17
25	18	18	18	76	27	45	229	146	1340	133	18	17
26	18	20	18	75	25	25	235	42	1440	127	18	17
27	18	18	18	64	23	24	302	18	1830	351	18	17
28	18	18	18	63	22	28	343	74	1840	107	18	17
29	17	17	18	29	---	25	401	273	1840	70	18	17
30	18	18	18	182	---	23	457	270	1830	61	18	17
31	18	---	18	146	---	24	---	413	---	55	18	---
TOTAL	541	537	565	3539	1820	652	3446	5782	27463	21183	678	513
MEAN	17.5	17.9	18.2	114	65.0	21.0	115	187	915	683	21.9	17.1
MAX	18	20	20	750	371	45	457	528	1840	3450	55	20
MIN	17	17	17	16	21	18	20	18	259	55	16	17
AC-FT	1070	1070	1120	7020	3610	1290	6840	11470	54470	42020	1340	1020

11216500 NORTH FORK KINGS RIVER ABOVE DINKEY CREEK, AT BALCH CAMP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 1930, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	25.2	69.3	65.4	66.4	132	280	779	1877	1136	164	29.0	15.3
MAX	52.1	225	130	111	397	498	1434	3040	3200	472	73.8	41.2
(WY)	1921	1928	1923	1923	1927	1921	1926	1922	1922	1922	1922	1923
MIN	10.0	11.2	18.7	24.1	42.2	54.6	389	552	42.2	9.50	5.40	5.09
(WY)	1922	1922	1930	1926	1924	1924	1924	1924	1924	1924	1924	1924

SUMMARY STATISTICS	WATER YEARS 1920 - 1930	
ANNUAL MEAN	387	
HIGHEST ANNUAL MEAN	646	1922
LOWEST ANNUAL MEAN	102	1924
HIGHEST DAILY MEAN	4890	Jun 4 1922
LOWEST DAILY MEAN	4.0	Aug 29 1924
ANNUAL SEVEN-DAY MINIMUM	4.2	Aug 28 1924
INSTANTANEOUS PEAK FLOW	6080	Jun 4 1922
INSTANTANEOUS PEAK STAGE	12.18	Jun 4 1922
ANNUAL RUNOFF (AC-FT)	280500	
10 PERCENT EXCEEDS	1300	
50 PERCENT EXCEEDS	74	
90 PERCENT EXCEEDS	11	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	17.7	20.3	26.5	57.5	48.2	41.0	70.4	228	333	181	47.0	28.5
MAX	60.5	92.3	332	499	239	405	490	1838	2042	1176	822	331
(WY)	1962	1962	1967	1997	1962	1986	1986	1969	1983	1967	1960	1960
MIN	5.80	5.42	5.87	8.07	7.32	7.29	7.18	4.54	6.81	7.34	8.86	8.72
(WY)	1978	1978	1978	1977	1964	1971	1971	1977	1977	1968	1976	1964

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1960 - 1998	
ANNUAL TOTAL	25307		66719			
ANNUAL MEAN	69.3		183		88.5	
HIGHEST ANNUAL MEAN					406	1983
LOWEST ANNUAL MEAN					8.47	1977
HIGHEST DAILY MEAN	3900	Jan 2	3450	Jul 8	7680	Dec 6 1966
LOWEST DAILY MEAN	15	May 31	16	Jan 6	.30	Nov 3 1964
ANNUAL SEVEN-DAY MINIMUM	16	May 25	17	Aug 15	4.3	May 30 1977
INSTANTANEOUS PEAK FLOW			4050	Jul 8	14000	Feb 1 1963
INSTANTANEOUS PEAK STAGE			5.66	Jul 8	13.24	Feb 1 1963
ANNUAL RUNOFF (AC-FT)	50200		132300		64150	
10 PERCENT EXCEEDS	107		469		204	
50 PERCENT EXCEEDS	18		20		16	
90 PERCENT EXCEEDS	17		17		8.3	

11218400 NORTH FORK KINGS RIVER BELOW DINKEY CREEK, NEAR BALCH CAMP, CA

LOCATION.—Lat 36°52'47", long 119°07'40", in NE 1/4 NW 1/4 sec.22, T.12 S., R.26 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right bank 1.1 mi upstream from mouth, 1.7 mi south of Balch Camp, 2.1 mi downstream from Dinkey Creek, and 9 mi east of Trimmer.

DRAINAGE AREA.—387 mi^2.

PERIOD OF RECORD.—March 1960 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 1,035 ft above sea level, from river-profile map.

REMARKS.—Flow regulated by Courtright Reservoir (station 11214550), Wishon Reservoir (station 11214800), and Black Rock Reservoir (station 11216100); Balch Afterbay, capacity, 318 acre-ft; and Haas and Balch Powerplants. Water is diverted from Balch Afterbay to Kings River Powerplant (station 11218700), beginning Mar. 1, 1962. Some water diverted from Balch Afterbay returns upstream from station at a release to Dinkey Creek. See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided 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, 27,400 ft^3/s, Feb. 1, 1963, gage height, 19.20 ft, from rating curve extended above 10,100 ft^3/s; minimum daily, 6.4 ft^3/s, Oct. 3, 1977.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	38	61	76	268	249	427	1830	2080	3280	294	74
2	37	37	56	80	765	246	390	1780	1990	3290	226	73
3	37	37	53	81	995	248	430	1810	2800	3020	198	68
4	38	37	51	81	592	246	412	1860	1930	2010	185	80
5	58	37	54	64	387	235	383	1770	1890	1920	171	86
6	50	37	176	70	348	252	378	1480	2540	1850	168	92
7	40	37	166	72	403	213	361	1200	2950	2510	160	86
8	37	38	158	73	427	206	344	989	2360	4710	151	78
9	37	38	89	73	325	209	349	978	2480	4010	143	74
10	38	41	77	120	273	218	382	918	2610	2800	136	75
11	58	60	76	131	251	238	417	847	3280	1740	128	73
12	50	56	71	296	235	265	398	981	2960	1480	121	71
13	43	50	70	372	217	286	366	811	3020	1220	118	68
14	42	57	71	228	289	258	356	660	3240	1130	116	65
15	41	51	74	1310	309	290	332	592	3760	1060	109	63
16	40	47	72	968	246	346	317	653	3750	1010	101	62
17	39	45	72	459	261	355	319	574	3420	950	97	60
18	38	45	73	401	226	378	349	608	3450	870	94	58
19	37	42	68	651	245	414	446	830	3520	784	94	58
20	38	52	67	371	271	445	586	1200	3590	733	91	57
21	37	45	67	282	269	456	800	972	3550	697	88	56
22	38	41	59	212	396	451	1370	1060	3350	777	87	57
23	37	40	57	219	465	537	1440	965	3180	726	83	57
24	38	41	57	211	430	757	970	1160	3160	579	80	57
25	38	39	52	190	334	1240	875	1380	3140	502	79	58
26	38	86	52	173	290	687	921	1170	3090	451	80	59
27	38	79	53	160	261	588	1210	860	3330	628	79	62
28	38	68	56	181	241	578	1370	985	3380	412	78	66
29	38	68	59	202	---	463	1560	1420	3410	359	76	71
30	38	66	66	276	---	418	1770	1360	3370	336	74	73
31	38	---	73	292	---	409	---	1710	---	318	73	---
TOTAL	1251	1455	2306	8375	10019	12181	20028	35413	90580	46162	3778	2037
MEAN	40.4	48.5	74.4	270	358	393	668	1142	3019	1489	122	67.9
MAX	58	86	176	1310	995	1240	1770	1860	3760	4710	294	92
MIN	37	37	51	64	217	206	317	574	1890	318	73	56
AC-FT	2480	2890	4570	16610	19870	24160	39730	70240	179700	91560	7490	4040

11218400 NORTH FORK KINGS RIVER BELOW DINKEY CREEK, NEAR BALCH CAMP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	49.0	89.3	141	249	286	366	623	1047	907	330	61.8	49.8
MAX	288	347	920	1492	1269	1329	2163	4253	4210	1894	422	233
(WY)	1983	1984	1967	1997	1986	1986	1982	1969	1983	1983	1961	1978
MIN	10.6	17.6	19.3	26.3	30.0	48.1	111	129	47.3	21.9	16.2	14.1
(WY)	1978	1978	1977	1991	1991	1977	1977	1977	1976	1976	1968	1968

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998	
ANNUAL TOTAL	136279		233585			
ANNUAL MEAN	373		640		350	
HIGHEST ANNUAL MEAN					1045	1983
LOWEST ANNUAL MEAN					49.2	1977
HIGHEST DAILY MEAN	13100	Jan 2	4710	Jul 8	14900	Dec 6 1966
LOWEST DAILY MEAN	37	Oct 1	37	Oct 1	6.4	Oct 3 1977
ANNUAL SEVEN-DAY MINIMUM	37	Nov 1	37	Nov 1	9.6	Oct 2 1977
INSTANTANEOUS PEAK FLOW			5850	Jul 8	27400	Feb 1 1963
INSTANTANEOUS PEAK STAGE			10.32	Jul 8	19.20	Feb 1 1963
ANNUAL RUNOFF (AC-FT)	270300		463300		253300	
10 PERCENT EXCEEDS	830		1950		897	
50 PERCENT EXCEEDS	118		245		97	
90 PERCENT EXCEEDS	38		41		29	

11224500 LOS GATOS CREEK ABOVE NUNEZ CANYON, NEAR COALINGA, CA

LOCATION.—Lat 36°12'53", long 120°28'11", in NW 1/4 SE 1/4 sec.5, T.20 S., R.14 E., Fresno County, Hydrologic Unit 18030012, on left bank 50 ft downstream from highway bridge, 1.1 mi upstream from Nunez Canyon, 3.0 mi downstream from White Creek, and 8.1 mi northwest of Coalinga.

DRAINAGE AREA.—95.8 mi^2.

PERIOD OF RECORD.—May 1945 to current year. Prior to October 1949 monthly discharge only, published in WSP 1315-A.

REVISED RECORDS.—WSP 1215: 1950. WSP 1735: 1952(M), 1956(M). WSP 1930: Drainage area. WDR CA-72-2: 1971(P).

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 1,065.2 ft above sea level. Aug. 2, 1959, to Jan. 11, 1985, at site on right bank at datum 2.00 ft higher. Prior to Aug. 2, 1959, at site 100 ft downstream on right bank at datum 2.00 ft higher.

REMARKS.—Records fair. Minor diversion for irrigation and stock ponds.

EXTREMES FOR PERIOD OF RECORD (SINCE 1950).—Maximum discharge, 5,700 ft^3/s, Mar. 10, 1995, gage height, 12.77 ft, present datum, in gage well, 13.41 ft from floodmarks, from rating curve extended above 3,000 ft^3/s on basis of slope-area measurement at gage height 12.77 ft; maximum gage height, 13.95 ft from floodmarks, Jan. 16, 1978; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 40 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 5	2030	44	4.21	Feb. 19	1945	339	5.57
Jan. 19	0030	87	4.46	Feb. 21	2115	749	6.40
Feb. 3	0930	1,450	8.21	Mar. 25	0830	77	4.53
Feb. 7	1815	2,390	9.47	Mar. 31	1600	151	4.87
Feb. 14	1215	359	5.66	Apr. 3	1700	83	4.56
Feb. 17	0015	272	5.37	May 5	2230	206	5.06

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	.31	2.7	.84	10	80	55	21	21	7.4	2.8	1.2
2	.16	.29	1.8	.90	245	76	44	26	18	7.7	2.8	1.2
3	.19	.29	1.4	.99	508	72	52	24	17	7.6	2.7	1.1
4	.22	.28	1.2	1.2	106	65	53	26	17	7.0	2.6	1.3
5	.25	.31	20	1.2	54	67	50	97	16	6.2	2.4	1.5
6	.23	.32	41	1.2	282	66	50	96	18	6.0	2.4	1.4
7	.29	.40	23	1.1	586	62	45	73	21	5.6	2.1	1.3
8	.35	.44	12	1.1	247	65	40	78	20	5.3	2.1	1.4
9	.42	.47	7.1	1.5	116	55	39	60	18	5.2	2.1	1.4
10	.50	.57	5.2	3.4	106	49	38	53	17	5.1	2.0	1.5
11	.53	.57	4.2	2.9	86	46	44	50	17	5.1	1.9	1.5
12	.52	.56	3.5	2.9	82	46	40	53	17	5.0	1.8	1.4
13	.51	.89	3.0	11	75	47	42	57	16	4.8	1.7	1.3
14	.46	.65	2.4	5.4	157	43	41	55	15	4.6	1.6	1.2
15	.40	1.1	2.4	5.6	121	38	42	53	13	4.4	1.6	1.2
16	.36	1.2	2.2	5.7	105	39	36	47	12	4.2	1.6	1.1
17	.34	.94	2.0	4.1	126	38	34	43	12	4.1	1.6	1.1
18	.33	.85	1.8	7.2	90	35	33	40	11	4.0	1.8	1.2
19	.35	1.5	1.7	37	112	32	30	37	10	3.8	1.8	1.2
20	.37	1.7	1.6	9.2	91	31	29	35	10	3.5	1.8	1.2
21	.42	1.2	1.5	6.6	167	30	27	34	11	3.5	1.8	1.2
22	.43	.97	1.5	5.4	213	28	25	33	11	3.6	1.7	1.3
23	.41	.84	1.3	4.6	233	27	26	31	10	3.8	1.7	1.3
24	.36	.76	1.3	4.0	182	39	28	30	10	3.6	1.6	1.5
25	.76	.74	1.2	3.7	142	62	26	28	9.8	3.5	1.4	1.5
26	.42	3.1	1.1	3.4	118	44	24	27	9.7	3.5	1.5	1.6
27	.38	2.9	.99	2.9	99	37	23	27	9.0	3.4	1.4	1.6
28	.36	1.8	.97	2.7	88	41	21	25	8.0	3.1	1.4	1.6
29	.36	1.3	.91	7.1	---	37	20	27	7.5	3.1	1.3	1.6
30	.36	2.7	.88	5.8	---	32	19	25	7.3	3.1	1.2	1.5
31	.38	---	.86	4.5	---	59	---	22	---	3.0	1.2	---
TOTAL	11.56	29.95	152.71	155.13	4547	1488	1076	1333	409.3	143.8	57.4	40.4
MEAN	.37	1.00	4.93	5.00	162	48.0	35.9	43.0	13.6	4.64	1.85	1.35
MAX	.76	3.1	41	37	586	80	55	97	21	7.7	2.8	1.6
MIN	.14	.28	.86	.84	10	27	19	21	7.3	3.0	1.2	1.1
AC-FT	23	59	303	308	9020	2950	2130	2640	812	285	114	80

11224500 LOS GATOS CREEK ABOVE NUNEZ CANYON, NEAR COALINGA, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.27	.93	3.82	14.2	25.4	21.5	9.45	3.34	1.16	.32	.11	.27
MAX	7.18	18.2	36.3	139	287	236	160	43.0	16.4	5.71	2.92	8.33
(WY)	1946	1966	1967	1969	1978	1995	1958	1998	1983	1983	1983	1976
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1947	1948	1948	1948	1948	1961	1949	1948	1948	1947	1945	1945

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1945 - 1998	
ANNUAL TOTAL	5227.36		9444.25			
ANNUAL MEAN	14.3		25.9		6.64	
HIGHEST ANNUAL MEAN					48.5	1983
LOWEST ANNUAL MEAN					.000	1989
HIGHEST DAILY MEAN	504	Jan 2	586	Feb 7	2940	Mar 10 1995
LOWEST DAILY MEAN	.02	Aug 21	.14	Oct 1	.00	Jul 5 1945
ANNUAL SEVEN-DAY MINIMUM	.03	Aug 19	.21	Oct 1	.00	Jul 5 1945
INSTANTANEOUS PEAK FLOW			2390	Feb 7	5700	Mar 10 1995
INSTANTANEOUS PEAK STAGE			9.47	Feb 7	13.95	Jan 16 1978
ANNUAL RUNOFF (AC-FT)	10370		18730		4810	
10 PERCENT EXCEEDS	29		65		7.2	
50 PERCENT EXCEEDS	1.1		4.5		.00	
90 PERCENT EXCEEDS	.05		.51		.00	

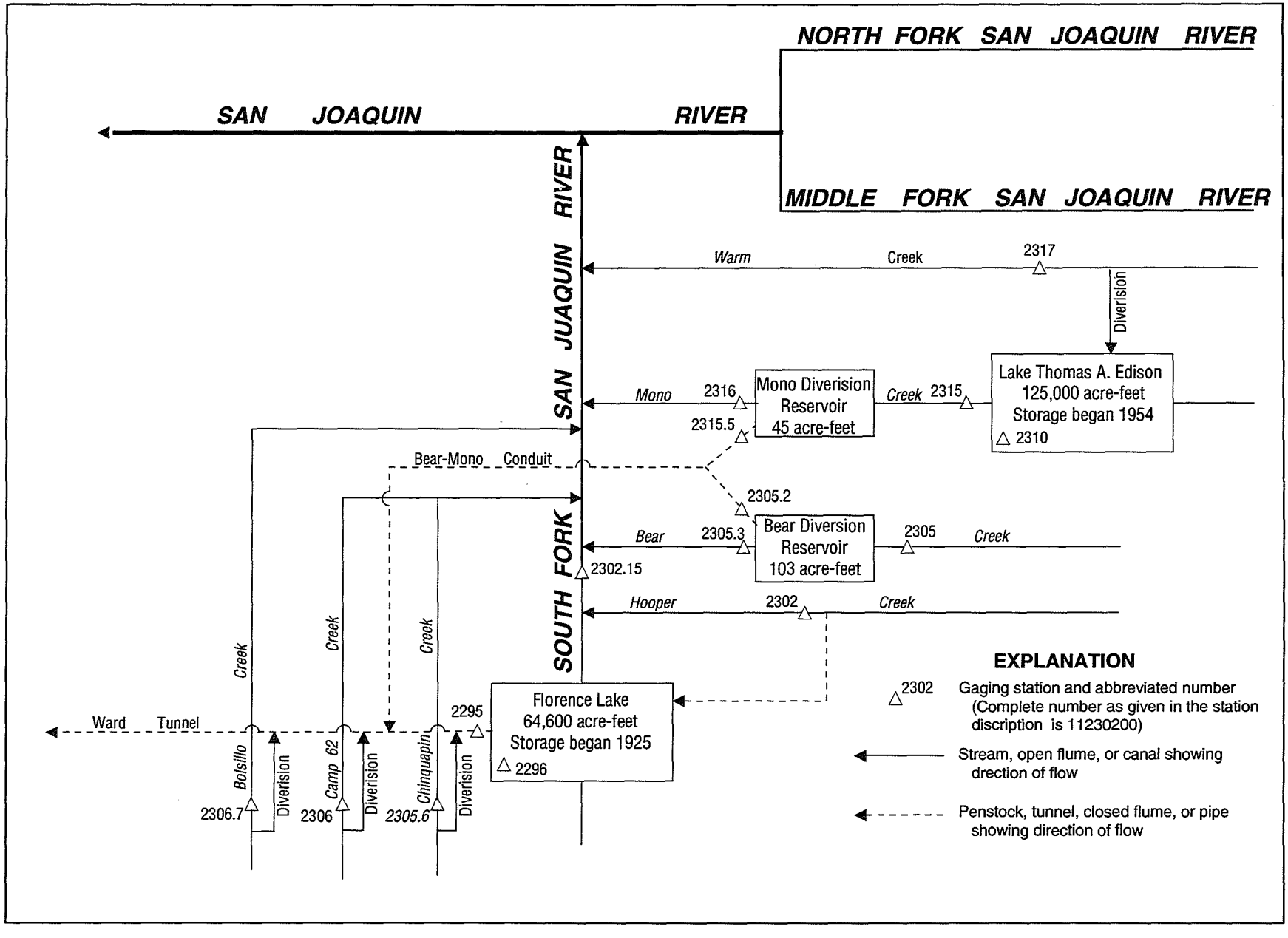


Figure 27. Diversions and storage in upper San Joaquin River Basin.

11229500 WARD TUNNEL INTAKE AT FLORENCE LAKE, CA

LOCATION.—Lat 37°16'20", long 118°58'17", unsurveyed, T.8 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in gatehouse at entrance of tunnel, 0.4 mi south of left abutment of Florence Lake Dam, and 16 mi northeast of town of Big Creek.

PERIOD OF RECORD.—April 1925 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as Florence Lake Tunnel at Intake 1925–36 and as Ward Tunnel at Intake 1937–60.

REVISED RECORDS.—WSP 1515: 1931.

GAGE.—Water-stage recorder, concrete control, and Venturi meter. Datum of gage is 7,213.89 ft above sea level (levels by Southern California Edison Co.).

REMARKS.—Ward Tunnel diverts from Florence Lake (station 11229600), a reservoir on South Fork San Joaquin River, to Huntington Lake (station 11236000) via Portal Powerplant (station 11235500). Water used again in Big Creek powerplants. See schematic diagram of upper San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, 1,990 ft^3/s, Apr. 30, 1926; no flow at times.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	164	21	58	31	60	86	124	554	269	444	992	999
2	163	18	28	37	64	85	114	575	1.5	445	991	1020
3	163	16	3.4	38	82	88	114	591	1.7	444	989	1040
4	163	15	69	34	100	85	106	602	1.7	443	987	1030
5	163	14	76	30	113	81	101	604	1.9	442	828	1020
6	163	13	62	33	129	77	96	591	2.2	441	671	1020
7	163	13	69	39	117	73	91	712	2.4	625	670	e1020
8	164	13	71	37	125	77	87	745	2.8	982	672	e1010
9	163	11	72	35	145	75	89	695	2.9	1110	672	e1000
10	163	11	70	36	156	81	102	658	3.2	1110	673	e990
11	163	13	66	38	151	93	116	587	3.4	1110	672	e980
12	163	16	61	41	134	106	109	442	3.5	1110	673	e970
13	163	17	60	45	112	106	102	362	3.6	1110	e1100	e962
14	273	20	57	51	102	94	97	305	3.8	1110	e1420	e806
15	369	18	55	75	93	103	89	304	3.9	1120	e1370	e637
16	366	16	55	108	102	127	87	352	375	1180	e1340	e717
17	362	18	55	100	104	131	89	305	828	1160	e1320	e897
18	358	19	52	78	100	155	108	318	1100	965	e903	e858
19	353	22	47	90	97	181	180	364	1100	966	446	e820
20	347	23	45	80	92	209	300	427	1120	1020	397	e812
21	340	23	42	82	92	217	399	400	918	1200	397	e804
22	334	23	36	76	88	208	448	377	286	1230	396	e797
23	502	23	33	72	98	259	486	479	206	1230	393	e789
24	658	20	31	68	87	290	491	474	665	1210	538	e847
25	615	20	27	63	114	252	474	598	929	1210	704	e892
26	560	39	26	61	109	203	452	571	927	1200	702	e873
27	494	36	26	58	98	200	444	447	925	1200	702	e853
28	262	57	28	56	89	174	456	455	925	1280	701	e834
29	65	72	28	58	---	150	481	524	689	1290	698	815
30	35	68	29	54	---	136	518	489	446	1100	695	802
31	25	---	30	61	---	133	---	574	---	989	866	---
TOTAL	8439	708	1467.4	1765	2953	4335	6950	15481	11746.5	30476	24578	26914
MEAN	272	23.6	47.3	56.9	105	140	232	499	392	983	793	897
MAX	658	72	76	108	156	290	518	745	1120	1290	1420	1040
MIN	25	11	3.4	30	60	73	87	304	1.5	441	393	637
AC-FT	16740	1400	2910	3500	5860	8600	13790	30710	23300	60450	48750	53380

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1998, BY WATER YEAR (WY)

MEAN	237	131	109	78.6	77.1	113	275	466	554	542	429	350
MAX	634	745	1064	546	240	297	588	949	1161	1199	856	897
(WY)	1996	1938	1946	1939	1986	1986	1997	1974	1974	1967	1995	1998
MIN	.000	.47	3.04	2.13	.64	22.5	35.4	.85	1.49	90.1	48.3	1.50
(WY)	1946	1965	1991	1991	1991	1977	1991	1939	1938	1931	1977	1949

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1925 - 1998	
ANNUAL TOTAL	145647.8		135812.9			
ANNUAL MEAN	399		372		282	
HIGHEST ANNUAL MEAN					460	1956
LOWEST ANNUAL MEAN					98.1	1977
HIGHEST DAILY MEAN	1400	Jun 1	1420	Aug 14	1990	Apr 30 1926
LOWEST DAILY MEAN	2.4	Jan 4	1.5	Jun 2	.00	Oct 7 1925
ANNUAL SEVEN-DAY MINIMUM	2.4	Jan 4	2.0	Jun 2	.00	Nov 5 1925
ANNUAL RUNOFF (AC-FT)	288900		269400		204400	
10 PERCENT EXCEEDS	860		999		676	
50 PERCENT EXCEEDS	275		163		166	
90 PERCENT EXCEEDS	2.4		23		12	

e Estimated.

11229600 FLORENCE LAKE NEAR BIG CREEK, CA

LOCATION.—Lat 37°16'20", long 118°58'17", unsurveyed, T.8 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in gatehouse of Ward Tunnel intake, 0.3 mi west of dam on South Fork San Joaquin River and 16 mi northeast of town of Big Creek.

DRAINAGE AREA.—171 mi^2.

PERIOD OF RECORD.—November 1925 to current year. Prior to October 1931, published in WSP 721. Maximum and minimum daily contents (water years 1926–39) summarized in WSP 881. Prior to 1960, maximum and minimum daily contents were published.

REVISED RECORDS.—WDR CA-78-3: 1977.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Southern California Edison Co.).

REMARKS.—Lake is formed by multiple-arch concrete dam; storage began in April 1925. Usable capacity, 64,406 acre-ft between elevations 7,220.94 ft, throat of Venturi tube in Ward Tunnel intake (station 11229500), and 7,327.50 ft, top of spillway drum gates. Additional storage of 168 acre-ft is not available for diversion. Water is diverted through Ward Tunnel to Huntington Lake (station 11236000) via Portal Powerplant (station 11235500) and used for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin River Basin. Records, including extremes, represent contents at 2400 hours.

COOPERATION.—Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 65,990 acre-ft, July 3, 1932, elevation, 7,329.14 ft; minimum occurred during period of no record, Oct. 2–4, 1926, or Nov. 30 to Dec. 2, 1927.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 64,686 acre-ft, Aug. 13, elevation, 7,327.79 ft; minimum, 1,049 acre-ft, Dec. 2, 3, elevation, 7,231.04.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Southern California Edison Co., dated Aug. 26, 1926)

7,220.94	0	7,240	2,976	7,270	17,755
7,222	63	7,245	4,66	7,280	24,588
7,225	281	7,250	6,648	7,290	31,966
7,230	887	7,255	8,950	7,310	48,284
7,235	1,774	7,260	11,608	7,330	66,826

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17794	e1083	e1156	e1125	e1164	e1197	e1233	e1750	e5902	e57722	e61634	53505
2	17198	e1078	e1049	e1130	e1183	e1198	e1232	e2039	e6501	e57517	e61720	52077
3	16895	e1074	e1049	e1130	e1202	e1198	e1225	e2358	e7878	e57349	e61805	50735
4	16600	e1069	e1223	e1124	e1217	e1197	e1216	e2699	e8799	e57182	e61900	49627
5	16300	e1068	e1166	e1122	e1235	e1188	e1209	e2850	e10295	e57016	e61995	48529
6	15994	e1064	e1170	e1127	e1244	e1187	e1205	e3099	e12495	e56849	e62357	47414
7	15697	e1066	e1180	e1130	e1235	e1188	e1202	e3251	e14995	e56664	e62719	46233
8	15395	e1064	e1180	e1127	e1248	e1185	e1197	e3200	e17198	e56211	e63082	44986
9	15095	e1057	e1181	e1127	e1269	e1188	e1207	e3001	e19495	e56192	e63446	43642
10	14797	e1066	e1178	e1129	e1266	e1200	e1226	e2600	e21495	e56183	e63810	42014
11	14495	e1066	e1170	e1130	e1260	e1214	e1228	e2001	e23696	e56165	e64175	40676
12	14196	e1073	e1166	e1144	e1237	e1223	e1230	e1900	e25699	e56156	e64532	39136
13	13898	e1085	e1163	e1142	e1217	e1209	e1212	e1700	e28695	e56137	64686	37912
14	13296	e1085	e1158	e1156	e1207	e1210	e1207	e1651	e32994	e56128	64570	36994
15	12595	e1078	e1156	e1225	e1212	e1235	e1202	e1674	e37599	e56119	64349	35892
16	11896	e1076	e1156	e1216	e1217	e1246	e1202	e1700	e40496	e56109	63973	34513
17	11197	e1085	e1156	e1207	e1212	e1267	e1209	e1750	e43760	e56590	63724	33071
18	10497	e1086	e1151	e1151	e1210	e1300	e1262	e1900	e47112	e57071	63724	31639
19	9798	e1098	e1142	e1192	e1207	e1350	e1330	e2001	e50558	e57554	63686	30217
20	9449	e1098	e1141	e1197	e1204	e1400	e1380	e2100	e54098	e58038	63542	28784
21	9106	e1096	e1134	e1190	e1204	e1430	e1499	e2199	e57778	e58514	63331	27354
22	8429	e1096	e1127	e1183	e1204	e1451	e1529	e2351	e57629	e58851	63063	25936
23	7768	e1095	e1125	e1178	e1202	e1421	e1571	e2500	e57293	e59179	62529	24389
24	6709	e1085	e1120	e1171	e1216	e1389	e1631	e2699	e57359	e59612	61672	22806
25	5327	e1093	e1110	e1168	e1228	e1350	e1641	e2833	e57424	e60045	60829	21269
26	3929	e1134	e1108	e1163	e1216	e1310	e1571	e3099	e57489	e60479	59951	19743
27	2690	e1142	e1110	e1159	e1202	e1291	e1550	e3499	e57554	e60895	59048	18220
28	e1209	e1176	e1110	e1158	e1197	e1269	e1529	e3800	e57619	e61293	58178	16767
29	e1134	e1181	e1115	e1156	---	e1260	e1571	e4199	e57684	e61378	57377	15332
30	e1112	e1168	e1117	e1168	---	e1255	e1631	e4699	e57731	e61464	56331	13850
31	e1091	---	e1120	e1166	---	e1242	---	e5100	---	e61549	54959	---
MAX	17794	1181	1223	1225	1269	1451	1641	5100	57778	61549	64686	53505
MIN	1091	1057	1049	1122	1164	1185	1197	1651	5902	56109	54959	13850
a	7231.29	7231.74	7231.46	7231.73	7231.91	7232.17	7234.27	7246.16	7320.45	7324.51	7317.45	7263.80
b	-16690	+77	-48	+46	+31	+45	+389	+3469	+52631	+3818	-6590	-41109

CAL YR 1997 b -417
WTR YR 1998 b -3931

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

11230200 HOOPER CREEK BELOW DIVERSION DAM, NEAR FLORENCE LAKE, CA

LOCATION.—Lat 37°18'21", long 118°56'59", unsurveyed, T.7 S., R.28 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 300 ft downstream from diversion dam, 0.7 mi upstream from mouth, 2.5 mi north of Florence Lake, and 17.6 mi northeast of town of Big Creek.

DRAINAGE AREA.—7.22 mi^2.

PERIOD OF RECORD.—October 1986 to current year. Prior to October 1991, published as Hooper Creek at diversion dam near Florence Lake.

GAGE.—Water-stage recorder and Parshall flume. Elevation of gage is 7,440 ft above sea level, from topographic map.

REMARKS.—Flow regulated by diversion dam 300 ft upstream. Most of the water is diverted at the diversion dam to Florence Lake (station 11229600). See schematic diagram of upper San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, 112 ft^3/s, July 17, 1995; minimum daily, 1.2 ft^3/s, Apr. 25, 1989.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	2.3	2.9	2.5	2.4	2.9	5.5	26	e26	e46	e32	4.0
2	2.6	2.3	3.0	2.5	2.7	2.9	5.4	e25	e29	e45	e32	4.0
3	2.6	2.3	3.1	2.6	3.3	3.0	5.2	23	e34	e46	e32	4.0
4	2.5	2.3	2.9	2.6	3.5	3.2	5.0	21	e32	e44	e31	4.1
5	2.5	2.3	2.8	2.9	3.3	3.0	5.0	20	35	e47	e31	4.2
6	2.4	2.3	3.0	3.1	3.2	3.0	4.9	18	39	e44	30	4.2
7	2.5	2.5	2.8	2.7	4.1	2.9	4.9	17	39	e47	28	4.1
8	2.5	2.4	3.0	2.4	3.8	2.9	4.8	17	39	e60	e26	4.1
9	2.5	2.4	4.5	2.4	3.4	3.0	5.1	17	37	e68	e22	8.3
10	2.9	2.5	3.9	2.5	3.1	3.4	5.2	17	38	e65	17	11
11	3.0	2.7	3.2	2.5	3.0	3.7	5.1	16	38	e62	5.3	8.0
12	3.0	2.5	2.8	2.5	3.0	3.8	5.2	16	38	e58	5.4	5.6
13	2.9	2.6	2.6	2.7	3.0	3.6	5.1	15	38	e54	5.1	4.8
14	2.9	2.7	2.7	2.6	3.0	3.6	5.0	14	e42	e52	4.7	6.4
15	2.8	2.7	2.7	3.4	3.2	4.3	4.9	14	e48	e48	4.7	6.8
16	2.7	2.8	2.7	3.1	3.1	4.8	5.0	14	58	e47	5.0	3.9
17	2.6	2.8	2.6	2.9	3.1	5.2	5.3	14	52	e46	4.8	4.0
18	2.6	2.7	2.6	2.7	3.0	5.8	6.4	e14	53	e43	e4.8	4.0
19	2.5	2.9	2.6	2.8	2.9	6.3	7.9	e15	e55	e41	e4.9	4.0
20	2.5	2.6	2.7	3.3	3.1	6.5	10	16	e63	e39	5.1	4.0
21	2.6	2.6	2.5	3.3	3.0	6.5	13	15	e61	e41	5.0	4.0
22	2.5	2.7	2.6	2.7	3.1	6.8	e14	e15	e58	e43	e4.8	3.8
23	2.5	2.6	2.7	2.6	3.0	8.8	e14	e16	e55	e45	e4.7	3.7
24	2.5	2.5	2.6	2.5	3.3	8.8	14	e17	e53	e48	4.8	3.8
25	2.5	2.6	2.2	2.5	3.1	7.7	13	e18	e56	e46	4.7	4.0
26	2.4	2.6	1.8	2.5	3.0	7.5	e14	e20	e54	e41	4.1	4.0
27	2.4	3.7	1.9	2.5	2.9	6.9	e15	e19	e52	e41	4.0	4.0
28	2.4	3.7	2.4	2.4	3.0	6.5	e18	e20	e49	e40	4.0	4.0
29	2.4	3.0	2.5	2.5	---	6.3	e20	e21	e51	e39	4.0	4.1
30	2.4	2.9	2.5	2.6	---	5.9	e24	e22	e48	e37	4.0	4.0
31	2.3	---	2.5	2.5	---	5.6	---	e25	---	e34	4.0	---
TOTAL	80.0	79.5	85.3	83.3	87.6	155.1	269.9	557	1370	1457	378.9	142.9
MEAN	2.58	2.65	2.75	2.69	3.13	5.00	9.00	18.0	45.7	47.0	12.2	4.76
MAX	3.0	3.7	4.5	3.4	4.1	8.8	24	26	63	68	32	11
MIN	2.3	2.3	1.8	2.4	2.4	2.9	4.8	14	26	34	4.0	3.7
AC-FT	159	158	169	165	174	308	535	1100	2720	2890	752	283

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

MEAN	2.64	2.50	2.38	2.90	2.70	3.89	6.78	10.8	15.8	15.0	5.27	2.85
MAX	4.75	3.58	3.56	10.2	5.14	8.03	18.8	60.9	45.7	68.3	18.8	4.76
(WY)	1996	1996	1996	1997	1997	1997	1997	1997	1998	1995	1995	1998
MIN	1.68	1.82	1.59	1.55	1.55	2.10	3.07	2.50	2.46	2.66	2.32	1.91
(WY)	1991	1991	1989	1991	1991	1990	1996	1991	1989	1989	1989	1990

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998	
ANNUAL TOTAL	4649.0		4746.5			
ANNUAL MEAN	12.7		13.0		6.14	
HIGHEST ANNUAL MEAN					15.6	1995
LOWEST ANNUAL MEAN					2.42	1991
HIGHEST DAILY MEAN	86	May 6	68	Jul 9	112	Jul 17 1995
LOWEST DAILY MEAN	1.8	Dec 26	1.8	Dec 26	1.2	Apr 25 1989
ANNUAL SEVEN-DAY MINIMUM	2.3	Dec 25	2.3	Dec 25	1.3	Oct 10 1990
ANNUAL RUNOFF (AC-FT)	9220		9410		4450	
10 PERCENT EXCEEDS	41		43		7.5	
50 PERCENT EXCEEDS	4.6		4.0		2.9	
90 PERCENT EXCEEDS	2.5		2.5		1.8	

e Estimated.

11230500 BEAR CREEK NEAR LAKE THOMAS A. EDISON, CA

LOCATION.—Lat 37°20'22", long 118°58'21", unsurveyed, T.7 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 0.2 mi upstream from diversion dam, 1.7 mi upstream from mouth, 2.1 mi south of Lake Thomas A. Edison, and 2.4 mi northeast of Mono Hot Springs.

DRAINAGE AREA.—52.5 mi^2.

PERIOD OF RECORD.—October 1921 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1954, published as "near Vermilion Valley."

REVISED RECORDS.—WSP 611: 1922(M). WSP 1345: 1931–35. WSP 1515: 1922–30. WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 7,366.94 ft above sea level (levels by Southern California Edison Co.).

REMARKS.—No storage or diversion upstream from station. See schematic diagram of upper San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, 3,660 ft^3/s, Sept. 26, 1982, gage height, 8.35 ft, from rating curve extended above 570 ft^3/s; minimum daily, 1.2 ft^3/s, Sept. 29 to Oct. 5, 1924.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	11	26	e17	e24	e29	39	244	285	780	282	99
2	23	11	23	e18	e26	e29	41	232	303	846	296	93
3	23	10	20	e19	e33	e30	38	207	302	795	321	99
4	22	10	18	e17	e37	e29	37	176	217	723	327	102
5	21	10	16	e18	e42	28	36	154	233	700	337	136
6	20	9.8	22	e18	e42	27	33	123	316	681	346	161
7	19	11	27	e17	e38	e27	34	114	341	703	326	131
8	18	11	24	e17	e43	26	33	113	337	806	305	114
9	18	11	28	e17	e48	27	33	138	283	888	254	106
10	19	13	31	e17	e45	28	37	138	299	815	224	99
11	22	13	e26	e19	e37	32	40	130	274	680	227	81
12	21	14	e25	e20	e33	35	37	115	281	694	254	73
13	22	14	e25	e21	e31	34	35	96	297	711	255	64
14	21	15	e23	e25	e30	31	34	83	448	683	248	58
15	21	15	e25	e25	e34	36	34	95	672	668	222	54
16	20	13	e25	e32	e35	42	34	110	777	733	197	52
17	19	15	e24	e34	e34	43	33	89	643	796	175	51
18	18	14	e22	e30	e33	51	38	106	685	810	157	48
19	17	15	e20	e26	e31	59	59	132	761	723	141	45
20	16	17	e20	e31	e32	67	93	140	795	670	123	41
21	16	16	e19	e30	e31	66	145	107	780	852	107	39
22	16	15	e18	e28	e32	66	182	114	738	782	95	37
23	15	15	e17	e26	e33	86	169	144	687	813	87	35
24	15	15	e16	e25	e36	79	121	153	717	743	84	33
25	13	14	e16	e25	e36	61	110	189	774	606	87	32
26	14	e15	e15	e24	e32	60	112	143	744	482	90	32
27	13	e16	e15	e24	e30	58	144	120	706	420	85	33
28	12	e30	e15	e24	e29	51	176	137	763	433	81	31
29	13	35	e17	e23	---	49	212	152	814	459	83	30
30	13	29	e17	e25	---	47	242	156	787	400	94	32
31	12	---	e17	e25	---	41	---	220	---	313	107	---
TOTAL	555	452.8	652	717	967	1374	2411	4370	16059	21208	6017	2041
MEAN	17.9	15.1	21.0	23.1	34.5	44.3	80.4	141	535	684	194	68.0
MAX	23	35	31	34	48	86	242	244	814	888	346	161
MIN	12	9.8	15	17	24	26	33	83	217	313	81	30
AC-FT	1100	898	1290	1420	1920	2730	4780	8670	31850	42070	11930	4050

e Estimated.

11230500 BEAR CREEK NEAR LAKE THOMAS A. EDISON, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	15.0	15.4	19.8	22.7	23.7	33.2	87.1	252	349	208	67.6	28.8
MAX	62.2	56.1	71.2	107	61.0	79.8	172	586	740	747	349	260
(WY)	1983	1951	1956	1997	1986	1986	1926	1969	1983	1995	1983	1982
MIN	2.71	3.10	4.86	4.50	5.80	9.00	33.1	71.3	42.2	12.2	3.15	1.63
(WY)	1925	1930	1930	1924	1991	1924	1975	1977	1924	1924	1924	1924

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1922 - 1998	
ANNUAL TOTAL	42429.8		56823.8			
ANNUAL MEAN	116		156		93.8	
HIGHEST ANNUAL MEAN					201	1983
LOWEST ANNUAL MEAN					29.2	1924
HIGHEST DAILY MEAN	1060	Jan 2	888	Jul 9	2610	Sep 26 1982
LOWEST DAILY MEAN	9.8	Nov 6	9.8	Nov 6	1.2	Sep 29 1924
ANNUAL SEVEN-DAY MINIMUM	10	Nov 1	10	Nov 1	1.2	Sep 29 1924
INSTANTANEOUS PEAK FLOW			1120	Jul 8	3660	Sep 26 1982
INSTANTANEOUS PEAK STAGE			6.13	Jul 8	8.35	Sep 26 1982
ANNUAL RUNOFF (AC-FT)	84160		112700		67940	
10 PERCENT EXCEEDS	331		675		294	
50 PERCENT EXCEEDS	43		38		30	
90 PERCENT EXCEEDS	16		16		7.0	

11230520 BEAR CREEK CONDUIT NEAR LAKE THOMAS A. EDISON, CA

LOCATION.—Lat 37°20'10", long 118°58'28", unsurveyed, T.7 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank at diversion dam, 2.2 mi northeast of Mono Hot Springs, and 2.5 mi south of Lake Thomas A. Edison.

PERIOD OF RECORD.—October 1986 to current year.

GAGE.—Discharge computed as difference between flows at Bear Creek near Lake Thomas A. Edison (station 11230500) and Bear Creek below diversion dam (station 11230530). Datum of conduit invert, 7,340 ft above sea level (levels by Southern California Edison Co.).

REMARKS.—Conduit diverts at diversion dam on Bear Creek to Ward Tunnel and Huntington Lake (station 11236000) via Portal Powerplant (station 11235500) for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, 465 ft^3/s, June 4, 1996; no flow at times in most years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	8.8	24	14	21	26	36	241	243	e5.0	e5.0	96
2	20	8.7	21	15	23	26	38	229	256	e5.0	e5.0	90
3	21	7.7	18	16	30	27	35	204	262	e5.0	e84	96
4	20	7.8	16	15	34	26	34	173	214	e5.0	219	99
5	19	7.8	14	16	39	25	33	151	230	e5.0	222	133
6	18	7.6	20	16	39	24	30	120	275	e5.0	248	158
7	17	8.8	25	15	35	24	31	111	272	e5.0	252	128
8	16	8.8	22	15	40	23	30	110	269	e5.0	228	111
9	16	8.8	26	15	45	24	30	135	274	e5.0	225	103
10	17	11	29	15	42	25	34	135	296	e5.0	216	96
11	20	11	24	17	34	29	37	127	271	e5.0	224	78
12	19	12	23	18	30	32	34	112	278	e5.0	242	70
13	20	12	22	19	28	31	32	93	285	e5.0	238	61
14	19	13	21	23	27	28	31	80	376	e5.0	245	55
15	19	13	22	23	31	32	31	92	413	e5.0	219	51
16	18	11	22	29	32	38	31	107	421	e5.0	194	49
17	17	13	21	31	31	39	30	86	e212	e5.0	172	48
18	16	12	20	27	30	48	35	103	e5.0	e5.0	154	45
19	15	13	18	24	28	56	56	129	e5.0	e5.0	138	42
20	14	15	18	29	29	64	90	137	e5.0	e5.0	120	38
21	14	14	17	28	28	63	142	104	e5.0	e5.0	104	36
22	14	13	16	25	29	63	179	111	e5.0	e5.0	92	34
23	13	13	15	23	30	83	166	141	e5.0	e5.0	84	32
24	13	13	14	22	33	76	118	150	e5.0	e5.0	81	30
25	11	12	14	22	33	58	107	186	e5.0	e5.0	84	29
26	12	13	13	21	29	57	109	140	e5.0	e5.0	87	29
27	11	14	13	21	27	55	141	117	e5.0	e5.0	82	30
28	9.5	28	13	21	26	48	173	134	e5.0	e5.0	78	28
29	11	33	14	20	---	46	209	149	e5.0	e5.0	80	27
30	11	27	14	22	---	44	239	153	e5.0	e5.0	91	29
31	9.8	---	14	22	---	38	---	212	---	e5.0	104	---
TOTAL	490.3	390.8	583	639	883	1278	2321	4272	4912.0	155.0	4617.0	1951
MEAN	15.8	13.0	18.8	20.6	31.5	41.2	77.4	138	164	5.00	149	65.0
MAX	21	33	29	31	45	83	239	241	421	5.0	252	158
MIN	9.5	7.6	13	14	21	23	30	80	5.0	5.0	5.0	27
AC-FT	973	775	1160	1270	1750	2530	4600	8470	9740	307	9160	3870

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

MEAN	13.9	12.8	12.5	18.4	18.0	32.3	90.4	189	167	70.0	53.5	23.7
MAX	45.3	26.5	32.5	50.8	41.3	52.4	138	345	326	168	181	84.1
(WY)	1995	1995	1997	1997	1996	1995	1989	1997	1991	1996	1995	1995
MIN	3.23	3.68	3.23	3.46	.000	.000	43.2	59.2	.000	.000	10.6	4.53
(WY)	1989	1991	1991	1991	1997	1997	1991	1995	1995	1995	1989	1987

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998	
ANNUAL TOTAL	29300.10		22492.1			
ANNUAL MEAN	80.3		61.6		58.4	
HIGHEST ANNUAL MEAN					82.3	1997
LOWEST ANNUAL MEAN					49.2	1990
HIGHEST DAILY MEAN	458	May 30	421	Jun 16	465	Jun 4 1996
LOWEST DAILY MEAN	.00	Jan 9	5.0	Jun 18	.00	Oct 18 1988
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 9	5.0	Jun 18	.00	May 18 1995
ANNUAL RUNOFF (AC-FT)	58120		44610		42330	
10 PERCENT EXCEEDS	292		189		190	
50 PERCENT EXCEEDS	20		28		22	
90 PERCENT EXCEEDS	.00		5.0		3.2	

e Estimated.

11230530 BEAR CREEK BELOW DIVERSION DAM, NEAR LAKE THOMAS A. EDISON, CA

LOCATION.—Lat 37°20'08", long 118°58'29", unsurveyed, T.7 S, R.27 E, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 60 ft downstream from diversion dam, 2.5 mi south of Lake Thomas A. Edison, and 18.3 mi east of town of Big Creek.

DRAINAGE AREA.—52.8 mi^2.

PERIOD OF RECORD.—October 1986 to current year. Prior to October 1991, published as "at Diversion Dam."

GAGE.—Water-stage recorder, Parshall flume, and concrete control. Datum of gage is 7,338.30 ft above sea level (levels by Southern California Edison Co.).

REMARKS.—Low and medium flow regulated at diversion dam. Most of the flow is diverted at the diversion dam to Bear Creek Conduit (station 11230520), then to Ward Tunnel and Huntington Lake (station 11236000) via Portal Powerplant (station 11235500) for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, 1,730 ft^3/s, July 9, 1995, gage height, 14.75 ft; minimum daily, 0.94 ft^3/s, Oct. 15, 1987.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	2.2	2.4	2.5	2.5	2.7	2.9	3.2	42	763	282	3.4
2	2.9	2.3	2.4	2.5	2.5	2.8	3.0	3.2	47	818	302	3.4
3	2.5	2.3	2.4	2.5	2.5	2.9	3.0	3.2	40	778	237	3.4
4	2.5	2.2	2.4	2.4	2.5	2.8	2.9	3.2	3.5	721	108	3.4
5	2.5	2.2	2.5	2.4	2.6	2.8	2.9	3.2	3.4	703	115	3.4
6	2.5	2.2	2.5	2.4	2.5	2.8	2.8	3.1	41	687	98	3.4
7	2.4	2.2	2.5	2.4	2.5	2.8	2.8	3.1	69	703	74	3.4
8	2.4	2.2	2.4	2.4	2.5	2.9	2.8	3.1	68	793	77	3.4
9	2.4	2.2	2.4	2.4	2.5	2.9	2.8	3.1	9.1	863	29	3.3
10	2.4	2.2	2.4	2.4	2.6	2.9	2.8	3.1	3.4	811	8.5	3.3
11	2.4	2.2	2.4	2.4	2.6	3.0	2.8	3.1	3.4	699	3.4	3.3
12	2.4	2.2	2.4	2.4	2.6	3.0	2.8	3.1	3.4	712	12	3.3
13	2.4	2.2	2.5	2.4	2.6	3.3	2.8	3.1	12	725	17	3.3
14	2.4	2.2	2.4	2.4	2.6	3.4	2.8	3.1	72	700	3.3	3.2
15	2.4	2.2	2.5	2.4	2.5	3.6	2.8	3.1	259	689	3.3	3.3
16	2.4	2.2	2.5	2.5	2.5	3.7	2.8	3.1	356	741	3.3	3.5
17	2.4	2.2	2.5	2.5	2.5	3.6	2.8	3.1	431	793	3.3	3.5
18	2.4	2.3	2.4	2.5	2.5	3.5	2.8	3.1	670	802	3.4	3.5
19	2.4	2.4	2.4	2.4	2.5	3.5	2.8	3.1	729	731	3.4	3.5
20	2.4	2.4	2.4	2.4	2.5	3.3	2.8	3.2	756	690	3.4	3.5
21	2.4	2.4	2.4	2.4	2.5	3.2	2.8	3.3	753	846	3.4	3.5
22	2.4	2.4	2.4	2.5	2.5	3.1	3.0	3.3	716	785	3.4	3.5
23	2.4	2.4	2.4	2.5	2.5	2.9	3.2	3.3	679	796	3.3	3.5
24	2.4	2.4	2.4	2.6	2.5	2.9	3.1	3.3	704	740	3.4	3.5
25	2.5	2.4	2.4	2.6	2.5	2.9	3.1	3.3	747	621	3.4	3.5
26	2.5	2.4	2.4	2.6	2.5	2.9	3.1	3.3	717	505	3.4	3.5
27	2.5	2.4	2.4	2.6	2.6	2.9	3.1	3.3	687	450	3.4	3.5
28	2.5	2.4	2.4	2.6	2.7	2.8	3.1	3.3	739	461	3.4	3.5
29	2.4	2.4	2.5	2.6	---	2.9	3.2	3.3	790	488	3.4	3.5
30	2.2	2.4	2.6	2.6	---	2.9	3.2	3.3	769	426	3.4	3.5
31	2.2	---	2.5	2.6	---	2.9	---	8.2	---	323	3.4	---
TOTAL	76.0	68.7	75.5	76.8	70.9	94.5	87.6	103.8	10919.2	21363	1423.6	102.7
MEAN	2.45	2.29	2.44	2.48	2.53	3.05	2.92	3.35	364	689	45.9	3.42
MAX	3.1	2.4	2.6	2.6	2.7	3.7	3.2	8.2	790	863	302	3.5
MIN	2.2	2.2	2.4	2.4	2.5	2.7	2.8	3.1	3.4	323	3.3	3.2
AC-FT	151	136	150	152	141	187	174	206	21660	42370	2820	204

11230530 BEAR CREEK BELOW DIVERSION DAM, NEAR LAKE THOMAS A. EDISON, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2.29	2.14	2.72	6.42	3.46	6.84	9.52	26.9	131	138	16.6	3.92
MAX	4.11	6.16	12.5	55.8	20.4	59.8	67.1	121	555	747	109	11.1
(WY)	1996	1996	1996	1997	1997	1997	1997	1995	1995	1995	1995	1996
MIN	1.33	1.38	1.41	1.48	1.35	1.48	1.42	2.57	2.43	2.25	2.25	2.44
(WY)	1988	1990	1993	1995	1995	1988	1990	1991	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998	
ANNUAL TOTAL	13415.0		34462.3			
ANNUAL MEAN	36.8		94.4		29.4	
HIGHEST ANNUAL MEAN					131	1995
LOWEST ANNUAL MEAN					1.98	1990
HIGHEST DAILY MEAN	625	Jun 1	863	Jul 9	1420	Jul 9 1995
LOWEST DAILY MEAN	2.0	Jan 7	2.2	Oct 30	.94	Oct 15 1987
ANNUAL SEVEN-DAY MINIMUM	2.2	Nov 4	2.2	Nov 4	1.0	Nov 5 1992
INSTANTANEOUS PEAK FLOW			1060	Jul 8	1730	Jul 9 1995
INSTANTANEOUS PEAK STAGE			13.99	Jul 8	14.75	Jul 9 1995
ANNUAL RUNOFF (AC-FT)	26610		68360		21310	
10 PERCENT EXCEEDS	92		674		11	
50 PERCENT EXCEEDS	3.4		2.9		2.4	
90 PERCENT EXCEEDS	2.4		2.4		1.5	

11230560 CHINQUAPIN CREEK BELOW DIVERSION DAM, NEAR BIG CREEK, CA

LOCATION.—Lat 37°18'26", long 119°01'08", unsurveyed, T.7 S, R.27 E, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, 30 ft downstream from diversion dam to Ward Tunnel, 0.7 mi upstream from mouth, 1.7 mi south of Mono Hot Springs, and 14.0 mi northeast of town of Big Creek.

DRAINAGE AREA.—1.65 mi^2.

PERIOD OF RECORD.—October 1986 to current year. Prior to October 1991 published as "at Diversion Dam."

GAGE.—Water-stage recorder and 90° V-notch weir control. Elevation of gage is 7,260 ft above sea level, from topographic map.

REMARKS.—Records of fishery release normally computed only during periods of diversion to Ward Tunnel. See schematic diagram of upper San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

NOTE.—No diversion during 1998 water year.

11230600 CAMP 62 CREEK BELOW DIVERSION DAM, NEAR BIG CREEK, CA

LOCATION.—Lat 37°18'32", long 119°01'37", unsurveyed, T.7 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 30 ft downstream from diversion dam, 1.4 mi southwest of Mono Hot Springs, and 13.5 mi northeast of town of Big Creek.

DRAINAGE AREA.—1.97 mi^2.

PERIOD OF RECORD.—October 1986 to current year. Prior to October 1991 published as "at Diversion Dam."

GAGE.—Water-stage recorder and 90° V-notch weir control. Elevation of gage is 7,320 ft above sea level, from topographic map.

REMARKS.—Records of fishery release normally are computed only during periods of diversion to Ward Tunnel. Flow over the spillway bypasses this station. Discharge represents the combined flow of spill and or release from diversion dam. See schematic diagram of upper San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

NOTE.—No diversion during 1998 water year.

11230670 BOLSILLO CREEK BELOW DIVERSION DAM, NEAR BIG CREEK, CA

LOCATION.—Lat 37°18'43", long 119°02'23", unsurveyed, T.7 S, R.27 E, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, 50 ft downstream from diversion dam, 1.5 mi upstream from mouth, 1.7 mi southwest of Mono Hot Springs, and 13.3 mi northeast of town of Big Creek.

DRAINAGE AREA.—1.40 mi^2.

PERIOD OF RECORD.—October 1986 to current year.

GAGE.—Water-stage recorder and 90° V-notch weir control. Elevation of gage is 7,600 ft above sea level, from topographic map.

REMARKS.—Records of fishery release normally computed only during periods of diversion to Ward Tunnel. Diversion during the current water year occurred May 24, 25, 27, 28, 31, and June 1 to July 25. See schematic diagram of upper San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison Co., 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 1997 TO SEPTEMBER 1998

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	7.0	9.0	---	---
2	---	---	---	---	---	---	---	---	e7.0	10	---	---
3	---	---	---	---	---	---	---	---	e4.5	8.0	---	---
4	---	---	---	---	---	---	---	---	e4.0	7.0	---	---
5	---	---	---	---	---	---	---	---	e5.0	7.0	---	---
6	---	---	---	---	---	---	---	---	e7.0	7.0	---	---
7	---	---	---	---	---	---	---	---	e6.6	7.0	---	---
8	---	---	---	---	---	---	---	---	e6.6	7.0	---	---
9	---	---	---	---	---	---	---	---	e8.6	7.0	---	---
10	---	---	---	---	---	---	---	---	e6.6	5.0	---	---
11	---	---	---	---	---	---	---	---	e5.7	4.0	---	---
12	---	---	---	---	---	---	---	---	e5.0	5.0	---	---
13	---	---	---	---	---	---	---	---	e7.0	4.0	---	---
14	---	---	---	---	---	---	---	---	e8.0	4.4	---	---
15	---	---	---	---	---	---	---	---	e12	8.0	---	---
16	---	---	---	---	---	---	---	---	e10	8.7	---	---
17	---	---	---	---	---	---	---	---	e8.0	9.2	---	---
18	---	---	---	---	---	---	---	---	e10	9.4	---	---
19	---	---	---	---	---	---	---	---	e10	9.7	---	---
20	---	---	---	---	---	---	---	---	e11	9.4	---	---
21	---	---	---	---	---	---	---	---	e11	9.2	---	---
22	---	---	---	---	---	---	---	---	e10	9.8	---	---
23	---	---	---	---	---	---	---	---	e10	8.5	---	---
24	---	---	---	---	---	---	---	7.8	e10	8.8	---	---
25	---	---	---	---	---	---	---	6.6	e9.0	8.0	---	---
26	---	---	---	---	---	---	---	---	8.0	---	---	---
27	---	---	---	---	---	---	---	4.4	8.0	---	---	---
28	---	---	---	---	---	---	---	4.6	9.0	---	---	---
29	---	---	---	---	---	---	---	---	9.0	---	---	---
30	---	---	---	---	---	---	---	---	9.0	---	---	---
31	---	---	---	---	---	---	---	8.8	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	242.6	---	---	---
MEAN	---	---	---	---	---	---	---	---	8.09	---	---	---
MAX	---	---	---	---	---	---	---	---	12	---	---	---
MIN	---	---	---	---	---	---	---	---	4.0	---	---	---
AC-FT	---	---	---	---	---	---	---	---	481	---	---	---

e Estimated.

11231000 LAKE THOMAS A. EDISON NEAR BIG CREEK, CA

LOCATION.—Lat 37°22'09", long 118°59'17", unsurveyed, T.6 1/2 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in outlet works of Vermillion Valley Dam on Mono Creek 18.1 mi northeast of town of Big Creek.

DRAINAGE AREA.—90.0 mi^2.

PERIOD OF RECORD.—October 1954 to current year. Prior to 1960, maximum and minimum daily contents were published.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Southern California Edison Co.).

REMARKS.—Lake is formed by earthfill dam; dam completed and storage began Oct. 12, 1954. Usable capacity, 125,035 acre-ft between elevations 7,508.9 ft, invert of outlet works, and 7,642.50 ft, top of gates in service spillway. Water is diverted at times into lake from Warm Creek (station 11231700). Water is released for diversion to Ward Tunnel via Mono Creek Conduit (station 11231550). Records, including extremes, represent contents at 2400 hours. See schematic diagram of upper San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 125,983 acre-ft, Sept. 26, 1982, elevation, 7,643.55 ft; minimum since appreciable storage was attained, 4,553 acre-ft, Dec. 27, 1987, elevation, 7,552.07 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 124,887 acre-ft, Aug. 19, elevation, 7,642.42 ft; minimum, 5,694 acre-ft, Apr. 15, 16, elevation, 7,554.21 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Southern California Edison Co., dated July 22, 1955)

7,550	3,567	7,580	28,515	7,620	85,006
7,555	6,147	7,590	40,454	7,630	102,367
7,560	9,521	7,600	53,769	7,640	120,424
7,570	18,137	7,610	68,616	7,644	127,820

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80043	61428	45384	37419	23775	17101	6444	10411	18175	72706	123463	121086
2	78432	60627	45122	36963	23524	16453	6371	11134	18877	75279	123371	121141
3	77607	59817	44860	36510	23377	15840	6292	11851	19872	77953	123408	121196
4	76800	58953	44611	36058	23156	15081	6195	12468	20387	80410	123574	121270
5	75933	58122	44453	35534	22970	14308	6101	13010	20956	82691	123777	121454
6	75083	57270	44257	35015	22877	13617	6004	13454	21838	85074	124109	121656
7	74256	56464	44114	34520	22712	12984	5946	13879	22743	87477	124387	121785
8	73413	55622	43920	34017	22567	12326	5929	14281	23597	90204	124294	121877
9	72609	54771	43660	33553	22350	11688	5877	14670	24706	92918	124054	121987
10	71853	53995	43413	33101	22164	11029	5854	15090	26036	95437	123851	122006
11	71008	53169	43154	32667	21940	10395	5831	15331	27277	97728	123906	122042
12	70243	52333	42921	32268	21747	9791	5803	15440	28449	99751	124017	122042
13	69453	51574	42703	31789	21523	9187	5785	15440	29546	101942	124183	122042
14	69042	50709	42523	31374	21401	8559	5745	15394	31016	103273	124424	122042
15	68742	49904	42304	31108	21178	7981	5694	15358	33007	104554	124591	122042
16	68335	49064	42073	30659	20946	7387	5694	15376	35340	106018	124720	122006
17	67725	48565	41842	30216	20737	6830	5699	15322	37505	108005	124794	121877
18	67162	48362	41586	29841	20507	6535	5728	15295	39799	110379	124831	121748
19	66559	48161	41319	29401	20337	6486	5797	15367	42317	112275	124887	121583
20	65941	47880	41077	28963	20118	6462	5757	15476	44925	114106	124646	121454
21	65309	47626	40823	28515	19960	6444	5843	15549	47546	116581	124535	121307
22	64668	47318	40568	28083	19735	6432	6553	15631	50190	118683	124387	121160
23	64424	47064	40316	27640	19578	6480	6919	15777	52611	120479	124220	120994
24	64378	46798	40101	27168	19333	6571	7233	15959	55011	121527	123814	120902
25	64363	46573	39825	26709	19098	6620	7501	16259	57487	122208	123278	120700
26	64210	46573	39560	26262	18867	6632	7785	16472	59949	122669	122725	120534
27	64027	46335	39308	25852	18435	6632	8133	16620	62397	122909	122226	120406
28	63468	46110	39070	25378	17779	6638	8559	16824	64851	123204	121877	120241
29	62713	45885	38846	25004	---	6589	9083	17064	67491	123481	121564	120094
30	61905	45646	38435	24557	---	6541	9729	17279	70084	123611	121233	119984
31	61652	---	37924	24111	---	6498	---	17637	---	123592	121068	---
MAX	80043	61428	45384	37419	23775	17101	9729	17637	70084	123611	124887	122042
MIN	61652	45646	37924	24111	17779	6432	5694	10411	18175	72706	121068	119984
a	7605.45	7594.02	7587.98	7575.94	7569.62	7555.58	7560.27	7569.47	7610.93	7641.72	7640.35	7639.76
b	-18391	-16006	-7722	-13813	-6332	-11281	+3231	+7908	+52447	+53508	-2524	-1084

CAL YR 1997 b -32797
WTR YR 1998 b +39941

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

11231500 MONO CREEK BELOW LAKE THOMAS A. EDISON, CA

LOCATION.—Lat 37°21'41", long 118°59'28", unsurveyed, T.6 1/2 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 0.5 mi upstream from diversion dam, 0.9 mi downstream from Vermilion Valley Dam, and 1.0 mi south of Lake Thomas A. Edison.

DRAINAGE AREA.—92.5 mi^2.

PERIOD OF RECORD.—October 1921 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1954, published as "near Vermilion Valley."

REVISED RECORDS.—WSP 1011: 1943. WSP 1515: 1956. WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 7,380 ft above sea level, from topographic map.

REMARKS.—Flow regulated by Lake Thomas A. Edison (station 11231000) 1 mi upstream beginning Oct. 12, 1954. Water is diverted at times into the basin from Warm Creek (station 11231700) to Lake Thomas A. Edison. See schematic diagram of upper San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, 2,160 ft^3/s, Sept. 26, 1982, gage height, 8.87 ft; minimum daily, 0.3 ft^3/s, Nov. 11, 12, 1954.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	450	125	155	264	261	389	123	85	265	42	510	99
2	450	421	152	268	232	387	123	85	261	42	507	95
3	450	431	150	268	166	385	123	84	246	42	418	97
4	448	445	150	271	166	439	123	83	243	42	360	99
5	445	445	150	271	166	492	122	82	244	42	343	99
6	445	445	147	275	168	400	121	82	250	42	262	99
7	445	445	147	274	169	398	95	82	250	42	298	99
8	445	445	150	271	169	395	82	82	248	42	471	99
9	442	445	150	271	169	392	83	82	156	42	471	99
10	440	445	147	271	169	386	84	82	93	42	426	99
11	440	450	147	271	169	384	84	185	96	42	292	99
12	438	450	147	272	153	382	84	252	97	42	292	99
13	435	445	145	274	163	378	84	252	96	161	233	99
14	254	445	145	271	165	374	84	248	99	437	199	99
15	178	445	145	271	166	369	84	248	101	437	199	99
16	201	445	145	271	166	367	79	248	101	373	199	118
17	318	298	142	268	166	360	65	248	73	133	199	131
18	313	155	140	268	166	248	65	249	46	23	199	131
19	323	155	140	268	166	123	65	252	46	96	271	131
20	329	158	140	268	166	121	65	253	46	114	304	131
21	329	158	140	268	166	121	67	252	46	97	221	130
22	338	158	140	266	166	121	70	252	45	60	221	128
23	151	158	140	264	166	121	72	255	44	168	221	128
24	24	158	140	264	166	121	72	256	44	441	327	128
25	24	158	137	264	166	123	72	259	43	465	414	128
26	104	158	137	263	166	123	72	257	43	479	414	128
27	109	160	137	261	288	123	74	255	43	487	386	128
28	263	158	137	261	392	123	77	256	43	495	319	128
29	421	155	137	261	---	123	80	259	43	502	319	128
30	432	155	223	261	---	123	84	259	43	507	319	128
31	150	---	264	261	---	123	---	260	---	512	197	---
TOTAL	10034	9114	4666	8300	5157	8514	2578	6084	3494	6491	9811	3403
MEAN	324	304	151	268	184	275	85.9	196	116	209	316	113
MAX	450	450	264	275	392	492	123	260	265	512	510	131
MIN	24	125	137	261	153	121	65	82	43	23	197	95
AC-FT	19900	18080	9260	16460	10230	16890	5110	12070	6930	12870	19460	6750

11231500 MONO CREEK BELOW LAKE THOMAS A. EDISON, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1954, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	24.4	29.4	31.4	33.3	39.8	59.4	170	457	548	270	79.6	31.3
MAX	60.8	124	127	76.8	74.4	94.8	282	714	1135	672	233	86.6
(WY)	1946	1951	1951	1951	1951	1934	1926	1952	1938	1938	1938	1938
MIN	11.3	10.5	12.0	14.0	17.0	25.0	77.8	197	79.6	36.6	17.6	11.5
(WY)	1925	1930	1931	1949	1949	1924	1948	1933	1924	1924	1924	1924

SUMMARY STATISTICS	WATER YEARS 1922 - 1954		
ANNUAL MEAN	148		
HIGHEST ANNUAL MEAN	268		1938
LOWEST ANNUAL MEAN	52.8		1924
HIGHEST DAILY MEAN	1550	Jun 3	1938
LOWEST DAILY MEAN	8.0	Sep 29	1924
ANNUAL SEVEN-DAY MINIMUM	8.1	Sep 28	1924
INSTANTANEOUS PEAK FLOW	1760	Jun 2	1938
INSTANTANEOUS PEAK STAGE	8.62	Jun 2	1938
ANNUAL RUNOFF (AC-FT)	107300		
10 PERCENT EXCEEDS	470		
50 PERCENT EXCEEDS	48		
90 PERCENT EXCEEDS	18		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	100	161	201	212	212	189	129	70.3	87.4	209	226	176
MAX	324	423	437	467	472	479	647	515	577	684	414	450
(WY)	1998	1994	1968	1984	1973	1973	1983	1983	1969	1995	1983	1994
MIN	11.0	12.1	9.05	9.95	10.4	13.8	12.7	12.7	11.5	12.1	12.2	14.0
(WY)	1972	1982	1991	1991	1991	1990	1966	1966	1977	1977	1981	1966

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1956 - 1998	
ANNUAL TOTAL	97762		77646			
ANNUAL MEAN	268		213		164	
HIGHEST ANNUAL MEAN					366	1983
LOWEST ANNUAL MEAN					53.2	1977
HIGHEST DAILY MEAN	917	Jun 21	512	Jul 31	2080	Sep 26 1982
LOWEST DAILY MEAN	24	Oct 24	23	Jul 18	4.1	Dec 12 1990
ANNUAL SEVEN-DAY MINIMUM	25	Jan 7	42	Jul 1	4.2	Dec 12 1990
INSTANTANEOUS PEAK FLOW			528	Mar 5	2160	Sep 26 1982
INSTANTANEOUS PEAK STAGE			6.57	Mar 5	8.87	Sep 26 1982
ANNUAL RUNOFF (AC-FT)	193900		154000		119100	
10 PERCENT EXCEEDS	476		440		426	
50 PERCENT EXCEEDS	264		166		100	
90 PERCENT EXCEEDS	25		72		14	

11231550 MONO CREEK CONDUIT NEAR MONO HOT SPRINGS, CA

LOCATION.—Lat 37°21'36", long 118°59'51", unsurveyed, T.6 1/2 S, R.27 E, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 40 ft upstream from diversion dam, 1.0 mi southwest of Lake Thomas A. Edison, and 2.5 mi northeast of Mono Hot Springs.

PERIOD OF RECORD.—October 1986 to current year.

GAGE.—Discharge computed as difference between flow at Mono Creek below Lake Thomas A. Edison (station 11231500) and Mono Creek below diversion dam (station 11231600). Datum of conduit invert is 7,338 ft above sea level (levels by Southern California Edison Co.).

REMARKS.—Conduit diverts at diversion dam on Mono Creek to Ward Tunnel and Huntington Lake (station 11236000) via Portal Powerplant (station 11235500) for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, 499 ft^3/s, Apr. 7, 1995; minimum daily, –18 ft^3/s, June 11, 1993 (reverse flow from Bear Creek Conduit).

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	436	114	144	256	253	382	e111	71	250	29	484	84
2	436	408	141	260	224	380	e111	71	246	29	489	80
3	437	418	139	e260	158	378	e111	70	231	29	402	80
4	435	432	139	e263	158	e422	e111	69	228	29	273	82
5	432	432	139	e263	158	e471	e110	68	229	29	268	82
6	432	432	136	e267	160	e385	e109	68	235	29	247	82
7	432	432	136	e266	161	e383	e83	68	235	29	268	82
8	432	432	139	e263	161	e380	e70	68	233	28	281	82
9	429	432	139	e263	161	e378	e71	68	141	25	279	82
10	427	432	136	e263	161	e372	e72	68	79	25	276	82
11	427	437	136	e263	161	e370	e72	e170	82	25	276	82
12	425	437	136	e264	145	e368	e72	e237	83	25	277	82
13	422	432	134	e266	155	e365	e72	e237	82	144	217	82
14	242	432	134	e263	157	e361	e72	e233	85	421	183	82
15	165	432	134	e263	158	e356	e72	e233	87	421	183	82
16	186	432	134	263	158	e354	e67	e233	87	357	183	101
17	302	286	131	260	158	e348	e53	e233	59	118	183	114
18	299	144	131	260	158	e236	e53	e234	33	8.0	183	114
19	311	144	132	260	158	e111	e53	e237	33	78	200	114
20	317	147	132	260	158	e109	e53	e238	33	95	215	114
21	317	147	132	260	158	e109	e55	237	33	79	204	113
22	326	147	132	258	158	e109	e57	237	32	42	204	111
23	140	147	132	256	158	e109	58	240	31	85	204	111
24	14	147	132	256	158	e109	58	241	31	170	311	111
25	14	147	129	256	158	e111	58	244	30	175	399	111
26	93	147	129	255	158	e111	58	242	30	175	399	111
27	98	149	129	253	280	e111	60	240	30	172	373	111
28	251	147	129	253	384	e111	63	241	30	174	e304	111
29	408	144	129	253	---	e111	66	244	30	176	e304	111
30	419	144	215	253	---	e111	70	244	30	328	e304	111
31	139	---	256	253	---	e111	---	245	---	475	e182	---
TOTAL	9643	8753	4366	8052	4933	8122	2201	5629	3078	4024.0	8555	2897
MEAN	311	292	141	260	176	262	73.4	182	103	130	276	96.6
MAX	437	437	256	267	384	471	111	245	250	475	489	114
MIN	14	114	129	253	145	109	53	68	30	8.0	182	80
AC-FT	19130	17360	8660	15970	9780	16110	4370	11170	6110	7980	16970	5750

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

MEAN	109	136	124	76.9	95.5	173	138	73.9	79.5	168	249	192
MAX	311	412	421	260	395	464	400	207	203	417	397	440
(WY)	1998	1994	1987	1998	1996	1996	1996	1995	1997	1989	1997	1994
MIN	13.8	12.6	1.39	4.08	.000	8.00	14.8	6.07	6.91	.000	93.0	11.8
(WY)	1990	1989	1991	1991	1997	1990	1992	1989	1995	1995	1996	1989

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998	
ANNUAL TOTAL	82195.00		70253.0			
ANNUAL MEAN	225		192		135	
HIGHEST ANNUAL MEAN					227	1997
LOWEST ANNUAL MEAN					50.5	1990
HIGHEST DAILY MEAN	468	Mar 14	489	Aug 2	499	Apr 7 1995
LOWEST DAILY MEAN	.00	Jan 10	8.0	Jul 18	-18	Jun 11 1993
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 10	27	Jul 6	.00	Dec 5 1990
ANNUAL RUNOFF (AC-FT)	163000		139300		97680	
10 PERCENT EXCEEDS	437		408		408	
50 PERCENT EXCEEDS	219		158		55	
90 PERCENT EXCEEDS	.00		58		7.0	

e Estimated.

11231600 MONO CREEK BELOW DIVERSION DAM, NEAR MONO HOT SPRINGS, CA

LOCATION.—Lat 37°21'36", long 118°59'51", unsurveyed, T.6 1/2 S, R.27 E, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 20 ft downstream from diversion dam, 1.0 mi southwest of Lake Thomas A. Edison, and 2.5 mi northeast of Mono Hot Springs.

DRAINAGE AREA.—92.8 mi^2.

PERIOD OF RECORD.—October 1986 to current year. Prior to October 1991, published as "at Diversion Dam."

GAGE.—Acoustic-velocity meter on low-flow discharge, and water-stage recorder on diversion reservoir. Elevation of gage is 7,340 ft above sea level, from topographic map. Prior to Oct. 1, 1991, at datum 10 ft higher.

REMARKS.—Flow regulated by diversion reservoir and Lake Thomas A. Edison (station 11231000). Most of the flow is diverted at the diversion dam to Mono Creek Conduit (station 11231550), then to Ward Tunnel and Huntington Lake (station 11236000) via Portal Powerplant (station 11235500) for further power development in Big Creek powerplants. Discharge, including extremes, represents the combined flow at Mono Creek and spill at diversion dam. See schematic diagram of upper San Joaquin River Basin.

COOPERATION.—Records collected by Southern California Edison 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, 1,300 ft^3/s, July 11, 12, 1995; minimum daily, 4.1 ft^3/s, Dec. 12–16, 1990.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	11	11	7.7	7.7	7.5	e12	14	15	13	26	15
2	14	13	11	7.7	7.7	7.5	e12	14	15	13	18	15
3	13	13	11	e7.7	7.7	7.5	e12	14	15	13	16	17
4	13	13	11	e7.7	7.7	e17	e12	14	15	13	87	17
5	13	13	11	e7.7	7.7	e21	e12	14	15	13	75	17
6	13	13	11	e7.7	7.7	e15	e12	14	15	13	15	17
7	13	13	11	e7.7	7.7	e15	e12	14	15	13	30	17
8	13	13	11	e7.7	7.7	e15	e12	14	15	14	190	17
9	13	13	11	e7.7	7.7	e14	e12	14	15	17	192	17
10	13	13	11	e7.7	7.7	e14	e12	14	14	17	150	17
11	13	13	11	e7.7	7.7	e14	e12	e15	14	17	16	17
12	13	13	11	e7.7	7.6	e14	e12	e15	14	17	15	17
13	13	13	11	e7.7	7.7	e13	e12	e15	14	17	16	17
14	12	13	11	e7.7	7.7	e13	e12	e15	14	16	16	17
15	13	13	11	e7.7	7.7	e13	e12	e15	14	16	16	17
16	15	13	11	7.7	7.7	e13	e12	e15	14	16	16	17
17	16	12	11	7.7	7.7	e12	e12	e15	14	15	16	17
18	14	11	9.4	7.7	7.7	e12	e12	e15	13	15	16	17
19	12	11	7.6	7.7	7.7	e12	e12	e15	13	18	71	17
20	12	11	7.6	7.7	7.7	e12	e12	e15	13	19	89	17
21	12	11	7.6	7.7	7.7	e12	e12	15	13	18	17	17
22	12	11	7.6	7.7	7.7	e12	e13	15	13	18	17	17
23	11	11	7.6	7.7	7.7	e12	14	15	13	83	17	17
24	10	11	7.6	7.7	7.7	e12	14	15	13	271	16	17
25	10	11	7.6	7.7	7.7	e12	14	15	13	290	15	17
26	11	11	7.6	7.7	7.7	e12	14	15	13	304	15	17
27	11	11	7.6	7.7	7.7	e12	14	15	13	315	13	17
28	12	11	7.6	7.7	7.6	e12	14	15	13	321	e15	17
29	13	11	7.6	7.7	---	e12	14	15	13	326	e15	17
30	13	11	7.8	7.7	---	e12	14	15	13	179	e15	17
31	11	---	7.7	7.7	---	e12	---	15	---	37	e15	---
TOTAL	391	361	295.5	238.7	215.4	393.5	377	455	416	2467	1256	506
MEAN	12.6	12.0	9.53	7.70	7.69	12.7	12.6	14.7	13.9	79.6	40.5	16.9
MAX	16	13	11	7.7	7.7	21	14	15	15	326	192	17
MIN	10	11	7.6	7.7	7.6	7.5	12	14	13	13	13	15
AC-FT	776	716	586	473	427	781	748	902	825	4890	2490	1000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

MEAN	9.09	8.90	8.79	8.14	8.61	8.23	9.29	12.3	50.2	88.4	24.9	12.5
MAX	12.6	23.1	27.0	20.9	25.5	17.7	18.5	18.6	336	684	141	16.9
(WY)	1998	1996	1996	1997	1997	1997	1995	1995	1997	1995	1995	1998
MIN	6.72	5.62	5.69	5.66	5.69	5.84	5.88	9.45	9.98	9.91	9.85	9.67
(WY)	1995	1992	1993	1993	1993	1990	1992	1994	1990	1991	1994	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998	
ANNUAL TOTAL	15566.3		7372.1			
ANNUAL MEAN	42.6		20.2		20.9	
HIGHEST ANNUAL MEAN					79.4	1995
LOWEST ANNUAL MEAN					7.83	1992
HIGHEST DAILY MEAN	604	Jun 21	326	Jul 29	1300	Jul 11 1995
LOWEST DAILY MEAN	7.6	Dec 19	7.5	Mar 1	4.1	Dec 12 1990
ANNUAL SEVEN-DAY MINIMUM	7.6	Dec 19	7.6	Dec 19	4.2	Dec 12 1990
ANNUAL RUNOFF (AC-FT)	30880		14620		15130	
10 PERCENT EXCEEDS	26		17		16	
50 PERCENT EXCEEDS	14		13		9.8	
90 PERCENT EXCEEDS	11		7.7		5.8	

e Estimated.

11231700 WARM CREEK BELOW DIVERSION DAM, NEAR LAKE THOMAS A. EDISON, CA

LOCATION.—Lat 37°23'31", long 119°01'39", unsurveyed, T.6 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank, 40 ft downstream from diversion dam, 1.5 mi northwest of Lake Thomas A. Edison, and 17.4 mi northeast of town of Big Creek.

DRAINAGE AREA.—2.14 mi^2.

PERIOD OF RECORD.—October 1986 to current year.

GAGE.—Water-stage recorder and 90° V-notch weir control. Elevation of gage is 8,030 ft above sea level, from topographic map.

REMARKS.—Records normally computed only in summer months or during periods of diversion to Lake Thomas A. Edison. Diversion occurred Apr. 21 to Aug. 16 and Aug. 30 to Sept. 1. See schematic diagram of upper San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison Co., 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 1997 TO SEPTEMBER 1998

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	e.28	.43	.69	1.7	.42
2	---	---	---	---	---	---	---	e.29	.46	.71	1.7	---
3	---	---	---	---	---	---	---	e.31	.45	.71	1.6	---
4	---	---	---	---	---	---	---	e.32	.43	.71	1.6	---
5	---	---	---	---	---	---	---	e.33	.39	.67	1.6	---
6	---	---	---	---	---	---	---	e.35	.38	.64	1.6	---
7	---	---	---	---	---	---	---	e.36	.39	.65	1.6	---
8	---	---	---	---	---	---	---	e.37	.42	.65	1.6	---
9	---	---	---	---	---	---	---	e.38	.41	.62	1.5	---
10	---	---	---	---	---	---	---	e.39	.40	.61	1.5	---
11	---	---	---	---	---	---	---	e.41	.41	.61	e1.5	---
12	---	---	---	---	---	---	---	.43	.42	.59	e1.4	---
13	---	---	---	---	---	---	---	.44	.42	.59	e1.4	---
14	---	---	---	---	---	---	---	.44	.42	.59	e1.4	---
15	---	---	---	---	---	---	---	.46	.53	.59	e1.4	---
16	---	---	---	---	---	---	---	.48	.58	.58	e1.3	---
17	---	---	---	---	---	---	---	.49	.58	.56	---	---
18	---	---	---	---	---	---	---	.51	.56	.49	---	---
19	---	---	---	---	---	---	---	.51	.50	e.30	---	---
20	---	---	---	---	---	---	---	.49	.71	e.52	---	---
21	---	---	---	---	---	---	e.20	.52	.80	e.65	---	---
22	---	---	---	---	---	---	e.20	.56	.84	e.78	---	---
23	---	---	---	---	---	---	e.23	.57	.77	e.90	---	---
24	---	---	---	---	---	---	e.22	.59	.80	e1.0	---	---
25	---	---	---	---	---	---	e.23	.57	.85	e1.2	---	---
26	---	---	---	---	---	---	e.23	.56	.83	e1.3	---	---
27	---	---	---	---	---	---	e.24	.55	.82	e1.4	---	---
28	---	---	---	---	---	---	e.25	.52	.71	e1.6	---	---
29	---	---	---	---	---	---	e.26	.51	.68	1.7	---	---
30	---	---	---	---	---	---	e.27	.48	.68	1.7	.37	---
31	---	---	---	---	---	---	---	.41	---	1.7	.43	---
TOTAL	---	---	---	---	---	---	---	13.88	17.07	26.01	---	---
MEAN	---	---	---	---	---	---	---	.45	.57	.84	---	---
MAX	---	---	---	---	---	---	---	.59	.85	1.7	---	---
MIN	---	---	---	---	---	---	---	.28	.38	.30	---	---
AC-FT	---	---	---	---	---	---	---	28	34	52	---	---

e Estimated.

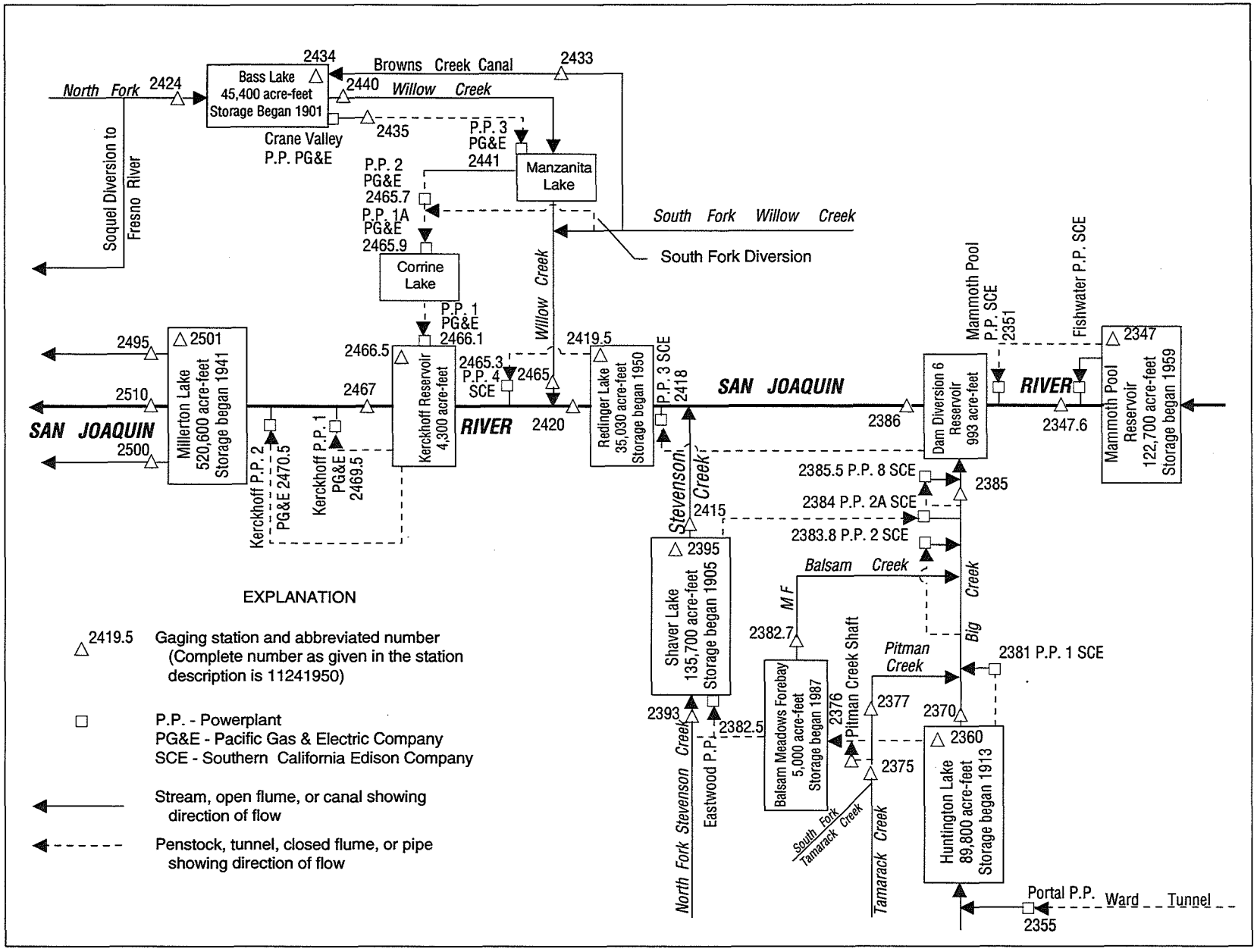


Figure 28. Diversions and storage in lower San Joaquin River Basin.

11234700 MAMMOTH POOL RESERVOIR NEAR BIG CREEK, CA

LOCATION.—Lat 37°19'40", long 119°19'38", in SE 1/4 SE 1/4 sec.10, T.7 S., R.24 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, in gatehouse of power tunnel intake 0.7 mi northwest of dam on San Joaquin River, 9.0 mi northwest of town of Big Creek.

DRAINAGE AREA.—995 mi^2.

PERIOD OF RECORD.—October 1959 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Southern California Edison Co.).

REMARKS.—Reservoir is formed by an earthfill dam; storage began Oct. 8, 1959. Usable capacity, 119,940 acre-ft between elevations 3,100.00 ft, invert of power tunnel, and 3,330.00 ft, crest of spillway. Additional storage of 2,780 acre-ft is not available for release. Water is diverted from basin through Ward Tunnel (stations 11229500 and 11235500). Water is diverted from Mammoth Pool through tunnel for power development and returned to river 8.5 mi downstream from dam. Records, including extremes, represent usable contents at 2400 hours. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Records not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 128,944 acre-ft, Jan. 2, 1997; elevation, 3,338.00 ft; minimum contents since appreciable storage was attained, 1,134 acre-ft, Sept. 25, 1992, elevation, 3,112.82 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 124,446 acre-ft, July 2, elevation, 3,334.04 ft; minimum, 7,025 acre-ft, Apr. 16, elevation, 3,152.97 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Southern California Edison Co., dated Nov. 6, 1959)

3,100	0	3,130	3,114	3,180	14,060	3,260	56,381
3,105	417	3,140	4,605	3,190	17,414	3,280	72,109
3,110	861	3,150	6,402	3,200	21,400	3,300	89,781
3,115	1,355	3,160	8,618	3,220	31,109	3,320	109,336
3,120	1,900	3,170	11,165	3,240	42,787	3,340	131,255

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43550	26289	16588	10653	14287	16382	17352	53678	122484	124143	120361	100720
2	42756	25927	17044	10653	16201	15894	15413	59896	122618	124446	120361	98783
3	42022	24835	16956	10765	19680	15443	13607	65582	122518	123952	121381	96862
4	41226	24513	16619	10938	20738	14976	11534	70910	122194	123817	120615	95420
5	40591	24262	16198	10823	21188	14474	11146	74977	122652	123795	120693	95220
6	40102	24057	15736	10590	22691	13881	10277	77832	123446	123761	120494	95753
7	39360	23432	15363	10648	23858	12972	9577	80857	122976	123873	119940	95192
8	38749	23291	15018	10759	25151	12115	9073	84294	123032	124120	120693	92853
9	38119	23138	14643	10703	25255	10661	8048	88006	122887	124176	120815	94129
10	37760	22999	14158	11108	24440	9754	7847	90807	122853	123615	119765	94044
11	37095	22261	13792	11458	23264	8911	8838	92957	122876	123088	118621	93362
12	36622	21686	13461	12126	22301	9261	9982	94983	122507	123144	117789	91125
13	36094	21448	13285	12934	21729	10284	9655	96087	122987	123155	117596	90284
14	35185	21146	13166	13377	22012	10984	8780	96555	123727	122853	117318	88688
15	34270	20797	12993	17127	21824	11998	7662	96881	124367	122920	115856	86767
16	33512	20485	12899	18848	21171	12041	7025	97901	124154	123066	114690	84774
17	32830	19999	12708	19617	20296	12263	7481	98200	123615	122909	112664	82780
18	32175	19390	12648	20226	18998	11945	8323	98803	123997	123043	111594	80759
19	31472	19053	12524	21031	18161	12115	9219	101196	123997	123390	111542	78811
20	30745	18790	12086	21213	17674	13190	10930	103831	124165	123615	111228	76903
21	30079	18280	11782	21491	17193	14161	13937	105843	124345	123435	109720	74994
22	29578	17569	11362	21392	17599	14337	18180	107417	124131	123491	108749	73111
23	29421	17331	11181	20843	17898	15679	23346	110332	124165	122909	107693	71317
24	29149	16674	11065	20308	17768	18610	26339	113359	124199	122495	106420	69325
25	28997	16046	10890	19692	17610	22148	28207	119110	123997	122004	105813	67114
26	28733	16450	10831	18665	17301	22825	29731	121370	123985	121737	104895	65070
27	28578	16368	10717	17667	16945	23129	32061	121058	123918	121537	104755	63483
28	28315	16361	10714	16878	16633	22838	35475	121336	124075	121537	104403	62542
29	27940	16276	10656	16279	---	21651	40242	121392	124233	121270	104614	61856
30	27455	16079	10656	15622	---	20514	46607	121370	124188	121503	104061	61062
31	26869	---	10653	14911	---	19065	---	121937	---	120748	102819	---
MAX	43550	26289	17044	21491	25255	23129	46607	121937	124367	124446	121381	100720
MIN	26869	16046	10653	10590	14287	8911	7025	53678	122194	120748	102819	61062
a	3211.85	3186.19	3168.09	3182.67	3187.81	3194.29	3245.93	3331.80	3333.81	3330.73	3313.57	3266.25
b	-17339	-10790	-5426	+4258	+1722	+2432	+27542	+75330	+2251	-3440	-17929	-41757

CAL YR 1997 b -25298
WTR YR 1998 b +16854

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

11234760 SAN JOAQUIN RIVER ABOVE SHAKEFLAT CREEK, NEAR BIG CREEK, CA

LOCATION.—Lat 37°19'00", long 119°19'43", in NE 1/4 SE 1/4 sec.15, T.7 S., R.24 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 1,500 ft upstream from Shakeflat Creek, 4,900 ft downstream from Mammoth Pool Dam, and 9.0 mi northwest of town of Big Creek.

DRAINAGE AREA.—1,003 mi^2.

PERIOD OF RECORD.—October 1959 to current year.

GAGE.—Water-stage recorder. Datum of gage is 2,865.50 ft above sea level (levels by Southern California Edison Co.). Since 1961, supplementary water-stage recorder and sharp-crested weir at different datum at outlet of dam 4,900 ft upstream, used for low flows of 60 ft^3/s or less.

REMARKS.—Flow regulated by Mammoth Pool Reservoir (station 11234700) 4,900 ft upstream. Diversions upstream through Ward Tunnel (see stations 11229500 and 11235500). Since March 1960, most of the water is diverted past this station to Mammoth Pool Powerplant (station 11235100). See schematic diagrams of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, 80,000 ft^3/s, Jan. 2, 1997, gage height, 32.00 ft from floodmarks, from rating curve extended above 20,300 ft^3/s; minimum daily, 0.3 ft^3/s, Oct. 14, Dec. 5, 1959.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	53	12	e12	11	12	33	59	3590	9440	522	36
2	62	28	12	e12	11	12	33	61	4430	10400	461	36
3	62	13	12	e12	11	12	33	61	4680	9560	992	34
4	62	13	12	e12	11	12	32	61	3460	8620	1260	30
5	62	11	12	e12	11	12	32	62	3700	8110	736	33
6	62	11	12	e12	11	12	32	63	4990	8080	465	35
7	62	11	12	e12	11	12	32	64	6820	8030	231	33
8	62	11	12	e12	11	12	30	63	5750	8530	440	36
9	61	11	12	e12	11	11	29	63	5580	9140	976	35
10	61	11	11	e12	11	11	28	63	5500	8630	405	42
11	61	11	11	e12	11	11	29	63	5100	6850	71	42
12	61	11	11	e12	11	11	29	64	4930	6690	68	42
13	61	11	11	e12	11	11	29	64	4300	6410	68	42
14	61	11	11	e12	11	11	29	65	6290	6250	68	42
15	60	11	11	e11	11	11	29	65	7990	5870	68	42
16	60	12	e12	11	11	11	28	65	9650	5730	68	42
17	59	11	e12	12	11	11	28	65	7980	5100	68	41
18	59	11	e12	12	11	11	29	65	7660	5530	67	41
19	58	12	e12	12	11	12	29	65	8440	6330	67	41
20	58	12	e12	12	11	12	29	65	8690	7080	66	41
21	57	12	e12	12	11	12	30	66	9070	8170	66	36
22	57	12	e12	11	11	12	31	66	9570	7040	66	30
23	56	12	e12	11	12	12	31	66	9850	5980	66	30
24	56	12	e12	11	12	29	32	66	9550	4650	65	30
25	56	12	e12	11	12	40	32	67	9970	3860	65	30
26	55	12	e12	11	11	40	33	e1150	8990	3100	52	30
27	55	12	e12	11	12	40	33	e1350	8520	2400	36	30
28	55	12	e12	11	12	31	46	1170	8810	2240	36	31
29	54	12	e12	11	---	33	59	1810	9170	1860	37	30
30	54	12	e12	11	---	33	60	1490	9510	1980	37	31
31	53	---	e12	11	---	33	---	2050	---	1360	37	---
TOTAL	1823	406	366	360	313	545	989	10617	212540	193020	7730	1074
MEAN	58.8	13.5	11.8	11.6	11.2	17.6	33.0	342	7085	6226	249	35.8
MAX	62	53	12	12	12	40	60	2050	9970	10400	1260	42
MIN	53	11	11	11	11	11	28	59	3460	1360	36	30
AC-FT	3620	805	726	714	621	1080	1960	21060	421600	382900	15330	2130
a	26850	23290	23960	33450	56410	102300	106100	138100	118900	104600	85090	79770

e Estimated.

a Diversion, in acre-feet, to Mammoth Pool Powerplant, provided by Southern California Edison Co.

11234760 SAN JOAQUIN RIVER ABOVE SHAKEFLAT CREEK, NEAR BIG CREEK, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	24.3	13.0	15.2	101	70.2	101	216	1454	2223	1004	78.6	23.1
MAX	61.9	20.1	66.3	2872	754	1111	2489	9681	12400	7169	1184	45.3
(WY)	1960	1974	1967	1997	1980	1995	1995	1969	1983	1995	1983	1978
MIN	12.6	.82	3.06	10.2	10.8	10.9	12.3	12.9	11.8	12.4	12.8	12.4
(WY)	1961	1960	1960	1986	1985	1960	1964	1961	1961	1961	1972	1960

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1960 - 1998	
ANNUAL TOTAL	292332		429783			
ANNUAL MEAN	801		1177		445	
HIGHEST ANNUAL MEAN					2022	1983
LOWEST ANNUAL MEAN					13.2	1961
HIGHEST DAILY MEAN	26000	Jan 3	10400	Jul 2	26000	Jan 3 1997
LOWEST DAILY MEAN	11	Nov 5	11	Nov 5	.30	Oct 14 1959
ANNUAL SEVEN-DAY MINIMUM	11	Nov 5	11	Nov 5	.57	Dec 1 1959
INSTANTANEOUS PEAK FLOW			11400	Jun 16	80000	Jan 2 1997
INSTANTANEOUS PEAK STAGE			15.55	Jun 16	32.00	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	579800		852500		322000	
TOTAL DIVERSION (AC-FT) a	970400		898900			
10 PERCENT EXCEEDS	3000		6090		642	
50 PERCENT EXCEEDS	36		33		15	
90 PERCENT EXCEEDS	12		11		12	

a Diversion, in acre-feet, to Mammoth Pool Powerplant, provided by Southern California Edison Co.

11235500 PORTAL POWERPLANT AT HUNTINGTON LAKE, CA

LOCATION.—Lat 37°15'25", long 119°09'30", in SE 1/4 SW 1/4 sec.5, T.8 S., R.26 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in powerplant at tunnel outlet at east end of Huntington Lake, 0.9 mi east of Lakeshore Post Office, and 6 mi northeast of town of Big Creek.

PERIOD OF RECORD.—October 1927 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1960, published as Ward Tunnel at Outlet. October 1960 to September 1991, published as Ward Tunnel Outlet at Huntington Lake.

GAGE.—Acoustic-velocity meter in tunnel since Dec. 1, 1987. Oct. 1, 1968, to Nov. 30, 1987, pressure-differential recorder recorded discharge through penstock. November 1927 to May 23, 1956, water-stage recorder at datum 6,999.00 ft above sea level (levels by Southern California Edison Co.). May 24, 1956, to Sept. 30, 1968, no recorder, see REMARKS below.

REMARKS.—Daily discharge for the period May 24, 1956, to Sept. 30, 1968, computed as the sum of Ward Tunnel at Intake, Mono-Bear Conduit, Camp Creek Conduit, and corrected for change in contents of Portal Forebay. Powerplant receives water from Florence Lake (station 11229600) via Ward Tunnel, receives diversions from Bear and Mono Creeks (stations 11230520 and 11231550), and at times from several other small tributaries to South Fork San Joaquin River. See schematic diagram lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, 2,080 ft^3/s, June 21, 1935; no flow at times many years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	677	136	260	361	317	522	320	1010	927	654	1530	1240
2	647	492	210	391	382	522	332	995	644	564	1520	1240
3	672	456	144	336	301	543	238	1010	644	579	1520	1260
4	671	502	254	334	379	536	350	981	519	589	1530	1250
5	669	497	266	340	353	649	219	923	556	587	1420	1270
6	654	433	226	357	377	487	306	882	660	507	1230	1350
7	665	501	308	387	357	503	271	966	612	718	1260	1290
8	648	505	257	335	340	507	231	1110	618	1100	1260	1260
9	657	471	287	369	388	492	222	1020	604	1260	1260	1210
10	647	514	252	334	421	483	254	975	512	1190	1260	1210
11	665	438	260	360	406	555	276	978	430	1250	1260	1210
12	631	528	275	372	398	525	226	933	493	1230	1210	1210
13	675	455	202	339	337	490	261	876	521	1300	1290	1160
14	591	429	272	410	326	582	251	693	566	1600	1300	969
15	587	523	277	371	316	518	250	666	687	1610	1280	804
16	607	444	203	457	359	531	195	667	1010	1670	1220	866
17	745	358	272	461	341	614	243	585	1220	1410	1210	1110
18	741	191	211	386	308	413	220	737	1330	1040	1060	1020
19	740	203	260	456	319	466	286	756	1310	1090	840	1050
20	741	204	203	384	311	452	554	962	1320	1140	816	1020
21	740	195	273	417	323	457	633	845	1120	1390	760	1010
22	718	199	201	437	341	366	793	796	468	1380	751	1010
23	731	202	197	361	341	585	826	964	362	1360	686	964
24	728	201	203	401	270	499	816	937	819	1430	962	1000
25	759	206	206	364	388	512	681	1230	1100	1460	1250	1070
26	721	214	205	384	338	434	679	1090	1070	1450	1240	1020
27	673	208	234	373	411	428	717	857	1070	1400	1240	1020
28	533	283	229	349	555	406	754	857	1150	1540	1170	1010
29	510	290	202	394	---	391	875	1040	855	1540	1140	980
30	530	274	287	337	---	348	936	978	503	1510	1140	976
31	195	---	333	413	---	308	---	1150	---	1510	1200	---
TOTAL	20168	10552	7469	11770	10003	15124	13215	28469	23700	37058	36815	33059
MEAN	651	352	241	380	357	488	441	918	790	1195	1188	1102
MAX	759	528	333	461	555	649	936	1230	1330	1670	1530	1350
MIN	195	136	144	334	270	308	195	585	362	507	686	804
AC-FT	40000	20930	14810	23350	19840	30000	26210	56470	47010	73500	73020	65570

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1998, BY WATER YEAR (WY)

MEAN	332	266	273	254	259	297	526	856	913	838	660	502
MAX	757	908	1102	793	806	815	953	1459	1665	1321	1386	1104
(WY)	1996	1983	1946	1985	1985	1985	1936	1946	1974	1956	1995	1983
MIN	.82	.81	5.29	13.4	10.3	78.8	98.9	119	3.93	150	147	2.00
(WY)	1946	1946	1991	1991	1991	1976	1991	1983	1938	1931	1934	1949

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1928 - 1998	
ANNUAL TOTAL	276828.60		247402			
ANNUAL MEAN	758		678		499	
HIGHEST ANNUAL MEAN					748	1997
LOWEST ANNUAL MEAN					196	1977
HIGHEST DAILY MEAN	1710	Jan 2	1670	Jul 16	2080	Jun 21 1935
LOWEST DAILY MEAN	.00	Jan 10	136	Nov 1	.00	Sep 18 1961
ANNUAL SEVEN-DAY MINIMUM	9.6	Jan 17	199	Nov 18	.00	Dec 2 1969
ANNUAL RUNOFF (AC-FT)	549100		490700		361700	
10 PERCENT EXCEEDS	1440		1260		1090	
50 PERCENT EXCEEDS	761		566		466	
90 PERCENT EXCEEDS	12		251		63	

11236000 HUNTINGTON LAKE NEAR BIG CREEK, CA

LOCATION.—Lat 37°14'04", long 119°12'44", in SW 1/4 sec.14, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in gate tower of dam 1 on Big Creek, 2.7 mi northeast of town of Big Creek.

DRAINAGE AREA.—80.5 mi^2.

PERIOD OF RECORD.—April 1913 to current year. Prior to October 1926, monthly contents only, published in WSP 1315-A; 1926–31, published in WSP 721. Maximum and minimum daily contents (water years 1913–39) were summarized in WSP 881. Prior to 1960, maximum and minimum daily contents were published.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Southern California Edison Co.). Prior to June 19, 1920, nonrecording gage at same site and datum.

REMARKS.—Lake is formed by four dams; storage began Apr. 11, 1913. Dams were raised in 1914 and again in 1917. Usable capacity, 89,166 acre-ft between elevations 6,819.90 ft, invert of Outlet Tunnel No. 1, and 6,950.00 ft, spillway crest at Dam 1. Additional storage of 600 acre-ft is not available for release. Lake receives water from South Fork San Joaquin River Basin via Ward Tunnel through Portal Powerplant (station 11235500). Water is diverted from lake through Huntington–Shaver Conduit and Eastwood Powerplant (station 11238250) to Shaver Lake (station 11239500) since Apr. 21, 1928. Water is also diverted to Big Creek Powerplant No. 1 (station 11238100) on Big Creek. Records, including extremes, represent contents at 2400 hours. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Records not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 90,491 acre-ft, May 31, 1926, elevation, 6,950.92 ft; minimum, 2,103 acre-ft, Nov. 6, 1937, elevation, 6,838.53 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 88,923 acre-ft, Aug. 14, elevation, 6,949.83 ft; minimum, 20,826 acre-ft, Apr. 19, elevation, 6,887.08 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Southern California Edison Co., dated Sept. 24, 1964)

6,835	1,552	6,870	11,293	6,920	50,812
6,840	2,354	6,880	16,370	6,930	62,555
6,845	3,324	6,890	22,882	6,940	75,344
6,850	4,480	6,900	30,861	6,950	89,166
6,860	7,427	6,910	40,216	6,951	90,606

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80926	76612	74523	56067	44156	29500	32181	32941	41162	84084	88165	88237
2	80898	76439	74046	55622	43718	28970	32003	33702	42601	84434	88136	88179
3	80679	76185	73703	55157	43676	28661	31692	34160	44881	84504	88251	88251
4	80446	76399	73375	54856	43229	28578	31325	34252	45505	84406	88222	88351
5	80242	76854	73125	54312	42889	28611	30809	34059	46658	84210	88051	88551
6	80050	77164	72717	53806	42662	28294	30241	33583	48076	83749	88294	88909
7	79927	77689	72574	53428	42322	27991	28945	33620	50022	83609	88480	88780
8	79736	78256	72156	53049	42036	27794	27354	33839	51711	84224	88537	88766
9	79477	78703	71660	52050	41802	27606	25794	33913	53416	85050	88337	88823
10	79327	79232	71179	50924	41527	27729	24775	33885	54647	85444	88380	88851
11	79218	79286	70623	50578	41101	28303	24357	33739	55856	85669	88437	88794
12	78934	79123	70041	49667	40528	28686	23833	33492	57042	85782	88666	88708
13	78717	79150	69540	49116	39997	28836	23315	33257	57443	85895	88866	88880
14	78364	78974	69103	48896	39580	29255	22666	32581	58083	86459	88923	88809
15	78039	78920	68617	49061	39036	29585	22278	32003	59698	86970	88894	88194
16	77783	78934	67764	48819	38575	29890	21684	31852	63430	87523	88766	87750
17	77863	78961	67143	48665	38076	30319	21321	31264	66676	88279	88708	87765
18	77958	78567	66473	48447	37563	30422	20950	30336	69412	88194	88451	87665
19	78025	78310	65720	48131	37197	30525	20826	30689	71543	88108	88480	87693
20	78039	77958	64919	47848	36460	30801	21438	31526	73835	88008	88494	87679
21	78106	77608	64198	47445	35770	31159	22170	32145	75785	88322	88394	87580
22	78120	77339	63344	47187	34844	31229	23205	32670	76225	88523	88108	87537
23	78161	77016	62506	46809	34169	31719	24177	33784	76238	88108	87537	87324
24	78256	76733	61748	46551	33320	32234	25382	35244	77190	88337	87537	86984
25	78486	76399	60956	46070	32412	32724	26219	37225	78608	88136	87965	86998
26	78432	76238	60155	45750	31561	32706	27137	38076	79791	88251	88279	87083
27	78608	75878	59326	45547	31019	32959	28237	38038	80967	87993	88480	87097
28	78689	75518	58464	45250	30525	33004	29449	37757	82429	88136	88437	87225
29	78323	75331	57620	45113	---	32932	30992	37370	83456	88122	88365	87168
30	77985	74920	57101	44828	---	32815	32456	38575	83707	88165	88322	87126
31	77217	---	56629	44565	---	32403	---	39997	---	88165	88208	---
MAX	80926	79286	74523	56067	44156	33004	32456	39997	83707	88523	88923	88909
MIN	77217	74920	56629	44565	30525	27606	20826	30336	41162	83609	87537	86984
a	6941.40	6939.68	6925.07	6914.24	6899.61	6901.75	6901.81	6909.78	6946.14	6949.30	6949.33	6948.57
b	-3833	-2297	-18291	-12064	-14040	+1878	+53	+7541	+43710	+4458	+43	-1082

CAL YR 1997 b -4303
WTR YR 1998 b +6076

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

11237000 BIG CREEK BELOW HUNTINGTON LAKE, CA

LOCATION.—Lat 37°13'17", long 119°12'42", in SE 1/4 NW 1/4 sec.23, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 800 ft upstream from Grouse Creek, 1.0 mi south of main dam of Huntington Lake, and 2.1 mi northeast of town of Big Creek.

DRAINAGE AREA.—81.1 mi^2.

PERIOD OF RECORD.—June 1925 to September 1970, October 1986 to current year.
WATER TEMPERATURE: Water years 1961–70.

REVISED RECORDS.—WSP 1315-A: 1943(M). WSP 1635: 1925–29. WSP 1930: Drainage area.

GAGE.—Water-stage recorder and Parshall flume. Elevation of gage is 6,630 ft above sea level, from topographic map. Prior to Oct. 1, 1942, at datum 1.00 ft lower and Oct. 1, 1942, to Sept. 30, 1948, at datum 1.00 ft higher.

REMARKS.—Flow regulated by Huntington Lake (station 11236000). Diversions to Big Creek Powerplant No. 1 (station 11238100) and Eastwood Powerplant (station 11238250) bypass this station. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, 2,040 ft^3/s, June 23, 1925, gage height, 11.3 ft, present datum; minimum daily, 0.1 ft^3/s, many days in 1931.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	2.3	2.3	2.0	1.9	1.3	2.3	10	12	6.4	3.5	3.2
2	2.3	2.3	2.3	2.0	2.5	1.3	2.2	10	13	6.0	3.4	3.2
3	2.3	2.3	2.3	2.0	3.1	1.3	1.9	11	14	5.6	3.4	3.2
4	2.3	2.3	2.2	2.0	2.5	1.2	1.8	11	13	5.3	3.4	3.2
5	2.3	2.3	2.3	2.0	2.3	1.2	1.7	11	13	5.1	3.4	3.3
6	2.3	2.3	2.7	2.0	2.2	1.2	1.6	11	14	4.9	3.4	3.4
7	2.3	2.3	2.5	2.0	2.2	1.2	1.6	11	15	4.7	3.4	3.6
8	2.3	2.3	2.4	1.9	2.1	1.2	2.5	11	14	4.6	3.4	3.2
9	2.3	2.3	2.4	1.9	2.0	1.2	4.9	11	14	4.7	3.3	3.3
10	2.5	2.3	2.4	1.9	2.0	1.2	4.9	11	13	4.7	3.3	3.2
11	2.4	2.4	2.3	1.9	1.9	1.3	4.8	10	14	4.6	3.3	3.2
12	2.4	2.4	2.3	2.2	1.9	1.4	4.7	10	12	4.5	3.3	3.1
13	2.4	2.4	2.3	2.1	1.9	1.4	4.6	9.5	11	4.4	3.4	3.3
14	2.3	2.4	2.3	2.0	1.9	1.4	4.6	9.2	11	4.3	4.0	3.4
15	2.3	2.3	2.3	6.1	1.8	1.5	4.5	9.0	11	4.3	4.1	3.1
16	2.3	2.3	2.2	3.7	1.8	1.6	4.5	8.9	11	4.3	3.6	3.0
17	2.3	2.3	2.2	2.8	1.7	1.7	4.5	8.6	10	4.3	3.3	3.0
18	2.3	2.3	2.2	2.6	1.7	1.8	4.7	8.9	10	4.2	3.3	3.0
19	2.3	2.5	2.2	2.6	1.7	2.0	5.0	9.5	9.7	4.1	3.3	2.9
20	2.3	2.4	2.2	2.3	1.6	2.2	5.5	9.7	9.5	4.0	3.3	2.9
21	2.3	2.4	2.2	2.2	1.6	2.2	6.2	9.7	9.2	4.0	3.2	2.9
22	2.3	2.4	2.1	2.2	1.5	2.2	7.1	10	8.8	4.0	3.2	2.9
23	2.3	2.3	2.1	2.1	1.5	2.6	7.3	11	8.2	3.9	3.2	2.9
24	2.3	2.3	2.1	2.1	1.5	3.3	6.5	11	7.8	3.8	3.2	3.0
25	2.3	2.3	2.1	2.1	1.4	3.4	6.7	12	7.4	3.7	3.1	3.0
26	2.3	2.5	2.1	2.0	1.3	2.8	7.3	12	6.9	3.7	3.1	3.1
27	2.3	2.3	2.1	2.0	1.2	2.7	8.0	11	6.4	3.6	3.2	3.1
28	2.3	2.3	2.1	2.0	1.2	2.5	8.6	11	6.0	3.5	3.2	3.1
29	2.3	2.3	2.1	2.0	---	2.4	9.2	12	6.5	3.6	3.2	3.1
30	2.3	2.3	2.1	2.0	---	2.3	9.9	11	6.7	3.5	3.2	3.1
31	2.3	---	2.0	2.0	---	2.3	---	12	---	3.5	3.2	---
TOTAL	71.8	70.1	69.4	70.7	51.9	57.3	149.6	324.0	318.1	135.8	103.8	93.9
MEAN	2.32	2.34	2.24	2.28	1.85	1.85	4.99	10.5	10.6	4.38	3.35	3.13
MAX	2.5	2.5	2.7	6.1	3.1	3.4	9.9	12	15	6.4	4.1	3.6
MIN	2.3	2.3	2.0	1.9	1.2	1.2	1.6	8.6	6.0	3.5	3.1	2.9
AC-FT	142	139	138	140	103	114	297	643	631	269	206	186
a	26410	16440	21880	24510	31050	22050	26520	37710	33940	42970	39950	32760

a Diversion, in acre-feet, to Big Creek Powerplant No. 1, provided by Southern California Edison Co.

11237000 BIG CREEK BELOW HUNTINGTON LAKE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.44	1.47	1.49	1.33	1.32	1.69	2.74	9.15	9.19	10.2	1.98	1.51
MAX	4.79	4.55	4.70	6.45	3.53	5.90	7.09	297	242	293	8.34	4.86
(WY)	1994	1994	1956	1997	1995	1995	1995	1926	1926	1925	1969	1993
MIN	.16	.23	.18	.20	.30	.38	.47	.46	.43	.31	.16	.12
(WY)	1932	1932	1932	1932	1931	1948	1934	1934	1931	1931	1931	1931

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1925 - 1998	
ANNUAL TOTAL	1132.7		1516.4			
ANNUAL MEAN	3.10		4.15		3.22	
HIGHEST ANNUAL MEAN					45.9	1926
LOWEST ANNUAL MEAN					.35	1931
HIGHEST DAILY MEAN	29	Jan 2	15	Jun 7	1160	May 23 1926
LOWEST DAILY MEAN	2.0	Dec 31	1.2	Feb 27	.10	Jan 18 1931
ANNUAL SEVEN-DAY MINIMUM	2.1	Dec 25	1.2	Mar 4	.10	Aug 21 1931
INSTANTANEOUS PEAK FLOW			16	Jun 6	2040	Jun 23 1925
INSTANTANEOUS PEAK STAGE			2.86	Jun 6	11.30	Jun 23 1925
ANNUAL RUNOFF (AC-FT)	2250		3010		2330	
TOTAL DIVERSION (AC-FT) a	390500		356200			
10 PERCENT EXCEEDS	3.7		10		4.0	
50 PERCENT EXCEEDS	2.8		2.7		1.4	
90 PERCENT EXCEEDS	2.3		1.9		.40	

a Diversion, in acre-feet, to Big Creek Powerplant No. 1, provided by Southern California Edison Co.

11237500 PITMAN CREEK BELOW TAMARACK CREEK, CA

LOCATION.—Lat 37°11'55", long 119°12'46", in NW 1/4 NW 1/4 sec.35, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 250 ft upstream from Huntington–Shaver Conduit Tunnel, 0.8 mi downstream from confluence of Tamarack and South Fork Tamarack Creeks, 1.4 mi upstream from mouth, and 1.9 mi east of town of Big Creek..

DRAINAGE AREA.—22.9 mi^2.

PERIOD OF RECORD.—October 1927 to current year. Records for water year 1928 incomplete, yearly estimate published in WSP 1315-A.

REVISED RECORDS.—WSP 931: 1940. WSP 1315-A: 1944. WSP 1395: 1928–29, 1938. WSP 1515: 1929. WSP 1930: Drainage area.

GAGE.—Water-stage recorder, Parshall flume and concrete control. Elevation of gage is 7,020 ft above sea level, from topographic map. Prior to Sept. 28, 1940, at site 10 ft downstream at same datum.

REMARKS.—No diversion upstream from station; practically all flow is diverted downstream from station to Huntington–Shaver Conduit. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, 5,500 ft^3/s, Jan. 2, 1997, gage height, 12.65 ft, from rating curve extended above 1,100 ft^3/s on basis of slope-area measurement at gage height 10.77 ft; no flow, Oct. 15–18, 1931.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.36	.49	1.2	e1.5	e1.6	e1.6	32	243	401	406	23	3.2
2	.33	.46	1.1	e1.6	e2.0	e1.6	30	236	435	405	21	2.9
3	.33	.45	1.0	e1.8	e2.2	e1.7	27	234	452	358	19	3.0
4	.32	.44	1.0	e1.6	e2.0	e1.6	26	210	334	329	17	4.4
5	.31	.43	1.1	e1.5	e2.6	e1.6	26	186	390	310	16	5.0
6	.32	.42	1.8	e1.5	e2.3	e1.8	26	149	497	286	14	6.1
7	.35	.46	1.8	e1.5	e2.1	e2.0	26	138	536	271	13	6.3
8	.37	.44	1.6	e1.6	e2.0	e2.2	25	135	490	274	12	5.0
9	.37	.43	1.6	e1.8	e1.8	e2.4	24	160	497	254	11	5.6
10	.78	.53	1.4	e2.0	e1.9	e2.6	24	160	449	216	9.8	5.4
11	1.3	.77	1.3	e2.3	e1.8	e3.0	25	148	649	188	9.4	4.8
12	1.1	.75	1.1	e2.5	e1.8	e4.0	26	131	477	177	9.1	4.0
13	1.1	.74	1.1	e2.3	e1.8	e5.0	25	108	553	164	8.6	3.4
14	.94	.71	1.2	e2.0	e1.7	e6.0	25	93	653	146	8.2	3.1
15	.78	.60	1.2	e1.8	e1.8	e7.0	25	88	776	134	7.1	3.3
16	.66	.57	1.2	e2.0	e1.7	e8.0	25	101	706	127	6.4	2.9
17	.58	.61	1.3	e2.3	e1.9	e11	24	89	622	118	5.9	2.6
18	.52	.61	1.3	e2.5	e1.8	e12	27	96	643	106	5.7	2.4
19	.49	1.0	1.3	e2.6	e1.7	e16	39	136	649	95	5.9	2.3
20	.47	1.1	e1.5	e2.3	e1.8	e20	58	173	656	87	6.0	2.2
21	.47	.86	e1.5	e2.1	e1.9	e24	84	164	652	81	5.6	2.2
22	.47	.85	e1.4	e2.0	e1.8	e30	116	168	584	92	5.4	2.3
23	.47	1.0	e1.4	e1.8	e1.8	e33	141	197	532	83	5.1	2.2
24	.46	.89	e1.3	e1.7	e1.7	41	115	256	538	67	5.0	2.1
25	.45	.84	e1.2	e1.6	e1.8	40	102	280	512	55	4.9	2.1
26	.47	1.3	e1.3	e1.5	e1.7	41	113	228	475	46	4.7	3.6
27	.48	1.5	e1.4	e1.5	e1.6	40	144	186	461	41	4.5	6.7
28	.47	1.8	e1.5	e1.5	e1.5	36	173	208	472	36	4.1	5.2
29	.47	1.5	e1.5	e1.5	---	36	194	224	471	32	3.8	5.0
30	.49	1.4	e1.5	e1.5	---	34	224	259	431	29	3.4	4.7
31	.49	---	e1.5	e1.5	---	31	---	345	---	26	3.3	---
TOTAL	16.97	23.95	41.6	57.2	52.1	497.1	1971	5529	15993	5039	277.9	114.0
MEAN	.55	.80	1.34	1.85	1.86	16.0	65.7	178	533	163	8.96	3.80
MAX	1.3	1.8	1.8	2.6	2.6	41	224	345	776	406	23	6.7
MIN	.31	.42	1.0	1.5	1.5	1.6	24	88	334	26	3.3	2.1
AC-FT	34	48	83	113	103	986	3910	10970	31720	9990	551	226

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1998, BY WATER YEAR (WY)

MEAN	1.90	5.53	10.9	12.1	14.1	27.8	92.9	200	121	21.2	2.45	1.41
MAX	42.0	110	135	194	91.1	136	264	550	648	180	21.4	18.9
(WY)	1983	1951	1951	1997	1986	1986	1982	1969	1983	1995	1983	1978
MIN	.13	.18	.20	.20	.20	.30	16.6	24.3	7.82	.67	.11	.10
(WY)	1989	1930	1932	1930	1949	1949	1975	1977	1976	1934	1931	1928

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1928 - 1998	
ANNUAL TOTAL	21355.96		29612.82			
ANNUAL MEAN	58.5		81.1		43.0	
HIGHEST ANNUAL MEAN					118	1983
LOWEST ANNUAL MEAN					6.16	1977
HIGHEST DAILY MEAN	2200	Jan 2	776	Jun 15	2200	Jan 2 1997
LOWEST DAILY MEAN	.31	Oct 5	.31	Oct 5	.00	Oct 15 1931
ANNUAL SEVEN-DAY MINIMUM	.33	Oct 1	.33	Oct 1	.04	Oct 13 1931
INSTANTANEOUS PEAK FLOW			1210	Jun 15	5500	Jan 2 1997
INSTANTANEOUS PEAK STAGE			8.20	Jun 15	12.65	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	42360		58740		31130	
10 PERCENT EXCEEDS	181		296		130	
50 PERCENT EXCEEDS	6.7		4.0		5.5	
90 PERCENT EXCEEDS	.44		.61		.30	

e Estimated.

11237600 PITMAN CREEK SHAFT BELOW TAMARACK CREEK, CA

LOCATION.—Lat 37°11'54", long 119°12'48", in NW 1/4 NW 1/4 sec.35, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank at Huntington–Shaver Conduit Tunnel, 0.8 mi downstream from confluence of Tamarack and South Fork Tamarack Creeks, 1.4 mi upstream from mouth, and 1.9 mi east of town of Big Creek.

PERIOD OF RECORD.—October 1986 to February 1989, March 1989 to December 1995, April 1996 to November 1996, and March 1997 to current year.

GAGE.—Discharge computed as difference between Pitman Creek below Tamarack Creek (station 11237500) and Pitman Creek near Tamarack Mountain (station 11237700). Elevation of diversion point is 7,010 ft above sea level, from topographic map.

REMARKS.—Flow is diversion from Pitman Creek into Huntington–Shaver Conduit for power development in Big Creek powerplants. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, unknown, Jan. 2, 1997, no flow for many days each year.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	e.00	e.00	e.00	e.00	e30	241	e71	22	5.0	.50
2	.00	.00	e.00	e.00	e.00	e.00	e28	232	e25	23	6.0	.30
3	.00	.00	e.00	e.00	e.20	e.00	e25	226	e25	31	5.0	.50
4	.00	.00	e.00	e.00	e.00	e.00	e24	205	e23	29	5.0	1.5
5	.00	.00	e.00	e.00	e.60	e.00	e24	183	e24	26	6.0	1.8
6	.00	.00	e.00	e.00	e.30	e.00	e24	147	e25	29	5.3	2.0
7	.00	.00	e.00	e.00	e.10	e.00	e24	136	e27	33	5.1	1.7
8	.00	.00	e.00	e.00	e.00	e.20	e23	133	e26	30	5.0	1.4
9	.00	.00	e.00	e.00	e.00	e.40	e22	158	e26	33	5.1	1.6
10	.12	.00	e.00	e.00	e.00	e.60	e22	158	e25	35	4.1	1.2
11	.51	e.00	e.00	e.30	e.00	e1.0	e23	146	e28	36	4.3	1.2
12	.34	e.00	e.00	e.50	e.00	e2.0	e24	129	e26	34	4.0	1.0
13	.34	e.00	e.00	e.30	e.00	e3.0	e23	106	e28	33	3.5	.70
14	.19	e.00	e.00	e.00	e.00	e4.0	e23	91	e28	32	3.1	.50
15	.05	e.00	e.00	e.00	e.00	e5.0	e23	87	e30	30	2.5	.70
16	.00	e.00	e.00	e.00	e.00	e6.0	e23	100	e30	32	1.8	.40
17	.00	e.00	e.00	e.30	e.00	e9.0	e22	88	e28	33	1.3	.30
18	.00	e.00	e.00	e.50	e.00	e10	e25	95	e28	36	1.1	.20
19	.00	e.00	e.00	e.60	e.00	e14	e37	134	e28	37	1.3	.20
20	.00	e.00	e.00	e.30	e.00	e18	e56	168	e28	35	1.4	.20
21	.00	e.00	e.00	e.10	e.00	e22	e82	161	e28	34	1.0	.20
22	.00	e.00	e.00	e.00	e.00	e28	e114	163	e26	33	1.2	.20
23	.00	e.00	e.00	e.00	e.00	e31	e139	183	e26	33	.90	.10
24	.00	e.00	e.00	e.00	e.00	e39	e113	196	e26	36	1.2	.10
25	.00	e.00	e.00	e.00	e.00	e38	e100	140	e26	35	1.2	.10
26	.00	e.00	e.00	e.00	e.00	e39	e111	174	e24	35	1.3	.90
27	.00	e.00	e.00	e.00	e.00	e38	e64	185	e24	34	1.1	1.6
28	.00	e.00	e.00	e.00	e.00	e34	e33	206	e24	32	.80	1.2
29	.00	e.00	e.00	e.00	---	e34	e84	223	e24	23	.80	1.7
30	.00	e.00	e.00	e.00	---	e32	223	251	e17	7.0	.60	2.4
31	.00	---	e.00	e.00	---	e29	---	249	---	6.0	.60	---
TOTAL	1.55	0.00	0.00	2.90	1.20	437.20	1588	5094	824	937.0	86.60	26.40
MEAN	.050	.000	.000	.094	.043	14.1	52.9	164	27.5	30.2	2.79	.88
MAX	.51	.00	.00	.60	.60	39	223	251	71	37	6.0	2.4
MIN	.00	.00	.00	.00	.00	.00	22	87	17	6.0	.60	.10
AC-FT	3.1	.00	.00	5.8	2.4	867	3150	10100	1630	1860	172	52

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

MEAN	.52	.93	1.01	3.47	5.03	23.7	77.5	124	67.1	11.7	1.67	.17
MAX	3.22	6.24	7.33	22.5	25.6	78.5	124	440	365	76.0	13.7	.90
(WY)	1995	1995	1995	1995	1995	1995	1989	1993	1995	1995	1995	1995
MIN	.000	.000	.000	.000	.000	.000	40.7	53.3	9.14	.83	.000	.000
(WY)	1989	1989	1989	1987	1987	1992	1995	1997	1992	1994	1988	1988

SUMMARY STATISTICS	FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998	
ANNUAL TOTAL	8998.85			
ANNUAL MEAN	24.7		28.8	
HIGHEST ANNUAL MEAN			67.8	1993
LOWEST ANNUAL MEAN			13.5	1987
HIGHEST DAILY MEAN	251	May 30	888	May 16 1996
LOWEST DAILY MEAN	.00	Oct 1	.00	Nov 12 1986
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 1	.00	Dec 5 1986
ANNUAL RUNOFF (AC-FT)	17850		20850	
10 PERCENT EXCEEDS	87		87	
50 PERCENT EXCEEDS	.90		1.0	
90 PERCENT EXCEEDS	.00		.00	

e Estimated.

11237700 PITMAN CREEK NEAR TAMARACK MOUNTAIN, CA

LOCATION.—Lat 37°11'57", long 119°12'51", in NW 1/4 NW 1/4 sec.35, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 400 ft downstream from Huntington–Shaver Conduit Tunnel, 0.9 mi downstream from confluence of Tamarack and South Fork Tamarack Creeks, 1.3 mi upstream from mouth, and 1.8 mi east of town of Big Creek.

DRAINAGE AREA.—23.0 mi^2.

PERIOD OF RECORD.—October 1986 to February 1989, March 1989 to December 1995, April 1996 to November 1996, and March 1997 to current year.

GAGE.—Water-stage recorder and concrete control with V-notch sharp-crested weir. Elevation of gage is 7,000 ft above sea level, from topographic map

REMARKS.—Most of flow is diverted upstream from station at Pitman Creek Shaft below Tamarack Creek (station 11237600) to Huntington–Shaver Conduit. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, unknown, Jan. 2, 1997, no flow Feb. 15 to Apr. 4, 1991.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.38	.59	e1.2	e1.5	e1.6	e1.6	e2.0	2.3	e330	384	18	2.7
2	.36	.56	e1.1	e1.6	e2.0	e1.6	e2.0	3.9	e410	382	15	2.6
3	.36	.56	e1.0	e1.8	e2.0	e1.7	e2.0	8.5	e427	327	14	2.5
4	.36	.54	e1.0	e1.6	e2.0	e1.6	e2.0	5.5	e311	300	12	2.9
5	.34	.54	e1.1	e1.5	e2.0	e1.6	e2.0	2.8	e366	284	10	3.2
6	.33	.51	e1.8	e1.5	e2.0	e1.8	e2.0	1.7	e472	257	8.7	4.1
7	.39	.56	e1.8	e1.5	e2.0	e2.0	e2.0	1.7	e509	238	7.9	4.6
8	.42	.56	e1.6	e1.6	e2.0	e2.0	e2.0	1.7	e464	244	7.0	3.6
9	.42	.52	e1.6	e1.8	e1.8	e2.0	e2.0	1.9	e471	221	5.9	4.0
10	.66	.59	e1.4	e2.0	e1.9	e2.0	e2.0	1.9	e424	181	5.7	4.2
11	.79	e.80	e1.3	e2.0	e1.8	e2.0	e2.0	1.8	e621	152	5.1	3.6
12	.76	e.78	e1.1	e2.0	e1.8	e2.0	e2.0	1.7	e451	143	5.1	3.0
13	.76	e.76	e1.1	e2.0	e1.8	e2.0	e2.0	1.6	e525	131	5.1	2.7
14	.75	e.74	e1.2	e2.0	e1.7	e2.0	e2.0	1.6	e625	114	5.1	2.6
15	.73	e.62	e1.2	e1.8	e1.8	e2.0	e2.0	1.5	e746	104	4.6	2.6
16	.70	e.60	e1.2	e2.0	e1.7	e2.0	e2.0	1.5	e676	95	4.6	2.5
17	.65	e.63	e1.3	e2.0	e1.9	e2.0	e2.0	1.5	e594	85	4.6	2.3
18	.60	e.63	e1.3	e2.0	e1.8	e2.0	e2.0	1.5	e615	70	4.6	2.2
19	.57	e1.0	e1.3	e2.0	e1.7	e2.0	e2.0	2.5	e621	58	4.6	2.1
20	.56	e1.1	e1.5	e2.0	e1.8	e2.0	e2.0	5.1	e628	52	4.6	2.0
21	.56	e.87	e1.5	e2.0	e1.9	e2.0	e2.0	3.5	e624	47	4.6	2.0
22	.54	e.86	e1.4	e2.0	e1.8	e2.0	e2.0	4.8	e558	59	4.2	2.1
23	.54	e1.0	e1.4	e1.8	e1.8	e2.0	e2.0	14	e506	50	4.2	2.1
24	.54	e.90	e1.3	e1.7	e1.7	e2.0	e2.0	60	e512	31	3.8	2.0
25	.54	e.84	e1.2	e1.6	e1.8	e2.0	e2.0	140	e486	20	3.7	2.0
26	.54	e1.3	e1.3	e1.5	e1.7	e2.0	e2.0	54	e451	11	3.4	2.7
27	.56	e1.5	e1.4	e1.5	e1.6	e2.0	e80	1.3	e437	7.5	3.4	5.1
28	.54	e1.8	e1.5	e1.5	e1.5	e2.0	e140	1.6	e448	4.2	3.3	4.0
29	.57	e1.5	e1.5	e1.5	---	e2.0	e110	.99	e447	8.7	3.0	3.3
30	.59	e1.4	e1.5	e1.5	---	e2.0	1.2	7.9	414	22	2.8	2.3
31	.59	---	e1.5	e1.5	---	e2.0	---	96	---	20	2.7	---
TOTAL	17.00	25.16	41.6	54.3	50.9	59.9	383.2	436.29	15169	4102.4	191.3	87.6
MEAN	.55	.84	1.34	1.75	1.82	1.93	12.8	14.1	506	132	6.17	2.92
MAX	.79	1.8	1.8	2.0	2.0	2.0	140	140	746	384	18	5.1
MIN	.33	.51	1.0	1.5	1.5	1.6	1.2	.99	311	4.2	2.7	2.0
AC-FT	34	50	83	108	101	119	760	865	30090	8140	379	174

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

MEAN	.62	.87	1.06	1.37	1.88	5.27	28.4	47.0	59.3	22.5	1.16	.69
MAX	1.40	1.74	1.50	2.17	5.19	24.8	126	265	506	132	6.17	2.92
(WY)	1987	1990	1990	1990	1992	1990	1997	1995	1998	1998	1998	1998
MIN	.13	.31	.41	.56	.35	.000	1.22	1.22	.66	.52	.16	.13
(WY)	1989	1991	1991	1991	1991	1991	1994	1990	1990	1992	1994	1987

SUMMARY STATISTICS	FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998	
ANNUAL TOTAL	20618.65			
ANNUAL MEAN	56.5		14.2	
HIGHEST ANNUAL MEAN			56.5	1998
LOWEST ANNUAL MEAN			.79	1991
HIGHEST DAILY MEAN	746	Jun 15	762	May 16 1996
LOWEST DAILY MEAN	.33	Oct 6	.00	Feb 15 1991
ANNUAL SEVEN-DAY MINIMUM	.36	Oct 1	.00	Feb 15 1991
ANNUAL RUNOFF (AC-FT)	40900		10280	
10 PERCENT EXCEEDS	249		8.3	
50 PERCENT EXCEEDS	2.0		1.2	
90 PERCENT EXCEEDS	.63		.24	

e Estimated.

11238250 EASTWOOD POWERPLANT ABOVE SHAVER LAKE, NEAR BIG CREEK, CA

LOCATION.—Lat 37°07'55", long 119°15'39", in NE 1/4 SW 1/4 sec.20, T.9 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, 0.25 mi upstream from Shaver Lake and 5.0 mi south of Big Creek.

PERIOD OF RECORD.—October 1987 to current year.

GAGE.—Acoustic flow meter in powerplant penstock. Elevation of gage is 5,400 ft above sea level, from topographic map.

REMARKS.—Flow is diverted from Huntington Lake (station 11236000) and Pitman Creek (station 11237600) to Balsam Meadows Forebay, then through a tunnel to the powerplant. Water is returned to Shaver Lake (station 11239500) 0.25 mi downstream for further power development in Big Creek powerplants. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, 1,910 ft^3/s, May 24, 1993; no flow for many days each year.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	522	511	480	552	538	341	225	1110	938	1470	947	1010
2	621	596	184	585	448	311	187	976	406	1540	1020	898
3	590	583	8	597	458	365	183	989	531	1490	851	910
4	748	476	402	538	155	150	199	897	938	1640	1060	897
5	618	505	397	463	264	115	183	888	848	1650	866	895
6	601	485	342	473	427	140	187	807	862	1400	574	911
7	657	3	541	453	554	152	321	909	837	1510	569	1110
8	685	0	568	509	554	153	697	892	883	1520	755	958
9	657	0	551	792	390	156	475	984	843	1510	987	866
10	541	80	542	518	387	151	470	975	874	1540	967	483
11	601	517	602	473	0	154	184	899	887	1560	937	542
12	521	457	545	642	500	111	170	917	1070	1410	922	594
13	530	353	568	438	512	76	167	899	1300	1510	755	647
14	558	452	553	88	405	152	167	942	1430	1610	1010	1040
15	528	387	425	556	446	156	144	727	1230	1600	961	572
16	547	0	483	470	460	142	0	719	998	1370	855	569
17	488	0	434	258	377	232	0	729	866	1020	980	546
18	547	0	508	558	387	221	0	747	1210	1060	833	547
19	609	0	397	330	429	138	0	402	1400	912	459	583
20	604	0	375	443	522	152	0	524	1660	1040	305	568
21	386	0	576	522	423	163	108	518	1500	906	324	532
22	342	0	245	457	478	265	122	483	1650	1140	360	505
23	574	0	454	442	386	187	478	540	1550	1470	783	465
24	281	0	570	534	149	298	249	500	1520	1070	602	495
25	283	0	464	548	429	301	270	503	1490	1100	726	579
26	578	320	524	424	398	208	94	537	1510	1090	741	472
27	402	306	384	543	397	199	0	877	1500	1100	918	486
28	362	498	469	416	393	193	0	1230	1530	952	963	517
29	521	318	494	482	---	447	4	1170	1520	1120	1050	606
30	600	606	536	467	---	274	286	1030	1480	1010	917	623
31	579	---	442	472	---	217	---	893	---	942	940	---
TOTAL	16681	7453	14063	15043	11266	6320	5570	25213	35261	40262	24937	20426
MEAN	538	248	454	485	402	204	186	813	1175	1299	804	681
MAX	748	606	602	792	554	447	697	1230	1660	1650	1060	1110
MIN	281	0	8	88	0	76	0	402	406	906	305	465
AC-FT	33090	14780	27890	29840	22350	12540	11050	50010	69940	79860	49460	40510

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1998, BY WATER YEAR (WY)

MEAN	310	220	274	301	271	268	485	805	894	745	555	444
MAX	600	571	540	534	574	684	1081	1605	1503	1343	837	702
(WY)	1996	1996	1997	1997	1997	1997	1996	1993	1993	1995	1997	1996
MIN	.000	.000	21.4	6.19	.000	19.5	29.3	159	270	156	181	81.7
(WY)	1988	1988	1991	1990	1996	1991	1991	1991	1990	1992	1992	1992

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1988 - 1998	
ANNUAL TOTAL	258152		222495			
ANNUAL MEAN	707		610		465	
HIGHEST ANNUAL MEAN					720	1997
LOWEST ANNUAL MEAN					141	1990
HIGHEST DAILY MEAN	1745	May 13	1660	Jun 20	1910	May 24 1993
LOWEST DAILY MEAN	0	Nov 8	0	Nov 8	0	Oct 1 1987
ANNUAL SEVEN-DAY MINIMUM	.00	Nov 16	.00	Nov 16	.00	Oct 1 1987
ANNUAL RUNOFF (AC-FT)	512000		441300		337100	
10 PERCENT EXCEEDS	1100		1130		1030	
50 PERCENT EXCEEDS	671		531		404	
90 PERCENT EXCEEDS	387		150		.00	

11238270 MIDDLE FORK BALSAM CREEK BELOW BALSAM MEADOWS FOREBAY, NEAR BIG CREEK, CA

LOCATION.—Lat 37°09'46", long 119°15'12", in NE 1/4 NW 1/4 sec.9, T.9 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 80 ft downstream from control house at base of Balsam Meadows Dam, 2.6 mi south of Big Creek.

DRAINAGE AREA.—Not determined.

PERIOD OF RECORD.—January 1989 to current year.

GAGE.—Water-stage recorder, 90° V-notch weir and concrete control. Elevation of gage is 6,560 ft above sea level, from topographic map.

REMARKS.—Flow consists of fishery maintenance release and spill over Balsam Meadows Dam. No record of flow over spillway Apr. 15, 1989. Diversion from Balsam Meadows Dam through penstock to Eastwood Powerplant (station 11238250). See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, unknown, Apr. 15, 1989, as there was no record of flow over spillway; minimum daily, 0.31 ft^3/s, Feb. 4, 1989.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.99	.60	.56	.58	.63	.61	.66	.84	1.2	1.3	1.3	1.2
2	.59	.62	.56	.57	.68	.61	.66	.85	1.2	1.3	1.3	1.2
3	.59	.62	.56	.57	.67	.62	.66	.86	1.2	1.3	1.3	1.2
4	.59	.61	.56	.55	.62	.66	.66	.85	1.1	1.3	1.3	1.2
5	.59	.63	.56	.55	.62	.61	.65	.81	1.1	1.3	1.2	1.2
6	.59	.61	.59	.56	.61	.61	.66	.77	1.2	1.2	1.2	1.2
7	.59	.60	.59	.56	.61	.61	.67	.77	1.2	1.3	1.2	1.2
8	.59	e.57	.57	.57	.61	.61	.66	.88	1.2	1.3	1.2	1.3
9	.59	e.57	.56	.57	.61	.61	.67	.97	1.2	1.3	1.2	1.3
10	.59	e.57	.55	.58	.61	.62	.71	.88	1.1	1.3	1.2	1.3
11	.59	e.57	.58	.59	.62	.63	.70	.75	1.1	1.3	1.2	1.3
12	.57	e.57	.58	.59	.64	.62	.70	.76	1.1	1.3	1.3	1.2
13	.59	.56	.59	.59	.64	.63	.69	.73	1.1	1.3	1.3	1.3
14	.57	.56	.58	.59	.64	.63	.68	.72	1.1	1.3	1.3	1.2
15	.56	.56	.58	.75	.63	.65	.66	.71	1.1	1.3	1.3	1.3
16	.56	.56	.59	.66	.64	.65	.65	.71	1.1	1.3	1.2	1.3
17	.56	.56	.58	.59	.64	.66	.67	.70	1.1	1.3	1.2	1.3
18	.56	.56	.59	.64	.64	.65	.68	.70	1.0	1.3	1.2	1.3
19	.56	.56	.59	.62	.64	.65	.69	.76	1.0	1.3	1.3	1.3
20	.56	.56	.58	.61	.64	.67	.70	1.1	1.0	1.2	1.2	1.3
21	.56	.56	.59	.61	.62	.68	.68	1.2	1.0	1.2	1.2	1.3
22	.56	.56	.57	.60	.61	.69	.68	1.2	1.0	1.2	1.2	1.3
23	.56	.56	.59	.60	.61	.71	.71	1.2	1.0	1.2	1.2	1.2
24	.56	.56	.58	.62	.61	.76	.71	1.2	1.0	1.2	1.2	1.3
25	.57	.56	.57	.63	.61	.73	.71	1.2	1.0	1.2	1.2	1.3
26	.59	.56	.58	.65	.61	.70	.70	1.1	1.0	1.2	1.2	1.2
27	.59	.56	.56	.65	.61	.69	.71	1.1	1.0	1.3	1.2	1.3
28	.59	.56	.58	.60	.61	.69	.74	1.2	1.1	1.3	1.2	1.3
29	.60	.56	.58	.64	---	.69	.77	1.2	1.2	1.2	1.2	1.3
30	.61	.54	.58	.63	---	.68	.82	1.1	1.3	1.2	1.2	1.3
31	.59	---	.58	.65	---	.67	---	1.2	---	1.2	1.2	---
TOTAL	18.36	17.20	17.86	18.77	17.53	20.30	20.71	29.02	33.0	39.2	38.1	37.9
MEAN	.59	.57	.58	.61	.63	.65	.69	.94	1.10	1.26	1.23	1.26
MAX	.99	.63	.59	.75	.68	.76	.82	1.2	1.3	1.3	1.3	1.3
MIN	.56	.54	.55	.55	.61	.61	.65	.70	1.0	1.2	1.2	1.2
AC-FT	36	34	35	37	35	40	41	58	65	78	76	75

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1998, BY WATER YEAR (WY)

MEAN	.78	.71	.77	.75	.77	.94	1.06	.88	1.29	1.31	1.33	1.33
MAX	.93	1.15	1.44	1.10	1.10	2.20	2.75	1.28	1.45	1.38	1.48	1.50
(WY)	1992	1992	1992	1993	1993	1992	1992	1995	1995	1990	1992	1992
MIN	.59	.57	.58	.56	.57	.56	.57	.60	1.10	1.17	1.23	1.21
(WY)	1998	1997	1998	1996	1996	1996	1996	1996	1998	1997	1996	1997

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1989 - 1998	
ANNUAL TOTAL	312.42		307.95			
ANNUAL MEAN	.86		.84		1.00	
HIGHEST ANNUAL MEAN					1.38	1992
LOWEST ANNUAL MEAN					.81	1996
HIGHEST DAILY MEAN	1.4	Jun 17	1.3	Jun 30	3.4	Apr 2 1992
LOWEST DAILY MEAN	.54	Nov 30	.54	Nov 30	.31	Feb 4 1989
ANNUAL SEVEN-DAY MINIMUM	.56	Nov 24	.56	Nov 24	.51	Nov 1 1996
INSTANTANEOUS PEAK FLOW			1.5	Jun 6		
INSTANTANEOUS PEAK STAGE			.84	Jun 6		
ANNUAL RUNOFF (AC-FT)	620		611		721	
10 PERCENT EXCEEDS	1.3		1.3		1.4	
50 PERCENT EXCEEDS	.71		.68		.86	
90 PERCENT EXCEEDS	.57		.56		.60	

e Estimated.

11238500 BIG CREEK NEAR MOUTH, NEAR BIG CREEK, CA

LOCATION.—Lat 37°12'28", long 119°19'13", in SE 1/4 NW 1/4 sec.26, T.8 S., R.24 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 0.6 mi upstream from mouth and 3.9 mi west of town of Big Creek.

DRAINAGE AREA.—131 mi^2.

PERIOD OF RECORD.—June 1923 to May 1932, October 1986 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.—Water-stage recorder. Elevation of gage is 2,620 ft above sea level, from topographic map.

REMARKS.—Flow regulated by Huntington Lake (station 11236000) and diversions for power development in Big Creek powerplants. Most of the water is diverted past this station to Big Creek Powerplant No. 8 (station 11238550). See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records collected by the Southern California Edison 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, 7,400 ft^3/s, Jan. 2, 1997, gage height, 10.34 ft, from rating curve extended above 900 ft^3/s; no flow several days in 1925 and 1931.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	4.4	3.9	3.6	4.7	6.3	9.9	4.5	37	425	13	4.1
2	4.2	4.4	3.6	3.8	8.1	19	8.9	4.5	173	495	9.1	4.2
3	4.2	4.4	4.1	3.8	40	5.8	11	52	696	358	6.8	4.2
4	4.2	4.3	4.0	4.1	13	5.5	11	78	549	317	8.6	4.2
5	4.2	3.3	4.2	3.7	8.3	5.7	9.5	66	214	287	6.9	4.2
6	4.2	3.3	4.4	3.6	7.0	6.0	9.5	40	475	268	6.8	4.4
7	4.2	3.8	5.3	3.6	17	5.5	8.9	78	579	238	6.6	4.3
8	4.2	4.7	4.9	3.6	10	5.3	7.8	62	456	239	6.6	4.2
9	4.2	4.5	4.1	4.0	7.9	5.2	7.4	7.8	494	225	6.4	4.5
10	4.5	4.7	3.8	4.3	7.4	5.1	7.2	21	508	162	8.6	4.3
11	8.2	4.5	3.7	3.7	6.9	4.9	7.2	5.0	793	123	6.6	10
12	4.6	4.5	3.7	5.8	6.5	4.9	7.0	6.8	308	121	6.5	4.2
13	4.5	4.5	3.6	5.1	6.1	4.9	7.1	6.3	438	116	181	3.8
14	4.5	4.5	3.7	4.4	11	4.8	7.1	5.6	667	107	222	4.0
15	4.4	4.5	3.7	20	8.5	4.8	247	5.4	828	71	6.2	4.1
16	4.4	4.4	3.3	7.9	7.9	4.7	230	5.4	546	84	4.4	4.0
17	4.3	4.4	3.6	5.0	8.4	4.7	126	5.1	999	90	4.2	3.9
18	4.4	4.3	3.6	6.2	7.5	4.6	5.9	4.9	750	77	4.2	3.9
19	4.1	4.2	3.6	8.3	6.9	4.5	5.7	4.8	765	64	4.2	3.9
20	4.1	4.2	3.6	5.3	6.6	4.4	5.5	4.8	764	57	4.2	3.9
21	4.1	4.2	3.5	4.7	38	4.4	5.4	4.6	843	53	4.2	3.9
22	4.1	4.1	3.5	4.6	286	4.4	5.4	4.5	705	65	4.1	3.9
23	4.2	4.1	3.6	4.4	26	4.3	6.3	4.5	666	60	4.1	3.9
24	4.2	4.1	3.6	4.2	80	9.9	5.8	5.9	632	42	4.2	3.9
25	4.2	4.1	3.8	4.2	69	19	5.0	16	607	32	59	3.9
26	4.2	5.7	3.6	4.1	27	8.5	5.0	4.8	554	23	4.7	4.0
27	4.2	4.3	3.6	4.0	7.0	8.4	4.9	4.5	515	16	79	3.8
28	4.2	4.2	3.6	3.9	6.9	11	10	4.8	523	7.6	77	80
29	3.9	4.1	3.6	4.2	---	8.6	4.6	5.1	516	7.5	59	298
30	4.4	4.1	3.6	7.9	---	7.8	4.5	4.6	471	7.7	4.3	268
31	4.4	---	3.6	5.3	---	8.7	---	6.8	---	7.6	4.2	---
TOTAL	135.9	128.8	118.0	161.3	739.6	211.6	796.5	534.0	17071	4245.4	826.7	761.6
MEAN	4.38	4.29	3.81	5.20	26.4	6.83	26.5	17.2	569	137	26.7	25.4
MAX	8.2	5.7	5.3	20	286	19	247	78	999	495	222	298
MIN	3.9	3.3	3.3	3.6	4.7	4.3	4.5	4.5	37	7.5	4.1	3.8
AC-FT	270	255	234	320	1470	420	1580	1060	33860	8420	1640	1510
a	58810	35870	36690	43860	57520	61820	57490	67170	72160	84240	73710	69850

a Diversion, in acre-feet, to Big Creek Powerplant No. 8, provided by Southern California Edison Co.

11238500 BIG CREEK NEAR MOUTH, NEAR BIG CREEK, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.65	25.1	48.5	71.8	32.5	53.5	13.8	41.6	77.0	28.3	5.93	5.74
MAX	5.66	261	554	786	331	377	58.3	327	569	137	26.7	25.4
(WY)	1994	1997	1997	1997	1997	1995	1995	1995	1998	1998	1998	1998
MIN	2.44	1.97	1.28	1.61	1.69	2.03	2.35	2.23	2.23	2.20	2.27	2.33
(WY)	1988	1988	1995	1989	1988	1992	1989	1987	1987	1987	1988	1987

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998	
ANNUAL TOTAL	37689.2		25730.4			
ANNUAL MEAN	103		70.5		34.0	
HIGHEST ANNUAL MEAN					171	1997
LOWEST ANNUAL MEAN					2.34	1988
HIGHEST DAILY MEAN	3540	Jan 2	999	Jun 17	3540	Jan 2 1997
LOWEST DAILY MEAN	2.8	Sep 6	3.3	Nov 5	1.0	Dec 8 1994
ANNUAL SEVEN-DAY MINIMUM	3.5	Dec 16	3.5	Dec 16	1.1	Dec 4 1994
INSTANTANEOUS PEAK FLOW			2170	Jun 21	7400	Jan 2 1997
INSTANTANEOUS PEAK STAGE			6.44	Jun 21	10.34	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	74760		51040		24630	
TOTAL DIVERSION (AC-FT) a	678000		719200		492900	
10 PERCENT EXCEEDS	462		255		21	
50 PERCENT EXCEEDS	6.6		5.1		3.4	
90 PERCENT EXCEEDS	4.1		3.9		1.8	

a Diversion, in acre-feet, to Big Creek Powerplant No. 8, provided by Southern California Edison Co.

11238600 SAN JOAQUIN RIVER ABOVE STEVENSON CREEK, NEAR BIG CREEK, CA

LOCATION.—Lat 37°12'28", long 119°19'44", unsurveyed, T.8 S., R.24 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in intake structure near left bank, 300 ft upstream from Dam 6, 3.5 mi upstream from Stevenson Creek, 4.4 mi west of town of Big Creek, and at mile 313.6.

DRAINAGE AREA.—1,197 mi^2.

PERIOD OF RECORD.—Water years 1987, 1993–94, October 1995 to current year. Records for water years 1951 to 1972 in files of Southern California Edison Co. Records for water years 1974 to 1986 in files of the U.S. Geological Survey.

GAGE.—Accoustic-velocity meter and water-stage recorder on Dam 6 since Oct. 1, 1992. Water-stage recorders at various sites downstream prior to 1992. Elevation of gage is 2,200 ft above sea level, from topographic map.

REMARKS.—Record consists of computed flow over spillway at Dam 6 and flow through fish-water release valve. At times the sluice valve leaks and this flow bypasses the station. Flow regulated by Mammoth Pool Reservoir and Huntington Lake (stations 11234700 and 11236000) and diversions for power development in Big Creek powerplants. Most of the water is diverted past this station to Big Creek Powerplant No. 3 (station 11241800). See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records collected by the Southern California Edison 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, 72,500 ft^3/s, Jan. 2, 1997; minimum daily, 3.0 ft^3/s, at times in several years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e3.3	3.4	e3.3	3.4	3.4	3.4	295	277	3490	7900	616	3.4
2	e3.3	3.4	e3.3	3.4	3.4	3.4	258	1080	4680	7240	753	3.4
3	e3.3	e3.3	e3.3	3.4	3.3	3.4	369	1130	5070	6400	1280	3.4
4	e3.3	e3.3	e3.3	3.4	3.4	3.4	412	1270	4000	5590	1820	3.4
5	e3.3	e3.3	e3.3	3.4	3.4	3.4	15	1200	3910	4940	1040	3.9
6	e3.3	e3.3	e3.3	3.4	3.4	3.4	3.3	1160	e5460	4840	813	3.4
7	e3.3	e3.3	e3.3	3.4	3.4	3.4	3.4	983	e6970	4730	373	3.4
8	e3.4	e3.3	e3.3	3.4	3.4	3.4	3.4	1470	e6470	5170	50	3.4
9	3.4	e3.3	e3.3	3.4	3.4	3.3	3.3	448	e6290	5990	342	3.4
10	3.4	e3.3	e3.3	3.4	3.3	3.4	3.4	320	6450	5440	640	3.4
11	3.4	e3.3	e3.3	3.4	3.4	3.4	3.4	141	6260	3690	277	8.7
12	3.4	e3.3	e3.3	3.4	3.4	3.4	3.4	291	5580	3510	3.3	3.4
13	3.4	e3.3	e3.3	3.4	3.4	3.4	3.4	103	5160	3350	140	4.6
14	3.4	e3.3	e3.3	3.4	3.4	3.4	3.3	58	6840	3180	285	3.4
15	3.4	e3.3	e3.3	3.4	3.4	3.4	3.3	85	8820	2800	237	e3.4
16	3.4	e3.3	e3.3	3.4	3.4	3.4	3.4	60	10100	2510	133	3.4
17	3.4	e3.3	e3.3	3.4	3.4	3.4	3.4	3.2	8920	1990	3.3	3.4
18	3.4	e3.3	3.4	3.4	3.4	3.3	3.4	106	8190	2350	3.4	3.4
19	3.4	e3.3	3.4	3.4	3.4	3.3	49	44	9120	3340	3.4	3.4
20	3.4	e3.3	3.4	3.4	3.4	3.4	243	160	9500	4190	3.4	3.4
21	3.4	e3.3	3.4	3.4	142	3.4	56	18	9720	5450	9.9	3.4
22	3.4	e3.3	3.4	3.4	24	3.3	3.3	104	10400	4190	3.4	3.4
23	3.4	e3.3	3.4	3.4	3.4	69	82	24	10600	3040	3.3	3.4
24	3.4	e3.3	3.4	3.4	29	603	11	109	9830	1520	22	3.4
25	3.4	e3.3	3.4	3.4	10	1160	125	267	10000	738	19	3.4
26	3.4	e3.3	3.4	3.4	3.4	563	3.3	1010	9310	72	3.3	3.4
27	3.4	e3.3	3.4	3.4	3.4	452	57	1410	8810	1460	74	3.4
28	3.4	e3.3	3.4	3.4	3.4	454	121	1210	9090	1950	3.3	3.4
29	3.4	e3.3	3.4	11	---	319	174	2190	9400	1910	23	3.4
30	3.4	e3.3	3.4	3.4	---	107	64	1460	9970	1410	56	3.4
31	3.4	---	3.4	3.4	---	168	---	2020	---	1420	3.4	---
TOTAL	104.7	99.2	103.7	113.0	286.4	3969.4	2381.4	20211.2	228410	112310	9036.4	109.0
MEAN	3.38	3.31	3.35	3.65	10.2	128	79.4	652	7614	3623	291	3.63
MAX	3.4	3.4	3.4	11	142	1160	412	2190	10600	7900	1820	8.7
MIN	3.3	3.3	3.3	3.4	3.3	3.3	3.3	3.2	3490	72	3.3	3.4
AC-FT	208	197	206	224	568	7870	4720	40090	453100	222800	17920	216
a	85560	58590	61580	84180	131700	169900	172600	194000	174000	170600	153400	152200

e Estimated.

a Diversion, in acre-feet, to Big Creek Powerplant No. 3, provided by Southern California Edison Co.

11238600 SAN JOAQUIN RIVER ABOVE STEVENSON CREEK, NEAR BIG CREEK, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.40	3.40	36.2	1104	485	359	269	1667	2672	882	52.4	3.50
MAX	3.90	3.95	200	6605	1841	954	621	3726	7614	3623	291	4.04
(WY)	1987	1987	1997	1997	1997	1996	1996	1993	1998	1998	1998	1987
MIN	3.14	3.20	3.25	3.26	3.30	3.20	3.25	3.39	3.60	3.29	3.30	3.29
(WY)	1993	1993	1993	1993	1993	1994	1994	1994	1994	1997	1997	1993

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998	
ANNUAL TOTAL	432612.7		377134.4			
ANNUAL MEAN	1185		1033		628	
HIGHEST ANNUAL MEAN					1202	1997
LOWEST ANNUAL MEAN					3.38	1994
HIGHEST DAILY MEAN	32000	Jan 3	10600	Jun 23	32000	Jan 3 1997
LOWEST DAILY MEAN	3.1	Mar 24	3.2	May 17	3.0	Dec 4 1993
ANNUAL SEVEN-DAY MINIMUM	3.3	Jul 14	3.3	Oct 1	3.1	Oct 6 1992
INSTANTANEOUS PEAK FLOW			14200	Jun 23	72500	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	858100		748000		454900	
TOTAL DIVERSION (AC-FT) a	1356000		1608000		1139000	
10 PERCENT EXCEEDS	3880		4770		2280	
50 PERCENT EXCEEDS	3.4		3.4		3.4	
90 PERCENT EXCEEDS	3.3		3.3		3.2	

a Diversion, in acre-feet, to Big Creek Powerplant No. 3, provided by Southern California Edison Co.

11239300 NORTH FORK STEVENSON CREEK AT PERIMETER ROAD, NEAR BIG CREEK, CA

LOCATION.—Lat 37°08'13", long 119°15'13", in SE 1/4 NW 1/4 sec.21, T.9 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 100 ft upstream from Perimeter Road and 4.8 mi south of town of Big Creek.

DRAINAGE AREA.—4.42 mi^2.

PERIOD OF RECORD.—January 1989 to current year.

GAGE.—Water-stage recorder, modified Parshall flume, and concrete control. Elevation of gage is 5,740 ft above sea level, from topographic map.

REMARKS.—Releases for fishery maintenance from Balsam Meadows Forebay on Balsam Creek enter creek upstream from station. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, 3,220 ft^3/s, May 16, 1996, gage height, 9.58 ft; minimum daily, 1.6 ft^3/s, Feb. 14, 1991.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	4.7	4.6	4.9	5.9	8.0	e15	52	56	40	8.5	4.8
2	5.9	4.6	4.5	5.1	17	8.3	e14	53	59	38	8.2	4.7
3	5.7	4.6	4.3	4.9	16	8.5	e14	57	80	36	7.9	4.8
4	5.3	4.6	4.2	e4.9	10	8.2	14	68	61	34	7.7	5.4
5	5.6	4.5	5.4	e4.9	8.6	8.1	13	61	58	31	7.4	5.9
6	4.8	4.5	7.6	e4.9	9.3	7.8	13	53	71	29	6.9	5.7
7	4.9	4.6	5.8	4.9	8.8	e7.5	13	56	82	27	6.8	5.6
8	5.0	4.4	5.3	4.9	8.0	e7.6	13	62	63	25	6.7	5.4
9	4.7	2.8	e5.0	5.7	7.7	7.7	14	55	61	24	6.7	5.5
10	5.4	2.7	e4.9	6.1	7.4	8.0	15	45	66	22	6.5	5.5
11	5.4	39	e4.8	5.3	7.5	8.5	15	41	99	21	6.5	5.3
12	5.2	4.7	4.8	7.6	7.5	9.5	14	39	82	19	6.2	5.2
13	5.0	4.9	4.8	6.4	7.4	10	e13	35	79	18	6.2	5.1
14	4.8	4.8	4.8	5.8	e7.6	10	e13	34	81	17	6.1	4.9
15	4.8	4.7	4.8	27	e7.5	11	e12	33	88	16	6.0	4.9
16	4.6	4.5	4.7	15	e7.4	12	e12	34	84	15	5.8	4.9
17	4.6	17	4.8	9.5	e7.2	12	12	31	72	14	5.7	4.8
18	4.6	66	4.7	10	e6.9	13	14	32	72	13	5.7	4.8
19	4.6	67	4.7	10	e6.7	14	17	34	70	13	5.3	4.7
20	4.7	68	4.7	7.8	e6.8	16	22	36	68	12	5.2	4.7
21	4.7	70	4.6	7.5	6.7	17	27	33	65	12	5.1	4.8
22	4.7	70	e4.5	6.7	7.0	18	33	33	60	12	5.0	5.0
23	4.7	70	e4.5	6.5	9.0	25	34	34	56	12	5.1	5.0
24	4.7	69	e4.5	6.2	e8.5	36	29	38	56	11	5.0	5.1
25	4.7	38	e4.5	6.1	e7.7	40	28	42	57	11	4.9	5.0
26	4.8	5.1	e4.6	6.0	7.4	27	30	43	55	10	4.9	6.3
27	4.7	4.4	e4.8	5.9	7.2	23	35	39	52	9.8	5.0	6.5
28	4.7	4.5	4.8	5.8	7.3	e21	38	41	47	9.3	5.0	5.7
29	4.7	4.4	4.8	e6.0	---	e18	43	45	45	9.1	4.8	5.5
30	4.7	4.7	4.8	e6.1	---	e17	51	44	42	8.9	4.7	5.4
31	4.7	---	4.8	e6.0	---	e16	---	50	---	8.7	4.8	---
TOTAL	153.4	662.7	150.4	224.4	232.0	453.7	630	1353	1987	577.8	186.3	156.9
MEAN	4.95	22.1	4.85	7.24	8.29	14.6	21.0	43.6	66.2	18.6	6.01	5.23
MAX	6.0	70	7.6	27	17	40	51	68	99	40	8.5	6.5
MIN	4.6	2.7	4.2	4.9	5.9	7.5	12	31	42	8.7	4.7	4.7
AC-FT	304	1310	298	445	460	900	1250	2680	3940	1150	370	311

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1998, BY WATER YEAR (WY)

MEAN	4.74	7.93	7.05	14.1	12.0	17.4	27.7	34.5	31.7	9.84	5.87	5.14
MAX	6.39	22.1	14.1	71.8	52.2	40.7	53.9	108	178	36.2	11.3	7.15
(WY)	1994	1998	1992	1997	1996	1995	1992	1996	1995	1995	1996	1995
MIN	3.65	3.80	4.29	4.59	3.89	7.15	8.99	5.80	4.66	4.00	4.08	4.14
(WY)	1991	1993	1993	1992	1991	1991	1994	1990	1989	1989	1989	1991

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1989 - 1998	
ANNUAL TOTAL	6737.2		6767.6			
ANNUAL MEAN	18.5		18.5		15.7	
HIGHEST ANNUAL MEAN					34.7	1995
LOWEST ANNUAL MEAN					5.57	1990
HIGHEST DAILY MEAN	836	Jan 2	99	Jun 11	1750	May 16 1996
LOWEST DAILY MEAN	2.7	Nov 10	2.7	Nov 10	1.6	Feb 14 1991
ANNUAL SEVEN-DAY MINIMUM	4.0	Nov 4	4.0	Nov 4	2.0	Feb 14 1991
INSTANTANEOUS PEAK FLOW			120	Jun 7	3220	May 16 1996
INSTANTANEOUS PEAK STAGE			3.78	Jun 7	9.58	May 16 1996
ANNUAL RUNOFF (AC-FT)	13360		13420		11340	
10 PERCENT EXCEEDS	41		56		33	
50 PERCENT EXCEEDS	6.5		7.6		6.0	
90 PERCENT EXCEEDS	4.7		4.7		4.2	

e Estimated.

11239500 SHAVER LAKE NEAR BIG CREEK, CA

LOCATION.—Lat 37°08'41", long 119°18'06", in SW 1/4 SE 1/4 sec.13, T.9 S., R.24 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, near center of dam on Stevenson Creek, 5.2 mi southwest of town of Big Creek.

DRAINAGE AREA.—29.1 mi^2.

PERIOD OF RECORD.—November 1909 to current year. Prior to January 1927, monthly contents only, published in WSP 1315-A; January 1927 to September 1931, published in WSP 721. Maximum and minimum daily contents (water years 1928–39) summarized in WSP 881. Prior to 1960, maximum and minimum daily contents were published.

REVISED RECORDS.—WSP 1565: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Southern California Edison Co.). Prior to Jan. 11, 1927, gage on rockfill dam a short distance upstream at different datum.

REMARKS.—Storage began prior to 1905. Original lake formed by rockfill dam, usable capacity, 5,500 acre-ft. Water diverted by Fresno Flume and Lumber Co.'s Flumes Nos. 1 and 2 beginning prior to 1907 and discontinued July 7, 1920. Present lake formed by concrete-arch dam; dam completed Nov. 18, 1927. Usable capacity of present lake, 135,568 acre-ft between elevations 5,225 ft, trash-rack foundation, and 5,370.13 ft, crest of spillway. Additional storage of 92 acre-ft is not available for release. Water is received from Pitman Creek (since Feb. 22, 1928) and Huntington Lake (since Apr. 21, 1928) via Huntington–Shaver Conduit and Eastwood Powerplant (station 11238250). Water is released for power development in Big Creek powerplants. Records, including extremes, represent contents at 2400 hours. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 135,897 acre-ft, July 5, 1946, Aug. 4, 1978; maximum elevation, 5,370.28 ft, Aug. 4, 1978; minimum contents, 652 acre-ft, Mar. 7, 1942, elevation, 5,249.38 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 135,415 acre-ft, Aug. 19, elevation, 5,370.06 ft; minimum, 39,203 acre-ft, Apr. 21, elevation, 5,314.02 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Southern California Edison Co., dated Oct. 1, 1967)

5,245	379	5,270	4,748	5,320	46,797
5,250	700	5,280	9,189	5,330	60,942
5,255	1,254	5,290	15,598	5,340	76,741
5,260	2,070	5,300	24,004	5,350	94,568
5,265	3,206	5,310	34,455	5,371	137,476

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	110556	96722	87181	87708	89255	76274	52891	43829	82938	114915	133935	133282
2	110314	96244	87363	87490	89347	75507	52151	45302	84574	116202	134065	133500
3	110234	95806	86804	87472	90192	74694	51286	46390	85158	117662	134304	133565
4	110073	95330	86535	87399	90985	74018	50520	47565	85549	119004	134261	133608
5	110274	95140	86966	87381	90985	72935	49676	48754	85639	120601	134783	133630
6	110274	95616	87272	87254	90985	71842	48781	49962	85818	122206	135240	133804
7	110294	96149	87617	87020	91599	70811	47969	50697	86249	123380	135131	133869
8	110073	95578	88180	86966	91786	69690	47309	51643	87181	124703	134826	134217
9	109391	94949	88434	86679	91991	68563	47336	52569	87835	125907	134522	134348
10	108810	94492	88525	87109	91935	67466	46986	54374	88198	126794	134587	134348
11	108389	94341	88561	87308	91693	66409	46692	55971	88489	127687	134522	134022
12	108168	95025	88634	86912	90652	65776	45917	57681	89016	128643	134348	133804
13	107492	95140	88652	87617	90799	65238	45056	59482	90027	129540	134391	133717
14	107034	94835	88779	87835	89806	64201	44239	61167	91339	130524	134217	134130
15	106457	94568	88943	87272	89016	63276	43445	62912	93058	131491	134478	134609
16	105903	94209	89071	89218	87944	62353	42920	64201	94644	132483	134805	134457
17	105271	93152	89310	89512	86984	61392	42024	65544	95444	133195	134979	134326
18	104660	92438	89365	89843	86374	60584	41161	66749	95559	133108	135044	134174
19	103874	91935	89365	90413	86015	59765	40342	67905	96054	133086	135415	133956
20	103229	91339	89365	90560	85406	58831	39570	68642	97564	132828	135087	133782
21	102427	90707	89310	90578	84202	58048	39203	69436	99350	132741	134500	133630
22	101708	90119	89163	90523	83252	57138	39215	70344	100971	132612	134500	133391
23	100913	89586	89163	90413	82344	56464	39668	70875	102877	132720	134674	133108
24	100293	89108	88834	90321	81769	55725	40838	71584	104581	133369	134435	132763
25	99542	88434	88870	90174	81269	56174	41496	72168	106140	133500	133739	132461
26	98907	87853	88779	90027	80131	55638	42112	72935	107631	133500	133391	132785
27	98138	88471	88634	89843	78955	55116	42680	73985	109090	133543	132979	132159
28	97373	88362	88489	89696	77617	54474	42756	75290	110536	133565	132741	131944
29	96492	88071	88362	89549	---	54203	42857	77600	111908	133304	132979	131858
30	96722	87490	88271	89696	---	53549	43125	79637	113428	133587	133152	131577
31	97105	---	87835	89512	---	52877	---	81424	---	133848	133195	---
MAX	110556	96722	89365	90578	91991	76274	52891	81424	113428	133848	135415	134609
MIN	96492	87490	86535	86679	77617	52877	39203	43829	82938	114915	132741	131577
a	5351.33	5346.18	5346.37	5347.29	5340.52	5324.46	5317.17	5342.75	5359.61	5369.34	5369.04	5368.29
b	-14177	-9615	+345	+1677	-11895	-24740	-9752	+38299	+32004	+20420	-653	-1618

CAL YR 1997 b -23730
WTR YR 1998 b +20295

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

11241500 STEVENSON CREEK AT SHAVER LAKE, CA

LOCATION.—Lat 37°08'41", long 119°18'27", in NE 1/4 SW 1/4 sec.13, T.9 S., R.24 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 400 ft downstream from Highway 168, 1,600 ft downstream from Shaver Lake Dam, 2.6 mi north of town of Shaver Lake, and 5.1 mi southwest of town of Big Creek.

DRAINAGE AREA.—29.4 mi^2.

PERIOD OF RECORD.—October 1916 to August 1919, October 1919 to September 1920, May 1922 to September 1928, and October 1986 to current year. Prior to October 1986, published as "at Shaver."

GAGE.—Water-stage recorder, Parshall flume, and concrete control; auxilliary gage, accoustic-velocity meters on Shaver Lake Dam. Elevation of gage is 5,200 ft above sea level, from topographic map. See WSP 1315-A for history of changes prior to October 1986.

REMARKS.—Flow regulated by Shaver Lake (station 11239500). Flow diverted into basin through Eastwood Powerplant (station 11238250). Diversion to Big Creek Powerplant No. 2A (station 11238400) bypasses station and returns to Big Creek. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, 1,390 ft^3/s, Nov. 27, 1926, gage height, 3.65 ft, site and datum then in use; maximum gage height, 7.64 ft, Apr. 26, 1993; no flow at times in 1924, 1925, 1927.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	3.4	3.3	2.3	2.6	203	195	203	4.6	221	257	3.0
2	3.6	3.4	3.3	2.3	5.0	203	194	204	44	220	257	3.0
3	3.6	3.4	3.3	2.4	5.3	201	194	204	211	220	257	3.0
4	3.6	3.4	3.3	2.4	3.6	201	193	205	210	220	150	3.0
5	3.6	3.4	3.4	2.3	3.1	203	192	206	211	221	5.2	3.0
6	3.5	3.4	3.8	2.3	4.7	203	193	207	212	222	5.2	3.1
7	3.5	3.4	3.9	2.3	4.1	202	193	207	212	222	e101	3.0
8	3.5	3.4	3.8	2.3	3.9	202	191	208	212	e335	e178	3.0
9	3.5	3.4	3.6	2.4	3.3	201	192	68	213	459	e179	3.1
10	3.7	3.5	3.5	2.6	3.1	200	193	4.6	212	459	e179	3.1
11	3.6	3.6	3.4	2.5	51	199	191	4.5	213	459	e98	3.1
12	3.6	3.5	3.4	2.9	157	199	191	4.6	214	459	4.2	3.1
13	3.5	3.6	3.4	2.7	201	201	190	4.7	215	459	4.1	3.0
14	3.5	3.5	3.4	2.6	201	200	130	4.6	214	459	4.0	3.0
15	3.5	3.5	3.4	5.3	201	200	4.6	4.6	214	456	3.9	3.0
16	3.5	3.5	3.4	3.5	202	199	4.5	4.6	214	459	e294	3.0
17	3.5	3.4	3.4	2.8	114	198	4.5	4.6	215	459	e313	3.0
18	3.5	3.4	3.4	3.2	70	198	4.6	4.5	216	459	e116	3.2
19	3.5	3.5	3.4	3.1	206	197	4.6	4.5	217	459	3.6	3.2
20	3.5	3.4	3.4	2.7	205	197	4.6	4.5	216	459	3.2	3.2
21	3.5	3.4	3.3	2.6	206	197	4.6	4.5	216	459	3.1	3.2
22	3.5	3.4	3.0	2.6	206	197	4.6	4.5	217	459	3.1	3.2
23	3.5	3.4	2.4	2.6	205	195	4.7	4.5	217	459	3.1	3.2
24	3.5	3.4	2.3	2.5	205	196	4.6	4.5	218	459	3.0	3.2
25	3.5	3.3	2.3	2.5	204	198	5.5	4.5	219	459	3.0	3.2
26	3.5	3.9	2.3	2.5	203	196	6.4	4.6	218	459	3.0	3.3
27	3.5	3.6	2.3	2.4	203	196	6.4	4.5	218	459	3.0	3.3
28	3.5	3.4	2.3	2.4	203	196	5.5	4.7	219	459	3.0	3.2
29	3.4	3.4	2.3	2.7	---	195	4.5	4.7	219	e358	3.0	3.2
30	3.4	3.4	2.3	2.6	---	194	37	4.6	220	257	3.0	3.2
31	3.4	---	2.3	2.5	---	194	---	4.6	---	257	3.0	---
TOTAL	109.0	103.6	96.3	82.8	3281.7	6161	2743.2	1812.5	6070.6	11930	2445.7	93.3
MEAN	3.52	3.45	3.11	2.67	117	199	91.4	58.5	202	385	78.9	3.11
MAX	3.7	3.9	3.9	5.3	206	203	195	208	220	459	313	3.3
MIN	3.4	3.3	2.3	2.3	2.6	194	4.5	4.5	4.6	220	3.0	3.0
AC-FT	216	205	191	164	6510	12220	5440	3600	12040	23660	4850	185
a	32270	19140	14410	17560	22930	34880	25750	21370	31160	38460	33470	37680

e Estimated.

a Diversion, in acre-feet, to Big Creek Powerplant No. 2A, provided by Southern California Edison Co.

11241500 STEVENSON CREEK AT SHAVER LAKE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 1928, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.54	8.14	7.53	5.13	12.9	38.7	66.8	59.8	20.3	5.73	4.76	3.51
MAX	9.76	45.5	33.5	15.1	40.7	147	245	203	61.3	16.5	12.7	10.9
(WY)	1917	1927	1927	1920	1927	1917	1917	1922	1922	1920	1927	1927
MIN	.48	.30	.13	.15	.25	.37	.46	.27	.070	.000	.000	.000
(WY)	1926	1928	1928	1928	1928	1924	1928	1928	1924	1924	1924	1924

SUMMARY STATISTICS	WATER YEARS 1917 - 1928	
ANNUAL TOTAL		
ANNUAL MEAN	19.6	
HIGHEST ANNUAL MEAN	61.9	1917
LOWEST ANNUAL MEAN	.76	1928
HIGHEST DAILY MEAN	854	Nov 27 1926
LOWEST DAILY MEAN	.00	Jun 11 1924
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 20 1924
ANNUAL RUNOFF (AC-FT)	14170	
10 PERCENT EXCEEDS	46	
50 PERCENT EXCEEDS	4.5	
90 PERCENT EXCEEDS	.20	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.60	3.26	2.76	23.6	35.1	55.0	57.8	99.9	144	103	17.6	3.54
MAX	4.34	3.84	3.73	253	280	304	289	382	556	495	98.4	4.90
(WY)	1996	1988	1994	1997	1997	1997	1997	1996	1995	1995	1995	1997
MIN	3.26	2.92	2.22	2.21	2.39	2.53	3.43	3.45	3.23	3.03	3.16	3.11
(WY)	1997	1993	1990	1996	1990	1996	1989	1992	1994	1997	1996	1998

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998	
ANNUAL TOTAL	52340.9		34929.7			
ANNUAL MEAN	143		95.7		45.8	
HIGHEST ANNUAL MEAN					156	1995
LOWEST ANNUAL MEAN					3.06	1990
HIGHEST DAILY MEAN	355	Jun 23	459	Jul 9	688	Jun 25 1995
LOWEST DAILY MEAN	2.3	Dec 24	2.3	Dec 24	1.2	Dec 1 1991
ANNUAL SEVEN-DAY MINIMUM	2.3	Dec 24	2.3	Dec 24	1.9	Nov 26 1991
INSTANTANEOUS PEAK FLOW			463	Jul 9	816	Jun 13 1995
INSTANTANEOUS PEAK STAGE			6.21	Jul 8	7.64	Apr 26 1993
ANNUAL RUNOFF (AC-FT)	103800		69280		33190	
TOTAL DIVERSION (AC-FT) a	305500		329100		236800	
10 PERCENT EXCEEDS	317		220		232	
50 PERCENT EXCEEDS	3.8		4.5		3.4	
90 PERCENT EXCEEDS	3.0		2.9		2.5	

a Diversion, in acre-feet, to Big Creek Powerplant No. 2A, provided by Southern California Edison Co.

11241950 REDINGER LAKE NEAR AUBERRY, CA

LOCATION.—Lat 37°08'42", long 119°26'58", in NE 1/4 SW 1/4 sec.15, T.9 S., R.23 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, at intake structure on Dam No. 7 on San Joaquin River, 4.2 mi northeast of Auberry.

DRAINAGE AREA.—1,295 mi^2.

PERIOD OF RECORD.—November 1950 to current year. Prior to October 1965, monthend contents only, published in WSP 1930.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Southern California Edison Co.).

REMARKS.—Lake is formed by a concrete dam; storage began Nov. 19, 1950. Usable capacity, 26,120 acre-ft between elevations 1,320.00 ft, invert of tunnel, and 1,403.00 ft, top of radial gates. Additional storage of 8,914 acre-ft not available for release. Water is used for power development in Big Creek Powerplant No. 4 (station 11246530). Records, including extremes, represent contents at 2400 hours. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 26,586 acre-ft, Aug. 5, 1978, elevation, 1,404.00 ft; minimum since appreciable storage was attained, 5,985 acre-ft, Nov. 22, 1981, elevation, 1,346.85 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 25,833 acre-ft, Aug. 4, elevation, 1,402.38 ft; minimum, 11,069 acre-ft, Oct. 1, elevation, 1,364.58 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Southern California Edison Co., dated Oct. 27, 1950)

1,340	4,284	1,380	16,455
1,350	6,809	1,390	20,427
1,360	9,651	1,400	24,748
1,370	12,858	1,405	27,058

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11069	24251	24385	24506	23711	15417	25451	19563	25073	25579	23246	25264
2	12378	24640	24349	24888	24551	16086	24902	22801	24884	25722	24313	24573
3	12695	24511	24304	24757	24929	17547	25191	24475	25209	23149	23711	24636
4	12658	24627	24587	24816	22331	17248	25128	24780	23614	23517	25833	24897
5	12058	24784	24479	24847	21443	16361	24158	24167	23329	23874	24074	24829
6	11387	23790	25010	25146	23080	15858	23931	22827	25028	23557	24136	24906
7	12811	21227	24902	25119	23080	15212	23834	21219	24216	23014	24394	25042
8	14556	20903	24600	24109	22589	14414	23377	21915	23346	23759	24825	24762
9	16406	20130	24555	23285	22594	15550	23149	21012	23914	24408	25137	24924
10	18056	17789	24596	23605	22862	16410	22957	22763	24042	23101	25078	24708
11	19661	15687	24546	24216	22715	15340	21745	22888	23909	22832	24757	23940
12	21312	12817	24632	24676	21668	15580	20727	23640	22706	23945	23958	23786
13	23023	12419	24502	23980	20769	13710	21307	23684	22767	24390	23931	21105
14	24029	13959	24694	22884	20076	13514	21320	23684	24493	23342	24870	19850
15	24140	15406	24694	25689	19013	12385	20761	23967	24082	24065	24663	18104
16	24300	16844	24636	23728	17793	12941	19531	24105	23856	24771	24408	16425
17	23980	18420	24658	23058	16546	13237	17415	23971	21698	24421	24537	14697
18	23768	18456	24425	23211	15227	13376	15539	23945	22361	24654	24484	12906
19	23777	20519	24167	23053	16482	14218	14221	23958	22953	24198	24313	12975
20	24025	22396	23364	24798	16195	14758	13434	23989	24381	24007	24798	13150
21	24185	22396	24528	24381	16267	16806	14062	23918	24131	25132	24461	12753
22	24011	22211	24748	24096	16909	16737	14104	23865	24198	23456	24497	12668
23	24029	22555	24771	23781	17183	16691	13598	23883	23874	23927	24291	12675
24	24180	23005	24632	23658	17388	18376	13791	23808	23645	23583	24269	12882
25	24056	23442	24605	23377	17044	22788	14274	24287	24158	24771	24564	12712
26	24273	23812	24708	23394	16493	24627	14787	24703	23830	24372	25246	12726
27	24074	23838	24875	23329	15850	25451	15139	23777	23390	23892	24951	12739
28	24291	23803	24443	23040	15343	25001	16221	24322	23649	23980	24690	12665
29	24242	24118	24220	23355	---	24902	16691	25069	25566	23724	25046	12712
30	24105	24372	23918	23561	---	24640	17353	24105	22996	23750	25593	12465
31	24042	---	24189	23640	---	24992	---	25768	---	24136	25561	---
MAX	24300	24784	25010	25689	24929	25451	25451	25768	25566	25722	25833	25264
MIN	11069	12419	23364	22884	15227	12385	13434	19563	21698	22832	23246	12465
a	1398.42	1399.16	1398.75	1397.51	1377.02	1400.54	1382.34	1402.24	1396.04	1398.63	1401.79	1368.84
b	+14023	+330	-183	-549	-8297	+9649	-7639	+8415	-2772	+1140	+1425	-13096

CAL YR 1997 b +2903
WTR YR 1998 b +2446

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

11242000 SAN JOAQUIN RIVER ABOVE WILLOW CREEK, NEAR AUBERRY, CA

LOCATION.—Lat 37°08'40", long 119°27'13", in SW 1/4 SW 1/4 sec.15, T.9 S., R.23 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 1,000 ft downstream from Redinger Lake Dam, 0.4 mi upstream from Willow Creek, and 4.2 mi northeast of Auberry.

DRAINAGE AREA.—1,295 mi^2.

PERIOD OF RECORD.—March 1951 to current year.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 1,175.54 ft above sea level (levels by Southern California Edison Co.).

REMARKS.—Flow regulated by Redinger Lake (station 11241950). Most of the flow, since June 1951, is diverted at Redinger Lake to Big Creek No. 4 Powerplant (station 11246530). See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, 99,200 ft^3/s, Jan. 2, 1997, gage height, 65.17 ft, from floodmarks, from rating curve extended above 7,000 ft^3/s on basis of computed flow over dam; no flow, Sept. 25, 1951.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	21	e25	e21	e20	10	814	36	3710	8970	1300	20
2	42	22	e25	e21	e21	10	1180	37	4720	10300	e34	20
3	42	22	e25	e21	e22	10	1070	1050	5200	11300	21	22
4	42	22	e25	e21	e21	10	1190	2280	5070	8850	403	20
5	42	22	e25	e21	e18	10	995	2540	4070	8370	952	20
6	42	22	e25	e21	e19	10	273	2560	4960	8620	20	20
7	42	22	e33	e21	e19	10	22	2180	7670	8620	20	20
8	29	22	38	e21	e19	10	22	2040	6260	8450	20	20
9	21	22	38	e21	e20	10	22	1350	5820	9270	20	20
10	22	22	38	e21	e20	10	22	e22	6420	9820	478	20
11	22	21	38	e21	e16	10	22	e19	6580	7600	e28	20
12	22	21	37	e21	e16	10	22	e16	6310	6290	20	20
13	22	20	37	e21	e15	9.9	22	e16	4980	6690	20	19
14	23	20	e37	e21	e16	9.8	22	e18	5950	6830	20	19
15	23	20	e37	e21	e14	9.8	21	20	9290	5460	20	18
16	23	20	e37	e21	e13	9.8	22	20	10500	5860	20	18
17	22	20	e37	e21	e11	9.8	21	20	10200	5920	20	28
18	22	21	e37	e21	e9.9	9.9	18	20	8420	5880	20	35
19	21	21	e37	e21	10	9.9	26	20	8990	5850	20	35
20	21	21	e37	e21	10	12	34	20	8830	5770	20	35
21	22	e21	e37	e21	10	14	35	20	9870	6350	20	35
22	22	e21	e37	e21	10	15	35	20	10300	6450	20	35
23	22	22	e29	e21	10	16	35	20	10400	5690	20	35
24	22	25	e21	e21	10	17	35	20	9910	4540	20	29
25	22	25	e21	e21	10	114	35	21	9900	3850	20	19
26	22	25	e21	e21	10	21	35	831	9670	3640	20	19
27	22	25	e21	e21	10	503	35	2110	9310	2970	20	19
28	21	25	e21	e21	10	1500	35	1160	8920	2030	20	19
29	21	25	e21	e21	---	988	35	1710	8610	2350	20	19
30	21	25	e21	e20	---	832	36	2020	10900	1430	20	19
31	21	---	e21	e20	---	423	---	1170	---	1420	20	---
TOTAL	824	663	939	649	409.9	4643.9	6191	23386	231740	195440	3696	697
MEAN	26.6	22.1	30.3	20.9	14.6	150	206	754	7725	6305	119	23.2
MAX	42	25	38	21	22	1500	1190	2560	10900	11300	1300	35
MIN	21	20	21	20	9.9	9.8	18	16	3710	1420	20	18
AC-FT	1630	1320	1860	1290	813	9210	12280	46390	459700	387700	7330	1380
a	71710	59370	62160	91490	169100	188500	200200	206900	209400	214800	173300	166300

e Estimated.

a Diversion, in acre-feet, to Big Creek No. 4 Powerplant, provided by Southern California Edison Co.

11242000 SAN JOAQUIN RIVER ABOVE WILLOW CREEK, NEAR AUBERRY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1998, BY WATER YEAR (WY)

MEAN	20.3	20.4	113	166	123	157	428	1693	2304	950	75.1	21.8
MAX	26.6	76.2	3501	4156	1255	1456	2739	10410	12700	7739	1343	46.9
(WY)	1998	1983	1956	1997	1986	1983	1951	1969	1983	1995	1983	1997
MIN	8.15	8.55	5.66	3.83	3.38	2.86	3.27	4.76	8.59	13.5	16.5	2.79
(WY)	1983	1985	1966	1965	1966	1968	1955	1971	1971	1979	1984	1951

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1951 - 1998	
ANNUAL TOTAL	349699		469278.8			
ANNUAL MEAN	958		1286		501	
HIGHEST ANNUAL MEAN					2409	1983
LOWEST ANNUAL MEAN					11.4	1966
HIGHEST DAILY MEAN	33700	Jan 3	11300	Jul 3	47700	Dec 23 1955
LOWEST DAILY MEAN	20	Nov 13	9.8	Mar 14	.00	Sep 25 1951
ANNUAL SEVEN-DAY MINIMUM	20	Nov 11	9.8	Mar 13	.38	Oct 17 1982
INSTANTANEOUS PEAK FLOW			27000	Jul 2	99200	Jan 2 1997
INSTANTANEOUS PEAK STAGE			32.08	Jul 2	65.17	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	693600		930800		363000	
TOTAL DIVERSION (AC-FT) a	1766000		1813000			
10 PERCENT EXCEEDS	2940		6270		1300	
50 PERCENT EXCEEDS	37		22		20	
90 PERCENT EXCEEDS	22		15		5.0	

a Diversion, in acre-feet, to Big Creek No. 4 Powerplant, provided by Southern California Edison Co.

11242400 NORTH FORK WILLOW CREEK NEAR SUGAR PINE, CA

LOCATION.—Lat 37°23'52", long 119°33'55", in SW 1/4 NE 1/4 sec.21, T.6 S., R.22 E., Madera County, Hydrologic Unit 18040006, on right bank at road bridge 0.6 mi downstream from Soquel Campground, 3.0 mi upstream from Chilkoot Creek, and 4.7 mi southeast of Sugar Pine.

DRAINAGE AREA.—16.9 mi^2.

PERIOD OF RECORD.—August 1965 to current year.

REVISED RECORDS.—WDR CA-72-2: 1970, 1971. WDR CA-85-3: 1983, 1984(P). WDR CA-93-3: 1992.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 5,200 ft above sea level, from topographic map.

REMARKS.—Records good. No storage upstream from station. Madera Irrigation District has water rights to divert up to 50 ft^3/s from North Fork Willow Creek through Soquel Ditch into Nelder Creek (Fresno River Basin) from October through July each year. See schematic diagram of lower San Joaquin River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,750 ft^3/s, Jan. 13, 1980, gage height, 7.41 ft, from rating curve extended above 1,100 ft^3/s on basis of a step-backwater survey; minimum daily, 0.27 ft^3/s, Oct. 4, 1987.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 15	1700	196	4.04	Apr. 23	0045	102	3.64
Feb. 3	1215	133	3.79	June 21	1945	225	4.13
Mar. 24	2045	200	4.05				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	3.9	6.2	6.3	12	22	52	111	123	159	33	8.6
2	3.7	3.9	5.8	7.6	69	22	49	120	126	158	31	8.3
3	3.8	3.9	5.6	8.2	90	23	49	133	125	151	29	8.2
4	3.7	3.9	5.6	12	53	23	47	172	116	144	28	9.1
5	3.7	3.8	7.9	8.5	36	e22	44	145	122	140	26	11
6	3.8	3.8	12	7.2	51	e22	43	128	146	133	25	11
7	3.9	4.0	15	6.7	47	20	42	121	159	127	24	9.2
8	4.1	4.0	11	6.5	47	19	41	129	140	126	23	8.6
9	4.0	4.0	8.1	7.6	35	20	44	133	138	127	21	11
10	5.7	5.2	7.2	12	30	21	48	119	152	116	20	9.8
11	5.6	6.8	6.8	12	28	24	49	111	156	103	20	8.4
12	4.6	5.2	6.5	25	29	27	44	109	146	96	19	7.8
13	4.4	5.5	6.3	18	28	28	42	102	140	92	18	7.1
14	4.1	5.5	6.8	14	35	29	41	96	152	86	17	6.7
15	4.0	5.1	6.9	102	33	33	39	94	160	81	17	9.6
16	3.9	4.9	6.3	68	26	39	38	95	161	78	18	6.9
17	3.8	4.8	6.3	38	26	41	39	89	156	74	17	6.4
18	3.8	4.7	6.2	37	22	44	47	91	166	70	17	6.3
19	3.8	8.1	5.9	43	24	49	56	95	168	65	17	6.3
20	3.8	6.4	5.8	24	23	53	63	99	171	62	16	6.1
21	3.9	5.1	6.0	19	22	57	72	96	173	60	15	6.1
22	3.9	4.8	11	17	24	59	83	91	166	60	15	6.2
23	3.9	4.8	5.6	16	26	63	86	91	160	56	13	6.4
24	3.9	4.7	5.5	14	27	102	75	88	162	53	12	6.9
25	3.9	4.8	5.7	13	24	128	71	114	164	48	12	6.9
26	3.9	14	5.9	12	22	83	74	124	163	44	12	12
27	3.9	8.5	6.2	11	21	75	83	102	163	41	11	12
28	3.9	7.6	6.2	11	20	67	91	102	168	39	10	9.6
29	3.9	7.0	6.1	16	---	60	103	109	170	38	9.6	9.6
30	3.9	6.6	6.1	13	---	57	109	107	166	37	9.2	9.8
31	3.9	---	6.2	12	---	54	---	112	---	35	9.0	---
TOTAL	124.8	165.3	218.7	617.6	930	1386	1764	3428	4578	2699	563.8	251.9
MEAN	4.03	5.51	7.05	19.9	33.2	44.7	58.8	111	153	87.1	18.2	8.40
MAX	5.7	14	15	102	90	128	109	172	173	159	33	12
MIN	3.7	3.8	5.5	6.3	12	19	38	88	116	35	9.0	6.1
AC-FT	248	328	434	1230	1840	2750	3500	6800	9080	5350	1120	500

e Estimated.

11242400 NORTH FORK WILLOW CREEK NEAR SUGAR PINE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.59	9.58	15.3	31.8	30.2	41.9	51.3	78.5	53.8	18.5	6.10	4.46
MAX	17.8	43.0	78.2	268	178	151	176	228	219	109	26.9	14.3
(WY)	1983	1984	1997	1997	1986	1986	1982	1995	1995	1983	1983	1978
MIN	.41	1.63	1.20	1.84	2.08	2.04	1.78	2.40	1.84	.99	.66	.38
(WY)	1978	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1965 - 1998	
ANNUAL TOTAL	19135.5		16727.1			
ANNUAL MEAN	52.4		45.8		28.8	
HIGHEST ANNUAL MEAN					82.7	1983
LOWEST ANNUAL MEAN					1.57	1977
HIGHEST DAILY MEAN	1600	Jan 2	173	Jun 21	1600	Jan 2 1997
LOWEST DAILY MEAN	3.3	Sep 24	3.7	Oct 1	.27	Oct 4 1987
ANNUAL SEVEN-DAY MINIMUM	3.5	Sep 18	3.8	Oct 1	.29	Oct 11 1977
INSTANTANEOUS PEAK FLOW			225	Jun 21	2750	Jan 13 1980
INSTANTANEOUS PEAK STAGE			4.13	Jun 21	7.41	Jan 13 1980
ANNUAL RUNOFF (AC-FT)	37960		33180		20870	
10 PERCENT EXCEEDS	103		128		82	
50 PERCENT EXCEEDS	15		22		8.2	
90 PERCENT EXCEEDS	3.9		4.3		1.8	

11243300 BROWNS CREEK CANAL AT BASS LAKE, CA

LOCATION.—Lat 37°17'19", long 119°31'09", in SE 1/4 SW 1/4 sec.25, T.7 S., R.22 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 900 ft upstream from Bass Lake, and 3.0 mi southeast of town of Bass Lake.

PERIOD OF RECORD.—October 1986 to September 1998 (discontinued).

GAGE.—Water-stage recorder and concrete canal. Elevation of gage is 3,440 ft above sea level, from topographic map.

REMARKS.—Canal diverts from South Fork Willow Creek at diversion dam 1.5 mi upstream from gage, in NW 1/4 NE 1/4 sec.30, T.7 S., R.23 E. Flow enters Bass Lake (station 11243400) for power development in San Joaquin River powerplants. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were provided 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 daily discharge, 86 ft^3/s, Mar. 8, 1989; no flow at times in each year.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	6.3	.32	.51	.71	.42	e.00	e.00	.00	.00
2	.00	.00	.00	9.1	1.0	.51	.66	.44	e.00	e.00	.00	.00
3	.00	.00	.00	13	1.1	.51	.78	.51	e.00	e.00	.00	.00
4	.00	.00	.00	11	.59	.51	.75	.56	e.00	e.00	.00	.00
5	.00	.00	.15	10	.47	.53	.71	.57	e.00	e.00	.00	.00
6	.00	.00	.45	10	.70	.59	.63	.59	e.00	e.00	.00	.00
7	.00	.00	.55	10	.76	.55	.56	.55	e.00	.00	.00	.00
8	.41	.00	2.8	11	.81	.53	.52	.52	e.00	.00	.00	.00
9	.54	.00	3.3	13	.63	.51	.51	.51	e.00	.00	.00	.00
10	.18	.05	.85	34	.55	.51	.51	.46	e.00	.00	.00	.00
11	.06	.22	.45	29	.51	.47	.56	.49	e.00	.00	.00	.00
12	.00	.04	.20	37	.50	.42	.53	.59	e.00	.00	.00	.00
13	.00	.16	.00	49	.46	.45	.58	.58	e.00	.00	.00	.00
14	.00	.14	.47	36	.72	.43	.56	e.50	e.00	.00	.00	.00
15	.00	.05	1.6	69	.64	.42	.55	e.40	e.00	.00	.00	.00
16	.00	.05	.27	68	.58	.42	.51	e.30	e.00	.00	.00	.00
17	.00	.00	.44	61	.62	.39	.51	e.20	e.00	.00	.00	.00
18	.00	.00	.35	9.9	.54	.32	.51	e.10	e.00	.00	.00	.00
19	.00	.11	.00	.46	.64	.18	.50	e.00	e.00	.00	.00	.00
20	.00	.17	.00	.29	.61	.11	.47	e.00	e.00	.00	.00	.00
21	.00	.10	.00	.22	.76	.06	.46	e.00	e.00	.00	.00	.00
22	.00	.01	.13	.19	.78	.04	.46	e.00	e.00	.00	.00	.00
23	.00	.00	.19	.16	.78	.00	.47	e.00	e.00	.00	.00	.00
24	.00	.00	.04	.11	.68	.54	.48	e.00	e.00	.00	.00	.00
25	.00	.00	.00	.06	.62	.98	.46	e.00	e.00	.00	.00	.00
26	.00	1.3	.04	.05	.58	.58	.46	e.00	e.00	.00	.00	.00
27	.00	.23	.16	.00	.56	.60	.46	e.00	e.00	.00	.00	.00
28	.00	.00	.07	.00	.54	.63	.45	e.00	e.00	.00	.00	.00
29	.00	.00	2.6	.46	---	.56	.44	e.00	e.00	.00	.00	.00
30	.00	.00	6.0	.19	---	.54	.43	e.00	e.00	.00	.00	.00
31	.00	---	6.3	.11	---	.66	---	e.00	---	.00	.00	---
TOTAL	1.19	2.63	27.41	488.60	18.05	14.06	16.19	8.29	0.00	0.00	0.00	0.00
MEAN	.038	.088	.88	15.8	.64	.45	.54	.27	.000	.000	.000	.000
MAX	.54	1.3	6.3	69	1.1	.98	.78	.59	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.32	.00	.43	.00	.00	.00	.00	.00
AC-FT	2.4	5.2	54	969	36	28	32	16	.00	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

MEAN	1.83	4.89	9.90	19.0	33.0	47.7	52.4	37.5	19.8	6.99	2.03	.94
MAX	6.53	22.7	56.0	53.5	73.3	74.5	77.2	76.3	76.4	37.4	12.1	4.50
(WY)	1990	1997	1997	1993	1997	1997	1993	1993	1995	1995	1995	1995
MIN	.000	.000	.88	3.01	.64	.45	.54	.27	.000	.000	.000	.000
(WY)	1989	1996	1998	1991	1998	1998	1998	1998	1998	1998	1987	1987

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998	
ANNUAL TOTAL	8937.43		576.42			
ANNUAL MEAN	24.5		1.58		19.6	
HIGHEST ANNUAL MEAN					39.0	1995
LOWEST ANNUAL MEAN					1.58	1998
HIGHEST DAILY MEAN	81	Feb 16	69	Jan 15	86	Mar 8 1989
LOWEST DAILY MEAN	.00	Aug 12	.00	Oct 1	.00	Jul 3 1987
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 12	.00	Oct 1	.00	Jul 3 1987
ANNUAL RUNOFF (AC-FT)	17730		1140		14170	
10 PERCENT EXCEEDS	74		.73		71	
50 PERCENT EXCEEDS	3.6		.00		5.9	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated.

11243400 BASS LAKE NEAR BASS LAKE, CA

LOCATION.—Lat 37°17'33", long 119°31'43", in SE 1/4 NE 1/4 sec.26, T.7 S., R.22 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, at outlet tower at dam on North Fork Willow Creek, 2.2 mi southeast of town of Bass Lake, and 5 mi north of North Fork.

DRAINAGE AREA.—50.4 mi^2.

PERIOD OF RECORD.—January 1911 to September 1982 (monthend contents only), October 1982 to current year. Bass Lake was formerly called Crane Valley Reservoir.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir formed by earthfill and rockfill dam; completed in 1901 and raised in 1910. Since 1910 usable contents 45,100 acre-ft between elevations 3,280.22 ft, invert of outlet conduit No. 3, and 3,376.40 ft, top of spillway gates. Additional storage of 300 acre-ft not available for release. Water is released through Crane Valley Powerplant below dam for use in three small powerplants before being discharged into Kerckhoff Reservoir (station 11246650) at Wishon Powerplant. Water is diverted from South Fork Willow Creek via Browns Creek Ditch into Bass Lake near left end of dam. Madera Irrigation District has water rights to divert up to 50 ft^3/s from North Fork Willow Creek through Soquel Ditch into Nelder Creek (Fresno River Basin) from October through July each year. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 45,960 acre-ft, June 17, 1923, elevation, 3,376.8 ft; minimum, 35 acre-ft, Nov. 19, 1953, elevation, 3,270.2 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 45,376 acre-ft, June 7, elevation, 3,376.37 ft; minimum, 15,981 acre-ft, Dec. 16, elevation, 3,344.64 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated March 1937)

3,280	290	3,310	3,404	3,340	13,227	3,370	38,218
3,290	890	3,320	5,584	3,350	19,663	3,376.4	45,410
3,300	1,896	3,330	8,717	3,360	28,121		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30976	22255	19178	16495	20120	26698	30686	35281	44738	45185	43664	39060
2	30686	21952	18904	16608	21099	26635	30782	35716	44822	45230	43522	38911
3	30417	21652	18645	16715	22686	26554	31064	36318	45072	45230	43345	38769
4	30139	21355	18358	16843	23207	26473	31219	37183	45242	45196	43168	38612
5	29854	21035	18148	16910	23383	26437	31336	37924	44959	45129	42994	38475
6	29575	20755	17960	16977	23977	26446	31483	38491	44925	45072	42821	38480
7	29295	20469	17974	17044	24735	26347	31581	38959	45376	45083	42581	38516
8	29023	20165	17824	17111	25250	26266	31640	39439	45298	45129	42433	38542
9	28744	19872	17606	17287	25356	26158	31689	39918	45016	45196	42262	38574
10	28558	19634	17355	17613	25427	26059	31767	40278	44822	45185	42004	38612
11	28298	19437	17104	17817	25436	25996	31944	40649	45027	45185	41828	38639
12	28028	19171	16843	18274	25471	25934	32033	41161	45095	45162	41652	38662
13	27768	18911	16581	18337	25453	25898	32201	41597	45129	45072	41477	38686
14	27499	18652	16354	18316	25845	25836	32271	41883	44993	45004	41281	38708
15	27223	18568	16124	19842	26023	25801	32310	42093	45072	44970	41096	38730
16	26941	18596	15981	20271	26050	25774	32330	42365	45129	44970	40889	38745
17	26635	18624	16020	20362	26059	25774	32320	42547	45130	44903	40660	38756
18	26365	18638	16053	20546	25996	25792	32360	42707	45083	44846	40453	38733
19	26077	18708	16105	20670	26131	25792	32430	42867	45072	44774	40235	38578
20	25765	18750	16140	20623	26140	25801	32550	43041	45072	44666	40071	38392
21	25471	18778	16157	20539	26329	25827	32750	43239	45072	44618	39864	38206
22	25189	18785	16183	20454	26590	25898	32991	43392	45072	44666	39690	38020
23	24900	18806	16209	20331	26815	25987	33254	43558	45004	44618	39635	37831
24	24613	18820	16241	20187	26914	26617	33509	43711	44891	44594	39635	37649
25	24321	18862	16254	20097	26923	27991	33673	44127	44846	44498	39679	37466
26	24028	19157	16274	19947	26896	28391	33836	44510	44810	44414	39722	37260
27	23722	19214	16301	19805	26833	28772	34001	44570	44846	44354	39690	37094
28	23425	19264	16327	19663	26770	29042	34299	44606	44891	44222	39632	36888
29	23131	19293	16365	19767	---	29521	34599	44702	45016	44115	39493	36664
30	22854	19329	16395	19800	---	29892	34923	44726	45117	43949	39354	36395
31	22561	---	16441	19917	---	30369	---	44702	---	43818	39206	---
MAX	30976	22255	19178	20670	26923	30369	34923	44726	45376	45230	43664	39060
MIN	22561	18568	15981	16495	20120	25774	30686	35281	44738	43818	39206	36395
a	3353.68	3349.54	3345.34	3350.34	3358.53	3362.39	3366.94	3375.78	3376.14	3375.04	3370.91	3368.32
b	-8668	-3232	-2888	+3476	+6853	+3599	+4554	+9779	+415	-1299	-4612	-2811

CAL YR 1997 b -18253
WTR YR 1998 b +5166

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

11243500 PACIFIC GAS & ELECTRIC CO. CONDUIT NO. 3 NEAR BASS LAKE, CA

LOCATION.—Lat 37°17'21", long 119°31'44", in NE 1/4 SE 1/4 sec.26, T.7 S., R.22 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 1,000 ft downstream from Crane Valley Powerplant and Dam and 2.5 mi southeast of town of Bass Lake.

PERIOD OF RECORD.—October 1940 to current year. Prior to October 1954, published as "near Crane Valley Reservoir."

GAGE.—Water-stage recorder and concrete flume. Elevation of gage is 3,300 ft above sea level, from topographic map.

REMARKS.—Conduit diverts from Bass Lake in sec.26, T.7 S., R.22 E. Water passes through Crane Valley Powerplant, then to Powerplant No. 3 (station 11244100), and is stored temporarily at Manzanita Lake on North Fork Willow Creek; flow then diverts to Powerplants No. 2 and No. 1A (stations 11246570 and 11246590), before it enters San Joaquin River at Kerckhoff Reservoir through San Joaquin Powerplant No. 1 (station 11246610). See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were provided 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 daily discharge, 167 ft^3/s, June 23, 24, 1965; no flow at times.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	142	152	83	.51	.18	116	53	112	128	134	117	.19
2	149	152	139	.48	.19	116	115	113	141	135	117	.00
3	152	152	139	.46	.19	117	113	114	134	136	117	.00
4	151	152	137	.48	.18	117	112	112	127	138	117	.00
5	151	151	137	.47	53	117	112	110	128	139	117	.00
6	151	151	136	.45	109	117	112	110	129	139	117	.00
7	150	151	136	.43	119	118	112	108	129	139	117	.00
8	150	151	135	.44	119	119	112	107	129	140	117	.00
9	150	150	135	.46	119	124	113	107	126	141	118	.00
10	150	150	134	.45	118	131	114	107	131	141	118	.00
11	149	150	133	.44	118	119	115	112	133	139	119	.00
12	149	149	133	57	118	115	115	115	133	139	119	.00
13	149	149	133	120	118	115	116	114	133	138	120	.00
14	151	149	133	118	98	116	117	115	134	137	121	.00
15	154	66	132	119	53	117	117	115	133	135	122	2.4
16	145	.29	84	119	115	117	118	115	133	131	123	5.8
17	149	.38	2.1	119	115	118	118	118	133	131	126	4.0
18	152	.44	2.1	118	115	119	118	116	133	130	128	60
19	152	.51	2.1	119	113	119	119	117	129	131	125	99
20	151	.51	2.2	106	113	119	115	123	128	130	122	104
21	151	5.0	2.2	95	115	120	113	128	131	110	121	104
22	151	5.7	2.1	95	115	108	114	128	130	95	122	104
23	151	2.7	2.2	94	115	108	115	128	129	102	45	104
24	150	2.7	2.2	94	116	116	113	129	128	112	.00	104
25	150	2.7	2.2	94	116	117	112	130	128	112	.00	122
26	149	2.7	2.2	95	115	117	112	130	131	111	.00	132
27	150	2.7	2.2	95	116	117	113	133	132	111	.00	132
28	149	2.7	2.2	95	116	86	112	118	115	111	.00	135
29	149	2.7	2.2	96	---	4.9	111	134	129	110	.04	144
30	142	2.7	2.2	35	---	3.4	112	101	131	110	.24	150
31	152	---	1.2	.18	---	3.6	---	141	---	114	.27	---
TOTAL	4641	2209.43	2090.6	1888.25	2637.74	3266.9	3363	3660	3908	3921	2685.55	1506.39
MEAN	150	73.6	67.4	60.9	94.2	105	112	118	130	126	86.6	50.2
MAX	154	152	139	120	119	131	119	141	141	141	128	150
MIN	142	.29	1.2	.18	.18	3.4	53	101	115	95	.00	.00
AC-FT	9210	4380	4150	3750	5230	6480	6670	7260	7750	7780	5330	2990
a	8060	3930	3940	3850	5400	6260	6110	6270	6520	7070	5010	2320
b	8700	4230	4320	4550	6380	7390	7960	8160	8530	8040	5650	1740
c	8520	4900	5180	6070	7680	9510	4670	10460	9280	10440	8490	4850
d	8840	4540	5570	7340	9680	10740	11340	12090	10750	11640	8010	4610

a Discharge, in acre-feet, to San Joaquin Powerplant No. 3, provided by Pacific Gas & Electric Co.
b Discharge, in acre-feet, to San Joaquin Powerplant No. 2, provided by Pacific Gas & Electric Co.
c Discharge, in acre-feet, to San Joaquin Powerplant No. 1A, provided by Pacific Gas & Electric Co.
d Discharge, in acre-feet, to San Joaquin Powerplant No. 1, provided by Pacific Gas & Electric Co.

11243500 PACIFIC GAS & ELECTRIC CO. CONDUIT NO. 3 NEAR BASS LAKE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	65.0	44.5	57.8	61.9	71.5	76.5	65.5	61.8	61.8	84.1	102	86.3
MAX	152	148	157	157	161	162	158	157	160	153	155	154
(WY)	1951	1984	1983	1956	1956	1956	1956	1958	1952	1983	1958	1980
MIN	.000	.000	.042	.19	.079	.12	.12	.090	.060	.52	9.43	.23
(WY)	1988	1968	1954	1954	1977	1947	1947	1977	1942	1977	1977	1996

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1941 - 1998	
ANNUAL TOTAL	34063.11		35777.86			
ANNUAL MEAN	93.3		98.0		69.9	
HIGHEST ANNUAL MEAN					128	1983
LOWEST ANNUAL MEAN					14.4	1977
HIGHEST DAILY MEAN	154	Oct 15	154	Oct 15	167	Jun 23 1965
LOWEST DAILY MEAN	.00	Aug 11	.00	Aug 24	.00	Nov 6 1940
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 11	.00	Sep 2	.00	Feb 8 1941
ANNUAL RUNOFF (AC-FT)	67560		70970		50640	
TOTAL DIVERSION (AC-FT) a	60940		64750			
TOTAL DIVERSION (AC-FT) b	68000		75650			
TOTAL DIVERSION (AC-FT) c	78400		90040			
TOTAL DIVERSION (AC-FT) d	43040		105200			
10 PERCENT EXCEEDS	149		149		151	
50 PERCENT EXCEEDS	128		117		70	
90 PERCENT EXCEEDS	.96		.46		.03	

a Discharge, in acre-feet, to San Joaquin Powerplant No. 3, provided by Pacific Gas & Electric Co.
b Discharge, in acre-feet, to San Joaquin Powerplant No. 2, provided by Pacific Gas & Electric Co.
c Discharge, in acre-feet, to San Joaquin Powerplant No. 1A, provided by Pacific Gas & Electric Co.
d Discharge, in acre-feet, to San Joaquin Powerplant No. 1, provided by Pacific Gas & Electric Co.

11244000 NORTH FORK WILLOW CREEK NEAR BASS LAKE, CA

LOCATION.—Lat 37°17'20", long 119°31'45", in SE 1/4 SE 1/4 sec.26, T.7 S., R.22 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 1,500 ft downstream from Bass Lake Spillway and 2.5 mi southeast of town of Bass Lake.

DRAINAGE AREA.—50.8 mi^2.

PERIOD OF RECORD.—May 1940 to current year. Prior to October 1944, published as Willow Creek below Crane Valley Reservoir. October 1944 to September 1954, published as "below Crane Valley Reservoir."

GAGE.—Water-stage recorder. Broad-crested weir with V-notch Dec. 21, 1961, to Jan. 16, 1969, and since Mar. 26, 1971. Elevation of gage is 3,200 ft above sea level, from topographic map.

REMARKS.—Flow regulated by Bass Lake (station 11243400), 1,500 ft upstream and by diversion into Pacific Gas & Electric Co. Conduit No. 3 near Bass Lake (station 11243500). Soquel ditch diverts up to 50 ft^3/s from North Fork Willow Creek into Nelder Creek in Fresno River Basin. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were provided 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, 3,770 ft^3/s, Jan. 2, 1997, gage height, 9.10 ft; minimum daily, 0.01 ft^3/s, Dec. 4, 1989.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.96	1.2	1.2	1.4	1.8	1.4	3.1	4.2	e120	125	2.2	81
2	.97	1.2	1.2	1.5	6.6	1.4	2.3	5.0	e120	137	2.2	80
3	.95	1.2	1.3	1.5	9.8	1.4	4.0	6.1	e129	148	2.2	88
4	.94	1.2	1.3	1.6	3.6	1.4	3.1	6.6	e159	147	2.1	94
5	.94	1.2	1.3	1.5	2.0	1.4	2.6	6.3	e177	146	2.1	54
6	.93	1.2	1.4	1.5	4.7	1.8	2.8	6.6	e177	125	2.1	2.0
7	.89	1.2	2.2	1.5	6.6	1.6	2.3	6.4	e351	82	2.1	1.9
8	.87	1.2	1.8	1.5	5.3	1.5	2.0	5.7	e396	56	2.1	1.9
9	1.1	1.2	1.5	1.7	3.1	1.5	1.9	5.7	e420	49	2.1	1.9
10	1.5	1.2	1.4	2.8	2.0	1.4	1.8	6.0	e243	47	2.0	1.9
11	1.4	1.2	1.4	2.1	1.8	1.4	2.3	6.4	e253	45	2.0	1.9
12	1.4	1.1	1.3	4.6	1.8	1.4	2.0	6.1	e252	44	2.0	1.9
13	1.4	1.1	1.3	2.7	1.7	1.4	2.4	5.7	e282	42	2.0	1.9
14	1.4	1.2	1.3	1.6	4.2	1.4	2.1	e6.0	e288	36	2.0	1.9
15	1.4	1.2	1.2	11	3.0	1.3	2.0	e6.0	e292	18	1.9	1.8
16	1.4	1.2	1.2	3.4	1.9	1.3	1.9	e13	e292	2.0	1.9	1.6
17	1.4	1.2	1.3	1.9	1.9	1.3	1.8	e12	e292	2.6	1.9	1.7
18	1.4	1.2	1.3	3.0	1.6	1.3	1.8	e13	e292	2.5	1.8	1.6
19	1.4	1.2	1.3	3.3	2.5	1.3	1.7	e13	e292	2.5	1.8	1.6
20	1.4	1.2	1.2	1.8	2.2	1.3	1.7	e3.0	e285	2.4	1.8	1.6
21	1.4	1.2	1.2	1.6	4.2	1.3	1.7	e5.0	e292	2.5	1.8	1.6
22	1.4	1.2	1.3	1.5	4.8	1.3	1.7	e5.0	e292	2.5	1.8	1.6
23	1.4	1.2	1.3	1.5	3.8	1.3	1.7	e5.0	e292	2.5	1.9	1.6
24	1.4	1.2	1.4	1.5	2.5	3.9	1.9	e5.0	e264	2.5	2.0	1.6
25	1.4	1.2	1.4	1.4	2.0	9.2	1.9	e5.0	e257	2.5	1.9	1.5
26	1.4	1.7	1.4	1.4	1.8	2.3	2.0	e5.0	e183	2.4	1.9	1.6
27	1.4	1.2	1.4	1.4	1.6	2.3	2.0	e132	e173	2.4	20	1.6
28	1.4	1.2	1.4	1.4	1.5	2.7	2.0	e144	e173	2.3	64	1.5
29	1.4	1.2	1.4	2.9	---	2.1	2.1	e144	e148	2.2	85	11
30	1.3	1.2	1.4	1.7	---	2.0	3.0	e144	e140	2.2	83	19
31	1.2	---	1.4	1.5	---	2.8	---	e137	---	2.2	82	---
TOTAL	39.15	36.3	42.4	69.7	90.3	59.4	65.6	873.8	7326	1285.2	385.6	466.7
MEAN	1.26	1.21	1.37	2.25	3.23	1.92	2.19	28.2	244	41.5	12.4	15.6
MAX	1.5	1.7	2.2	11	9.8	9.2	4.0	144	420	148	85	94
MIN	.87	1.1	1.2	1.4	1.5	1.3	1.7	3.0	120	2.0	1.8	1.5
AC-FT	78	72	84	138	179	118	130	1730	14530	2550	765	926

e Estimated.

11244000 NORTH FORK WILLOW CREEK NEAR BASS LAKE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.05	4.01	7.47	25.0	28.9	36.9	20.7	31.2	24.8	5.13	4.17	4.33
MAX	77.8	54.6	106	524	380	387	272	317	244	73.6	66.4	103
(WY)	1949	1958	1947	1997	1986	1995	1982	1995	1998	1983	1963	1963
MIN	.18	.26	.21	.22	.18	.24	.30	.23	.24	.21	.24	.26
(WY)	1991	1992	1987	1991	1991	1977	1977	1977	1977	1977	1977	1976

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1941 - 1998	
ANNUAL TOTAL	22600.62		10740.15			
ANNUAL MEAN	61.9		29.4		16.2	
HIGHEST ANNUAL MEAN					92.4	1995
LOWEST ANNUAL MEAN					.26	1977
HIGHEST DAILY MEAN	2880	Jan 2	420	Jun 9	2880	Jan 2 1997
LOWEST DAILY MEAN	.81	Jul 30	.87	Oct 8	.01	Dec 4 1989
ANNUAL SEVEN-DAY MINIMUM	.88	Jul 25	.93	Oct 2	.11	Oct 1 1990
INSTANTANEOUS PEAK FLOW			unknown	Jun 9	3770	Jan 2 1997
INSTANTANEOUS PEAK STAGE			unknown	Jun 9	9.10	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	44830		21300		11770	
10 PERCENT EXCEEDS	116		130		27	
50 PERCENT EXCEEDS	1.4		1.9		.80	
90 PERCENT EXCEEDS	1.0		1.2		.30	

11246500 WILLOW CREEK AT MOUTH, NEAR AUBERRY, CA

LOCATION.—Lat 37°09'03", long 119°27'34", in SE 1/4 NE 1/4 sec.16, T.9 S., R.23 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 40 ft upstream from bridge, 0.4 mi upstream from mouth, 1.3 mi downstream from Whiskey Creek, and 4.3 mi northeast of Auberry.

DRAINAGE AREA.—130 mi^2.

PERIOD OF RECORD.—January 1952 to September 1988, October 1989 to current year.
WATER TEMPERATURE: Water years 1961–72.

GAGE.—Water-stage recorder. Concrete control since Oct. 22, 1964. Datum of gage is 1,174.69 ft above sea level (levels by Southern California Edison Co.).

REMARKS.—Flow regulated by Bass Lake (station 11243400) 10 mi upstream. Soquel Ditch diverts up to 50 ft^3/s from North Fork Willow Creek into Nelder Creek in Fresno River Basin. Flow diverted out of basin by Pacific Gas & Electric Co. Conduit No. 3. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison 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, 15,700 ft^3/s, Dec. 23, 1955, gage height, 28.5 ft, from floodmarks, from rating curve extended above 4,700 ft^3/s; maximum gage height, 31.65 ft, Jan. 2, 1997 (backwater from San Joaquin River); no flow at times some years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.59	3.7	18	4.2	29	125	415	443	640	289	18	5.1
2	.49	3.5	16	4.8	450	118	345	465	708	288	17	4.9
3	.49	4.7	13	7.1	1040	113	433	582	691	285	18	4.7
4	.49	6.2	12	8.4	413	109	386	952	513	270	19	5.9
5	.55	5.2	12	7.5	186	103	318	839	507	263	15	7.2
6	.56	4.8	18	6.2	233	150	302	739	610	243	13	7.7
7	.58	4.4	18	5.8	412	114	281	557	1040	189	13	6.1
8	.78	4.1	59	5.8	492	103	247	527	869	149	12	5.4
9	1.2	3.4	14	5.9	300	97	234	536	825	134	11	24
10	1.8	3.7	9.2	21	196	99	235	458	813	125	11	36
11	4.0	8.6	8.0	23	174	101	269	401	789	120	11	28
12	6.0	12	6.7	64	159	101	268	493	707	112	11	27
13	5.4	9.8	6.3	145	141	113	242	520	675	e102	10	24
14	4.8	11	5.9	32	270	111	228	412	683	e95	14	21
15	4.5	10	8.8	1020	312	115	198	377	772	e71	11	20
16	8.6	8.9	7.5	574	172	136	178	365	709	e50	10	20
17	22	8.0	6.2	126	175	136	171	332	644	36	8.8	19
18	3.4	7.5	5.7	101	133	135	174	324	618	34	9.6	9.1
19	3.9	7.6	5.4	362	167	141	206	336	606	31	9.4	14
20	2.5	13	5.0	128	233	156	250	355	591	28	8.7	6.2
21	3.6	12	4.8	53	238	170	308	335	581	27	8.3	15
22	3.9	10	4.5	38	525	161	367	313	554	31	7.9	19
23	3.5	8.3	4.2	31	392	209	398	312	527	31	7.4	9.4
24	3.3	7.6	4.2	27	345	498	323	325	507	25	7.3	6.4
25	3.3	8.3	3.9	24	227	1460	284	418	487	23	7.0	6.1
26	3.2	28	3.8	22	176	598	273	496	431	21	6.6	10
27	3.2	47	3.7	20	153	491	319	384	359	19	6.5	20
28	3.4	23	3.9	19	132	591	352	480	332	20	6.1	9.4
29	3.4	18	4.0	75	---	409	404	540	332	19	5.8	7.9
30	6.5	16	4.0	56	---	323	434	499	303	19	5.5	7.6
31	4.0	---	4.1	32	---	336	---	507	---	19	5.3	---
TOTAL	113.93	318.3	299.8	3048.7	7875	7622	8842	14622	18423	3168	324.2	406.1
MEAN	3.68	10.6	9.67	98.3	281	246	295	472	614	102	10.5	13.5
MAX	22	47	59	1020	1040	1460	434	952	1040	289	19	36
MIN	.49	3.4	3.7	4.2	29	97	171	312	303	19	5.3	4.7
AC-FT	226	631	595	6050	15620	15120	17540	29000	36540	6280	643	805

e Estimated.

11246500 WILLOW CREEK AT MOUTH, NEAR AUBERRY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.46	16.9	58.0	127	137	153	146	158	65.3	10.9	2.53	2.88
MAX	24.6	150	652	1108	1255	1033	995	747	614	102	12.6	28.3
(WY)	1983	1997	1956	1997	1986	1983	1982	1967	1998	1998	1983	1982
MIN	.000	.54	1.13	2.13	1.89	2.63	2.36	3.61	1.93	.000	.000	.000
(WY)	1956	1978	1991	1991	1991	1977	1977	1977	1961	1961	1959	1960

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1952 - 1998	
ANNUAL TOTAL	53431.41		65063.03			
ANNUAL MEAN	146		178		71.7	
HIGHEST ANNUAL MEAN					344	1983
LOWEST ANNUAL MEAN					1.71	1977
HIGHEST DAILY MEAN	4200	Jan 2	1460	Mar 25	7500	Dec 23 1955
LOWEST DAILY MEAN	.42	Sep 12	.49	Oct 2	.00	Sep 4 1955
ANNUAL SEVEN-DAY MINIMUM	.47	Sep 12	.54	Oct 1	.00	Sep 4 1955
INSTANTANEOUS PEAK FLOW			2670	Jan 15	15700	Dec 23 1955
INSTANTANEOUS PEAK STAGE			12.49	Jan 15	31.65	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	106000		129100		51930	
10 PERCENT EXCEEDS	357		522		186	
50 PERCENT EXCEEDS	10		32		8.4	
90 PERCENT EXCEEDS	.93		4.2		.34	

11246650 KERCKHOFF RESERVOIR NEAR AUBERRY, CA

LOCATION.—Lat 37°07'40", long 119°31'25", in SE 1/4 SW 1/4 sec.24, R.9 S., T.22 E., Fresno County, Hydrologic Unit 18040006, near center of Kerckhoff Dam on San Joaquin River, 2.0 mi downstream from A.G. Wishon Powerplant, and 7.9 mi northwest of Auberry.

DRAINAGE AREA.—1,460 mi^2.

PERIOD OF RECORD.—October 1986 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by concrete arch dam with spillway completed in 1920. Usable contents, 4,247 acre-ft between elevations 900.14 ft, invert of sluice gates, and 985.68 ft, top of spillway gates. Water is released for use in Kerckhoff Powerplants No. 1 and No. 2 before being discharged into the San Joaquin River above Millerton Lake. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 5,700 acre-ft, Jan. 2, 1997, elevation, unknown; minimum, 2,104 acre-ft, Nov. 14–17, 1988, elevation, 970.10 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 4,140 acre-ft, Nov. 3, elevation, 985.00 ft; minimum, 3,400 acre-ft, Mar. 12, elevation, 980.09 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas and Electric Co., dated July 16, 1919)

960	1,090	970	2,092	980	3,387	990	4,964
965	1,549	975	2,703	985	4,140		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3769	3860	3980	3953	3920	3800	3694	3709	3679	3540	e3778	3605
2	3891	4070	3935	3876	3561	3922	3517	3517	3679	3546	3679	3937
3	3937	4140	3920	3984	3605	3576	3459	3679	3679	3546	3815	3739
4	3992	3922	3906	4015	3475	3694	3605	3515	3678	3546	3590	3739
5	3968	3968	3784	3830	3984	3650	3590	3760	3670	3546	3739	3650
6	3724	4077	3694	3984	4077	3444	3860	3740	3710	3546	3953	3739
7	4015	4030	3953	3488	3459	3576	3680	3532	3679	3546	3502	3680
8	3895	3992	3984	3739	3590	3891	3915	3769	3694	3546	3532	3664
9	3845	4030	3922	3860	3860	3620	3800	3650	3694	3546	3576	3992
10	3800	4093	3906	3937	3724	3906	3739	3561	3694	3546	3546	3679
11	3800	3561	3860	3769	3576	3679	3800	3473	3679	3576	3860	3739
12	3922	4062	3937	3757	3590	3400	3590	3709	3679	3473	3724	3922
13	3754	3784	3922	3580	3754	3992	3739	3769	3679	3546	3769	3860
14	3891	3937	3845	3830	3754	3576	3650	3754	3679	3546	3739	3860
15	3891	3953	3891	3488	3517	3546	3922	3561	3546	3694	3891	3891
16	3984	3968	3694	3784	3473	3679	3953	3650	3546	3694	3830	3876
17	3984	3800	3984	3517	3694	3739	3644	3679	3546	3679	3650	3845
18	4015	4050	4015	3605	3850	3754	3664	3770	3546	3679	3650	3922
19	3984	3679	3890	3815	3650	3845	3561	3890	3546	3679	3860	3891
20	3920	3561	3585	3906	3620	3906	3800	3650	3546	3694	3650	3860
21	3750	3709	3990	3709	3891	3709	3664	3754	3561	3694	3620	3860
22	3880	3709	3891	3694	3620	3830	3769	3922	3561	3694	3473	3680
23	3922	3968	3906	3953	3590	3910	3670	3590	3546	3694	3605	3654
24	3953	3891	3605	3968	3754	3815	3724	3502	3546	3739	3906	3590
25	3922	3922	4015	3906	3710	3460	3620	3679	3546	3694	3815	3860
26	3968	3784	3891	3860	3488	3590	3770	3473	3546	3694	3953	3860
27	3992	3784	3860	3754	3709	3664	3906	3502	3546	3778	3984	3845
28	3906	3739	3984	3968	3694	3860	3769	3605	3546	3800	3679	3590
29	3906	3590	3953	3992	---	3937	3922	3709	3560	3746	3679	3561
30	3800	3561	3992	3984	---	3605	3590	3561	3546	3459	3906	3769
31	3724	---	3980	3890	---	3532	---	3830	---	3876	4030	---
MAX	4015	4140	4015	4015	4077	3992	3953	3922	3710	3876	4030	3992
MIN	3724	3561	3585	3488	3459	3400	3459	3473	3546	3459	3473	3561
a	982.30	981.20	983.97	983.39	982.10	981.00	981.40	983.00	981.09	983.30	984.30	982.60
b	-198	-163	+419	-90	-196	-162	+58	+240	-284	+330	+154	-261

CAL YR 1997 b +550
WTR YR 1998 b -153

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

11246700 SAN JOAQUIN RIVER NEAR AUBERRY, CA

LOCATION.—Lat 37°07'56", long 119°31'50", in NW 1/4 SW 1/4 sec.24, T.9 S., R.22 E., Fresno County, Hydrologic Unit 18040006, on left bank 2,300 ft downstream from Kerckhoff Dam, 2.8 mi northwest of Auberry, and 6.7 mi south of town of North Fork.

DRAINAGE AREA.—1,461 mi^2.

PERIOD OF RECORD.—October 1986 to current year.

GAGE.—Water-stage recorder. Datum of gage is 870.11 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Flow regulated by nine powerplants and eight reservoirs with combined capacity of about 609,300 acre-ft. Diversions to Kerckhoff Powerplant No. 1 and Kerckhoff Powerplant No. 2 (stations 11246950 and 11247050) bypass this station. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were provided 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, 80,600 ft^3/s, Jan. 3, 1997, gage height, 35.62 ft; minimum daily, 16 ft^3/s, May 9–18, 1987, Sept. 29, 30, 1988.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	25	30	30	29	32	38	39	974	5960	35	42
2	28	26	30	30	30	32	37	39	1960	6810	34	41
3	28	730	30	30	219	32	38	38	2720	8140	35	42
4	28	32	30	31	31	31	38	38	3000	5810	35	41
5	29	32	30	30	30	31	38	71	2140	5490	35	42
6	28	32	30	30	31	32	38	52	2900	5660	35	42
7	28	32	30	30	31	31	38	60	5740	5680	35	43
8	29	32	30	30	31	31	37	31	4320	5950	35	43
9	29	32	30	30	30	31	37	50	3580	6210	35	43
10	29	511	30	30	30	31	36	30	3850	6700	34	43
11	28	950	30	30	30	31	37	30	4360	4840	34	41
12	28	782	30	30	66	31	36	31	3950	2820	35	42
13	28	31	30	30	30	31	36	54	2550	3460	100	43
14	28	30	30	30	31	31	36	218	3180	4110	34	43
15	28	31	30	33	31	31	35	34	6490	2580	34	43
16	28	31	30	30	31	31	36	34	7550	2990	34	43
17	28	31	29	30	31	31	36	33	7470	3210	34	44
18	28	31	30	30	30	31	35	34	5830	3050	37	43
19	28	31	30	30	42	31	35	34	6180	3020	39	42
20	29	30	30	30	31	31	35	35	5830	2920	39	42
21	27	30	29	30	33	31	35	178	6830	3440	39	42
22	26	30	30	29	34	31	35	33	7340	3810	38	43
23	27	30	30	29	35	31	35	33	7520	2800	39	42
24	27	30	30	29	33	33	35	33	7080	1920	39	43
25	27	30	30	29	33	847	35	34	6820	900	40	43
26	27	30	30	29	32	90	35	33	6790	847	41	43
27	26	30	30	29	32	37	35	33	6460	202	41	43
28	27	30	30	29	32	39	49	33	6060	35	41	44
29	27	30	30	30	---	38	36	34	8350	35	41	42
30	27	30	30	30	---	37	39	34	7600	35	41	63
31	26	---	30	29	---	37	---	33	---	34	42	---
TOTAL	859	3762	928	926	1109	1875	1101	1496	155424	109468	1210	1296
MEAN	27.7	125	29.9	29.9	39.6	60.5	36.7	48.3	5181	3531	39.0	43.2
MAX	29	950	30	33	219	847	49	218	8350	8140	100	63
MIN	26	25	29	29	29	31	35	30	974	34	34	41
AC-FT	1700	7460	1840	1840	2200	3720	2180	2970	308300	217100	2400	2570
a	335	48320	.00	1070	8770	10970	10490	50330	81380	73860	5340	.00
b	72210	11260	60410	96920	182500	198200	212900	226500	268600	263600	159300	154800

a Discharge, in acre-feet, to Kerckhoff Powerplant No. 1, provided by Pacific Gas & Electric Co.
b Discharge, in acre-feet, to Kerckhoff Powerplant No. 2, provided by Pacific Gas & Electric Co.

11246700 SAN JOAQUIN RIVER NEAR AUBERRY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	28.2	37.1	30.2	289	40.6	105	71.6	519	1100	774	37.0	31.4
MAX	36.3	125	43.1	2571	144	881	534	2683	5452	5217	89.3	45.6
(WY)	1995	1998	1991	1997	1996	1995	1995	1995	1995	1995	1995	1993
MIN	17.5	17.4	18.2	18.0	18.0	17.8	19.1	18.7	17.3	17.2	17.3	17.1
(WY)	1988	1988	1988	1989	1988	1988	1988	1988	1987	1987	1988	1988

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998	
ANNUAL TOTAL	110993		279454			
ANNUAL MEAN	304		766		256	
HIGHEST ANNUAL MEAN					1263	1995
LOWEST ANNUAL MEAN					18.2	1988
HIGHEST DAILY MEAN	35200	Jan 3	8350	Jun 29	35200	Jan 3 1997
LOWEST DAILY MEAN	22	Aug 17	25	Nov 1	16	May 9 1987
ANNUAL SEVEN-DAY MINIMUM	22	Aug 17	26	Oct 27	16	May 9 1987
INSTANTANEOUS PEAK FLOW			17600	Jul 2	80600	Jan 3 1997
INSTANTANEOUS PEAK STAGE			18.76	Jul 2	35.62	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	220200		554300		185700	
TOTAL DIVERSION (AC-FT) a	287000		290900		149800	
TOTAL DIVERSION (AC-FT) b	1823000		1907000		1323000	
10 PERCENT EXCEEDS	91		3450		42	
50 PERCENT EXCEEDS	30		34		30	
90 PERCENT EXCEEDS	26		29		18	

a Discharge, in acre-feet, to Kerckhoff Powerplant No. 1, provided by Pacific Gas & Electric Co.
b Discharge, in acre-feet, to Kerckhoff Powerplant No. 2, provided by Pacific Gas & Electric Co.

11249500 MADERA CANAL AT FRIANT, CA

LOCATION.—Lat 37°00'10", long 119°42'21", in NW 1/4 SW 1/4 sec.5, T.11 S., R.21 E., Madera County, Hydrologic Unit 18040006, at Friant Dam 0.9 mi northeast of Friant.

PERIOD OF RECORD.—October 1943 to current year. Monthly discharge only for October 1943 to September 1948 published in WSP 1315-A. October 1954 to September 1966 published as Friant–Madera Canal at Friant.

REVISED RECORDS.—WSP 1151: 1944–48.

GAGE.—Discharge computed on basis of megawatt meter reading, efficiency of the generator coefficiant, and net head on the turbines. Prior to Oct. 1, 1948, water-stage recorder at several sites at various datums. Oct. 1, 1948, to Sept. 30, 1949, water-stage recorder at site 8.8 mi downstream.

REMARKS.—Canal diverts from Millerton Lake (station 11250100) at right end of Friant Dam for irrigation between San Joaquin and Chowchilla Rivers. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were provided by U.S. Bureau of Reclamation and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 1,330 ft^3/s, July 2, 3, 1973, and May 21, 1983; no flow for many days in each year.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	325	.00	.00	.00	.00	.00	800	1010	1020	1180	835	310
2	351	.00	.00	.00	.00	.00	800	1000	1050	1180	703	310
3	365	.00	.00	.00	.00	.00	800	1000	1070	1150	618	310
4	365	.00	.00	.00	.00	.00	800	984	1070	1090	645	323
5	352	.00	.00	.00	.00	.00	800	959	1070	1060	702	330
6	345	.00	.00	.00	.00	.00	832	934	1070	1090	752	330
7	358	.00	.00	.00	.00	.00	850	925	1020	1130	770	395
8	365	.00	.00	.00	.00	.00	850	925	968	1140	738	595
9	365	.00	.00	.00	.00	.00	850	925	918	1140	720	630
10	384	.00	.00	.00	.00	417	850	925	900	1140	720	630
11	395	.00	.00	.00	.00	650	850	925	900	1140	720	617
12	380	.00	.00	.00	.00	800	850	893	900	1140	720	610
13	356	.00	.00	.00	.00	800	850	875	900	1140	720	565
14	284	.00	.00	.00	.00	800	850	875	916	1120	739	514
15	277	.00	.00	.00	.00	800	867	875	1040	1110	750	490
16	290	.00	.00	.00	.00	800	875	875	1080	1140	737	509
17	289	.00	.00	.00	.00	800	875	875	1050	1170	601	552
18	288	.00	.00	.00	.00	800	875	875	1050	1180	507	570
19	286	.00	.00	.00	.00	800	875	875	1050	1180	435	570
20	284	.00	.00	.00	.00	800	875	891	1050	1180	400	537
21	282	.00	.00	.00	.00	800	891	932	1050	1180	384	520
22	280	.00	.00	.00	.00	800	900	950	1060	1180	375	572
23	277	.00	.00	.00	.00	832	900	950	1070	1180	358	552
24	275	.00	.00	.00	.00	850	900	950	1100	1140	340	564
25	226	.00	.00	.00	.00	783	900	950	1110	1090	312	520
26	200	.00	.00	.00	.00	750	900	966	1110	1080	310	485
27	192	.00	.00	.00	.00	750	900	1030	1130	1030	310	462
28	188	.00	.00	.00	.00	750	932	1060	1140	1030	310	450
29	187	.00	.00	.00	---	750	950	1050	1170	1040	310	450
30	186	.00	.00	.00	---	750	998	1030	1180	1050	310	450
31	54	---	.00	.00	---	782	---	1020	---	964	310	---
TOTAL	9051	0.00	0.00	0.00	0.00	16864.00	26045	29309	31212	34764	17161	14722
MEAN	292	.000	.000	.000	.000	544	868	945	1040	1121	554	491
MAX	395	.00	.00	.00	.00	850	998	1060	1180	1180	835	630
MIN	54	.00	.00	.00	.00	.00	800	875	900	964	310	310
AC-FT	17950	.00	.00	.00	.00	33450	51660	58130	61910	68950	34040	29200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	113	14.6	1.77	29.3	109	320	362	508	798	979	726	350
MAX	599	143	49.0	527	659	1094	1258	1261	1277	1293	1234	1153
(WY)	1984	1987	1970	1997	1986	1980	1980	1982	1978	1973	1967	1983
MIN	.000	.000	.000	.000	.000	.000	.000	.000	13.8	356	76.7	.000
(WY)	1950	1949	1949	1949	1949	1952	1964	1961	1977	1981	1977	1959

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1949 - 1998	
ANNUAL TOTAL	201666.00		179128.00			
ANNUAL MEAN	553		491		361	
HIGHEST ANNUAL MEAN					736	1983
LOWEST ANNUAL MEAN					43.8	1977
HIGHEST DAILY MEAN	1140	Jun 18	1180	Jun 30	1330	Jul 2 1973
LOWEST DAILY MEAN	.00	Jan 24	.00	Nov 1	.00	Oct 3 1948
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 24	.00	Nov 1	.00	Oct 3 1948
ANNUAL RUNOFF (AC-FT)	400000		355300		261500	
10 PERCENT EXCEEDS	941		1070		1070	
50 PERCENT EXCEEDS	650		450		124	
90 PERCENT EXCEEDS	.00		.00		.00	

11250000 FRIANT-KERN CANAL AT FRIANT, CA

LOCATION.—Lat 36°59'53", long 119°42'11", in SE 1/4 SW 1/4 sec.5, T.11 S., R.21 E., Fresno County, Hydrologic Unit 18040006, at Friant Dam 0.9 mi northeast of Friant.

PERIOD OF RECORD.—March 1949 to current year.

GAGE.—Discharge computed on basis of megawatt meter reading, efficiency of generator coefficient, and net head on turbines. Prior to January 1986, discharge computed on basis of valve openings and head on valves. Prior to July 8, 1949, nonrecording gages at various sites and datums. July 8 to Sept. 30, 1949, water-stage recorder at site 0.2 mi downstream.

REMARKS.—Canal diverts from Millerton Lake (station 11250100) at left end of Friant Dam for irrigation in upper San Joaquin Valley. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were provided by U.S. Bureau of Reclamation and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 5,330 ft^3/s, June 25, 1982; no flow for many days in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1990	1100	474	250	467	.00	.00	1120	421	3140	3380	2860
2	2010	1040	473	251	147	.00	.00	1290	816	2960	3910	3130
3	1850	1100	475	252	50	.00	.00	1290	900	2700	4260	3060
4	1640	1130	447	254	.00	.00	.00	1290	825	2490	4400	2680
5	1980	1090	340	267	.00	.00	.00	1100	700	2650	4360	2250
6	2250	1050	279	252	.00	.00	.00	765	681	3000	4220	2150
7	2390	971	295	199	233	.00	.00	464	725	3320	3950	2150
8	2420	849	318	201	400	.00	.00	304	625	3630	3530	2150
9	2280	803	314	203	459	.00	.00	279	450	3580	3520	2300
10	2050	749	306	204	655	.00	.00	279	567	3190	3690	2330
11	1790	567	343	86	874	.00	.00	279	533	3000	3780	2080
12	1690	487	362	.00	1030	162	.00	279	450	3260	3830	1860
13	1750	482	351	.00	1010	278	.00	279	450	3540	3760	1890
14	1820	449	353	44	979	278	.00	369	450	3690	3500	2040
15	1810	422	295	127	840	279	.00	331	525	3810	3010	2160
16	1700	420	253	224	566	278	.00	277	875	3880	3050	2230
17	1660	437	251	229	425	279	.00	276	1480	3700	3210	2220
18	1690	465	264	77	556	280	.00	275	2000	3550	3220	2000
19	1770	476	306	.00	813	281	.00	273	2160	3630	3170	1790
20	1880	472	330	.00	821	324	.00	272	2210	3760	3030	1870
21	1960	478	356	150	680	382	.00	271	2370	4070	2720	1980
22	1890	451	375	126	600	463	.00	269	2730	4210	2490	2030
23	1920	442	347	.00	244	500	.00	268	2930	4430	2630	2050
24	1780	453	297	.00	.00	458	.00	267	3000	4280	2790	1980
25	1440	397	278	41	.00	335	.00	265	3120	3980	2750	1730
26	1280	357	276	151	.00	85	.00	264	3090	4070	2700	1620
27	1290	361	224	252	.00	.00	102	264	2850	4320	2610	1690
28	1310	386	188	254	.00	.00	125	264	2950	4470	2380	1780
29	1300	389	190	255	---	.00	107	263	3100	4540	2130	1800
30	1280	431	284	313	---	.00	632	264	3180	4490	2200	1770
31	1200	---	292	381	---	.00	---	264	---	3780	2440	---
TOTAL	55070	18704	9936	5043.00	11849.00	4662.00	966.00	14014	47163	113120	100620	63630
MEAN	1776	623	321	163	423	150	32.2	452	1572	3649	3246	2121
MAX	2420	1130	475	381	1030	500	632	1290	3180	4540	4400	3130
MIN	1200	357	188	.00	.00	.00	.00	263	421	2490	2130	1620
AC-FT	109200	37100	19710	10000	23500	9250	1920	27800	93550	224400	199600	126200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	854	326	77.8	217	1240	1241	1398	1648	2650	2946	2588	1528
MAX	3085	1364	629	1349	4507	3552	4476	4238	4529	4905	4339	4033
(WY)	1979	1979	1970	1966	1965	1965	1962	1993	1993	1993	1967	1967
MIN	.000	.000	.000	.000	.000	5.13	32.2	87.5	598	262	384	1.33
(WY)	1950	1950	1950	1950	1950	1991	1998	1977	1977	1949	1949	1950

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1949 - 1998	
ANNUAL TOTAL	685226.00		444777.00			
ANNUAL MEAN	1877		1219		1404	
HIGHEST ANNUAL MEAN					2356	1993
LOWEST ANNUAL MEAN					270	1950
HIGHEST DAILY MEAN	4970	Jun 4	4540	Jul 29	5330	Jun 25 1982
LOWEST DAILY MEAN	.00	Jan 1	.00	Jan 12	.00	Jul 5 1949
ANNUAL SEVEN-DAY MINIMUM	.00	Feb 3	.00	Feb 24	.00	Sep 11 1949
ANNUAL RUNOFF (AC-FT)	1359000		882200		1017000	
10 PERCENT EXCEEDS	3700		3280		3550	
50 PERCENT EXCEEDS	1850		476		980	
90 PERCENT EXCEEDS	279		.00		.00	

11250100 MILLERTON LAKE AT FRIANT, CA

LOCATION.—Lat 37°00'00", long 119°42'13", in SW 1/4 SW 1/4 sec.5, T.11 S., R.21 E., Fresno County, Hydrologic Unit 18040006, near center of Friant Dam on San Joaquin River just upstream from Cottonwood Creek, 0.9 mi northeast of Friant.

DRAINAGE AREA.—1,638 mi^2.

PERIOD OF RECORD.—October 1941 to current year. Monthend contents only for some periods, published in WSP 1315-A.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by U.S. Bureau of Reclamation). Prior to May 29, 1944, nonrecording gage on left bank at same datum.

REMARKS.—Reservoir is formed by gravity-type concrete dam with spillway near center, completed in December 1942. Control valves installed in February 1944, and spillway gates installed in November 1947. Usable capacity, 503,200 acre-ft between elevations 375.4 ft, invert of river outlet, and 578.0 ft, top of drum-type spillway gates. Not available for release, 17,400 acre-ft. Millerton Lake is one of the storage units in the Central Valley Project. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records and capacity table were provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 528,800 acre-ft, July 21, 1998, elevation, 579.68 ft, (maximum instantaneous contents, 530,500 acre-ft, at 1300 hours, Jan. 3, 1997, elevation 580.01 ft); minimum since lake first filled, 133,600 acre-ft, Apr. 11, 1969, elevation, 467.81 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 528,800 acre-ft, July 21, elevation, 579.68 ft; minimum, 160,900 acre-ft, Nov. 6, elevation, 479.66 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by U.S. Bureau of Reclamation, dated 1921)

400	36,400	440	83,300	480	161,700	520	279,400	560	436,500
420	57,000	460	117,500	500	215,000	540	353,000	580	530,400

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	220800	162300	179200	219000	323100	364500	431600	362700	329200	478800	519200	445400
2	217000	161700	179300	220100	330600	362400	437800	357100	334000	481200	515800	444100
3	214800	162200	180000	221300	346800	360600	444200	352700	339400	488100	512700	442700
4	213200	163100	180700	222700	357200	359500	449000	353000	344600	489800	508900	441100
5	211300	161700	182400	224200	360300	359100	452300	353800	348500	490900	506900	439600
6	208900	160900	184000	225200	362400	359500	452800	356700	354000	491300	503700	437400
7	204100	161500	186300	227100	366300	358900	451500	358900	366600	492200	501600	435900
8	200100	161600	189100	229200	366700	358000	447900	349300	375900	494000	498100	436200
9	196200	161800	191100	231600	365100	356900	443700	360600	383400	498800	495500	434800
10	192700	163800	192800	233600	363100	356500	438800	358900	390700	506200	494100	434600
11	189500	166900	194600	235300	361300	358300	434400	358500	398000	509900	492100	434200
12	186600	170600	195500	238000	360400	357600	429600	358200	404000	510200	489700	434600
13	183800	172600	196700	242400	359300	358000	423600	358200	407100	513300	485400	435500
14	181800	172200	197700	245600	360000	358300	419200	357600	410700	517300	481700	436100
15	180200	172100	199100	255300	361700	358000	414500	356300	419700	517500	480300	437200
16	178800	171600	200500	264500	362600	358200	410900	353900	429200	518600	479300	438200
17	178300	171200	201400	269000	363500	359300	407900	351200	436900	519500	478400	439000
18	177500	172000	202700	272400	363400	362200	404200	348800	439300	519500	476000	440100
19	176300	171300	204200	278900	361000	364300	401200	345900	442700	521100	472100	439800
20	174800	170600	206800	281200	359900	365200	398300	343400	445200	527000	468500	439800
21	173300	171200	206300	285100	359000	365100	395700	340400	449900	528800	467100	439700
22	171700	172600	207500	288500	361800	367500	393200	337200	454600	528400	465400	439300
23	169600	172700	208500	292300	363900	369700	391400	334600	459800	528400	463900	438600
24	167900	173600	210000	296000	365000	373700	388100	331600	463500	528300	461400	438000
25	167000	174500	210700	299900	365500	385600	384800	328700	466300	528300	458600	438200
26	166300	175600	211800	303300	366100	391300	381100	327300	469200	527900	455900	439000
27	165600	176900	212900	306500	366200	397300	377100	328000	471800	526900	452800	439500
28	164800	187000	214500	309300	365800	407500	374800	326800	473300	523600	451600	439300
29	163700	178900	216000	313800	---	414600	371800	326700	473200	521100	449200	438600
30	162700	179700	217400	317100	---	420600	368300	327800	478000	519800	447100	438000
31	162800	---	218100	320100	---	425600	---	326600	---	518800	446000	---
MAX	220800	187000	218100	320100	366700	425600	452800	362700	478000	528800	519200	445400
MIN	162700	160900	179200	219000	323100	356500	368300	326600	329200	478800	446000	434200
a	480.44	487.08	500.83	531.40	543.24	557.53	543.87	533.14	569.12	577.65	562.12	560.34
b	-61300	+16900	+38400	+102000	+45700	+59800	-57300	-41700	+151400	+40800	-72800	-8000

CAL YR 1997 b -230400
WTR YR 1998 b +213900

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

11251000 SAN JOAQUIN RIVER BELOW FRIANT, CA

LOCATION.—Lat 36°59'04", long 119°43'24", in SW 1/4 SW 1/4 sec.7, T.11 S., R.21 E., Fresno County, Hydrologic Unit 18040001, on left bank 0.5 mi west of Friant, 1.5 mi downstream from Cottonwood Creek, 2 mi downstream from Friant Dam, and at mile 268.1.

DRAINAGE AREA.—1,676 mi^2.

PERIOD OF RECORD.—October 1907 to current year. Published as "near Pollasky" October 1907 to December 1908, and as "near Friant" January 1909 to September 1938. Monthly discharge only for October 1907 to November 1908, published in WSP 1315-A.

REVISED RECORDS.—WSP 843: 1914(M).

GAGE.—Water-stage recorder. Datum of gage is 294.00 ft above sea level (levels by U.S. Bureau of Reclamation). Oct. 18, 1907, to Nov. 9, 1913, nonrecording gage at site 4.5 mi upstream at different datum. Nov. 10, 1913, to Sept. 30, 1938, water-stage recorder at site 2.5 mi upstream at different datum.

REMARKS.—Records good. Flow regulated by Millerton Lake (station 11250100) beginning in 1941, and by nine powerplants and eight reservoirs with combined capacity of about 609,300 acre-ft. Diversion for irrigation to Madera and Friant–Kern Canals (stations 11249500 and 11250000) began in 1943 and 1949, respectively. See schematic diagram of lower San Joaquin River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 77,200 ft^3/s, Dec. 11, 1937, gage height, 23.8 ft, site and datum then in use; minimum, 38 ft^3/s, regulated, July 29, 1940. Maximum discharge since construction of Friant Dam in 1941, 60,300 ft^3/s, Jan. 3, 1997, gage height, 22.97 ft (provided by U.S. Bureau of Reclamation); minimum, 5.5 ft^3/s, Oct. 20, 1941.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	270	174	148	156	65	4130	1990	4210	4440	7880	636	394
2	271	172	135	159	153	4120	1960	4030	4450	7890	488	396
3	270	176	135	160	384	4100	2360	4010	4460	7870	310	394
4	270	175	135	163	674	4090	3000	4040	4470	7870	347	391
5	265	173	134	162	1730	4090	2950	3730	4470	7880	373	390
6	260	176	135	151	2300	4160	3600	3520	4440	7890	373	388
7	250	199	136	138	3320	4090	4690	3520	4470	7320	371	392
8	231	225	138	138	4400	4080	5440	3510	4690	6430	369	385
9	213	227	136	142	4360	3700	6180	3520	4970	5420	370	365
10	184	209	136	147	4280	2620	6260	3510	5240	5190	372	366
11	182	175	146	142	4110	2080	6240	3510	5750	5540	358	366
12	183	177	153	151	3710	1890	6250	3510	6290	4820	345	365
13	185	176	154	154	3580	1890	6250	3510	6470	3670	347	366
14	204	175	154	133	3720	1890	6240	3500	6470	3640	348	366
15	247	176	172	207	3730	1890	5850	3940	6940	3980	347	368
16	231	176	190	140	3630	1880	5250	4460	7680	3650	348	369
17	239	176	177	68	3650	1590	5080	4450	7920	4040	351	374
18	241	150	155	58	3590	1390	5100	4500	7930	4530	358	369
19	241	202	154	88	3970	1390	5090	4520	7920	3660	372	369
20	244	173	155	70	4220	1390	4740	4520	7930	1240	376	370
21	244	173	155	80	4240	1400	4530	4510	7880	3330	389	371
22	242	173	156	68	4360	1400	4510	4500	7830	4900	389	383
23	236	172	172	53	4290	1400	4510	4480	7850	3360	391	395
24	225	172	189	52	4240	1440	4530	4480	7880	2970	378	398
25	224	176	168	50	4190	1730	4540	4470	7890	2090	378	397
26	222	177	156	50	4170	1460	4540	4450	7870	2370	365	403
27	217	175	157	98	4150	1440	4530	4450	7850	1860	377	402
28	199	174	156	129	4140	1670	4520	4450	7870	1780	394	400
29	190	162	156	161	---	1510	4520	4450	7870	1510	391	400
30	174	150	157	88	---	1480	4190	4440	7870	308	388	397
31	174	---	157	68	---	1790	---	4440	---	303	391	---
TOTAL	7028	5366	4757	3624	93356	73180	139440	127140	196060	135191	11790	11489
MEAN	227	179	153	117	3334	2361	4648	4101	6535	4361	380	383
MAX	271	227	190	207	4400	4160	6260	4520	7930	7890	636	403
MIN	174	150	134	50	65	1390	1960	3500	4440	303	310	365
AC-FT	13940	10640	9440	7190	185200	145200	276600	252200	388900	268200	23390	22790

11251000 SAN JOAQUIN RIVER BELOW FRIANT, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 1940, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	628	609	868	1276	1704	2246	3805	5876	6085	2765	1166	772
MAX	1678	1317	3589	4507	4391	6854	8010	11170	15870	9635	2312	1361
(WY)	1919	1928	1910	1909	1937	1938	1916	1938	1911	1911	1914	1938
MIN	164	196	301	333	393	419	1262	1703	635	335	264	156
(WY)	1932	1932	1909	1918	1924	1924	1912	1934	1924	1924	1924	1931

SUMMARY STATISTICS	WATER YEARS 1908 - 1940	
ANNUAL TOTAL		
ANNUAL MEAN	2343	
HIGHEST ANNUAL MEAN	4961	1938
LOWEST ANNUAL MEAN	698	1924
HIGHEST DAILY MEAN	38800	Jan 31 1911
LOWEST DAILY MEAN	54	Sep 15 1924
ANNUAL SEVEN-DAY MINIMUM	105	Sep 16 1931
INSTANTANEOUS PEAK FLOW	77200	Dec 11 1937
INSTANTANEOUS PEAK STAGE	23.80	Dec 11 1937
ANNUAL RUNOFF (AC-FT)	1698000	
10 PERCENT EXCEEDS	6100	
50 PERCENT EXCEEDS	1190	
90 PERCENT EXCEEDS	394	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	358	264	408	771	1117	1253	1800	1961	1752	1070	600	472
MAX	1663	1623	3798	9144	7100	7705	7701	9107	9438	5322	2807	2392
(WY)	1946	1983	1983	1997	1969	1969	1983	1941	1941	1995	1945	1948
MIN	47.2	37.3	32.5	30.0	33.9	33.0	43.2	43.9	78.6	101	91.1	67.2
(WY)	1970	1972	1971	1966	1966	1968	1971	1971	1970	1970	1970	1969

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1941 - 1998	
ANNUAL TOTAL	572264		808421			
ANNUAL MEAN	1568		2215		984	
HIGHEST ANNUAL MEAN					4385	1983
LOWEST ANNUAL MEAN					66.9	1971
HIGHEST DAILY MEAN	36800	Jan 3	7930	Jun 18	36800	Jan 3 1997
LOWEST DAILY MEAN	110	Apr 21	50	Jan 25	11	Jan 8 1977
ANNUAL SEVEN-DAY MINIMUM	135	Dec 2	60	Jan 20	20	Jan 22 1990
INSTANTANEOUS PEAK FLOW			7960	Jun 17	60300	Jan 3 1997
INSTANTANEOUS PEAK STAGE			9.92	Jun 17	22.97	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	1135000		1604000		712600	
10 PERCENT EXCEEDS	7490		5480		3020	
50 PERCENT EXCEEDS	277		398		151	
90 PERCENT EXCEEDS	172		151		52	

11253310 CANTUA CREEK NEAR CANTUA CREEK, CA

LOCATION.—Lat 36°24'08", long 120°25'57", in SE 1/4 SE 1/4 sec.34, T.17 S., R.14 E., Fresno County, Hydrologic Unit 18030012, on left bank 9.2 mi southwest of town of Cantua Creek and 19 mi north of Coalinga.

DRAINAGE AREA.—46.4 mi^2.

PERIOD OF RECORD.—Water years 1958–65 (annual maximum), October 1966 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 680 ft above sea level, from topographic map. Prior to October 1966, crest-stage gage at datum 2.00 ft lower.

REMARKS.—Records fair. Some small dams for stock use upstream from station. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,420 ft^3/s, Mar. 1, 1983, gage height, 5.72 ft; maximum gage height, 7.38 ft, from floodmarks, Mar. 10, 1995; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 50 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 5	2000	95	1.81	Feb. 21	2100	182	2.42
Feb. 3	0945	494	3.85	Mar. 13	1445	131	2.02
Feb. 7	1645	1,150	5.48	May 5	1600	154	2.06
Feb. 14	1215	130	2.03				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.02	.65	4.8	28	20	9.8	9.2	4.6	2.4	.70
2	.00	.00	.02	.65	141	26	18	11	9.2	4.9	2.2	.68
3	.00	.00	.01	.71	236	24	19	10	9.2	5.3	1.9	.66
4	.00	.00	.01	.90	48	22	19	12	9.4	5.1	1.7	.75
5	.00	.00	17	1.3	17	22	18	63	9.1	4.8	1.6	.81
6	.00	.00	12	1.0	118	22	19	36	9.3	4.7	1.5	.81
7	.00	.00	2.7	1.0	264	19	18	18	11	4.4	1.2	.72
8	.00	.00	5.0	.97	107	21	15	17	10	4.3	1.2	.70
9	.00	.00	2.8	.99	51	17	15	13	9.9	4.3	1.2	.76
10	.00	.00	1.4	3.3	33	17	14	12	9.2	4.3	1.2	.73
11	.00	.00	1.1	2.1	27	16	16	11	9.0	4.2	1.2	.79
12	.00	.00	.92	1.6	29	16	16	14	8.8	4.1	1.1	.86
13	.00	.00	.81	5.8	23	30	17	14	8.4	3.8	1.0	.87
14	.00	.00	.75	3.3	71	18	15	15	7.7	3.5	1.0	.85
15	.00	.00	.72	3.0	43	16	15	12	7.4	3.5	.98	.73
16	.00	.00	.72	2.4	36	16	14	12	7.0	3.3	.96	.73
17	.00	.00	.65	1.9	52	16	14	11	6.7	3.2	.98	.73
18	.00	.00	.65	2.0	35	15	13	11	6.1	2.9	1.0	.72
19	.00	.00	.65	12	49	15	13	11	6.0	2.7	1.1	.80
20	.00	.00	.68	5.2	42	15	13	10	6.0	2.6	1.1	.82
21	.00	.00	.72	3.6	55	14	13	10	6.0	2.5	1.1	.79
22	.00	.00	.72	3.0	71	14	12	9.9	5.8	2.5	1.0	.83
23	.00	.00	.67	2.7	70	14	12	9.7	5.7	2.6	1.0	.90
24	.00	.00	.70	2.3	62	16	12	9.7	5.7	2.6	.98	.95
25	.00	.00	.67	2.1	43	26	11	10	5.7	2.6	.91	.97
26	.00	.14	.68	1.9	38	17	11	10	5.7	2.5	.89	.96
27	.00	.03	.69	1.8	34	17	10	10	5.3	2.2	.88	1.3
28	.00	.01	.69	1.7	30	17	10	10	5.0	1.9	.81	1.3
29	.00	.01	.72	3.0	---	16	10	11	4.8	1.9	.77	1.2
30	.00	.08	.72	3.7	---	15	9.2	9.6	4.7	2.3	.73	1.1
31	.00	---	.70	2.7	---	22	---	9.2	---	2.5	.68	---
TOTAL	0.00	0.27	56.29	79.27	1829.8	579	431.2	431.9	223.0	106.6	36.27	25.52
MEAN	.000	.009	1.82	2.56	65.3	18.7	14.4	13.9	7.43	3.44	1.17	.85
MAX	.00	.14	17	12	264	30	20	63	11	5.3	2.4	1.3
MIN	.00	.00	.01	.65	4.8	14	9.2	9.2	4.7	1.9	.68	.66
AC-FT	.00	.5	112	157	3630	1150	855	857	442	211	72	51

11253310 CANTUA CREEK NEAR CANTUA CREEK, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1998, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.082	.33	1.44	7.33	11.4	13.8	5.17	2.77	1.21	.45	.13	.16
MAX	1.40	2.82	11.2	44.0	65.3	101	23.2	17.4	7.64	3.83	1.83	1.41
(WY)	1984	1973	1984	1969	1998	1995	1983	1983	1983	1983	1983	1976
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1967	1967	1969	1975	1976	1989	1972	1972	1968	1968	1968	1968

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1967 - 1998	
ANNUAL TOTAL	1373.90		3799.12			
ANNUAL MEAN	3.76		10.4		3.65	
HIGHEST ANNUAL MEAN					18.9	1983
LOWEST ANNUAL MEAN					.003	1989
HIGHEST DAILY MEAN	98	Jan 23	264	Feb 7	1070	Mar 10 1995
LOWEST DAILY MEAN	.00	Jul 24	.00	Oct 1	.00	Oct 1 1966
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 24	.00	Oct 1	.00	Oct 1 1966
INSTANTANEOUS PEAK FLOW			1150	Feb 7	3420	Mar 1 1983
INSTANTANEOUS PEAK STAGE			5.48	Feb 7	7.38	Mar 10 1995
ANNUAL RUNOFF (AC-FT)	2730		7540		2640	
10 PERCENT EXCEEDS	8.3		22		7.2	
50 PERCENT EXCEEDS	.66		2.7		.09	
90 PERCENT EXCEEDS	.00		.00		.00	

11253500 JAMES BYPASS NEAR SAN JOAQUIN, CA

LOCATION.—Lat 36°39'09", long 120°10'49", in NE 1/4 SW 1/4 sec.1, T.15 S., R.16 E., Fresno County, Hydrologic Unit 18030012, on right bank 3.2 mi north of San Joaquin.

PERIOD OF RECORD.—October 1947 to current year. Published as "Fresno Slough bypass" in WSP 1315-A and 1735. Daily discharge data for period October 1954 to September 1972 are in files of U.S. Bureau of Reclamation. Monthly totals published in WDR CA-72-2.

GAGE.—Water-stage recorder. Elevation of gage is 160 ft above sea level, from topographic map.

REMARKS.—Diversion upstream from station for irrigation. James Bypass carries overflow from Kings River to San Joaquin River.

COOPERATION.—Records were provided by U.S. Bureau of Reclamation; rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 5,570 ft^3/s, June 7, 1969; no flow for all or most of each year.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	---	1600	4360	4460	4330	---	.00
2	.00	.00	.00	.00	.00	311	1860	4310	4430	4330	---	.00
3	.00	.00	.00	.00	.00	321	2130	4280	4390	4240	188	.00
4	.00	.00	.00	.00	.00	321	2290	4350	4370	4220	144	.00
5	.00	.00	.00	.00	345	307	2300	4440	4680	4240	98	.00
6	.00	.00	.00	.00	491	345	2850	4790	4700	4330	.00	.00
7	.00	.00	.00	.00	---	---	2920	4670	4700	4360	.00	.00
8	.00	.00	.00	.00	---	---	2900	4410	4440	4270	.00	.00
9	.00	.00	.00	.00	159	788	3160	4390	4230	4290	.00	78
10	.00	.00	.00	.00	140	773	3270	4420	4160	3890	.00	33
11	.00	.00	.00	.00	.00	776	3130	4700	4040	4090	.00	.00
12	.00	.00	.00	.00	.00	909	3160	4810	4150	4310	.00	.00
13	.00	.00	.00	.00	.00	1140	3500	4910	4400	4550	.00	.00
14	.00	.00	.00	.00	---	1190	3540	4880	4680	4560	.00	.00
15	.00	.00	.00	.00	---	1170	3590	4470	4910	4410	.00	.00
16	.00	.00	.00	.00	---	1300	3810	4480	4770	4250	.00	.00
17	.00	.00	.00	.00	204	1280	3930	4730	4580	3760	.00	.00
18	.00	.00	.00	.00	174	1320	4050	4910	4530	2270	.00	.00
19	.00	.00	.00	249	.00	1290	4140	4970	4630	1220	.00	.00
20	.00	.00	.00	.00	.00	1270	4330	4510	4610	771	.00	.00
21	.00	.00	.00	.00	---	1240	4310	4370	4580	771	.00	.00
22	.00	.00	.00	.00	---	1240	4250	4340	4720	569	.00	.00
23	.00	.00	.00	.00	156	1330	4420	4270	4740	131	.00	.00
24	.00	.00	.00	.00	472	1370	4560	4370	4440	203	.00	.00
25	.00	.00	.00	.00	270	1410	4530	4440	4360	218	.00	.00
26	.00	.00	.00	.00	264	1740	4580	4530	4490	254	.00	.00
27	.00	.00	.00	.00	140	2120	4570	4550	4350	337	.00	.00
28	.00	.00	.00	.00	---	1610	4490	4440	4190	188	.00	.00
29	.00	.00	.00	.00	---	1330	4410	4430	4170	45	.00	.00
30	.00	.00	.00	.00	---	1840	4490	4400	4240	119	.00	.00
31	.00	---	.00	.00	---	1660	---	4390	---	35	.00	---
TOTAL	0.00	0.00	0.00	249.00	---	---	107070	140320	134140	79561	---	111.00
MEAN	.000	.000	.000	8.03	---	---	3569	4526	4471	2566	---	3.70
MAX	.00	.00	.00	249	---	---	4580	4970	4910	4560	---	78
MIN	.00	.00	.00	.00	---	---	1600	4270	4040	35	---	.00
AC-FT	.00	.00	.00	494	---	---	212400	278300	266100	157800	---	220

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	59.4	151	232	377	380	569	789	958	614	277	39.7	28.1
MAX	1723	2364	3648	3551	4688	5192	5066	4932	4913	2985	1077	811
(WY)	1984	1984	1983	1983	1983	1983	1983	1983	1983	1983	1983	1983
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1948	1948	1948	1948	1948	1948	1948	1954	1953	1948	1948	1949

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		WATER YEARS 1948 - 1998a	
ANNUAL TOTAL	217859.00			
ANNUAL MEAN	597		338	
HIGHEST ANNUAL MEAN			3189	1983
LOWEST ANNUAL MEAN			.000	1954
HIGHEST DAILY MEAN	4850	Feb 9	5360	Mar 3 1983
LOWEST DAILY MEAN	.00	Mar 25	.00	Oct 1 1947
ANNUAL SEVEN-DAY MINIMUM	.00	Mar 25	.00	Oct 1 1947
ANNUAL RUNOFF (AC-FT)	432100		244700	
10 PERCENT EXCEEDS	2910		1370	
50 PERCENT EXCEEDS	.00		.00	
90 PERCENT EXCEEDS	.00		.00	

a Does not include water years 1955 to 1972 (See Period of Record).

11255575 PANOCHE CREEK AT INTERSTATE 5 NEAR SILVER CREEK, CA

LOCATION.—Lat 36°39' 09", long 120°37' 52", in NE 1/4 SW 1/4 sec. 11, T.15 S., R.12 E., Fresno County, Hydrologic Unit 18040001, on left bank at downstream side of Interstate 5 bridge over Panoche Creek, 7.3 mi southwest of Silver Creek Township, and 11.8 mi east of Panoche.

DRAINAGE AREA.— 305 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.— Dec. 1, 1997, to June 30, 1998. Record is published seasonally, Dec. 1 to June 30 of each water year.

GAGE.—Water-stage recorder. Altitude of gage is 450 ft above sea level, from topographic map.

REMARKS.—Records poor. No known regulation or diversions upstream of station. No peaks above base occurred outside of period of published record during this water year.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 9,940 ft^3/s, Feb. 3, 1998, gage height 13.46 ft, from rating curve extended above 1,500 ft^3/s on the basis of slope-area measurement of peak flow; no flow for many days.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 150 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 19	0330	711	5.29	Feb. 14	1500	581	5.04
Feb. 3	0830	9,940	13.46	Feb. 23	1715	1,780	6.81
Feb. 7	1845	8,550	12.47				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	e.00	.00	.00	e.27	e16	1.6	e.50	---	---	---
2	---	---	e.00	.00	379	e.26	e17	2.8	e.80	---	---	---
3	---	---	e.00	.00	3250	e.25	e23	3.9	1.0	---	---	---
4	---	---	e.00	.00	206	e.25	e30	8.8	1.1	---	---	---
5	---	---	e.00	.00	41	e.35	e23	6.4	1.0	---	---	---
6	---	---	e.00	.00	693	e.30	e21	9.2	1.7	---	---	---
7	---	---	e.00	.00	1760	e.35	e16	15	1.2	---	---	---
8	---	---	e.00	.00	392	e.23	e14	18	e.85	---	---	---
9	---	---	e.00	.00	91	e.21	e12	7.1	e.75	---	---	---
10	---	---	e.00	.00	62	e.19	e9.0	e5.0	e.58	---	---	---
11	---	---	e.00	.00	41	e.18	e10	e4.2	e.47	---	---	---
12	---	---	e.00	.00	39	e.17	e21	11	e.40	---	---	---
13	---	---	e.00	.00	64	.89	e17	10	e.36	---	---	---
14	---	---	e.00	.00	177	e.34	e20	8.8	e.33	---	---	---
15	---	---	e.00	.00	179	e.28	14	e6.4	e.31	---	---	---
16	---	---	e.00	.00	79	e.24	11	e4.5	e.29	---	---	---
17	---	---	e.00	.00	115	e.22	e6.0	e2.7	e.27	---	---	---
18	---	---	.00	.00	54	e.19	e5.5	e1.2	e.25	---	---	---
19	---	---	.00	71	216	e.18	e4.7	e.60	e.24	---	---	---
20	---	---	.00	2.2	200	e.17	e3.5	e.52	e.30	---	---	---
21	---	---	.00	.00	117	e.16	e2.7	e.47	e.50	---	---	---
22	---	---	.00	.00	242	e.16	e2.5	e.45	e.82	---	---	---
23	---	---	.00	.00	333	e.15	e6.4	e.43	1.6	---	---	---
24	---	---	.00	.00	119	e.15	e5.4	e.41	2.0	---	---	---
25	---	---	.00	.00	3.5	35	e3.6	e.39	1.1	---	---	---
26	---	---	.00	.00	.40	7.1	5.5	e.37	2.4	---	---	---
27	---	---	.00	.00	e.33	e5.5	2.3	e.37	e.80	---	---	---
28	---	---	.00	.00	e.30	e4.7	1.8	e.36	e.56	---	---	---
29	---	---	.00	.70	---	e5.0	1.8	e.35	e.86	---	---	---
30	---	---	.00	6.3	---	e8.0	1.7	e.34	2.4	---	---	---
31	---	---	.00	.16	---	e7.0	---	e.33	---	---	---	---
TOTAL	---	---	0.00	80.36	8853.53	78.44	327.4	131.99	25.74	---	---	---
MEAN	---	---	.000	2.59	316	2.53	10.9	4.26	.86	---	---	---
MAX	---	---	.00	71	3250	35	30	18	2.4	---	---	---
MIN	---	---	.00	.00	.00	.15	1.7	.33	.24	---	---	---
AC-FT	---	---	.00	159	17560	156	649	262	51	---	---	---

e Estimated.

11255575 PANOCHE CREEK AT INTERSTATE 5 NEAR SILVER CREEK, CA

WATER-QUALITY RECORDS

PERIOD OF RECORD.—January 1998 to July 1998.
CHEMICAL DATA: January 1998 to April 1998.
SEDIMENT DATA: January 1998 to July 1998.

REMARKS.—Zero bedload discharge observed for flows less than 1.0 ft^3/s during current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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)	TUR-BID-ITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
JAN										
30...	1200	4.5	2990	8.5	13.0	250	750	10.7	104	940
FEB										
02...	1010	122	1480	8.4	10.0	8400	743	10.4	95	410
APR										
03...	1310	21	3430	8.6	11.0	1100	752	11.2	104	1300
14...	1245	18	3630	8.3	13.0	2100	753	10.5	102	1300

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	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)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)
JAN										
30...	740	160	130	368	46	5	7.2	242	3	202
FEB										
02...	280	87	46	172	48	4	5.0	148	0	121
APR										
03...	1000	200	201	380	38	5	6.6	360	6	305
14...	1100	200	206	424	41	5	7.6	333	2	277

DATE	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)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
JAN									
30...	1400	100	.68	10	2580	2330	3.50	11	12
FEB									
02...	580	36	.62	11	1070	1010	1.46	7	4
APR									
03...	1700	110	.63	10	3020	2750	4.10	18	28
14...	1800	110	.64	10	3230	2870	4.40	19	29

11255575 PANOCHE CREEK AT INTERSTATE 5 NEAR SILVER CREEK, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70339)
JAN								
19...	1350	38	11.5	20200	2070	45	58	71
30...	1215	4.3	13.0	1480	17	--	--	--
FEB								
02...	0920	122	10.0	24900	8200	40	50	65
02...	1240	85	10.0	18300	4200	--	--	--
04...	1145	149	8.5	37000	14900	24	32	40
12...	1700	52	11.5	13000	1830	34	46	51
APR								
03...	1445	21	11.0	6530	370	24	34	39
06...	1630	21	18.5	7920	449	27	36	54
14...	1525	18	21.0	10800	525	32	41	46
28...	1130	2.4	23.0	3360	22	--	--	--
MAY								
12...	1350	9.5	18.5	12000	308	22	32	36
JUN								
03...	1215	1.1	19.0	5510	16	--	--	--
JUL								
01...	1508	2.8	31.0	12500	95	--	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70341)	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)
JAN							
19...	82	86	90	94	99	100	--
30...	--	--	66	80	98	100	--
FEB							
02...	75	82	85	88	95	99	100
02...	--	--	78	--	--	--	--
04...	50	63	72	79	91	99	100
12...	63	64	72	82	95	99	100
APR							
03...	46	55	66	81	98	100	--
06...	62	68	74	84	96	100	--
14...	55	63	74	86	98	100	--
28...	--	--	96	--	--	--	--
MAY							
12...	49	65	82	90	99	100	--
JUN							
03...	--	--	97	--	--	--	--
JUL							
01...	--	--	88	--	--	--	--

11255575 PANOCHE CREEK AT INTERSTATE 5 NEAR SILVER CREEK, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	NUMBER OF SAMPLING POINTS (COUNT) (00063)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPERATURE WATER (DEG C) (00010)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)
APR							
28...	1155	1	2.4	23.0	3	9	24
28...	1158	1	2.4	23.0	5	21	53
28...	1159	1	2.4	23.0	6	27	76
28...	1200	1	2.4	23.0	5	28	73
28...	1201	1	2.4	23.0	6	14	24
28...	1202	1	2.5	23.0	13	44	66
28...	1203	1	2.5	23.0	25	37	47
28...	1204	1	2.5	23.0	48	87	96

DATE	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)
APR							
28...	54	70	74	77	92	93	100
28...	87	96	97	98	99	100	--
28...	99	100	--	--	--	--	--
28...	99	100	--	--	--	--	--
28...	45	69	75	80	88	94	100
28...	86	94	97	98	100	--	--
28...	56	69	91	100	--	--	--
28...	98	99	100	--	--	--	--

11255575 PANOCHE CREEK AT INTERSTATE 5 NEAR SILVER CREEK, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF BEDLOAD, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	SAMPLING METHOD, CODES (82398)	SAMPLER TYPE (CODE) (84164)	BAG MESH SIZE BEDLOAD SAMPLER (MM) (30333)	TETHER LINE USED IN SAMPLNG (YES=1) (CODE) (04117)	STARTING TIME (2400 HOURS) (82073)	ENDING TIME (2400 HOURS (82074)	TIME ON BED FOR BED LOAD SAMPLE (SEC) (04120)	HORIZONTAL WIDTH OF VERTICAL (FEET) (04121)
FEB									
02...	1445	1000	1120	.25	0	1440	1450	10	.5
02...	1450	1000	1120	.25	0	1450	1455	10	.5
12...	1715	1000	1120	.25	0	1710	1723	30	1.5
12...	1730	1000	1120	.25	0	1725	1738	30	1.5
APR									
03...	1420	1000	1120	.25	0	1415	1425	30	1.0
03...	1500	1000	1120	.25	0	1455	1505	30	1.0
MAY									
12...	1215	1000	1120	.25	0	1210	1220	20	.9
12...	1230	1000	1120	.25	0	1225	1230	20	.9
JUN									
03...	1255	1000	1120	.25	0	1245	1305	30	.3
03...	1315	1000	1120	.25	0	1305	1325	30	.3

DATE	COMPSTD SAMPLES IN X-SEC BEDLOAD MEASMNT (NUM) (04118)	VERTICALS IN COMPOSITE SAMPLE (NUM) (04119)	NUMBER OF SAMPLING POINTS (COUNT) (00063)	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPERATURE WATER (DEG C) (00010)	DISCH, BEDLOAD AV UNIT FOR COMPOSITE SAMPLE T/D/FT (04122)	SEDIMENT DISCHARGE, BEDLOAD (TONS/DAY) (80225)
FEB								
02...	2	20	20	.25	48	10.0	.42	3.5
02...	2	20	20	.25	50	10.0	.28	3.5
12...	2	22	22	.75	55	11.5	.40	13
12...	2	22	22	.75	58	11.5	.39	13
APR								
03...	2	16	16	.75	21	11.0	.29	5.8
03...	2	16	16	.75	21	11.0	.43	5.8
MAY								
12...	2	9	9	.40	9.1	18.5	.09	.97
12...	2	9	9	.40	9.3	18.5	.15	.97
JUN								
03...	2	14	14	.15	1.1	20.0	.04	.15
03...	2	14	14	.15	1.1	20.0	.03	.15

DATE	SED. BEDLOAD SIEVE DIAM. % FINER THAN .062 MM (80226)	SED. BEDLOAD SIEVE DIAM. % FINER THAN .125 MM (80227)	SED. BEDLOAD SIEVE DIAM. % FINER THAN .250 MM (80228)	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)
FEB								
02...	2	11	51	89	97	98	99	100
02...	2	11	58	92	98	100	--	--
12...	3	18	54	92	99	100	--	--
12...	4	29	71	96	100	--	--	--
APR								
03...	4	22	58	84	92	95	98	100
03...	5	26	66	92	96	98	99	100
MAY								
12...	12	34	76	94	98	99	100	--
12...	10	30	75	94	98	99	100	--
JUN								
03...	2	7	32	73	90	94	99	100
03...	--	3	33	86	97	99	100	--

11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA

LOCATION.—Lat 37°14'52", long 120°51'04", in SE 1/4 SE 1/4, sec.10, T.8 S., R.10 E., Merced County, Hydrologic Unit 18040001, on right bank at bridge on Highway 165 and 5.5 mi south of Stevinson.

DRAINAGE AREA.—Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—Water years 1986–94. October 1995 to current year.

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

REMARKS.—Records fair. During major storm events record can be affected by backwater from the San Joaquin River. Discharge is affected by irrigation return and drainage from Kesterson Wildlife Refuge.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 810 ft^3/s, Feb. 20, 1986; minimum daily, 24 ft^3/s, Sept. 6, 1992.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132	124	162	72	166	653	404	257	307	344	324	310
2	134	128	158	74	189	621	381	269	275	330	324	250
3	143	141	148	74	378	593	368	278	248	303	328	220
4	137	149	136	80	632	568	370	282	250	295	334	227
5	133	153	144	80	647	530	391	302	254	295	302	229
6	e137	152	165	72	630	509	398	337	265	300	225	259
7	e126	155	169	70	611	504	386	347	282	310	204	266
8	e115	139	191	69	641	510	379	340	323	321	218	226
9	e105	138	192	73	662	507	348	318	356	321	276	193
10	e90	147	182	74	708	507	343	291	343	332	318	175
11	e94	174	169	72	712	508	354	279	322	334	349	160
12	e98	194	160	75	688	501	350	283	295	326	328	183
13	e102	202	154	101	669	495	337	305	269	319	305	173
14	e107	205	157	109	675	482	320	336	247	339	280	186
15	e110	217	165	138	692	475	300	357	242	362	273	153
16	119	224	160	143	737	471	298	349	257	356	260	123
17	125	196	143	297	764	445	293	307	249	347	282	130
18	125	185	127	421	729	418	280	269	253	329	319	161
19	126	177	117	401	666	389	269	223	261	300	332	146
20	126	153	105	325	638	376	265	192	273	288	312	152
21	146	141	98	284	629	357	262	196	285	261	258	160
22	129	132	95	216	637	327	261	198	291	215	266	129
23	128	123	77	160	641	308	245	203	294	188	287	116
24	135	111	85	128	669	319	240	206	299	173	285	144
25	138	110	85	113	693	368	242	213	296	189	274	163
26	135	117	84	110	725	511	235	216	292	224	195	143
27	138	138	80	97	732	618	235	e227	285	247	197	163
28	128	161	66	85	702	613	239	244	280	262	237	172
29	139	157	74	90	---	519	242	268	278	269	267	161
30	141	155	80	125	---	422	252	291	297	257	255	156
31	133	---	76	156	---	406	---	306	---	301	285	---
TOTAL	3874	4698	4004	4384	17662	14830	9287	8489	8468	9037	8699	5429
MEAN	125	157	129	141	631	478	310	274	282	292	281	181
MAX	146	224	192	421	764	653	404	357	356	362	349	310
MIN	90	110	66	69	166	308	235	192	242	173	195	116
AC-FT	7680	9320	7940	8700	35030	29420	18420	16840	16800	17920	17250	10770

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1998, BY WATER YEAR (WY)

MEAN	159	176	144	163	291	359	264	221	225	243	261	177
MAX	255	273	237	426	631	512	419	355	339	376	411	289
(WY)	1990	1990	1996	1997	1998	1996	1986	1987	1987	1986	1986	1986
MIN	41.3	65.2	63.4	60.6	83.4	231	159	75.2	72.0	61.7	57.1	39.4
(WY)	1993	1993	1991	1991	1991	1992	1997	1992	1992	1992	1992	1992

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1986 - 1998	
ANNUAL TOTAL	74589		98861			
ANNUAL MEAN	204		271		223	
HIGHEST ANNUAL MEAN					289	1996
LOWEST ANNUAL MEAN					96.6	1992
HIGHEST DAILY MEAN	668	Jan 28	764	Feb 17	810	Feb 20 1986
LOWEST DAILY MEAN	66	Dec 28	66	Dec 28	24	Sep 6 1992
ANNUAL SEVEN-DAY MINIMUM	78	Dec 25	72	Jan 6	31	Dec 25 1992
INSTANTANEOUS PEAK FLOW			771	Feb 17a	unknown	Feb 20 1986
INSTANTANEOUS PEAK STAGE			71.30	Feb 10a	unknown	Feb 20 1986
ANNUAL RUNOFF (AC-FT)	147900		196100		161700	
10 PERCENT EXCEEDS	382		508		376	
50 PERCENT EXCEEDS	160		253		207	
90 PERCENT EXCEEDS	106		110		82	

e Estimated.
a Backwater from San Joaquin River.

11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1985–94. October 1995 to current year. Data for the period October 1985 to March 1987 are available in U.S. Geological Survey Open-File Report 88-479. Data for the period April 1987 to September 1988 are available in U.S. Geological Survey Open File Report 91–74.
CHEMICAL DATA: Water years 1985–88, 1993–94.
SEDIMENT DATA: Water years 1983–88, 1993–94.

PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: Water years 1985–94. October 1995 to current year.
WATER TEMPERATURE: Water years 1985–94. October 1995 to current year.

INSTRUMENTATION.—Water-quality monitor.

REMARKS.—Interruption in record was due to malfunction of the recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: Maximum recorded, 4,330 microsiemens, Jan. 16, 1991; minimum recorded, 450 microsiemens, July 24, 1986.
WATER TEMPERATURE: Maximum recorded, 32.5°C, July 15, 1992; minimum recorded, 0.5°C, Dec. 26, 1985, Dec. 23, 1990.

EXTREMES FOR CURRENT YEAR.—
SPECIFIC CONDUCTANCE: Maximum recorded, 2,590 microsiemens, Jan. 2; minimum recorded, 550 microsiemens, June 8.
WATER TEMPERATURE: Maximum recorded, 32.0°C, Aug. 5; minimum recorded, 5.5°C, Dec. 22.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1100	883	1500	1380	1660	1610	2540	2450	2000	1900	2110	2020
2	1070	937	1490	1440	1680	1600	2590	2530	2020	1780	2020	1920
3	982	888	1500	1390	1730	1670	2580	2540	1810	1470	2020	1920
4	1020	949	1470	1340	1780	1720	2560	2450	1520	1410	2010	1970
5	1020	901	1460	1350	1810	1740	2450	2330	1600	1430	2010	1950
6	1060	918	1390	1330	1790	1760	2520	2390	1890	1590	2020	1960
7	1110	977	1400	1320	1780	1740	2570	2100	1960	1850	2000	1940
8	1170	958	1440	1360	1750	1720	2570	2540	2020	1870	1960	1920
9	1330	1170	1410	1320	1800	1720	2570	2310	1870	1820	1940	1890
10	1490	1330	1400	1250	1860	1800	2560	2490	1820	1770	1920	1850
11	1390	1180	1370	1210	1930	1860	2540	2510	1940	1770	1860	1770
12	1240	1140	1230	1180	1940	1900	2550	2440	2040	1940	1830	1700
13	1320	1230	1280	1180	2000	1940	2500	2190	2060	2030	1720	1640
14	1320	1120	1310	1250	2000	1960	2290	2070	2100	1940	1700	1580
15	1330	1200	1340	1220	1970	1940	2340	2150	2110	1860	1620	1530
16	1440	1330	1360	1180	1980	1960	2240	2150	1860	1750	1660	1550
17	1400	1290	1460	1360	2090	1980	2330	2090	1900	1760	1770	1650
18	1340	1290	1480	1420	2170	2090	2130	2010	2010	1900	1850	1750
19	1360	1280	1480	1400	2220	2170	2170	2090	2070	2010	1860	1800
20	1360	1330	1620	1450	2250	2210	2270	2140	2070	1920	1800	1740
21	1330	1130	1660	1620	2230	2190	2280	2240	1920	1820	1820	1730
22	1340	1240	1690	1660	2260	2230	2280	2250	1910	1850	---	---
23	1340	1250	1770	1660	2300	2250	2320	2220	1930	1880	---	---
24	1310	1240	1840	1770	2310	2280	2320	2230	2000	1930	---	---
25	1330	1250	1830	1770	2330	2280	2310	2270	2040	2000	---	---
26	1430	1280	1800	1750	2340	2320	2290	2130	2080	2040	---	---
27	1410	1360	1770	1600	2370	2340	2290	2130	2110	2050	---	---
28	1430	1390	1600	1560	2380	2350	2260	2100	2160	2080	---	---
29	1420	1280	1620	1560	2440	2350	2250	2110	---	---	---	---
30	1360	1270	1650	1580	2470	2430	2170	1690	---	---	---	---
31	1390	1250	---	---	2450	2410	1980	1760	---	---	---	---
MONTH	1490	883	1840	1180	2470	1600	2590	1690	2160	1410	2110	1530

11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	1950	1930	1330	1180	850	783	724	622	614	582	737	687
2	1960	1930	1180	1040	886	843	763	694	632	572	788	727
3	2000	1850	1060	970	894	816	852	740	628	554	828	748
4	1980	1780	1080	1020	834	782	906	738	664	566	868	726
5	1790	1710	1070	1010	851	794	830	745	764	649	872	798
6	1870	1760	1070	1040	800	600	850	745	882	764	820	708
7	1940	1720	1090	1050	638	561	817	742	901	854	787	708
8	2050	1890	1140	1090	633	550	803	733	854	739	857	785
9	2050	1990	1260	1120	842	569	905	796	768	721	874	828
10	1990	1860	1320	1230	830	789	860	689	738	637	888	837
11	1940	1890	1340	1230	907	802	745	662	671	630	928	881
12	1930	1880	1240	1170	902	855	697	646	742	652	937	804
13	1900	1890	1200	994	1040	884	721	648	749	695	953	795
14	1910	1730	1000	948	1060	1020	683	632	781	708	951	809
15	1750	1690	1160	946	1070	929	664	587	772	722	890	810
16	1790	1690	1620	1160	946	872	619	589	760	693	1010	890
17	1800	1780	1750	1570	969	902	615	563	762	648	1020	923
18	1830	1760	1760	1410	957	789	688	612	653	619	967	770
19	2090	1730	1540	1450	791	689	694	656	692	623	984	825
20	2010	1840	1920	1520	772	644	720	669	783	668	901	840
21	1850	1760	1830	1460	765	625	868	683	809	750	880	818
22	1820	1630	1480	1380	653	615	880	788	808	724	941	868
23	1830	1700	1400	1300	705	649	853	741	796	726	1010	921
24	1780	1490	1340	1160	744	689	831	729	780	700	1040	756
25	1650	1590	1200	1110	759	681	832	711	795	693	814	699
26	1640	1550	1140	1030	786	731	755	695	864	784	876	814
27	1580	1480	1040	918	805	776	697	634	877	796	871	753
28	1580	1420	918	843	813	776	679	643	798	716	763	714
29	1600	1490	851	808	780	692	683	669	779	709	789	692
30	1570	1310	843	769	735	619	726	653	803	730	807	773
31	---	---	812	768	---	---	670	611	768	669	---	---
MONTH	2090	1310	1920	768	1070	550	906	563	901	554	1040	687

11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	25.0	21.5	19.5	16.5	12.5	10.5	11.5	9.0	11.0	10.5	15.5	14.5
2	23.0	20.0	19.5	16.5	12.0	10.5	12.5	10.0	11.5	10.5	16.0	15.0
3	22.0	18.5	18.5	16.5	12.0	11.0	12.5	10.5	11.5	11.0	16.0	15.0
4	23.0	19.0	19.5	17.0	12.0	11.0	12.5	10.5	11.5	10.5	15.0	13.0
5	21.5	19.0	19.0	16.5	11.5	11.5	11.5	8.5	11.5	11.0	13.0	11.5
6	20.5	17.5	18.5	16.5	12.0	11.5	10.5	8.5	11.0	10.5	12.0	10.5
7	18.5	16.0	18.5	16.0	12.0	11.5	12.0	10.0	11.0	10.0	11.5	10.5
8	19.0	15.0	16.5	14.5	12.0	10.5	11.5	11.0	10.0	9.5	13.5	11.0
9	19.0	16.5	15.5	13.5	11.0	9.5	11.5	10.5	11.0	9.5	14.5	12.0
10	18.0	15.5	14.5	14.0	10.5	9.0	12.5	11.0	10.5	10.0	15.5	13.5
11	17.5	14.5	15.5	13.5	10.0	8.5	13.0	11.5	11.5	10.0	16.5	14.5
12	17.0	13.5	15.5	14.0	9.5	9.0	13.0	11.5	11.0	11.0	16.0	15.0
13	18.5	14.0	16.0	14.5	9.5	8.5	12.0	10.5	12.5	11.0	15.5	14.5
14	19.0	15.0	15.5	14.0	9.0	8.5	11.5	11.0	12.5	12.0	16.0	14.0
15	20.0	16.0	14.0	12.5	10.0	8.0	12.5	11.0	13.0	11.5	17.0	14.5
16	21.0	16.5	13.0	11.5	10.0	9.5	14.5	12.0	12.0	10.0	18.5	16.5
17	21.0	17.5	14.5	12.5	10.5	9.5	15.0	13.5	11.0	10.0	19.0	16.5
18	21.0	17.5	13.5	13.0	11.0	10.0	14.0	13.0	12.0	10.0	19.5	17.0
19	20.5	17.5	14.0	13.0	11.0	9.0	13.5	12.5	12.0	11.5	19.5	17.5
20	19.0	16.0	14.5	12.5	11.0	8.5	12.5	11.0	12.0	10.5	19.0	17.5
21	19.0	16.0	13.5	12.5	10.5	7.5	11.5	10.0	11.0	10.5	19.0	17.0
22	19.5	16.0	14.0	12.0	8.0	5.5	10.5	9.5	12.0	10.5	---	---
23	19.0	16.5	15.5	13.0	9.0	6.0	10.5	9.5	12.0	11.0	---	---
24	17.0	14.0	16.5	14.5	9.5	7.0	10.0	9.0	12.5	11.0	---	---
25	16.0	12.5	16.5	15.0	9.0	6.5	10.0	9.5	13.0	11.5	---	---
26	16.5	13.0	15.5	14.0	9.0	6.5	10.5	9.5	13.5	12.0	---	---
27	16.5	13.5	14.0	13.0	9.0	6.0	13.0	10.5	14.5	13.0	---	---
28	16.0	13.5	14.0	12.0	10.0	6.5	12.5	12.0	15.0	13.5	---	---
29	16.5	13.0	12.5	12.0	10.0	7.5	13.0	11.5	---	---	---	---
30	18.0	14.5	12.0	11.5	10.5	7.5	12.0	11.0	---	---	---	---
31	19.0	15.5	---	---	11.0	9.0	12.0	10.5	---	---	---	---
MONTH	25.0	12.5	19.5	11.5	12.5	5.5	15.0	8.5	15.0	9.5	---	---

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	14.0	12.5	24.0	21.5	23.5	20.5	25.0	22.0	27.5	24.0	29.0	25.5
2	14.5	13.0	21.5	20.0	23.5	20.5	24.5	22.0	29.5	25.5	29.5	26.0
3	14.0	13.0	22.0	19.5	22.5	20.0	24.5	21.0	30.5	27.0	30.5	27.0
4	14.0	12.5	22.0	20.0	21.5	18.0	26.0	22.5	31.5	27.5	29.5	27.5
5	16.0	13.0	21.0	19.0	22.5	19.5	27.0	23.5	32.0	28.0	29.5	26.5
6	17.0	15.0	20.0	18.0	22.0	19.5	27.5	24.0	31.5	28.0	30.0	27.5
7	17.0	15.5	21.0	18.5	19.5	18.0	28.5	24.5	30.0	27.0	30.5	27.5
8	18.0	15.5	21.5	19.5	20.5	17.5	28.5	25.5	28.5	25.0	30.0	27.5
9	18.5	16.5	20.0	18.0	23.0	19.0	28.0	25.5	28.0	24.5	27.5	22.5
10	18.5	17.0	20.5	17.0	22.5	21.0	27.0	23.5	28.0	25.0	23.5	20.0
11	18.0	15.5	20.0	17.5	21.0	18.5	26.0	23.0	29.0	26.0	24.5	20.5
12	16.0	14.0	17.5	15.0	21.5	18.5	27.5	23.5	30.0	26.5	26.0	22.0
13	16.5	14.5	16.5	14.5	24.0	19.5	29.0	25.0	30.5	27.5	27.5	23.5
14	17.0	15.0	17.5	15.0	26.0	22.5	28.0	25.5	30.5	28.0	28.0	25.0
15	17.5	14.5	19.5	16.5	27.5	24.0	28.0	25.0	30.0	27.5	27.5	24.5
16	18.5	16.0	19.5	18.5	27.0	23.5	28.5	25.5	28.5	25.0	27.0	23.5
17	19.5	16.5	20.0	17.0	24.5	21.5	30.0	26.5	26.5	23.5	26.0	23.0
18	20.5	18.0	21.5	17.5	26.5	22.5	30.5	27.5	24.5	22.0	24.0	21.5
19	21.5	18.5	22.5	19.5	27.0	24.0	31.0	28.0	24.5	21.0	23.5	20.0
20	22.5	19.5	22.0	20.0	25.5	22.5	30.5	28.0	24.5	21.5	24.0	20.0
21	24.5	21.0	22.0	19.5	24.5	21.0	28.0	25.0	25.5	22.0	23.0	19.5
22	25.0	22.5	22.5	19.5	24.5	21.5	28.0	25.0	26.5	23.0	23.0	19.0
23	24.0	21.5	23.0	20.5	25.0	21.5	28.5	25.0	26.5	23.5	22.5	19.5
24	22.0	20.0	23.5	20.5	25.0	22.0	28.5	25.0	27.0	23.5	22.5	19.0
25	21.0	19.0	23.0	21.0	25.5	22.0	29.5	25.5	27.0	24.0	22.0	19.5
26	21.0	18.0	21.5	19.5	25.0	22.5	30.5	27.0	26.0	22.5	20.0	18.0
27	23.0	19.5	20.0	17.5	26.0	22.5	30.5	27.5	26.5	22.5	19.5	16.5
28	25.0	21.5	19.0	16.5	27.5	24.0	29.5	26.5	26.5	23.5	21.0	17.5
29	26.0	23.0	19.5	15.5	26.5	23.5	28.5	25.5	27.5	24.0	21.5	18.5
30	25.5	23.5	21.0	17.0	25.5	22.5	27.5	24.5	28.5	25.0	21.5	18.5
31	---	---	23.0	19.0	---	---	26.5	23.5	28.0	25.0	---	---
MONTH	26.0	12.5	24.0	14.5	27.5	17.5	31.0	21.0	32.0	21.0	30.5	16.5

11262900 MUD SLOUGH NEAR GUSTINE, CA

LOCATION.—Lat 37°15'45", long 120°54'20", in SE 1/4 SE 1/4 sec.6, T.8 S., R.10 E., Merced County, Hydrologic Unit 18040001, Kesterson National Wildlife Refuge, on right bank at footbridge 400 ft northwest of terminus of San Luis Drain and 5.2 mi east of Gustine.

DRAINAGE AREA.—Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1985 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 70 ft above sea level, from topographic map.

REMARKS.—Records poor. During major storm events record can be affected by backwater from the San Joaquin River. Discharge is affected by irrigation return and drainage from Kesterson Wildlife Refuge.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,060 ft^3/s, Feb. 8, 1998; gage height, 11.11 ft; maximum gage height, 12.03 ft, Jan. 28, 1997, minimum daily, 0.01 ft^3/s, Sept. 24, 1991.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	120	245	146	421	910	375	91	91	98	108	93
2	100	120	243	139	521	869	341	92	93	98	106	85
3	129	118	233	120	706	821	323	91	91	99	111	75
4	141	119	221	110	794	789	304	93	93	101	125	102
5	153	118	230	112	866	763	293	106	94	105	128	110
6	168	122	275	124	927	766	293	127	87	112	101	91
7	153	126	300	131	992	765	286	143	84	118	77	92
8	135	125	307	121	1040	775	291	156	106	126	77	85
9	117	126	310	122	1060	775	290	148	126	134	83	74
10	126	136	291	129	1050	742	278	138	130	135	94	75
11	122	162	265	142	1040	687	265	137	132	133	99	75
12	119	200	241	209	1030	638	246	137	132	123	98	82
13	131	201	200	308	1030	599	233	155	118	119	94	88
14	132	191	195	358	1040	575	216	173	110	125	91	95
15	136	191	205	409	1040	547	198	189	109	131	73	99
16	149	200	191	442	1040	515	202	182	121	122	72	99
17	151	204	186	507	1040	482	209	166	109	124	87	97
18	146	202	180	585	1020	460	190	147	97	125	86	96
19	142	193	174	558	1010	433	166	142	93	124	87	99
20	144	187	170	546	1010	409	153	137	88	123	81	95
21	141	182	164	585	1010	384	147	127	83	113	90	104
22	136	182	151	582	1020	349	137	120	78	103	90	111
23	130	170	147	577	1030	320	126	112	72	108	84	116
24	128	156	135	504	1050	312	118	106	73	103	87	137
25	125	148	129	415	1040	330	121	98	77	95	87	134
26	123	177	125	393	1030	373	101	83	82	102	80	124
27	125	207	120	373	1000	412	93	76	85	112	72	137
28	126	212	108	349	958	440	94	77	89	110	72	150
29	126	212	99	346	---	430	94	82	93	103	87	165
30	118	222	95	351	---	393	94	88	95	97	93	172
31	115	---	93	378	---	378	---	89	---	100	94	---
TOTAL	4064	5029	6028	10171	26815	17441	6277	3808	2931	3521	2814	3157
MEAN	131	168	194	328	958	563	209	123	97.7	114	90.8	105
MAX	168	222	310	585	1060	910	375	189	132	135	128	172
MIN	77	118	93	110	421	312	93	76	72	95	72	74
AC-FT	8060	9980	11960	20170	53190	34590	12450	7550	5810	6980	5580	6260

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1998, BY WATER YEAR (WY)

MEAN	40.9	61.6	86.7	146	201	170	81.0	43.8	41.7	41.1	35.6	21.4
MAX	131	181	305	545	958	563	229	123	130	114	100	105
(WY)	1998	1997	1997	1997	1998	1998	1986	1998	1986	1998	1987	1998
MIN	3.35	7.53	5.86	6.17	6.96	28.0	19.2	1.76	3.79	7.42	3.36	2.67
(WY)	1993	1991	1991	1991	1991	1990	1992	1992	1994	1994	1994	1990

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1986 - 1998	
ANNUAL TOTAL	63239		92056			
ANNUAL MEAN	173		252		80.3	
HIGHEST ANNUAL MEAN					252	1998
LOWEST ANNUAL MEAN					17.6	1991
HIGHEST DAILY MEAN	709	Jan 28	1060	Feb 9	1060	Feb 9 1998
LOWEST DAILY MEAN	22	Sep 6	72	Jun 23	.01	Sep 24 1991
ANNUAL SEVEN-DAY MINIMUM	31	Sep 20	79	Jun 21	.12	Sep 23 1992
INSTANTANEOUS PEAK FLOW			1060	Feb 8	1060	Feb 8 1998
INSTANTANEOUS PEAK STAGE			11.32	Feb 10	12.03	Jan 28 1997
ANNUAL RUNOFF (AC-FT)	125400		182600		58150	
10 PERCENT EXCEEDS	439		695		166	
50 PERCENT EXCEEDS	123		134		40	
90 PERCENT EXCEEDS	58		87		4.6	

11262900 MUD SLOUGH NEAR GUSTINE, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water year 1985 to current year. Data for the period October 1985 to March 1987 are available in U.S. Geological Survey Open-File Report 88-479. Data for the period April 1987 to September 1988 are available in U.S. Geological Survey Open-File Report 91-74.
CHEMICAL DATA: Water years 1985–88, 1993–94.
SEDIMENT DATA: Water years 1985–94.

PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: October 1985 to current year.
WATER TEMPERATURE: October 1985 to current year.

INSTRUMENTATION.—Water-quality monitor since October 1985.

REMARKS.—Maximum and minimum values are affected by the drainage of holding ponds located immediately upstream from the station. Interruptions in record were due to malfunction of the recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: Maximum recorded, 15,900 microsiemens, Feb. 25, 1991; minimum recorded, 470 microsiemens, Oct. 15, 1986.
WATER TEMPERATURE: Maximum recorded, 34.5°C, July 22, 1988, Aug. 6, 1990, July 2, 25, Aug. 13, 1996; minimum recorded, 2.5°C, Jan. 17, 1987, Dec. 24, 1990.

EXTREMES FOR CURRENT YEAR.—
SPECIFIC CONDUCTANCE: Maximum recorded, 5,640 microsiemens, Apr. 27; minimum recorded, 650 microsiemens, Jan. 20.
WATER TEMPERATURE: Maximum recorded, 32.0°C, Aug. 4; minimum recorded, 4.0°C, Dec. 22, 23.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1840	1510	2130	2000	1790	1640	2540	2310	1950	1760	1490	1370
2	2180	1680	2080	1980	1810	1760	2580	2440	1990	1700	1530	1480
3	2130	1690	2090	2010	1790	1730	2590	2350	1990	1500	1680	1530
4	1690	1580	2280	2090	1850	1720	2590	2380	1580	1330	1840	1660
5	1590	1470	2250	2200	1930	1840	2790	2500	1340	1140	2070	1840
6	1680	1490	2210	2120	1890	1700	2550	2070	1210	1090	2050	1940
7	1930	1680	2140	2090	1920	1750	2260	1930	1250	1200	2020	1960
8	1770	1500	2190	2120	1940	1880	2290	1880	1260	1250	2020	1960
9	1910	1440	2190	2090	1920	1760	---	---	1260	1210	2010	1960
10	2140	1800	2100	1870	1810	1680	2270	1880	1210	1060	2320	1970
11	2010	1860	1870	1790	1860	1800	2450	2040	1190	1110	2430	2310
12	2000	1780	2000	1870	1880	1830	2100	1610	1310	1180	2620	2390
13	1880	1680	1960	1870	1830	1610	1820	1390	1350	1270	2760	2600
14	1790	1680	1890	1800	1830	1630	1660	1430	1360	1290	2780	2680
15	1880	1690	1830	1750	1870	1800	1470	1340	1290	1250	2870	2620
16	1950	1860	1810	1730	1890	1790	1420	1210	1280	1140	2720	2400
17	1950	1870	1760	1710	1790	1710	1250	820	1160	1120	3020	2720
18	1990	1910	1770	1700	1830	1750	830	710	1250	1160	3220	3020
19	2000	1920	1800	1760	1850	1810	900	720	1320	1230	3320	3210
20	1990	1830	1850	1600	1860	1820	870	650	1330	1290	3450	3310
21	1930	1830	1760	1700	1920	1780	---	---	1340	1280	3520	3380
22	2000	1920	1750	1690	2000	1870	---	---	1290	1210	3690	3510
23	2030	1970	1800	1740	1980	1930	---	---	1310	1240	3860	3670
24	2120	1890	1940	1800	2000	1930	---	---	1310	1040	3910	3650
25	2190	2060	1990	1930	2170	2000	---	---	1300	1260	3840	3430
26	2340	2190	2030	1740	2210	2160	---	---	1300	1230	3500	2770
27	2390	2320	1760	1720	2260	2180	---	---	1370	1280	3380	2670
28	2360	2270	1800	1740	2360	2220	---	---	1370	1340	3450	3190
29	2340	2260	1770	1710	2400	2190	1980	1710	---	---	3270	3190
30	2310	2240	1760	1670	2400	2280	2310	1940	---	---	3240	3110
31	2280	2130	---	---	2450	2280	2370	1940	---	---	3180	3040
MONTH	2390	1440	2280	1600	2450	1610	---	---	1990	1040	3910	1370

11262900 MUD SLOUGH NEAR GUSTINE, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	3180	3060	5050	4350	3710	3050	3870	3170	3640	3060	3700	3300
2	3140	3050	4980	4270	3650	2740	3790	2970	3660	3030	3660	3450
3	3100	3020	5460	4410	3620	2700	3740	3120	3600	3300	3640	3230
4	3490	3010	5170	4550	3140	2300	3600	3250	3470	2590	3350	2570
5	3800	3450	5100	4330	3420	2520	3410	2820	3170	2590	2780	2480
6	3930	3780	4780	3490	3640	2960	3790	2890	4070	2850	2960	2540
7	3780	3470	3720	2550	4040	3350	3910	3260	4270	3970	2860	2610
8	3550	2940	2610	2290	4290	3890	3690	3140	4430	4150	3110	2820
9	2950	2460	3780	2280	4130	3310	3630	3160	4370	3580	3330	3010
10	2770	2520	4140	3480	3580	3010	3510	2980	4040	3540	3580	3330
11	3500	2750	4630	3820	3580	2190	3570	2900	3830	3260	3700	3360
12	3920	3450	5020	4190	2260	2010	3280	2710	3580	3300	3670	3080
13	3940	3690	4210	3580	3090	1930	3340	2780	3450	3030	3360	3230
14	4180	3830	3890	2900	4150	2880	3500	2820	3940	3200	3310	2810
15	3920	3690	2900	2170	3980	2970	3400	2720	4100	3560	2960	2730
16	3820	2700	2990	2180	4350	3040	3540	2800	4120	3630	3030	2620
17	2730	2330	3830	2680	3950	3260	3400	2900	4110	3360	3100	2670
18	3130	2410	4290	3560	4350	3520	3330	2770	4080	3560	3350	2750
19	3760	3130	4600	4070	4400	3640	3280	2770	4040	3450	2750	2350
20	4390	3700	4670	4020	4350	3520	3300	2800	3750	3470	2490	2240
21	4490	3980	4900	4240	4230	3320	3330	2840	3710	2980	2620	2180
22	4810	3950	4460	4060	3760	2890	3500	2640	3510	3070	2530	2090
23	4800	4000	4900	4170	4070	3290	3220	2670	3500	3180	2240	1860
24	5060	3530	4950	4120	4050	3190	3330	2560	3510	3150	---	---
25	5320	3980	5110	4350	4180	3210	3380	3060	3590	3290	---	---
26	4990	3870	5200	4170	4170	3600	3220	2980	3830	3410	---	---
27	5640	3590	5380	4190	3990	3010	3080	2800	4060	3810	1900	1600
28	4660	4200	5280	4210	3850	3290	3090	2700	4130	3670	1960	1740
29	4890	4260	5020	4130	3580	2880	3430	2770	3870	3350	1770	1460
30	4900	4130	4750	3940	3660	3190	3540	2960	3780	3310	1620	1420
31	---	---	4370	3610	---	---	3610	2910	3760	3360	---	---
MONTH	5640	2330	5460	2170	4400	1930	3910	2560	4430	2590	---	---

11262900 MUD SLOUGH NEAR GUSTINE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	26.0	22.0	20.5	17.0	12.0	10.0	9.0	7.0	11.0	10.0	16.0	14.0
2	24.0	21.5	20.5	17.0	12.0	10.0	10.0	8.0	11.5	10.0	16.5	14.0
3	23.0	19.5	20.0	17.5	11.0	10.5	10.0	8.5	11.5	10.5	15.5	14.0
4	24.5	20.5	20.5	18.0	11.0	10.0	10.0	9.0	11.5	10.0	14.0	11.5
5	22.5	20.0	20.5	17.5	11.0	10.5	9.5	7.0	11.5	10.5	12.5	11.0
6	21.0	18.5	19.5	17.5	11.5	10.5	8.5	7.0	11.0	10.0	12.0	9.5
7	19.0	16.5	19.5	17.5	11.0	10.5	10.0	7.5	10.5	9.5	12.0	10.0
8	19.5	16.0	17.5	15.5	11.0	9.5	9.0	8.5	10.0	9.5	14.0	11.0
9	19.0	17.0	16.5	14.5	10.0	8.5	9.5	8.5	11.5	9.5	15.0	11.5
10	18.5	16.5	15.5	14.5	9.5	7.5	10.5	9.0	11.0	10.0	16.5	13.0
11	18.0	15.0	16.0	13.5	9.0	7.5	11.0	9.5	12.0	10.0	17.5	14.5
12	17.5	14.0	16.0	14.0	8.5	8.0	11.0	10.0	11.5	11.0	17.0	15.5
13	19.5	14.5	16.0	14.5	8.0	7.0	10.5	9.0	13.0	11.0	16.5	15.0
14	20.0	16.0	16.0	14.0	7.5	6.5	10.5	10.0	13.0	12.0	17.5	13.5
15	21.0	16.5	14.5	12.5	8.5	6.5	11.0	9.5	13.0	11.5	19.5	15.5
16	22.0	17.5	13.5	11.5	8.5	8.0	12.5	10.5	12.5	10.0	20.0	17.0
17	22.0	18.5	15.0	12.5	9.0	8.0	13.5	11.5	12.0	10.0	20.5	16.5
18	22.0	18.5	14.0	13.0	9.5	8.5	12.5	11.5	13.0	10.5	21.0	17.0
19	22.0	19.0	14.0	13.0	8.5	7.0	11.5	10.0	12.5	11.0	21.5	17.5
20	20.5	17.0	14.0	12.5	8.5	7.0	11.0	9.5	12.0	10.0	20.5	17.5
21	20.5	17.0	13.5	12.0	8.5	6.5	10.5	8.5	11.5	10.0	20.0	17.0
22	20.5	17.0	14.0	12.0	6.5	4.0	10.5	8.5	12.0	10.0	21.5	18.0
23	20.0	17.5	15.5	13.0	6.0	4.0	10.5	10.0	11.5	11.0	22.0	18.0
24	18.5	14.5	16.5	14.0	7.0	4.5	10.5	9.5	12.0	10.0	20.5	18.0
25	16.5	12.5	16.5	14.5	6.5	4.5	10.5	8.5	13.0	11.0	19.0	16.5
26	17.5	13.5	15.5	13.5	6.5	4.5	10.5	10.0	14.0	11.5	18.0	15.5
27	17.0	14.5	14.0	13.0	7.0	4.5	11.5	10.5	15.0	12.5	16.5	15.0
28	17.0	14.0	14.0	11.5	7.5	5.0	12.0	11.0	16.0	13.0	16.0	13.5
29	17.5	14.5	13.0	11.5	8.0	5.5	12.5	11.0	---	---	15.0	12.0
30	19.0	15.0	11.5	11.0	8.5	6.0	11.5	10.5	---	---	16.0	12.0
31	20.0	16.5	---	---	9.0	7.5	11.5	10.0	---	---	15.0	13.0
MONTH	26.0	12.5	20.5	11.0	12.0	4.0	13.5	7.0	16.0	9.5	22.0	9.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	14.5	12.0	24.0	22.0	24.0	22.0	25.5	23.5	28.0	24.5	29.5	26.0
2	15.0	13.0	22.5	21.0	24.5	22.0	25.5	23.0	29.5	26.0	30.0	26.5
3	14.5	13.0	22.5	20.5	23.5	21.5	24.5	22.5	30.0	27.5	30.5	27.0
4	14.5	12.0	22.5	21.0	24.5	20.0	26.0	23.0	32.0	28.0	29.5	27.5
5	17.5	13.5	21.5	20.0	24.5	21.0	27.0	24.0	31.5	28.5	29.5	26.5
6	18.0	15.0	21.5	19.0	24.0	22.0	27.5	25.0	31.5	29.0	30.0	27.5
7	18.0	15.0	22.0	19.0	22.0	20.5	28.0	25.5	30.5	28.5	30.0	27.5
8	19.5	15.0	21.5	19.5	23.5	20.5	28.5	26.0	29.0	27.0	30.0	27.5
9	19.5	15.5	20.5	18.0	24.5	21.5	28.0	26.0	28.0	25.5	27.5	24.0
10	19.0	16.5	21.0	18.0	24.5	23.0	27.0	25.5	28.5	26.0	24.0	22.0
11	18.0	15.0	20.5	18.5	23.0	21.0	26.0	24.0	29.0	26.5	24.5	21.5
12	16.5	13.5	18.5	15.5	23.0	20.0	27.0	24.0	30.0	27.0	25.5	22.5
13	16.0	14.0	17.5	14.5	24.5	20.0	28.0	25.5	30.5	28.0	27.0	23.5
14	17.0	14.0	19.0	15.5	26.5	23.0	28.0	25.5	30.5	28.5	27.5	24.5
15	17.5	14.5	19.5	16.5	27.5	24.5	28.0	25.5	30.5	28.0	27.0	24.5
16	18.5	15.5	19.0	18.0	26.5	23.5	28.5	26.0	29.0	27.0	27.0	24.0
17	20.0	16.0	19.5	17.0	24.5	21.5	29.5	26.5	27.5	25.0	26.0	23.5
18	20.5	17.0	21.0	17.5	26.5	23.0	30.5	27.5	25.5	23.0	24.0	22.0
19	21.5	18.5	21.5	19.0	27.0	24.0	31.0	28.0	25.0	22.0	23.5	20.5
20	22.5	20.0	21.0	19.0	26.0	24.0	30.5	28.0	25.0	22.0	24.5	20.5
21	24.0	21.0	21.5	19.5	25.5	22.5	28.5	26.5	25.5	22.5	24.0	20.0
22	24.5	23.0	21.5	19.5	25.5	22.5	28.0	25.0	26.5	23.0	23.5	19.5
23	24.0	21.5	22.0	20.0	25.5	22.5	28.5	25.5	27.0	23.5	23.0	19.5
24	22.0	21.0	23.0	20.5	25.5	23.0	28.5	25.5	28.0	23.5	---	---
25	21.0	18.5	22.5	21.0	26.0	23.0	29.5	25.5	28.0	24.5	---	---
26	20.5	18.0	21.5	20.0	25.5	23.0	30.0	26.5	26.5	23.5	---	---
27	22.0	19.5	21.0	19.5	26.0	23.5	30.0	27.0	26.5	23.0	21.0	17.5
28	24.0	21.5	19.5	17.0	27.0	24.5	29.5	27.0	27.5	24.0	21.0	18.0
29	25.5	23.0	19.5	16.5	26.5	24.5	29.0	26.0	27.5	24.0	21.5	18.5
30	26.0	23.5	21.0	18.0	26.0	24.0	28.5	25.5	28.5	25.0	22.0	18.5
31	---	---	22.5	20.0	---	---	28.0	24.0	28.5	25.0	---	---
MONTH	26.0	12.0	24.0	14.5	27.5	20.0	31.0	22.5	32.0	22.0	---	---

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA

LOCATION.—Lat 37°43'54", long 119°33'28", unsurveyed, Mariposa County, Hydrologic Unit 18040008, Yosemite National Park, on right bank 10 ft downstream from footbridge at Happy Isles, 0.4 mi downstream from Illilouette Creek, and 2.0 mi southeast of Yosemite National Park Headquarters.

DRAINAGE AREA.—181 mi^2.

PERIOD OF RECORD.—August 1915 to current year.
CHEMICAL DATA: Water years 1968–96.
BIOLOGICAL DATA: Water years 1973–81.
WATER TEMPERATURE: Water years 1966–77, 1979–93.
SEDIMENT DATA: Water years 1970–71, 1973–96.

REVISED RECORDS.—WSP 1215: 1938(M).

GAGE.—Water-stage recorder. Datum of gage is 4,016.58 ft above sea level. Prior to Nov. 2, 1916, nonrecording gage at datum 0.55 ft lower.

REMARKS.—Records good. Up to 5 ft^3/s can be diverted upstream from station for Yosemite Valley water supply.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 10,100 ft^3/s, Jan. 2, 1997, gage height, 13.27 ft, from rating curve extended above 4,000 ft^3/s on basis of contracted-opening measurements at gage heights 10.4 and 11.55 ft; minimum daily, 1.5 ft^3/s, Sept. 26, 1977.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,900 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 30	2315	1,920	5.83	June 16	0315	4,150	7.79

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	11	45	35	81	101	256	1710	1570	2770	627	200
2	16	11	39	40	117	107	235	1550	1810	2860	628	177
3	16	10	37	39	242	115	234	1390	1640	2870	688	170
4	16	9.8	36	38	162	114	217	1290	1280	2580	686	186
5	15	9.6	36	32	163	111	207	1100	1640	2490	686	195
6	15	9.5	40	37	158	111	201	941	2130	2520	723	318
7	16	10	48	42	158	102	192	841	2430	2630	680	286
8	15	10	44	42	161	103	187	900	2320	2870	627	224
9	15	10	41	43	152	107	191	925	2160	3030	491	523
10	17	10	45	47	136	120	207	883	2240	2800	414	899
11	22	14	46	49	130	142	218	850	1920	2230	404	371
12	21	14	43	64	125	160	206	785	1970	2120	541	240
13	19	13	41	61	119	164	198	652	1900	2160	528	178
14	18	15	41	67	119	159	189	556	2650	2090	497	146
15	17	14	39	184	118	187	178	547	3290	1880	596	135
16	17	13	40	188	109	249	174	640	3610	2000	516	126
17	16	13	41	171	110	282	181	552	3120	2140	394	118
18	16	13	40	155	103	316	217	571	2990	2170	322	110
19	16	22	36	144	104	375	325	697	3170	1960	270	102
20	16	24	37	121	104	428	527	861	3180	1830	232	92
21	15	17	34	105	101	437	826	779	3210	2100	201	84
22	14	17	32	101	107	451	1110	699	3080	1880	179	77
23	14	19	32	96	104	611	1150	875	2780	1620	165	71
24	13	18	25	91	100	776	851	888	2640	1530	156	67
25	13	18	22	86	98	662	751	1300	2860	1340	152	63
26	12	42	23	85	95	493	753	1120	2840	1090	151	66
27	12	42	24	82	92	442	956	802	2740	1060	147	87
28	11	42	27	81	96	382	1170	792	2940	1010	142	96
29	12	47	29	88	---	323	1360	888	3090	997	148	98
30	11	48	31	83	---	293	1580	810	2940	912	172	116
31	11	---	33	83	---	280	---	1070	---	735	206	---
TOTAL	473	565.9	1127	2580	3464	8703	15047	28264	76140	62274	12369	5621
MEAN	15.3	18.9	36.4	83.2	124	281	502	912	2538	2009	399	187
MAX	22	48	48	188	242	776	1580	1710	3610	3030	723	899
MIN	11	9.5	22	32	81	101	174	547	1280	735	142	63
AC-FT	938	1120	2240	5120	6870	17260	29850	56060	151000	123500	24530	11150

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	36.8	62.2	85.1	91.6	109	191	541	1255	1236	488	116	45.0
MAX	267	818	736	1084	401	575	1007	2675	3317	2393	775	360
(WY)	1919	1951	1965	1997	1986	1986	1926	1969	1983	1995	1983	1978
MIN	2.58	4.89	4.49	6.56	8.89	25.2	173	231	120	28.6	7.79	3.18
(WY)	1956	1933	1977	1991	1991	1977	1975	1977	1924	1931	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1916 - 1998	
ANNUAL TOTAL	177278.9		216627.9			
ANNUAL MEAN	486		594		355	
HIGHEST ANNUAL MEAN					802	1983
LOWEST ANNUAL MEAN					84.9	1977
HIGHEST DAILY MEAN	9030	Jan 2	3610	Jun 16	9030	Jan 2 1997
LOWEST DAILY MEAN	9.5	Nov 6	9.5	Nov 6	1.5	Sep 26 1977
ANNUAL SEVEN-DAY MINIMUM	9.8	Nov 3	9.8	Nov 3	1.9	Oct 14 1964
INSTANTANEOUS PEAK FLOW			4150	Jun 16	10100	Jan 2 1997
INSTANTANEOUS PEAK STAGE			7.79	Jun 16	13.27	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	351600		429700		257400	
10 PERCENT EXCEEDS	1360		2120		1140	
50 PERCENT EXCEEDS	241		163		100	
90 PERCENT EXCEEDS	16		16		11	

11266500 MERCED RIVER AT POHONO BRIDGE, NEAR YOSEMITE, CA

LOCATION.—Lat 37°43'01", long 119°39'55", unsurveyed, Mariposa County, Hydrologic Unit 18040008, Yosemite National Park, on left bank 150 ft upstream from Pohono Bridge, 0.4 mi upstream from Artist Creek, and 4.8 mi southwest of Yosemite National Park Headquarters.

DRAINAGE AREA.—321 mi^2.

PERIOD OF RECORD.—October 1916 to current year. Monthly discharge only for October and November 1916, published in WSP 1315-A.
CHEMICAL DATA: Water years 1971–72, 1981–82, 1994, and 1995.
WATER TEMPERATURE: Water year 1995.
SEDIMENT DATA: Water year 1995.

GAGE.—Water-stage recorder. Datum of gage is 3,861.66 ft above sea level. Prior to Sept. 5, 1918, at datum 1.8 ft higher. Sept. 5, 1918, to Sept. 30, 1955, at datum 1.0 ft higher.

REMARKS.—Records good. No diversions between stations at Happy Isles Bridge and Pohono Bridge.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 24,600 ft^3/s, Jan. 3, 1997, gage height, 23.43 ft, from floodmarks in gagehouse, from rating curve extended above 17,000 ft^3/s on basis of computation of flow over diversion dam for Yosemite Powerplant 1 mi downstream at gage heights 20.1 and 21.98 ft, present datum; minimum daily 5.4 ft^3/s, Oct. 26, 1977.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 2,900 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 1	0230	3,620	7.60	June 16	0300	7,110	10.52

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	23	60	64	167	229	590	3290	3310	4630	946	246
2	31	23	58	75	254	240	536	3140	3700	4660	906	220
3	31	22	55	76	565	257	539	2980	3440	4700	957	210
4	30	22	54	e77	400	254	498	2840	2890	4280	946	220
5	30	22	54	e65	349	252	470	2410	3420	4170	922	233
6	30	22	59	e75	379	253	455	2110	4140	4140	954	348
7	30	21	83	e80	359	227	434	1920	4830	4200	900	344
8	30	21	89	73	362	235	414	2110	4520	4410	825	283
9	30	22	78	75	335	235	421	2180	4300	4540	666	444
10	31	22	80	85	305	254	448	2080	4460	4270	554	1160
11	36	26	82	92	294	291	478	1970	4090	3590	522	483
12	37	27	77	133	285	327	455	1860	4100	3350	647	315
13	35	27	76	133	272	345	434	1620	4010	3340	656	242
14	34	27	76	138	292	329	412	1400	5030	3210	601	201
15	32	28	76	390	270	367	384	1330	5910	2910	754	181
16	31	27	73	414	249	482	377	1520	6420	2990	652	172
17	30	26	75	369	257	574	389	1350	5660	3130	510	158
18	29	26	73	342	236	676	453	1400	5350	3150	418	148
19	29	30	68	328	249	861	672	1710	5610	2890	358	139
20	28	38	69	267	237	947	1090	2030	5590	2700	316	127
21	28	33	65	231	240	966	1630	1920	5620	2870	281	117
22	27	31	59	220	244	963	2120	1730	5500	2750	252	109
23	27	30	59	206	247	1230	2300	2070	4990	2430	233	102
24	26	31	57	193	225	1620	1720	2070	4680	2250	221	96
25	26	31	51	180	227	1550	1520	2960	4950	2020	213	91
26	26	60	50	176	22[illegible]	1140	1530	2660	4860	1710	207	94
27	25	64	50	170	21	1040	1900	1980	4660	1620	203	119
28	25	58	51	165	21[illegible]	864	2300	1900	4890	1530	194	134
29	25	61	53	183	---	733	2680	2080	5080	1480	193	136
30	24	62	58	166	---	660	3030	1950	4960	1370	209	156
31	24	---	61	168	---	651	---	2420	---	1120	239	---
TOTAL	908	963	2029	5409	7954	19052	30679	64990	140970	96410	16455	7028
MEAN	29.3	32.1	65.5	174	284	615	1023	2096	4699	3110	531	234
MAX	37	64	89	414	565	1620	3030	3290	6420	4700	957	1160
MIN	24	21	50	64	167	227	377	1330	2890	1120	193	91
AC-FT	1800	1910	4020	10730	15780	37790	60850	128900	279600	191200	32640	13940

e Estimated.

11266500 MERCED RIVER AT POHONO BRIDGE, NEAR YOSEMITE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	63.6	123	187	205	249	421	1101	2321	1942	664	154	66.6
MAX	436	1587	1666	2461	1035	1459	2136	5305	6279	3460	1045	426
(WY)	1983	1951	1951	1997	1986	1986	1982	1969	1983	1983	1983	1978
MIN	5.89	13.9	15.1	17.3	21.0	51.5	343	379	148	47.2	14.7	7.38
(WY)	1978	1930	1977	1977	1991	1977	1977	1977	1924	1931	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1917 - 1998	
ANNUAL TOTAL	328850		392847			
ANNUAL MEAN	901		1076		625	
HIGHEST ANNUAL MEAN					1466	1983
LOWEST ANNUAL MEAN					127	1977
HIGHEST DAILY MEAN	21000	Jan 2	6420	Jun 16	21000	Jan 2 1997
LOWEST DAILY MEAN	21	Nov 7	21	Nov 7	5.4	Oct 26 1977
ANNUAL SEVEN-DAY MINIMUM	22	Nov 3	22	Nov 3	5.6	Oct 20 1977
INSTANTANEOUS PEAK FLOW			7110	Jun 16	24600	Jan 3 1997
INSTANTANEOUS PEAK STAGE			10.52	Jun 16	23.43	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	652300		779200		453100	
10 PERCENT EXCEEDS	2540		3630		1920	
50 PERCENT EXCEEDS	447		292		184	
90 PERCENT EXCEEDS	30		30		26	

11267350 BIG CREEK DIVERSION NEAR FISH CAMP, CA

LOCATION.—Lat 37°28'10", long 119°36'51", in SE 1/4 NE 1/4 sec.25, T.5 S., R.21 E., Mariposa County, Hydrologic Unit 18040008, Sierra National Forest, on right bank 0.5 mi downstream from diversion weir, 0.5 mi upstream from Rainier Creek, and 1.2 mi southeast of Fish Camp.

PERIOD OF RECORD.—October 1969 to June 1977, April 1987 to current year.

GAGE.—Water-stage recorder, crest-stage gage, and culvert control. Elevation of gage is 5,400 ft above sea level, from topographic map.

REMARKS.—Records fair except those for estimated daily discharges, which are poor. Flow is diverted from the left bank of Big Creek, a tributary to South Fork of the Merced River, to Lewis Fork of the Fresno River. Flow is used for domestic and irrigation purposes.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 66 ft^3/s, June 1, 2, 1975; no flow for several days in summer months of most years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	.39	3.3	e4.2	7.0	15	28	54	55	e52	.67	.41
2	.18	.39	3.0	e4.5	30	14	27	59	55	e52	.63	.39
3	.18	.39	2.8	6.1	40	15	27	63	54	e51	.63	.52
4	.18	.39	2.7	5.3	25	15	26	61	52	e50	.63	.63
5	.18	.38	5.5	e6.0	19	15	25	56	54	e50	.63	.52
6	.18	.38	12	e5.0	19	14	25	54	57	e49	.63	.27
7	.17	.38	12	e4.7	16	15	24	54	64	e48	.63	.28
8	.18	.38	8.3	e4.5	14	14	24	55	60	e48	.63	.29
9	.81	.37	7.2	7.0	14	14	26	55	59	e47	.63	.29
10	1.2	.34	8.4	9.6	13	15	27	53	62	46	.63	.25
11	1.0	.29	9.0	8.5	12	17	28	51	63	44	.63	.25
12	.95	.27	9.4	18	13	18	25	50	60	44	.60	.25
13	.89	.26	9.0	15	13	19	25	48	59	43	.58	.25
14	.87	.25	7.0	12	14	19	24	46	60	41	.57	.25
15	.79	.25	5.1	46	13	22	23	45	62	15	.58	.25
16	.73	.29	4.7	37	12	25	23	45	62	.28	.55	.25
17	.67	.23	4.8	23	12	28	24	44	61	.89	.55	.25
18	.60	1.3	4.7	20	11	28	26	45	62	1.2	.55	.25
19	.55	5.1	4.9	20	11	30	31	48	61	.95	.55	.23
20	.55	3.6	4.7	14	12	32	36	49	60	1.2	.55	.23
21	.55	2.4	5.4	12	9.7	33	41	49	59	.69	.55	.25
22	.55	2.3	e7.0	10	12	35	45	48	58	.71	.54	.25
23	.52	2.4	e5.0	9.2	14	39	46	48	57	.71	.51	.25
24	.48	2.2	e3.9	8.3	17	48	42	50	57	.68	.48	.25
25	.48	2.1	e3.8	7.6	13	51	41	54	e56	.65	.48	.23
26	.48	6.0	e3.7	7.1	12	43	43	53	e55	.70	.47	.24
27	.44	4.9	e3.7	6.9	12	40	46	50	e55	.70	.41	.19
28	.41	4.3	e4.1	6.7	14	36	48	51	e54	.68	.44	.18
29	.41	4.0	e4.4	8.1	---	33	51	51	e53	.63	.45	.18
30	.39	3.6	e4.0	7.3	---	31	53	51	e53	.67	.39	.18
31	.39	---	e4.0	7.1	---	30	---	53	---	.71	.39	---
TOTAL	16.12	49.83	177.5	360.7	423.7	803	980	1593	1739	692.05	17.16	8.51
MEAN	.52	1.66	5.73	11.6	15.1	25.9	32.7	51.4	58.0	22.3	.55	.28
MAX	1.2	6.0	12	46	40	51	53	63	64	52	.67	.63
MIN	.16	.23	2.7	4.2	7.0	14	23	44	52	.28	.39	.18
AC-FT	32	99	352	715	840	1590	1940	3160	3450	1370	34	17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1998, BY WATER YEAR (WY)

MEAN	1.57	3.72	6.26	7.54	8.63	16.1	22.8	28.0	17.8	4.34	1.05	.87
MAX	7.61	11.9	31.3	35.8	32.7	37.3	43.3	56.2	58.0	22.3	3.14	3.46
(WY)	1970	1997	1997	1970	1970	1972	1993	1975	1998	1998	1973	1995
MIN	.026	1.10	.75	.76	.19	.32	3.21	2.65	.025	.52	.025	.000
(WY)	1989	1991	1991	1996	1997	1996	1995	1995	1995	1995	1988	1987

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1970 - 1998	
ANNUAL TOTAL	2963.11		6860.57			
ANNUAL MEAN	8.12		18.8		10.5	
HIGHEST ANNUAL MEAN					19.3	1993
LOWEST ANNUAL MEAN					3.67	1995
HIGHEST DAILY MEAN	35	May 15	64	Jun 7	66	Jun 1 1975
LOWEST DAILY MEAN	.13	Jan 19	.16	Oct 1	.00	Jul 1 1973
ANNUAL SEVEN-DAY MINIMUM	.13	Mar 4	.18	Oct 1	.00	Aug 1 1987
ANNUAL RUNOFF (AC-FT)	5880		13610		7600	
10 PERCENT EXCEEDS	30		54		33	
50 PERCENT EXCEEDS	.87		8.5		3.6	
90 PERCENT EXCEEDS	.15		.28		.25	

e Estimated.

11269500 LAKE MCCLURE AT EXCHEQUER, CA

LOCATION.—Lat 37°35'02", long 120°16'09", in NW 1/4 SE 1/4 sec.13, T.4 S., R.15 E., Mariposa County, Hydrologic Unit 18040008, on left end of New Exchequer Dam on Merced River, 0.9 mi east of Exchequer, and 5.5 mi northeast of Merced Falls.

DRAINAGE AREA.—1,037 mi^2.

PERIOD OF RECORD.—April 1926 to September 1930 (daily gage heights; also summary of yearly contents in WSP 881), October 1930 to current year.

REVISED RECORDS.—WSP 881: 1926–32 (yearly summaries only). WSP 1345: 1951(M). WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Merced Irrigation District). Prior to Oct. 1, 1964, indicator in powerplant at same datum. Oct. 1, 1964, to July 31, 1966, nonrecording gage at center of upstream face of dam at same datum.

REMARKS.—Reservoir is formed by a rockfill dam with a reinforced concrete face completed in March 1967. Dam is downstream from and connected to the original concrete arch and gravity-type dam which was completed in April 1926. Usable capacity, 1,024,000 acre-ft between elevations 440.0 ft, invert entrance to outlet tunnel, and 867.0 ft, top of spillway gates. Dead storage, 300 acre-ft. Water is released through a series of powerplants down the Merced River to a diversion dam for Merced Irrigation District's main canal.

COOPERATION.—Records were provided by Pacific Gas and Electric Company 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, 1,026,000 acre-ft, July 14, 15, 1969, elevation, 867.2 ft; practically no storage at times in 1926, 1930–31, 1964–65 when reservoir was drained for inspection or construction. Minimum since construction of New Exchequer Dam in 1966 and since lake first filled, 66,100 acre-ft, Feb. 28, 1991, elevation, 588.4 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 1,019,000 acre-ft, July 20, 21, maximum elevation, 866.24 ft, July 20; minimum, 583,000 acre-ft, Nov. 24, 25, minimum elevation, 790.82 ft, Nov. 24.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Merced Irrigation District, dated June 1966)

590	67,900	640	137,800	720	317,800	840	845,800
600	79,900	660	173,500	750	415,900	860	975,700
610	92,800	680	215,200	780	534,500	870	1,046,000
620	106,700	700	263,000	820	729,600		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	634900	590000	583800	586900	642600	664800	685000	696900	728100	950900	1003000	894900
2	633800	589000	583800	587000	647800	663000	686400	697000	732700	971800	1000000	890800
3	631600	588700	583700	587500	676200	661000	686300	701700	737800	979000	997600	886500
4	629700	588500	583300	588000	682300	658400	686100	706800	741900	985800	995300	882200
5	628100	588400	583300	587400	679300	655800	689900	712100	744500	990400	992700	877800
6	626000	588300	583600	587500	679000	654700	690900	717700	749100	995000	990300	874200
7	624400	587800	584700	587600	685800	651900	692200	721600	757400	999000	987600	870300
8	622600	586900	586000	587900	694400	648500	694100	723800	777800	1003000	984900	866600
9	621300	586200	586700	588300	696800	645600	695100	724600	774500	1006000	982200	862500
10	619700	585800	586900	589200	694600	642400	695600	726800	781500	1009000	979000	858700
11	618600	586100	586900	590500	691200	639600	695700	728700	789200	1011000	975700	855100
12	617400	586200	586500	596300	685800	637200	694300	730800	796200	1012000	972400	852000
13	616000	585800	586800	600800	682700	637200	693400	732500	803000	1013000	968900	848400
14	614600	584900	586900	602800	684400	634400	692400	733600	810100	1014000	966300	844800
15	613000	584700	587300	625400	686900	633100	692000	733400	820700	1014000	963300	840700
16	611600	584800	587200	636600	683900	632100	691500	733000	833700	1014000	960400	836200
17	609000	585000	587400	639600	679800	631000	690800	731400	845900	1014000	958200	832300
18	607500	584900	587200	642100	674500	631400	688400	729800	855600	1016000	954800	827900
19	606300	584600	586900	648800	670600	631700	687200	728500	866400	1018000	950400	823400
20	604600	584300	587100	651100	670400	632100	685200	726800	872700	1019000	946500	819400
21	603400	583600	587400	652300	669900	633000	683400	724900	882200	1019000	942500	815400
22	601800	583800	587200	652900	675900	633800	682400	723500	896300	1018000	938200	811500
23	599900	583500	587000	653000	677300	634300	682700	723400	904800	1016000	934100	807900
24	598400	583000	586900	653100	677300	636700	684300	722900	911600	1015000	929900	804600
25	596700	583000	586900	652500	676300	639800	686700	721700	919000	1015000	925400	800700
26	595000	583500	586700	652400	673500	673700	688200	720900	926700	1014000	919500	796900
27	593900	583900	586500	652400	670700	681000	688600	720800	931700	1013000	917000	793100
28	592900	584000	586400	652000	667900	681200	688500	723100	939200	1011000	912500	789300
29	591900	584100	587100	653000	---	683300	689000	726400	947700	1009000	908500	785700
30	590800	584000	586900	650100	---	684800	690600	726700	959300	1007000	903600	781400
31	590200	---	586900	646400	---	685400	---	726100	---	1005000	899300	---
MAX	634900	590000	587400	653100	696800	685400	695700	733600	959300	1019000	1003000	894900
MIN	590200	583000	583300	586900	642600	631000	682400	696900	728100	950900	899300	781400
a	792.40	791.05	791.68	804.09	808.35	811.74	812.72	819.36	857.59	864.24	848.50	829.20
b	-47100	-6200	+2900	+59500	+21500	+17500	+5200	+35500	+233200	+45700	-105700	-117900

CAL YR 1997 b -177400
WTR YR 1998 b +144100

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

11270900 MERCED RIVER BELOW MERCED FALLS DAM, NEAR SNELLING, CA

LOCATION.—Lat 37°31'18", long 120°19'53", in SE 1/4 SW 1/4 sec.4, T.5 S., R.15 E., Merced County, Hydrologic Unit 18040008, on right bank 0.1 mi south of Merced Falls, 0.2 mi downstream from Merced Falls Dam, and 5.8 mi east of Snelling.

DRAINAGE AREA.—1,061 mi^2.

PERIOD OF RECORD.—April 1901 to current year. Records for water years 1914–16 incomplete, yearly estimates published in WSP 1315-A. Published as "near Merced Falls" 1901–13; as "at Exchequer" 1916–64.

REVISED RECORDS.—WSP 1315-A: 1901–9, 1911(M). WSP 1515: 1918–20, 1942–43 (published as station 11270000). WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 310.55 ft above sea level. See WSP 1930 for history of changes prior to Oct. 1, 1964.

REMARKS.—Merced Falls Dam diverts water to Northside Canal for irrigation downstream from station. Flow regulated by Exchequer, McSwain, and Merced Falls powerplants, Lake McClure since 1926, enlarged 1967, and McSwain Reservoir since 1966, capacity, 9,200 acre-ft.

COOPERATION.—Records were provided by Pacific Gas and Electric Company, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD (water years 1901–13, 1916–98).—Maximum discharge observed, 47,700 ft^3/s, Jan. 31, 1911, gage height, 23.3 ft, site and datum then in use; no flow for part of Nov. 21, 1901. Maximum discharge since construction of Exchequer Dam in 1926, 46,200 ft^3/s, Dec. 4, 1950, gage height, 22.6 ft, from floodmarks, site and datum then in use, from rating curve extended above 16,000 ft^3/s on basis of computation of peak flow over dam; minimum daily, 3.4 ft^3/s, Mar. 5, 1966.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	948	264	210	207	2790	3280	2730	3240	3730	3710	2630	2590
2	953	259	214	207	2890	2510	2720	3220	3720	3710	2630	2590
3	949	253	211	207	2770	2360	2770	3210	3730	4170	2640	2590
4	948	253	216	207	4480	2580	2740	3420	3730	4430	2620	2600
5	949	253	209	208	4710	2760	2730	3730	3730	4230	2470	2580
6	939	255	208	208	4860	2520	2740	3410	3730	4460	2410	2570
7	888	254	209	208	4340	2760	2710	3220	3740	4680	2410	2570
8	865	253	213	208	4730	2770	2680	3220	3730	4900	2410	2580
9	811	254	217	209	4720	2780	2670	3220	3730	5520	2410	2590
10	763	256	239	216	4860	2680	2920	3210	3730	5500	2410	2600
11	728	256	222	211	4770	2690	3220	3210	3730	5040	2420	2590
12	700	255	214	321	4880	2750	3210	3540	3740	4580	2420	2580
13	759	253	211	217	4810	2330	3230	3750	3740	4360	2430	2570
14	798	253	206	220	3700	2030	3250	3740	3750	4280	2420	2570
15	798	253	206	637	4390	2030	3200	3750	4020	4610	2360	2580
16	833	249	206	774	4880	1740	3200	3750	4280	4610	1970	2570
17	864	250	208	776	4880	1540	3210	3760	4300	4310	2230	2570
18	867	231	208	790	4890	1540	3210	3760	4050	3300	2550	2570
19	864	210	207	789	4700	1540	3210	3750	4030	2810	2550	2390
20	845	206	208	776	3780	1540	3210	3750	4490	2940	2560	2180
21	830	203	206	765	3810	1550	3230	3740	4500	3390	2520	2180
22	829	209	200	759	3830	1550	3280	3750	4500	4820	2500	2170
23	856	210	201	763	3730	1540	3280	3750	4490	4300	2500	2160
24	876	210	200	764	3670	1360	3260	3750	4280	3310	2500	2170
25	882	211	199	764	3660	2980	3260	3750	4010	2830	2530	2160
26	878	212	205	768	3650	4950	3260	3750	4010	2830	2590	2170
27	682	212	210	764	3440	4130	3270	3750	3870	2830	2580	2160
28	516	211	208	762	3300	3180	3280	3750	3700	2710	2580	2170
29	516	210	208	1710	---	3170	3250	3750	3690	2620	2580	2180
30	516	210	208	2860	---	2970	3250	3760	3710	2620	2580	2180
31	423	---	207	2740	---	2750	---	3740	---	2630	2590	---
TOTAL	24873	7068	6494	21015	115920	76860	92180	111100	118190	121040	77000	72730
MEAN	802	236	209	678	4140	2479	3073	3584	3940	3905	2484	2424
MAX	953	264	239	2860	4890	4950	3280	3760	4500	5520	2640	2600
MIN	423	203	199	207	2770	1360	2670	3210	3690	2620	1970	2160
AC-FT	49340	14020	12880	41680	229900	152500	182800	220400	234400	240100	152700	144300

11270900 MERCED RIVER BELOW MERCED FALLS DAM, NEAR SNELLING, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1901 - 1925, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	224	222	396	1095	1290	2102	2644	4362	3719	1261	306	144
MAX	1522	531	1676	4409	3232	6995	5749	6768	8225	5867	958	302
(WY)	1905	1910	1910	1911	1909	1907	1907	1922	1906	1906	1906	1904
MIN	49.4	58.5	83.7	100	208	314	774	1478	212	61.3	29.9	20.5
(WY)	1914	1922	1906	1918	1913	1924	1912	1924	1924	1924	1924	1924

SUMMARY STATISTICS	WATER YEARS 1901 - 1925	
ANNUAL MEAN	1443	
HIGHEST ANNUAL MEAN	2937	1907
LOWEST ANNUAL MEAN	348	1924
HIGHEST DAILY MEAN	37200	Jan 30 1911
LOWEST DAILY MEAN	1.0	Nov 21 1901
ANNUAL SEVEN-DAY MINIMUM	20	Sep 4 1924
INSTANTANEOUS PEAK FLOW	47700	Jan 31 1911
INSTANTANEOUS PEAK STAGE	23.30	Jan 31 1911
ANNUAL RUNOFF (AC-FT)	1045000	
10 PERCENT EXCEEDS	4340	
50 PERCENT EXCEEDS	488	
90 PERCENT EXCEEDS	80	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1964, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	223	57.8	267	402	694	1059	1892	3143	2737	1739	1400	884
MAX	638	385	4698	3869	3155	5375	3876	7249	7426	2384	1713	1313
(WY)	1945	1951	1951	1956	1938	1938	1958	1952	1938	1938	1963	1952
MIN	20.8	25.2	26.0	20.7	35.1	33.3	275	1049	1090	210	171	17.2
(WY)	1932	1932	1934	1940	1960	1948	1948	1955	1934	1931	1961	1931

SUMMARY STATISTICS	WATER YEARS 1927 - 1964	
ANNUAL MEAN	1210	
HIGHEST ANNUAL MEAN	2738	1938
LOWEST ANNUAL MEAN	360	1931
HIGHEST DAILY MEAN	24000	Dec 4 1950
LOWEST DAILY MEAN	4.5	Feb 11 1960
ANNUAL SEVEN-DAY MINIMUM	8.7	Jan 12 1940
INSTANTANEOUS PEAK FLOW	46200	Dec 4 1950
INSTANTANEOUS PEAK STAGE	22.60	Dec 4 1950
ANNUAL RUNOFF (AC-FT)	876500	
10 PERCENT EXCEEDS	2510	
50 PERCENT EXCEEDS	1150	
90 PERCENT EXCEEDS	38	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	871	389	571	813	1137	1352	1842	2300	2353	2146	1753	1401
MAX	3143	1396	2451	7368	6686	4680	5278	5701	6975	5177	2761	3049
(WY)	1984	1970	1983	1997	1997	1983	1983	1982	1983	1983	1983	1983
MIN	76.4	118	120	133	113	139	394	528	813	922	636	83.1
(WY)	1978	1969	1969	1977	1977	1977	1991	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1968 - 1998	
ANNUAL TOTAL	825300		844470			
ANNUAL MEAN	2261		2314		1412	
HIGHEST ANNUAL MEAN					3779	1983
LOWEST ANNUAL MEAN					363	1977
HIGHEST DAILY MEAN	8020	Jan 4	5520	Jul 9	8020	Jan 4 1997
LOWEST DAILY MEAN	199	Dec 25	199	Dec 25	46	Oct 3 1968
ANNUAL SEVEN-DAY MINIMUM	203	Dec 20	203	Dec 20	74	Oct 12 1977
INSTANTANEOUS PEAK FLOW			5720	Jul 9	9360	Jun 1 1969
INSTANTANEOUS PEAK STAGE			10.18	Jul 9	12.40	Jun 1 1969
ANNUAL RUNOFF (AC-FT)	1637000		1675000		1023000	
10 PERCENT EXCEEDS	7200		4280		2960	
50 PERCENT EXCEEDS	1700		2580		1190	
90 PERCENT EXCEEDS	213		210		183	

11271290 MERCED RIVER AT SHAFFER BRIDGE, NEAR CRESSEY, CA

LOCATION.—Lat 37°27'15", long 120°36'28", in NW 1/4 SW 1/4 sec.36, T.5 S., R.12 E., Merced County, Hydrologic Unit 18040002, near center of span on downstream side of county road bridge, 0.6 mi upstream from Dry Creek, and 4.0 mi northeast of Cressey.

DRAINAGE AREA.—1,117 mi^2.

PERIOD OF RECORD.—October 1965 to current year (low-flow records only).

GAGE.—Water-stage recorder. Datum of gage is 116.79 ft above sea level.

REMARKS.—No records computed above 200 ft^3/s. Most water released from Lake McClure (station 11269500) is diverted upstream into the main canal of Merced Irrigation District. Flow past station consists of releases from diversion dam, irrigation return flow, and tributary inflow.

COOPERATION.—Records were provided by Pacific Gas and Electric Co., 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 1997 TO SEPTEMBER 1998

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	192	182	158	---	---	---	---	---	---	---	---
2	57	200	174	164	---	---	---	---	---	---	---	---
3	67	188	174	172	---	---	---	---	---	---	---	---
4	92	176	175	177	---	---	---	---	---	---	---	---
5	97	180	185	183	---	---	---	---	---	---	---	---
6	90	176	185	171	---	---	---	---	---	---	---	---
7	90	188	188	170	---	---	---	---	---	---	---	---
8	86	198	---	166	---	---	---	---	---	---	---	---
9	94	198	200	169	---	---	---	---	---	---	---	---
10	111	---	195	191	---	---	---	---	---	---	---	---
11	119	---	---	195	---	---	---	---	---	---	---	---
12	110	---	192	---	---	---	---	---	---	---	---	---
13	98	---	184	---	---	---	---	---	---	---	---	---
14	108	---	180	---	---	---	---	---	---	---	---	---
15	128	---	175	---	---	---	---	---	---	---	---	---
16	147	---	174	---	---	---	---	---	---	---	---	---
17	157	---	171	---	---	---	---	---	---	---	---	---
18	155	---	170	---	---	---	---	---	---	---	---	---
19	166	190	170	---	---	---	---	---	---	---	---	---
20	178	168	170	---	---	---	---	---	---	---	---	---
21	150	163	170	---	---	---	---	---	---	---	---	---
22	133	162	166	---	---	---	---	---	---	---	---	---
23	135	164	162	---	---	---	---	---	---	---	---	---
24	140	166	162	---	---	---	---	---	---	---	---	---
25	151	166	161	---	---	---	---	---	---	---	---	---
26	163	183	160	---	---	---	---	---	---	---	---	---
27	169	187	167	---	---	---	---	---	---	---	---	---
28	171	177	170	---	---	---	---	---	---	---	---	---
29	167	177	170	---	---	---	---	---	---	---	---	---
30	164	183	167	---	---	---	---	---	---	---	---	---
31	174	---	161	---	---	---	---	---	---	---	---	---
TOTAL	3927	---	---	---	---	---	---	---	---	---	---	---
MEAN	127	---	---	---	---	---	---	---	---	---	---	---
MAX	178	---	---	---	---	---	---	---	---	---	---	---
MIN	57	---	---	---	---	---	---	---	---	---	---	---
AC-FT	7790	---	---	---	---	---	---	---	---	---	---	---

11273500 MERCED RIVER AT RIVER ROAD BRIDGE, NEAR NEWMAN, CA

LOCATION.—Lat 37°21'04", long 120°57'39", in NE 1/4 SE 1/4 sec. 4, T.7 S., R.9 E, Merced County, Hydrologic Unit 1804002, on upstream side of River Road Bridge, near right bank just downstream of Hatfield State Park and 1.1 river miles upstream of confluence with the San Joaquin River.

DRAINAGE AREA.—1,276 mi^2.

PERIOD OF RECORD.—April 1992 to current year. Published as Merced River near Stevinson (11272500) water years 1985–94.
CHEMICAL DATA: Water years 1994–95, February 1997 to current year.
SEDIMENT DATA: Water years 1994–95, February 1997 to current year.

PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: April 1992 to current year.
WATER TEMPERATURE: April 1992 to current year.

INSTRUMENTATION.—Water-quality monitor since April 1992.

REMARKS.—Interruptions in record were due to malfunction of the recording instruments. Specific-conductance and water-temperature values are affected by irrigation return flow. Discharge data provided by Pacific Gas and Electric (not reviewed by U.S. Geological Survey).

EXTREMES FOR PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: Maximum recorded, 910 microsiemens, Aug. 7, 1992; minimum recorded, 22 microsiemens, June 23, 1995.
WATER TEMPERATURE: Maximum recorded, 32.5°C, July 14, 15, 1992, Aug. 12, 1992; minimum recorded, 6.0°C, Jan. 4, 5, 1993.

EXTREMES FOR CURRENT YEAR.—
SPECIFIC CONDUCTANCE: Maximum recorded, 359 microsiemens, Oct. 10; minimum recorded, 40 microsiemens, July 23.
WATER TEMPERATURE: Maximum recorded, 26.0°C, several days in August; minimum recorded, 6.5°C, Dec. 26–29.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	ALKA-LINITY WAT.DIS GRAN T. FIELD CACO3 (MG/L) (29802)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT										
14...	1230	175	244	7.7	15.4	764	10.6	106	60	.03
NOV										
05...	1250	218	225	7.6	17.3	761	8.9	93	55	.05
DEC										
22...	1100	226	260	7.7	7.3	761	10.8	90	61	.04
JAN										
07...	1130	256	187	7.8	10.0	765	10.8	95	40	<.01
27...	1130	712	77	7.5	11.4	761	10.3	94	29	--
FEB										
05...	1100	4960	66	7.6	10.9	763	9.8	89	24	--
28...	1300	4120	78	7.6	10.6	764	10.8	97	25	<.01
MAR										
04...	1100	2880	89	7.6	11.8	759	9.8	91	38	<.01
23...	1200	1410	98	7.5	15.1	758	10.1	101	31	--
APR										
01...	1130	3080	74	7.5	11.3	756	10.8	99	27	<.01
29...	1150	2860	72	7.5	15.0	757	9.9	99	26	--
MAY										
11...	1050	2640	72	7.4	13.7	757	9.9	96	24	<.01
27...	1140	2530	55	7.2	13.7	760	9.9	96	21	--
JUN										
03...	1210	2530	54	7.1	15.3	759	10.6	106	19	.02
30...	1130	2330	60	7.2	17.2	759	9.4	98	24	--
JUL										
08...	1030	2710	48	7.4	16.8	758	9.8	102	17	<.01
28...	1230	731	109	7.5	21.5	758	7.7	88	30	--
AUG										
11...	1130	595	158	7.5	23.5	759	6.7	79	39	.05
SEP										
17...	1050	938	--	7.6	19.4	759	8.6	--	22	<.01

11273500 MERCED RIVER AT RIVER ROAD BRIDGE, NEAR NEWMAN, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	BORON, DISSOLVED (UG/L AS B) (01020)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)
OCT									
14...	2.2	.03	.2	<.2	.06	.03	.04	38.9	<1
NOV									
05...	2.3	.05	.2	.2	.03	.02	.03	34.5	<1
DEC									
22...	3.2	.05	.2	.2	.04	.02	.03	37.4	<1
JAN									
07...	1.8	<.02	.2	.1	.03	.03	.03	35.1	<1
27...	--	--	--	--	--	--	--	--	--
FEB									
05...	--	--	--	--	--	--	--	--	--
28...	.41	.03	.3	<.1	.04	<.01	.01	35.2	3
MAR									
04...	.37	.04	.2	.1	.05	.02	.02	19.1	<1
23...	--	--	--	--	--	--	--	--	--
APR									
01...	.25	.05	<.1	<.1	.03	.03	.02	20.8	<1
29...	--	--	--	--	--	--	--	--	--
MAY									
11...	.20	.03	.1	<.1	.01	<.01	<.01	20.4	<1
27...	--	--	--	--	--	--	--	--	--
JUN									
03...	.17	.06	.1	<.1	.01	<.01	.02	<16.0	<1
30...	--	--	--	--	--	--	--	--	--
JUL									
08...	.20	.08	.1	<.1	<.01	<.01	.03	17.0	<1
28...	--	--	--	--	--	--	--	--	--
AUG									
11...	1.8	.23	.4	.3	.10	.05	.06	24.0	<1
SEP									
17...	.57	.04	.2	.1	.06	.03	.03	18.4	<1

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPERATURE WATER (DEG C) (00010)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT						
14...N	1230	175	15.4	12	5.7	78
NOV						
05...N	1250	218	17.3	9	5.3	71
DEC						
22...N	1100	226	7.3	5	3.1	76
JAN						
07...N	1130	256	10.0	11	7.6	71
27...N	1130	712	11.4	29	56	93
FEB						
05...N	1100	4960	10.9	66	884	92
28...N	1300	4120	10.6	12	133	100
MAR						
04...N	1100	2880	11.8	22	171	97
23...N	1200	1410	15.1	13	49	92
APR						
01...N	1130	3080	11.3	14	116	90
29...N	1150	2860	15.0	15	116	88
MAY						
11...N	1050	2640	13.7	9	64	100
27...N	1140	2530	13.7	20	137	97
JUN						
03...N	1210	2530	15.3	13	89	90
30...N	1130	2330	17.2	15	94	90
JUL						
08...N	1030	2710	16.8	22	161	89
28...N	1230	731	21.5	54	107	78
AUG						
11...N	1130	595	23.5	39	63	82
SEP						
17...N	1050	938	19.4	45	114	70

11273500 MERCED RIVER AT RIVER ROAD BRIDGE, NEAR NEWMAN, CA—Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	189	126	241	229	273	262	54	53	81	77
2	---	---	152	132	254	231	292	259	58	53	77	75
3	---	---	224	152	258	246	292	259	89	58	87	74
4	---	---	239	194	292	253	259	243	72	58	94	75
5	---	---	273	191	280	256	259	236	72	66	82	74
6	---	---	235	183	273	244	236	131	67	62	85	73
7	250	203	290	216	261	230	232	137	79	61	102	77
8	232	199	291	252	238	198	263	232	76	69	91	78
9	277	195	259	247	222	180	268	261	72	65	78	77
10	359	258	254	247	217	208	262	242	72	69	77	76
11	349	253	249	235	238	210	242	144	75	69	78	76
12	268	182	248	222	255	235	144	119	75	68	77	72
13	205	176	232	204	269	255	180	126	78	68	75	70
14	256	201	237	227	262	255	126	95	77	71	84	74
15	---	---	245	233	292	251	147	120	86	73	84	83
16	---	---	239	214	292	260	144	73	86	75	85	81
17	---	---	237	221	281	276	86	71	75	73	90	84
18	260	216	235	221	285	271	94	86	78	71	105	90
19	230	190	235	206	274	258	102	94	74	68	96	86
20	244	190	244	223	262	252	99	85	80	67	107	86
21	227	179	297	244	264	256	97	89	81	75	105	89
22	201	161	300	230	263	252	91	85	87	75	112	97
23	215	141	303	276	267	253	86	82	87	79	103	91
24	207	167	286	223	273	255	83	78	85	81	102	86
25	204	167	296	277	274	266	83	77	82	78	103	64
26	214	193	293	272	271	265	80	77	79	78	74	56
27	209	199	280	253	272	262	81	75	79	77	77	64
28	202	157	256	241	269	252	84	79	82	78	81	70
29	205	164	259	247	257	250	91	82	---	---	77	73
30	246	205	250	237	263	255	98	71	---	---	75	72
31	245	189	---	---	263	259	71	51	---	---	74	73
MONTH	---	---	303	126	292	180	292	51	89	53	112	56

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	78	73	81	70	58	53	65	59	146	125	76	68
2	87	75	78	70	56	53	61	58	151	125	75	67
3	83	78	79	72	54	54	62	58	131	110	83	64
4	89	78	80	74	60	54	61	52	136	122	69	61
5	89	82	76	71	61	52	52	48	132	123	71	61
6	85	79	73	68	58	52	55	50	159	130	69	53
7	83	78	75	70	58	51	62	47	185	159	61	52
8	89	78	78	74	57	52	49	45	184	164	59	53
9	87	80	78	72	60	54	47	45	183	161	68	54
10	83	77	76	75	65	58	50	44	167	146	82	63
11	106	78	75	69	64	59	48	45	166	138	75	70
12	81	76	78	68	63	59	46	43	175	153	78	66
13	84	75	78	69	66	59	48	45	185	147	74	68
14	77	73	71	66	66	60	52	45	172	146	81	70
15	91	75	67	65	76	61	55	46	155	125	87	77
16	88	76	69	63	64	56	59	44	143	119	83	74
17	88	76	66	63	61	55	57	45	210	127	78	69
18	84	77	67	62	61	58	55	47	260	210	70	62
19	85	77	65	61	66	60	96	55	223	106	66	56
20	86	76	65	54	74	64	118	96	113	95	71	59
21	86	76	59	55	71	57	118	95	109	100	86	71
22	83	72	57	53	60	57	123	57	110	87	84	80
23	78	73	57	52	62	58	58	40	91	82	88	78
24	88	73	55	52	61	59	48	41	92	80	84	79
25	80	73	54	51	72	56	77	46	106	86	88	81
26	78	70	56	51	63	59	108	77	104	90	86	62
27	80	68	60	54	69	60	109	100	101	87	62	55
28	71	69	60	51	69	63	114	104	94	82	62	54
29	73	69	58	50	72	58	131	110	92	81	64	57
30	74	70	54	49	62	58	143	131	103	79	61	54
31	---	---	58	50	---	---	145	127	83	71	---	---
MONTH	106	68	81	49	76	51	145	40	260	71	88	52

11273500 MERCED RIVER AT RIVER ROAD BRIDGE, NEAR NEWMAN, CA—Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	24.0	21.0	17.5	16.0	13.0	12.0	9.0	8.0	11.0	10.5	11.5	10.5
2	23.0	21.0	17.5	15.5	12.5	11.5	10.0	8.5	11.0	10.5	12.0	10.5
3	22.0	19.5	17.5	16.0	12.5	11.5	10.0	9.0	11.5	11.0	12.5	11.5
4	22.0	19.5	18.0	16.5	12.5	12.0	10.5	9.5	11.5	11.0	12.5	11.5
5	21.0	19.0	17.5	16.0	12.5	12.0	9.5	8.5	11.0	10.5	11.5	10.5
6	20.0	18.0	17.0	16.0	12.5	12.0	9.0	7.5	11.0	10.5	11.0	10.0
7	19.0	17.0	17.5	16.0	12.5	12.0	10.5	9.0	11.0	10.5	10.5	10.0
8	18.5	16.5	16.0	15.0	12.0	11.5	10.5	10.0	10.5	10.0	11.0	9.5
9	18.5	17.0	15.0	14.0	11.5	10.5	10.5	10.0	11.0	10.0	12.0	10.5
10	18.0	16.5	15.0	14.5	11.0	9.5	11.5	10.0	11.0	10.5	12.0	10.5
11	18.0	16.0	15.5	14.5	10.5	9.5	11.5	11.0	11.0	10.0	13.0	11.0
12	17.5	15.0	15.5	14.0	10.0	9.5	11.5	10.5	11.0	10.5	12.5	11.5
13	18.0	15.5	15.5	14.5	9.5	9.0	11.0	10.0	11.5	10.5	12.5	11.5
14	18.5	16.0	15.5	14.0	10.0	9.0	11.0	10.0	11.5	11.0	12.5	11.0
15	---	---	14.5	13.0	10.0	9.0	11.0	10.0	11.5	10.5	13.5	12.0
16	---	---	13.5	12.5	10.5	10.0	12.5	10.5	11.0	10.0	14.0	12.5
17	---	---	14.5	13.0	10.5	10.0	13.0	12.5	10.5	9.5	14.0	12.5
18	19.5	17.0	14.0	13.5	11.0	10.0	13.0	12.5	11.0	10.0	14.5	13.5
19	19.5	17.5	14.0	13.5	10.5	9.0	13.0	12.5	11.0	10.0	14.5	13.5
20	18.5	16.5	14.0	13.0	10.0	8.5	12.5	12.0	10.5	10.0	15.0	14.0
21	18.5	16.5	13.5	12.5	10.0	8.0	12.0	11.0	10.0	9.5	15.0	14.5
22	18.0	16.5	14.0	12.5	8.0	7.0	11.0	10.0	10.0	9.5	15.5	14.5
23	18.0	16.0	15.0	13.5	8.5	7.0	10.5	10.0	11.0	10.0	15.5	14.5
24	17.0	15.0	16.0	14.0	9.0	7.5	10.0	10.0	10.5	10.0	15.5	15.0
25	16.0	14.0	15.5	14.5	8.5	7.0	10.5	10.0	10.5	9.5	16.0	15.0
26	16.0	14.0	15.0	14.0	8.0	6.5	11.0	10.5	11.0	10.0	15.5	14.0
27	16.0	14.0	14.5	13.5	8.0	6.5	12.0	11.0	11.0	10.0	14.0	12.5
28	15.5	14.0	14.0	12.5	8.0	6.5	12.0	11.5	11.0	10.0	12.5	12.0
29	15.5	13.5	13.0	12.5	8.0	6.5	12.5	12.0	---	---	12.5	11.5
30	16.5	14.5	13.5	12.5	8.5	7.0	12.5	11.5	---	---	12.5	11.0
31	17.5	15.5	---	---	9.0	8.0	11.5	11.0	---	---	12.5	11.5
MONTH	---	---	18.0	12.5	13.0	6.5	13.0	7.5	11.5	9.5	16.0	9.5

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

11274000 SAN JOAQUIN RIVER NEAR NEWMAN, CA

LOCATION.—Lat 37°21'02", long 120°58'34", in NW 1/4 SW 1/4 sec.3, T.7 S., R.9 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 600 ft downstream from bridge on Hills Ferry Road, 650 ft downstream from Merced River, and 3.5 mi northeast of Newman.

DRAINAGE AREA.—9,520 mi^2.

PERIOD OF RECORD.—April 1912 to current year. Water years 1938 to 1943 include flows through Merced River Slough.
CHEMICAL DATA: Water year 1993.
SPECIFIC CONDUCTANCE: Water years 1989, 1992–95.
TEMPERATURE: Water years 1989, 1992–95.
SEDIMENT DATA: Water year 1993.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is sea level. Prior to Mar. 3, 1931, gage at various sites within 240 ft of bridge. Mar. 3, 1931, to Sept. 30, 1959, water-stage recorder within 300 ft of bridge, at datum 47.31 ft higher. Oct. 1, 1959, to Aug. 9, 1960, water-stage recorder at site 70 ft upstream, at present datum.

REMARKS.—Records good. Natural flow of stream affected by storage reservoirs, ground-water withdrawals, diversions for irrigation, and imported water; low flows consist mainly of return water from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge (river only), 36,200 ft^3/s, Jan. 28, 1997, elevation, 66.14 ft; minimum daily, 15 ft^3/s, Aug. 9, 10, 1924. Maximum discharge (including flow in Merced River Slough in water years 1938–43), 33,000 ft^3/s, Mar. 7, 1938.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Jan. 2, 1868, reached a stage of 69.0 ft from floodmarks; flood of February 1886 reached a stage of 67.1 ft from floodmarks; and flood of 1911 reached a stage of 66.3 ft from floodmarks. All stages referred to current datum. Discharges unknown.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	456	627	744	537	3950	14800	11700	10200	10400	9960	2000	1620
2	462	691	e780	532	4140	13500	11200	9920	10300	9740	1850	1650
3	470	657	e820	529	5270	12100	11100	9650	10200	9380	1800	1600
4	493	639	e860	529	7480	10600	11300	9380	9990	9230	1740	1610
5	527	633	e890	533	8930	10200	11600	9500	9710	9410	1700	1620
6	550	628	e930	535	10600	9790	12200	10200	9440	9370	1590	1660
7	571	621	e950	522	12700	9420	12600	10600	9280	9340	1390	1750
8	581	617	e1030	504	15600	9390	13500	10700	9440	9510	1340	1730
9	578	614	e1050	508	17500	9520	13600	10600	9940	9480	1330	1660
10	560	610	1030	527	19100	9340	13500	10400	10600	9510	1410	1550
11	537	621	989	564	19300	9120	14200	10200	10900	9210	1430	1520
12	530	680	928	699	18500	8790	15100	10400	11000	8680	1420	1580
13	541	715	858	1160	18000	8520	15400	11000	10800	7930	1410	1650
14	553	725	810	1760	17700	8080	15500	11500	10800	7480	1380	1700
15	561	729	792	1960	17200	7400	15400	11800	11100	7270	1370	1720
16	563	748	776	3120	17000	7030	15000	12300	11300	7120	1340	1700
17	566	753	742	3830	17600	6800	14600	12400	11800	6770	1280	1690
18	571	739	710	4000	16900	6430	14000	12100	11900	6490	1160	1780
19	578	734	672	4410	16200	6100	13200	12000	11800	6040	1330	1900
20	583	712	650	4360	15900	5890	12500	12100	11600	5440	1420	1880
21	585	666	643	4030	15400	5720	12300	12000	12000	4960	1470	1740
22	595	646	631	3640	15500	5470	12100	11700	12200	4470	1490	1680
23	603	636	619	3130	15900	5220	11800	11500	12200	4320	1550	1640
24	607	630	606	2620	16700	5040	11600	11200	12000	4050	1590	1620
25	607	617	601	2170	17200	5600	11300	11000	11800	3480	1600	1650
26	603	612	594	1880	17800	7970	11300	10700	11400	3260	1540	1700
27	598	650	587	1720	17700	11400	11200	10500	11200	3250	1490	1860
28	597	684	579	1600	16700	14600	11000	10400	10900	3100	1520	1900
29	593	691	568	1550	---	14600	10900	10500	10500	2860	1520	1880
30	591	718	557	2070	---	13400	10600	10500	10200	2400	1540	1910
31	591	---	546	3390	---	12500	---	10400	---	2140	1590	---
TOTAL	17401	20043	23542	58919	412470	284340	381300	337350	326700	205650	46590	51150
MEAN	561	668	759	1901	14730	9172	12710	10880	10890	6634	1503	1705
MAX	607	753	1050	4410	19300	14800	15500	12400	12200	9960	2000	1910
MIN	456	610	546	504	3950	5040	10600	9380	9280	2140	1160	1520
AC-FT	34510	39760	46700	116900	818100	564000	756300	669100	648000	407900	92410	101500

e Estimated.

11274000 SAN JOAQUIN RIVER NEAR NEWMAN, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1937, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	290	362	796	1857	3623	3223	3395	5010	5490	1888	328	209
MAX	1422	1233	2907	8356	11840	13000	11780	14210	15700	8803	1370	442
(WY)	1919	1928	1923	1914	1916	1916	1916	1916	1922	1914	1914	1936
MIN	55.0	85.5	136	228	278	233	122	115	92.5	29.1	21.3	26.7
(WY)	1914	1932	1913	1918	1913	1913	1931	1931	1924	1924	1924	1924

SUMMARY STATISTICS	WATER YEARS 1912 - 1937	
ANNUAL MEAN		2208
HIGHEST ANNUAL MEAN	6585	1916
LOWEST ANNUAL MEAN	196	1931
HIGHEST DAILY MEAN	20700	Jan 27 1914
LOWEST DAILY MEAN	15	Aug 9 1924
ANNUAL SEVEN-DAY MINIMUM	17	Aug 4 1924
INSTANTANEOUS PEAK FLOW	20700	Jan 27 1914
INSTANTANEOUS PEAK STAGE	65.30	Jan 27 1914
ANNUAL RUNOFF (AC-FT)	1599000	
10 PERCENT EXCEEDS	7040	
50 PERCENT EXCEEDS	590	
90 PERCENT EXCEEDS	112	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1943, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	447	494	1558	3378	7512	10070	7308	8025	9334	3383	686	482
MAX	708	1065	2832	5111	14350	23500	11480	15310	21010	8625	1745	768
(WY)	1939	1939	1938	1942	1938	1938	1938	1938	1938	1938	1938	1938
MIN	226	190	423	1967	2442	679	959	627	333	234	225	278
(WY)	1940	1940	1940	1939	1939	1939	1939	1939	1939	1939	1939	1939

SUMMARY STATISTICS	WATER YEARS 1938 - 1943	
ANNUAL MEAN		4366
HIGHEST ANNUAL MEAN	8643	1938
LOWEST ANNUAL MEAN	904	1939
HIGHEST DAILY MEAN	33000	Mar 7 1938
LOWEST DAILY MEAN	170	Nov 9 1939
ANNUAL SEVEN-DAY MINIMUM	171	Nov 8 1939
INSTANTANEOUS PEAK FLOW	33000	Mar 7 1938
INSTANTANEOUS PEAK STAGE	65.81	Mar 7 1938
ANNUAL RUNOFF (AC-FT)	3163000	
10 PERCENT EXCEEDS	11900	
50 PERCENT EXCEEDS	1580	
90 PERCENT EXCEEDS	291	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	687	660	1224	2425	3286	3149	3021	2891	2251	1021	522	632
MAX	5831	4039	10880	24920	21100	24170	18860	14050	15280	11320	2683	3786
(WY)	1984	1984	1983	1997	1983	1983	1983	1983	1983	1983	1983	1983
MIN	25.2	123	202	230	180	212	159	141	48.7	45.9	80.4	41.2
(WY)	1978	1978	1950	1991	1991	1948	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1944 - 1998	
ANNUAL TOTAL	1660724		2165455			
ANNUAL MEAN	4550		5933		1805	
HIGHEST ANNUAL MEAN					11620	1983
LOWEST ANNUAL MEAN					200	1961
HIGHEST DAILY MEAN	36000	Jan 28	19300	Feb 11	36000	Jan 28 1997
LOWEST DAILY MEAN	329	Aug 30	456	Oct 1	20	Oct 26 1977
ANNUAL SEVEN-DAY MINIMUM	343	Aug 29	504	Oct 1	23	Oct 7 1977
INSTANTANEOUS PEAK FLOW			19500	Feb 10	36200	Jan 28 1997
INSTANTANEOUS PEAK STAGE			64.59	Feb 10	66.14	Jan 28 1997
INSTANTANEOUS LOW FLOW					15	Aug 9 1924
ANNUAL RUNOFF (AC-FT)	3294000		4295000		1308000	
10 PERCENT EXCEEDS	21300		13400		4350	
50 PERCENT EXCEEDS	649		3260		590	
90 PERCENT EXCEEDS	392		586		216	

11274500 ORESTIMBA CREEK NEAR NEWMAN, CA

LOCATION.—Lat 37°18'56", long 121°07'27", in NE 1/4 NE 1/4 sec.19, T.7 S., R.8 E., Stanislaus County, Hydrologic Unit 18040002, on right bank 20 ft downstream from bridge at California Aqueduct Siphon, 3 mi downstream from Oso Creek, and 5.5 mi west of Newman.

DRAINAGE AREA.—134 mi^2.

PERIOD OF RECORD.—January 1932 to current year.

REVISED RECORDS.—WSP 1445: 1932(M), 1938(P), 1940–41(M), 1945, 1951(M). WSP 1930: Drainage area, WDR CA-95-3: 1986 (M).

GAGE.—Water-stage recorder. Datum of gage is 216.01 ft above sea level. Prior to Oct. 1, 1958, at site 1,080 ft downstream at datum 24.14 ft lower. Oct. 1, 1958, to Aug. 13, 1969, at site 960 ft downstream at datum 27.14 ft lower. Aug. 13, 1969, to Feb. 6, 1984, at site 240 ft upstream, present datum.

REMARKS.—Records good except for discharges below 10 ft^3/s which are fair. No storage or diversion upstream from station except for minor stock ponds.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 12,000 ft^3/s, Mar. 10, 1995, gage height, 9.51, from rating curve extended above 4,000 ft^3/s on basis of critical depth measurement; no flow for all or parts of each year.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 12	2315	717	4.43	Feb. 7	1845	5,920	7.63
Jan. 15	2145	591	4.29	Feb. 14	2145	717	4.49
Jan. 19	0145	576	4.29	Feb. 21	1930	2,340	5.76
Feb. 3	0615	9,470	8.80				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.50	305	201	65	23	11	4.8	.00	.00
2	.00	.00	.00	.57	1860	180	52	27	11	4.6	.00	.00
3	.00	.00	.00	.59	4550	161	59	28	10	4.9	.00	.00
4	.00	.00	.00	1.4	828	146	77	32	11	4.8	.00	.00
5	.00	.00	.00	8.1	237	138	69	52	11	4.4	.00	.00
6	.00	.00	.00	10	664	144	59	39	9.6	4.1	.00	.00
7	.00	.00	.00	7.2	2440	123	55	31	9.6	3.3	.00	.00
8	.00	.00	15	5.9	1880	130	50	28	9.4	2.9	.00	.00
9	.00	.00	35	7.0	809	112	44	27	9.2	2.5	.00	.00
10	.00	.00	14	54	448	103	41	26	8.7	2.1	.00	.00
11	.00	.00	5.9	49	327	96	48	23	8.2	1.9	.00	.00
12	.00	.00	2.0	83	335	93	48	38	7.9	1.6	.00	.00
13	.00	.00	1.0	276	358	93	52	45	7.6	1.3	.00	.00
14	.00	.00	1.1	70	472	90	80	34	7.1	1.1	.00	.00
15	.00	.00	3.0	214	486	80	100	27	6.4	.87	.00	.00
16	.00	.00	5.7	284	401	76	75	22	6.1	.70	.00	.00
17	.00	.00	6.7	94	556	75	58	21	5.2	.52	.00	.00
18	.00	.00	3.4	65	379	70	48	19	4.8	.35	.00	.00
19	.00	.00	1.6	336	544	65	42	17	4.9	.25	.00	.00
20	.00	.00	1.1	128	545	63	39	15	4.9	.14	.00	.00
21	.00	.00	.95	67	880	60	36	14	5.1	.08	.00	.00
22	.00	.00	.38	38	895	56	35	14	5.2	.05	.00	.00
23	.00	.00	.29	24	826	53	32	14	5.4	.03	.00	.00
24	.00	.00	.32	17	631	63	33	13	5.4	.01	.00	.00
25	.00	.00	.28	13	432	68	30	13	5.8	.00	.00	.00
26	.00	.00	.24	10	330	67	28	12	5.6	.00	.00	.00
27	.00	.00	.27	8.1	271	56	26	13	5.2	.00	.00	.00
28	.00	.00	.35	7.2	228	58	25	13	5.3	.00	.00	.00
29	.00	.00	.45	75	---	54	24	13	4.9	.00	.00	.00
30	.00	.00	.48	103	---	47	23	14	4.8	.00	.00	.00
31	.00	---	.45	50	---	56	---	12	---	.00	.00	---
TOTAL	0.00	0.00	99.96	2106.56	22917	2877	1453	719	216.3	47.30	0.00	0.00
MEAN	.000	.000	3.22	68.0	818	92.8	48.4	23.2	7.21	1.53	.000	.000
MAX	.00	.00	35	336	4550	201	100	52	11	4.9	.00	.00
MIN	.00	.00	.00	.50	228	47	23	12	4.8	.00	.00	.00
AC-FT	.00	.00	198	4180	45460	5710	2880	1430	429	94	.00	.00

11274500 ORESTIMBA CREEK NEAR NEWMAN, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.000	.95	11.8	47.3	88.4	50.0	22.7	3.47	.71	.13	.001	.000
MAX	.000	31.0	181	432	818	345	362	46.9	15.1	5.32	.045	.000
(WY)	1933	1951	1956	1997	1998	1995	1958	1983	1941	1941	1958	1932
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1933	1933	1933	1936	1935	1933	1933	1933	1932	1932	1932	1932

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1932 - 1998	
ANNUAL TOTAL	15505.21		30436.12			
ANNUAL MEAN	42.5		83.4		18.4	
HIGHEST ANNUAL MEAN					89.4	1983
LOWEST ANNUAL MEAN					.000	1947
HIGHEST DAILY MEAN	1940	Jan 2	4550	Feb 3	4550	Feb 3 1998
LOWEST DAILY MEAN	.00	May 20	.00	Oct 1	.00	May 9 1932
ANNUAL SEVEN-DAY MINIMUM	.00	May 20	.00	Oct 1	.00	May 9 1932
INSTANTANEOUS PEAK FLOW			9470	Feb 3	12000	Mar 10 1995
INSTANTANEOUS PEAK STAGE			8.80	Feb 3	9.51	Mar 10 1995
ANNUAL RUNOFF (AC-FT)	30750		60370		13360	
10 PERCENT EXCEEDS	45		145		21	
50 PERCENT EXCEEDS	.00		4.8		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA

LOCATION.—Lat 37°24'49", long 121°00'54", in Orestimba Grant, Stanislaus County, Hydrologic Unit 18040002, on right bank at downstream side of River Road Bridge, 0.8 mi upstream of mouth, and 3.4 mi northeast of Crows Landing.

DRAINAGE AREA.—Not determined.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—April 1992 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 65 ft above sea level, from topographic map.

REMARKS.—Records fair except for periods of backwater and estimated daily discharge, which are poor. Flows during summer and fall consist mainly of return water from irrigated areas. During major storm events record can be affected by backwater from the San Joaquin River.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,650 ft^3/s, Mar. 10, 1995, gage height 18.40 ft, from rating curve extended above 2,470 ft^3/s, maximum gage height, 19.60 ft, Jan. 23, 1997 (backwater from San Joaquin River); no flow for many days during winter months.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	e.76	13	e.00	53	344	89	250	162	153	55	21
2	10	e.76	15	e.00	703	224	68	253	155	130	36	15
3	24	e.76	36	e.00	e2250	179	52	266	147	109	52	16
4	6.1	9.4	15	e.00	e1000	120	43	263	137	92	64	43
5	29	e.76	19	e.00	e380	106	42	274	112	95	77	90
6	26	8.0	18	e.00	e350	100	48	317	93	92	81	98
7	19	e5.8	12	e.00	e1060	92	63	306	72	83	71	76
8	27	26	14	e.00	e1380	94	88	306	68	104	36	27
9	37	16	e3.3	e.00	e610	107	112	298	66	129	85	38
10	14	25	e.00	e.00	e560	117	116	274	65	160	75	58
11	6.2	27	e.00	e13	e560	124	140	270	64	180	93	56
12	4.7	7.7	e.00	27	e560	124	190	303	68	184	81	43
13	5.9	e6.0	e.00	152	e540	126	229	286	62	144	41	29
14	e4.1	e5.0	e.00	69	e560	124	251	269	61	116	64	21
15	e.76	e6.5	e.00	63	e560	97	277	265	60	118	91	45
16	e.76	21	e.00	206	e480	82	274	268	57	133	90	20
17	e.76	21	e.00	79	e550	80	281	267	64	130	80	4.7
18	e.76	41	e.00	46	e600	78	271	253	76	118	52	19
19	e.76	41	e.00	174	e610	76	249	247	75	106	36	32
20	e.76	17	e.00	107	e750	75	229	227	69	81	66	43
21	e9.1	9.5	e.00	60	e820	73	222	232	80	72	96	54
22	13	6.9	e.00	39	e940	71	232	229	97	73	94	66
23	5.1	e.76	e.00	25	e875	70	236	218	96	70	59	58
24	e.76	e.76	e.00	17	887	69	238	206	90	71	76	61
25	e.76	e.76	e.00	11	755	69	238	199	99	73	73	41
26	27	e.76	e.00	7.2	688	77	241	184	110	71	36	20
27	23	e.76	e.00	e4.0	612	185	260	165	130	72	41	65
28	26	e.76	e.00	e2.4	502	346	268	158	147	70	24	39
29	33	e.76	e.00	e1.5	---	336	260	167	163	66	33	12
30	15	e.76	e.00	79	---	225	254	167	174	66	36	69
31	e4.0	---	e.00	46	---	127	---	161	---	69	35	---
TOTAL	379.28	308.92	145.30	1228.10	20195	4117	5561	7548	2919	3230	1929	1279.7
MEAN	12.2	10.3	4.69	39.6	721	133	185	243	97.3	104	62.2	42.7
MAX	37	41	36	206	2250	346	281	317	174	184	96	98
MIN	.76	.76	.00	.00	53	69	42	158	57	66	24	4.7
AC-FT	752	613	288	2440	40060	8170	11030	14970	5790	6410	3830	2540

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1998, BY WATER YEAR (WY)

MEAN	15.8	17.8	18.0	164	237	133	55.3	59.8	29.9	35.4	28.3	17.7
MAX	34.8	29.4	54.1	596	721	318	185	243	97.3	104	62.2	42.7
(WY)	1997	1996	1997	1997	1998	1995	1998	1998	1998	1998	1998	1998
MIN	2.19	3.82	1.01	11.4	6.15	12.5	12.2	11.7	7.38	14.1	11.2	4.04
(WY)	1995	1995	1995	1994	1995	1994	1994	1994	1992	1992	1992	1992

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1992 - 1998	
ANNUAL TOTAL	31533.00		48840.30			
ANNUAL MEAN	86.4		134		68.5	
HIGHEST ANNUAL MEAN					134	1998
LOWEST ANNUAL MEAN					15.7	1994
HIGHEST DAILY MEAN	1760	Jan 23	2250	Feb 3	2250	Feb 3 1998
LOWEST DAILY MEAN	.00	Dec 10	.00	Dec 10	.00	Dec 18 1992
ANNUAL SEVEN-DAY MINIMUM	.00	Dec 10	.00	Dec 10	.00	Dec 18 1992
INSTANTANEOUS PEAK FLOW			2340	Feb 3	2650	Mar 10 1995
INSTANTANEOUS PEAK STAGE			19.24	Feb 8 a	19.60	Jan 23 1997
ANNUAL RUNOFF (AC-FT)	62550		96870		49650	
10 PERCENT EXCEEDS	215		283		147	
50 PERCENT EXCEEDS	18		69		19	
90 PERCENT EXCEEDS	.76		.76		1.3	

e Estimated.

a Backwater from the San Joaquin River.

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—April 1992 to current year.
CHEMICAL DATA: Water years 1992–95, February 1997 to current year.
SEDIMENT DATA: Water years 1992–95, February 1997 to current year.

PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: April 1992 to current year.
WATER TEMPERATURE: April 1992 to current year.

INSTRUMENTATION.—Water-quality monitor since April 1992.

REMARKS.—Interruptions in record were due to malfunction of the recording instruments. Specific-conductance, water-temperature, and chemical values are affected by irrigation-return flow from a drainage pipe located 30 ft upstream from gage.

EXTREMES FOR PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: Maximum recorded, 1,890 microsiemens, Sept. 13, 1992; minimum recorded, 103 microsiemens, Jan. 7, 1993.
WATER TEMPERATURE: Maximum recorded, 31.0°C, July 29, 1996, Aug. 4, 5, 1998; minimum recorded, 4.0°C, Dec. 28, 1992.

EXTREMES FOR CURRENT YEAR.—
SPECIFIC CONDUCTANCE: Maximum recorded, 1,530 microsiemens, Mar. 26; minimum recorded, 172 microsiemens, July 7.
WATER TEMPERATURE: Maximum recorded, 31.0°C, Aug. 4, 5; minimum recorded, 7.5°C, Feb. 20.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	ALKA-LINITY WAT.DIS GRAN T. FIELD CACO3 (MG/L) (29802)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT										
14...	1200	e3.3	1010	8.2	13.4	764	9.2	88	210	.07
NOV										
05...	1150	e3.2	1110	8.2	14.7	761	9.7	96	200	.07
JAN										
27...	1330	e4.8	736	8.4	10.2	761	10.2	91	200	<.01
FEB										
05...	1220	e482	441	8.4	11.0	763	10.6	96	120	--
28...	1600	481	1020	8.4	13.2	766	10.4	99	230	<.01
MAR										
04...	1300	114	1190	8.3	10.9	759	10.8	98	250	<.01
23...	1450	70	1390	8.6	19.0	757	10.6	116	240	--
APR										
01...	1300	86	1240	8.4	12.7	756	9.8	93	220	.03
29...	1250	258	362	7.9	21.8	756	8.1	93	65	--
MAY										
11...	1300	269	321	7.9	17.5	757	9.7	102	54	.02
27...	1320	165	219	7.9	18.2	760	8.9	95	43	--
JUN										
03...	1100	146	264	7.8	19.9	759	8.6	95	39	.03
30...	1230	183	233	7.6	22.9	759	8.0	94	42	--
JUL										
08...	1100	102	305	7.6	23.7	758	7.1	84	57	.10
28...	1130	70	296	7.8	25.0	758	7.6	93	48	--
AUG										
11...	1030	104	439	7.9	27.0	759	6.9	--	68	--
SEP										
17...	1000	4.2	95	7.7	21.4	759	5.8	66	--	.07

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	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)	BORON, DIS-SOLVED (UG/L AS B) (01020)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
OCT									
14...	8.9	.09	.9	.8	.24	.19	.17	296	<1
NOV									
05...	8.4	<.02	.4	.3	.13	.09	.10	360	<1
JAN									
27...	.40	<.02	.3	.2	.04	.02	.03	302	<1
FEB									
05...	--	--	--	--	--	--	--	--	--
28...	.24	.05	.1	<.1	.03	.03	.03	162	<1
MAR									
04...	1.5	<.02	.1	.1	.01	<.01	.01	416	4
23...	--	--	--	--	--	--	--	--	--
APR									
01...	1.5	.08	.3	.3	.04	.04	.03	570	4
29...	--	--	--	--	--	--	--	--	--
MAY									
11...	.49	.04	.6	.2	.23	.04	.05	170	1
27...	--	--	--	--	--	--	--	--	--
JUN									
03...	.53	.07	.8	.2	.28	.10	.10	128	<1
30...	--	--	--	--	--	--	--	--	--
JUL									
08...	2.5	.11	.4	.4	.13	--	.09	127	<1
28...	--	--	--	--	--	--	--	--	--
AUG									
11...	--	--	--	--	--	--	--	230	1
SEP									
17...	2.7	.15	1.0	.8	.27	.20	.20	237	<1

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT						
14...N	1200	e3.3	13.4	41	.37	98
NOV						
05...N	1150	e3.2	14.7	42	.36	100
JAN						
27...N	1330	e4.8	10.2	28	.36	100
FEB						
05...N	1220	e482	11.0	366	476	95
28...N	1600	481	13.2	61	79	100
MAR						
04...N	1300	114	10.9	62	19	79
23...N	1450	70	19.0	36	6.8	80
APR						
01...N	1300	86	12.7	92	21	98
29...N	1250	258	21.8	--	--	--
MAY						
11...N	1300	269	17.5	249	181	97
27...N	1320	165	18.2	217	97	99
JUN						
03...N	1100	146	19.9	209	82	99
30...N	1230	183	22.9	362	179	99
JUL						
08...N	1100	102	23.7	188	52	100
28...N	1130	70	25.0	316	60	99
AUG						
11...N	1030	104	27.0	500	140	96
SEP						
17...N	1000	4.2	21.4	55	.62	97

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA—Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	831	788	---	---	---	---	---	---	761	738	1110	1040
2	804	767	---	---	---	---	---	---	738	446	1160	949
3	767	633	---	---	679	655	---	---	464	349	1140	1130
4	684	634	1070	851	683	672	---	---	457	352	1140	1110
5	801	684	---	---	751	613	---	---	494	422	1160	1130
6	770	610	1120	984	751	540	---	---	618	300	1200	1130
7	621	602	1080	929	648	540	---	---	300	195	1170	1120
8	624	573	1030	826	677	595	---	---	239	174	1240	1140
9	620	513	826	749	---	---	---	---	289	228	1170	1140
10	617	557	797	693	---	---	---	---	345	289	1210	1170
11	751	613	708	664	---	---	---	---	401	345	1230	1200
12	---	---	685	677	---	---	868	461	444	401	1250	1220
13	933	865	685	655	---	---	591	401	460	443	1270	1250
14	---	---	662	651	---	---	461	402	491	459	1270	1240
15	---	---	660	649	---	---	535	461	496	462	1270	1250
16	---	---	656	643	---	---	536	388	543	496	1290	1270
17	---	---	652	641	---	---	805	400	551	541	1310	1290
18	---	---	650	637	---	---	519	466	584	551	1310	1240
19	---	---	644	626	---	---	549	437	603	582	1240	1160
20	---	---	668	641	---	---	479	441	582	561	1280	1180
21	---	---	679	666	---	---	522	479	594	571	1360	1280
22	1070	805	696	679	---	---	563	522	611	539	1390	1360
23	805	775	702	689	---	---	608	563	635	579	1430	1390
24	---	---	---	---	---	---	648	607	632	511	1470	1420
25	---	---	---	---	---	---	688	647	701	546	1510	1470
26	955	732	---	---	---	---	722	688	839	701	1530	1420
27	852	737	---	---	---	---	---	---	952	839	1420	1360
28	742	684	716	631	---	---	---	---	1040	952	1420	1370
29	758	719	724	715	---	---	---	---	---	---	1450	1340
30	722	708	726	532	---	---	762	556	---	---	1340	1220
31	---	---	---	---	---	---	765	752	---	---	1320	1200
MONTH	---	---	---	---	---	---	---	---	1040	174	1530	949

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	1240	1150	382	347	187	182	273	202	---	---	586	564
2	1150	966	434	317	239	187	377	273	---	---	618	575
3	966	923	442	405	297	239	409	377	---	---	632	526
4	1100	926	442	370	309	297	424	409	567	495	642	567
5	1090	1040	446	394	345	308	429	407	540	471	583	567
6	1170	1130	545	416	384	344	414	203	541	493	585	261
7	1180	1170	515	440	427	384	267	172	528	478	332	293
8	1180	1110	488	442	444	427	379	267	573	517	397	332
9	1110	1090	486	371	448	433	562	379	577	523	424	397
10	1100	1090	410	372	444	439	482	393	543	524	441	404
11	1100	1090	378	279	459	442	425	386	540	508	442	407
12	1110	1090	435	211	478	459	386	340	537	507	444	429
13	1100	1060	528	318	479	449	421	366	631	523	476	441
14	1080	1050	633	527	449	367	471	420	625	524	496	474
15	1050	919	619	561	367	343	515	471	528	508	527	496
16	919	697	756	619	359	344	---	---	510	488	530	495
17	697	598	1130	756	356	349	---	---	493	475	558	529
18	598	562	1050	418	356	324	---	---	525	488	591	557
19	562	522	423	374	337	331	---	---	579	514	566	531
20	522	480	377	352	---	---	---	---	583	515	544	524
21	480	434	361	353	345	319	---	---	519	477	535	486
22	441	418	356	328	433	276	---	---	514	459	491	484
23	441	419	328	304	385	273	---	---	516	492	499	486
24	420	396	304	263	528	277	---	---	539	516	513	489
25	397	381	263	221	347	313	---	---	527	494	523	486
26	381	371	226	219	---	---	---	---	672	496	526	491
27	371	352	225	216	673	382	---	---	667	552	513	483
28	394	268	238	224	---	---	---	---	552	535	483	472
29	373	268	225	194	556	284	---	---	554	537	501	474
30	391	359	195	187	390	222	---	---	574	549	738	496
31	---	---	189	184	---	---	---	---	573	545	---	---
MONTH	1240	268	1130	184	---	---	---	---	---	---	738	261

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA—Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	22.0	19.0	---	---	11.5	10.5	---	---	10.5	9.0	15.0	12.0
2	21.0	19.0	---	---	11.5	9.5	---	---	11.5	10.0	15.5	12.5
3	21.0	19.0	---	---	11.5	10.5	---	---	12.0	11.0	15.5	13.0
4	21.5	18.0	19.5	14.0	11.5	10.0	---	---	12.0	10.0	14.0	10.5
5	19.5	16.5	---	---	11.5	10.5	---	---	11.5	11.0	12.5	9.5
6	18.5	16.5	16.5	13.5	11.5	11.0	---	---	12.0	10.5	12.0	9.0
7	18.0	16.0	16.5	13.5	12.0	11.0	---	---	11.0	9.5	12.5	9.5
8	18.0	14.5	15.5	13.5	11.0	9.5	---	---	10.5	10.0	14.0	10.5
9	17.5	17.0	14.5	13.0	---	---	---	---	12.0	9.5	14.0	11.0
10	17.0	15.0	14.5	13.0	---	---	---	---	11.0	9.5	14.5	12.5
11	15.0	12.0	14.5	13.5	---	---	---	---	13.0	9.5	15.0	13.5
12	15.5	11.0	14.5	13.0	---	---	11.5	10.5	12.5	10.5	15.5	14.0
13	16.5	12.0	14.0	13.0	---	---	10.5	9.5	14.0	10.5	14.5	14.0
14	---	---	13.5	12.0	---	---	10.5	10.0	13.5	11.5	15.5	13.0
15	---	---	13.0	11.0	---	---	11.0	10.0	12.5	10.0	17.5	15.0
16	---	---	13.0	10.5	---	---	13.5	11.0	12.0	9.0	18.5	16.5
17	---	---	13.5	11.5	---	---	14.0	13.0	12.0	8.5	18.5	16.0
18	---	---	13.5	12.5	---	---	13.5	12.5	12.5	9.0	18.5	16.5
19	---	---	---	---	---	---	12.5	10.0	12.5	10.0	19.0	16.0
20	---	---	13.5	12.0	---	---	10.0	9.0	11.5	7.5	19.5	17.5
21	---	---	12.5	11.5	---	---	10.0	8.5	10.5	9.5	19.5	16.5
22	17.0	15.0	12.5	11.5	---	---	9.5	8.0	11.5	9.5	19.5	17.0
23	16.5	13.0	14.0	12.0	---	---	9.0	8.0	11.5	10.0	20.5	17.0
24	---	---	---	---	---	---	8.5	8.0	12.0	8.5	18.5	17.5
25	---	---	---	---	---	---	9.0	8.5	13.0	9.5	18.0	16.5
26	14.5	11.0	---	---	---	---	9.0	8.5	14.0	10.5	17.0	15.5
27	14.5	12.5	---	---	---	---	---	---	15.0	11.5	16.0	15.0
28	14.5	12.0	12.5	10.0	---	---	---	---	15.0	11.5	15.0	13.5
29	15.0	12.5	10.5	9.5	---	---	---	---	---	---	14.5	11.5
30	15.5	13.5	12.0	10.5	---	---	11.0	9.5	---	---	16.0	11.5
31	---	---	---	---	---	---	11.0	9.0	---	---	15.0	13.5
MONTH	---	---	---	---	---	---	---	---	15.0	7.5	20.5	9.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	14.0	12.0	22.0	20.0	23.5	20.0	25.5	22.0	27.0	23.0	28.5	24.0
2	14.5	13.0	20.5	19.0	23.0	19.5	25.5	21.0	28.5	23.0	28.5	24.0
3	14.0	13.0	21.0	18.5	21.5	19.0	25.0	20.5	---	---	28.5	25.0
4	14.0	12.0	21.0	19.0	22.0	17.5	25.5	21.5	31.0	25.0	28.5	25.5
5	15.5	12.5	20.0	18.5	22.5	18.5	26.0	22.5	31.0	26.5	27.0	25.5
6	16.0	14.5	19.5	17.5	22.5	19.5	27.0	23.5	30.5	26.5	29.0	26.0
7	16.0	14.0	20.5	17.0	21.0	18.5	26.5	23.5	29.0	25.0	28.5	26.5
8	18.0	14.0	20.5	18.0	22.0	18.0	27.5	23.5	27.0	22.0	28.0	26.0
9	19.5	15.0	20.5	17.5	23.5	19.0	27.5	25.0	27.5	23.0	26.0	24.0
10	19.0	16.0	19.5	16.5	23.0	20.5	27.5	23.0	28.0	24.0	25.0	21.5
11	18.5	15.0	19.5	16.5	22.0	20.0	26.5	22.0	29.0	25.0	22.5	21.0
12	16.0	13.0	16.5	13.5	22.5	19.0	28.0	23.0	29.5	25.0	24.0	21.5
13	16.0	14.0	16.5	13.0	23.5	19.5	28.0	24.5	30.0	26.0	24.5	22.5
14	15.5	13.0	18.5	15.0	25.5	21.0	27.0	24.0	30.0	27.0	24.5	23.0
15	16.0	12.5	21.0	15.5	26.0	22.5	27.0	24.5	30.0	26.0	24.5	23.0
16	17.0	14.0	21.0	17.5	25.5	22.5	27.5	24.5	28.0	25.0	24.0	22.0
17	18.5	15.5	19.5	16.5	24.0	20.0	27.5	25.0	27.0	23.5	23.0	20.5
18	19.5	16.0	21.5	17.0	26.0	21.5	27.5	25.5	26.0	22.0	21.5	19.5
19	20.5	17.0	22.0	18.5	26.0	22.5	28.0	25.5	25.5	20.5	21.5	20.0
20	21.5	18.0	21.5	19.0	26.0	21.5	28.0	26.0	25.0	21.0	21.5	19.5
21	23.0	19.0	21.5	18.5	25.0	21.0	27.0	24.5	25.0	21.0	21.5	20.0
22	24.0	21.0	21.5	18.5	25.0	21.0	25.5	24.0	26.0	22.0	21.0	20.0
23	22.5	20.0	22.5	19.5	25.5	21.0	24.5	23.5	26.5	22.0	21.0	19.5
24	20.5	18.5	22.5	19.0	25.5	21.0	25.0	23.5	27.0	23.0	21.0	19.0
25	20.0	18.0	22.0	20.5	25.5	21.5	26.0	24.0	27.5	24.0	21.0	19.0
26	19.0	17.0	20.5	18.0	24.5	20.5	27.0	24.5	26.0	22.0	20.0	18.5
27	21.0	18.0	20.0	17.5	25.5	21.5	27.5	25.5	26.0	22.0	19.0	17.5
28	23.5	19.5	18.5	16.5	26.5	23.0	28.0	25.0	26.0	23.0	19.0	18.0
29	24.0	20.5	18.5	15.5	26.0	22.5	27.0	24.0	26.5	23.0	19.0	18.0
30	24.0	21.0	20.5	16.0	26.0	22.0	26.0	23.0	27.5	24.0	20.5	19.0
31	---	---	22.5	18.0	---	---	26.0	22.5	27.5	24.0	---	---
MONTH	24.0	12.0	22.5	13.0	26.5	17.5	28.0	20.5	---	---	29.0	17.5

11274550 SAN JOAQUIN RIVER NEAR CROWS LANDING, CA

LOCATION.—Lat 37°25'42", long 121°00'12", in NE 1/4 NE 1/4 sec.7, T.6 S., R.9 E., Stanislaus County, Hydrologic Unit 18040002, on right bank 50 ft downstream from bridge on Crows Landing Road, and 4.2 miles northeast of Crows Landing.

DRAINAGE AREA.—9,694 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1995 to current year.

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

REMARKS.—Records fair, except flows above 10,000 ft^3/s, which are poor. Natural flow of stream affected by storage reservoirs, ground-water withdrawals, diversions for irrigation, and imported water; low flows consist mainly of return water from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 38,000 ft^3/s, Jan. 28, 1997, gage height, 59.23 ft, from rating curve extended above 32,100 ft^3/s; minimum daily, 432 ft^3/s, Sept. 18, 1997.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	484	696	867	514	4470	17000	13500	11700	11600	11700	2770	1680
2	515	753	886	528	5330	15200	12900	11400	11500	11500	2530	1730
3	532	740	1020	539	7680	13900	12500	11300	11400	11300	2420	1700
4	550	715	1050	e590	9790	12100	12500	10900	11300	11100	2280	1690
5	651	690	1080	e620	10700	11500	12700	10900	11000	11300	2180	1760
6	e660	684	1120	e680	12000	11000	13100	11400	10800	11400	2040	1850
7	e670	657	1130	655	15700	10500	13600	11700	10500	11400	1790	1900
8	e665	677	1200	628	20500	10200	14100	11800	10600	11600	1650	1850
9	e658	679	1220	620	22500	10200	14600	11800	10900	11700	1620	1790
10	e640	687	1210	646	23900	10200	14500	11700	11300	11800	e1670	1720
11	e625	728	1170	680	24300	9980	14900	11500	11600	11600	e1670	1680
12	e608	752	1110	843	23700	9660	15800	11700	11800	11100	e1630	1700
13	e624	783	1030	1330	22900	9340	16500	12100	11700	10100	e1580	1770
14	e621	805	958	2040	22300	8990	16800	12400	11700	9170	e1560	1810
15	e645	820	928	2250	21800	8320	16800	12700	11800	8770	e1570	1850
16	e648	845	911	3250	20600	7830	16600	13100	11900	8580	e1530	1820
17	e650	856	872	4380	21500	7610	16100	13400	12300	8190	e1540	1800
18	651	857	831	4560	20900	7330	15600	13300	12600	7760	e1480	1870
19	678	864	789	5120	19700	7050	14800	13200	12600	7330	e1430	2060
20	682	819	752	5290	19500	6820	14100	13100	12300	6660	1520	2090
21	666	764	741	4990	18600	6640	13600	13100	12600	6080	1620	1970
22	734	742	712	4600	18900	6370	13500	13000	13000	5620	1630	1890
23	763	722	671	4060	18900	6110	13300	12700	13000	5330	1640	1820
24	716	697	632	3480	19400	5890	13000	12400	12900	5120	1710	1790
25	694	671	620	2900	19700	6020	12700	12200	12800	4650	1700	1790
26	688	702	600	2470	20100	7780	12500	12000	12500	4310	1630	1780
27	682	735	579	2230	20100	10700	12500	11700	12400	4210	1600	1990
28	690	771	568	2060	19200	14600	12400	e11600	12300	4030	1580	2050
29	680	785	546	1960	---	15900	12100	e11700	12000	3730	1590	2000
30	678	836	529	2270	---	15200	11900	11700	11900	3350	1620	2070
31	647	---	520	3580	---	14200	---	11700	---	2960	1700	---
TOTAL	20095	22532	26852	70363	504670	314140	419500	374900	356600	253450	54480	55270
MEAN	648	751	866	2270	18020	10130	13980	12090	11890	8176	1757	1842
MAX	763	864	1220	5290	24300	17000	16800	13400	13000	11800	2770	2090
MIN	484	657	520	514	4470	5890	11900	10900	10500	2960	1430	1680
AC-FT	39860	44690	53260	139600	1001000	623100	832100	743600	707300	502700	108100	109600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1998, BY WATER YEAR (WY)

MEAN	1333	925	2075	9611	15110	6927	5776	5377	4541	3186	1061	1047
MAX	2338	1027	4364	25600	23390	10130	13980	12090	11890	8176	1757	1842
(WY)	1996	1997	1997	1997	1997	1998	1998	1998	1998	1998	1998	1998
MIN	648	751	866	960	4299	4614	1353	1238	605	583	612	501
(WY)	1998	1998	1998	1996	1996	1997	1997	1997	1997	1997	1997	1997

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1996 - 1998	
ANNUAL TOTAL	1810289		2472852			
ANNUAL MEAN	4960		6775		4690	
HIGHEST ANNUAL MEAN					6775	1998
LOWEST ANNUAL MEAN					1992	1996
HIGHEST DAILY MEAN	37600	Jan 28	24300	Feb 11	37600	Jan 28 1997
LOWEST DAILY MEAN	432	Sep 18	484	Oct 1	432	Sep 18 1997
ANNUAL SEVEN-DAY MINIMUM	476	Aug 29	535	Dec 28	476	Aug 29 1997
INSTANTANEOUS PEAK FLOW			24600	Feb 11	38000	Jan 28 1997
INSTANTANEOUS PEAK STAGE			57.11	Feb 11	59.23	Jan 28 1997
ANNUAL RUNOFF (AC-FT)	3591000		4905000		3398000	
10 PERCENT EXCEEDS	21900		14600		13100	
50 PERCENT EXCEEDS	771		4210		1430	
90 PERCENT EXCEEDS	521		666		617	

e Estimated.

11274550 SAN JOAQUIN RIVER NEAR CROWS LANDING, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—January 1996 to current year.
SPECIFIC CONDUCTANCE: January 1996 to current year.
WATER TEMPERATURE: January 1996 to current year.

PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: January 1996 to current year.
WATER TEMPERATURE: January 1996 to current year.

INSTRUMENTATION.—Water-quality monitor since January 1996.

REMARKS.—Interruptions in record were due to malfunction of the recording instruments. Specific conductance and water temperature values are affected by irrigation return flow.

EXTREMES FOR PERIOD OF RECORD.—
SPECIFIC CONDUCTANCE: Maximum recorded, 1,660 microsiemens, Jan. 15, 1996, Dec. 25, 28, 1997, Jan. 3, 1998; minimum recorded 120 microsiemens, July 11, 12, 16, 1998.
WATER TEMPERATURE: Maximum recorded, 30.5°C, July 30, 31, Aug. 13, 14, 1996; minimum recorded, 6.0°C, Dec. 23, 27, 1997.

EXTREMES FOR CURRENT YEAR.—
SPECIFIC CONDUCTANCE: Maximum recorded, 1,660 microsiemens, Dec. 25, 28, Jan. 3; minimum recorded, 120 microsiemens, July 11, 12, 16.
WATER TEMPERATURE: Maximum recorded, 28.5°C, Aug. 5, 6; minimum recorded, 6.0°C, Dec. 23, 27.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	984	931	1280	1250	1260	1240	1650	1620	446	391	519	455
2	988	840	1270	1260	1290	1250	1650	1620	472	435	576	504
3	997	869	1290	1270	1280	1210	1660	1630	435	367	575	515
4	1100	997	1300	1280	1210	1100	1650	1600	376	317	640	525
5	1010	847	1310	1300	1110	1090	1610	1600	383	312	594	518
6	---	---	1320	1310	1140	1100	1620	1480	---	---	605	542
7	---	---	1330	1320	1180	1140	1480	1410	---	---	606	545
8	---	---	1340	1330	1200	1170	1560	1470	374	332	612	557
9	---	---	1350	1340	1220	1200	1560	1530	386	357	587	547
10	---	---	1360	1350	1240	1220	1570	1530	395	370	575	535
11	---	---	1370	1360	1240	1210	1540	1470	383	357	562	519
12	---	---	1390	1370	1300	1240	1470	1220	396	362	575	519
13	---	---	1400	1380	1340	1300	1220	888	408	377	560	508
14	---	---	1410	1400	1340	1320	888	693	416	368	556	510
15	---	---	1420	1410	1360	1320	693	539	433	393	598	544
16	---	---	1420	1420	1390	1360	589	410	475	425	571	529
17	---	---	1430	1090	1420	1390	410	350	467	414	569	518
18	1090	1050	1130	1090	1460	1420	403	352	452	415	578	525
19	1080	1010	1160	1130	1510	1460	412	355	465	418	607	562
20	1070	971	1190	1150	1530	1500	492	412	477	431	603	579
21	1080	1020	1260	1190	1560	1530	492	458	508	435	636	582
22	1030	914	1300	1260	1580	1560	538	470	511	475	648	625
23	974	909	1300	1290	1600	1570	600	538	499	420	644	620
24	991	943	1310	1290	1640	1600	676	600	486	450	653	394
25	1010	976	1360	1310	1660	1630	809	675	477	435	653	437
26	1070	1010	1380	1340	1630	1610	870	809	485	454	510	400
27	1110	1070	1340	1300	1640	1610	912	870	501	449	457	358
28	1140	1110	1300	1280	1660	1640	941	910	505	433	390	296
29	1180	1140	1280	1260	1650	1590	946	935	---	---	346	299
30	1210	1180	1280	1240	1630	1600	944	649	---	---	377	323
31	1250	1210	---	---	1640	1620	649	384	---	---	410	349
MONTH	---	---	1430	1090	1660	1090	1660	350	---	---	653	296

11274550 SAN JOAQUIN RIVER NEAR CROWS LANDING, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	457	379	281	238	283	209	208	145	387	340	622	573
2	465	398	293	236	254	187	201	146	416	366	594	550
3	471	368	268	225	229	183	196	145	424	375	598	565
4	450	386	280	235	209	177	216	151	427	394	593	554
5	409	334	266	230	218	180	194	144	427	370	565	514
6	384	315	263	224	205	177	190	140	411	370	538	499
7	458	351	291	230	208	173	185	136	515	403	502	462
8	470	350	294	240	214	179	189	134	613	496	481	458
9	426	333	275	234	245	185	192	131	610	520	493	466
10	445	344	---	---	269	202	178	127	---	---	523	483
11	426	336	---	---	235	186	184	120	---	---	555	514
12	373	319	---	---	245	185	179	120	---	---	567	523
13	347	283	279	211	233	188	170	127	---	---	532	484
14	348	287	328	233	218	167	154	136	---	---	493	452
15	350	302	349	257	201	162	150	132	---	---	475	454
16	344	309	339	253	194	160	140	120	---	---	460	427
17	363	312	307	231	206	159	136	121	---	---	459	431
18	363	311	300	235	218	163	141	126	---	---	444	395
19	361	286	297	227	202	159	143	121	---	---	397	373
20	349	276	285	204	203	156	169	141	762	676	379	346
21	372	275	275	200	172	144	190	156	685	618	412	353
22	338	274	272	196	199	144	216	184	646	614	458	399
23	339	265	263	203	201	145	221	183	635	578	471	441
24	355	267	271	208	194	143	238	196	596	563	451	398
25	345	259	272	209	187	141	264	225	589	569	450	417
26	323	246	250	200	197	142	273	236	604	571	453	387
27	323	248	253	194	190	147	237	181	613	586	387	322
28	324	240	---	---	197	148	212	193	610	591	376	320
29	317	239	---	---	205	153	242	212	620	588	406	374
30	303	239	262	193	201	150	353	241	632	604	397	353
31	---	---	263	207	---	---	360	329	613	576	---	---
MONTH	471	239	---	---	283	141	360	120	---	---	622	320

11274550 SAN JOAQUIN RIVER NEAR CROWS LANDING, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	13.0	12.0	21.0	19.5	21.0	20.0	22.5	22.0	25.5	24.0	25.0	23.5
2	13.0	10.5	19.5	19.0	21.5	20.5	22.5	22.0	26.0	24.5	25.5	24.0
3	13.0	12.0	19.5	18.5	21.0	19.5	22.5	22.0	27.0	25.5	25.5	24.5
4	13.0	11.5	20.0	19.5	20.0	19.0	23.5	22.5	28.0	26.0	25.0	24.5
5	14.0	12.0	19.5	18.0	20.5	20.0	23.5	23.0	28.5	27.0	25.5	24.0
6	15.0	13.5	18.0	17.5	21.0	20.5	24.0	23.5	28.5	27.5	25.5	24.5
7	15.0	14.0	18.5	18.0	20.5	19.0	24.5	23.5	28.0	27.0	26.0	24.5
8	16.0	14.5	19.0	18.5	20.5	19.0	24.5	24.0	27.0	25.5	25.5	24.5
9	16.5	15.5	19.0	18.5	21.5	20.5	24.0	23.5	26.5	24.5	24.5	23.0
10	17.0	16.0	---	---	22.0	21.5	23.5	22.0	---	---	23.0	21.0
11	16.0	14.0	---	---	21.5	20.5	22.5	21.5	---	---	22.0	20.5
12	14.5	13.5	---	---	21.0	20.0	23.0	22.0	---	---	22.5	20.5
13	14.0	13.5	15.5	14.5	21.0	20.0	24.0	23.0	---	---	23.0	21.5
14	14.0	13.0	16.5	15.5	22.5	21.0	24.0	23.5	---	---	23.5	22.0
15	14.5	13.5	18.0	16.5	23.5	22.5	24.5	23.5	---	---	23.5	22.5
16	15.0	14.0	18.0	17.0	24.0	22.0	24.5	24.0	---	---	23.5	22.0
17	16.0	15.0	17.5	16.5	22.0	20.5	25.0	24.5	---	---	23.0	22.0
18	17.0	15.5	18.0	17.0	23.0	21.5	25.5	25.0	---	---	22.0	20.5
19	17.5	16.5	19.5	18.0	23.5	23.0	27.0	25.5	---	---	21.0	20.0
20	18.5	17.5	19.0	18.5	23.5	23.0	27.5	26.5	24.0	23.0	20.5	19.5
21	19.5	18.0	19.5	18.5	23.0	22.0	27.5	26.0	23.5	22.0	21.0	19.5
22	20.5	19.5	20.0	19.0	22.5	22.0	26.5	25.0	24.0	22.0	21.0	19.5
23	20.0	19.0	20.5	19.5	22.5	22.0	25.0	23.5	24.0	22.5	20.5	19.5
24	19.0	18.5	20.5	19.5	23.0	22.0	23.5	22.0	24.5	22.5	20.5	19.5
25	18.5	17.0	20.5	19.5	23.0	22.5	24.0	22.5	24.5	23.0	20.5	19.0
26	17.5	16.5	19.5	19.0	22.5	22.0	26.0	24.0	24.0	22.5	20.0	18.5
27	19.0	17.5	19.0	18.0	23.0	22.0	26.5	25.0	24.0	22.0	19.0	17.5
28	20.5	19.0	---	---	23.5	22.5	26.5	25.5	24.0	22.5	18.5	17.5
29	21.5	20.0	---	---	23.0	22.5	26.0	25.0	24.5	22.5	19.5	17.5
30	22.0	21.0	18.5	17.0	23.0	22.5	25.5	24.5	25.0	23.0	19.5	18.5
31	---	---	20.0	18.5	---	---	25.0	23.5	25.0	23.0	---	---
MONTH	22.0	10.5	---	---	24.0	19.0	27.5	21.5	---	---	26.0	17.5

11274630 DEL PUERTO CREEK NEAR PATTERSON, CA

LOCATION.—Lat 37°29'12", long 121°12'29", in SE 1/4 NW 1/4 sec.21, T.5 S., R.7 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 1.0 mi upstream from California Aqueduct crossing and 4.4 mi west of Patterson.

DRAINAGE AREA.—72.6 mi^2.

PERIOD OF RECORD.—October 1958 to May 1965 (maximums only), June 1965 to current year.

REVISED RECORDS.—WSP 1930: 1959–60(M), drainage area.

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 200 ft above sea level, from topographic map. Prior to June 1965, crest-stage gage at site 1.0 mi downstream at different datum.

REMARKS.—Records good except for estimated daily discharges and those below 0.1 ft^3/s, which are poor. Some stock ponds and small diversions upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,270 ft^3/s, Feb. 3, 1998, gage height, 14.92, from rating curve extended above 3,400 ft^3/s on basis of computation of peak flow through culvert; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 50 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 19	0045	157	4.40	Feb. 19	1815	629	5.54
Feb. 3	0615	5,270	14.92	Mar. 24	0945	51	3.29
Feb. 7	1715	1,690	8.11				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	.03	6.9	2.4	39	143	38	20	13	6.6	2.2	.81
2	e.09	.02	4.1	2.3	350	129	34	22	13	6.2	1.9	.77
3	e.04	.02	3.1	2.2	1870	120	36	22	13	6.0	1.8	e.79
4	.04	.02	2.7	5.2	365	109	36	23	14	5.7	1.5	e.81
5	.05	.02	16	7.6	131	104	34	26	13	5.6	1.4	.83
6	.04	.03	18	5.1	372	105	33	27	13	5.4	1.3	.85
7	.06	.04	8.9	4.6	818	90	32	23	13	5.2	1.2	.84
8	.04	.03	28	4.3	664	88	31	21	13	4.9	1.2	.88
9	.03	.02	25	4.3	330	77	30	19	12	4.7	1.1	.95
10	.05	.02	11	6.8	207	71	30	17	11	4.7	1.1	1.0
11	.06	.36	6.7	6.8	167	66	33	18	11	4.4	e1.0	.96
12	.06	.90	5.4	25	169	64	31	25	10	4.3	.98	.93
13	.04	1.0	4.4	76	184	62	34	28	10	3.9	.93	.98
14	.04	1.0	4.7	30	229	59	32	22	9.2	3.8	.93	.92
15	.04	1.5	6.1	53	247	54	35	19	8.5	3.3	.93	.93
16	.04	1.9	5.2	78	246	52	30	17	7.4	3.1	.89	.91
17	.04	1.5	4.3	36	277	50	28	17	7.1	2.6	.89	.90
18	.04	1.2	4.0	34	204	48	27	16	7.0	2.5	.93	.88
19	.04	1.2	3.5	107	306	46	26	16	7.0	2.3	.95	e.89
20	.04	1.3	3.1	50	260	44	25	16	7.0	2.2	e1.0	.91
21	.03	1.3	3.1	33	334	43	25	16	7.0	e2.2	1.1	.93
22	.02	1.2	2.9	24	352	41	24	15	7.0	e2.2	1.1	1.0
23	.02	1.1	2.7	19	343	39	24	14	7.0	e2.3	1.1	e1.1
24	.02	1.1	2.5	16	294	48	25	14	7.0	2.3	1.0	e1.2
25	.02	1.1	2.4	14	235	43	23	14	7.0	2.2	e1.0	e1.3
26	.03	10	2.4	13	202	40	22	14	6.9	2.2	1.0	e1.4
27	.04	9.9	2.4	12	172	37	21	14	6.9	2.1	.99	e1.4
28	.04	4.5	2.4	11	155	38	21	14	6.9	1.9	.98	e1.5
29	.04	3.1	2.4	44	---	36	21	18	7.1	1.8	.94	e1.6
30	.03	7.7	2.4	47	---	34	20	17	6.8	1.9	.86	e1.7
31	.02	---	2.4	30	---	39	---	14	---	2.1	e.84	---
TOTAL	1.30	53.11	199.1	803.6	9522	2019	861	578	281.8	110.6	35.04	30.87
MEAN	.042	1.77	6.42	25.9	340	65.1	28.7	18.6	9.39	3.57	1.13	1.03
MAX	.11	10	28	107	1870	143	38	28	14	6.6	2.2	1.7
MIN	.02	.02	2.4	2.2	39	34	20	14	6.8	1.8	.84	.77
AC-FT	2.6	105	395	1590	18890	4000	1710	1150	559	219	70	61

e Estimated.

11274630 DEL PUERTO CREEK NEAR PATTERSON, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.094	1.02	3.69	20.4	36.7	26.9	9.88	4.30	2.02	.38	.10	.20
MAX	2.15	9.38	31.8	130	340	218	54.1	31.5	31.3	5.56	2.06	4.48
(WY)	1984	1983	1984	1997	1998	1983	1983	1983	1983	1983	1983	1990
MIN	.000	.000	.000	.000	.000	.062	.002	.000	.000	.000	.000	.000
(WY)	1966	1967	1969	1977	1977	1977	1990	1992	1966	1965	1965	1965

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1965 - 1998	
ANNUAL TOTAL	6020.14		14495.42			
ANNUAL MEAN	16.5		39.7		8.66	
HIGHEST ANNUAL MEAN					47.7	1983
LOWEST ANNUAL MEAN					.030	1977
HIGHEST DAILY MEAN	735	Jan 23	1870	Feb 3	1870	Feb 3 1998
LOWEST DAILY MEAN	.01	Jul 12	.02	Oct 22	.00	Jul 1 1965
ANNUAL SEVEN-DAY MINIMUM	.02	Oct 30	.02	Oct 30	.00	Jul 1 1965
INSTANTANEOUS PEAK FLOW			5270	Feb 3	5270	Feb 3 1998
INSTANTANEOUS PEAK STAGE			14.92	Feb 3	14.92	Feb 3 1998
ANNUAL RUNOFF (AC-FT)	11940		28750		6280	
10 PERCENT EXCEEDS	27		82		15	
50 PERCENT EXCEEDS	1.7		6.8		.12	
90 PERCENT EXCEEDS	.04		.06		.00	

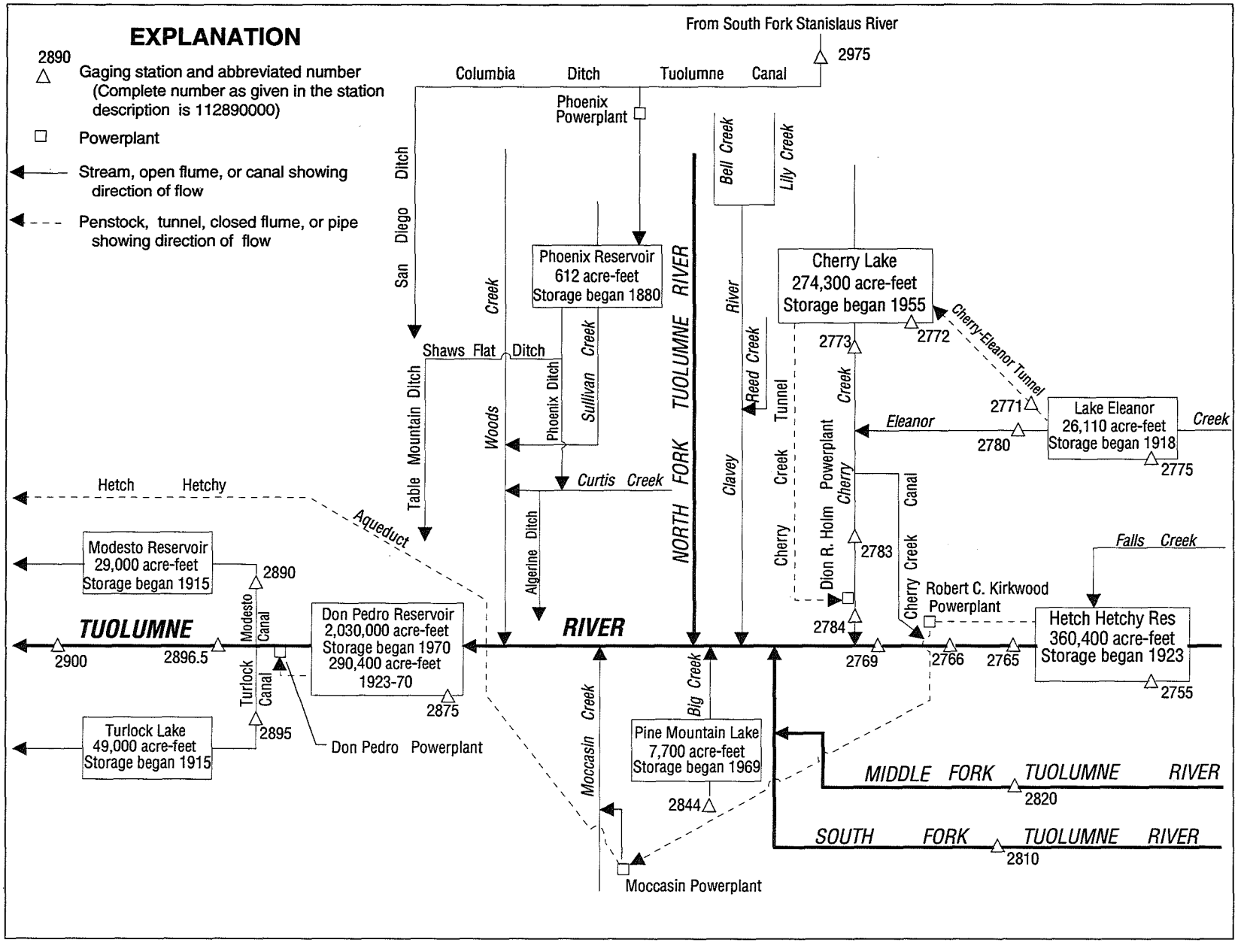


Figure 29. Diversions and storage in Tuolumne River Basin.

11275500 HETCH HETCHY RESERVOIR AT HETCH HETCHY, CA

LOCATION.—Lat 37°56'52", long 119°47'13", in NW 1/4 NW 1/4 sec.16, T.1 N., R.20 E., Tuolumne County, Hydrologic Unit 18040009, Yosemite National Park, near center of O'Shaughnessy Dam on Tuolumne River at Hetch Hetchy, 1.5 mi downstream from Falls Creek.

DRAINAGE AREA.—455 mi^2.

PERIOD OF RECORD.—May 1923 to current year. Prior to October 1930 monthend contents published in WSP 1315-A.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder installed March 1995. Datum of gage is 1.84 ft above sea level. Prior to Oct. 1, 1927, nonrecording gage at same site and datum. Oct. 1, 1927, to July 9, 1972, water-stage recorder at same site and datum. Prior to October 1974, datum published as at mean sea level.

REMARKS.—Reservoir is formed by concrete gravity-type dam, completed to crest gage height 3,726.5 ft in 1923 and raised to 3,812.0 ft in 1937. Storage began Apr. 6, 1923. Ten-foot drum gates were installed on spillway in 1949. Capacity, 360,400 acre-ft between gage heights 3,512.0 ft, bottom outlet, and 3,806.0 ft, top of drum-type spillway gates. Water is diverted from reservoir through tunnel to Robert C. Kirkwood Powerplant 15 mi downstream. Flow is diverted from powerplant tailrace in a closed conduit through Hetch Hetchy Aqueduct to Moccasin Powerplant with flows in excess of aqueduct capacity being spilled to the river. At Moccasin Creek Diversion Dam, water re-enters Hetch Hetchy Aqueduct and flows into Crystal Springs Reservoir, which supplies city of San Francisco. Surplus water is spilled into Don Pedro Reservoir (station 11287500) at Red Mountain Bar. Flow downriver is for State Department of Fish and Game and Raker Act requirements. Hetch Hetchy Reservoir is the main storage unit of Hetch Hetchy water-supply system for San Francisco. See schematic diagram of Tuolumne River Basin. Records, including extremes, represent contents at 2400 hours.

EXTREMES (AT 0800) FOR PERIOD OF RECORD.—Maximum contents, 369,100 acre-ft, Dec. 3, 1950, gage height, 3,810.4 ft; no contents at times in 1929–31.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 363,900 acre-ft, July 17, gage height, 3,807.78 ft; minimum, 111,600 acre-ft, Apr. 20, gage height, 3,652.9 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on table provided by San Francisco Public Utilities Commission, dated May 20, 1971)

3,512	0	3,530	3,300	3,600	57,400	3,680	146,200	3,760	273,700
3,513	51	3,540	8,700	3,620	76,500	3,700	175,000	3,780	310,400
3,515	154	3,560	22,900	3,640	97,000	3,720	206,000	3,800	348,600
3,520	410	3,580	39,500	3,660	119,900	3,740	238,900	3,810.4	369,100

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e301800	e274400	e251800	e227500	e196200	e155600	e136300	e138000	e195100	318200	360500	347000
2	e300700	e273700	e251200	e226500	e194600	e153900	e135300	e143200	e201300	326100	359800	346400
3	e299600	e272800	e250700	e225800	e195700	e152200	e133800	e148000	e203500	334600	359300	345800
4	e298700	e272100	e250000	e225300	e196400	e150500	e132800	e152500	e203300	342200	358600	345300
5	e297700	e271200	e249500	e224700	e195400	e148700	e131300	e156100	e202800	349600	358100	345000
6	e296800	e270300	e249200	e223900	e193700	e147000	e129900	e158400	e204100	356000	358300	344700
7	e295900	e269600	e249200	e222500	e192700	e145300	e128700	e160100	e209200	360100	358900	344400
8	e295000	e268900	e249200	e221500	e191600	e143400	e127200	e161700	e213400	362400	359500	343700
9	e294000	e268400	e248800	e220600	e190200	e141500	e125700	e163500	e217500	363300	359700	344000
10	e293100	e267800	e248300	e219700	e188800	e139900	e124100	e165700	e221100	362300	359200	344500
11	e292200	e266800	e248300	e219400	e187300	e138200	e122600	e167200	e224000	362300	358900	344300
12	e291500	e266100	e246900	e218900	e185500	e136800	e121600	e168300	e226300	362600	358600	344000
13	e290700	e265200	e246200	e218300	e184000	e135400	e120000	e169100	e229200	363100	358300	343500
14	e289600	e264500	e245400	e217600	e182600	e134200	e119000	e169100	e234000	362900	357900	342700
15	e288500	e263400	e244700	e217500	e181100	e132800	e117800	e168900	e242300	362400	357800	342300
16	e287800	e262700	e244000	e221200	e179300	e131500	e115800	e168800	e250400	363300	357500	341700
17	e286900	e261900	e243000	e221400	e177600	e131300	e114300	e169200	e257700	363900	357100	341100
18	e286400	e260800	e242000	e221100	e176100	e130800	e112900	e169100	264100	363400	356500	340500
19	e285600	e260300	e240900	e220900	e173800	e130400	e111700	e169400	269500	362700	355800	340300
20	e284700	e259400	e239900	e219700	e172500	e130300	e111600	171900	275000	362500	355200	339900
21	e284000	e258700	e238900	e218100	e170400	e130300	e112500	173000	281100	362700	354500	339000
22	e283100	e257800	e237900	e216500	e168600	e130300	e115200	173600	286900	361800	354200	338400
23	e282300	e257000	e236900	e214200	e166900	e131000	e118300	175300	291000	361500	353600	338000
24	e281300	e255900	e235900	e212700	e165100	e132800	e120800	177500	293300	362500	352900	337100
25	e280400	e254900	e235000	e210300	e163500	e137200	e121900	e179300	296400	362900	352100	336800
26	e279500	e254900	e233500	e208400	e161400	e138800	e123000	e183400	298900	362700	351300	336800
27	e278400	e254900	e232500	e206200	e159500	e139300	e123700	e184900	300300	362400	350500	336800
28	e277700	e254000	e231500	e204400	e157500	e139500	e125900	e186100	302400	362200	349700	336400
29	e276800	e253500	e230500	e202400	---	e139000	e128900	e187600	307300	362100	349100	335900
30	e276000	e253000	e229500	e200500	---	e138400	e132700	e189100	312800	361800	348500	335500
31	e275500	---	e229500	e198400	---	e137400	---	e190500	---	361200	347700	---
MAX	301800	274400	251800	227500	196400	155600	136300	190500	312800	363900	360500	347000
MIN	275500	253000	229500	198400	157500	130300	111600	138000	195100	318200	347700	335500
a	3761.0	3748.2	3734.4	3715.2	3688.1	3673.5	3670.0	3710.2	3781.30	3806.41	3799.54	3793.26
b	-27400	-22500	-23500	-31100	-40900	-20100	-4700	+57800	+122300	+48400	-13500	-12200

CAL YR 1997 b -31800
WTR YR 1998 b +32600

e Estimated.
a Gage height, in feet, at end of month.
b Change in contents, in acre-feet.

11276500 TUOLUMNE RIVER NEAR HETCH HETCHY, CA

LOCATION.—Lat 37°56'15", long 119°47'50", in SW 1/4 SE 1/4 sec.17, T.1 N., R.20 E., Tuolumne County, Hydrologic Unit 18040009, Yosemite National Park, on left bank 0.9 mi downstream from O'Shaughnessy Dam at Hetch Hetchy and 2.5 mi downstream from Falls Creek.

DRAINAGE AREA.—457 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1910 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "at Hetch Hetchy damsite, near Sequoia" 1910–14 and as "below Hetch Hetchy damsite, near Sequoia" 1915–18.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder, crest-stage gage with concrete control since May 5, 1970. Elevation of gage is 3,480 ft above sea level, from topographic map. Prior to Jan. 1, 1915, water-stage recorder at site 1 mi upstream, at damsite, at different datum. Jan. 1, 1915, to Sept. 3 1968, water-stage recorder, at same site and datum. Oct. 1, 1968, to May 4, 1970, nonrecording gage at site 0.5 mi upstream at different datum.

REMARKS.—Records good. Flow regulated by Hetch Hetchy Reservoir (station 11275500) 0.9 mi upstream beginning in April 1923. Flow diverted upstream from station through tunnel to Robert C. Kirkwood Powerplant and Hetch Hetchy Aqueduct beginning Apr. 26, 1967. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 16,400 ft^3/s, Jan. 3, 1997, gage height, 15.08 ft; no flow at times in 1968–70.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	60	52	51	121	141	154	204	446	3230	328	113
2	59	60	47	52	137	141	152	211	1750	2130	242	106
3	59	60	47	52	167	139	154	218	2740	1890	200	103
4	59	60	47	52	131	138	154	206	2900	1920	204	99
5	58	60	47	52	126	135	151	186	3010	1960	227	99
6	58	60	47	52	134	133	150	189	3040	2590	184	98
7	58	60	49	52	137	130	150	189	3110	4300	160	98
8	57	60	50	52	135	129	147	189	3170	5670	130	101
9	57	60	48	51	124	129	144	192	3220	6710	132	104
10	57	60	48	51	121	127	141	192	3280	7110	131	104
11	57	60	48	52	122	126	141	192	3310	5230	130	104
12	57	60	49	69	121	126	143	196	3340	4380	129	104
13	57	60	49	56	120	130	143	196	3380	4370	129	104
14	57	60	49	54	126	137	141	196	3450	4330	128	103
15	58	60	49	98	146	141	148	196	3980	3760	127	93
16	60	60	49	63	159	141	157	196	4350	3790	126	84
17	60	60	49	86	146	141	154	196	4420	4440	126	80
18	60	60	49	128	148	141	151	196	4470	4760	125	83
19	60	60	49	134	148	141	149	196	4310	4330	124	85
20	60	60	49	126	149	141	149	196	4230	3690	123	85
21	60	60	49	122	150	141	149	196	4300	3720	125	84
22	60	60	49	120	153	141	153	197	4380	3370	125	82
23	60	61	49	118	145	141	160	197	4440	2470	124	82
24	60	60	49	122	146	156	171	199	4910	1700	132	81
25	60	60	49	126	149	178	174	202	5220	1510	137	84
26	60	62	49	127	146	163	176	194	5400	1390	136	88
27	60	61	49	124	145	162	178	184	5440	1130	134	88
28	60	60	49	123	143	164	181	186	5460	988	132	83
29	60	59	49	124	---	162	186	188	4510	912	129	81
30	60	59	49	124	---	157	194	187	3850	826	128	80
31	60	---	50	122	---	154	---	195	---	580	126	---
TOTAL	1834	1802	1511	2735	3895	4426	4695	6057	113816	99186	4633	2783
MEAN	59.2	60.1	48.7	88.2	139	143	157	195	3794	3200	149	92.8
MAX	66	62	52	134	167	178	194	218	5460	7110	328	113
MIN	57	59	47	51	120	126	141	184	446	580	123	80
AC-FT	3640	3570	3000	5420	7730	8780	9310	12010	225800	196700	9190	5520

11276500 TUOLUMNE RIVER NEAR HETCH HETCHY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1966, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	534	516	544	528	519	620	971	2005	3149	1396	636	548
MAX	813	780	2281	1221	1556	1078	2803	5336	7859	4624	1320	1143
(WY)	1949	1939	1951	1965	1965	1916	1952	1919	1911	1911	1939	1939
MIN	13.8	1.52	1.83	2.51	34.2	11.2	507	493	480	279	27.1	5.83
(WY)	1925	1924	1924	1924	1924	1925	1937	1961	1924	1919	1924	1923

SUMMARY STATISTICS	WATER YEARS 1911 - 1966		
ANNUAL MEAN	997		
HIGHEST ANNUAL MEAN	1724		1911
LOWEST ANNUAL MEAN	516		1924
HIGHEST DAILY MEAN	11400	Jun 18	1911
LOWEST DAILY MEAN	1.3	Nov 2	1923
ANNUAL SEVEN-DAY MINIMUM	1.4	Nov 1	1923
INSTANTANEOUS PEAK FLOW	12900	Jun 1	1943
INSTANTANEOUS PEAK STAGE	13.90	Jun 1	1943
ANNUAL RUNOFF (AC-FT)	722600		
10 PERCENT EXCEEDS	2230		
50 PERCENT EXCEEDS	721		
90 PERCENT EXCEEDS	115		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	49.8	62.9	79.9	129	73.6	78.0	231	1105	1825	921	167	74.9
MAX	164	561	618	2105	305	489	1371	3327	5885	5149	1263	125
(WY)	1987	1987	1997	1997	1974	1983	1986	1969	1983	1983	1983	1989
MIN	31.1	33.6	34.1	33.5	31.7	29.9	33.6	49.0	71.2	68.2	66.7	31.6
(WY)	1969	1991	1991	1977	1971	1974	1981	1990	1977	1968	1974	1970

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1968 - 1998	
ANNUAL TOTAL	229071		247373			
ANNUAL MEAN	628		678		401	
HIGHEST ANNUAL MEAN					1433	1983
LOWEST ANNUAL MEAN					49.5	1977
HIGHEST DAILY MEAN	13800	Jan 3	7110	Jul 10	13800	Jan 3 1997
LOWEST DAILY MEAN	47	Dec 2	47	Dec 2	.00	Oct 3 1968
ANNUAL SEVEN-DAY MINIMUM	48	Dec 2	48	Dec 2	.00	Feb 20 1970
INSTANTANEOUS PEAK FLOW			7820	Jul 10	16400	Jan 3 1997
INSTANTANEOUS PEAK STAGE			12.24	Jul 10	15.08	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	454400		490700		290200	
10 PERCENT EXCEEDS	2290		3290		1040	
50 PERCENT EXCEEDS	128		130		64	
90 PERCENT EXCEEDS	57		52		35	

11276500 TUOLUMNE RIVER NEAR HETCH HETCHY, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: August 1987 to current year.

INSTRUMENTATION.—Temperature recorder since August 1987.

REMARKS.—Temperature recorder installed Aug. 13, 1987, located 0.6 mi upstream from gaging station on left bank at road bridge. Interruptions in record were due to malfunction of the recording instrument. Water temperature can be affected by releases from O'Shaughnessy Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum recorded, 19.5°C, July 12, 1996; minimum recorded, 4.0°C, Mar. 25, 1991.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum recorded, 17.0°C, July 26–29; minimum recorded, 6.0°C, several days in March and April.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	12.0	11.0	12.0	10.5	11.5	10.5	10.0	9.0	8.0	7.5	7.0	6.5
2	12.0	11.0	11.5	10.5	11.0	10.5	9.5	9.0	8.0	7.5	7.0	6.5
3	12.0	10.5	12.0	10.5	11.5	10.5	9.5	9.0	8.0	7.5	7.5	6.5
4	12.0	10.5	11.5	10.5	11.5	10.5	9.0	8.0	7.5	7.5	7.0	6.0
5	12.0	10.5	11.5	10.5	11.0	10.5	9.0	8.0	8.0	7.5	6.5	6.5
6	11.5	10.5	12.0	10.5	11.5	11.0	9.0	8.5	8.0	7.0	6.5	6.0
7	11.5	10.0	11.5	11.0	11.0	10.0	9.5	9.0	7.5	7.0	6.5	6.0
8	11.0	10.0	11.0	10.0	10.5	10.0	9.5	8.5	7.5	7.0	7.0	6.5
9	11.0	10.5	11.0	10.5	11.0	10.0	9.0	9.0	7.5	7.0	7.0	6.5
10	11.0	10.5	11.0	10.5	11.0	10.0	9.0	9.0	7.5	7.0	7.5	6.5
11	11.0	10.0	11.0	10.5	11.0	10.5	9.0	9.0	7.5	7.0	7.5	6.5
12	11.5	10.0	11.5	10.0	11.0	10.0	9.0	8.0	7.5	7.0	7.0	6.5
13	11.5	10.0	11.0	10.5	11.0	10.5	9.0	8.0	8.0	7.5	7.0	6.5
14	12.0	10.5	11.0	10.5	10.5	10.5	8.5	8.5	7.5	6.5	7.5	6.5
15	12.0	10.5	11.0	10.0	10.5	10.0	8.5	8.5	7.5	7.0	7.5	7.0
16	12.0	10.5	11.5	10.0	10.5	10.0	9.0	8.5	7.0	6.5	7.5	6.5
17	12.0	10.5	11.5	10.5	10.5	10.0	9.0	8.5	7.5	7.0	7.5	6.5
18	12.0	10.5	11.0	10.5	10.5	10.0	9.0	8.0	7.5	7.0	8.0	7.0
19	11.5	10.5	11.5	10.5	10.5	9.5	8.0	7.5	7.0	6.5	8.0	7.0
20	11.5	10.5	11.5	10.5	10.5	10.0	8.5	8.0	7.0	6.5	8.0	7.0
21	11.5	10.5	11.5	10.5	10.0	9.0	8.5	7.5	7.0	6.5	8.0	7.0
22	12.0	10.5	11.5	10.5	10.0	9.0	8.5	8.0	7.0	6.5	7.5	7.5
23	11.5	10.5	11.5	11.0	10.0	9.0	8.5	8.0	7.0	6.5	8.0	7.0
24	11.5	10.5	11.5	10.5	9.5	9.0	8.5	8.0	7.0	6.5	7.5	7.0
25	11.5	10.0	11.5	11.0	9.5	9.0	8.5	8.0	7.0	6.5	7.5	7.0
26	11.5	10.0	11.5	10.5	9.5	9.0	8.5	7.5	7.0	6.5	7.5	7.0
27	11.5	10.0	11.0	10.5	9.5	9.0	8.5	8.0	7.0	6.5	7.0	6.5
28	11.5	10.0	11.5	10.5	9.5	9.0	8.5	8.0	7.0	6.5	7.0	6.5
29	11.5	10.0	11.5	10.5	10.0	9.0	8.0	7.5	---	---	7.0	6.5
30	12.0	10.5	11.5	10.5	9.5	9.0	8.0	7.5	---	---	7.0	6.5
31	12.0	10.5	---	---	9.5	9.0	8.0	7.5	---	---	6.5	6.5
MONTH	12.0	10.0	12.0	10.0	11.5	9.0	10.0	7.5	8.0	6.5	8.0	6.0

11276500 TUOLUMNE RIVER NEAR HETCH HETCHY, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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

11276600 TUOLUMNE RIVER ABOVE EARLY INTAKE, NEAR MATHER, CA

LOCATION.—Lat 37°52'46", long 119°56'46", in SE 1/4 SW 1/4 sec.1, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 0.5 mi upstream from Early Intake, 2.4 mi upstream from Cherry Creek, and 5.0 mi west of Mather.

DRAINAGE AREA.—484 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1970 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 2,420 ft above sea level, from topographic map.

REMARKS.—Records good. Flow regulated by Hetch Hetchy Reservoir (station 11275500) 12 mi upstream. Flow diverted upstream from station through tunnel to Robert C. Kirkwood Powerplant and Hetch Hetchy Aqueduct. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 17,700 ft^3/s, Jan. 3, 1997, gage height, 22.98 ft; minimum daily, 25 ft^3/s, Oct. 11, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of June 1, 1943, reached a stage of 22.1 ft, discharge, 12,900 ft^3/s.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	67	68	61	199	272	311	271	373	3490	426	158
2	66	67	58	69	454	264	296	283	1440	2250	297	134
3	65	67	56	77	913	260	320	304	2800	1910	270	131
4	65	66	56	79	434	252	320	353	2960	1930	233	121
5	65	67	57	76	300	243	306	315	3120	1970	268	140
6	65	67	60	71	453	258	335	308	3240	2470	259	125
7	65	68	83	72	501	238	329	292	3310	4160	206	119
8	64	68	108	73	521	231	298	293	3330	6000	181	120
9	66	68	78	73	382	233	281	301	3380	7140	179	136
10	67	69	69	95	314	229	272	289	3450	7720	177	129
11	69	72	66	115	319	230	281	282	3510	5950	176	129
12	66	69	66	257	303	237	304	323	3530	4380	174	128
13	65	70	65	206	313	240	291	323	3590	4550	172	127
14	65	70	66	133	413	249	290	315	3630	4420	171	126
15	65	69	72	766	396	258	275	297	4100	3900	168	122
16	67	68	67	359	346	261	283	297	4570	3770	166	103
17	69	68	66	214	314	259	274	306	4630	4470	165	92
18	69	67	66	266	290	252	265	291	4670	4870	165	91
19	69	70	65	442	337	248	260	279	4530	4470	163	98
20	69	69	64	277	355	248	255	274	4400	3810	163	98
21	69	68	64	231	343	243	254	271	4470	3810	167	97
22	69	68	63	210	445	239	254	268	4560	3520	166	94
23	69	67	63	198	367	238	258	266	4590	2670	165	92
24	69	67	62	191	331	427	267	265	5080	1890	168	92
25	68	69	61	193	307	760	264	294	5580	1470	182	92
26	67	94	61	185	287	409	261	324	5780	1470	181	106
27	66	86	61	179	277	428	261	276	5790	1160	180	105
28	66	73	61	173	274	431	261	276	5850	996	178	102
29	67	70	61	254	---	354	262	348	4980	908	172	93
30	67	69	61	231	---	321	265	302	3950	837	170	93
31	67	---	61	200	---	319	---	282	---	648	167	---
TOTAL	2083	2097	2035	6026	10488	9131	8453	9168	119193	103009	6075	3393
MEAN	67.2	69.9	65.6	194	375	295	282	296	3973	3323	196	113
MAX	78	94	108	766	913	760	335	353	5850	7720	426	158
MIN	64	66	56	61	199	229	254	265	373	648	163	91
AC-FT	4130	4160	4040	11950	20800	18110	16770	18180	236400	204300	12050	6730

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1998, BY WATER YEAR (WY)

MEAN	52.2	76.3	115	199	147	161	285	1114	1830	956	181	83.9
MAX	142	552	801	2501	375	814	1564	3339	6142	5424	1319	132
(WY)	1987	1987	1997	1997	1998	1983	1983	1982	1983	1995	1983	1989
MIN	33.3	36.6	38.7	39.7	38.5	38.5	39.7	55.8	78.0	74.3	73.7	56.7
(WY)	1989	1991	1991	1977	1977	1977	1977	1992	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1971 - 1998	
ANNUAL TOTAL	255592		281151			
ANNUAL MEAN	700		770		434	
HIGHEST ANNUAL MEAN					1584	1983
LOWEST ANNUAL MEAN					53.5	1977
HIGHEST DAILY MEAN	14500	Jan 3	7720	Jul 10	14500	Jan 3 1997
LOWEST DAILY MEAN	56	Dec 3	56	Dec 3	25	Oct 11 1988
ANNUAL SEVEN-DAY MINIMUM	61	Nov 30	61	Nov 30	27	Oct 11 1988
INSTANTANEOUS PEAK FLOW			9280	Jul 10	17700	Jan 3 1997
INSTANTANEOUS PEAK STAGE			20.85	Jul 10	22.98	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	507000		557700		314400	
10 PERCENT EXCEEDS	2430		3500		1110	
50 PERCENT EXCEEDS	168		243		83	
90 PERCENT EXCEEDS	66		66		41	

11276600 TUOLUMNE RIVER ABOVE EARLY INTAKE, NEAR MATHER, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: August 1987 to current year.

INSTRUMENTATION.—Temperature recorder since Aug. 12, 1987.

REMARKS.—Temperature recorder located 600 ft upstream from gaging station on right bank. Water temperature is affected by regulation from O'Shaughnessy Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum recorded, 25.5°C, June 1, 1992; minimum recorded, 0.0°C, Dec. 24, 25, 1990.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum recorded, 21.0°C, August 12–16; minimum recorded, 2.5°C, Dec. 27.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.5	15.5	11.5	10.0	9.0	8.0	8.0	6.5	7.5	7.0	9.5	8.0
2	17.5	16.0	12.0	10.0	8.5	7.5	8.0	7.5	7.5	7.0	9.0	7.5
3	17.0	14.5	12.5	10.5	8.0	7.0	8.5	8.0	7.0	6.5	9.0	8.0
4	17.0	14.5	12.5	11.0	8.5	7.0	8.0	7.0	7.0	6.0	9.0	7.5
5	16.5	14.0	12.0	10.5	8.0	7.5	7.0	5.5	7.5	7.0	7.5	7.0
6	15.5	13.5	12.0	10.5	9.0	8.0	6.0	5.0	7.5	7.0	7.0	6.0
7	14.5	12.5	12.0	11.0	9.0	8.5	6.0	5.5	7.0	6.5	7.0	5.5
8	13.0	11.5	11.0	10.0	8.5	8.0	6.5	5.5	7.0	6.5	8.5	6.5
9	13.0	12.0	11.0	9.5	8.0	6.0	7.5	6.5	7.5	6.5	9.5	7.0
10	13.0	11.5	10.5	10.0	6.0	5.0	8.0	7.0	7.5	6.5	10.0	7.5
11	13.0	11.0	10.5	10.0	5.5	5.0	8.5	8.0	7.5	7.0	10.0	8.0
12	12.5	10.5	10.0	9.0	5.5	4.5	8.5	7.5	7.5	7.5	10.0	8.5
13	13.0	10.5	10.0	9.0	6.0	5.0	7.5	6.5	8.0	7.5	9.5	8.5
14	13.0	10.5	10.0	9.0	6.5	5.5	7.0	6.5	8.0	7.0	10.5	8.0
15	13.5	11.0	9.0	8.5	6.5	6.0	7.5	7.0	7.0	6.0	11.0	8.5
16	14.0	11.5	9.0	8.0	7.0	6.0	8.0	7.5	6.5	6.0	11.5	9.5
17	14.0	11.5	9.0	8.0	7.5	6.5	9.0	8.0	7.0	6.0	12.0	10.0
18	14.0	12.0	9.0	8.0	7.0	6.5	9.0	8.0	8.0	6.5	11.5	9.5
19	14.0	12.0	10.0	9.0	6.5	6.0	8.5	7.0	7.5	7.0	12.0	10.0
20	13.5	12.0	10.0	9.5	6.0	5.5	7.0	6.5	7.0	6.5	12.0	10.0
21	13.5	11.5	10.5	9.0	6.0	5.0	7.0	6.5	7.0	6.5	12.0	10.0
22	13.0	11.0	10.0	9.0	5.0	4.5	7.0	6.5	7.0	6.5	11.0	10.5
23	13.0	11.5	10.0	9.5	4.5	4.0	7.5	6.5	7.5	6.5	12.0	10.0
24	12.5	11.0	10.0	9.0	4.0	3.5	7.5	7.0	7.0	5.5	11.0	9.5
25	12.0	10.0	11.0	9.5	3.5	3.0	7.5	7.0	7.5	6.0	9.5	8.0
26	11.5	10.0	10.5	10.0	3.5	3.0	8.0	7.0	8.0	7.0	9.5	8.0
27	11.0	9.5	10.0	9.5	3.5	2.5	8.5	7.5	8.5	7.0	9.0	7.5
28	10.5	9.0	10.0	8.5	4.0	3.0	9.0	8.0	9.0	7.5	7.5	6.5
29	11.0	9.0	9.0	8.0	5.0	3.5	8.5	7.5	---	---	7.0	6.0
30	11.0	9.5	9.5	8.5	5.5	4.5	7.5	6.5	---	---	8.0	6.0
31	11.5	9.5	---	---	7.0	5.5	7.5	6.5	---	---	8.0	7.5
MONTH	17.5	9.0	12.5	8.0	9.0	2.5	9.0	5.0	9.0	5.5	12.0	5.5

11276600 TUOLUMNE RIVER ABOVE EARLY INTAKE, NEAR MATHER, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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

11276900 TUOLUMNE RIVER BELOW EARLY INTAKE, NEAR MATHER, CA

LOCATION.—Lat 37°52'54", long 119°58'09", in NW 1/4 SW 1/4 sec.2, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 0.6 mi upstream from Cherry Creek, 0.7 mi downstream from Robert C. Kirkwood Powerplant and Hetch Hetchy Aqueduct, and 6.3 mi west of Mather.

DRAINAGE AREA.—487 mi^2.

PERIOD OF RECORD.—October 1966 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 2,200 ft above sea level, from topographic map.

REMARKS.—Records good. Flow regulated by Hetch Hetchy Reservoir (station 11275500) 13 mi upstream and Robert C. Kirkwood Powerplant beginning Apr. 26, 1967. Water is diverted to Hetch Hetchy Aqueduct from the tailrace of the powerplant through a closed conduit. Flow in excess of aqueduct capacity is diverted to river. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 18,200 ft^3/s, Jan. 3, 1997, gage height, 12.33 ft; minimum daily, 12 ft^3/s, Nov. 28–30, 1976.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	64	59	60	884	874	896	832	1010	3850	1090	126
2	64	64	56	67	1120	913	876	857	1950	2600	974	111
3	63	66	55	76	1580	900	900	892	3020	2330	956	110
4	63	64	55	79	1100	875	909	955	3180	2360	899	102
5	62	64	55	76	978	859	895	919	3320	2380	844	117
6	62	65	57	70	1110	856	926	910	3270	2800	521	107
7	62	65	80	72	1160	848	913	898	3350	4260	237	101
8	62	65	112	72	1170	838	882	886	3520	5620	151	101
9	64	65	78	72	1040	851	853	889	3570	6500	174	114
10	66	66	68	94	986	820	841	898	3660	6930	347	110
11	67	70	65	116	998	812	850	905	3760	5680	210	109
12	64	67	65	446	984	818	873	963	3610	4570	242	108
13	63	67	64	514	1000	720	850	970	3380	4700	247	108
14	63	68	65	423	1090	844	846	961	3410	4620	232	107
15	63	67	71	1070	1070	749	827	942	3830	4160	188	105
16	65	66	66	594	1030	843	823	936	4550	3620	145	92
17	66	66	65	898	990	830	793	943	4860	4400	137	85
18	66	66	65	967	957	816	783	936	4810	4970	135	85
19	66	68	64	1090	992	807	785	918	4720	4710	133	90
20	66	68	64	952	1010	805	778	908	4660	4210	131	90
21	66	66	63	911	1000	816	755	901	4750	4140	134	89
22	66	66	62	883	1070	824	744	898	4790	3820	133	88
23	66	66	62	861	1030	827	764	765	4830	2990	131	87
24	66	102	61	857	1000	995	794	579	5140	2350	134	86
25	65	72	61	870	976	1340	809	856	5470	2050	144	86
26	64	83	60	865	926	991	816	958	5560	1960	143	96
27	65	82	60	862	916	1000	812	902	5570	1780	142	96
28	75	73	60	857	909	913	820	906	5660	1640	140	94
29	64	67	60	934	---	871	812	988	5050	1560	135	87
30	64	65	60	910	---	896	820	950	4350	1490	134	87
31	64	---	61	884	---	893	---	931	---	1310	131	---
TOTAL	2018	2063	1999	17502	29076	27044	25045	27952	122610	110360	9494	2974
MEAN	65.1	68.8	64.5	565	1038	872	835	902	4087	3560	306	99.1
MAX	76	102	112	1090	1580	1340	926	988	5660	6930	1090	126
MIN	62	64	55	60	884	720	744	579	1010	1310	131	85
AC-FT	4000	4090	3970	34720	57670	53640	49680	55440	243200	218900	18830	5900

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1998, BY WATER YEAR (WY)

MEAN	83.6	108	165	291	300	358	477	1341	2056	1067	245	122
MAX	247	313	1169	2917	1039	990	1694	3727	6260	5530	1726	370
(WY)	1984	1984	1997	1997	1996	1996	1983	1986	1983	1983	1983	1983
MIN	30.0	34.8	29.4	31.1	34.8	37.5	33.7	52.0	36.9	29.9	31.1	28.7
(WY)	1989	1988	1977	1977	1977	1977	1977	1992	1976	1976	1976	1976

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1968 - 1998	
ANNUAL TOTAL	380774		378137			
ANNUAL MEAN	1043		1036		551	
HIGHEST ANNUAL MEAN					1778	1983
LOWEST ANNUAL MEAN					49.2	1977
HIGHEST DAILY MEAN	14400	Jan 3	6930	Jul 10	14400	Jan 3 1997
LOWEST DAILY MEAN	55	Dec 3	55	Dec 3	12	Nov 28 1976
ANNUAL SEVEN-DAY MINIMUM	57	Nov 30	57	Nov 30	13	Nov 24 1976
INSTANTANEOUS PEAK FLOW			7470	Jul 10	18200	Jan 3 1997
INSTANTANEOUS PEAK STAGE			9.53	Jul 10	12.33	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	755300		750000		399500	
10 PERCENT EXCEEDS	3280		3590		1440	
50 PERCENT EXCEEDS	710		816		137	
90 PERCENT EXCEEDS	64		64		45	

11277100 LAKE ELEANOR DIVERSION TUNNEL TO CHERRY LAKE, NEAR HETCH HETCHY, CA

LOCATION.—Lat 37°58'47", long 119°52'51", in SW 1/4 SW 1/4 sec.34, T.2 N., R.19 E., Tuolumne County, Hydrologic Unit 18040009, Yosemite National Park, on west side of Lake Eleanor, 0.5 mi northwest of Eleanor Dam, and 6.0 mi northwest of Hetch Hetchy.

PERIOD OF RECORD.—July 1996 to August 1996, October 1996 to current year.

GAGE.—Ultrasonic-velocity meter system. Elevation of gage is 4,670 ft above sea level, from topographic map.

REMARKS.—Records fair. Instrumentation damaged by forest fire on Aug. 26, 1996. Flow is gravity flow or regulated by pump station at Cherry Lake (11277200). Diversion from Lake Eleanor (station 11277500) to Cherry Lake began in March 1960. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 550 ft^3/s, July 3, 1997 and many days in 1998; no flow at times each year.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	e.00	e550	e90	e234	e319	e550	e550	e550	e.00	e224	e.00
2	e.00	e.00	e548	e89	e231	e320	e550	e550	e550	e.00	e226	e.00
3	e.00	e.00	e510	e89	e254	e321	e550	e550	e550	e.00	e224	e.00
4	e.00	e.00	e488	e89	e274	e313	e550	e550	e550	e.00	e250	e.00
5	e.00	e.00	e459	e89	e284	e313	e550	e550	e550	e.00	e251	e.00
6	e.00	e.00	e425	e89	e293	e317	e550	e550	e550	e.00	e245	e.00
7	e.00	e.00	e401	e88	e297	e325	e550	e550	e528	e.00	e244	e.00
8	e.00	e.00	e371	e88	e306	e333	e550	e550	e488	e.00	e243	e.00
9	e.00	e.00	e339	e88	e310	e343	e550	e550	e462	e.00	e240	e.00
10	e.00	e.00	e308	e88	e315	e357	e550	e550	e424	e.00	e239	e.00
11	e.00	e.00	e274	e88	e315	e371	e550	e550	e398	e.00	e239	e.00
12	e.00	e.00	e.00	e89	e317	e387	e550	e550	e360	e.00	e238	e.00
13	e.00	e.00	e220	e.00	e319	e398	e550	e550	e313	e.00	e237	e.00
14	e.00	e.00	e187	e.00	e321	e373	e550	e550	e266	e.00	e235	e.00
15	e.00	e.00	e160	e.00	e325	e373	e550	e550	e194	e.00	e233	e.00
16	e.00	e.00	e142	e.00	e323	e379	e550	e550	e.00	e.00	e230	e.00
17	e.00	e.00	e327	e.00	e325	e438	e550	e550	e.00	e.00	e.00	e.00
18	e.00	e.00	e324	e.00	e325	e460	e550	e550	e.00	e.00	e.00	e.00
19	e.00	e.00	e323	e.00	e325	e483	e550	e550	e.00	e.00	e.00	e.00
20	e.00	e.00	e321	e.00	e327	e504	e275	e550	e.00	e.00	e.00	e.00
21	e.00	e.00	e320	e.00	e325	e525	e.00	e550	e.00	e.00	e.00	e.00
22	e.00	e.00	e319	e279	e329	e540	e.00	e550	e.00	e.00	e.00	e.00
23	e.00	e.00	e317	e271	e327	e550	e550	e550	e.00	e.00	e.00	e.00
24	e.00	e.00	e321	e264	e329	e550	e550	e550	e.00	e.00	e.00	e.00
25	e.00	e275	e134	e254	e333	e550	e550	e550	e.00	e.00	e.00	e.00
26	e.00	e550	e136	e243	e321	e550	e550	e550	e.00	e.00	e.00	e.00
27	e.00	e550	e135	e243	e325	e550	e550	e550	e.00	e.00	e.00	e.00
28	e.00	e550	e135	e234	e323	e550	e550	e550	e.00	e73	e.00	e.00
29	e.00	e550	e135	e234	---	e550	e550	e550	e.00	e74	e.00	e.00
30	e.00	e550	e135	e237	---	e550	e550	e550	e.00	e222	e.00	e.00
31	e.00	---	e89	e243	---	e550	---	e550	---	e223	e.00	---
TOTAL	0.00	3025.00	8853.00	3566.00	8632	13442	15125.00	17050	6733.00	592.00	3798.00	0.00
MEAN	.000	101	286	115	308	434	504	550	224	19.1	123	.000
MAX	.00	550	550	279	333	550	550	550	550	223	251	.00
MIN	.00	.00	.00	.00	231	313	.00	550	.00	.00	.00	.00
AC-FT	.00	6000	17560	7070	17120	26660	30000	33820	13350	1170	7530	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1998, BY WATER YEAR (WY)

MEAN	.000	50.4	231	57.5	154	347	445	439	209	61.3	61.3	.000
MAX	.000	101	286	115	308	434	504	550	224	104	123	.000
(WY)	1997	1998	1998	1998	1998	1998	1998	1998	1998	1997	1998	1997
MIN	.000	.000	176	.000	.000	261	385	327	193	19.1	.000	.000
(WY)	1997	1997	1997	1997	1997	1997	1997	1997	1997	1998	1997	1997

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1996 - 1998	
ANNUAL TOTAL	50667.00		80816.00			
ANNUAL MEAN	139		221		171	
HIGHEST ANNUAL MEAN					221	1998
LOWEST ANNUAL MEAN					121	1997
HIGHEST DAILY MEAN	550	Jul 3	550	Nov 26	550	Jul 3 1997
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Oct 1 1996
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Oct 1 1996
ANNUAL RUNOFF (AC-FT)	100500		160300		124100	
10 PERCENT EXCEEDS	386		550		550	
50 PERCENT EXCEEDS	.00		224		88	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated.

11277200 CHERRY LAKE NEAR HETCH HETCHY, CA

LOCATION.—Lat 37°58'33", long 119°54'47", in SE 1/4 NW 1/4 sec.5, T.1 N., R.19 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on upstream face of Cherry Valley Dam on Cherry Creek, 4.2 mi upstream from Eleanor Creek, 7 mi north of Early Intake, and 7.3 mi northwest of Hetch Hetchy.

DRAINAGE AREA.—117 mi^2.

PERIOD OF RECORD.—August 1956 to current year. Prior to October 1959, published as Lake Lloyd near Hetch Hetchy.

GAGE.—Water-stage recorder. Datum of gage is 2.42 ft above sea level. Prior to October 1974, datum published as at mean sea level.

REMARKS.—Reservoir is formed by a rockfill dam completed in 1956. Storage began in December 1955. Capacity, 274,300 acre-ft between gage heights 4,430 ft, bottom of sluice gates, and 4,703 ft, top of flashboard gates on concrete spillway. No dead storage. Installation of flashboard gates on top of concrete spillway completed in 1979. Water is released down Cherry Creek for power development and domestic supply as part of Hetch Hetchy system of city and county of San Francisco. Unmeasured diversion from Lake Eleanor (station 11277500) into Cherry Lake began Mar. 6, 1960. Diversion from Cherry Lake through tunnel to Dion R. Holm Powerplant near mouth of Cherry Creek began Aug. 1, 1960. See schematic diagram of Tuolumne River Basin. Records, including extremes, represent contents at 2400 hours.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 274,300 acre-ft, June 25–28, 1986, gage height, 4,703.0 ft; minimum since reservoir first filled, 7,660 acre-ft, Jan. 24, 1960, gage height, 4,502.1 ft. Reservoir drained for inspection in 1961, 1964, and 1989.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 274,200 acre-ft, July 21, gage height, 4,702.96 ft; minimum, 116,800 acre-ft, April 20, gage height, 4,603.58 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)

(Based on table provided by San Francisco Public Utilities Commission, dated May 15, 1971)

4,440	0	4,490	3,020	4,560	60,800	4,660	201,100
4,450	75	4,500	6,030	4,580	85,100	4,680	234,100
4,460	250	4,510	11,700	4,600	111,800	4,700	268,800
4,470	675	4,520	19,700	4,620	139,900	4,705	277,900
4,480	1,530	4,540	38,900	4,640	169,700		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	159600	125500	138800	158000	168100	150100	137200	130600	155700	252100	270200	254600
2	158500	125400	140200	158500	168100	149400	136400	133800	158300	254800	269900	253800
3	157100	125400	141500	159000	168900	148600	135500	137100	160100	257500	269400	253100
4	155900	125400	142600	159500	168400	147700	134300	140000	161300	260100	269400	252200
5	155400	125400	143900	159400	167600	146900	133300	141700	163500	262600	269600	251900
6	155300	125300	145500	159800	167300	146000	132200	142900	167700	265400	269300	251600
7	155300	125400	147300	159800	166700	144800	130900	143500	171400	268400	269000	250900
8	154700	125300	148500	159900	166200	143700	129700	144400	174900	271600	268800	250200
9	152800	125300	149600	160300	165500	142400	128500	146200	177800	273700	268500	250400
10	151000	125200	150500	161000	164800	141300	127400	147000	181300	273800	268000	250000
11	149200	125200	151200	161100	164000	140300	126300	147400	184400	273500	267500	250000
12	147300	125200	151900	162000	163300	139300	125100	147700	187500	273900	267000	249800
13	145300	125300	152500	162300	162500	138500	123900	147600	191500	273900	266500	249800
14	143300	125300	153100	162500	162100	137300	122600	147300	195600	273600	266400	249500
15	141300	125100	153600	164800	161600	136200	121300	146900	199700	273500	266400	249200
16	139300	125100	154100	166200	160900	135400	119900	146900	204200	273900	267000	248800
17	137400	125200	154600	167300	160000	134800	118700	146700	207500	274000	266400	248300
18	135400	125200	155100	168600	159200	134400	117700	146400	210800	273700	265800	248200
19	133500	125800	155400	168900	158500	133900	117000	146800	214200	273400	265000	247800
20	131500	126100	155800	169200	157700	133700	116800	147500	217700	273900	264200	247700
21	129500	126100	156200	169300	157000	133600	117100	148000	221400	274200	263200	247700
22	127600	126100	156400	169400	156200	133600	118500	148100	225000	273900	262500	247600
23	126600	126300	156300	169500	155500	134400	120500	148700	227800	273500	262400	247600
24	126500	126400	156600	169500	154600	138500	121300	149100	230400	273500	261200	247400
25	126500	127600	156300	169500	153600	139900	121500	151600	234000	273300	260200	247400
26	126400	130200	156400	169200	152800	140200	121800	152200	237300	272900	259200	248000
27	126400	132300	156500	169200	151800	140400	122500	152000	240100	272600	258100	248400
28	126400	134100	156700	168900	151000	140200	123800	152200	242900	272200	257100	248600
29	126200	135800	157000	168500		139600	125500	152200	246300	271700	256300	248700
30	125900	137400	157300	167900	---	138900	127900	152100	249500	271400	256300	249100
31	125500	---	157700	167700	---	138200	---	153400	---	270800	255500	---
MAX	159600	137400	157700	169500	168900	150100	137200	153400	249500	274200	270200	254600
MIN	125500	125100	138800	158000	151000	133600	116800	130600	155700	252100	255500	247400
a	4609.85	4618.25	4632.07	4638.71	4627.55	4618.80	4611.55	4629.17	4689.01	4701.11	4692.43	4688.77
b	-35100	+11900	+20300	+10000	-16700	-12800	-10300	+25500	+96100	+21300	-15300	-6400

CAL YR 1997 b -27500
WTR YR 1998 b +88500

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

11277300 CHERRY CREEK BELOW CHERRY VALLEY DAM, NEAR HETCH HETCHY, CA

LOCATION.—Lat 37°58'04", long 119°54'59", in SE 1/4 SW 1/4 sec.5, T.1 N., R.19 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on right bank 0.7 mi downstream from Cherry Valley Dam, 3.5 mi upstream from Eleanor Creek, 6.7 mi north of Early Intake, and 7.2 mi west of Hetch Hetchy.

DRAINAGE AREA.—118 mi^2.

PERIOD OF RECORD.—November 1956 to current year.

GAGE.—Water-stage recorder. Datum of gage is 4,337.08 ft above sea level (levels by city and county of San Francisco).

REMARKS.—Records good except for estimated daily discharges which are fair. Flow regulated by Cherry Lake (station 11277200) 0.7 mi upstream. Diversion between Lake Eleanor (station 11277500) and Cherry Lake began Mar. 6, 1960. Diversion from Cherry Lake to Dion R. Holm Powerplant began Aug. 1, 1960. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,120 ft^3/s, May 16, 1996, from rating curve extended above 4,000 ft^3/s, gage height, 11.15 ft; minimum daily, 0.77 ft^3/s, Dec. 1–4, 1988.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e8.5	5.5	5.5	5.8	8.8	10	13	8.0	7.6	11	16	13
2	e5.0	5.5	5.5	6.3	15	9.9	12	8.1	7.6	13	15	14
3	e6.0	5.5	5.5	6.3	23	9.7	13	8.5	7.6	13	15	15
4	e6.0	5.5	5.5	6.2	15	9.7	12	9.4	7.6	14	15	15
5	e6.0	5.5	5.7	6.2	13	9.8	12	8.9	7.6	14	15	16
6	e6.0	5.5	6.0	6.2	17	10	12	8.8	9.0	14	15	15
7	e6.0	5.5	7.3	6.2	17	9.6	12	8.4	8.9	14	15	16
8	e6.0	5.5	6.7	6.2	18	9.6	12	8.3	8.3	14	15	16
9	5.5	5.5	6.3	6.4	15	9.6	11	8.3	8.4	384	15	16
10	5.5	5.6	6.2	7.0	14	9.4	11	8.0	8.8	1340	15	16
11	5.5	5.7	6.0	7.5	14	9.4	11	8.1	8.8	1290	15	16
12	5.5	5.5	5.8	11	14	9.3	11	8.6	8.4	560	15	16
13	5.5	5.6	5.8	9.1	13	9.5	11	8.5	8.4	811	15	16
14	5.5	5.5	6.1	8.5	17	9.5	11	8.1	8.2	782	15	16
15	5.4	5.6	6.2	24	15	9.5	11	8.0	8.0	512	15	16
16	5.3	5.5	6.2	13	13	9.7	10	8.3	8.0	552	15	16
17	5.4	5.5	6.2	11	13	9.7	10	8.3	8.0	e780	15	16
18	5.5	5.6	6.2	12	12	9.7	10	8.0	8.0	e880	15	16
19	5.5	5.9	6.0	12	13	9.7	9.7	8.0	8.0	e730	15	16
20	5.5	5.5	5.8	10	12	9.7	9.6	8.0	8.0	e260	15	16
21	5.5	5.5	5.8	9.4	12	9.5	9.3	7.9	8.0	e350	15	16
22	5.4	5.5	5.8	8.9	12	9.3	9.1	7.6	8.0	e410	15	16
23	5.4	5.5	5.8	8.4	12	9.3	9.2	7.6	8.0	e305	15	16
24	5.5	5.5	5.8	8.1	11	18	9.2	7.6	8.0	100	14	16
25	5.5	5.5	5.8	8.0	11	22	8.7	7.9	8.0	42	14	19
26	5.5	6.5	5.8	8.0	10	16	8.4	8.0	8.0	17	14	26
27	5.5	5.9	5.8	8.0	10	17	8.4	7.7	8.0	16	14	25
28	5.5	5.8	5.8	8.0	10	15	8.2	7.9	8.0	15	14	25
29	5.5	5.6	5.8	9.1	---	14	8.0	8.0	7.9	15	14	26
30	5.5	5.5	5.8	8.4	---	13	8.0	8.0	7.5	16	14	26
31	5.5	---	5.8	8.0	---	13	---	7.8	---	16	14	---
TOTAL	175.4	167.8	184.3	273.2	379.8	349.1	310.8	252.6	242.6	10290	458	523
MEAN	5.66	5.59	5.95	8.81	13.6	11.3	10.4	8.15	8.09	332	14.8	17.4
MAX	8.5	6.5	7.3	24	23	22	13	9.4	9.0	1340	16	26
MIN	5.0	5.5	5.5	5.8	8.8	9.3	8.0	7.6	7.5	11	14	13
AC-FT	348	333	366	542	753	692	616	501	481	20410	908	1040

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998, BY WATER YEAR (WY)

MEAN	10.2	12.4	11.6	20.8	11.9	15.6	14.2	40.4	132	109	28.5	22.1
MAX	166	135	155	352	134	171	167	359	1198	993	176	139
(WY)	1978	1977	1977	1997	1977	1969	1969	1978	1983	1983	1977	1977
MIN	4.61	3.99	4.82	4.71	4.51	4.45	4.58	4.40	4.46	10.9	12.0	10.6
(WY)	1973	1970	1970	1961	1961	1972	1990	1973	1973	1978	1961	1976

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998	
ANNUAL TOTAL	14128.0		13606.6			
ANNUAL MEAN	38.7		37.3		35.7	
HIGHEST ANNUAL MEAN					195	1983
LOWEST ANNUAL MEAN					7.08	1961
HIGHEST DAILY MEAN	1350	Jan 3	1340	Jul 10	2830	Jul 7 1995
LOWEST DAILY MEAN	5.0	Oct 2	5.0	Oct 2	.77	Dec 1 1988
ANNUAL SEVEN-DAY MINIMUM	5.4	Oct 11	5.4	Oct 11	.79	Nov 28 1988
INSTANTANEOUS PEAK FLOW			1500	Jul 10	5120	May 16 1996
INSTANTANEOUS PEAK STAGE			8.15	Jul 10	11.15	May 16 1996
ANNUAL RUNOFF (AC-FT)	28020		26990		25900	
10 PERCENT EXCEEDS	15		16		17	
50 PERCENT EXCEEDS	9.3		9.1		7.4	
90 PERCENT EXCEEDS	5.5		5.5		5.0	

e Estimated.

11277500 LAKE ELEANOR NEAR HETCH HETCHY, CA

LOCATION.—Lat 37°58'27", long 119°52'48", in SE 1/4 NW 1/4 sec.3, T.1 N., R.19 E., Tuolumne County, Hydrologic Unit 18040009, Yosemite National Park, 710 ft from left bank on upstream side of dam on Eleanor Creek, 1.7 mi upstream from Miguel Creek, and 5.5 mi northwest of Hetch Hetchy.

DRAINAGE AREA.—78.1 mi^2.

PERIOD OF RECORD.—June 1918 to current year. Prior to October 1930, published in WSP 1315-A. Published as "near Sequoia" 1919–20.

REVISED RECORDS.—WSP 1445: 1938(M). WSP 1930: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 2.39 ft above sea level. Prior to Oct. 1, 1927, nonrecording gage on upstream side of dam at same site and datum.

REMARKS.—Reservoir is formed by multiple-arch dam completed in 1918; storage began June 23, 1918. Capacity, 26,110 acre-ft between gage heights 4,620.9 ft, natural outlet of old lake, and 4,660.0 ft, top of 5-ft flashboards. Records, including extremes, represent usable contents at 2400 hours. See schematic diagram of Tuolumne River Basin.

COOPERATION.—Periodic observations of gage height were provided by city and county of San Francisco.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 31,000 acre-ft, Dec. 11, 1937, from capacity table then in use, gage height, 4,663.4 ft, maximum gage height, 4,663.87 ft, Jan. 1, 1997; no usable contents at times in many years.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 27,000 acre-ft, July 20–22, gage height, 4,661.0 ft; minimum, 1,430 acre ft, Mar. 16, gage height, 4,627.90 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on table provided by San Francisco Public Utilities Commission, dated May 1941)

4,608	0	4,620	36	4,628	1,480	4,646	13,500
4,610	6	4,622	49	4,630	2,450	4,650	17,000
4,612	12	4,624	92	4,632	3,580	4,655	21,500
4,614	18	4,625	211	4,635	5,270	4,660	26,100
4,616	24	4,626	550	4,638	7,330	4,663	29,100
4,618	27	4,627	996	4,642	10,300		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20900	19700	10800	1780	10800	4990	e16200	26100	26000	e25600	26500	21700
2	20800	19600	9650	1870	11400	4640	e16400	26000	25900	e25400	26300	21600
3	20800	19600	8580	1930	12600	4330	e16500	25400	25600	e25400	26100	21600
4	20700	19600	7630	1980	12700	4010	e16600	25100	25500	e25400	25900	21500
5	20700	19500	6800	1980	12600	3710	e17100	24500	25700	e25300	25700	21600
6	20700	19500	6170	1960	12700	3460	e17100	23800	26400	e25300	25400	21500
7	20600	19400	5850	1950	12600	e3350	e17200	23200	25900	e25400	25100	21500
8	20600	19400	5350	1930	12500	e3180	17500	23500	25900	e25500	24800	21500
9	20600	19300	4860	2000	12200	e3010	17700	24700	25800	e25500	24500	21700
10	20600	19300	4390	2150	12000	e2950	18000	25200	26000	e25400	24100	21800
11	20600	19300	3990	2340	11700	e2950	18400	25400	26100	e25400	23800	21900
12	20500	19300	3630	3350	11400	e3010	18600	25300	26000	e25200	23400	21900
13	20500	19300	3340	3870	11100	e3120	18900	25200	26100	e25200	23000	21900
14	20500	19200	3150	4370	11000	e2010	19100	25000	26200	e25200	22700	21900
15	20400	19200	3010	7420	10700	e1620	19300	24900	26300	e25100	22400	21900
16	20400	19200	2830	9290	10300	e1430	19400	25000	26300	e25100	22000	21900
17	20300	19200	2660	10700	9930	e3010	19600	25000	26100	e25700	21900	21900
18	20300	19200	2530	11900	9510	e3630	20000	25000	26000	e26200	21900	21900
19	20300	19200	2430	12700	9180	e4360	20600	25300	26000	e26600	21900	21900
20	20200	19200	2350	13200	8770	e5150	21700	25500	26000	e27000	21900	21900
21	20200	19200	2270	13300	8450	e6090	23400	25500	26000	e27000	21900	21900
22	20100	19200	2180	13100	8100	e6850	25100	25400	25900	e27000	21900	21800
23	20100	19200	2120	12800	7740	e7810	25800	25500	25700	26900	21900	21800
24	20000	19100	2070	12500	7310	e9740	25600	25600	e25700	26900	21900	21800
25	20000	18100	2000	12300	6860	e13300	25500	26200	e25700	26800	21900	21800
26	19900	16900	1950	12000	6370	e14500	25500	25600	e25700	26800	21800	21900
27	19900	15600	1900	11800	5870	e15200	25800	25100	e25700	26700	21800	22100
28	19900	14300	1860	11500	5390	e15600	26000	25200	e25600	26800	21800	22200
29	19800	13000	1810	11400	---	e15900	26100	25300	e25600	26800	21800	22300
30	19800	11900	1770	11200	---	e16000	26300	25200	e25700	26800	21700	22400
31	19700	---	1770	11000	---	e16100	---	25500	---	26700	21700	---
MAX	20900	19700	10800	13300	12700	16100	26300	26200	26400	27000	26500	22400
MIN	19700	11900	1770	1780	5390	1430	16200	23200	25500	25100	21700	21500
a	4653.03	4643.99	4628.60	4642.88	4635.18	4649.0	4660.17	4659.35	4659.5	4660.54	4655.20	4656.02
b	-1200	-7800	-10100	+9230	-5610	+10700	+10200	-800	+200	+1000	-5000	+700

CAL YR 1997 b -25400
WTR YR 1998 b +1500

e Estimated.

a Gage height, in feet, at end of month.

b Change in contents, in acre-feet.

11278000 ELEANOR CREEK NEAR HETCH HETCHY, CA

LOCATION.—Lat 37°58'09", long 119°52'52", in NW 1/4 SW 1/4 sec.3, T.1 N., R.19 E., Tuolumne County, Hydrologic Unit 18040009, Yosemite National Park, on right bank 0.5 mi downstream from Lake Eleanor Dam, 1.1 mi upstream from Miguel Creek, and 5.5 mi northwest of Hetch Hetchy.

DRAINAGE AREA.—78.4 mi^2.

PERIOD OF RECORD.—October 1909 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "near Sequoia" 1910–18.

REVISED RECORDS.—WSP 1315-A: 1923(M). WSP 1930: Drainage area.

GAGE.—Water-stage recorder and concrete control which was destroyed January 1997. Elevation of gage is 4,500 ft above sea level, from topographic map. November 1909 to November 1915, nonrecording gage and water-stage recorder at site 1 mi upstream at different datum. Prior to Jan. 2, 1997, datum of gage 10 ft lower.

REMARKS.—Records fair. Flow regulated by Lake Eleanor (station 11277500) 0.5 mi upstream beginning in 1918. Since March 1960, water is diverted at Lake Eleanor via Lake Eleanor diversion tunnel (station 11277100) to Cherry Lake (station 11277200). See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 19,500 ft^3/s, Jan. 2, 1997, gage height, 26.74 ft, from rating curve extended above 2,600 ft^3/s on basis of slope-area measurements at gage heights 9.94 and 12.24 ft, datum then in use; no flow at times in 1910, 1930–31, 1933, 1956.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e10	10	9.4	9.6	14	12	15	1410	881	1020	28	22
2	e10	11	9.2	9.9	18	12	15	1410	1230	962	28	21
3	e10	11	9.0	9.9	19	12	16	1090	1100	963	27	21
4	e10	11	10	9.9	15	12	16	941	847	935	26	21
5	e10	11	11	9.9	14	11	15	792	948	897	25	22
6	e10	11	11	9.8	17	12	16	734	1320	836	24	21
7	e10	10	12	10	16	11	16	695	1770	862	23	21
8	e10	10	12	9.9	16	12	15	329	1420	892	22	21
9	e10	10	11	10	15	11	15	77	1370	900	22	21
10	e10	11	11	11	14	11	15	158	1380	865	21	21
11	e10	11	10	12	15	11	16	252	1510	809	20	21
12	e10	10	10	15	15	11	16	305	1470	653	20	21
13	e10	11	9.9	12	14	216	16	253	1520	588	19	21
14	e10	10	9.9	13	16	359	16	179	1530	589	18	21
15	e10	10	9.9	20	14	340	17	129	1640	443	18	21
16	e10	11	9.7	14	14	151	18	129	1770	332	17	13
17	e10	11	9.7	14	14	11	18	137	1640	251	17	6.8
18	e10	11	9.6	15	13	11	18	130	1440	230	17	7.4
19	e10	11	9.3	14	14	11	18	172	1480	234	18	7.4
20	e10	11	9.0	14	14	12	18	337	1450	350	19	7.2
21	e10	11	9.0	13	13	13	26	432	1440	459	19	6.9
22	e10	11	9.0	13	13	13	81	323	1430	463	19	9.6
23	e10	11	9.3	13	14	13	508	383	1310	462	19	11
24	e10	11	9.6	13	13	19	585	387	1150	372	19	9.6
25	e10	11	9.6	13	13	19	418	893	1170	310	21	9.0
26	e10	11	9.7	13	13	16	356	1130	1190	308	22	9.2
27	e10	10	9.7	13	13	16	497	685	1090	250	22	9.2
28	e10	10	9.7	13	12	16	724	402	1050	98	22	9.1
29	e10	9.8	9.6	14	---	15	897	390	1060	29	21	9.1
30	10	9.6	9.5	13	---	15	1030	376	1100	29	22	9.2
31	10	---	9.6	13	---	15	---	449	---	29	22	---
TOTAL	310	318.4	306.9	386.9	405	1419	5447	15509	39706	16420	657	450.7
MEAN	10.0	10.6	9.90	12.5	14.5	45.8	182	500	1324	530	21.2	15.0
MAX	10	11	12	20	19	359	1030	1410	1770	1020	28	22
MIN	10	9.6	9.0	9.6	12	11	15	77	847	29	17	6.8
AC-FT	615	632	609	767	803	2810	10800	30760	78760	32570	1300	894

e Estimated.

11278000 ELEANOR CREEK NEAR HETCH HETCHY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 1917, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	25.2	62.5	97.2	208	175	320	610	742	640	190	25.7	8.81
MAX	157	287	358	485	307	516	806	945	1207	484	65.4	25.8
(WY)	1917	1910	1910	1914	1911	1916	1916	1914	1911	1911	1911	1913
MIN	.081	.19	12.4	33.6	66.6	116	264	536	230	36.5	6.06	2.10
(WY)	1916	1916	1912	1913	1912	1912	1912	1913	1910	1910	1910	1915

SUMMARY STATISTICS	WATER YEARS 1910 - 1917		
ANNUAL MEAN	259		
HIGHEST ANNUAL MEAN	386		1911
LOWEST ANNUAL MEAN	144		1913
HIGHEST DAILY MEAN	5000	Jan 30	1911
LOWEST DAILY MEAN	.00	Sep 8	1910
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 8	1910
ANNUAL RUNOFF (AC-FT)	187300		
10 PERCENT EXCEEDS	770		
50 PERCENT EXCEEDS	109		
90 PERCENT EXCEEDS	5.0		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 1959, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	76.0	75.5	105	94.5	134	224	460	696	409	144	98.9	103
MAX	145	931	826	490	454	708	794	1330	981	471	204	179
(WY)	1929	1951	1951	1956	1945	1928	1936	1952	1922	1958	1958	1933
MIN	3.68	1.65	1.74	2.50	6.64	1.70	44.5	138	46.0	20.7	16.4	4.16
(WY)	1932	1928	1932	1957	1930	1920	1924	1931	1924	1959	1959	1931

SUMMARY STATISTICS	WATER YEARS 1920 - 1959		
ANNUAL MEAN	218		
HIGHEST ANNUAL MEAN	356		1938
LOWEST ANNUAL MEAN	86.2		1924
HIGHEST DAILY MEAN	8270	Nov 19	1950
LOWEST DAILY MEAN	.00	Oct 15	1930
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 15	1930
INSTANTANEOUS PEAK FLOW	11700	Nov 19	1950
INSTANTANEOUS PEAK STAGE	14.95	Nov 19	1950
ANNUAL RUNOFF (AC-FT)	158200		
10 PERCENT EXCEEDS	584		
50 PERCENT EXCEEDS	113		
90 PERCENT EXCEEDS	8.5		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	18.0	38.5	34.0	74.5	58.9	25.4	89.9	281	351	121	26.0	26.3
MAX	333	565	314	1416	586	198	916	1029	1605	677	176	137
(WY)	1983	1984	1984	1997	1986	1986	1982	1995	1983	1983	1983	1982
MIN	.15	2.55	4.30	4.27	3.76	4.15	4.44	4.81	4.72	12.0	2.43	.40
(WY)	1967	1978	1964	1978	1974	1972	1973	1972	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998	
ANNUAL TOTAL	87844.1		81335.9			
ANNUAL MEAN	241		223		95.3	
HIGHEST ANNUAL MEAN					320	1983
LOWEST ANNUAL MEAN					4.73	1977
HIGHEST DAILY MEAN	15100	Jan 2	1770	Jun 7	15100	Jan 2 1997
LOWEST DAILY MEAN	8.4	Mar 4	6.8	Sep 17	.10	Oct 9 1966
ANNUAL SEVEN-DAY MINIMUM	8.4	Mar 4	8.0	Sep 17	.10	Oct 24 1966
INSTANTANEOUS PEAK FLOW			2060	Jun 7	19500	Jan 2 1997
INSTANTANEOUS PEAK STAGE			14.89	Jun 7	26.74	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	174200		161300		69070	
10 PERCENT EXCEEDS	493		944		287	
50 PERCENT EXCEEDS	20		15		7.9	
90 PERCENT EXCEEDS	10		9.9		4.6	

11278300 CHERRY CREEK NEAR EARLY INTAKE, CA

LOCATION.—Lat 37°53'40", long 119°57'42", in NW 1/4 SE 1/4 sec.35, T.1 N., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on right bank 1.2 mi upstream from mouth, 1.3 mi north of Early Intake, and 10.3 mi southwest of Hetch Hetchy.

DRAINAGE AREA.—226 mi^2.

PERIOD OF RECORD.—May 1956 to current year.

GAGE.—Water-stage recorder. Datum of gage is 2,272.00 ft above sea level (levels by city and county of San Francisco).

REMARKS.—Records good. Flow regulated by Cherry Lake (station 11277200) 10 mi upstream and Lake Eleanor (station 11277500) 9.8 mi upstream. Diversion from Cherry Lake to Dion R. Holm Powerplant began Aug. 1, 1960. Water is returned to creek 1.2 mi below station. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 33,200 ft^3/s, Jan. 2, 1997, gage height, 18.46 ft, from rating curve extended above 4,600 ft^3/s; minimum daily, 0.30 ft^3/s, Apr. 5, 6, 1964.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	17	19	20	101	182	228	1420	857	1020	68	45
2	19	18	18	26	293	182	213	1440	1220	942	66	45
3	18	18	18	29	562	185	231	1150	1120	940	64	47
4	18	17	18	29	283	182	223	1030	872	911	62	48
5	18	17	20	25	208	172	220	888	936	879	60	86
6	18	17	23	23	305	173	222	817	1340	827	58	63
7	18	18	44	24	310	154	231	771	1910	834	56	51
8	18	18	46	24	311	153	218	515	1440	864	55	50
9	19	18	27	25	246	161	211	222	1380	1200	53	54
10	21	18	24	46	223	163	212	288	1390	2150	52	50
11	21	21	23	57	227	172	220	391	1580	2060	51	50
12	19	19	22	173	224	181	224	475	1520	1110	50	49
13	19	19	21	134	232	338	215	440	1580	1320	48	49
14	18	19	22	85	292	554	211	358	1580	1330	47	48
15	18	19	26	566	259	551	203	283	1710	970	45	48
16	18	19	22	305	217	410	201	273	1850	888	45	46
17	18	19	22	190	203	203	203	296	1710	990	44	29
18	18	18	21	175	187	191	202	274	1440	1140	44	29
19	18	21	21	252	212	188	200	295	1480	1040	44	29
20	18	20	20	159	206	185	197	439	1450	574	46	29
21	18	19	20	127	206	176	193	536	1430	799	46	29
22	18	19	20	112	219	169	247	450	1420	948	45	29
23	18	19	20	103	214	163	603	479	1300	813	45	33
24	18	18	20	97	196	430	752	483	1150	552	45	33
25	18	19	20	90	181	611	596	876	1150	413	45	31
26	18	35	20	84	174	339	522	1180	1170	382	48	35
27	18	27	20	81	171	365	615	768	1100	341	48	34
28	17	21	20	77	174	313	795	539	1040	199	48	33
29	17	20	20	122	---	256	940	528	1060	71	47	33
30	17	19	20	112	---	238	1070	518	1100	70	47	35
31	17	---	20	97	---	242	---	531	---	69	46	---
TOTAL	569	586	697	3469	6636	7982	10618	18953	40285	26646	1568	1270
MEAN	18.4	19.5	22.5	112	237	257	354	611	1343	860	50.6	42.3
MAX	23	35	46	566	562	611	1070	1440	1910	2150	68	86
MIN	17	17	18	20	101	153	193	222	857	69	44	29
AC-FT	1130	1160	1380	6880	13160	15830	21060	37590	79910	52850	3110	2520

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998, BY WATER YEAR (WY)

MEAN	24.1	53.0	63.7	158	138	116	164	346	484	222	41.9	38.9
MAX	341	610	390	2566	922	399	1298	1342	2845	1699	229	164
(WY)	1983	1984	1965	1997	1986	1983	1982	1982	1983	1983	1983	1978
MIN	2.95	4.85	3.07	3.27	2.70	2.71	2.12	2.16	2.88	9.55	10.3	11.0
(WY)	1961	1961	1977	1977	1977	1977	1977	1977	1977	1977	1963	1962

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998	
ANNUAL TOTAL	135070		119279			
ANNUAL MEAN	370		327		154	
HIGHEST ANNUAL MEAN					634	1983
LOWEST ANNUAL MEAN					8.08	1977
HIGHEST DAILY MEAN	25200	Jan 2	2150	Jul 10	25200	Jan 2 1997
LOWEST DAILY MEAN	17	Oct 28	17	Oct 28	.30	Apr 5 1964
ANNUAL SEVEN-DAY MINIMUM	17	Oct 26	17	Oct 26	1.4	Oct 6 1970
INSTANTANEOUS PEAK FLOW			2320	Jul 10	33200	Jan 2 1997
INSTANTANEOUS PEAK STAGE			7.32	Jul 10	18.46	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	267900		236600		111500	
10 PERCENT EXCEEDS	558		1080		389	
50 PERCENT EXCEEDS	62		154		32	
90 PERCENT EXCEEDS	18		18		9.9	

11278400 CHERRY CREEK BELOW DION R. HOLM POWERPLANT, NEAR MATHER, CA

LOCATION.—Lat 37°53'24", long 119°58'08", in NE 1/4 NW 1/4 sec.2, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 600 ft upstream from mouth, 0.5 mi downstream from powerplant, 0.8 mi northwest of Early Intake, and 6.2 mi west of Mather.

DRAINAGE AREA.—234 mi^2.

PERIOD OF RECORD.—March 1963 to current year. Prior to October 1965, published as "below Cherry Powerhouse, near Mather."

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 2,133.50 ft above sea level (levels by city and county of San Francisco).

REMARKS.—Records good except those for estimated daily discharges, which are fair. Flow regulated by Cherry Lake (station 11277200) 11 mi upstream and Lake Eleanor (station 11277500) 10 mi upstream. Flow diverted, at times, into Cherry Creek Canal (station 11278200) 2 mi upstream from station for domestic use and to supplement flow to Hetch Hetchy Aqueduct. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 33,500 ft^3/s, Jan. 2, 1997, gage height, unknown, on basis of combined peak flow for Cherry Creek near Early Intake (station 11278300) and Dion R. Holm Powerplant, maximum gage height (from floodmark) 25.4 ft, Jan. 3, 1997, caused by backwater from Tuolumne River; minimum daily, 1.6 ft^3/s, June 4, 1977.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e545	26	23	63	438	1230	1280	2530	1880	2040	978	428
2	e555	26	60	37	1340	1230	1270	2570	2300	1970	796	480
3	747	63	23	53	1640	1230	1280	2230	2180	1950	957	512
4	613	25	22	52	1340	1230	1270	2100	1900	1910	597	514
5	e285	25	24	235	1260	1220	1270	1920	1970	1880	511	334
6	e25	26	27	33	1360	1220	1270	1840	2270	1830	733	262
7	e25	27	42	165	1350	1200	1280	1790	3000	1830	662	274
8	e320	27	44	163	1360	1200	1270	1550	2530	1870	626	486
9	1080	27	30	99	1290	1210	1260	1260	2470	2320	597	303
10	1090	27	28	84	1270	1210	1260	1320	2480	3490	650	344
11	1090	43	27	362	1270	1220	1270	1420	2710	3340	645	226
12	1090	28	26	315	1270	1230	1270	1510	2630	2270	651	224
13	1100	27	25	172	1280	1260	1270	1480	2700	2500	661	45
14	1100	27	26	278	1350	1590	1260	1390	2710	2520	495	223
15	1100	78	30	865	1170	1580	1250	1320	2810	2090	440	222
16	1100	37	26	324	1270	1450	1250	1310	2960	1820	44	219
17	1100	24	26	208	1250	1250	1250	1330	2820	2080	511	210
18	1100	22	27	150	1230	1240	1250	1310	2550	2270	441	206
19	1100	25	25	544	1260	1240	1250	1330	2580	2160	482	211
20	1100	26	25	236	1260	1230	1240	1470	2560	1630	483	33
21	1100	61	24	476	1260	1220	1240	1560	2550	1870	608	32
22	1100	22	24	576	1280	1220	1280	1470	2530	2040	364	31
23	e545	22	140	586	1270	1210	1630	1500	2390	1890	69	34
24	e32	22	28	568	1250	1500	1780	1510	2230	1600	685	35
25	e27	23	224	575	1240	1700	1620	1920	2210	1470	595	33
26	e31	48	80	670	1230	1390	1560	2260	2270	1430	562	36
27	e27	32	29	560	1220	1420	1640	1790	2190	1390	555	34
28	e37	24	29	699	1220	1370	1810	1570	2110	1260	616	34
29	e140	23	75	911	---	1310	1980	1560	2130	1160	367	41
30	e130	23	42	940	---	1290	2140	1550	2150	1140	53	36
31	173	---	29	629	---	1290	---	1420	---	1140	466	---
TOTAL	19607	936	1310	11628	35228	40390	41950	51090	72770	60160	16900	6102
MEAN	632	31.2	42.3	375	1258	1303	1398	1648	2426	1941	545	203
MAX	1100	78	224	940	1640	1700	2140	2570	3000	3490	978	514
MIN	25	22	22	33	438	1200	1240	1260	1880	1140	44	31
AC-FT	38890	1860	2600	23060	69870	80110	83210	101300	144300	119300	33520	12100

e Estimated.

11278400 CHERRY CREEK BELOW DION R. HOLM POWERPLANT, NEAR MATHER, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	427	446	476	661	671	714	823	1058	1179	788	527	474
MAX	962	1445	1394	3266	1528	1351	2199	2310	3728	2643	1161	765
(WY)	1983	1984	1984	1997	1986	1997	1982	1996	1983	1983	1983	1997
MIN	12.7	14.9	5.56	4.22	3.84	3.71	2.63	2.67	4.08	11.3	25.8	20.4
(WY)	1994	1994	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1963 - 1998	
ANNUAL TOTAL	387678		358071			
ANNUAL MEAN	1062		981		687	
HIGHEST ANNUAL MEAN					1437	1983
LOWEST ANNUAL MEAN					47.9	1977
HIGHEST DAILY MEAN	25500	Jan 2	3490	Jul 10	25500	Jan 2 1997
LOWEST DAILY MEAN	22	Nov 18	22	Nov 18	1.6	Jun 4 1977
ANNUAL SEVEN-DAY MINIMUM	25	Dec 16	25	Dec 16	2.1	Apr 21 1977
INSTANTANEOUS PEAK FLOW			3870	Jul 10	33500	Jan 2 1997
INSTANTANEOUS PEAK STAGE			11.22	Jul 10	25.40	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	769000		710200		497500	
10 PERCENT EXCEEDS	1640		2150		1270	
50 PERCENT EXCEEDS	928		1100		620	
90 PERCENT EXCEEDS	27		27		75	

11281000 SOUTH FORK TUOLUMNE RIVER NEAR OAKLAND RECREATION CAMP, CA

LOCATION.—Lat 37°49'18", long 120°00'43", in SE 1/4 SE 1/4 sec.29, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on right bank 75 ft downstream from highway bridge on Big Oak Flat Road, 0.5 mi southwest of Oakland Recreation Camp, and 0.6 mi upstream from Middle Tuolumne River.

DRAINAGE AREA.—87.0 mi^2.

PERIOD OF RECORD.—March 1923 to September 1996, October 1997 to September 1998.

REVISED RECORDS.—WSP 1445: 1923, 1925(M), 1926–28, 1929–30(M), 1932(M), 1935–36(M), 1937–38, 1943(M), 1945(M). WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 2,800 ft above sea level, from topographic map. Prior to Nov. 22, 1931, at site 50 ft upstream at same datum. Nov. 22, 1931, to July 19, 1977, at present site, datum 1.00 ft higher.

REMARKS.—Records good, except for estimated daily discharges, which are fair. No diversion upstream from station. One small recreation reservoir (capacity unknown) is located approximately 3.5 mi upstream. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 11,900 ft^3/s, Dec. 23, 1955, gage height, 11.9 ft, from floodmarks, present datum, from rating curve extended above 3,300 ft^3/s, on basis of slope-area measurements, at gage heights 9.08 and 11.9 ft; minimum daily, 0.4 ft^3/s, Aug. 22, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Jan. 3, 1997, reached a stage of 12.51 ft, from floodmarks, discharge, 12,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 900 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 15	1715	1,070	6.63	Mar. 24	2245	1,820	7.71
Feb. 3	0915	1,960	7.88				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	15	23	30	120	197	336	517	516	385	75	35
2	14	15	22	40	698	196	308	543	548	371	72	35
3	14	15	21	53	1340	195	344	640	511	356	68	34
4	14	15	20	44	514	189	327	708	463	327	65	35
5	14	15	22	34	301	182	316	597	480	318	62	39
6	14	15	39	33	506	185	314	540	577	309	58	49
7	14	15	92	36	597	164	309	480	678	299	58	42
8	14	15	73	35	619	163	295	511	573	291	56	40
9	15	15	39	39	384	166	291	522	564	275	55	48
10	16	15	32	90	297	166	293	483	573	252	54	55
11	17	18	30	76	274	175	329	433	641	229	53	43
12	18	19	28	167	259	185	325	468	590	213	52	42
13	18	19	28	143	257	192	305	435	674	204	50	41
14	18	20	29	91	403	191	290	393	635	189	50	40
15	18	20	36	590	345	198	278	367	679	173	51	38
16	18	21	30	373	269	220	267	372	663	166	51	36
17	18	19	29	206	245	236	264	358	590	159	48	35
18	17	19	29	e240	213	236	270	340	582	151	47	34
19	17	22	27	e290	260	247	291	358	580	138	46	34
20	16	23	26	e160	260	256	328	387	562	132	46	34
21	16	20	25	e125	294	258	378	373	539	122	45	34
22	15	19	23	e110	409	263	432	341	509	118	44	34
23	15	18	23	98	329	304	463	366	468	118	42	34
24	15	18	23	91	281	688	386	362	454	107	41	35
25	15	18	23	82	238	1240	355	529	462	102	41	36
26	14	63	22	77	214	639	345	544	432	94	40	37
27	14	44	23	73	200	561	388	412	429	89	39	47
28	14	30	24	71	194	497	431	402	431	85	39	42
29	15	26	26	145	---	409	461	471	430	82	38	40
30	16	24	32	123	---	367	491	428	412	79	37	42
31	16	---	32	99	---	364	---	437	---	77	36	---
TOTAL	483	630	951	3864	10320	9529	10210	14117	16245	6010	1559	1170
MEAN	15.6	21.0	30.7	125	369	307	340	455	542	194	50.3	39.0
MAX	18	63	92	590	1340	1240	491	708	679	385	75	55
MIN	14	15	20	30	120	163	264	340	412	77	36	34
AC-FT	958	1250	1890	7660	20470	18900	20250	28000	32220	11920	3090	2320

e Estimated.

11281000 SOUTH FORK TUOLUMNE RIVER NEAR OAKLAND RECREATION CAMP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	12.6	31.0	62.2	91.0	137	167	226	257	134	36.1	13.6	10.2
MAX	50.6	229	516	652	725	750	730	760	656	242	57.9	39.0
(WY)	1983	1951	1956	1969	1986	1983	1982	1969	1983	1983	1983	1998
MIN	1.53	3.66	6.04	8.05	8.74	11.1	15.7	26.0	12.7	2.56	.48	.75
(WY)	1978	1930	1991	1977	1991	1977	1977	1977	1976	1931	1977	1977

SUMMARY STATISTICS	FOR 1998 WATER YEAR			WATER YEARS 1923 - 1998	
ANNUAL TOTAL	75088				
ANNUAL MEAN	206			97.6	
HIGHEST ANNUAL MEAN				330	1983
LOWEST ANNUAL MEAN				9.25	1977
HIGHEST DAILY MEAN	1340	Feb	3	6960	Dec 23 1955
LOWEST DAILY MEAN	14	Oct	1	.40	Aug 22 1934
ANNUAL SEVEN-DAY MINIMUM	14	Oct	1	.45	Aug 12 1977
INSTANTANEOUS PEAK FLOW	1960	Feb	3	11900	Dec 23 1955
INSTANTANEOUS PEAK STAGE	7.88	Feb	3	11.90	Dec 23 1955
ANNUAL RUNOFF (AC-FT)	148900			70710	
10 PERCENT EXCEEDS	515			265	
50 PERCENT EXCEEDS	118			31	
90 PERCENT EXCEEDS	18			6.1	

11282000 MIDDLE TUOLUMNE RIVER AT OAKLAND RECREATION CAMP, CA

LOCATION.—Lat 37°49'42", long 120°00'38", in SW 1/4 NW 1/4 sec.28, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 1,000 ft downstream from Oakland Recreation Camp, 0.8 mi upstream from South Fork Tuolumne River, and 2.7 mi east of Buck Meadows Post Office.

DRAINAGE AREA.—73.5 mi^2.

PERIOD OF RECORD.—October 1916 to September 1996, October 1997 to September 1998. Monthly discharge only for October and November 1916, published in WSP 1315-A. Published as Middle Fork of Tuolumne River near Buck Meadows 1917–32 and as "near Buck Meadows" 1933–40.

REVISED RECORDS.—WSP 1395: 1919(M), 1938(M), 1951(P). WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 2,800 ft above sea level, from topographic map.

REMARKS.—Records good except for estimated daily discharges which are fair. No regulation but small diversion upstream from station for irrigation. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 4,920 ft^3/s, Dec. 23, 1955, gage height, 11.75 ft from flood profile, 11.05 ft from floodmarks inside gage well, from rating curve extended above 3,000 ft^3/s on basis of slope-area measurement of peak flow; no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Jan. 3, 1997, reached a stage of 13.02 ft, from floodmarks, discharge, 6,300 ft^3/s.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 380 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 15	1615	757	5.47	Mar. 25	0430	1,100	6.33
Feb. 3	0900	1,140	6.44	June 16	0200	1,100	6.32

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	6.2	15	e13	69	119	208	502	569	546	72	22
2	4.4	6.0	14	e20	307	118	190	530	612	532	68	21
3	4.6	5.9	13	e30	717	117	213	578	556	515	63	20
4	4.6	5.8	13	e25	267	114	200	665	491	477	59	21
5	4.5	5.7	14	e18	166	111	192	553	553	462	55	26
6	4.4	5.7	20	e16	301	115	191	468	671	442	51	35
7	4.5	5.9	45	e15	331	101	196	417	827	437	49	35
8	4.8	6.2	39	e15	324	103	181	476	674	431	46	29
9	5.5	6.3	24	e15	203	102	174	493	680	408	44	39
10	7.1	6.8	20	e50	161	103	175	447	702	369	42	56
11	9.9	9.8	20	e35	150	108	190	395	783	328	41	35
12	9.3	10	18	e100	146	114	189	402	740	305	39	32
13	8.9	9.9	18	e80	146	117	180	364	866	290	38	28
14	8.3	11	18	e50	219	115	176	332	839	264	39	26
15	8.2	10	20	e400	180	120	168	318	885	235	70	25
16	7.2	9.7	18	269	147	134	161	330	890	221	51	24
17	6.7	8.6	18	150	137	145	160	312	792	211	40	22
18	7.1	8.8	18	164	123	146	164	306	757	196	37	21
19	6.3	10	17	184	155	153	178	340	770	176	36	20
20	6.1	13	17	110	149	165	206	378	754	162	35	20
21	6.0	13	15	84	182	172	254	364	737	154	34	19
22	5.9	11	13	74	234	178	311	337	705	143	33	19
23	5.9	11	14	68	186	206	345	378	652	141	31	20
24	5.9	11	e13	63	156	466	287	370	629	125	30	21
25	5.9	11	e11	57	140	748	261	529	655	115	28	23
26	5.9	32	e10	55	127	357	267	541	596	102	28	26
27	5.9	28	e10	51	120	327	311	407	587	95	27	38
28	6.0	20	e10	50	117	299	364	406	600	89	26	34
29	6.1	18	e10	99	---	247	405	456	598	82	25	30
30	6.1	17	e15	76	---	222	458	415	580	78	24	32
31	6.1	---	e14	65	---	221	---	453	---	76	23	---
TOTAL	192.4	333.3	534	2501	5660	5863	6955	13262	20750	8207	1284	819
MEAN	6.21	11.1	17.2	80.7	202	189	232	428	692	265	41.4	27.3
MAX	9.9	32	45	400	717	748	458	665	890	546	72	56
MIN	4.3	5.7	10	13	69	101	160	306	491	76	23	19
AC-FT	382	661	1060	4960	11230	11630	13800	26310	41160	16280	2550	1620

e Estimated.

11282000 MIDDLE TUOLUMNE RIVER AT OAKLAND RECREATION CAMP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.23	15.2	32.0	43.3	67.5	87.8	156	295	193	39.3	7.12	3.60
MAX	36.9	181	318	248	345	353	476	747	875	361	60.7	27.3
(WY)	1983	1951	1951	1956	1986	1995	1982	1969	1983	1983	1983	1998
MIN	.083	.80	1.71	2.49	3.51	4.87	16.9	24.0	10.7	.85	.011	.000
(WY)	1978	1930	1991	1991	1991	1977	1977	1977	1992	1924	1977	1931

SUMMARY STATISTICS	FOR 1998 WATER YEAR		WATER YEARS 1917 - 1998	
ANNUAL TOTAL	66360.7			
ANNUAL MEAN	182		78.6	
HIGHEST ANNUAL MEAN			246	1983
LOWEST ANNUAL MEAN			6.49	1977
HIGHEST DAILY MEAN	890	Jun 16	4000	Dec 23 1955
LOWEST DAILY MEAN	4.3	Oct 1	.00	Sep 4 1924
ANNUAL SEVEN-DAY MINIMUM	4.5	Oct 1	.00	Sep 4 1924
INSTANTANEOUS PEAK FLOW	1140	Feb 3	4920	Dec 23 1955
INSTANTANEOUS PEAK STAGE	6.44	Feb 3	11.75	Dec 23 1955
ANNUAL RUNOFF (AC-FT)	131600		56970	
10 PERCENT EXCEEDS	536		238	
50 PERCENT EXCEEDS	99		19	
90 PERCENT EXCEEDS	7.8		1.7	

11284400 BIG CREEK ABOVE WHITES GULCH, NEAR GROVELAND, CA

LOCATION.—Lat 37°50'31", long 120°11'02", in SW 1/4 NE 1/4 sec.23, T.1 S., R.16 E., Tuolumne County, Hydrologic Unit 18040009, on right bank 500 ft upstream from Whites Gulch and 2.5 mi east of Groveland.

DRAINAGE AREA.—16.4 mi^2.

PERIOD OF RECORD.—May 1969 to current year.

REVISED RECORDS.—WDR CA-85-3: 1980–84(P).

GAGE.—Water-stage recorder. Datum of gage is 2,561.79 ft above sea level (levels by Boise-Cascade Corp.).

REMARKS.—Records good except flows below 1 ft^3/s, which are fair, and flows below 0.10 ft^3/s, which are poor. No storage or diversion from station. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,620 ft^3/s, Feb. 17, 1986, gage height, 7.03 ft, from rating curve extended above 1,100 ft^3/s on basis of slope-area measurement at gage height 6.51 ft; no flow for many days in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Jan. 6, 1965, reached a stage of 6.4 ft from floodmarks, discharge, 1,850 ft^3/s.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 150 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 15	1500	966	5.44	Feb. 14	1945	343	4.23
Jan. 29	1445	165	3.69	Feb. 21	2015	336	4.21
Feb. 3	0945	1,450	6.03	Mar. 25	0215	1,170	5.72
Feb. 7	1800	503	4.60				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.75	16	19	58	13	9.1	3.9	.85	.06
2	.00	.00	.00	1.4	326	17	45	14	8.7	3.9	.83	.04
3	.00	.00	.00	2.2	800	15	103	16	8.8	3.8	.76	.03
4	.00	.00	.00	3.0	178	13	89	31	8.9	3.7	.70	.02
5	.00	.00	.00	3.1	48	14	71	19	8.4	3.5	.67	.03
6	.00	.00	.07	2.0	112	28	60	18	8.3	3.2	e.62	.51
7	.00	.00	5.9	2.3	345	18	67	16	13	3.1	e.56	.45
8	.00	.00	7.3	2.3	236	14	51	15	10	2.9	e.49	.38
9	.00	.00	3.2	2.2	151	13	42	14	9.3	2.8	e.44	.41
10	.00	.00	1.8	7.5	65	12	36	13	8.8	2.8	e.36	.37
11	.00	.00	1.3	9.2	46	11	40	13	17	2.5	.37	.35
12	.00	.00	1.1	87	43	10	38	21	12	2.5	.35	.30
13	.00	.00	.96	40	35	12	39	18	9.5	2.4	.32	.27
14	.00	.00	.91	13	154	13	45	15	8.3	2.2	.28	.24
15	.00	.00	.96	409	142	10	40	14	7.5	2.1	.25	.21
16	.00	.00	.94	112	56	9.9	34	14	7.2	1.9	.23	.19
17	.00	.00	.90	24	43	9.7	30	14	6.8	1.8	.21	.17
18	.00	.00	.86	36	28	9.3	26	12	6.3	1.7	.20	.15
19	.00	.00	.82	104	47	8.7	24	11	6.1	1.6	.22	.14
20	.00	.00	.79	27	59	8.4	22	11	5.7	1.5	.23	.14
21	.00	.00	.79	14	120	7.9	21	11	5.5	1.4	.24	.14
22	.00	.00	.77	9.6	193	7.7	19	10	5.4	1.4	.24	.14
23	.00	.00	.72	7.5	109	7.6	19	9.8	5.4	1.4	.22	.17
24	.00	.00	.70	6.0	76	254	20	9.1	5.2	1.3	.20	.21
25	.00	.00	.70	5.1	45	595	18	10	5.0	1.3	.18	.25
26	.00	.08	.68	4.6	33	101	16	10	4.7	1.2	.16	.33
27	.00	.02	.66	4.3	26	62	15	9.3	4.6	1.0	.15	.47
28	.00	.00	.66	3.9	21	73	15	11	4.5	.98	.15	.47
29	.00	.00	.70	69	---	61	14	19	4.3	.92	.14	.47
30	.00	.00	.72	30	---	50	14	12	4.1	.90	.11	.47
31	.00	---	.75	14	---	58	---	9.9	---	.92	.09	---
TOTAL	0.00	0.10	35.66	1055.95	3553	1542.2	1131	433.1	228.4	66.52	10.82	7.58
MEAN	.000	.003	1.15	34.1	127	49.7	37.7	14.0	7.61	2.15	.35	.25
MAX	.00	.08	7.3	409	800	595	103	31	17	3.9	.85	.51
MIN	.00	.00	.00	.75	16	7.6	14	9.1	4.1	.90	.09	.02
AC-FT	.00	.2	71	2090	7050	3060	2240	859	453	132	21	15

e Estimated.

11284400 BIG CREEK ABOVE WHITES GULCH, NEAR GROVELAND, 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	.082	3.36	11.0	29.1	33.0	26.2	11.3	3.98	1.21	.29	.045	.025
MAX	1.05	43.2	103	184	173	126	74.1	26.2	7.61	2.42	.82	.42
(WY)	1983	1983	1997	1997	1986	1983	1982	1983	1998	1983	1983	1983
MIN	.000	.000	.000	.000	.000	.038	.014	.018	.000	.000	.000	.000
(WY)	1971	1977	1977	1991	1991	1977	1977	1977	1977	1972	1971	1969

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1969 - 1998	
ANNUAL TOTAL	6539.84		8064.33			
ANNUAL MEAN	17.9		22.1		9.86	
HIGHEST ANNUAL MEAN					38.2	1983
LOWEST ANNUAL MEAN					.011	1977
HIGHEST DAILY MEAN	1370	Jan 2	800	Feb 3	1370	Jan 2 1997
LOWEST DAILY MEAN	.00	Jul 19	.00	Oct 1	.00	Aug 27 1969
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 19	.00	Oct 1	.00	Aug 27 1969
INSTANTANEOUS PEAK FLOW			1450	Feb 3	2620	Feb 17 1986
INSTANTANEOUS PEAK STAGE			6.03	Feb 3	7.03	Feb 17 1986
ANNUAL RUNOFF (AC-FT)	12970		16000		7150	
10 PERCENT EXCEEDS	17		49		16	
50 PERCENT EXCEEDS	.82		3.1		.34	
90 PERCENT EXCEEDS	.00		.00		.00	

11287500 DON PEDRO RESERVOIR NEAR LA GRANGE, CA

LOCATION.—Lat 37°42'06", long 120°25'16", in NE 1/4 SW 1/4 sec.3, T.3 S., R.14 E., Tuolumne County, Hydrologic Unit 18040009, on left end of New Don Pedro Dam on Tuolumne River, 500 ft downstream from Mexican Gulch, and 3.4 mi northeast of La Grange.

DRAINAGE AREA.—1,533 mi^2.

PERIOD OF RECORD.—September 1923 to current year. Year-end contents only 1923–24 and October 1924 to September 1930 monthend contents, published in WSP 1315-A.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Turlock Irrigation District). Prior to Feb. 1, 1941, nonrecording gage at site 1.5 mi upstream at same datum. Feb. 2, 1941, to Nov. 3, 1970, water-stage recorder at site 1.5 mi upstream at same datum. Nov. 4, 1970, to Apr. 26, 1972, nonrecording gage at same site and datum.

REMARKS.—Reservoir is formed by earthfill dam completed June 23, 1971. Storage began Nov. 3, 1970. Total capacity, 2,030,000 acre-ft at elevation 830.0 ft, top of uncontrolled spillway, of which 309,000 acre-ft below elevation 600.0 ft, mutually agreed-upon minimum, is not available for release. Water passes through powerplant at dam and down Tuolumne River to La Grange Dam, 2.5 mi downstream, where it is diverted into Turlock and Modesto Canals (stations 11289500 and 11289000) for irrigation. This reservoir is operated jointly by Turlock and Modesto Irrigation Districts. Prior to June 1971, reservoir was formed by a concrete gravity-type dam completed Jan. 1, 1923, capacity, 290,400 acre-ft. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 2,044,000 acre-ft, Jan. 2, 1997, elevation, 831.11 ft; minimum, 29,200 acre-ft, Sept. 1–3, 5, 1934; minimum elevation, 475.0 ft, Sept. 1, 2, 1934. Minimum since reservoir first filled, 302,600 acre-ft, Oct. 14, 15, 1977, elevation, 598.2 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 2,023,000 acre-ft, several days in July, elevation, 829.49 ft; minimum, 1,535,000 acre-ft, several days in November and December, elevation 787.55.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Modesto and Turlock Irrigation Districts, dated August 1970)

550	158,700	650	517,400	770	1,359,000
570	212,900	680	679,000	800	1,669,000
590	274,800	710	869,700	830	2,030,000
620	384,100	740	1,095,000		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1587000	1550000	1536000	1543000	1615000	1671000	1667000	1630000	1696000	1927000	2014000	1859000
2	1586000	1550000	1536000	1544000	1625000	1664000	1666000	1638000	1699000	1933000	2010000	1854000
3	1583000	1549000	1535000	1545000	1663000	1657000	1668000	1644000	1705000	1937000	2006000	1847000
4	1579000	1549000	1535000	1546000	1671000	1650000	1668000	1651000	1711000	1942000	2002000	1842000
5	1575000	1548000	1535000	1547000	1671000	1642000	1668000	1658000	1716000	1947000	1997000	1838000
6	1567000	1546000	1535000	1548000	1676000	1637000	1667000	1662000	1724000	1952000	1992000	1832000
7	1574000	1545000	1536000	1548000	1690000	1631000	1664000	1668000	1736000	1959000	1987000	1823000
8	1570000	1544000	1538000	1548000	1704000	1626000	1660000	1673000	1745000	1969000	1982000	1814000
9	1567000	1542000	1538000	1549000	1709000	1622000	1655000	1679000	1754000	1978000	1977000	1811000
10	1564000	1541000	1538000	1552000	1710000	1619000	1651000	1684000	1762000	1985000	1972000	1809000
11	1563000	1540000	1539000	1556000	1707000	1615000	1646000	1687000	1774000	1987000	1967000	1808000
12	1561000	1540000	1538000	1571000	1704000	1611000	1642000	1691000	1784000	1986000	1962000	1804000
13	1561000	1539000	1538000	1577000	1701000	1608000	1639000	1695000	1793000	1987000	1957000	1797000
14	1562000	1539000	1538000	1582000	1705000	1605000	1635000	1698000	1802000	1990000	1952000	1790000
15	1563000	1539000	1539000	1617000	1707000	1603000	1630000	1701000	1809000	1993000	1947000	1784000
16	1563000	1538000	1539000	1626000	1703000	1601000	1625000	1704000	1814000	1997000	1940000	1778000
17	1563000	1538000	1539000	1626000	1701000	1601000	1620000	1704000	1829000	2004000	1936000	1773000
18	1558000	1537000	1539000	1626000	1694000	1598000	1614000	1704000	1838000	2012000	1931000	1769000
19	1554000	1537000	1540000	1630000	1693000	1598000	1609000	1703000	1845000	2017000	1925000	1765000
20	1554000	1537000	1540000	1630000	1692000	1597000	1605000	1703000	1851000	2019000	1919000	1759000
21	1555000	1536000	1540000	1628000	1694000	1597000	1606000	1703000	1857000	2022000	1913000	1754000
22	1557000	1536000	1540000	1625000	1698000	1596000	1606000	1703000	1863000	2023000	1908000	1750000
23	1557000	1536000	1541000	1623000	1701000	1596000	1609000	1701000	1869000	2023000	1902000	1745000
24	1557000	1535000	1541000	1620000	1700000	1617000	1612000	1699000	1875000	2023000	1895000	1740000
25	1555000	1535000	1541000	1619000	1695000	1650000	1613000	1698000	1882000	2023000	1889000	1736000
26	1553000	1536000	1541000	1618000	1691000	1657000	1615000	1700000	1890000	2023000	1884000	1731000
27	1553000	1536000	1541000	1617000	1684000	1662000	1616000	1700000	1898000	2023000	1880000	1726000
28	1552000	1536000	1542000	1616000	1678000	1667000	1618000	1699000	1906000	2023000	1876000	1721000
29	1552000	1536000	1542000	1620000	---	1667000	1622000	1699000	1912000	2021000	1873000	1717000
30	1551000	1536000	1542000	1620000	---	1667000	1626000	1698000	1919000	2019000	1868000	1714000
31	1551000	---	1542000	1618000	---	1667000	---	1696000	---	2017000	1864000	---
MAX	1587000	1550000	1542000	1630000	1710000	1671000	1668000	1704000	1919000	2023000	2014000	1859000
MIN	1551000	1535000	1535000	1543000	1615000	1596000	1605000	1630000	1696000	1927000	1864000	1714000
a	789.09	787.71	788.29	795.35	800.77	799.83	796.07	802.41	821.25	828.97	816.79	804.01
b	-37000	-15000	+6000	+76000	+60000	-11000	-41000	+70000	+223000	+98000	-153000	-150000

CAL YR 1997 b -257000
WTR YR 1998 b +126000

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

11289000 MODESTO CANAL NEAR LA GRANGE, CA

LOCATION.—Lat 37°40'21", long 120°28'26", in NE 1/4 SW 1/4 sec.18, T.3 S., R.14 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 0.9 mi northwest of La Grange and 1.7 mi downstream from intake at La Grange Dam.

PERIOD OF RECORD.—April 1903 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.—WSP 1315-A: 1904–9 (monthly figures only).

GAGE.—Water-stage recorder and concrete control. Datum of gage is 267.47 ft above sea level (levels by Modesto Irrigation District). See WSP 1930 for history of changes prior to March 1932. March 1932 to Apr. 27, 1988, at site 1.1 mi upstream at different datum.

REMARKS.—Records good. Canal diverts from right bank of Tuolumne River at La Grange Dam for irrigation in Modesto and Waterford Irrigation Districts. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 1,820 ft^3/s, July 1, 1935; no flow at times most years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	468	53	17	14	55	53	320	759	369	844	791	910
2	170	54	.05	34	55	54	319	501	374	791	736	765
3	246	21	.00	20	56	54	235	455	412	711	815	991
4	729	.69	.00	90	57	54	55	693	724	706	707	828
5	913	.65	.00	230	57	54	14	484	932	780	711	905
6	813	.66	.00	316	58	54	14	537	860	760	849	831
7	840	290	.08	124	56	54	14	602	862	583	697	677
8	725	305	.04	8.3	57	54	14	531	929	629	1050	502
9	937	330	.00	19	58	54	14	216	853	633	1030	291
10	678	347	.00	7.3	57	54	14	252	614	1150	1010	295
11	639	347	.00	7.1	58	52	14	248	447	1450	769	266
12	746	11	.00	97	57	52	177	399	429	1470	1090	346
13	68	5.8	.00	20	58	53	297	248	395	913	1270	343
14	56	5.3	.00	8.3	57	52	297	209	405	659	1040	475
15	56	5.0	.00	8.3	58	52	298	208	399	606	1010	334
16	56	4.7	.41	140	58	52	300	198	394	616	1020	335
17	58	10	290	153	58	51	300	205	437	648	734	268
18	315	20	8.7	150	57	51	299	192	639	814	830	247
19	174	46	8.7	308	57	241	298	195	750	1210	874	361
20	67	13	8.7	189	56	462	297	172	733	1010	876	282
21	55	10	8.7	186	55	455	295	128	718	376	897	259
22	54	48	8.7	235	54	456	297	129	738	639	785	327
23	54	113	8.7	174	53	454	300	130	862	752	908	493
24	55	73	8.7	162	53	237	300	130	735	564	918	498
25	917	16	143	159	53	5.3	300	128	730	575	960	345
26	483	95	13	255	52	4.7	303	129	699	658	870	358
27	93	38	13	146	52	4.7	306	130	953	818	975	453
28	53	11	83	156	52	4.7	380	292	750	990	736	394
29	54	25	193	80	---	4.7	643	375	764	871	700	662
30	130	41	.38	63	---	161	795	374	752	563	587	418
31	55	---	3.2	53	---	298	---	368	---	592	684	---
TOTAL	10757	2339.80	817.06	3612.3	1564	3742.1	7509	9617	19658	24381	26929	14459
MEAN	347	78.0	26.4	117	55.9	121	250	310	655	786	869	482
MAX	937	347	290	316	58	462	795	759	953	1470	1270	991
MIN	53	.65	.00	7.1	52	4.7	14	128	369	376	587	247
AC-FT	21340	4640	1620	7160	3100	7420	14890	19080	38990	48360	53410	28680

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1998, BY WATER YEAR (WY)

MEAN	243	104	76.1	51.8	87.4	300	656	825	891	789	638	431
MAX	633	579	416	465	407	799	1198	1349	1244	1194	977	902
(WY)	1968	1983	1980	1976	1976	1932	1949	1946	1943	1956	1983	1980
MIN	.000	.000	.000	.000	.000	.000	220	224	450	186	12.1	.000
(WY)	1913	1910	1910	1910	1920	1938	1991	1977	1926	1919	1918	1917

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1909 - 1998	
ANNUAL TOTAL	176326.06		125385.26			
ANNUAL MEAN	483		344		427	
HIGHEST ANNUAL MEAN					570	1980
LOWEST ANNUAL MEAN					198	1910
HIGHEST DAILY MEAN	1480	May 30	1470	Jul 12	1820	Jul 1 1935
LOWEST DAILY MEAN	.00	Jan 28	.00	Dec 3	.00	Feb 8 1909
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 28	.00	Dec 9	.00	Feb 8 1909
ANNUAL RUNOFF (AC-FT)	349700		248700		309300	
10 PERCENT EXCEEDS	1040		856		1010	
50 PERCENT EXCEEDS	508		248		377	
90 PERCENT EXCEEDS	.10		8.7		.00	

11289500 TURLOCK CANAL NEAR LA GRANGE, CA

LOCATION.—Lat 37°39'49", long 120°26'23", in NW 1/4 NW 1/4 sec.21, T.3 S., R.14 E., Stanislaus County, Hydrologic Unit 18040002, on right bank 0.7 mi downstream from intake at La Grange Dam and 1.2 mi east of La Grange.

PERIOD OF RECORD.—October 1898 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.—WSP 1315-A: 1899–1908 (monthly figures only). WSP 1445: 1917–20, 1922.

GAGE.—Electromagnetic flow meter and concrete control. Datum of gage is 274.98 ft above sea level (levels by Turlock Irrigation District). See WSP 1930 for history of changes prior to Apr. 17, 1924. Prior to May 17, 1984, water-stage recorder at site 0.2 mi upstream at datum 2.72 ft higher.

REMARKS.—Records good. Canal diverts from left bank of Tuolumne River at La Grange Dam for irrigation in Turlock Irrigation District and to supply town of La Grange. Capacity of canal increased in March 1980 and in March 1984. During autumn and winter, some unmeasured flow is diverted from canal at tunnel 0.3 mi upstream from gage, passed through La Grange Powerplant, and returned to river. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 3,400 ft^3/s several days in May 1984; no diversion for irrigation during some periods in some years; prior to 1939, unmeasured small discharge during winter called zero. No flow Jan. 27, 1984, to Mar. 14, 1984, when canal was drained for construction and installation of electromagnetic flow meter and many days during most years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	267	.00	58	96	15	.00	.00	111	797	1380	2160	1640
2	237	.00	89	34	1.6	2.2	102	395	635	1640	1990	1790
3	389	.00	179	.00	169	.00	.00	1730	895	1850	1830	1900
4	643	.00	101	.00	.40	.00	.00	2000	871	2100	1930	1320
5	508	.00	77	.00	.00	.00	.00	1800	839	2030	2130	971
6	348	306	89	.00	209	314	790	1780	700	1310	1950	1170
7	601	162	167	.00	734	408	1250	1030	650	1400	1350	1300
8	710	32	180	951	131	408	1240	767	732	1760	1130	736
9	556	93	244	2.5	1.1	439	1350	643	1350	1910	1060	585
10	725	131	298	.30	428	510	1310	579	1340	2130	1640	558
11	916	.00	202	.34	847	382	1300	696	1500	2460	1800	375
12	1010	.00	277	102	483	407	1040	529	1570	2670	1790	112
13	258	.00	61	242	414	526	895	68	1580	2390	976	.00
14	94	.00	86	23	489	654	1450	62	1440	1630	1610	.00
15	369	.00	85	161	538	609	881	167	1600	1120	1900	786
16	680	.00	64	.11	504	823	591	520	1440	1260	1750	1390
17	699	.00	54	.37	446	1160	604	866	1150	846	1450	1440
18	2610	.00	63	.33	492	1420	583	243	1320	1500	1600	1230
19	2850	.00	84	.00	392	1020	655	200	1280	1690	2230	1410
20	933	.00	80	.00	335	.00	775	269	1510	2070	2290	1510
21	47	14	99	.00	536	.00	683	306	1580	1610	2210	1340
22	41	17	74	.15	513	.00	603	470	1610	2660	1760	1030
23	47	29	94	3.7	543	74	536	971	1670	2620	1860	892
24	22	.33	79	237	545	546	655	1310	1110	1330	2350	1030
25	.14	29	84	152	352	835	649	1460	1460	1660	2260	1200
26	81	28	69	19	.00	802	675	1390	1430	1930	1500	1140
27	.04	48	58	40	.00	793	792	1300	1390	1700	1070	1180
28	.00	11	69	14	.00	740	795	918	1280	1310	964	817
29	.00	5.8	57	.09	---	671	489	912	1250	2090	1160	279
30	.00	2.1	88	38	---	496	279	654	1300	2090	1330	166
31	.00	---	71	33	---	47	---	656	---	2180	1080	---
TOTAL	15641.18	908.23	3380	2149.89	9118.10	14086.20	20972.00	24802	37279	56326	52110	29297.00
MEAN	505	30.3	109	69.4	326	454	699	800	1243	1817	1681	977
MAX	2850	306	298	951	847	1420	1450	2000	1670	2670	2350	1900
MIN	.00	.00	54	.00	.00	.00	.00	62	635	846	964	.00
AC-FT	31020	1800	6700	4260	18090	27940	41600	49190	73940	111700	103400	58110

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1899 - 1998, BY WATER YEAR (WY)

MEAN	295	147	133	77.8	129	470	1019	1249	1341	1277	1067	688
MAX	883	1008	1210	544	855	1457	1874	1829	1883	2098	1991	1604
(WY)	1996	1976	1984	1997	1976	1997	1949	1984	1981	1980	1983	1967
MIN	.000	.000	.000	.000	.000	2.72	90.3	27.4	71.0	.000	25.4	.000
(WY)	1901	1901	1900	1900	1905	1973	1900	1977	1900	1914	1901	1901

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1899 - 1998	
ANNUAL TOTAL	369826.41		266069.60			
ANNUAL MEAN	1013		729		663	
HIGHEST ANNUAL MEAN					1082	1984
LOWEST ANNUAL MEAN					54.3	1900
HIGHEST DAILY MEAN	2850	Oct 19	2850	Oct 19	3400	May 24 1984
LOWEST DAILY MEAN	.00	Jan 3	.00	Oct 28	.00	Nov 14 1899
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 28	.00	Oct 28	.00	Nov 14 1899
ANNUAL RUNOFF (AC-FT)	733600		527700		480100	
10 PERCENT EXCEEDS	2120		1780		1670	
50 PERCENT EXCEEDS	916		556		452	
90 PERCENT EXCEEDS	29		.00		.00	

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA

LOCATION.—Lat 37°39'59", long 120°26'28", in NW 1/4 NW 1/4 sec.21, T.3 S., R.14 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 0.5 mi downstream from La Grange Dam and 1.1 mi east of La Grange.

DRAINAGE AREA.—1,538 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1970 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 170.19 ft above sea level (levels by Turlock Irrigation District).

REMARKS.—Records good. Flow diverted into Modesto Canal (station 11289000) and Turlock Canal (station 11289500) at La Grange Dam. Flow regulated by Don Pedro Powerplant, Don Pedro Reservoir (station 11287500), 4.5 mi upstream, Hetch Hetchy Reservoir (station 11275500), Cherry Lake (station 11277200), and Lake Eleanor (station 11277500). Tuolumne Canal (station 11297500) diverts water from the Stanislaus River Basin into the Tuolumne River Basin for power, irrigation, and domestic supply in the vicinity of Sonora, upstream from station. Diversion through Hetch Hetchy Aqueduct to San Francisco began Oct. 19, 1934; an average of 300 ft^3/s was diverted during the current year. For records of combined discharge of river and Modesto and Turlock Canals, see station 11289651. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—River only, maximum discharge, 58,900 ft^3/s, Jan. 3, 1997, gage height, 28.43 ft; no flow for several days during September and October 1977.

Combined flow, maximum daily discharge, 50,100 ft^3/s, Jan. 3, 1997; minimum daily, 0.45 ft^3/s, Nov. 2, 1970.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	327	367	316	329	4450	7790	5580	4070	4800	2170	1350	633
2	309	364	329	334	4310	7720	5830	3070	4700	1750	1520	654
3	310	406	326	355	4420	7870	5700	2400	4430	1490	1770	711
4	309	438	339	332	5370	7820	5930	2040	4200	1260	1850	1040
5	309	410	329	331	6430	8010	5870	2190	3990	2020	1450	1250
6	430	472	330	337	5600	6790	6060	2200	4150	2200	1590	1610
7	1000	442	330	322	3720	5930	6060	2180	4040	2150	1610	1420
8	1010	461	343	328	4280	5940	6040	2160	3630	2410	1600	1990
9	1040	483	335	327	5860	5690	5870	2150	3500	3340	1400	1660
10	1000	426	325	325	5930	5040	5800	2200	3550	5180	1050	1880
11	509	412	364	325	6510	5180	5980	3030	3380	5770	944	1850
12	473	407	334	318	6430	5140	5800	3220	3400	5840	864	2550
13	497	386	327	318	6920	5090	5990	3260	3690	5120	1770	3370
14	462	382	326	319	6190	5020	5650	3250	3530	4970	1030	3950
15	355	400	321	344	6570	5010	6400	3230	4570	4800	648	2550
16	409	405	347	2870	6960	4800	6650	2950	5230	3500	814	1300
17	428	387	332	4170	6830	3900	6520	3910	5050	2780	731	1010
18	421	365	325	4390	7420	3240	6650	4710	5140	1920	679	783
19	377	368	325	4200	6230	3660	6530	4790	5070	2740	652	888
20	338	362	327	4340	6640	4130	5590	4770	5120	2910	612	945
21	326	348	327	4310	6130	3830	4140	4750	4940	3020	629	802
22	333	313	328	4280	5940	4400	4270	4710	5090	3530	602	937
23	331	315	328	4230	5970	4440	4210	4800	5200	3310	605	952
24	338	346	327	3890	7060	4330	4160	4290	5150	2780	646	954
25	429	344	327	2980	7610	4260	4240	4130	4950	2270	614	914
26	392	331	326	3070	7360	5180	4190	4250	4700	1540	639	923
27	402	319	327	2870	7880	5160	4150	4770	4800	1750	926	910
28	374	316	327	3150	7690	5310	4010	4600	4670	1710	944	1150
29	376	318	327	3510	---	5580	3950	4490	4650	1160	706	1590
30	424	317	327	4170	---	5670	3940	4790	3680	1430	674	1500
31	387	---	331	4170	---	5690	---	4900	---	1380	656	---
TOTAL	14425	11410	10232	65544	172710	167620	161760	112260	133000	88200	31575	42676
MEAN	465	380	330	2114	6168	5407	5392	3621	4433	2845	1019	1423
MAX	1040	483	364	4390	7880	8010	6650	4900	5230	5840	1850	3950
MIN	309	313	316	318	3720	3240	3940	2040	3380	1160	602	633
AC-FT	28610	22630	20300	130000	342600	332500	320900	222700	263800	174900	62630	84650

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	715	383	957	1718	1953	1838	1651	1497	778	473	238	540
MAX	4187	905	4625	13070	8116	6636	8900	9744	5161	3808	1747	3491
(WY)	1984	1984	1997	1997	1997	1983	1983	1983	1983	1983	1983	1983
MIN	1.02	8.16	10.2	9.78	21.6	93.9	40.9	8.73	8.43	7.46	5.63	4.42
(WY)	1978	1978	1978	1978	1978	1989	1977	1972	1976	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1971 - 1998	
ANNUAL TOTAL	852057		1011412			
ANNUAL MEAN	2334		2771		1058	
HIGHEST ANNUAL MEAN					4786	1983
LOWEST ANNUAL MEAN					84.3	1989
HIGHEST DAILY MEAN	50100	Jan 3	8010	Mar 5	50100	Jan 3 1997
LOWEST DAILY MEAN	155	Jun 5	309	Oct 2	.00	Sep 26 1977
ANNUAL SEVEN-DAY MINIMUM	179	May 30	320	Nov 27	.00	Oct 12 1977
INSTANTANEOUS PEAK FLOW			8360	Feb 25	58900	Jan 3 1997
INSTANTANEOUS PEAK STAGE			13.19	Feb 25	28.43	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	1690000		2006000		766200	
10 PERCENT EXCEEDS	8430		5930		3630	
50 PERCENT EXCEEDS	331		2200		234	
90 PERCENT EXCEEDS	280		328		13	

11289651 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA—Continued

TUOLUMNE RIVER, MODESTO CANAL NEAR LA GRANGE, AND TURLOCK CANAL NEAR LA GRANGE,

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1060	420	391	439	4520	7840	5900	4940	5970	4390	4300	3180
2	716	418	418	402	4370	7780	6250	3970	5710	4180	4250	3210
3	945	427	505	375	4650	7920	5940	4590	5740	4050	4420	3600
4	1680	439	440	422	5430	7870	5990	4730	5800	4070	4490	3190
5	1730	411	406	561	6490	8060	5880	4470	5760	4830	4290	3130
6	1590	779	419	653	5870	7160	6860	4520	5710	4270	4390	3610
7	2440	894	497	446	4510	6390	7320	3810	5550	4130	3660	3400
8	2450	798	523	1290	4470	6400	7290	3460	5290	4800	3780	3230
9	2530	906	579	349	5920	6180	7230	3010	5700	5880	3490	2540
10	2400	904	623	333	6420	5600	7120	3030	5500	8460	3700	2730
11	2070	759	566	332	7420	5610	7290	3970	5330	9680	3510	2490
12	2230	418	611	517	6970	5600	7020	4150	5400	9980	3740	3010
13	823	392	388	580	7390	5670	7180	3580	5670	8420	4020	3710
14	612	387	412	350	6740	5730	7400	3520	5380	7260	3680	4430
15	780	405	406	513	7170	5670	7580	3610	6570	6530	3560	3670
16	1150	410	411	3010	7520	5680	7540	3670	7060	5380	3580	3030
17	1190	397	676	4320	7330	5110	7420	4980	6640	4270	2910	2720
18	3350	385	397	4540	7970	4710	7530	5150	7100	4230	3110	2260
19	3400	414	418	4510	6680	4920	7480	5190	7100	5640	3750	2660
20	1340	375	416	4530	7030	4590	6660	5210	7360	5990	3780	2740
21	428	372	435	4500	6720	4290	5120	5180	7240	5010	3740	2400
22	428	378	411	4520	6510	4860	5170	5310	7440	6830	3150	2300
23	432	457	431	4410	6570	4970	5050	5900	7730	6680	3380	2340
24	415	419	415	4290	7660	5110	5120	5730	7000	4670	3920	2480
25	1350	389	554	3290	8020	5100	5190	5720	7140	4510	3830	2460
26	956	454	408	3340	7410	5990	5170	5770	6830	4130	3010	2420
27	495	405	398	3060	7930	5960	5250	6200	7140	4270	2980	2540
28	427	338	479	3320	7740	6060	5190	5810	6700	4010	2640	2360
29	430	349	577	3590	---	6260	5080	5780	6660	4120	2570	2530
30	554	360	415	4270	---	6330	5010	5820	5730	4080	2590	2080
31	442	---	405	4260	---	6040	---	5920	---	4150	2420	---
TOTAL	40843	14659	14430	71322	183430	185460	190230	146700	189950	168900	110640	86450
MEAN	1318	489	465	2301	6551	5983	6341	4732	6332	5448	3569	2882
MAX	3400	906	676	4540	8020	8060	7580	6200	7730	9980	4490	4430
MIN	415	338	388	332	4370	4290	5010	3010	5290	4010	2420	2080
AC-FT	81010	29080	28620	141500	363800	367900	377300	291000	376800	335000	219500	171500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1998, BY WATER YEAR (WY)

MEAN	1360	839	1360	1899	2163	2661	3280	3350	2992	3077	2524	1823
MAX	4693	2383	5327	13630	8885	6677	9873	11840	7644	6670	4715	5429
(WY)	1984	1983	1983	1997	1997	1983	1983	1983	1983	1983	1983	1983
MIN	107	35.9	115	76.8	97.8	230	921	262	595	664	606	305
(WY)	1978	1978	1989	1978	1989	1992	1992	1977	1992	1992	1992	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1971 - 1998	
ANNUAL TOTAL	1398439		1403014			
ANNUAL MEAN	3831		3844		2292	
HIGHEST ANNUAL MEAN					6186	1983
LOWEST ANNUAL MEAN					442	1992
HIGHEST DAILY MEAN	50100	Jan 3	9980	Jul 12	50100	Jan 3 1997
LOWEST DAILY MEAN	338	Nov 28	332	Jan 11	.45	Nov 2 1970
ANNUAL SEVEN-DAY MINIMUM	384	Nov 25	384	Nov 25	.61	Oct 29 1970
ANNUAL RUNOFF (AC-FT)	2774000		2783000		1660000	
10 PERCENT EXCEEDS	8780		7160		4650	
50 PERCENT EXCEEDS	2750		4130		1900	
90 PERCENT EXCEEDS	419		416		244	

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: November 1970 to current year.

INSTRUMENTATION.—Temperature recorder since November 1970.

REMARKS.—Water temperature can be affected by releases from La Grange Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum recorded, 29.0°C, Sept. 27, Oct. 15, 1977; minimum recorded, 6.0°C, Feb. 6–8, 10, 1971.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum recorded, 14.0°C, Sept. 2; minimum recorded, 9.5°C, Mar. 7.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	12.5	11.5	12.0	11.0	11.0	11.0	11.5	11.0	10.5	10.5	13.5	10.0
2	12.5	11.5	12.0	11.0	11.5	10.5	11.5	11.0	11.0	10.5	13.0	10.0
3	12.5	11.0	12.0	11.0	11.0	10.5	11.5	11.0	11.0	10.5	12.5	10.0
4	13.0	11.0	12.0	11.0	11.0	11.0	11.5	11.0	10.5	10.5	11.5	10.0
5	13.0	11.0	12.0	11.0	11.5	11.0	11.0	10.5	10.5	10.5	11.5	10.0
6	13.0	11.0	12.0	11.0	11.5	11.0	11.0	10.5	10.5	10.5	12.5	10.0
7	12.5	11.0	12.0	11.0	11.5	11.0	11.5	11.0	10.5	10.5	11.5	9.5
8	12.0	11.0	11.5	11.0	11.0	11.0	11.5	11.0	10.5	10.5	12.5	10.0
9	12.0	11.5	11.5	11.0	11.0	10.5	11.5	11.0	10.5	10.5	12.5	10.0
10	12.0	11.5	11.5	11.0	11.0	10.5	11.5	11.0	10.5	10.5	12.0	10.0
11	12.5	11.5	11.5	11.0	11.0	10.5	11.5	11.5	10.5	10.0	10.5	10.0
12	12.5	11.0	11.5	11.0	11.0	10.5	11.5	11.0	10.5	10.0	10.5	10.0
13	12.5	11.5	11.5	11.5	11.0	11.0	11.5	10.5	10.5	10.0	10.5	10.0
14	12.5	11.0	11.5	11.0	11.0	11.0	11.0	11.0	10.5	10.0	10.5	10.0
15	12.5	11.0	11.5	11.0	11.5	11.0	11.5	11.0	10.5	10.0	10.5	10.0
16	13.0	11.5	11.5	11.0	11.0	11.0	12.0	11.5	10.0	10.0	10.5	10.0
17	12.5	11.5	12.0	11.0	11.0	11.0	11.5	11.5	10.5	10.0	10.5	10.0
18	13.0	11.5	11.5	11.0	11.0	11.0	11.5	11.0	10.5	10.0	10.5	10.0
19	13.0	11.5	11.5	11.5	11.5	11.0	11.5	11.0	10.0	10.0	10.5	10.0
20	12.5	11.5	11.5	11.0	11.5	11.0	11.0	11.0	11.0	10.0	10.5	10.0
21	12.5	11.5	11.5	11.0	11.0	11.0	11.0	11.0	11.0	10.0	10.5	10.0
22	12.5	11.5	11.5	11.0	11.0	10.5	11.0	11.0	12.0	10.0	10.5	10.0
23	12.5	11.5	11.5	11.0	11.0	10.5	11.0	10.5	12.0	10.0	10.5	10.0
24	12.0	11.0	12.0	11.0	11.0	10.5	11.0	10.5	11.5	10.0	10.5	10.0
25	12.0	11.0	12.0	11.5	11.0	10.5	11.0	10.5	12.0	10.0	10.5	10.0
26	12.0	11.0	11.5	11.0	11.0	10.5	11.0	10.5	12.5	10.0	10.5	10.0
27	12.0	11.0	11.5	11.0	11.0	10.5	11.0	10.5	13.0	10.0	10.5	10.0
28	11.5	11.0	11.5	11.0	11.0	10.5	11.0	10.5	13.5	10.0	10.5	10.0
29	12.0	11.0	11.5	11.0	11.5	11.0	10.5	10.5	---	---	10.5	10.0
30	12.5	11.0	11.5	11.0	11.5	11.0	10.5	10.5	---	---	10.5	10.0
31	12.5	11.0	---	---	11.5	11.0	10.5	10.5	---	---	10.0	10.0
MONTH	13.0	11.0	12.0	11.0	11.5	10.5	12.0	10.5	13.5	10.0	13.5	9.5

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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

11290000 TUOLUMNE RIVER AT MODESTO, CA

LOCATION.—Lat 37°37'38", long 120°59'11", in SE 1/4 SW 1/4 sec.33, T.3 S., R.9 E., Stanislaus County, Hydrologic Unit 18040002, on left bank at bridge on Ninth Street in Modesto and 0.2 mi downstream from Dry Creek.

DRAINAGE AREA.—1,884 mi^2.

PERIOD OF RECORD.—1878–84, 1891–94, 1897 (gage heights only), January 1895 to December 1896, April 1940 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Water-quality data for the period October 1985 to March 1987 are available in U.S. Geological Survey Open-File Report 88-479. Water-quality data for the period April 1987 to September 1988 are available in files of the U.S. Geological Survey.

CHEMICAL DATA: Water years 1993–95.
SPECIFIC CONDUCTANCE: Water years 1989–95.
WATER TEMPERATURE: Water years 1989–95.
SEDIMENT: Water years 1993–95.

GAGE.—Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is sea level (levels by Modesto Irrigation District). Prior to July 11, 1947, at site 1,700 ft downstream at same datum; July 11, 1947, to Nov. 16, 1953, at site 1,000 ft downstream at same datum.

REMARKS.—Records good except for estimated daily discharges, which ares fair. Flow regulated by reservoirs and powerplants upstream from station. Several major diversions for power, irrigation, and municipal supply upstream of station, including Modesto and Turlock Canals (stations 11289000 and 11289500). See REMARKS for Tuolumne River below La Grange Dam (station 11289650) and schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD (water years 1896, 1941–98).—Maximum discharge observed, 57,000 ft^3/s, Dec. 9, 1950, elevation, 69.19 ft, maximum gage height, 71.21 ft, Jan. 4, 1997 (backwater caused by debris on railroad trestle 1,500 ft downstream of gage); minimum daily, 56 ft^3/s, Aug. 6, 1977.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	446	547	429	437	4720	8040	e6200	e3700	4840	3460	1620	805
2	496	481	425	459	5010	8070	e6200	e2800	4670	2280	1520	764
3	531	482	429	454	7360	7970	e6300	e2300	4520	1820	1650	771
4	585	494	425	546	10300	8130	e6450	e2320	4360	1730	1820	811
5	659	529	491	603	6870	7930	e6400	e2400	4130	1600	1870	1140
6	683	500	453	676	6660	7850	e6500	e2400	4090	2090	1670	1470
7	729	552	476	551	7140	6680	e6490	e2380	4210	2290	1770	1740
8	1160	534	508	485	7450	6350	e6350	e2300	4100	2370	1730	1660
9	1290	555	573	506	7010	6310	e6300	e2350	3680	2370	1750	2140
10	1380	579	594	552	6790	5710	e6350	e3000	3620	3670	1590	1860
11	1350	563	516	779	6760	5130	e6300	e3500	3660	5000	1230	2010
12	920	509	513	1300	7630	5130	e6400	3480	3500	5500	1080	2210
13	795	506	484	3390	7330	5100	e6200	3540	3510	5670	1010	2720
14	768	482	487	1630	7770	5040	e6600	3450	3720	4990	1790	3470
15	733	505	465	1660	7970	4990	e7100	3450	3630	4870	1230	3800
16	604	490	452	5260	7830	4960	e7100	3370	4700	4480	924	2530
17	659	486	465	4760	7330	4550	e7050	3280	5090	3460	1060	1620
18	647	477	453	4650	7810	3770	e7050	4050	5070	2760	935	1290
19	680	459	435	4940	8180	3290	e6600	4520	5070	2160	855	1040
20	628	455	431	5020	7920	3730	e5000	4650	5120	3220	808	1080
21	658	451	430	4680	8330	3900	e4500	4630	5150	3180	808	1210
22	686	446	428	4580	7900	3810	e4500	4570	4910	3310	836	1240
23	679	419	433	4510	7740	4190	e4450	4600	5140	3430	854	1330
24	722	414	432	4470	7240	4390	e4500	4560	5210	3330	824	1410
25	626	433	431	4020	8400	5540	e4500	4220	5190	2760	833	1380
26	594	532	429	3460	8200	6220	e4500	4150	4810	2250	803	1380
27	560	461	427	3420	8400	5500	e4500	4190	4640	1820	824	1380
28	578	434	428	3330	8390	5570	e4200	4760	4680	1850	1040	1310
29	525	424	431	3640	---	6000	e4180	4700	4550	1780	1060	1600
30	521	468	430	4620	---	5790	e4250	4530	4480	1460	872	1930
31	559	---	432	4710	---	5990	---	4680	---	1590	857	---
TOTAL	22451	14667	14235	84098	210440	175630	173020	112830	134050	92550	37523	49101
MEAN	724	489	459	2713	7516	5665	5767	3640	4468	2985	1210	1637
MAX	1380	579	594	5260	10300	8130	7100	4760	5210	5670	1870	3800
MIN	446	414	425	437	4720	3290	4180	2300	3500	1460	803	764
AC-FT	44530	29090	28240	166800	417400	348400	343200	223800	265900	183600	74430	97390

e Estimated.

11290000 TUOLUMNE RIVER AT MODESTO, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	872	1013	1586	1997	2157	2062	1946	1956	1629	657	369	568
MAX	4760	4124	8677	15500	8782	7658	9268	10420	7665	4244	2225	4041
(WY)	1984	1951	1951	1997	1997	1983	1983	1983	1942	1983	1983	1983
MIN	78.2	93.1	110	154	166	199	169	138	94.5	78.8	67.5	72.6
(WY)	1978	1978	1978	1991	1991	1961	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1940 - 1998	
ANNUAL TOTAL	1009504		1120595			
ANNUAL MEAN	2766		3070		1390	
HIGHEST ANNUAL MEAN					5518	1983
LOWEST ANNUAL MEAN					185	1989
HIGHEST DAILY MEAN	52900	Jan 4	10300	Feb 4	52900	Jan 4 1997
LOWEST DAILY MEAN	351	Jun 4	414	Nov 24	56	Aug 6 1977
ANNUAL SEVEN-DAY MINIMUM	378	Jun 1	430	Dec 22	62	Aug 2 1977
INSTANTANEOUS PEAK FLOW			11800	Feb 4	57000	Dec 9 1950
INSTANTANEOUS PEAK STAGE			56.58	Feb 4	71.21	Jan 4 1997
ANNUAL RUNOFF (AC-FT)	2002000		2223000		1007000	
10 PERCENT EXCEEDS	9080		6670		3730	
50 PERCENT EXCEEDS	529		2380		617	
90 PERCENT EXCEEDS	428		467		181	

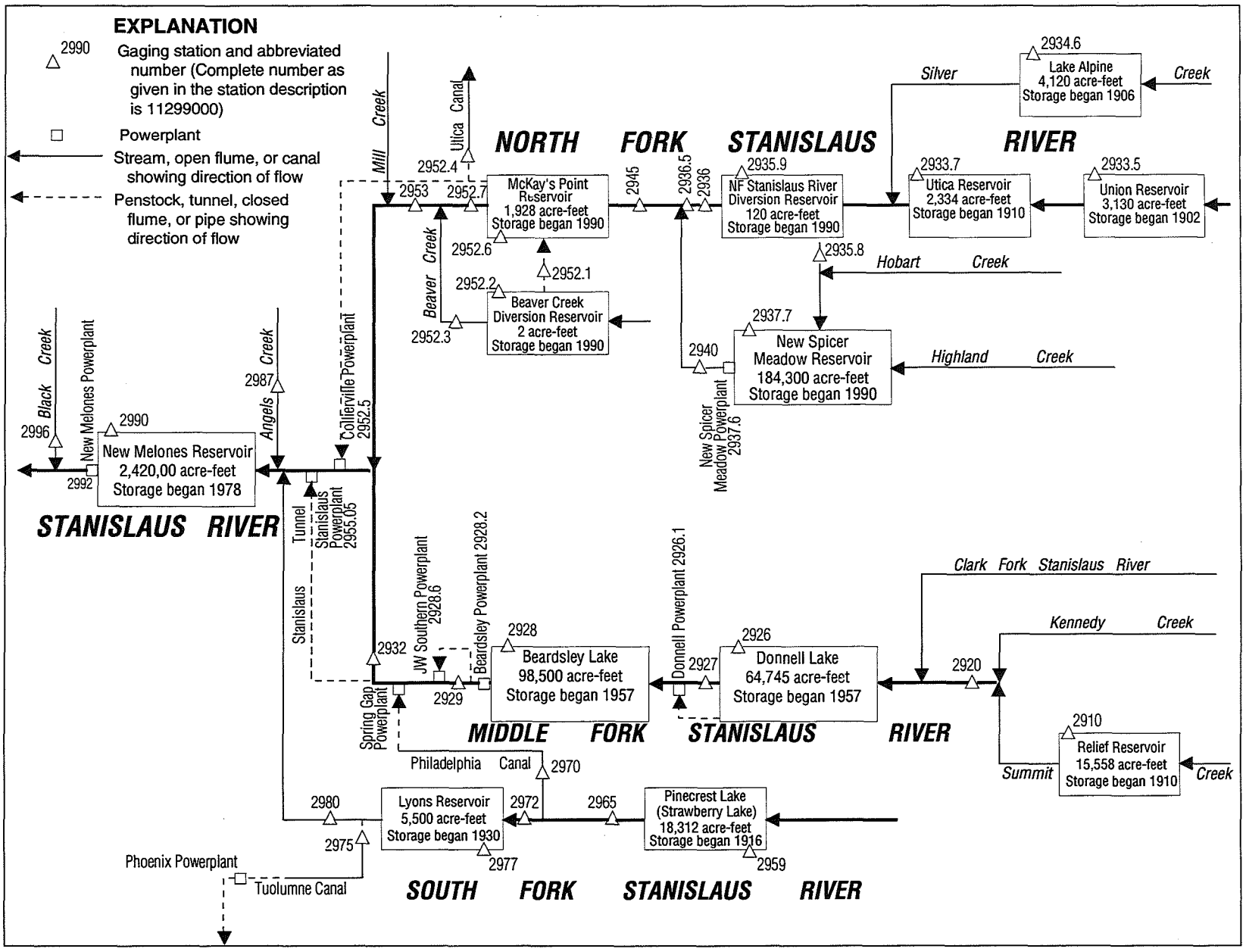


Figure 30. Diversions and storage in Stanislaus River Basin.

11291000 RELIEF RESERVOIR NEAR BAKER STATION, CA

LOCATION.—Lat 38°16'52", long 119°43'57", in NW 1/4 SW 1/4 sec.13, T.5 N., R.20 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on dam near spillway, 2.2 mi south of Kennedy Meadows, 3.6 mi southeast of Baker Station, and 7.0 mi southeast of Dardanelle.

DRAINAGE AREA.—24.4 mi^2.

PERIOD OF RECORD.—October 1986 to current year. Unpublished records for water years 1981–86 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Prior to Dec. 9, 1991, nonrecording gage observed approximately weekly. Datum of gage is 7,200 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by concrete-faced, rockfill dam completed in 1910. Usable capacity, 12,348 acre-ft between gage height, 1.37 ft, invert of outlet, and 123 ft, spillway crest. Flashboards are added in the summer months, increasing gage height to 138 ft and usable capacity to 15,550 acre-ft. Figures given represent total contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by the Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 15,650 acre-ft, June 7, 1996, gage height, 138.43 ft; minimum observed, 33 acre-ft, Jan. 12, 1987, gage height, 6.1 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 15,620 acre-ft, Aug. 6, gage height, 138.30 ft; minimum, 500 acre-ft, Apr. 15–18, gage height, unknown.

Capacity table (gage height, in feet, and contents, in acre-ft)
(Based on survey by Pacific Gas & Electric Co. in 1942)

10	53	50	1605	90	6579
20	105	60	2632	100	8105
30	308	70	3763	120	11895
40	842	80	5105	140	16012

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7165	1601	1353	1239	1482	1784	1493	2863	3099	15216	15197	13684
2	6879	1587	1348	1241	1499	1783	1366	3335	3067	15261	15322	13521
3	6606	1576	1343	1240	1537	1786	1312	3811	3227	15183	15433	13338
4	6305	1557	1333	1238	1558	1787	1313	4225	3633	15164	15539	13155
5	6019	1543	1336	1235	1575	1788	1234	4604	3933	15183	15601	12995
6	5770	1531	1336	1234	1592	1794	1122	4946	4135	15166	15620	12810
7	5520	1517	1338	1229	1615	1742	1077	5241	4369	15174	15594	12610
8	5270	1501	1344	1224	1633	1792	977	5479	4796	15179	15569	12451
9	5020	1487	1345	1221	1637	1750	880	5506	5515	15220	15562	12584
10	4770	1472	1349	1220	1658	1710	790	5476	6170	15222	15564	12355
11	4520	1462	1344	1221	1640	1618	710	5473	6742	15245	15564	12042
12	4280	1451	1341	1226	1674	1519	640	5384	7291	15218	15569	11752
13	4030	1438	1343	1227	1638	1425	580	5273	7742	15176	15580	11500
14	3790	1422	1343	1235	1692	1336	530	5127	8319	15094	15569	11238
15	3552	1410	1337	1282	1694	1245	500	4935	9096	15069	15546	10952
16	3335	1396	1335	1318	1710	1163	500	4728	9940	15069	15509	10604
17	3113	1380	1333	1355	1665	1096	500	4523	10977	15022	15476	10258
18	2901	1369	1334	1390	1727	1038	500	4342	11811	15000	15437	9920
19	2691	1367	1326	1402	1728	988	600	4143	12811	15047	15379	9620
20	2466	1364	1322	1419	1739	947	700	3956	13456	15067	15312	9318
21	2233	1350	1322	1427	1745	910	800	3807	14207	15495	15245	9020
22	2016	1345	1310	1435	1756	870	900	3720	14927	15478	15164	8709
23	1807	1333	1304	1439	1770	997	1033	3630	15187	15421	15084	8385
24	1707	1324	1298	1444	1779	1301	1213	3511	15253	15433	15002	8046
25	1695	1317	1288	1445	1781	1496	1267	3450	15203	15395	14933	7768
26	1684	1347	1281	1450	1783	1537	1223	3373	15166	15411	14750	7546
27	1672	1353	1274	1450	1783	1489	1187	3488	15189	15467	14562	7317
28	1657	1355	1266	1458	1785	1529	1179	3474	15278	15455	14388	7116
29	1643	1355	1259	1465	---	1497	2242	3383	15193	15395	14205	7043
30	1630	1357	1249	1471	---	1453	2512	3277	15181	15303	14026	6863
31	1614	---	1243	1473	---	1413	---	3214	---	15236	13859	---
MAX	7165	1601	1353	1473	1785	1794	2512	5506	15278	15495	15620	13684
MIN	1614	1317	1243	1220	1482	870	500	2863	3067	15000	13859	6863
a	50.10	47.18	45.77	48.54	52.00	47.84	58.98	65.40	136.07	136.35	129.55	91.96
b	-5959	-257	-114	+230	+312	-372	+1099	+702	+11967	+551	-1377	-6996

CAL YR 1997 MAX 15592 MIN 1243 b -891
WTR YR 1998 MAX 15620 MIN 500 b -710

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

11292000 MIDDLE FORK STANISLAUS RIVER AT KENNEDY MEADOWS, NEAR DARDANELLE, CA

LOCATION.—Lat 38°17'51", long 119°44'25", in SW 1/4 NE 1/4 sec.11, T.5 N., R.20 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank at upper end of Kennedy Meadows, 1.3 mi upstream from Deadman Creek, 1.6 mi downstream from Relief Reservoir, and 5.8 mi southwest of Dardanelle.

DRAINAGE AREA.—47.5 mi^2.

PERIOD OF RECORD.—October 1938 to current year. Records for water year 1946 incomplete, yearly estimate published in WSP 1315-A. Prior to October 1960, published as "at Kennedy Meadows."

REVISED RECORDS.—WSP 1315-A: 1939(M). WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 6,326.3 ft above sea level.

REMARKS.—Low and medium flow regulated by Relief Reservoir (station 11291000) 1.6 mi upstream. No diversion upstream from station. See schematic diagram of Stanislaus River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,310 ft^3/s, May 16, 1996, gage height, 8.37 ft; minimum daily, 7.1 ft^3/s, Jan. 14, 1977.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	175	26	26	25	26	27	103	255	327	827	299	174
2	175	25	26	27	31	28	100	247	336	808	300	174
3	173	25	26	26	45	29	99	233	313	832	268	173
4	171	25	25	26	34	29	97	219	294	805	206	171
5	168	25	26	29	30	28	95	199	306	838	209	171
6	167	26	27	41	29	29	93	182	398	903	217	171
7	166	26	27	25	29	31	92	231	478	917	249	169
8	164	25	29	24	24	27	91	324	452	966	242	169
9	166	25	28	25	22	55	90	330	430	972	202	208
10	164	25	29	25	21	81	90	312	440	888	184	210
11	161	26	26	25	21	89	89	296	408	787	182	217
12	158	25	26	26	31	83	87	285	438	669	187	209
13	155	25	26	26	47	83	85	268	482	691	191	206
14	153	25	26	25	32	82	83	254	501	645	196	204
15	152	25	26	42	30	85	63	251	515	562	188	202
16	150	25	26	40	31	90	51	252	558	609	178	199
17	148	25	26	39	28	91	52	244	530	709	164	198
18	146	25	26	34	28	94	57	243	510	715	151	196
19	144	26	23	33	27	98	69	257	538	632	144	192
20	142	26	26	31	28	103	88	269	662	656	140	190
21	139	25	26	31	27	104	120	266	947	578	135	188
22	136	25	25	27	28	121	160	263	1070	529	131	185
23	134	25	25	27	27	177	173	269	916	559	129	188
24	80	25	25	28	35	186	137	277	831	564	127	191
25	27	25	24	28	27	163	120	313	989	493	125	190
26	26	37	24	28	26	139	120	297	996	403	150	193
27	26	30	24	26	26	126	135	277	847	400	174	193
28	26	27	24	27	26	116	158	271	838	372	173	191
29	26	27	25	28	---	108	193	269	926	348	174	203
30	26	26	25	29	---	106	233	266	923	353	178	202
31	26	---	25	27	---	106	---	297	---	314	179	---
TOTAL	3870	778	798	900	816	2714	3223	8216	18199	20344	5772	5727
MEAN	125	25.9	25.7	29.0	29.1	87.5	107	265	607	656	186	191
MAX	175	37	29	42	47	186	233	330	1070	972	300	217
MIN	26	25	23	24	21	27	51	182	294	314	125	169
AC-FT	7680	1540	1580	1790	1620	5380	6390	16300	36100	40350	11450	11360

11292000 MIDDLE FORK STANISLAUS RIVER AT KENNEDY MEADOWS, NEAR DARDANELLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1998, BY WATER YEAR (WY)

MEAN	80.6	46.6	39.9	33.9	30.7	45.0	94.8	314	441	247	122	127
MAX	226	372	266	272	92.5	155	247	626	949	767	328	272
(WY)	1983	1951	1951	1997	1997	1980	1943	1969	1983	1995	1983	1983
MIN	10.4	9.85	10.0	9.23	8.81	12.6	23.7	28.0	68.1	43.1	24.9	12.2
(WY)	1967	1978	1960	1960	1991	1948	1975	1977	1977	1939	1961	1981

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1939 - 1998	
ANNUAL TOTAL	66516		71357			
ANNUAL MEAN	182		195		136	
HIGHEST ANNUAL MEAN					256	1983
LOWEST ANNUAL MEAN					36.4	1977
HIGHEST DAILY MEAN	2200	Jan 2	1070	Jun 22	2350	May 16 1996
LOWEST DAILY MEAN	23	Dec 19	21	Feb 10	7.1	Jan 14 1977
ANNUAL SEVEN-DAY MINIMUM	24	Dec 22	24	Dec 22	7.5	Feb 21 1991
INSTANTANEOUS PEAK FLOW			1290	Jun 22	3310	May 16 1996
INSTANTANEOUS PEAK STAGE			6.03	Jun 22	8.37	May 16 1996
ANNUAL RUNOFF (AC-FT)	131900		141500		98200	
10 PERCENT EXCEEDS	459		533		363	
50 PERCENT EXCEEDS	124		134		61	
90 PERCENT EXCEEDS	25		25		15	

11292600 DONNELL LAKE NEAR DARDANELLE, CA

LOCATION.—Lat 38°19'46", long 119°57'37", unsurveyed, T.6 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank in hoist house of Donnell Dam on Middle Fork Stanislaus River, 1.2 mi downstream from Niagara Creek, and 6.9 mi west of Dardanelle.

DRAINAGE AREA.—230 mi^2.

PERIOD OF RECORD.—October 1957 to current year. Prior to October 1960, published as Donnells Reservoir near Dardanelle.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 4.84 ft above sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

REMARKS.—Lake is formed by concrete arch-type dam completed in 1957. Usable capacity, 64,745 acre-ft, between gage heights 4,720.0 ft, minimum operating head, and 4,917.0 ft, top of spillway gates. Lake is for power and conservation storage. Water passes through a 7.2-mi tunnel to a powerplant and down the Middle Fork Stanislaus River to Beardsley Lake (station 11292800). Records, including extremes, represent total contents at 2400 hours, of which 2,150 acre-ft is below minimum operating head. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were provided by Oakdale and South San Joaquin Irrigation Districts, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 64,900 acre-ft, May 8, 1963, gage height, 4,917.3 ft; minimum since reservoir first filled, 2,220 acre-ft, Apr. 15, 1983, gage height, 4,720.6 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 64,000 acre-ft, July 30, gage height, 4,915.18 ft; minimum, 5,190 acre-ft, Apr. 12, gage height, 4,737.14 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated Oct. 1, 1956)

4,720	2,150	4,740	5,830	4,780	16,200	4,850	38,700
4,725	2,850	4,750	8,220	4,790	19,100	4,880	49,800
4,730	3,730	4,760	10,800	4,800	22,100	4,917.3	64,900
4,735	4,730	4,770	13,400	4,820	28,400		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15600	12500	12000	8340	8810	6200	11800	22300	61700	62400	63800	53300
2	15500	12600	12100	8230	8500	6140	11700	25100	62200	62600	63900	52800
3	15300	12400	12200	8150	8330	6340	11200	27600	61800	62700	63800	52300
4	15200	12100	12300	8320	7940	6060	10500	30000	61800	62700	63700	51600
5	15300	11800	12400	8190	7640	6190	9880	32000	62100	63000	63500	51100
6	15400	11600	12500	8050	7520	6200	9170	33600	63000	63700	63300	50700
7	15300	11400	12700	7840	7720	6120	8410	34900	62700	63800	63100	50400
8	15400	11300	12900	7540	7900	6240	7620	36900	62200	63900	62900	49900
9	15500	11300	13000	7250	8030	6170	6820	39300	62400	63800	62600	49700
10	15700	11000	13100	7160	7790	6140	6010	41100	62500	63400	62100	49900
11	15800	10800	13200	7180	7620	6240	5610	42600	62300	63100	61600	49900
12	15900	10700	13300	7200	7480	6350	5190	44000	62100	63100	61200	49700
13	15600	10500	13400	7040	7430	6420	5940	44900	62500	63200	60700	49500
14	15700	10300	13500	6920	7660	6500	6640	45700	62600	63000	60400	49200
15	15700	10300	13600	7530	7800	6510	7260	46400	61900	62800	60000	49000
16	15800	10200	13400	7910	7890	6770	7800	47300	62300	63900	59600	48900
17	15700	10300	13100	8620	7770	7020	7760	47900	62500	63900	59100	48700
18	15600	10400	12800	9140	7570	6680	7240	48600	62200	63600	58400	48600
19	15800	10500	12600	9430	7350	6490	7090	49700	62500	63500	57700	48500
20	15700	10600	12400	9460	7220	6510	7380	51100	62800	63900	57500	48400
21	15600	10700	12100	9460	7270	6570	8330	52200	63400	63800	57300	48400
22	15500	10800	11800	9380	7340	7000	9700	53200	63000	63400	57000	48300
23	15400	10900	11400	9300	7130	8410	11300	54500	62200	63400	56600	48100
24	15200	11000	11000	9410	6910	11100	11900	55900	61900	63600	55900	48100
25	14800	11100	10400	9480	6650	12500	12300	58300	62100	63400	55400	48000
26	14600	11400	9990	9380	6310	12800	12700	59200	62100	63200	55100	47900
27	14200	11500	9700	9200	5990	13000	13600	59000	61600	63200	54800	47700
28	13800	11600	9450	9050	6100	12900	14900	59100	62100	63500	54600	47600
29	13400	11800	9090	8910	---	12600	16900	59400	62600	63800	54400	47600
30	13100	11900	8750	8710	---	12200	19400	59500	62600	64000	54100	47500
31	12700	---	8440	8770	---	11700	---	60400	---	63900	53700	---
MAX	15900	12600	13600	9480	8810	13000	19400	60400	63400	64000	63900	53300
MIN	12700	10200	8440	6920	5990	6060	5190	22300	61600	62400	53700	47500
a	4767.22	4764.12	4750.89	4752.18	4741.18	4763.60	4791.22	4906.58	4911.77	4914.97	4890.04	4873.91
b	-3400	-800	-3460	+330	-2670	+5600	+7700	+41000	+2200	+1300	-10200	-6200

CAL YR 1997 b -35960
WTR YR 1998 b +31400

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

11292700 MIDDLE FORK STANISLAUS RIVER AT HELLS HALF ACRE BRIDGE, NEAR PINECREST, CA

LOCATION.—Lat 38°14'50", long 120°02'01", in NW 1/4 NE 1/4 sec.31, T.5 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, on left bank 200 ft upstream from Donnell Powerplant, 800 ft downstream from Hells Half Acre bridge, 1.1 mi upstream from Cow Creek, and 4.7 mi northwest of Pinecrest.

DRAINAGE AREA.—287 mi^2.

PERIOD OF RECORD.—February 1956 to current year. Prior to October 1965, published as Middle Fork Stanislaus River at Hells Half Acre bridge.

WATER TEMPERATURE: Water years 1966–71 and 1973–78.

GAGE.—Water-stage recorder. Datum of gage is 3,418.31 ft above sea level (river-profile survey). Prior to Aug. 9, 1961, at site 1,600 ft upstream at different datum.

REMARKS.—Records good.except for estimated daily discharges which are fair. Flow regulated by Relief Reservoir (station 11291000), Donnell Lake (station 11292600) since April 1957 and diversion around station through Donnell Powerplant (station 11292610). See schematic diagram of Stanislaus River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 21,000 ft^3/s, Jan. 2, 1997, gage height, 18.02 ft, from rating curve extended above 5,200 ft^3/s on basis of slope-area measurement at gage height 12.20 ft; minimum daily, 3.3 ft^3/s, Nov. 9, 10, 1957.

EXTREMES OUTSIDE PERIOD OF RECORD.—Maximum stage known since at least 1905, 23 ft, Dec. 23, 1955, from floodmarks, at present site, discharge, 26,600 ft^3/s by slope-area measurement.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	34	35	35	e136	142	e347	e882	e1490	e2810	e134	53
2	41	34	34	40	e205	147	e322	e964	e2140	e2530	e69	52
3	40	34	34	40	e565	155	e319	e1030	e2270	e2510	e67	53
4	40	33	34	40	e305	156	e299	e1090	e1900	e2490	e66	55
5	36	33	35	37	e230	152	e286	e999	e1920	e2190	e64	55
6	36	33	37	36	e240	152	e282	e818	e2980	e2150	e64	57
7	36	33	53	37	e230	138	e270	e731	e4090	e2490	e64	55
8	36	32	51	37	e225	137	e259	e792	e3660	e2590	e63	54
9	38	32	41	39	e200	137	e254	e773	e3400	e2710	e64	57
10	41	33	39	48	e190	143	e259	e712	e3510	e2550	e64	55
11	40	33	38	63	e192	157	e260	e590	e3580	e2130	e64	54
12	38	33	38	133	e195	174	e253	e550	e3380	e1650	e63	53
13	38	33	37	106	e200	184	e247	e495	e3330	e1540	e62	53
14	38	32	38	80	e225	187	e246	e459	e3760	e1600	e61	52
15	37	32	40	450	e205	219	e234	e434	e4360	e1390	e61	52
16	37	32	38	372	e180	270	e226	e446	e4090	e1170	e60	51
17	37	32	38	332	e171	299	e230	e420	e3550	e1300	e59	51
18	37	31	38	244	e160	310	e246	e420	e3650	e1420	e58	51
19	37	35	37	226	e161	346	e288	e466	e3470	e1150	e58	50
20	36	34	37	163	e161	392	e362	e500	e3490	e861	58	50
21	36	32	36	137	e160	402	e485	e490	e3680	e913	58	50
22	36	32	35	126	e164	493	e633	e482	e4220	e953	57	50
23	36	32	35	119	e165	657	e704	e477	e3860	e707	56	50
24	36	32	35	115	e160	e1730	e596	e509	e3470	e686	56	51
25	36	34	34	102	e151	e1260	e531	e746	e3440	e674	56	51
26	35	48	34	102	e145	e750	e514	e944	e3510	e574	55	53
27	35	43	33	e99	131	e646	e583	e1180	e3370	e390	55	53
28	35	38	33	e98	134	e534	e683	e988	e2760	e242	54	52
29	35	36	34	e131	---	e449	e764	e909	e2910	e146	54	56
30	35	35	34	e132	---	e400	e845	e918	e3140	e170	54	55
31	34	---	34	e135	---	e376	---	e1050	---	e196	53	---
TOTAL	1149	1020	1149	3854	5586	11694	11827	22264	98380	44882	1931	1584
MEAN	37.1	34.0	37.1	124	200	377	394	718	3279	1448	62.3	52.8
MAX	41	48	53	450	565	1730	845	1180	4360	2810	134	57
MIN	34	31	33	35	131	137	226	420	1490	146	53	50
AC-FT	2280	2020	2280	7640	11080	23200	23460	44160	195100	89020	3830	3140
a	12530	3830	6700	9180	11370	26130	34130	42430	40550	42220	34920	23000

e Estimated.

a Diversion, in acre-feet, through Donnell Powerplant (station 11292610), provided by Oakdale and South San Joaquin Irrigation District.

11292700 MIDDLE FORK STANISLAUS RIVER AT HELLS HALF ACRE BRIDGE, NEAR PINECREST, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	37.5	46.0	87.4	164	162	212	294	858	1020	296	46.8	35.1
MAX	184	305	814	1856	986	738	808	3144	4512	2016	320	72.8
(WY)	1983	1984	1965	1997	1986	1986	1986	1969	1983	1995	1983	1983
MIN	12.6	7.09	8.69	13.9	12.4	13.0	19.9	29.9	16.7	12.5	11.5	12.1
(WY)	1978	1958	1959	1961	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1958 - 1998	
ANNUAL TOTAL	148189		205320			
ANNUAL MEAN	406		563		272	
HIGHEST ANNUAL MEAN					868	1983
LOWEST ANNUAL MEAN					18.4	1977
HIGHEST DAILY MEAN	17300	Jan 2	4360	Jun 15	17300	Jan 2 1997
LOWEST DAILY MEAN	31	Nov 18	31	Nov 18	3.3	Nov 9 1957
ANNUAL SEVEN-DAY MINIMUM	32	Nov 12	32	Nov 12	3.7	Nov 7 1957
INSTANTANEOUS PEAK FLOW			4700	Jun 15	21000	Jan 2 1997
INSTANTANEOUS PEAK STAGE			10.18	Jun 15	18.02	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	293900		407300		196800	
TOTAL DIVERSION (AC-FT) a	337500		287000			
10 PERCENT EXCEEDS	1070		2140		638	
50 PERCENT EXCEEDS	49		137		48	
90 PERCENT EXCEEDS	34		35		20	

a Diversion, in acre-feet, through Donnell Powerplant (station 11292610), provided by Oakdale and South San Joaquin Irrigation District.

11292800 BEARDSLEY LAKE NEAR STRAWBERRY, CA

LOCATION.—Lat 38°12'17", long 120°04'31", in SE 1/4 NW 1/4 sec.14, T.4 N., R.17 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, in hoist house of Beardsley Dam on Middle Fork Stanislaus River, 2.4 mi upstream from Spring Gap Powerplant, 3.9 mi west of Strawberry, and 4.7 mi west of Pinecrest.

DRAINAGE AREA.—309 mi^2.

PERIOD OF RECORD.—June 1957 to current year. Prior to October 1960, published as Lake Hartley near Strawberry.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 7.84 ft above sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

REMARKS.—Reservoir is formed by rockfill, earth-core dam completed in 1957. Capacity, 98,500 acre-ft between gage heights 3,145.0 ft, tunnel invert, and 3,398.0 ft, top of spillway gates. No dead storage. Reservoir is used for power and conservation storage. Water passes through Beardsley Powerplant, is diverted at Beardsley Afterbay to J.W. Southern Powerplant at Sand Bar Flat on the Middle Fork Stanislaus River, then diverted to Stanislaus Powerplant at the head of New Melones Reservoir (station 11299000). Records, including extremes, represent contents at 2400 hours. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were provided by Oakdale and South San Joaquin Irrigation Districts, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 98,700 acre-ft, June 27, 1957, gage height, 3,398.2 ft; minimum since reservoir first filled, 3 acre-ft, Sept. 23, 1976, gage height, 3,154.4 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 97,700 acre-ft, several days in August, maximum gage height, 3,396.87 ft, Aug. 6; minimum, 22,400 acre-ft, Feb. 1, gage height, 3,266.73 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated Oct. 3, 1956)

3,154	2	3,200	2,370	3,290	33,100
3,160	41	3,210	3,790	3,320	48,800
3,170	267	3,220	5,720	3,350	66,400
3,180	693	3,240	11,600	3,370	79,200
3,190	1,370	3,260	19,500	3,398	98,500

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87000	68600	53000	31500	22400	28000	54100	81000	97200	97100	97500	93900
2	86500	67900	52100	30900	22800	27900	54700	83300	97300	97000	97600	93800
3	86100	68000	51100	30300	24700	27600	55700	85700	97000	97000	97700	96600
4	85600	68100	50200	29500	25700	27800	56700	88200	96800	97000	97700	93600
5	84800	68200	49300	28700	26200	27600	57600	90600	96900	97000	97700	93700
6	84200	68300	48400	28100	26700	27600	58500	92300	97000	97200	97700	93600
7	83600	68400	47600	27600	26800	27500	59500	93100	96600	97300	97700	93300
8	83000	68300	46800	27100	27000	27200	60300	93700	96000	97200	97700	93100
9	82300	68200	45900	26700	27000	27100	61200	94300	95600	97300	97700	92900
10	81600	68300	45000	26100	27200	27000	62100	94700	96000	97300	97700	92300
11	80900	68400	44100	25500	27400	27000	62700	94800	96100	97200	97700	91800
12	80200	68400	43200	25400	27500	27100	63100	94800	95600	97000	97700	91400
13	79900	68300	42200	25200	27700	27200	62500	94900	95200	97100	97700	91000
14	79200	67600	41300	24900	27900	27300	61900	94900	94900	97200	97700	90600
15	78500	66800	40400	25800	27900	27700	61200	95100	94300	97200	97600	90200
16	77800	66000	39700	26400	27800	28200	60500	95400	93800	97000	97500	89500
17	77200	65000	39300	26700	27900	28900	60500	95600	96300	97100	97500	89100
18	76700	64100	38800	26700	28000	30200	61000	95800	96000	97300	97600	88500
19	75800	63200	38200	26600	28200	31300	61600	96100	96000	97200	97600	87900
20	75300	62400	37600	26400	28200	32300	62400	96300	96000	97200	97100	87400
21	74800	61500	36900	26100	28100	33300	63500	96400	96300	97300	96700	86500
22	74200	60600	36400	25900	28000	34600	65200	96500	96600	97400	96400	86100
23	73600	59700	35900	25700	28200	36300	67100	96600	96300	97500	96300	85500
24	73100	58800	35500	25100	28200	41100	68700	96900	96000	97500	96400	84900
25	72600	58000	35200	24700	28300	43700	70200	97300	96000	97400	96200	84300
26	71800	57300	34800	24300	28400	46200	71700	97400	96100	97300	96000	83700
27	71400	56500	34300	24000	28500	48000	73300	97300	95900	97400	95700	83400
28	70900	55600	33700	23700	28200	49700	75000	97500	95900	97600	95300	82800
29	70400	54800	33200	23500	---	51100	76900	97100	96400	97500	94900	82300
30	69900	53900	32800	23300	---	52300	78900	96800	97000	97400	94500	81900
31	69400	---	32200	22800	---	53600	---	96800	---	97300	94200	---
MAX	87000	68600	53000	31500	28500	53600	78900	97500	97300	97600	97700	96600
MIN	69400	53900	32200	22800	22400	27000	54100	81000	93800	97000	94200	81900
a	3354.79	3329.03	3288.14	3267.75	3279.66	3328.52	3369.66	3395.55	3395.95	3396.37	3391.94	3374.05
b	-17700	-15500	-21700	-9400	+5400	+25400	+25300	+17900	+200	+300	-3100	-12300

CAL YR 1997 b -34300
WTR YR 1998 b -5200

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

11292900 MIDDLE FORK STANISLAUS RIVER BELOW BEARDSLEY DAM, CA

LOCATION.—Lat 38°11'36", long 120°05'53", in NW 1/4 NW 1/4 sec.22, T.4 N., R.17 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 0.5 mi downstream from Beardsley Afterbay Dam, 1.5 mi downstream from Beardsley Dam, and 5.7 mi west of Pinecrest.

DRAINAGE AREA.—316 mi^2.

PERIOD OF RECORD.—December 1956 to current year.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 3,044.7 ft above sea level (river-profile survey).

REMARKS.—Records good. Diversion from Beardsley Afterbay Dam, 0.5 mi upstream, to J.W. Southern Powerplant (station 11292860) at Sand Bar Flat 3 mi downstream, began May 31, 1986. Flow regulated by Relief Reservoir (station 11291000) since 1909, Donnell Lake (station 11292600) since April 1957, and by Beardsley Lake (station 11292800) since January 1957. See schematic diagram of Stanislaus River Basin. For records of combined discharge for river and powerplant, see station 11292901.

COOPERATION.—Records of diversion to J.W. Southern Powerplant provided by Oakdale–South San Joaquin Irrigation District.

EXTREMES FOR PERIOD OF RECORD.—River only, maximum discharge, 28,200 ft^3/s, from rating curve extended above 5,400 ft^3/s, on basis of spillway computation at Beardsley Dam, Jan. 2, 1997, gage height, 19.31 ft; minimum daily, 3.0 ft^3/s, Oct. 10, 11, 1958. Combined flow, maximum daily discharge, 23,100 ft^3/s, Jan. 2, 1997; minimum daily 25 ft^3/s, Oct. 25, 1986.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	152	151	144	148	151	152	147	149	1480	2620	223	146
2	152	151	144	148	153	152	146	150	2210	2500	167	146
3	152	151	144	147	154	152	146	149	2620	2410	159	146
4	152	151	144	149	151	153	144	149	2170	2410	161	146
5	152	151	144	149	150	152	144	148	2030	2140	162	147
6	152	150	144	150	150	151	146	286	2860	2080	157	164
7	153	150	146	149	150	151	144	618	4520	2330	156	174
8	153	151	146	149	148	151	143	749	4050	2510	156	176
9	151	151	146	149	149	151	144	757	3400	2510	156	165
10	151	151	145	150	151	151	148	762	3330	2430	158	155
11	151	151	148	148	151	151	147	764	3620	2130	153	155
12	151	151	148	148	151	151	148	743	3700	1710	151	154
13	151	150	148	147	149	153	147	708	3550	1510	152	153
14	151	147	148	148	150	155	147	636	4000	1520	152	155
15	151	148	148	158	150	160	148	526	4840	1410	152	154
16	151	148	149	147	146	150	148	522	4370	1100	150	153
17	151	148	148	147	146	142	147	525	2240	1290	147	153
18	151	148	148	151	145	145	146	526	3700	1570	148	154
19	151	148	146	153	146	144	147	524	3350	1460	148	155
20	152	148	147	154	146	144	147	585	3340	1100	148	155
21	153	148	148	152	147	144	147	616	3410	1100	148	155
22	153	145	148	152	147	144	149	577	3970	1160	149	155
23	152	144	148	152	147	145	154	574	3960	952	146	155
24	153	144	148	152	146	152	155	575	3430	949	147	155
25	154	145	148	152	145	165	148	726	3270	945	148	154
26	154	146	148	152	146	154	147	1100	3270	829	149	154
27	152	146	148	152	147	152	147	1390	3330	514	149	154
28	151	146	148	151	152	154	149	1190	2670	316	148	155
29	151	145	148	152	---	156	148	1340	2440	313	149	71
30	151	144	148	151	---	148	148	1330	2590	362	148	126
31	151	---	148	150	---	148	---	1320	---	339	146	---
TOTAL	4706	4448	4553	4657	4164	4673	4416	20714	97720	46519	4783	4540
MEAN	152	148	147	150	149	151	147	668	3257	1501	154	151
MAX	154	151	149	158	154	165	155	1390	4840	2620	223	176
MIN	151	144	144	147	145	142	143	148	1480	313	146	71
AC-FT	9330	8820	9030	9240	8260	9270	8760	41090	193800	92270	9490	9010
a	32890	19010	31330	28460	20390	29250	37910	38320	36200	37260	37670	38650

a Diversion, in acre-feet, through Beardsley Powerplant (station 11292820), provided by Oakdale–South San Joaquin Irrigation District.

11292900 MIDDLE FORK STANISLAUS RIVER BELOW BEARDSLEY DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1985, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	396	410	449	432	478	494	588	1271	1607	819	523	488
MAX	651	1064	1322	1035	1322	1307	1378	3754	5325	2420	958	690
(WY)	1984	1983	1984	1984	1980	1983	1982	1969	1983	1983	1983	1983
MIN	23.3	19.9	18.8	18.9	21.0	22.4	180	168	348	77.5	44.5	39.5
(WY)	1977	1977	1977	1977	1977	1977	1957	1960	1976	1977	1977	1977

SUMMARY STATISTICS	WATER YEARS 1957 - 1985	
ANNUAL MEAN	671	
HIGHEST ANNUAL MEAN	1507	1983
LOWEST ANNUAL MEAN	111	1977
HIGHEST DAILY MEAN	8630	May 30 1983
LOWEST DAILY MEAN	3.0	Oct 10 1958
ANNUAL SEVEN-DAY MINIMUM	5.0	Jan 16 1957
INSTANTANEOUS PEAK FLOW	9080	May 30 1983
INSTANTANEOUS PEAK STAGE	12.30	May 30 1983
ANNUAL RUNOFF (AC-FT)	485800	
10 PERCENT EXCEEDS	1270	
50 PERCENT EXCEEDS	500	
90 PERCENT EXCEEDS	110	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	108	110	110	283	155	204	217	694	907	402	122	110
MAX	152	158	154	2227	398	625	607	1973	3266	1960	269	151
(WY)	1998	1994	1990	1997	1997	1996	1995	1995	1995	1995	1995	1998
MIN	54.8	54.4	53.9	53.1	55.1	58.7	135	59.1	57.6	57.3	55.8	56.8
(WY)	1991	1991	1995	1995	1991	1991	1991	1994	1994	1994	1988	1990

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998	
ANNUAL TOTAL	196673		205893			
ANNUAL MEAN	539		564		286	
HIGHEST ANNUAL MEAN					735	1995
LOWEST ANNUAL MEAN					76.6	1988
HIGHEST DAILY MEAN	23100	Jan 2	4840	Jun 15	23100	Jan 2 1997
LOWEST DAILY MEAN	143	Apr 13	71	Sep 29	25	Oct 23 1986
ANNUAL SEVEN-DAY MINIMUM	144	Apr 10	138	Sep 24	44	Jan 19 1995
INSTANTANEOUS PEAK FLOW			5240	Jun 15	28200	Jan 2 1997
INSTANTANEOUS PEAK STAGE			10.29	Jun 15	19.31	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	390100		408400		206900	
TOTAL DIVERSION (AC-FT) a	414300		387300		284800	
10 PERCENT EXCEEDS	1250		2150		553	
50 PERCENT EXCEEDS	153		151		145	
90 PERCENT EXCEEDS	148		146		57	

a Diversion, in acre-feet, through Beardsley Powerplant (station 11292820), provided by Oakdale–South San Joaquin Irrigation District.

11292901 MIDDLE FORK STANISLAUS RIVER BELOW BEARDSLEY DAM, CA—Continued

MIDDLE FORK STANISLAUS RIVER AND J.W. SOUTHERN POWERPLANT BELOW BEARDSLEY DAM,

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	551	552	505	531	442	415	692	701	2100	3250	832	683
2	554	468	514	530	379	415	690	702	2830	3120	776	712
3	554	151	523	526	258	413	690	717	3240	3030	779	710
4	553	151	524	499	364	415	692	725	2790	3030	778	710
5	554	151	528	526	398	413	696	717	2650	2760	776	614
6	552	150	527	514	370	410	694	891	3300	2590	784	681
7	553	150	526	518	367	416	693	1240	5140	2950	782	686
8	553	151	522	520	357	419	691	1370	4670	3140	776	694
9	554	151	526	517	380	418	693	1380	4020	3140	774	674
10	555	151	526	519	396	406	691	1390	3950	3060	780	689
11	556	151	528	509	390	415	693	1390	4250	2760	769	635
12	557	151	530	459	397	413	694	1370	4330	2340	768	662
13	554	283	529	486	395	411	693	1330	4180	2140	788	665
14	552	544	528	471	352	410	693	1270	4630	2150	787	674
15	551	545	529	369	379	408	690	1150	5470	2040	771	704
16	550	542	530	377	391	396	688	1150	5000	1620	770	700
17	550	540	527	406	400	396	687	1150	2860	1910	719	707
18	549	522	529	408	407	400	687	1150	4330	2190	681	670
19	549	501	529	422	400	505	687	1150	3980	2090	764	640
20	551	500	527	441	396	659	686	1210	3970	1720	720	644
21	549	500	530	440	407	659	687	1240	4030	1720	671	624
22	555	500	528	443	400	659	688	1200	4590	1780	578	643
23	555	499	529	444	399	666	655	1200	4580	1580	615	650
24	520	498	527	448	404	650	704	1200	4050	1580	662	702
25	555	499	528	450	409	714	695	1350	3900	1580	601	647
26	569	493	528	451	411	699	689	1720	3900	1460	624	635
27	551	502	528	451	416	702	694	2010	3890	1140	622	691
28	549	505	528	450	415	701	700	1820	3300	947	652	713
29	552	502	529	435	---	702	700	1960	3070	946	686	695
30	552	502	532	445	---	695	700	1960	3220	990	677	706
31	552	---	636	447	---	692	---	1940	---	957	677	---
TOTAL	17111	11505	16430	14452	10879	16092	20732	39753	116220	65710	22439	20260
MEAN	552	384	530	466	389	519	691	1282	3874	2120	724	675
MAX	569	552	636	531	442	714	704	2010	5470	3250	832	713
MIN	520	150	505	369	258	396	655	701	2100	946	578	614
AC-FT	33940	22820	32590	28670	21580	31920	41120	78850	230500	130300	44510	40190

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1998, BY WATER YEAR (WY)

MEAN	355	256	388	454	395	536	607	1135	1434	870	571	478
MAX	655	538	656	2608	1007	1560	1448	2554	3874	2504	805	675
(WY)	1996	1987	1997	1997	1997	1986	1986	1995	1998	1995	1995	1998
MIN	57.6	58.1	55.8	55.3	55.1	58.7	147	72.7	208	444	471	124
(WY)	1989	1989	1989	1989	1991	1991	1988	1990	1987	1994	1994	1988

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1986 - 1998	
ANNUAL TOTAL	370507		371583			
ANNUAL MEAN	1015		1018		624	
HIGHEST ANNUAL MEAN					1165	1995
LOWEST ANNUAL MEAN					221	1988
HIGHEST DAILY MEAN	23100	Jan 2	5470	Jun 15	23100	Jan 2 1997
LOWEST DAILY MEAN	150	Nov 6	150	Nov 6	25	Oct 23 1986
ANNUAL SEVEN-DAY MINIMUM	151	Nov 3	151	Nov 3	27	Nov 12 1985
ANNUAL RUNOFF (AC-FT)	734900		737000		452200	
10 PERCENT EXCEEDS	1760		2770		1250	
50 PERCENT EXCEEDS	676		647		497	
90 PERCENT EXCEEDS	526		402		62	

11293200 MIDDLE FORK STANISLAUS RIVER BELOW SAND BAR DIVERSION DAM, CA

LOCATION.—Lat 38°10'59", long 120°09'28", in NW 1/4 SE 1/4 sec.24, T.4 N., R.16 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank 100 ft downstream from Sand Bar Diversion Dam and 8.5 mi west of Strawberry.

DRAINAGE AREA.—332 mi^2.

PERIOD OF RECORD.—October 1985 to current year (low-flow records only). Unpublished records for water years 1970, 1971, and 1976–85 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and sharp-crested weir since February 1986. Elevation of gage is 2,700 ft above sea level, from topographic map.

REMARKS.—No records computed above 70 ft^3/s. Flow regulated by Relief Reservoir and Donnell and Beardsley Lakes (stations 11291000, 11292600, and 11292800). Most of the water is diverted at Sand Bar Diversion Dam for use at Stanislaus Powerplant (station 11295505). See schematic diagram of Stanislaus River Basin.

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

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	54	27	27	30	30	---	---	---	---	---	---
2	54	56	27	31	31	30	---	---	---	---	---	---
3	54	37	27	27	33	30	---	---	---	---	---	---
4	53	25	27	27	31	30	---	---	---	---	---	---
5	54	25	27	27	31	31	---	---	---	---	---	---
6	54	25	27	28	33	31	---	---	---	---	---	---
7	54	25	35	28	33	30	---	---	---	---	---	---
8	53	25	29	28	33	30	---	---	---	---	---	---
9	56	25	26	28	31	31	---	---	---	---	---	---
10	54	25	26	28	31	31	---	---	---	---	---	---
11	53	25	27	29	33	30	---	---	---	---	---	---
12	53	25	27	47	32	31	---	---	---	---	---	---
13	54	39	26	28	31	33	---	---	---	---	---	---
14	53	62	27	29	33	32	---	---	---	---	---	---
15	54	62	27	---	33	32	---	---	---	---	---	---
16	53	59	28	33	30	31	---	---	---	---	---	---
17	54	58	27	33	31	31	---	---	---	---	---	---
18	54	47	27	31	30	31	---	---	---	---	---	---
19	54	31	28	31	30	---	---	---	---	---	---	---
20	54	27	27	31	30	---	---	---	---	---	---	---
21	54	26	27	31	30	---	---	---	---	---	---	---
22	54	27	27	30	32	---	---	---	---	---	---	---
23	54	27	27	30	31	---	---	---	---	---	---	---
24	53	27	28	30	32	---	---	---	---	---	---	---
25	54	27	27	30	31	---	---	---	---	---	---	---
26	54	28	27	32	30	---	---	---	---	---	---	---
27	54	27	27	30	30	---	---	---	---	---	---	---
28	54	27	27	30	31	---	---	---	---	---	---	---
29	54	26	27	29	---	---	---	---	---	---	---	---
30	54	27	27	28	---	---	---	---	---	---	---	---
31	54	---	27	28	---	---	---	---	---	---	---	---
TOTAL	1669	1026	847	---	877	---	---	---	---	---	---	---
MEAN	53.8	34.2	27.3	---	31.3	---	---	---	---	---	---	---
MAX	56	62	35	---	33	---	---	---	---	---	---	---
MIN	53	25	26	---	30	---	---	---	---	---	---	---
AC-FT	3310	2040	1680	---	1740	---	---	---	---	---	---	---
a	30690	20020	30930	29850	27580	30830	29870	23570	29520	15890	29830	29960

CAL YR 1997 a 351900
WTR YR 1998 a 328500

a Diversion, in acre-feet, through Stanislaus Powerplant, provided by Pacific Gas & Electric Co.

11293350 UNION RESERVOIR NEAR BIG MEADOWS, CA

LOCATION.—Lat 38°25'50", long 119°59'47", unsurveyed, T.7 N., R.18 E., Alpine County, Hydrologic Unit 18040010, Stanislaus National Forest, at outlet structure on upstream face of Union Dam on North Fork Stanislaus River and 6.4 mi east of Big Meadows.

DRAINAGE AREA.—13.8 mi^2.

PERIOD OF RECORD.—October 1986 to current year. Unpublished records for water years 1981–86 available in files of the U.S. Geological Survey.

GAGE.—Nonrecording gage, observed intermittently in the summer months. Datum of gage is 6,823.4 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by concrete and rock dam completed in 1902. Usable capacity, 3,130 acre-ft between gage heights –1.9 ft, invert of outlet, and 26.9 ft, crest of spillway. Figures given represent usable contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by the Northern California Power Association, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co. in 1954)

0	4	20	1,756
5	81	25	2,754
10	359	27.6	3,283
15	938		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	3130	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	1211	---	---	---	---	---	---	---	---	---	---	---
7	---	394	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	2765
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	3086	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	996	---	---	---	---	---	---	---	---	---	---	2744
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	3130	---	---
17	---	---	---	---	---	---	---	---	---	---	3021	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	318	---	---	---	---	---	---	---	3130	---	---
21	735	---	---	---	---	---	---	---	---	---	---	2660
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	2935	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	502	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	3130	---	2559
30	---	---	---	---	---	---	---	---	3174	---	---	---
31	---	---	---	---	---	---	---	---	---	---	2828	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

11293370 UTICA RESERVOIR NEAR BIG MEADOWS, CA

LOCATION.—Lat 38°26'26", long 120°00'08", unsurveyed, T.7 N., R.18 E., Alpine County, Hydrologic Unit 18040010, Stanislaus National Forest, at outlet structure on upstream face of Utica Dam on North Fork Stanislaus River, 1.2 mi upstream from Silver Creek, 2.6 mi southeast of Bear Valley, and 6.2 mi west of Big Meadows.

DRAINAGE AREA.—15.2 mi^2.

PERIOD OF RECORD.—October 1986 to current year. Unpublished records for water years 1981–86 available in files of the U.S. Geological Survey.

GAGE.—Nonrecording gage, observed intermittently during summer months. Datum of gage is 6,776.75 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by concrete and rock dam completed in 1910. Usable capacity, 2,334 acre-ft between gage heights 0.7 ft, invert of outlet, and 42.5 ft, crest of spillway. Figures given represent usable contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by the Northern California Power Association, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas and Electric Co. in 1954)

0.7	0	30	356
10	19	35	858
20	65	40	1,763
25	127	43	2,456

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	2382	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	1208	---	---	---	---	---	---	---	---	---	---	---
7	---	587	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	2239
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	2310	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	1089	---	---	---	---	---	---	---	---	---	---	2262
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	2481	---	---
17	---	---	---	---	---	---	---	---	---	---	2286	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	577	---	---	---	---	---	---	---	2472	---	---
21	888	---	---	---	---	---	---	---	---	---	---	2239
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	2262	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	729	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	2382	---	2239
30	---	---	---	---	---	---	---	---	2531	---	---	---
31	---	---	---	---	---	---	---	---	---	---	2239	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

11293460 LAKE ALPINE NEAR BIG MEADOWS, CA

LOCATION.—Lat 38°28'17", long 120°00'10", in NE 1/4 SW 1/4 sec.9, T.7 N., R.18 E., Alpine County, Hydrologic Unit 18040010, Stanislaus National Forest, at outlet structure on upstream face of Lake Alpine Dam on Silver Creek and 7.2 mi northeast of Big Meadows.

DRAINAGE AREA.—5.34 mi^2.

PERIOD OF RECORD.—October 1986 to current year. Unpublished records for water years 1981–86 available in files of the U.S. Geological Survey.

GAGE.—Nonrecording gage, observed intermittently in the summer months. Elevation of gage is 7,260.07 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed on natural lake by concrete and rock dam completed in 1906. Usable capacity, 4,117 acre-ft between gage heights 0.0 ft, invert of outlet, and 42.07 ft, crest of spillway. Figures given represent usable contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Northern California Power Association, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas and Electric Co. in 1948)

0	0	25	1,564
5	41	30	2,229
10	208	35	2,962
15	533	40	3,765
20	990	43	4,279

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	4105	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	2299	---	---	---	---	---	---	---	---	---	---	---
7	---	2062	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	3765
9	---	---	---	---	---	---	---	---	---	---	---	3765
10	---	---	---	---	---	---	---	---	---	---	4053	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	2299	---	---	---	---	---	---	---	---	---	---	3715
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	4174	---	---
17	---	---	---	---	---	---	---	---	---	---	4002	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	1981	---	---	---	---	---	---	---	4174	---	---
21	2090	---	---	---	---	---	---	---	---	---	---	3648
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	3934	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	1892	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	4122	---	3582
30	---	---	---	---	---	---	---	---	---	4122	---	---
31	---	---	---	---	---	---	---	---	---	---	3849	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

11293580 NORTH FORK STANISLAUS RIVER DIVERSION TUNNEL AT DIVERSION DAM, NEAR BIG MEADOWS, CA

LOCATION.—Lat 38°26'17", long 120°00'59", unsurveyed, T.7 N., R.18 E., Alpine County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank 50 ft upstream from diversion dam, at diversion tunnel entrance, and 5.6 mi southeast of Big Meadows.

PERIOD OF RECORD.—January 1989 to current year.

GAGE.—Water-stage recorder and artificial control. Datum of tunnel invert is 6,684 ft above sea level (levels by Calaveras County Water District).

REMARKS.—Records good except Oct. 1–27, which are fair. Flow diverted from North Fork Stanislaus River Diversion Dam to New Spicer Meadow Reservoir (station 11293770) beginning Oct. 21, 1987. See schematic diagram of Stanislaus River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 1,440 ft^3/s, Jan. 2, 1997; no flow for many days each year.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	.00	.00	.00	1.0	1.0	54	541	583	400	1.5	.00
2	29	.00	.00	.00	2.0	3.7	46	536	625	387	.32	.00
3	29	.00	.00	.00	34	5.4	46	455	568	386	.00	.00
4	29	.00	.00	.00	15	4.7	44	422	435	349	.00	.00
5	29	.00	.00	.00	5.8	2.8	38	313	544	367	.00	.00
6	26	.00	.00	.00	3.9	1.8	37	239	660	370	.00	.00
7	18	.00	.00	.00	2.4	.66	34	201	778	344	.00	.00
8	18	.00	.00	.00	1.8	.36	30	336	766	315	.00	.00
9	18	.00	.00	.00	1.2	.73	29	416	726	301	.00	3.4
10	21	.00	.00	.00	.90	2.3	34	330	759	264	.00	1.4
11	19	.00	.00	.00	.76	6.7	34	232	768	230	.00	.00
12	18	.00	.00	.00	.39	11	33	214	638	171	.00	.00
13	19	.00	.00	.00	.50	11	32	151	653	170	.00	.00
14	18	.00	.00	.00	1.5	8.4	34	118	748	163	.00	.00
15	21	.00	.00	7.9	.82	18	27	121	736	130	.00	.00
16	21	.00	.00	38	.00	30	24	181	723	114	.00	.00
17	21	.00	.00	45	.00	35	29	138	628	119	.00	.00
18	21	.00	.00	31	.00	38	48	159	671	112	.00	.00
19	21	.00	.00	20	.00	45	97	295	713	88	.00	.00
20	20	.00	.00	12	.00	58	194	339	673	77	.00	.00
21	20	.00	.00	7.1	.00	58	305	269	661	68	.00	.00
22	20	.00	.00	5.0	.00	79	410	224	633	58	.00	.00
23	15	.00	.00	4.9	.00	176	403	302	543	49	.00	.00
24	15	.00	.00	4.4	.00	645	193	339	479	42	.00	.00
25	13	.00	.00	3.2	.00	304	173	557	618	38	.00	.00
26	13	.00	.00	2.4	.00	156	200	330	605	28	.00	.00
27	7.0	.00	.00	1.9	.00	139	290	184	517	22	.00	.00
28	.00	.00	.00	2.4	.00	109	355	209	497	17	.00	.00
29	.00	.00	.00	2.7	---	76	435	239	537	13	.00	.00
30	.00	.00	.00	1.3	---	63	516	207	487	e9.0	.00	.00
31	.00	---	.00	1.3	---	62	---	402	---	3.3	.00	---
TOTAL	548.00	0.00	0.00	190.50	71.97	2151.55	4224	8999	18972	5204.3	1.82	4.80
MEAN	17.7	.000	.000	6.15	2.57	69.4	141	290	632	168	.059	.16
MAX	29	.00	.00	45	34	645	516	557	778	400	1.5	3.4
MIN	.00	.00	.00	.00	.00	.36	24	118	435	3.3	.00	.00
AC-FT	1090	.00	.00	378	143	4270	8380	17850	37630	10320	3.6	9.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1998, BY WATER YEAR (WY)

MEAN	11.6	7.28	7.68	21.7	18.3	66.9	183	259	177	47.5	3.82	9.98
MAX	21.2	33.2	57.6	159	86.4	145	301	561	632	257	14.3	21.3
(WY)	1997	1997	1997	1997	1996	1995	1989	1993	1998	1995	1993	1997
MIN	.33	.000	.000	.000	.001	7.28	39.3	33.0	.021	.000	.000	.013
(WY)	1990	1998	1998	1994	1994	1991	1991	1992	1992	1997	1997	1989

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1989 - 1998	
ANNUAL TOTAL	28351.00		40367.94			
ANNUAL MEAN	77.7		111		69.1	
HIGHEST ANNUAL MEAN					144	1995
LOWEST ANNUAL MEAN					22.0	1992
HIGHEST DAILY MEAN	1440	Jan 2	778	Jun 7	1440	Jan 2 1997
LOWEST DAILY MEAN	.00	Jun 28	.00	Oct 28	.00	Dec 15 1988
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 28	.00	Oct 28	.00	Dec 15 1988
ANNUAL RUNOFF (AC-FT)	56230		80070		50020	
10 PERCENT EXCEEDS	276		435		235	
50 PERCENT EXCEEDS	27		4.7		11	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated.

11293590 NORTH FORK STANISLAUS RIVER DIVERSION RESERVOIR NEAR BIG MEADOWS, CA

LOCATION.—Lat 38°26'18", long 120°01'00", unsurveyed, T.7 N., R.18 E., Alpine County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank of diversion dam on North Fork Stanislaus River, 5.6 mi southeast of Big Meadows.

PERIOD OF RECORD.—February 1990 to current year. Contents less than 12 acre-ft and end of month elevations for November 1990 to March 1991 published in WDR CA-91-3 are unreliable and should not be used.

REVISED RECORD.—WDR CA-92-3: 1991.

GAGE.—Water-stage recorder. Prior to Sept. 14, 1990, contents estimated on basis of periodic observations of nonrecording gage. Datum of gage is sea level (levels by Calaveras County Water District).

REMARKS.—Reservoir is formed by gravity-type concrete dam completed in October 1987. Capacity, 120 acre-ft between elevations 6,672.0 ft, sill of emergency release gate, and 6,695.0 ft, crest of spillway. Reservoir is used for power development and fishery enhancement. Flow is diverted through tunnel to New Spicer Meadow Reservoir (station 11293770). Records, including extremes, represent total contents at 2400 hours. Elevations below 6,678.9 ft are not recorded. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Calaveras County Water District, 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, 212 acre-ft, Jan. 1, 1997, elevation, 6,699.6 ft; minimum observed, 5 acre-ft, Feb. 1, 28, Mar. 1, 1990, elevation, 6,676.8 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 152 acre-ft, June 6, elevation, 6,696.6 ft; minimum, 11 acre-ft, many days in November, elevation, 6,678.9 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Calaveras County Water District in July 1989)

6,679	11	6,690	65	6,696	140
6,685	32	6,695	120		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	25	15	20	26	26	32	116	136	99	28	18
2	41	25	14	23	29	27	31	108	119	108	27	18
3	41	25	14	20	30	27	32	105	91	93	25	20
4	42	24	14	20	27	26	31	91	111	94	23	21
5	42	24	14	20	27	26	31	69	127	93	20	26
6	38	24	14	19	26	26	31	60	152	95	18	25
7	36	24	14	18	26	26	30	60	134	91	14	23
8	37	24	14	19	26	25	30	60	129	85	13	24
9	38	24	14	19	26	26	30	60	131	80	12	29
10	39	19	14	20	26	27	30	60	138	69	12	28
11	38	12	14	20	26	28	31	60	119	59	13	20
12	40	11	14	20	26	28	30	56	114	57	13	15
13	40	11	14	19	26	28	30	52	135	56	13	20
14	41	11	14	20	26	28	30	48	140	51	19	13
15	41	11	14	29	25	30	30	60	138	49	16	13
16	41	11	14	32	25	31	30	57	134	49	15	13
17	42	11	14	31	24	32	31	53	116	49	16	13
18	41	11	14	29	24	32	35	72	133	46	17	13
19	41	13	14	28	25	34	43	100	130	44	17	20
20	42	12	15	28	24	34	52	95	127	42	16	20
21	42	11	14	20	24	34	81	60	128	42	16	12
22	42	11	14	27	24	39	94	83	115	40	15	12
23	29	11	13	27	24	74	63	74	98	39	15	12
24	33	11	13	26	23	69	53	119	114	40	15	12
25	33	13	13	26	23	47	55	93	128	37	16	12
26	34	27	13	26	22	42	63	61	124	35	20	13
27	27	25	13	26	22	41	76	56	110	34	17	13
28	26	23	14	26	24	37	93	73	122	33	17	14
29	25	20	18	26	---	34	106	57	124	32	17	18
30	25	17	20	26	---	34	120	79	102	30	17	18
31	25	---	20	26	---	33	---	119	---	29	17	---
MAX	42	27	20	32	30	74	120	119	152	108	28	29
MIN	25	11	13	18	22	25	30	48	91	29	12	12
a	6683.1	6681.0	6682.1	6683.4	6683.0	6685.2	6695.0	6694.9	6693.4	6684.4	6681.2	6681.4
b	-16	-8	+3	+6	-2	+9	+87	-1	-17	-73	-12	+1

CAL YR 1997 MAX 212 MIN 11 b -71
WTR YR 1998 MAX 152 MIN 11 b -23

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

11293600 NORTH FORK STANISLAUS RIVER BELOW DIVERSION DAM, NEAR BIG MEADOWS, CA

LOCATION.—Lat 38°26'04", long 120°01'04", unsurveyed, T.7 N., R.18 E., Calaveras County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 0.3 mi downstream from diversion dam and 5.6 mi northeast of Big Meadows.

DRAINAGE AREA.—28.8 mi^2.

PERIOD OF RECORD.—October 1987 to current year.

REVISED RECORDS.—WDR CA-89-3: 1988 (M).

GAGE.—Water-stage recorder, crest-stage gage, and artificial control. Elevation of gage is 6,640 ft above sea level, from topographic map.

REMARKS.—Records good. Low and medium flow regulated by Union and Utica Reservoirs and Lake Alpine (stations 11293350, 11293370, and 11293460). Diversion upstream from station at North Fork Stanislaus River Diversion Reservoir (station 11293590) through North Fork Stanislaus River Diversion Tunnel (station 11293580) and into New Spicer Meadow Reservoir (station 11293770), for hydroelectric power generation. See schematic diagram of Stanislaus River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,220 ft^3/s, May 16, 1996, gage height 7.92 ft, from rating curve extended above 120 ft^3/s on basis of computation of peak flow over diversion dam; minimum daily, 2.3 ft^3/s, Oct. 18–20, 22, 23, 1992.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	15	12	14	17	16	18	28	82	24	16	9.8
2	16	15	11	15	17	17	18	28	112	24	16	9.8
3	16	15	11	15	20	17	18	27	26	24	16	11
4	16	15	10	15	18	17	18	26	25	24	15	10
5	16	15	10	14	17	16	18	24	34	24	14	11
6	16	15	13	14	17	16	18	22	186	24	13	11
7	15	15	14	14	17	16	18	22	297	24	12	11
8	15	15	14	14	17	16	18	24	67	23	10	9.9
9	16	15	13	14	17	16	18	26	61	23	9.5	11
10	16	15	13	14	17	16	18	24	110	22	8.9	11
11	15	11	12	14	17	17	18	22	101	22	9.5	17
12	15	8.8	12	14	17	17	18	22	26	21	10	11
13	14	8.1	12	14	17	17	18	20	61	21	10	11
14	14	7.7	12	14	17	17	18	20	122	20	11	10
15	15	7.7	12	16	17	18	17	20	123	20	12	10
16	15	7.7	12	19	17	18	17	21	107	19	10	10
17	15	7.8	12	19	17	18	18	20	60	19	9.4	10
18	14	7.7	12	18	17	18	18	21	47	19	9.7	9.9
19	14	9.9	12	18	17	19	20	24	62	19	10	9.7
20	15	9.4	12	18	17	19	21	25	44	19	10	9.6
21	14	8.9	11	17	17	19	23	39	40	19	10	9.6
22	15	8.7	11	17	17	19	25	22	36	18	9.9	9.5
23	31	8.6	11	17	17	22	23	24	25	18	9.7	9.5
24	18	8.5	11	17	16	29	21	25	24	18	9.6	9.6
25	18	9.7	10	17	16	23	20	95	33	18	9.6	9.6
26	18	16	10	17	16	20	21	23	38	18	9.6	9.8
27	17	16	10	17	15	20	23	21	28	17	9.7	10
28	16	15	11	17	15	19	24	22	25	17	9.7	10
29	16	14	12	17	---	19	25	22	29	17	9.7	12
30	15	13	14	17	---	18	27	22	28	17	9.7	16
31	15	---	14	17	---	18	---	25	---	17	9.7	---
TOTAL	498	354.2	366	494	473	567	595	806	2059	629	338.9	319.3
MEAN	16.1	11.8	11.8	15.9	16.9	18.3	19.8	26.0	68.6	20.3	10.9	10.6
MAX	31	16	14	19	20	29	27	95	297	24	16	17
MIN	14	7.7	10	14	15	16	17	20	24	17	8.9	9.5
AC-FT	988	703	726	980	938	1120	1180	1600	4080	1250	672	633

11293600 NORTH FORK STANISLAUS RIVER BELOW DIVERSION DAM, NEAR BIG MEADOWS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1998, BY WATER YEAR (WY)

MEAN	15.9	16.3	12.6	16.2	16.8	22.5	33.9	43.4	29.8	15.6	13.0	15.9
MAX	20.2	42.2	25.6	39.3	25.3	42.5	99.6	106	98.7	28.1	22.8	26.5
(WY)	1989	1990	1997	1997	1996	1988	1988	1996	1995	1989	1988	1988
MIN	10.1	7.01	3.19	3.80	4.85	16.2	18.8	18.0	9.68	5.45	5.32	5.48
(WY)	1993	1991	1991	1991	1991	1991	1991	1992	1992	1988	1989	1989

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1988 - 1998	
ANNUAL TOTAL	7371.7		7499.4			
ANNUAL MEAN	20.2		20.5		21.0	
HIGHEST ANNUAL MEAN					32.6	1995
LOWEST ANNUAL MEAN					13.0	1991
HIGHEST DAILY MEAN	288	Jan 1	297	Jun 7	1840	May 16 1996
LOWEST DAILY MEAN	5.5	Jul 16	7.7	Nov 14	2.3	Oct 18 1992
ANNUAL SEVEN-DAY MINIMUM	5.6	Jul 15	7.9	Nov 12	2.3	Oct 17 1992
INSTANTANEOUS PEAK FLOW			896	Jun 6	3220	May 16 1996
INSTANTANEOUS PEAK STAGE			5.63	Jun 6	7.92	May 16 1996
ANNUAL RUNOFF (AC-FT)	14620		14880		15210	
10 PERCENT EXCEEDS	28		25		27	
50 PERCENT EXCEEDS	18		17		17	
90 PERCENT EXCEEDS	6.5		9.8		7.0	

11293770 NEW SPICER MEADOW RESERVOIR NEAR BIG MEADOWS, CA

LOCATION.—Lat 38°23'35", long 119°59'53", in NW 1/4 NE 1/4 sec.9, T.7 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, at outlet structure on upstream face of New Spicer Meadow Dam on Highland Creek and 7.7 mi east-southeast of Big Meadows.

DRAINAGE AREA.—45.4 mi^2.

PERIOD OF RECORD.—February 1990 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Calaveras County Water District).

REMARKS.—Reservoir is formed by rockfill dam with a reinforced concrete face completed in December 1988. Dam is 600 ft downstream from original concrete gravity-type dam which was completed in 1929. Usable capacity, 184,298 acre-ft between elevations 6,420.0 ft, minimum operating head, and 6,614.0 ft, crest of spillway. Released water is used for hydroelectric power and fishery maintenance. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Calaveras County Water District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 190,024 acre-ft, July 5, 1998, elevation, 6,614.5 ft; minimum, 30,198 acre-ft, Mar. 5, 1993, elevation, 6,491.2 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 190,024 acre-ft, July 5, elevation, 6,614.5 ft; minimum, 36,712 acre-ft, Mar. 16, elevation, 6,502.0 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Calaveras County Water District in July 1989)

6,420	4,702	6,500	35,214	6,580	125,341
6,440	9,299	6,520	50,197	6,600	160,318
6,460	15,511	6,540	69,652	6,614	189,000
6,480	23,781	6,560	94,859		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74120	64693	59340	54234	55207	47275	48137	67269	106290	e185987	170547	134069
2	73440	64461	59281	54242	55499	46395	48287	69361	108882	e187625	169209	132377
3	72935	64710	59124	54129	55936	45378	48518	71564	111091	189294	167658	130677
4	72589	64247	58967	54088	56066	44466	48736	73686	112844	189794	165891	129221
5	72347	63989	e58807	53942	56179	43717	48886	75261	114672	190024	164007	128460
6	72035	63508	e58653	53797	56326	42743	49036	76522	117645	189858	162272	127871
7	71608	63126	e58496	53651	56520	41844	49073	77645	121075	189816	161066	127024
8	71309	62976	e58339	53456	56666	41058	49043	79105	124198	189772	160196	125771
9	71146	62843	e58182	53343	56666	39896	49036	80869	127352	189706	159251	124854
10	71008	62666	e58025	53164	56617	38736	49036	82256	131113	189512	158189	124225
11	70616	62460	e57676	53067	56326	37874	49224	83327	134610	189202	157127	123648
12	70443	62326	e57214	53164	56179	37386	49336	84146	137583	189081	155940	123185
13	70120	62121	e57057	53164	56131	37199	49448	84524	140731	189816	154634	122624
14	69901	61944	e56901	53164	56326	37050	49261	84776	144229	189081	153703	121773
15	69612	61792	e57746	53456	56326	36787	48849	85217	147727	188341	153165	120801
16	69337	61659	e56591	53747	56423	36712	48399	85848	151093	187188	152405	119806
17	69001	61471	e56530	54137	56229	37050	48399	86352	153848	186450	151472	119012
18	68867	61178	e56425	54477	55644	37312	48662	86920	156981	185590	150673	118710
19	68582	61097	e56323	54631	55304	37612	49111	87927	160056	184635	149991	118436
20	68395	60893	e56217	54720	54770	38098	49897	89251	163391	183583	149375	117961
21	68252	60723	e56034	54770	54291	38685	51413	90322	166669	182462	148705	117257
22	68020	60545	e55986	54818	53699	39634	53407	91267	169436	181478	147998	116475
23	67621	60394	e57798	54834	52872	41282	55207	92402	171586	180804	147132	115904
24	67228	60225	e55628	54866	51656	43980	56131	93852	173430	180212	146005	115640
25	67130	60171	55401	54915	50392	45253	56958	96231	175786	179589	144554	115372
26	66810	60295	55256	54915	49411	45964	57931	97717	177937	178613	143473	115081
27	66391	60207	55061	54956	48636	46602	59244	98669	179576	177200	141374	114806
28	65913	60011	54875	54963	47950	47051	60897	99812	181216	175763	140036	114554
29	65423	59697	54720	55101	---	47388	62843	100880	182957	174234	138731	114274
30	64996	59578	54574	55110	---	47650	65080	101946	184289	172851	137307	113982
31	64889	---	54412	55110	---	47950	---	103775	---	171699	135799	---
MAX	74120	64710	59340	55110	56666	47950	65080	103775	184289	190024	170547	134069
MIN	64889	59578	54412	53067	47950	36712	48137	67269	106290	171699	135799	113982
a	6535.1	6529.6	6524.3	6525.1	6517.0	6517.0	6535.3	6565.9	6611.7	6605.6	6586.0	6572.5
b	-9809	-5311	-5166	+698	-7160	0	+17130	+38695	+80514	-12590	-35900	-21817
c	11750	6420	6370	3350	11160	14640	4540	3620	10450	40910	36420	21860

CAL YR 1997 MAX 135561 MIN 54412 b -40195 c 219600
WTR YR 1998 MAX 190024 MIN 36712 b +39284 c 171500

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Diversion, in acre-feet, through New Spicer Meadow Powerplant (station 11293760), provided by Calaveras County Water District.

11294000 HIGHLAND CREEK BELOW NEW SPICER MEADOW RESERVOIR, CA

LOCATION.—Lat 38°23'35", long 119°59'53", in NW 1/4 NE 1/4 sec.9, T.7 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank in New Spicer Meadow Powerplant at downstream side of New Spicer Meadow Dam, 5.4 mi upstream from mouth, and 6.5 mi east-southeast of Big Meadows.

DRAINAGE AREA.—45.4 mi^2.

PERIOD OF RECORD.—October 1952 to current year.

REVISED RECORDS.—WSP 1930: 1953. WDR CA-89-3: Drainage area, 1987(M), 1988(M).

GAGE.—Acoustic-flow meter and water-stage recorder on New Spicer Meadow Reservoir (station 11293770). Elevation of gage is 6,362 ft above sea level, from topographic map. December 1986 to September 1990 at site 1,400 ft downstream at different datum. October 1952 to November 1986, at site 900 ft upstream at different datum.

REMARKS.—Low and medium flows regulated by New Spicer Meadow Reservoir since 1988 and, prior to 1988, by Spicer Meadows Reservoir, capacity 4,060 acre-ft. Flow has been diverted to New Spicer Meadow Reservoir from North Fork Stanislaus River since Oct. 21, 1987. Penstock diverts from New Spicer Meadow Reservoir to New Spicer Meadow Powerplant. At times flow may bypass New Spicer Meadow Powerplant. Discharges, including extremes, represent flow through or past powerplant, and flow over spillway of reservoir. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Calaveras County Water District, 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, 9,860 ft^3/s, Jan. 31, 1963, gage height, 11.88 ft, site and datum then in use, from rating curve extended above 1,200 ft^3/s; no flow some years.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Nov. 20, 1950, reached a stage of 11.50 ft, site and datum then in use, from Pacific Gas & Electric Co. recorder chart, discharge, 8,800 ft^3/s.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	343	92	94	97	31	412	45	32	99	597	639	796
2	319	92	94	68	31	536	75	32	56	585	698	797
3	271	87	95	85	31	607	28	32	33	628	807	797
4	238	94	95	81	31	522	30	32	124	834	904	772
5	166	120	95	88	31	458	30	33	311	1010	902	384
6	174	276	93	94	31	538	43	34	207	982	802	306
7	168	176	94	95	31	485	97	34	34	949	543	412
8	157	95	88	94	31	422	125	34	34	936	400	596
9	152	96	95	111	31	597	125	34	34	897	516	461
10	152	95	95	127	97	596	125	34	33	814	598	339
11	151	95	192	93	196	467	43	34	33	719	599	307
12	152	95	249	38	128	300	32	86	33	643	650	253
13	152	95	96	29	53	181	71	181	33	932	673	335
14	152	95	96	70	30	142	237	188	33	961	516	450
15	152	94	96	30	30	239	329	154	32	801	306	523
16	194	94	96	30	29	216	327	123	31	799	383	524
17	227	105	96	30	113	50	120	61	31	799	450	374
18	152	152	96	30	332	90	28	132	31	798	400	140
19	154	153	96	30	273	112	28	111	31	798	338	140
20	151	127	95	30	284	77	29	32	31	799	320	230
21	151	96	97	30	324	29	31	31	116	798	350	337
22	151	94	97	30	323	29	31	40	252	703	351	396
23	173	94	98	32	459	30	32	31	318	533	457	271
24	215	97	97	31	607	30	32	31	399	452	572	153
25	151	101	97	31	612	30	32	31	399	452	767	149
26	159	62	97	31	569	30	32	31	421	620	792	148
27	228	83	97	31	472	30	32	31	498	797	793	148
28	275	94	97	31	414	31	32	31	498	797	669	143
29	275	94	97	31	---	31	33	31	500	768	678	164
30	237	94	97	31	---	31	33	31	584	697	698	176
31	130	---	97	31	---	31	---	72	---	585	790	---
TOTAL	5922	3237	3214	1690	5624	7379	2287	1824	5269	23483	18361	11021
MEAN	191	108	104	54.5	201	238	76.2	58.8	176	758	592	367
MAX	343	276	249	127	612	607	329	188	584	1010	904	797
MIN	130	62	88	29	29	29	28	31	31	452	306	140
AC-FT	11750	6420	6370	3350	11160	14640	4540	3620	10450	46580	36420	21860

11294000 HIGHLAND CREEK BELOW NEW SPICER MEADOW RESERVOIR, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1998, BY WATER YEAR (WY)

MEAN	56.3	47.9	69.2	69.2	99.8	122	224	395	286	132	80.0	67.6
MAX	358	244	399	334	902	509	456	1047	1097	787	592	423
(WY)	1997	1994	1965	1997	1997	1996	1995	1969	1983	1995	1998	1997
MIN	.000	.000	.50	.50	2.69	.83	17.9	21.9	37.7	5.23	1.63	1.34
(WY)	1965	1965	1961	1961	1960	1977	1992	1991	1987	1961	1961	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1953 - 1998	
ANNUAL TOTAL	110711		89311			
ANNUAL MEAN	303		245		138	
HIGHEST ANNUAL MEAN					333	1997
LOWEST ANNUAL MEAN					25.3	1977
HIGHEST DAILY MEAN	1150	Feb 8	1010	Jul 5	5040	Dec 23 1955
LOWEST DAILY MEAN	29	Jan 1	28	Apr 3	.00	Sep 28 1964
ANNUAL SEVEN-DAY MINIMUM	37	May 21	30	Mar 21	.00	Sep 28 1964
INSTANTANEOUS PEAK FLOW			1250	Jul 13	9860	Jan 31 1963
INSTANTANEOUS PEAK STAGE					11.88	Jan 31 1963
ANNUAL RUNOFF (AC-FT)	219600		177100		99620	
10 PERCENT EXCEEDS	625		686		401	
50 PERCENT EXCEEDS	224		123		50	
90 PERCENT EXCEEDS	90		31		2.8	

11294500 NORTH FORK STANISLAUS RIVER NEAR AVERY, CA

LOCATION.—Lat 38°14'38", long 120°17'24", in SW 1/4 NE 1/4 sec.35, T.5 N., R.15 E., Calaveras County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 1.1 mi upstream from McKay's Point Dam, 3.3 mi upstream from Beaver Creek, and 5.1 mi northeast of Avery.

DRAINAGE AREA.—163 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—July 1914 to September 1925, October 1928 to current year. Water-year estimates for 1923–25 and 1929 published in WSP 1315-A.

REVISED RECORDS.—WSP 1215: 1938(M). WSP 1515: 1915(M), 1932(M), 1936(M), 1938, 1940(M).

GAGE.—Water-stage recorder. Datum of gage is 3,388.3 ft above sea level (river-profile survey). Prior to September 1922, nonrecording gage at same site at datum 0.05 ft lower.

REMARKS.—Records good. Low and medium flows regulated by Union and Utica Reservoirs, Lake Alpine, North Fork Stanislaus River Diversion Reservoir, and New Spicer Meadow Reservoir beginning 1990 (stations 11293350, 11293370, 11293460, 11293590, and 11293770), total combined usable capacity, 194,001 acre-ft. See schematic diagram of Stanislaus River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 36,000 ft^3/s, Jan. 31, 1963, gage height, 15.00 ft, from floodmarks, from rating curve extended above 14,000 ft^3/s on basis of slope-area measurement at gage height 13.8 ft; minimum daily, 5.5 ft^3/s, Dec. 6, 7, 1929.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	483	128	122	136	208	706	544	1540	1440	1240	691	896
2	399	107	119	156	494	788	566	1800	1610	1200	813	898
3	288	106	117	121	1490	952	516	1810	1310	1170	868	902
4	336	107	117	153	666	896	477	1740	1130	1220	1030	842
5	185	107	121	125	460	765	462	1500	1470	1340	1030	573
6	188	229	149	137	514	796	451	1310	1880	1370	996	379
7	185	283	236	145	480	818	466	1160	2520	1370	705	360
8	183	122	182	145	459	658	507	1200	1600	1330	479	679
9	179	109	145	152	381	839	512	1290	1470	1280	516	634
10	189	112	137	223	349	897	547	1240	1570	1220	679	436
11	183	114	136	260	537	877	509	952	1980	1110	679	357
12	172	108	335	393	498	694	413	909	1560	967	713	319
13	170	108	185	260	433	571	399	913	1550	945	768	320
14	169	105	138	187	465	498	510	868	1670	1050	721	485
15	169	106	138	1080	390	606	691	780	1690	1030	369	558
16	164	105	133	857	330	876	687	926	1630	1010	357	609
17	261	104	135	806	311	660	594	733	1400	1000	544	537
18	192	134	135	572	559	651	456	775	1320	992	456	216
19	165	186	131	509	637	788	556	1020	1360	980	426	158
20	168	177	130	328	519	847	756	1020	1290	973	340	181
21	168	121	128	263	618	785	1050	953	1250	967	394	307
22	165	108	126	242	613	975	1280	773	1360	922	396	472
23	174	106	126	236	692	1290	1330	963	1290	720	454	373
24	240	105	127	220	921	3210	967	941	1340	571	571	202
25	194	125	124	200	900	2040	876	1640	1360	570	831	167
26	170	243	125	192	877	1230	902	1160	1340	631	900	171
27	187	119	124	184	766	1050	1070	817	1330	936	898	171
28	302	139	124	186	683	861	1250	807	1290	933	790	168
29	302	131	129	242	---	707	1400	892	1270	929	767	174
30	303	126	132	203	---	624	1510	798	1280	822	789	200
31	187	---	135	194	---	600	---	1100	---	751	854	---
TOTAL	6820	3980	4441	9107	16250	28555	22254	34330	44560	31549	20824	12744
MEAN	220	133	143	294	580	921	742	1107	1485	1018	672	425
MAX	483	283	335	1080	1490	3210	1510	1810	2520	1370	1030	902
MIN	164	104	117	121	208	498	399	733	1130	570	340	158
AC-FT	13530	7890	8810	18060	32230	56640	44140	68090	88380	62580	41300	25280

11294500 NORTH FORK STANISLAUS RIVER NEAR AVERY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 1998, BY WATER YEAR (WY)

MEAN	78.9	136	230	269	346	510	973	1462	785	181	88.8	81.1
MAX	482	2103	1957	2440	2105	1785	2026	3299	3651	1231	672	464
(WY)	1983	1951	1965	1997	1986	1986	1982	1969	1983	1983	1998	1997
MIN	21.8	10.6	10.1	17.0	23.5	39.7	70.6	138	44.9	34.0	24.2	22.9
(WY)	1960	1960	1977	1977	1933	1977	1924	1924	1924	1924	1981	1924

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1915 - 1998	
ANNUAL TOTAL	241077		235414			
ANNUAL MEAN	660		645		428	
HIGHEST ANNUAL MEAN					1019	1983
LOWEST ANNUAL MEAN					54.3	1924
HIGHEST DAILY MEAN	21600	Jan 2	3210	Mar 24	23400	Dec 23 1955
LOWEST DAILY MEAN	104	Nov 17	104	Nov 17	5.5	Dec 6 1929
ANNUAL SEVEN-DAY MINIMUM	107	Nov 11	107	Nov 11	7.4	Dec 2 1929
INSTANTANEOUS PEAK FLOW			4770	Jun 6	36000	Jan 31 1963
INSTANTANEOUS PEAK STAGE			7.91	Jun 6	15.00	Jan 31 1963
ANNUAL RUNOFF (AC-FT)	478200		466900		310300	
10 PERCENT EXCEEDS	1260		1330		1210	
50 PERCENT EXCEEDS	363		556		133	
90 PERCENT EXCEEDS	130		128		35	

11294500 NORTH FORK STANISLAUS RIVER NEAR AVERY, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: June 1990 to September 1998 (discontinued).

INSTRUMENTATION.—Temperature recorder since June 1990.

REMARKS.—Records good.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum recorded, 23.0°C, July 5, 27–30, 1991; minimum recorded, 0.0°C, some days in most years.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum recorded, 18.0°C, Aug. 15; minimum recorded, 0.0°C, several days in December and January.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	14.0	12.0	9.5	7.0	5.0	3.5	4.5	3.5	3.5	3.0	6.0	5.0
2	13.5	12.5	9.0	7.5	4.0	3.0	4.5	3.0	3.5	3.0	6.0	5.0
3	13.0	11.0	9.0	7.5	4.0	3.0	3.5	2.5	3.5	2.0	6.0	5.0
4	13.0	11.0	9.0	7.5	4.0	3.0	3.0	.0	3.5	2.0	5.5	4.0
5	13.0	10.5	8.5	7.0	4.5	3.5	.5	.0	3.5	3.0	5.0	3.5
6	12.0	10.5	8.0	7.0	5.0	4.5	1.0	.0	4.0	2.5	4.5	3.0
7	10.5	9.0	8.5	7.5	5.5	4.0	2.0	.5	3.0	2.5	4.5	3.0
8	9.5	7.5	7.5	6.0	4.0	1.5	3.0	1.5	3.5	2.5	6.0	4.0
9	9.5	8.0	6.5	5.5	1.5	.5	3.0	2.5	5.0	3.5	6.0	4.0
10	9.0	7.5	6.5	6.0	1.5	.5	3.5	3.0	4.5	4.0	6.0	4.0
11	8.0	6.0	6.5	6.0	2.0	1.0	3.5	3.0	4.5	3.5	6.0	4.5
12	8.5	6.0	6.0	5.0	3.0	1.5	3.0	2.0	4.5	4.0	6.0	4.5
13	9.0	6.5	6.0	5.5	4.0	3.0	3.0	2.0	6.0	4.5	6.0	5.0
14	10.0	7.0	5.5	5.0	3.5	3.0	3.0	2.5	5.5	4.0	7.0	4.5
15	10.5	8.0	5.0	4.0	3.0	2.0	3.0	2.5	5.5	4.0	7.5	5.0
16	10.5	8.5	5.0	3.5	3.0	2.0	3.5	2.5	5.0	4.0	7.0	5.5
17	10.0	8.5	5.0	4.0	4.0	2.5	4.0	3.0	5.0	4.0	6.5	4.5
18	9.5	8.0	5.5	4.5	4.0	3.0	4.0	3.0	5.0	3.5	7.0	5.0
19	9.0	7.5	6.0	5.0	3.0	2.0	3.0	2.0	5.0	3.5	7.0	5.0
20	9.5	7.5	6.5	5.5	2.5	1.5	3.0	2.5	4.5	3.5	7.0	5.0
21	9.5	7.0	7.0	6.0	2.5	1.0	3.0	2.0	4.5	3.5	6.5	5.0
22	9.5	7.5	6.5	5.5	1.0	.0	3.5	2.5	5.0	3.5	6.5	4.5
23	9.5	7.5	7.5	6.5	.5	.0	4.0	3.0	5.0	4.0	6.5	4.0
24	9.0	7.0	7.0	6.0	1.0	.0	4.0	3.0	4.5	3.0	5.0	4.5
25	7.5	5.5	7.5	6.5	.5	.0	3.5	3.0	5.0	4.0	5.5	5.0
26	7.5	5.5	7.0	4.0	.0	.0	4.0	3.0	5.5	4.5	5.5	5.5
27	7.5	5.5	4.0	3.0	.5	.0	5.0	3.5	6.0	5.0	6.0	5.5
28	7.5	6.0	3.5	2.5	2.5	.5	5.0	4.0	6.0	5.0	5.5	5.5
29	8.0	6.0	4.5	3.0	3.5	2.0	5.0	3.5	---	---	5.5	5.0
30	9.0	7.0	5.5	4.0	4.0	2.5	3.5	2.5	---	---	5.5	5.5
31	9.5	7.5	---	---	4.5	3.5	3.5	2.5	---	---	5.5	5.5
MONTH	14.0	5.5	9.5	2.5	5.5	.0	5.0	.0	6.0	2.0	7.5	3.0

11294500 NORTH FORK STANISLAUS RIVER NEAR AVERY, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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

11295220 BEAVER CREEK DIVERSION RESERVOIR NEAR ARNOLD, CA

LOCATION.—Lat 38°13'58", long 120°16'43", in NW 1/4 NW 1/4 sec.1, T.4 N., R.15 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank at outlet structure of Beaver Creek Diversion Dam on Beaver Creek and 4.5 mi east-southeast of Arnold.

DRAINAGE AREA.—29.3 mi^2.

PERIOD OF RECORD.—February 1990 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Calaveras County Water District).

REMARKS.—Reservoir is formed by concrete gravity-type dam completed in July 1989. Usable capacity, 3.5 acre-ft between elevations 4,186.0 ft, minimum fishwater release elevation, and 4,191.5 ft, crest of spillway. Water is diverted through tunnel to McKay's Point Reservoir (station 11295260) on North Fork Stanislaus River. Released water is used for fishery maintenance. At times, during some years, reservoir is drained below minimum fishwater release elevation to allow replacement of the fish screens. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Calaveras County Water District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 15 acre-ft, Jan. 1, 1997, maximum elevation, 4,195.5 ft; minimum, no storage Jan. 3 to Nov. 10, 1997.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 14 acre-ft, Mar. 24, maximum elevation, 4,193.3 ft; minimum, no storage Oct. 1 to Nov. 10.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Calaveras County Water District in July 1989)

4,180	6	4,186	9	4,192	13
4,182	7	4,188	11	4,193	14
4,184	8	4,190	12		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.0	.0	10	10	13	12	13	13	13	12	12	10
2	.0	.0	10	13	13	12	13	14	13	10	12	10
3	.0	.0	10	13	13	12	12	14	13	13	12	10
4	.0	.0	10	13	12	12	12	14	13	13	12	10
5	.0	.0	10	11	12	12	12	13	13	13	12	12
6	.0	.0	12	11	13	12	12	13	14	12	12	12
7	.0	.0	13	11	13	12	12	13	13	12	12	10
8	.0	.0	13	10	13	12	13	13	13	12	11	10
9	.0	.0	13	11	12	12	13	13	13	12	11	12
10	.0	.0	13	13	12	12	12	13	13	12	10	10
11	.0	e2.0	13	13	12	12	12	13	14	12	10	10
12	.0	e5.0	13	13	12	12	12	13	13	12	10	10
13	.0	10	13	13	12	12	12	13	13	12	10	10
14	.0	10	13	13	12	12	12	13	13	12	10	10
15	.0	10	13	13	13	12	12	13	13	12	10	10
16	.0	10	13	13	12	13	12	13	13	12	10	10
17	.0	10	13	13	12	13	12	13	13	12	10	10
18	.0	10	13	13	12	13	12	13	13	12	10	10
19	.0	11	13	12	12	13	13	13	13	12	10	10
20	.0	10	10	12	12	13	13	13	13	12	10	10
21	.0	10	10	12	12	13	13	13	13	12	10	10
22	.0	10	10	12	12	13	13	13	13	12	10	10
23	.0	10	10	12	12	13	13	13	12	12	10	10
24	.0	10	10	12	12	14	13	13	13	12	10	10
25	.0	10	10	12	12	14	13	13	13	12	10	10
26	.0	13	10	12	12	13	13	13	12	12	10	10
27	.0	13	10	12	12	13	13	13	13	12	10	10
28	.0	12	10	12	12	13	13	13	13	12	10	10
29	.0	10	10	12	---	13	13	13	12	12	10	10
30	.0	10	10	13	---	13	13	13	12	12	10	10
31	.0	---	10	13	---	13	---	13	---	12	10	---
MAX	.0	13	13	13	13	14	13	14	14	13	12	12
MIN	.0	.0	10	10	12	12	12	13	12	10	10	10
a	4180.0	4187.6	4187.5	4191.3	4190.9	4191.6	4192.3	4192.1	4191.0	4190.6	4187.4	4187.6
b	0	+10	0	+3	-1	+1	0	0	-1	0	-2	0

CAL YR 1997 MAX 15 MIN .0 b 0
WTR YR 1998 MAX 14 MIN .0 b +10

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

11295230 BEAVER CREEK BELOW DIVERSION DAM, NEAR ARNOLD, CA

LOCATION.—Lat 38°13'59", long 120°16'46", in NE 1/4 NW 1/4 sec.1, T.4 N., R.15 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, at Beaver Creek Diversion Dam, 4.5 mi east-southeast of Arnold.

DRAINAGE AREA.—29.3 mi^2.

PERIOD OF RECORD.—February 1990 to current year.

REVISED RECORDS.—WDR CA-92-3: 1991 (M).

GAGE.—Acoustic-velocity meter on low-flow discharge, and water-stage recorder on Beaver Creek Diversion Reservoir (station 11295220). Datum of gage is sea level (levels by Calaveras County Water District).

REMARKS.—Entire flow of Beaver Creek in excess of 16.5 ft^3/s required for stream maintenance can be diverted through tunnel and penstock to turbine at McKay's Point Reservoir (stations 11295210 and 11295260). Capacity of tunnel and penstock is 400 ft^3/s and flow in excess of that amount is either released or spilled at Beaver Creek Diversion Dam to the creek. Discharge, including extremes, represents the combined flow of Beaver Creek and spill or release at diversion dam. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Calaveras County Water District, 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, 6,020 ft^3/s, Jan. 1, 1997; minimum daily, 1.2 ft^3/s, Dec. 22, 1994.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	e12	17	16	21	21	25	204	113	24	22	14
2	9.8	e12	16	20	45	21	22	320	141	20	22	14
3	10	e12	15	21	236	21	22	389	90	20	22	14
4	9.6	e12	15	21	64	21	21	408	48	24	22	16
5	9.2	e12	16	18	29	21	20	349	70	22	22	17
6	9.0	e12	21	20	22	21	21	242	184	25	22	27
7	9.3	e12	57	19	21	21	21	174	403	21	21	20
8	9.7	e12	68	20	21	21	21	152	252	21	21	16
9	13	e12	68	20	21	21	21	213	197	21	20	21
10	15	e12	68	22	21	21	22	176	211	22	20	21
11	12	e6.0	68	28	21	21	21	88	354	21	19	17
12	e12	e6.0	59	67	21	21	21	79	224	21	19	18
13	e12	e6.0	24	45	21	21	21	42	189	21	19	16
14	e12	e11	24	32	21	21	21	22	231	21	18	16
15	e12	13	24	247	21	21	21	24	232	21	18	15
16	e12	13	24	117	21	21	21	29	200	22	18	14
17	e12	13	24	31	21	21	21	30	143	21	17	14
18	e12	12	31	24	21	21	21	25	106	21	17	14
19	e12	20	30	21	21	21	21	49	96	21	17	14
20	e12	20	18	21	21	23	22	44	72	21	17	14
21	e12	15	15	21	21	22	54	44	65	21	17	13
22	e12	13	14	21	21	44	82	30	51	21	17	14
23	e12	12	14	21	21	141	86	40	25	21	16	14
24	e12	12	13	21	21	790	52	46	25	21	16	14
25	e12	18	12	21	21	563	36	270	34	21	16	14
26	e12	66	12	21	21	297	45	139	24	21	16	16
27	e12	35	13	21	21	202	70	46	22	22	15	17
28	e12	24	14	21	21	146	113	30	23	22	15	16
29	e12	21	14	21	---	90	175	33	25	22	15	18
30	e12	18	15	21	---	60	215	32	22	22	14	17
31	e12	---	16	21	---	36	---	54	---	22	14	---
TOTAL	355.3	474.0	839	1061	879	2813	1355	3823	3872	667	564	485
MEAN	11.5	15.8	27.1	34.2	31.4	90.7	45.2	123	129	21.5	18.2	16.2
MAX	15	66	68	247	236	790	215	408	403	25	22	27
MIN	8.7	6.0	12	16	21	21	20	22	22	20	14	13
AC-FT	705	940	1660	2100	1740	5580	2690	7580	7680	1320	1120	962
a	0	0	0	1880	3870	4680	7270	8660	6590	1530	1	1

e Estimated.

a Diversion, in acre-feet, to McKay's Point Reservoir, provided by Calaveras County Water District.

11295230 BEAVER CREEK BELOW DIVERSION DAM, NEAR ARNOLD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1998, BY WATER YEAR (WY)

MEAN	7.09	9.69	33.9	105	43.1	75.0	55.8	71.9	37.8	12.8	8.71	6.95
MAX	11.5	21.1	184	610	130	280	185	291	129	21.5	18.2	16.2
(WY)	1998	1997	1997	1997	1997	1995	1995	1995	1998	1998	1998	1998
MIN	3.28	4.48	4.53	5.00	6.32	17.6	17.2	16.3	6.93	4.77	2.61	2.48
(WY)	1991	1991	1991	1991	1991	1990	1990	1992	1992	1994	1994	1992

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1990 - 1998	
ANNUAL TOTAL	32347.9		17187.3			
ANNUAL MEAN	88.6		47.1		41.3	
HIGHEST ANNUAL MEAN					102	1997
LOWEST ANNUAL MEAN					9.86	1991
HIGHEST DAILY MEAN	3570	Jan 2	790	Mar 24	3570	Jan 2 1997
LOWEST DAILY MEAN	6.0	Nov 11	6.0	Nov 11	1.2	Dec 22 1994
ANNUAL SEVEN-DAY MINIMUM	9.0	Sep 18	9.3	Nov 8	2.0	Oct 1 1991
INSTANTANEOUS PEAK FLOW			1070	Mar 24	6020	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	64160		34090		29960	
ANNUAL DIVERSION (AC-FT) a	0		34470			
10 PERCENT EXCEEDS	164		115		71	
50 PERCENT EXCEEDS	23		21		16	
90 PERCENT EXCEEDS	9.7		12		3.8	

a Diversion, in acre-feet, to McKay's Point Reservoir, provided by Calaveras County Water District.

11295240 UTICA CANAL AT PRESSURE TAP, NEAR HATHAWAY PINES, CA

LOCATION.—Lat 38°11'33", long 120°21'14", in SW 1/4 SW 1/4 sec.17, T.4 N., R.15 E., Calaveras County, Hydrologic Unit 18040010, Stanislaus National Forest, at pressure tap in Collierville Tunnel and 0.5 mi east of Hathaway Pines.

PERIOD OF RECORD.—October 1989 to current year.

GAGE.—Acoustic-velocity meter. Elevation of gage is 3,160 ft above sea level, from topographic map.

REMARKS.—Flow is diverted into Collierville Tunnel at McKay's Point Reservoir (stations 11295250 and 11295260) and enters canal through pressure tap in the tunnel. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Henwood Energy Services, Inc., for Utica Power Authority, 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, 89 ft^3/s, Oct. 17, 1989; no flow for many days in most years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	23	40	40	15	.1	20	40	40	64	39	43
2	45	7.6	42	29	5.0	6.5	20	40	44	65	38	43
3	43	.00	43	28	.2	10	11	37	47	65	41	43
4	43	.00	42	33	.2	10	2.0	35	47	64	42	43
5	43	.00	41	33	.1	18	2.1	35	47	63	42	43
6	44	.00	41	33	.1	23	2.1	35	47	47	42	43
7	44	.00	32	33	.1	23	2.0	35	47	36	42	43
8	44	13	15	33	.2	24	.7	35	47	36	42	43
9	42	18	26	33	.2	25	10	38	47	36	42	43
10	40	15	35	33	.2	25	15	40	47	36	42	43
11	40	13	35	15	.1	25	13	40	47	36	42	43
12	40	13	35	.2	.2	25	.2	25	47	36	42	43
13	29	13	35	.2	.1	25	12	6.1	47	36	43	43
14	24	13	37	.2	.1	25	20	25	47	36	43	43
15	34	13	40	.2	.2	25	20	38	47	36	43	43
16	35	13	40	.1	.2	26	12	40	47	38	43	43
17	37	13	40	.1	.2	27	8.1	29	49	38	43	43
18	34	13	40	.1	.2	35	17	31	52	38	43	45
19	33	13	40	.1	.2	39	20	35	58	38	43	45
20	33	13	40	.2	.1	39	20	38	60	38	43	45
21	33	13	40	.2	.1	39	20	40	60	38	43	45
22	33	13	40	.2	.1	39	20	42	60	39	43	45
23	33	13	40	.2	.1	39	20	46	60	40	43	45
24	33	13	40	.2	.1	15	20	46	60	40	40	45
25	28	13	40	.1	.1	.2	20	45	60	41	43	47
26	23	8.9	40	.2	.1	.2	25	42	60	42	43	47
27	23	3.4	40	9.4	.1	.2	35	40	60	42	43	47
28	23	21	40	17	.1	.2	38	40	60	41	43	47
29	23	35	40	7.6	---	.2	39	21	60	40	43	47
30	23	38	40	7.0	---	12	40	35	63	40	43	47
31	23	---	40	13	---	20	---	40	---	40	43	---
TOTAL	1075	377.90	1179	399.5	23.7	620.6	504.2	1114.1	1564	1325	1310	1328
MEAN	34.7	12.6	38.0	12.9	.85	20.0	16.8	35.9	52.1	42.7	42.3	44.3
MAX	50	38	43	40	15	39	40	46	63	65	43	47
MIN	23	.00	15	.10	.10	.10	.20	6.1	40	36	38	43
AC-FT	2130	750	2340	792	47	1230	1000	2210	3100	2630	2600	2630

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1998, BY WATER YEAR (WY)

MEAN	45.6	43.0	50.9	43.0	41.5	44.7	46.7	60.0	64.0	52.2	43.5	42.5
MAX	74.7	59.3	70.2	77.7	79.0	75.8	81.5	85.2	86.0	81.9	56.0	51.3
(WY)	1990	1992	1994	1990	1991	1990	1990	1992	1992	1993	1995	1993
MIN	16.2	12.2	4.40	.023	.000	4.01	16.8	24.6	43.7	36.2	30.4	33.9
(WY)	1997	1997	1997	1997	1997	1997	1998	1995	1997	1990	1990	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1990 - 1998	
ANNUAL TOTAL	10558.40		10821.00			
ANNUAL MEAN	28.9		29.6		48.2	
HIGHEST ANNUAL MEAN					59.8	1990
LOWEST ANNUAL MEAN					24.5	1997
HIGHEST DAILY MEAN	53	Sep 29	65	Jul 2	89	Oct 17 1989
LOWEST DAILY MEAN	.00	Jan 1	.00	Nov 3	.00	Feb 4 1990
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 7	.10	Feb 20	.00	Feb 4 1990
ANNUAL RUNOFF (AC-FT)	20940		21460		34910	
10 PERCENT EXCEEDS	50		47		79	
50 PERCENT EXCEEDS	35		36		50	
90 PERCENT EXCEEDS	.00		.20		13	

11295250 COLLIERVILLE POWERPLANT NEAR MURPHYS, CA

LOCATION.—Lat 38°08'33", long 120°22'39", in NE 1/4 SE 1/4 sec.1, T.3 N., R.14 E., Calaveras County, Hydrologic Unit 18040010, 800 ft upstream from Stanislaus River and 4.4 mi east of Murphys.

PERIOD OF RECORD.—February 1990 to current year.

GAGE.—Pressure-differential sensors in powerplant penstocks. Elevation of powerplant is 1,120 ft above sea level, from topographic map.

REMARKS.—Flow is diverted from McKay's Point Reservoir (station 11295260) through Collierville Tunnel to the powerplant. A portion of the flow in the tunnel is diverted to Utica Canal (station 11295240) through a pressure tap near Mill Creek in SW 1/4 SW 1/4 sec.17, T.4 N., R.15 E. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Calaveras County Water District, 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, 1,450 ft^3/s, June 3, 17, 1998; no flow for many days each year.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	396	131	140	150	331	633	733	1390	1200	1090	591	752
2	272	119	153	28	488	860	640	1140	1410	1160	494	764
3	169	39	178	27	1080	933	585	1440	1450	1040	897	716
4	3.7	145	157	54	1050	867	533	1440	1410	1000	831	590
5	27	29	206	185	510	917	421	1440	1440	1040	795	358
6	153	54	38	294	576	743	662	1440	1330	1240	720	511
7	118	14	58	192	619	660	570	1270	1430	1360	724	313
8	170	3.8	105	172	421	348	559	1160	1440	1180	465	458
9	231	3.8	232	184	560	904	630	1150	1440	1090	137	525
10	279	56	188	17	550	821	668	1160	1440	1020	640	366
11	132	56	86	62	316	696	381	1030	1440	1030	621	400
12	4.0	81	89	444	653	671	230	937	1440	846	636	238
13	156	126	54	127	392	646	644	977	1440	784	646	235
14	217	164	47	256	488	548	709	988	1440	805	724	631
15	181	13	120	812	263	392	733	850	1430	807	269	314
16	262	22	117	871	599	849	583	831	1430	928	12	689
17	94	123	66	871	405	672	563	610	1450	909	385	283
18	3.7	280	38	718	515	800	450	1000	1410	708	476	212
19	3.8	140	62	434	646	887	567	960	1340	857	366	13
20	88	116	57	308	638	886	886	1070	1270	760	325	11
21	108	43	49	313	582	646	1000	1010	1010	632	460	203
22	162	3.8	219	312	520	874	1260	985	1240	802	298	360
23	150	2.1	134	219	839	1260	1340	831	1370	783	172	241
24	242	114	.00	296	743	1420	1140	749	1300	622	574	198
25	93	174	.00	118	873	1440	635	1160	1270	384	716	225
26	80	262	.00	288	854	1380	1010	1410	1260	505	758	11
27	380	16	17	205	671	1020	1270	956	1150	744	723	11
28	385	4.1	.00	358	360	816	1230	843	993	672	711	199
29	356	3.9	61	348	---	675	1180	948	1230	776	670	180
30	336	21	142	211	---	715	1390	894	1300	673	237	177
31	230	---	17	153	---	638	---	929	---	659	803	---
TOTAL	5482.2	2359.5	2830.00	9027	16542	25617	23202	32998	40203	26906	16876	10184
MEAN	177	78.7	91.3	291	591	826	773	1064	1340	868	544	339
MAX	396	280	232	871	1080	1440	1390	1440	1450	1360	897	764
MIN	3.7	2.1	.00	17	263	348	230	610	993	384	12	11
AC-FT	10870	4680	5610	17910	32810	50810	46020	65450	79740	53370	33470	20200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1998, BY WATER YEAR (WY)

MEAN	181	122	204	316	459	608	674	650	490	346	262	239
MAX	333	315	774	820	1170	1101	1240	1339	1340	897	544	364
(WY)	1997	1997	1997	1997	1997	1995	1995	1995	1998	1995	1998	1997
MIN	49.5	40.2	25.3	32.3	9.79	140	309	50.6	55.5	94.7	104	114
(WY)	1993	1992	1992	1992	1991	1991	1994	1992	1992	1994	1992	1992

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1990 - 1998	
ANNUAL TOTAL	161513.50		212226.70			
ANNUAL MEAN	443		581		400	
HIGHEST ANNUAL MEAN					696	1995
LOWEST ANNUAL MEAN					115	1992
HIGHEST DAILY MEAN	1430	Feb 5	1450	Jun 3	1450	Jun 3 1998
LOWEST DAILY MEAN	.00	Dec 24	.00	Dec 24	.00	Feb 10 1990
ANNUAL SEVEN-DAY MINIMUM	30	Dec 23	30	Dec 23	.00	Feb 7 1991
ANNUAL RUNOFF (AC-FT)	320400		421000		289700	
10 PERCENT EXCEEDS	1010		1270		1040	
50 PERCENT EXCEEDS	314		567		240	
90 PERCENT EXCEEDS	15		48		.00	

11295260 MCKAYS POINT RESERVOIR NEAR AVERY, CA

LOCATION.—Lat 38°14'01", long 120°17'30", in NE 1/4 NW 1/4 sec.2, T.4 N., R.15 E., Calaveras County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank at outlet structure near upstream face of McKay's Point Dam on North Fork Stanislaus River and 4.6 mi northeast of Avery.

DRAINAGE AREA.—166 mi^2.

PERIOD OF RECORD.—February 1990 to current year.

REVISED RECORDS.—WDR CA-92-3: 1992 (M).

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Calaveras County Water District).

REMARKS.—Reservoir is formed by concrete arch-type dam completed in July 1989. Usable capacity, 1,928 acre-ft between elevations 3,280.0 ft, minimum operating head, and 3,370.0 ft, crest of spillway. Water is diverted from reservoir through tunnel to Utica Canal (station 11295240) and Collierville Powerplant (station 11295250, near the confluence of the middle and north forks of the Stanislaus River). Released water is used for fishery maintenance. New capacity table started on Sept. 1, 1991, based on inflow-outflow computations. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Calaveras County Water District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 2,572 acre-ft, Jan. 1, 1997, elevation, 3,379.9 ft; minimum, 313 acre-ft, Jan. 28, 1994, elevation, 3,279.2 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 2,321 acre-ft, Mar. 24, elevation, 3,372.2 ft; minimum, 329 acre-ft, Nov. 2, elevation, 3,281.1 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on inflow-outflow computations provided by Calaveras County Water District in September 1991)

3,280	320	3,340	1,325	3,370	2,248
3,300	480	3,360	1,921	3,380	2,575
3,320	869				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1256	385	1826	1593	1172	1961	1436	1603	1866	1375	1408	1590
2	1324	329	1628	1749	1229	1710	1433	2086	2116	1156	1794	1499
3	1437	434	1422	1830	1934	1571	1455	2271	1718	1160	1363	1506
4	1942	332	1241	1911	1171	1498	1500	2270	1066	1325	1372	1712
5	2111	421	954	1703	1197	961	1699	2039	1020	1687	1454	1935
6	2066	725	1067	1304	1248	998	1393	1573	1949	1635	1619	1509
7	2093	1202	1292	1121	1139	1178	1314	1264	2280	1290	1333	1465
8	2013	1369	1393	961	1354	1721	1348	1293	2120	1286	1199	1696
9	1815	1484	1152	795	1105	1425	1206	1440	1921	1339	1177	1696
10	1534	1526	950	1119	811	1332	1017	1535	1937	1432	1589	1670
11	1539	1565	1068	1446	1346	1549	1370	1443	2270	1261	1478	1418
12	1777	1541	1427	1268	1106	1533	1867	1437	2242	1235	1370	1490
13	1708	1455	1572	1520	1265	1323	1496	1436	2215	1308	1326	1549
14	1524	1295	1632	1356	1336	1194	1131	1283	2224	1446	1046	1051
15	1381	1418	1539	1675	1709	1597	1022	1227	2244	1482	1108	1339
16	1081	1524	1448	1595	1264	1547	1232	1472	2206	1276	1645	916
17	1282	1436	1462	1573	1206	1567	1329	1800	1877	1123	1775	1237
18	1541	1146	1532	1416	1310	1294	1437	1377	1492	1390	1576	1147
19	1750	1182	1552	1672	1324	1072	1487	1476	1350	1283	1551	1322
20	1810	1265	1570	1797	1128	998	1253	1384	1244	1404	1466	1547
21	1828	1353	1608	1722	1226	1338	1303	1274	1634	1786	1211	1631
22	1746	1504	1310	1687	1414	1537	1319	844	1706	1726	1264	1681
23	1697	1635	1181	1783	1068	1361	1287	1160	1351	1337	1677	1811
24	1575	1551	1303	1674	1265	2321	1025	1576	1256	1055	1450	1725
25	1679	1422	1422	1877	1201	2215	1677	2259	1247	1262	1340	1523
26	1779	1314	1536	1726	1127	1596	1561	1598	1197	1308	1317	1743
27	1310	1492	1616	1702	1221	1550	1140	1339	1358	1325	1298	1949
28	1031	1677	1735	1396	1856	1620	1123	1321	1814	1533	1163	1812
29	813	1843	1751	1254	---	1754	1452	1272	1621	1499	1084	1703
30	613	1930	1613	1283	---	1637	1480	1136	1307	1504	1919	1666
31	446	---	1725	1402	---	1652	---	1451	---	1426	1669	---
MAX	2111	1930	1826	1911	1934	2321	1867	2271	2280	1786	1919	1949
MIN	446	329	950	795	811	961	1017	844	1020	1055	1046	916
a	3360.3	3295.7	3353.8	3342.8	3358.0	3352.2	3345.5	3344.5	3339.2	3343.6	3352.0	3351.9
b	-848	+1484	-205	-323	+454	-204	-172	-29	-144	+119	+243	-3

CAL YR 1997 MAX 2572 MIN 329 b -643
WTR YR 1998 MAX 2321 MIN 329 b +372

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

11295270 NORTH FORK STANISLAUS RIVER BELOW MCKAYS POINT DAM, NEAR AVERY, CA

LOCATION.—Lat 38°13'58", long 120°17'33", in NE 1/4 NW 1/4 sec.2, T.4 N., R.15 E., Calaveras County, Hydrologic Unit 18040010, Stanislaus National Forest, at McKay's Point Dam and 4.5 mi northeast of Avery.

DRAINAGE AREA.—166 mi^2.

PERIOD OF RECORD.—August 1989 to current year.

REVISED RECORDS.—WDR CA-91-3: 1990.

GAGE.—Acoustic-flow meter and water-stage recorder on McKay's Point Reservoir (station 11295260). August 1989 to September 1992 at site 500 ft downstream at different datum. Elevation of gage is 3,280 ft above sea level, from topographic map.

REMARKS.—Flow regulated by Union and Utica Reservoirs, Lake Alpine (stations 11293350, 11293370, and 11293460), New Spicer Meadow Reservoir and McKay's Point Reservoir (stations 11293770 and 11295260) with combined capacity, 200,770 acre-ft. Collierville Tunnel diverts at McKay's Point Reservoir to Utica Canal (station 11295240) and Collierville Powerplant (station 11295250). Discharge, including extremes, represents flow through dam's release valve, mini-hydro generator, and flow over spillway. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Calaveras County Water District, 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, 28,000 ft^3/s, Jan. 2, 1997; minimum daily, 3.4 ft^3/s, Nov. 25, 1989.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	21	20	24	18	18	18	18	18	18	18	18
2	19	20	18	24	18	19	18	19	18	18	18	18
3	19	21	19	24	19	18	18	120	18	18	18	18
4	19	24	19	24	19	18	18	186	18	18	18	18
5	20	27	20	24	19	18	18	65	18	18	18	18
6	20	29	19	22	19	18	18	18	19	18	18	18
7	20	28	20	21	18	18	18	18	717	18	18	18
8	20	26	22	20	18	18	18	18	114	18	18	18
9	19	27	22	19	18	18	18	18	18	18	19	18
10	19	27	20	20	18	18	18	18	18	18	19	18
11	18	27	20	21	19	18	19	18	244	18	18	18
12	20	27	21	22	18	18	19	18	47	18	18	18
13	24	27	22	22	18	18	18	18	34	18	18	18
14	26	20	23	22	18	18	18	18	108	18	18	19
15	28	20	23	21	18	18	18	18	122	18	18	21
16	28	20	23	19	18	18	18	18	104	18	18	18
17	28	20	22	18	18	18	18	18	18	18	19	18
18	28	19	23	18	18	18	18	18	18	18	18	18
19	28	19	23	18	18	18	18	18	18	18	18	18
20	26	19	23	19	18	18	18	18	18	18	18	19
21	26	18	23	18	18	18	18	18	19	18	18	18
22	26	18	22	18	18	18	18	18	18	18	18	18
23	26	18	22	19	18	18	18	18	18	18	19	18
24	26	18	22	18	19	1130	18	18	18	18	18	18
25	25	18	22	18	18	538	19	46	18	19	18	18
26	27	18	23	18	18	18	18	19	18	18	18	19
27	26	19	24	18	18	18	18	18	18	19	18	18
28	26	19	21	18	19	18	18	18	18	18	18	18
29	26	20	17	18	---	18	18	18	18	18	18	18
30	26	20	24	18	---	18	18	18	18	18	18	18
31	23	---	24	19	---	18	---	18	---	18	18	---
TOTAL	732	654	666	622	511	2191	543	905	1888	560	562	546
MEAN	23.6	21.8	21.5	20.1	18.3	70.7	18.1	29.2	62.9	18.1	18.1	18.2
MAX	28	29	24	24	19	1130	19	186	717	19	19	21
MIN	18	18	17	18	18	18	18	18	18	18	18	18
AC-FT	1450	1300	1320	1230	1010	4350	1080	1800	3740	1110	1110	1080

11295270 NORTH FORK STANISLAUS RIVER BELOW MCKAYS POINT DAM, NEAR AVERY, CA—Continued'

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1998, BY WATER YEAR (WY)

MEAN	22.3	20.4	40.7	202	28.5	53.5	38.2	90.5	29.7	20.2	20.1	22.1
MAX	27.6	25.9	210	1622	102	253	189	338	63.5	23.1	24.5	27.5
(WY)	1992	1994	1997	1997	1996	1995	1995	1995	1995	1994	1994	1991
MIN	19.1	6.06	5.55	7.93	17.4	15.8	18.1	18.4	19.1	18.1	10.6	18.2
(WY)	1996	1990	1990	1990	1990	1990	1998	1992	1996	1998	1989	1998

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1989 - 1998	
ANNUAL TOTAL	57433		10380			
ANNUAL MEAN	157		28.4		49.5	
HIGHEST ANNUAL MEAN					173	1997
LOWEST ANNUAL MEAN					16.9	1990
HIGHEST DAILY MEAN	21600	Jan 2	1130	Mar 24	21600	Jan 2 1997
LOWEST DAILY MEAN	17	Dec 29	17	Dec 29	3.4	Nov 25 1989
ANNUAL SEVEN-DAY MINIMUM	18	Nov 20	18	Jan 24	4.2	Nov 15 1989
INSTANTANEOUS PEAK FLOW			2370	Mar 24	28000	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	113900		20590		35880	
10 PERCENT EXCEEDS	26		26		25	
50 PERCENT EXCEEDS	20		18		20	
90 PERCENT EXCEEDS	19		18		18	

11295300 NORTH FORK STANISLAUS RIVER BELOW BEAVER CREEK, NEAR HATHAWAY PINES, CA

LOCATION.—Lat 38°12'26", long 120°18'58", in SW 1/4 SW 1/4 sec.10, T.4 N., R.15 E., Calaveras County, Hydrologic Unit 18040010, Stanislaus National Forest, at confluence with Beaver Creek and 2.8 mi northeast of Hathaway Pines.

DRAINAGE AREA.—224 mi^2.

PERIOD OF RECORD.—February 1990 to current year.

REVISED RECORD.—WDR CA-91-3: 1990.

GAGE.—Discharge computed as the sum of North Fork Stanislaus River below McKay's Point Dam (station 11295270) and Beaver Creek below diversion dam (station 11295230). Elevation of gage is 2,230 ft above sea level, from topographic map.

REMARKS.—Records consist of release and spill from McKay's Point Reservoir (station 11295260) and Beaver Creek Diversion Reservoir (station 11295220). See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Calaveras County Water District, 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, 25,200 ft^3/s, Jan. 2, 1997; minimum daily, 5.1 ft^3/s, December 22, 1994.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	29	36	40	40	40	44	222	131	42	40	32
2	29	28	34	43	63	40	41	338	160	39	40	32
3	29	29	34	46	255	40	40	509	108	38	40	32
4	29	32	33	45	83	39	40	594	66	42	40	34
5	29	35	36	42	48	39	38	414	89	41	40	36
6	29	37	40	42	41	40	40	261	203	43	40	46
7	29	36	78	40	40	40	40	192	1120	40	40	38
8	29	34	90	39	40	40	40	170	366	40	40	35
9	32	35	90	39	40	40	40	231	215	40	39	39
10	34	35	88	41	40	39	41	194	230	40	38	39
11	30	31	88	49	40	40	40	107	598	40	38	35
12	29	31	80	89	40	40	40	98	271	40	38	37
13	32	31	46	67	40	40	40	60	222	40	37	35
14	34	31	47	54	40	40	40	41	338	40	37	35
15	36	33	47	268	40	40	40	43	353	40	36	36
16	36	33	46	136	40	40	40	48	303	40	36	32
17	36	33	46	50	40	40	40	48	161	40	36	32
18	36	31	53	42	40	40	40	43	124	40	36	32
19	36	39	53	40	40	40	40	68	114	40	36	32
20	34	39	40	40	40	41	40	63	91	40	36	32
21	34	33	38	40	40	40	73	62	83	40	36	32
22	34	32	37	40	40	62	100	48	69	40	35	32
23	34	31	36	40	40	160	104	58	44	40	35	32
24	34	30	35	40	40	1920	71	64	43	40	34	33
25	33	36	35	40	40	1100	55	316	53	40	34	33
26	35	85	36	40	40	316	64	156	42	40	34	35
27	34	54	36	40	40	220	88	65	40	41	34	36
28	34	43	35	40	40	165	132	49	42	40	34	34
29	34	40	31	40	---	108	194	52	43	40	33	36
30	34	38	39	40	---	79	234	50	40	40	33	36
31	31	---	40	40	---	54	---	72	---	40	33	---
TOTAL	1008	1084	1503	1692	1410	5022	1919	4736	5762	1246	1138	1040
MEAN	32.5	36.1	48.5	54.6	50.4	162	64.0	153	192	40.2	36.7	34.7
MAX	36	85	90	268	255	1920	234	594	1120	43	40	46
MIN	29	28	31	39	40	39	38	41	40	38	33	32
AC-FT	2000	2150	2980	3360	2800	9970	3810	9390	11430	2470	2260	2060

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1998, BY WATER YEAR (WY)

MEAN	29.4	31.6	79.0	331	71.6	129	94.2	162	67.5	33.1	29.9	29.4
MAX	33.5	40.9	394	2233	223	533	374	629	192	40.2	36.7	34.7
(WY)	1992	1997	1997	1997	1996	1995	1995	1995	1998	1998	1998	1998
MIN	25.9	25.7	23.0	23.7	27.0	33.4	36.1	34.7	27.7	27.3	26.1	25.9
(WY)	1991	1991	1991	1991	1991	1990	1990	1992	1992	1990	1990	1990

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1990 - 1998	
ANNUAL TOTAL	89693		27562			
ANNUAL MEAN	246		75.5		95.0	
HIGHEST ANNUAL MEAN					275	1997
LOWEST ANNUAL MEAN					31.7	1992
HIGHEST DAILY MEAN	25200	Jan 2	1920	Mar 24	25200	Jan 2 1997
LOWEST DAILY MEAN	28	Aug 15	28	Nov 2	5.1	Dec 22 1994
ANNUAL SEVEN-DAY MINIMUM	28	Sep 16	29	Oct 1	22	Dec 25 1990
ANNUAL RUNOFF (AC-FT)	177900		54670		68790	
10 PERCENT EXCEEDS	193		134		92	
50 PERCENT EXCEEDS	44		40		35	
90 PERCENT EXCEEDS	29		32		27	

11295900 PINECREST LAKE AT PINECREST, CA

LOCATION.—Lat 38°11'59", long 119°59'20", in NE 1/4 SW 1/4 sec.15, T.4 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on south side of intake tower, 400 ft upstream from dam on South Fork Stanislaus River, and 0.7 mi north of Pinecrest.

DRAINAGE AREA.—26.5 mi^2.

PERIOD OF RECORD.—October 1985 to current year. Unpublished records for water years 1981–85 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder since July 14, 1992. Oct. 1, 1985, to July 13, 1992, nonrecording gage read once daily. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by concrete-faced, rockfill dam, completed in 1916; storage began in 1916. Capacity, 18,312 acre-ft between elevations 5,498.7 ft, outlet drain, and 5,617.5 ft, top of flash boards in spillway. Released water flows down South Fork Stanislaus River to diversion dam for Philadelphia Canal (station 11297000) for use at Spring Gap Powerplant on Middle Fork Stanislaus River. Figures given, including extremes, represent total contents. Records from July 14, 1992, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 18,582 acre-ft, June 5, 1997, elevation, 5,618.39 ft; minimum observed, 3,157 acre-ft, Mar. 3, 4, 1991, elevation, 5,546.6 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 18,503 acre-ft, July 17, elevation, 5,618.13 ft; minimum, 4,269 acre-ft, Dec. 31, elevation, 5,556.24 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated 1938)

5,520	792	5,550	3,534	5,580	8,576
5,530	1,558	5,560	4,738	5,600	13,537
5,540	2,475	5,570	6,395	5,618.5	18,615

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13251	8349	5762	4278	7504	4424	7559	13495	17697	17807	18303	16287
2	13070	8294	5667	4299	7491	4411	7559	14213	17665	17851	18309	16283
3	12890	8283	5557	4314	7480	4411	7559	14797	17644	17824	18315	16060
4	12735	8274	5455	4321	7454	4399	7581	15338	17650	17746	18318	15894
5	12633	8262	5376	4368	5048	4387	7581	15799	17708	17763	18297	15728
6	12454	8248	5341	4459	5069	4374	7559	16367	17833	17830	18273	15619
7	12249	8244	5318	4570	5070	4350	7559	16568	17789	17839	18273	15485
8	12096	8226	5252	4682	5061	4313	7537	16792	17798	17880	18244	15405
9	11885	8214	5162	4823	5033	4276	7515	17304	17778	18184	18223	15299
10	11748	8210	5077	5011	5004	4276	7515	17503	17749	18057	18172	15245
11	11609	8198	4787	5201	4969	4276	7515	17523	17810	17995	18113	15166
12	11456	8117	4760	5427	4943	4288	7515	17506	17787	18042	18051	15086
13	11302	7995	4724	5920	4920	4313	7494	17486	17853	18394	16843	14980
14	11149	7869	4696	6641	4916	4313	7472	17460	17877	18454	17927	14874
15	11014	7758	4666	7043	4886	4350	7428	17457	17912	18469	17939	14821
16	10892	7638	4639	7214	4853	4411	7389	17477	17930	18472	17868	14821
17	10765	7522	4600	7356	4816	4511	7374	17471	17848	18503	17798	14847
18	10634	7378	4559	7443	4846	4624	7415	17480	17894	18457	17714	14768
19	10506	7270	4516	7491	4765	4779	7561	17500	17883	18439	17639	14742
20	10372	7122	4474	7515	4765	4969	7874	17520	17897	18439	17506	14663
21	10242	6962	4441	7548	4700	5157	8365	17509	17906	18406	17422	14689
22	10115	6800	4416	7553	4687	5344	8985	17500	17845	18363	17327	14663
23	9962	6639	4408	7557	4649	5627	9583	17517	17792	18497	17236	14637
24	9778	6474	4404	7572	4611	6355	9908	17549	17816	18448	17137	14610
25	9602	6330	4398	7572	4574	6977	10152	17639	17874	18369	17039	14584
26	9416	6314	4382	7568	4524	7190	10417	17535	17830	18381	16938	14531
27	9242	6208	4367	7566	4486	7298	10820	17486	17821	18433	16681	14505
28	9063	6093	4334	7548	4461	7406	11360	17506	17853	18436	16631	14505
29	8888	5970	4299	7522	---	7472	11987	17497	17889	18424	16593	14505
30	8706	5856	4275	7509	---	7472	12730	17491	17743	18388	16531	14505
31	8525	---	4269	7509	---	7537	---	17613	---	18348	16478	---
MAX	13251	8349	5762	7572	7504	7537	12730	17639	17930	18503	18318	16287
MIN	8525	5856	4269	4278	4461	4276	7374	13495	17644	17746	16478	14505
a	5579.78	5567.20	5556.24	5575.27	5557.80	5575.40	5596.88	5615.12	5615.57	5617.62	5609.99	5603.70
b	-4803	-2669	-1587	+3240	-3048	+3076	+5193	+4883	+130	+605	-1870	-1973

CAL YR 1997 MAX 18582 MIN 4269 b -6002
WTR YR 1998 MAX 18503 MIN 4269 b +1177

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

11296500 SOUTH FORK STANISLAUS RIVER AT STRAWBERRY, CA

LOCATION.—Lat 38°11'51", long 120°00'27", in SW 1/4 SW 1/4 sec.16, T.4 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 0.4 mi downstream from bridge on State Highway 108 at Strawberry, 0.6 mi downstream from Herring Creek, and 1.2 mi downstream from Pinecrest Lake.

DRAINAGE AREA.—44.8 mi^2.

PERIOD OF RECORD.—October 1911 to January 1917, August 1938 to current year. Monthly discharge only for October 1913 and yearly estimates for 1912–13, published in WSP 1315-A. Published as "near Confidence" 1911–13.

REVISED RECORDS.—WSP 1215: 1945(M). WSP 1515: 1916, 1943(M). WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 5,235.1 ft above sea level (river-profile survey). October 1911 to January 1917, nonrecording gage at site 1 mi downstream at different datum.

REMARKS.—Low and medium flows regulated beginning in 1916 by Pinecrest Lake (station 11295900) 1.2 mi upstream. No diversion upstream from station. See schematic diagram of Stanislaus River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 7,820 ft^3/s, Jan. 2, 1997, gage height, 12.34 ft, from rating curve extended above 1,100 ft^3/s on basis of contracted-opening measurement of peak flow at bridge 0.3 mi downstream from station; minimum daily, 1.3 ft^3/s, Nov. 22, 1946.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	84	56	30	49	51	87	252	616	1010	147	67
2	73	30	56	30	59	52	84	252	739	1000	121	67
3	82	6.4	56	30	87	53	84	242	629	996	105	67
4	82	6.4	56	30	85	53	81	236	539	961	104	67
5	81	6.4	56	30	61	52	80	204	693	953	99	69
6	81	6.4	57	29	62	52	79	180	884	1010	91	69
7	81	6.4	59	30	59	51	77	159	1020	1040	69	68
8	80	6.4	57	29	58	51	76	199	973	1050	66	67
9	81	6.4	56	30	56	51	76	241	910	855	65	70
10	81	6.4	56	30	55	52	77	274	949	921	67	69
11	80	6.5	55	31	55	54	77	305	1030	850	67	67
12	80	39	55	33	55	55	75	291	989	733	70	66
13	79	59	55	35	55	56	75	239	1010	594	70	65
14	78	59	55	37	56	56	74	198	1150	652	71	45
15	68	58	54	49	55	59	73	174	1230	613	72	21
16	62	57	53	58	54	65	71	202	1280	640	68	20
17	65	57	53	68	54	69	72	188	1110	675	66	20
18	64	69	53	48	53	73	77	182	1090	663	65	20
19	63	80	46	40	53	78	86	263	1160	586	68	20
20	63	80	30	37	53	85	90	320	1150	556	71	20
21	63	78	30	46	52	92	107	306	1190	527	70	19
22	63	78	30	46	52	102	149	259	1150	464	69	19
23	75	77	30	46	53	148	167	321	997	350	68	19
24	86	77	29	45	52	215	112	316	944	402	67	19
25	85	77	29	47	51	171	96	545	1080	357	67	19
26	85	79	29	46	51	138	100	408	1100	271	67	20
27	85	77	29	48	51	129	131	279	1010	219	66	22
28	85	76	29	48	51	112	168	261	1040	228	66	25
29	85	76	29	47	---	100	200	283	1120	221	65	57
30	84	69	29	45	---	95	239	241	1100	211	65	65
31	84	---	29	46	---	91	---	369	---	172	65	---
TOTAL	2366	1493.7	1396	1244	1587	2561	3040	8189	29882	19780	2357	1328
MEAN	76.3	49.8	45.0	40.1	56.7	82.6	101	264	996	638	76.0	44.3
MAX	86	84	59	68	87	215	239	545	1280	1050	147	70
MIN	62	6.4	29	29	49	51	71	159	539	172	65	19
AC-FT	4690	2960	2770	2470	3150	5080	6030	16240	59270	39230	4680	2630

11296500 SOUTH FORK STANISLAUS RIVER AT STRAWBERRY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1998, BY WATER YEAR (WY)

MEAN	60.3	53.1	58.8	57.2	54.4	68.0	133	416	386	118	50.5	59.9
MAX	121	344	338	429	229	212	386	874	1066	683	127	99.2
(WY)	1983	1951	1951	1997	1982	1986	1982	1969	1983	1983	1983	1968
MIN	6.43	12.0	6.30	11.0	5.91	5.24	29.0	36.8	37.3	9.17	12.8	8.09
(WY)	1945	1943	1969	1987	1987	1977	1977	1977	1992	1977	1988	1984

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1938 - 1998	
ANNUAL TOTAL	60993.7		75223.7			
ANNUAL MEAN	167		206		126	
HIGHEST ANNUAL MEAN					259	1983
LOWEST ANNUAL MEAN					26.6	1977
HIGHEST DAILY MEAN	4680	Jan 2	1280	Jun 16	4680	Jan 2 1997
LOWEST DAILY MEAN	6.4	Nov 3	6.4	Nov 3	1.3	Nov 22 1946
ANNUAL SEVEN-DAY MINIMUM	6.4	Nov 3	6.4	Nov 3	2.3	Nov 9 1942
INSTANTANEOUS PEAK FLOW			1500	Jun 15	7820	Jan 2 1997
INSTANTANEOUS PEAK STAGE			5.71	Jun 15	12.34	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	121000		149200		91620	
10 PERCENT EXCEEDS	361		783		328	
50 PERCENT EXCEEDS	84		70		61	
90 PERCENT EXCEEDS	16		30		21	

11297200 SOUTH FORK STANISLAUS RIVER NEAR STRAWBERRY, CA

LOCATION.—Lat 38°10'40", long 120°02'45", in NW 1/4 NW 1/4 sec.30, T.4 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, on right bank 400 ft downstream from diversion dam and 2.8 mi southwest of Strawberry.

DRAINAGE AREA.—48.5 mi^2.

PERIOD OF RECORD.—October 1985 to current year (low-flow records only). Unpublished records for water years 1970, 1976–85 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 4,915 ft above sea level, from topographic map.

REMARKS.—No records computed above 50 ft^3/s. Flow regulated by Pinecrest Lake (station 11295900). Most of the water is diverted at diversion dam 400 ft upstream to Philadelphia Canal (station 11297000). See schematic diagram of Stanislaus River Basin.

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

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	28	7.5	5.1	7.6	26	---	---	---	---	---	11
2	16	15	21	5.1	---	27	---	---	---	---	---	9.9
3	26	3.9	29	5.0	---	29	---	---	---	---	---	10
4	26	3.8	31	5.3	---	29	---	---	---	---	---	11
5	25	3.7	35	6.7	43	23	---	---	---	---	---	12
6	24	3.7	36	7.7	---	18	---	---	---	---	44	12
7	24	3.7	40	5.1	47	16	---	---	---	---	15	16
8	24	3.7	38	5.1	42	16	---	---	---	---	12	12
9	24	3.7	37	5.1	37	16	---	---	---	---	9.3	17
10	25	3.8	36	5.1	36	17	---	---	---	---	13	16
11	24	4.3	35	5.1	33	19	---	---	---	---	13	13
12	23	7.9	34	7.8	33	21	---	---	---	---	16	12
13	22	5.9	34	4.8	33	23	---	---	---	---	16	11
14	22	5.0	34	4.9	39	25	---	---	---	---	17	20
15	16	4.8	33	16	35	29	48	---	---	---	18	21
16	12	4.4	33	18	32	35	47	---	---	---	15	21
17	9.6	4.7	33	29	31	37	50	---	---	---	16	20
18	8.2	16	32	9.9	29	44	---	---	---	---	11	21
19	8.1	29	23	14	30	---	---	---	---	---	11	21
20	8.0	28	6.6	6.2	29	---	---	---	---	---	15	21
21	8.0	27	5.4	6.8	28	---	---	---	---	---	14	21
22	8.5	27	6.1	5.3	27	---	---	---	---	---	14	20
23	25	26	5.5	5.0	27	---	---	---	---	---	13	21
24	44	25	5.1	4.9	27	---	---	---	---	---	12	21
25	44	26	4.9	5.6	25	---	---	---	---	---	12	20
26	43	39	4.9	4.8	26	---	---	---	---	---	10	21
27	42	35	5.0	5.9	24	---	---	---	---	---	10	23
28	35	31	4.8	5.9	25	---	---	---	---	---	10	16
29	32	24	4.8	6.9	---	---	---	---	---	---	9.2	16
30	29	19	5.0	4.3	---	---	---	---	---	---	8.6	12
31	28	---	5.1	4.9	---	---	---	---	---	---	8.7	---
TOTAL	711.8	462.0	664.7	231.3	---	---	---	---	---	---	---	498.9
MEAN	23.0	15.4	21.4	7.46	---	---	---	---	---	---	---	16.6
MAX	44	39	40	29	---	---	---	---	---	---	---	23
MIN	6.4	3.7	4.8	4.3	---	---	---	---	---	---	---	9.9
AC-FT	1410	916	1320	459	---	---	---	---	---	---	---	990
a	3520	2200	1770	2400	2200	3030	3070	3320	3330	3570	3510	1640

CAL YR 1997 a 25700
WTR YR 1998 a 33560

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

11297700 LYONS RESERVOIR NEAR LONG BARN, CA

LOCATION.—Lat 38°05'38", long 120°09'59", in SW 1/4 NE 1/4 sec.24, T.3 N., R.16 E., Tuolumne County, Hydrologic Unit 18040010, at left abutment of dam and 1.6 mi west of Long Barn.

DRAINAGE AREA.—66.8 mi^2.

PERIOD OF RECORD.—October 1985 to current year. Unpublished records for 1981–85 water years are available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Prior to Dec. 10, 1990, nonrecording gage read three times weekly. Datum of gage is 4,134 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by concrete arch dam completed in 1930; storage began in 1930. Usable capacity, 4,847 acre-ft between gage heights 0.0 ft, invert of outlet, and 86.0 ft, top of spillway gates. Dead storage, 2.5 acre-ft. Part of the released water is diverted to Tuolumne Canal (station 11297500) near the base of the dam. Records from Dec. 10, 1990, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents observed, 6,292 acre-ft, June 4, 5, 7, 9, 10, 1989, gage height, 90.4 ft; minimum observed, 832 acre-ft, Nov. 27, 1995, gage height, 48.51 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 5,526 acre-ft, July 25, gage height, 90.11 ft; minimum, 1,652 acre-ft, Oct. 8, gage height, 60.69 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co. in 1996)

20	34.2	40	474	70	2,598
25	94.4	50	908	80	3,913
30	186	60	1,592	90	5,507

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1734	1888	2087	2622	3964	3976	4021	4044	4160	4236	5487	4470
2	1695	1904	2079	2613	4087	3978	4011	4058	4166	4251	5472	4425
3	1689	1894	2103	2595	4128	3978	4018	4056	2842	4228	5453	4379
4	1683	1875	2128	2586	4043	3978	4011	4064	4134	4230	5451	4335
5	1675	1855	2165	2564	4014	4002	4009	4047	4172	4231	5473	4360
6	1667	1835	2211	2552	4070	3996	4009	4049	4255	4253	5473	4360
7	1657	1817	2348	2548	4062	3990	4000	4035	4236	4256	5438	4332
8	1652	1797	2407	2539	4035	3988	3973	4041	4251	4258	5389	4306
9	1654	1779	2445	2544	4015	3985	3972	4055	4224	4163	5332	4290
10	1674	1762	2491	2579	4003	3985	3970	4067	4236	4216	5287	4267
11	1680	1747	2533	2656	4002	3985	3981	4078	4285	4176	5257	4239
12	1680	1730	2574	2905	3999	3991	3978	4078	4236	4166	5229	4210
13	1710	1729	2615	3015	3997	4002	3976	4059	4275	4176	5203	4180
14	1751	1715	2660	3110	4044	4002	3975	4039	4304	4429	5175	4154
15	1789	1706	2705	3691	4015	4005	3933	4026	4323	4431	5147	4145
16	1807	1693	2744	3949	3996	4011	3958	4041	4321	4569	5116	4127
17	1822	1679	2784	3996	3987	3949	3958	4032	4265	4725	5078	4108
18	1833	1663	2822	4015	3973	3991	3958	4024	4288	4797	5039	4088
19	1815	1693	2856	3994	3993	3994	3964	4053	4290	4738	4994	4068
20	1770	1720	2852	3973	3976	3999	4008	4050	4292	4767	4962	4050
21	1731	1744	2816	3961	3979	4002	4012	4044	4301	4807	4929	4032
22	1699	1767	2793	3952	3975	4008	4035	4036	4267	4823	4897	4009
23	1674	1784	2780	3945	3981	4030	4061	4064	4230	4998	4858	3990
24	1694	1803	2769	3940	3972	4228	4030	4056	4241	5419	4816	3972
25	1720	1832	2755	3934	3991	4158	4011	4154	4279	5526	4776	3954
26	1745	1936	2739	3931	3987	4107	4008	4084	4259	5509	4733	3942
27	1770	1990	2726	3921	3979	4100	4012	4035	4248	5504	4693	3928
28	1793	2030	2712	3902	3976	4070	4023	4038	4264	5507	4651	3915
29	1821	2061	2693	3943	---	4052	4030	4043	4287	5505	4605	3894
30	1847	2083	2669	3940	---	4039	4041	4033	4259	5504	4559	3873
31	1868	---	2645	3933	---	4030	---	4085	---	5493	4513	---
MAX	1868	2083	2856	4015	4128	4228	4061	4154	4323	5526	5487	4470
MIN	1652	1663	2079	2539	3964	3949	3933	4024	2842	4163	4513	3873
a	63.05	65.24	70.40	80.13	80.42	80.78	80.85	81.14	82.28	89.92	83.91	79.73
b	+90	+215	+562	+1288	+43	+54	+11	+44	+174	+1234	-980	-640

CAL YR 1997 MAX 5612 MIN 1652 b -1521
WTR YR 1998 MAX 5526 MIN 1652 b +2095

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

11298000 SOUTH FORK STANISLAUS RIVER NEAR LONG BARN, CA

LOCATION.—Lat 38°05'33", long 120°10'04", in NE 1/4 NW 1/4 sec.25, T.3 N., R.16 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank 600 ft downstream from Lyons Dam, 1.9 mi west of Long Barn, and 15 mi northeast of Sonora.

DRAINAGE AREA.—66.9 mi^2.

PERIOD OF RECORD.—October 1937 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.—WSP 1215: 1938(M). WSP 1930: Drainage area.

GAGE.—Water-stage recorder and masonry control. Datum of gage is 4,073.4 ft above sea level (river-profile survey).

REMARKS.—Flow regulated by Lyons Reservoir (station 11297700) 600 ft upstream and Pinecrest Lake (station 11295900). Tuolumne Canal (station 11297500) diverts at Lyons Dam. See schematic diagram of Stanislaus River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 12,900 ft^3/s, Jan. 2, 1997, gage height, 13.03 ft, from rating curve extended above 2,400 ft^3/s, on basis of computation of peak flow over Lyons Dam; no flow at times in 1937–39, 1952.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	3.4	2.6	2.6	12	60	144	220	578	970	73	2.6
2	3.3	3.4	2.6	2.6	198	64	113	234	915	960	56	2.6
3	3.3	3.4	2.6	2.6	1270	68	115	228	728	950	27	2.7
4	3.3	3.4	2.6	2.5	491	70	104	274	536	920	13	2.7
5	3.3	3.4	2.6	2.8	227	64	99	239	693	910	7.2	2.8
6	3.3	3.4	2.5	2.9	330	58	98	205	1050	970	3.5	2.7
7	3.3	3.4	2.5	2.8	387	42	90	163	1400	1000	3.7	2.7
8	3.3	3.4	2.4	2.8	366	39	77	165	1150	1030	4.0	2.7
9	3.2	3.4	2.4	2.8	225	38	68	208	1060	830	4.0	2.6
10	3.2	3.5	2.3	2.9	173	37	66	229	1100	890	3.3	2.6
11	3.5	3.5	2.5	2.9	164	40	76	294	1240	820	2.7	2.6
12	3.6	3.5	2.6	3.0	150	48	85	316	1180	700	2.7	2.6
13	4.1	3.5	2.6	2.9	156	62	82	252	1010	570	2.8	2.6
14	4.1	3.5	2.6	2.8	279	67	79	184	1200	620	2.8	2.6
15	4.2	3.5	2.6	3.1	254	75	66	137	1220	580	2.8	2.6
16	4.2	3.6	2.6	3.0	176	95	67	144	1290	610	2.8	2.5
17	4.2	3.6	2.5	87	142	100	71	156	1100	640	2.7	2.5
18	4.2	3.2	2.6	85	110	97	72	125	1080	630	2.6	2.6
19	3.5	2.6	2.6	126	121	100	82	177	1150	550	2.8	2.7
20	2.9	2.5	2.6	69	119	109	97	253	1130	510	2.8	2.7
21	2.9	2.5	2.6	35	106	116	100	260	1170	490	2.7	2.8
22	3.2	2.6	2.5	18	114	124	155	191	1130	430	2.7	2.9
23	3.0	2.7	2.5	11	118	175	234	238	970	320	2.7	2.8
24	3.1	2.8	2.5	6.5	107	905	201	223	920	370	2.7	2.8
25	3.1	2.8	2.5	3.7	85	1270	119	548	1050	330	2.7	2.8
26	3.1	2.7	2.5	3.3	69	587	91	531	1070	230	2.6	2.7
27	3.2	2.7	2.6	3.2	60	452	102	288	980	178	2.6	2.7
28	3.5	2.7	2.6	2.8	59	355	129	175	1010	192	2.6	2.7
29	3.5	2.7	2.6	6.0	---	250	149	228	1090	187	2.6	2.7
30	3.4	2.7	2.6	14	---	195	184	167	1070	168	2.6	2.7
31	3.4	---	2.6	8.8	---	174	---	218	---	109	2.6	---
TOTAL	106.7	94.0	79.0	524.3	6068	5936	3215	7270	31270	18664	251.3	80.3
MEAN	3.44	3.13	2.55	16.9	217	191	107	235	1042	602	8.11	2.68
MAX	4.2	3.6	2.6	126	1270	1270	234	548	1400	1030	73	2.9
MIN	2.9	2.5	2.3	2.5	12	37	66	125	536	109	2.6	2.5
AC-FT	212	186	157	1040	12040	11770	6380	14420	62020	37020	498	159
a	1170	756	901	1460	1440	1920	1920	2380	2410	2670	2170	1680

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1998, BY WATER YEAR (WY)

MEAN	2.45	10.7	25.0	39.6	42.9	56.4	99.6	354	323	67.0	3.37	2.15
MAX	14.7	324	399	625	306	291	501	875	1042	602	37.7	5.45
(WY)	1983	1951	1951	1997	1982	1938	1982	1969	1998	1998	1983	1995
MIN	.000	.023	.077	.013	.000	.23	.97	1.02	1.00	.92	.83	.71
(WY)	1938	1939	1939	1939	1939	1939	1977	1977	1977	1949	1940	1949

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1938 - 1998	
ANNUAL TOTAL	49425.7		73558.6			
ANNUAL MEAN	135		202		84.8	
HIGHEST ANNUAL MEAN					234	1983
LOWEST ANNUAL MEAN					1.50	1977
HIGHEST DAILY MEAN	6040	Jan 2	1400	Jun 7	6040	Jan 2 1997
LOWEST DAILY MEAN	2.0	Aug 25	2.3	Dec 10	.00	Oct 1 1937
ANNUAL SEVEN-DAY MINIMUM	2.1	Aug 20	2.5	Dec 5	.00	Oct 1 1937
INSTANTANEOUS PEAK FLOW			2100	Jun 7	12900	Jan 2 1997
INSTANTANEOUS PEAK STAGE			4.61	Jun 7	13.03	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	98040		145900		61440	
ANNUAL DIVERSION (AC-FT) a	19560		20880			
10 PERCENT EXCEEDS	312		907		289	
50 PERCENT EXCEEDS	4.8		40		2.5	
90 PERCENT EXCEEDS	2.5		2.6		1.4	

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

11298700 ANGELS CREEK BELOW UTICA DITCH DIVERSION DAM, NEAR MURPHYS, CA

LOCATION.—Lat 38°07'51", long 120°29'03", in NW 1/4 NW 1/4 sec.7, T.3 N., R.14 E., Calaveras County, Hydrologic Unit 18040010, on right bank 120 ft downstream from diversion dam and 1.2 mi southwest of Murphys.

DRAINAGE AREA.—6.01 mi^2.

PERIOD OF RECORD.—October 1990 to current year (low-flow records only).

GAGE.—Water-stage recorder and 90° V-notch weir. Elevation of gage is 2,040 ft above sea level, from topographic map.

REMARKS.—No records computed above 2.5 ft^3/s. Flow consists of fishery release and spill over diversion dam. See schematic diagram of Stanislaus River Basin.

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

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	1.2	1.2	1.1	1.4	---	---	---	---	---	1.9	1.8
2	1.0	1.3	1.1	1.4	2.4	---	---	---	---	---	1.9	2.0
3	1.1	1.3	1.1	1.3	---	---	---	---	---	---	2.1	2.2
4	1.1	1.8	1.0	---	---	---	---	---	---	---	2.2	2.3
5	1.1	1.9	1.0	1.4	---	---	---	---	---	---	2.1	2.3
6	1.1	2.0	1.0	1.2	---	---	---	---	---	1.3	1.9	2.2
7	1.1	1.5	1.0	1.2	---	---	---	---	---	1.6	1.8	2.3
8	1.1	1.0	2.0	1.2	---	---	---	---	---	1.8	1.8	2.3
9	1.0	1.0	1.4	1.3	---	---	---	---	---	2.0	1.9	2.2
10	1.0	1.0	.94	---	---	---	---	---	---	2.0	1.8	2.0
11	1.2	1.1	1.0	---	---	---	---	---	---	2.0	1.8	2.1
12	1.2	1.0	1.1	---	---	---	---	---	---	2.0	1.9	2.2
13	1.2	1.0	1.1	---	---	---	---	---	---	2.0	1.9	2.3
14	1.1	1.1	1.1	---	---	---	---	---	---	2.0	2.0	2.3
15	1.0	.87	1.0	---	---	---	---	---	---	2.1	1.9	2.2
16	.94	.53	1.0	---	---	---	---	---	---	2.0	1.9	2.1
17	.90	.77	1.0	---	---	---	---	---	---	2.0	1.9	1.9
18	.94	1.2	.94	---	---	---	---	---	---	2.1	1.9	1.8
19	.87	1.1	.94	---	---	---	---	---	---	1.9	1.9	2.1
20	.77	1.1	1.0	---	---	---	---	---	---	1.9	1.5	2.0
21	.74	1.0	1.0	---	---	---	---	---	---	2.0	1.6	2.0
22	.77	.94	1.0	2.3	---	---	---	---	---	2.1	1.5	2.0
23	1.0	.90	.94	.66	---	---	---	---	---	1.9	1.6	2.0
24	1.0	.87	.90	.90	---	---	---	---	---	1.9	1.8	2.0
25	1.0	.84	.87	.87	---	---	---	---	---	2.1	2.0	1.9
26	1.0	1.1	.87	.94	---	---	---	---	---	2.2	2.0	1.9
27	1.0	2.5	1.0	1.2	---	---	---	---	---	2.2	1.8	1.8
28	1.0	2.5	1.0	1.2	---	---	---	---	---	1.9	1.7	1.9
29	.80	1.8	1.0	---	---	---	---	---	---	1.9	1.8	2.1
30	.94	1.3	.94	1.3	---	---	---	---	---	1.8	1.9	2.1
31	1.1	---	1.0	1.3	---	---	---	---	---	1.8	1.8	---
TOTAL	31.07	37.52	32.44	---	---	---	---	---	---	---	57.5	62.3
MEAN	1.00	1.25	1.05	---	---	---	---	---	---	---	1.85	2.08
MAX	1.2	2.5	2.0	---	---	---	---	---	---	---	2.2	2.3
MIN	.74	.53	.87	---	---	---	---	---	---	---	1.5	1.8
AC-FT	62	74	64	---	---	---	---	---	---	---	114	124

11299000 NEW MELONES RESERVOIR NEAR SONORA, CA

LOCATION.—Lat 37°57'02", long 120°30'49", in NW 1/4 SE 1/4 sec.11, T.1 N., R.13 E., Calaveras County, Hydrologic Unit 18040010, at right abutment of New Melones Dam on Stanislaus River, 0.1 mi downstream from the old Melones Dam, and 7.6 mi southwest of Sonora.

DRAINAGE AREA.—904 mi^2.

PERIOD OF RECORD.—1926 (year-end contents only, published in WSP 1315-A), June 1927 to current year. Prior to October 1970, published as Melones Reservoir at Melones Dam. October 1970 to September 1978, published as Melones Lake near Sonora.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Prior to Feb. 28, 1961, nonrecording gage, and Mar. 1, 1961, to Nov. 26, 1978, water-stage recorder at site on left side of old Melones Dam, at same datum.

REMARKS.—Reservoir is formed by earth and rockfill dam completed in November 1978. Dam is downstream from the original concrete dam which was completed in December 1926. Usable capacity 2,420,000 acre-ft between elevations 543.0 ft, invert entrance to outlet tunnel, and 1,088.0 ft, gross pool elevation. No dead storage. When elevation is above 808.0 ft, water is released through New Melones Powerplant (station 11299200) to Tulloch Reservoir (station 11299995) where it is used for irrigation. Records for the 1971 water year represent contents at 1630 hours. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River Basin.

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

EXTREMES FOR PERIOD OF RECORD (Subsequent to completion of New Melones Dam in 1978).—Maximum contents, 2,400,000 acre-ft, July 8–10, 1983, elevation, 1,086.42 ft; minimum since reservoir first filled in July 1983, 83,630 acre-ft, Oct. 1, 1992, elevation, 721.15 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 2,368,000 acre-ft, July 17–20, elevation, 1,083.82 ft, July 19, 20; minimum, 1,807,000 acre-ft, Oct. 20–22, elevation, 1,034.26, Oct. 21.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by U.S. Army Corps of Engineers, dated September 1978)

700	53,900	760	160,500	880	611,500	1,000	1,471,000
710	66,950	780	212,300	900	723,000	1,020	1,662,000
720	81,800	800	272,800	920	846,500	1,040	1,867,000
730	98,530	820	342,400	940	982,600	1,060	2,087,000
740	117,200	840	421,800	960	1,132,000	1,088	2,420,000
750	137,800	860	511,200	980	1,295,000		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1819000	1814000	1826000	1854000	1924000	1951000	2003000	2054000	2117000	2335000	2336000	2199000
2	1819000	1814000	1826000	1855000	1931000	1949000	2005000	2056000	2123000	2338000	2332000	2195000
3	1819000	1813000	1827000	1856000	1951000	1948000	2009000	2060000	2129000	2341000	2329000	2191000
4	1818000	1812000	1827000	1858000	1960000	1947000	2013000	2062000	2136000	2343000	2326000	2187000
5	1819000	1811000	1828000	1859000	1958000	1947000	2015000	2065000	2142000	2346000	2322000	2183000
6	1819000	1810000	1830000	1861000	1959000	1948000	2018000	2068000	2148000	2349000	2319000	2179000
7	1819000	1810000	1833000	1863000	1970000	1949000	2020000	2070000	2161000	2353000	2315000	2174000
8	1819000	1809000	1835000	1865000	1980000	1948000	2020000	2072000	2172000	2356000	2310000	2171000
9	1818000	1808000	1836000	1867000	1979000	1948000	2022000	2075000	2181000	2359000	2305000	2169000
10	1817000	1808000	1837000	1869000	1977000	1947000	2022000	2079000	2189000	2362000	2300000	2167000
11	1816000	1808000	1837000	1873000	1974000	1947000	2022000	2081000	2198000	2364000	2296000	2166000
12	1814000	1809000	1838000	1883000	1971000	1947000	2022000	2083000	2207000	2366000	2291000	2164000
13	1813000	1809000	1840000	1887000	1968000	1947000	2025000	2087000	2216000	2367000	2286000	2160000
14	1812000	1810000	1841000	1890000	1973000	1947000	2029000	2089000	2227000	2367000	2283000	2156000
15	1812000	1810000	1843000	1908000	1973000	1948000	2031000	2091000	2239000	2367000	2278000	2152000
16	1811000	1810000	1843000	1916000	1971000	1949000	2032000	2092000	2250000	2367000	2271000	2149000
17	1810000	1810000	1844000	1922000	1969000	1950000	2033000	2093000	2257000	2368000	2266000	2145000
18	1809000	1811000	1844000	1926000	1965000	1950000	2033000	2094000	2265000	2368000	2261000	2141000
19	1808000	1811000	1844000	1929000	1963000	1950000	2033000	2096000	2271000	2368000	2257000	2136000
20	1807000	1813000	1845000	1930000	1963000	1947000	2034000	2097000	2276000	2368000	2251000	2132000
21	1807000	1813000	1846000	1931000	1962000	1944000	2036000	2099000	2282000	2366000	2247000	2128000
22	1807000	1813000	1846000	1932000	1963000	1943000	2038000	2100000	2289000	2366000	2242000	2125000
23	1808000	1814000	1848000	1933000	1964000	1944000	2042000	2101000	2296000	2364000	2237000	2122000
24	1808000	1814000	1848000	1933000	1964000	1957000	2044000	2101000	2301000	2361000	2232000	2118000
25	1808000	1815000	1848000	1933000	1963000	1970000	2044000	2102000	2308000	2358000	2228000	2115000
26	1809000	1819000	1849000	1932000	1961000	1976000	2045000	2104000	2314000	2356000	2224000	2110000
27	1810000	1821000	1849000	1931000	1958000	1983000	2047000	2106000	2318000	2353000	2220000	2107000
28	1812000	1822000	1850000	1929000	1955000	1989000	2049000	2109000	2322000	2350000	2215000	2104000
29	1814000	1823000	1850000	1930000	---	1993000	2050000	2110000	2326000	2347000	2211000	2102000
30	1814000	1825000	1852000	1927000	---	1997000	2052000	2113000	2331000	2343000	2207000	2099000
31	1814000	---	1853000	1925000	---	1999000	---	2113000	---	2340000	2202000	---
MAX	1819000	1825000	1853000	1933000	1980000	1999000	2052000	2113000	2331000	2368000	2336000	2199000
MIN	1807000	1808000	1826000	1854000	1924000	1943000	2003000	2054000	2117000	2335000	2202000	2099000
a	1035.01	1036.05	1038.68	1045.43	1048.13	1052.19	1056.96	1062.28	1080.81	1081.56	1070.00	1061.05
b	-5000	+11000	+28000	+72000	+30000	+44000	+53000	+61000	+218000	+9000	-138000	-103000
c	3722	1826	736	1135	1286	2165	3028	3266	5138	8701	8220	5484
d	53890	26650	21660	50870	175000	136500	123600	165100	186700	219800	220900	169200

CAL YR b -158000
WTY YR b +280000

a Elevation, in feet, at end of month.
b Change in contents, in acre-feet.
c Evaporation, in acre-feet, published as provided; not reviewed by U.S. Geological Survey.
d Discharge, in acre-feet, through New Melones Powerplant, provided by U.S. Bureau of Reclamation.

11299600 BLACK CREEK NEAR COPPEROPOLIS, CA

LOCATION.—Lat 37°57'40", long 120°36'51", in SE 1/4 SE 1/4, sec.2, T.1 N., R.12 E., Calaveras County, Hydrologic Unit 18040010, on left bank 100 ft upstream from O'Byrnes Ferry Road Bridge, 1,300 ft upstream from Copper Creek, and 2.1 mi southeast of Copperopolis.

DRAINAGE AREA.—14.4 mi^2.

PERIOD OF RECORD.—August 1983 to current year.

REVISED RECORDS.—WDR CA-86-3: 1984(M).

GAGE.—Water-stage recorder. Datum of gage is 746.13 ft above sea level.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,200 ft^3/s, Feb. 19, 1986, gage height, 9.10 ft, from rating curve extended above 2,500 ft^3/s on basis of contracted-opening measurement of peak flow; no flow at times each year.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 50 ft^3/s, or maximim:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 4	0900	227	3.61	Mar. 25	0500	402	3.89
Jan. 15	1315	2,290	5.75	Apr. 3	0315	246	3.62
Feb. 3	0715	2,690	6.24	May 12	1145	105	3.15

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.75	.56	29	27	53	8.1	6.4	1.4	.06	.00
2	.00	.00	.55	5.7	264	25	36	12	6.0	1.3	.05	.00
3	.00	.00	.42	4.4	969	22	131	26	5.9	1.3	.03	.00
4	.00	.00	.36	55	173	19	61	22	5.6	1.1	.02	.00
5	.00	.00	.61	13	79	22	45	19	5.3	1.0	.01	.00
6	.00	.00	.78	7.0	327	36	39	17	5.1	.91	.00	.00
7	.00	.00	18	5.6	392	21	49	13	5.8	.80	.00	.00
8	.00	.00	9.5	4.5	457	19	34	11	5.3	.69	.00	.00
9	.00	.00	4.9	6.4	145	17	28	10	4.9	.66	.00	.00
10	.00	.00	2.9	132	92	16	24	9.1	4.8	.59	.00	.00
11	.00	.00	2.1	284	69	15	26	9.9	4.8	.56	.00	.00
12	.00	.00	1.7	671	72	14	21	33	4.6	.54	.00	.00
13	.00	.00	1.5	119	61	14	80	25	4.2	.51	.00	.00
14	.00	.00	1.4	122	358	13	57	18	3.9	.42	.00	.00
15	.00	.00	1.5	1010	154	11	38	14	3.5	.35	.00	.00
16	.00	.00	1.2	191	76	10	30	17	3.3	.30	.00	.00
17	.00	.06	1.0	72	58	9.4	25	20	2.8	.28	.00	.00
18	.00	.04	.97	163	42	9.0	21	13	2.7	.24	.00	.00
19	.00	.13	.91	152	116	8.3	19	11	2.5	.20	.00	.00
20	.00	.11	.85	58	108	8.1	16	10	2.3	.16	.00	.00
21	.00	.06	.88	37	235	8.4	15	9.2	2.3	.15	.00	.00
22	.00	.05	.76	27	141	8.4	13	8.6	2.3	.15	.00	.00
23	.00	.05	.69	22	121	7.9	29	8.1	2.2	.16	.00	.00
24	.00	.05	.65	18	75	31	21	7.5	2.2	.12	.00	.00
25	.00	.05	.64	16	53	132	13	8.0	2.1	.10	.00	.00
26	.00	11	.60	14	43	38	11	7.3	1.9	.08	.00	.00
27	.00	3.7	.60	13	36	42	10	6.9	1.8	.07	.00	.00
28	.00	1.0	.60	11	31	45	9.4	21	1.6	.05	.00	.00
29	.00	.57	.60	56	---	29	8.7	13	1.5	.04	.00	.00
30	.00	.99	.60	27	---	22	7.9	8.0	1.4	.04	.00	.00
31	.00	---	.60	24	---	45	---	7.0	---	.06	.00	---
TOTAL	0.00	17.86	59.12	3341.16	4776	744.5	971.0	422.7	109.0	14.33	0.17	0.00
MEAN	.000	.60	1.91	108	171	24.0	32.4	13.6	3.63	.46	.005	.000
MAX	.00	11	18	1010	969	132	131	33	6.4	1.4	.06	.00
MIN	.00	.00	.36	.56	29	7.9	7.9	6.9	1.4	.04	.00	.00
AC-FT	.00	35	117	6630	9470	1480	1930	838	216	28	.3	.00

11299600 BLACK CREEK NEAR COPPEROPOLIS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.15	4.94	11.8	35.8	41.3	22.6	5.58	2.54	.51	.059	.000	.007
MAX	1.80	53.1	98.8	144	171	96.6	32.4	13.6	3.63	.46	.005	.11
(WY)	1992	1984	1997	1997	1998	1995	1998	1998	1998	1998	1998	1983
MIN	.000	.000	.000	.000	.16	.62	.62	.17	.000	.000	.000	.000
(WY)	1986	1991	1991	1991	1991	1988	1988	1992	1988	1984	1984	1984

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1983 - 1998	
ANNUAL TOTAL	5092.86		10455.84			
ANNUAL MEAN	14.0		28.6		10.3	
HIGHEST ANNUAL MEAN					28.6	1998
LOWEST ANNUAL MEAN					.32	1988
HIGHEST DAILY MEAN	768	Jan 2	1010	Jan 15	1400	Feb 17 1986
LOWEST DAILY MEAN	.00	Jun 17	.00	Oct 1	.00	Sep 16 1983
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 17	.00	Oct 1	.00	Jun 28 1984
INSTANTANEOUS PEAK FLOW			2690	Feb 3	5200	Feb 19 1986
INSTANTANEOUS PEAK STAGE			6.24	Feb 3	9.10	Feb 19 1986
ANNUAL RUNOFF (AC-FT)	10100		20740		7460	
10 PERCENT EXCEEDS	17		58		13	
50 PERCENT EXCEEDS	.22		1.9		.20	
90 PERCENT EXCEEDS	.00		.00		.00	

11299995 TULLOCH RESERVOIR NEAR KNIGHTS FERRY, CA

LOCATION.—Lat 37°52'34", long 120°36'12", in Rancheria del Rio Estanislao Grant, T.1 S., R.12 E., Tuolumne County, Hydrologic Unit 18040010, in center of Tulloch Dam on Stanislaus River, 1.9 mi upstream from Goodwin Dam, and 5.3 mi northeast of Knights Ferry.

DRAINAGE AREA.—980 mi^2.

PERIOD OF RECORD.—November 1957 to current year.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

REMARKS.—Reservoir is formed by gravity-type concrete dam completed in October 1957. Usable capacity, 56,840 acre-ft between elevations 431.0 ft, normal minimum water surface, and 511.0 ft, top of radial gates. Dead storage, 11,560 acre-ft. Reservoir is used for irrigation and power. Water passes down Stanislaus River, first passing through Tulloch Powerplant at dam. Part of flow is diverted at Goodwin Dam to Oakdale Canal (station 11301000) and South San Joaquin Canal (station 11300500). Records, including extremes, represent total contents at 2400 hours.

COOPERATION.—Records were provided by Oakdale and South San Joaquin Irrigation Districts, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 69,500 acre-ft, Jan. 7, 1965, elevation, 512.0 ft; minimum, 4,580 acre-ft, Oct. 3, 1960, elevation, 404.0 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 66,400 acre-ft, Aug. 31, elevation, 509.52 ft; minimum, 53,300 acre-ft, Nov. 30, elevation, 498.14.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated October 1956)

404	4,580	430	11,100	475	33,100
411	6,020	445	16,400	490	45,300
420	8,200	460	23,600	512	69,500

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59200	54000	53700	54100	55800	56400	57600	59800	64900	64900	65300	65200
2	59400	53900	54000	54400	54800	56700	57500	59700	65200	65000	65500	65400
3	59200	53800	54200	54700	58300	55900	58200	60200	65800	65500	65300	65700
4	59200	53800	54900	55600	54600	56600	58100	61900	65200	66300	65500	65300
5	57800	54300	55500	55400	54400	56400	57900	62100	64700	65900	65400	65200
6	57000	54800	54800	54800	58300	56000	57600	62000	64700	65400	65100	65400
7	57000	55200	54500	54200	56400	55300	58000	61700	64700	65100	64800	65700
8	57000	55600	54100	53500	54300	55100	58600	62500	64600	65100	64900	65200
9	57200	56000	54200	53500	55700	55200	58200	62000	64200	65300	65000	65400
10	57100	56000	54500	54400	56500	55300	59000	61200	64200	65500	65300	65400
11	56800	55300	55400	55700	56500	55400	59500	61800	64800	65800	65400	65700
12	56900	54700	54800	57700	57000	55900	59700	63400	65000	65700	65300	64800
13	57000	54400	54100	54500	56900	56100	60000	62700	65500	65700	65400	64600
14	56900	54400	53400	54200	57000	56100	58900	62500	65400	65700	64800	65300
15	56800	54500	53400	59500	56300	55900	58200	62800	64800	65700	64900	64800
16	56600	54600	53600	56800	55800	56100	58600	63500	64900	65300	65200	64200
17	56400	54800	53900	53900	55200	56200	59000	63700	64700	64700	65500	64100
18	56200	55200	54200	54700	55300	56100	59600	63400	64800	65100	65400	64100
19	56000	55300	54400	55400	55900	55000	60200	63300	64400	65200	65100	63900
20	55800	54900	54700	55500	55600	56400	60100	63600	65300	64600	65800	64000
21	55700	55200	54900	55400	56700	56700	59600	63700	65400	65300	65200	64600
22	55900	55500	54700	54400	55800	57700	59800	63200	65500	64900	65400	63300
23	55800	55800	54300	53500	55700	56600	60900	63300	65600	65300	65600	63100
24	56100	56200	54500	53600	55900	54900	61200	63100	65900	65300	65500	63400
25	56500	55900	54700	53700	56200	56300	62000	63900	64900	65400	65200	62800
26	56800	55900	54900	53800	56100	56800	61600	64300	64600	65400	65200	62700
27	56800	55300	55000	53800	56400	57500	61500	64600	65200	66100	65500	61900
28	56100	54600	55300	55300	56100	57800	60800	63700	65400	65200	66000	61400
29	54700	54000	54800	55200	---	57100	60700	63100	65200	65100	65900	60900
30	54000	53300	54200	55700	---	57500	60200	63600	65100	65000	65200	60400
31	54100	---	53800	55800	---	58100	---	66200	---	65100	66400	---
MAX	59400	56200	55500	59500	58300	58100	62000	66200	65900	66300	66400	65700
MIN	54000	53300	53400	53500	54300	54900	57500	59700	64200	64600	64800	60400
a	498.85	498.14	498.63	500.47	500.77	502.56	504.38	509.39	508.48	508.50	509.52	504.58
b	-5200	-800	+500	+2000	+300	+2000	+2100	+6000	-1100	0	+1300	-6000

CAL YR 1997 b -2900
WTR YR 1998 b +1100

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

11299997 STANISLAUS RIVER BELOW TULLOCH POWERPLANT, NEAR KNIGHTS FERRY, CA

LOCATION.—Lat 37°52'34", long 120°36'15", in Rancheria del Rio Estanislao Grant, T.1 S., R.12 E., on Calaveras–Tuolumne County line, Hydrologic Unit 18040010, temperature recorder in south corner of Tulloch Powerplant at downstream side of Tulloch Dam, 5.2 mi northeast of Knights Ferry.

DRAINAGE AREA.—980 mi^2.

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: June 1972 to current year.

INSTRUMENTATION.—Temperature recorder since June 1972.

REMARKS.—Water temperature is affected by regulation from Tulloch Powerplant. Interruption in record was due to the malfunction of the recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum recorded, 27.5°C, Aug. 30, 1977; minimum recorded, 5.0°C, Jan. 13, 1973.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum recorded, 12.5°C, Oct. 4, 5, 7, 8; minimum recorded, 9.0°C, several days during December, January, and April.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	12.0	12.0	---	---	---	---	9.5	9.0	10.0	10.0	9.5	9.5
2	12.0	12.0	---	---	---	---	9.5	9.0	10.0	10.0	9.5	9.5
3	12.0	12.0	---	---	---	---	9.5	9.0	10.5	10.0	9.5	9.5
4	12.5	12.0	---	---	---	---	9.5	9.0	10.5	10.5	9.5	9.5
5	12.5	12.0	---	---	---	---	9.5	9.0	10.5	10.0	9.5	9.5
6	12.0	12.0	---	---	---	---	9.5	9.0	10.5	10.0	9.5	9.5
7	12.5	12.0	---	---	---	---	9.5	9.0	10.5	10.5	9.5	9.5
8	12.5	12.0	---	---	---	---	9.5	9.0	10.5	10.0	9.5	9.5
9	12.0	12.0	---	---	---	---	9.5	9.0	10.0	10.0	9.5	9.5
10	12.0	12.0	---	---	---	---	9.5	9.0	10.0	10.0	9.5	9.5
11	12.0	11.5	---	---	---	---	9.5	9.5	10.0	10.0	9.5	9.5
12	12.0	11.5	---	---	---	---	9.5	9.5	10.0	10.0	9.5	9.5
13	11.5	11.5	---	---	10.0	10.0	9.5	9.5	10.0	10.0	9.5	9.5
14	11.5	11.0	---	---	10.0	10.0	9.5	9.5	10.0	10.0	9.5	9.5
15	11.5	11.0	---	---	10.5	10.0	9.5	9.5	10.0	10.0	9.5	9.5
16	11.0	11.0	---	---	10.0	10.0	9.5	9.5	10.0	10.0	9.5	9.5
17	11.0	11.0	---	---	10.0	10.0	9.5	9.5	10.0	10.0	9.5	9.5
18	11.0	11.0	---	---	10.0	10.0	9.5	9.5	10.0	10.0	9.5	9.5
19	11.0	11.0	---	---	10.0	10.0	9.5	9.5	10.0	9.5	9.5	9.5
20	11.0	11.0	---	---	10.0	10.0	10.0	9.5	10.0	9.5	10.0	9.5
21	11.0	11.0	---	---	10.0	10.0	10.0	9.5	10.0	9.5	10.0	9.5
22	11.0	11.0	---	---	10.0	10.0	10.0	10.0	10.0	9.5	9.5	9.5
23	---	---	---	---	10.0	10.0	10.0	10.0	10.0	9.5	9.5	9.5
24	---	---	---	---	10.0	9.5	10.0	10.0	10.0	9.5	9.5	9.5
25	---	---	---	---	9.5	9.5	10.0	10.0	10.0	9.5	9.5	9.5
26	---	---	---	---	9.5	9.5	10.0	10.0	10.0	9.5	9.5	9.5
27	---	---	---	---	9.5	9.5	10.0	10.0	10.0	9.5	9.5	9.5
28	---	---	---	---	9.5	9.5	10.0	10.0	9.5	9.5	9.5	9.5
29	---	---	---	---	9.5	9.0	10.0	10.0	---	---	9.5	9.5
30	---	---	---	---	9.5	9.0	10.0	10.0	---	---	9.5	9.5
31	---	---	---	---	9.5	9.0	10.0	10.0	---	---	9.5	9.5
MONTH	---	---	---	---	---	---	10.0	9.0	10.5	9.5	10.0	9.5

11299997 STANISLAUS RIVER BELOW TULLOCH POWERPLANT, NEAR KNIGHTS FERRY, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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

11300500 SOUTH SAN JOAQUIN CANAL NEAR KNIGHTS FERRY, CA

LOCATION.—Lat 37°51'16", long 120°38'14", in Rancheria del Rio Estanislao Grant, Calaveras County, Hydrologic Unit 18040010, on left bank 0.8 mi downstream from headgate at Goodwin Dam and 3.0 mi northeast of Knights Ferry.

PERIOD OF RECORD.—May 1914 to current year. Monthly and yearly discharge only for some periods, published in WSP 1315-A.

GAGE.—Water-stage recorder and concrete control. Datum of gage is 334.18 ft above sea level (levels by Oakdale Irrigation District). Prior to Mar. 12, 1915, nonrecording gage 100 ft downstream. Mar. 12, 1915, to July 1, 1921, nonrecording gage at present site and datum.

REMARKS.—Records fair. Canal diverts from right bank of Stanislaus River at Goodwin Dam for irrigation in Oakdale and South San Joaquin Irrigation Districts.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,320 ft^3/s, Aug. 10–17, 1978; no flow at times in most years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	281	e498	.00	3.0	1.1	.00	.53	658	503	1190	1080	1090
2	271	e500	3.6	3.0	2.4	.00	135	664	498	1200	1090	1090
3	264	e501	6.0	3.0	4.9	.00	213	632	507	1200	1090	1080
4	264	e502	6.0	3.1	3.3	.00	213	679	521	1200	1080	993
5	263	e189	4.3	3.0	2.0	.48	213	699	698	1200	1070	950
6	259	4.4	.93	3.0	2.2	1.0	213	696	780	1200	1070	948
7	260	4.2	1.1	3.0	3.8	1.0	214	693	782	1200	1120	952
8	259	4.3	1.0	3.0	3.7	.55	215	437	981	1190	1140	867
9	194	4.4	.88	3.0	3.3	.00	215	270	1050	1190	1140	830
10	134	4.4	.88	2.3	2.5	.00	215	270	1040	1100	1140	832
11	109	4.4	.88	1.5	1.9	.00	217	300	1030	1040	1140	823
12	35	4.4	.95	2.9	1.5	.00	218	340	1020	1040	1140	809
13	4.0	220	1.0	1.9	1.4	.00	220	298	999	1050	1150	795
14	3.3	353	1.1	1.3	2.5	.00	220	298	983	1040	1180	789
15	4.8	354	1.2	3.8	1.7	.00	221	298	1000	1030	1190	788
16	8.4	355	1.2	2.9	1.4	.00	222	299	590	1030	1190	716
17	7.0	132	1.1	219	1.6	.00	223	300	232	1020	1160	692
18	5.1	.72	1.0	367	.92	.00	223	300	792	1030	1140	688
19	5.0	.07	.90	370	.20	114	224	300	1140	1050	1150	688
20	4.9	.00	.99	397	.15	205	224	307	1140	1060	1140	688
21	4.9	.00	.95	422	.71	213	228	365	1130	1070	1160	676
22	4.8	.00	1.0	423	.77	212	230	450	1150	1080	1170	671
23	4.6	.00	1.0	416	.76	213	230	494	1150	1090	1180	671
24	4.0	.00	1.0	414	.58	212	229	546	1160	1090	1180	671
25	2.7	.00	1.0	414	.58	212	228	577	1160	1090	1180	670
26	1.9	.07	2.5	416	.21	79	227	601	1170	1080	1180	672
27	1.5	.07	3.7	417	.00	4.1	231	623	1170	1090	1180	670
28	2.7	.02	3.3	419	.00	5.1	368	597	1170	1090	1170	672
29	313	.00	3.0	167	---	5.1	438	543	1180	1090	1160	672
30	e491	.00	3.0	1.2	---	3.0	553	538	1190	1090	1170	670
31	e496	---	3.0	1.1	---	.53	---	511	---	1090	1140	---
TOTAL	3962.6	3635.45	58.46	4907.0	46.08	1480.86	7020.53	14583	27916	34210	35470	23823
MEAN	128	121	1.89	158	1.65	47.8	234	470	931	1104	1144	794
MAX	496	502	6.0	423	4.9	213	553	699	1190	1200	1190	1090
MIN	1.5	.00	.00	1.1	.00	.00	.53	270	232	1020	1070	670
AC-FT	7860	7210	116	9730	91	2940	13930	28930	55370	67860	70350	47250

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	153	50.7	26.4	76.6	123	245	685	895	936	872	756	478
MAX	490	375	238	363	456	1087	1160	1265	1259	1260	1251	1031
(WY)	1981	1997	1969	1987	1985	1972	1984	1975	1978	1967	1978	1967
MIN	.000	.000	.000	.000	.000	.000	41.9	84.0	147	78.2	70.9	5.55
(WY)	1920	1920	1920	1916	1916	1930	1995	1977	1924	1924	1924	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1914 - 1998	
ANNUAL TOTAL	181483.89		157112.98			
ANNUAL MEAN	497		430		447	
HIGHEST ANNUAL MEAN					684	1984
LOWEST ANNUAL MEAN					114	1977
HIGHEST DAILY MEAN	1160	Apr 18	1200	Jul 2	1320	Aug 10 1978
LOWEST DAILY MEAN	.00	Feb 14	.00	Nov 20	.00	Oct 30 1914
ANNUAL SEVEN-DAY MINIMUM	.00	Feb 14	.00	Mar 9	.00	Oct 30 1914
ANNUAL RUNOFF (AC-FT)	360000		311600		323900	
10 PERCENT EXCEEDS	1080		1140		1080	
50 PERCENT EXCEEDS	355		259		332	
90 PERCENT EXCEEDS	.64		.57		.00	

e Estimated.

11301000 OAKDALE CANAL NEAR KNIGHTS FERRY, CA

LOCATION.—Lat 37°51'32", long 120°37'56", in SW 1/4 SE 1/4 sec.10, T.1 S., R.12 E., Tuolumne County, Hydrologic Unit 18040010, on left bank 0.3 mi downstream from headgate at Goodwin Dam and 3.4 mi northeast of Knights Ferry.

PERIOD OF RECORD.—May 1914 to current year. Records for water years 1933–36 incomplete; monthly and yearly estimates published in WSP 1315-A.

GAGE.—Water-stage recorder. Elevation of gage is 350 ft above sea level, from topographic map. Prior to Apr. 29, 1916, nonrecording gage at site 1,000 ft upstream at different datum. Apr. 29, 1916, to July 3, 1925, nonrecording gage and July 4, 1925, to Apr. 3, 1949, water-stage recorder at present site at datum 0.18 ft higher.

REMARKS.—Records good except for estimated daily discharges, which are poor. Canal diverts water from left bank of Stanislaus River at Goodwin Dam 0.3 mi upstream for irrigation in Oakdale Irrigation District.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 556 ft^3/s, July 8–11, 1967; maximum discharge, 595 ft^3/s, June 10, 1991, gage height, 10.09 ft, result of damage to canal due to vandalism; no flow at times in most years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	309	.00	.00	.00	e.90	.16	.33	279	274	454	487	491
2	308	.00	.00	.02	e3.0	.16	.21	252	268	467	487	491
3	308	.00	.00	.00	e12	.16	1.0	195	273	465	490	491
4	302	.00	.00	.68	e6.0	.12	.48	192	311	463	494	492
5	300	.01	.00	.05	e1.5	.16	.25	169	349	463	494	484
6	298	.04	.00	.01	e2.8	.18	.16	158	383	457	494	480
7	286	.01	.15	.11	e8.0	.11	.38	155	384	448	494	481
8	278	.01	.07	.06	e10	.10	.18	156	384	448	494	469
9	263	.01	.00	.34	e9.0	.10	.14	170	384	456	494	455
10	231	.10	.00	.93	e2.5	.10	.10	180	379	476	495	448
11	152	.05	.00	1.7	e1.8	.10	.11	196	370	483	495	439
12	45	.01	.00	7.0	e1.3	.10	.06	105	365	486	495	432
13	.26	.07	.00	5.2	e1.1	.11	.35	45	345	486	495	426
14	.26	.01	.00	e1.9	e1.8	.10	.26	45	320	486	496	416
15	.26	.06	.00	e10	e1.5	.10	.16	45	315	486	496	400
16	.24	.00	.00	e9.0	e1.3	.10	.14	49	332	487	496	392
17	.21	.00	.00	e2.5	e.95	.10	.14	48	362	487	489	384
18	.16	.00	.00	e3.6	e.90	.10	.07	48	382	489	485	380
19	.16	.00	.00	e7.0	.90	.10	.07	49	410	497	485	367
20	.19	.00	.00	e2.9	1.1	.10	29	74	439	497	485	353
21	.17	.00	.00	e1.9	1.2	.10	44	145	445	493	492	344
22	.10	.00	.00	e.90	1.2	.10	88	225	445	496	500	336
23	.06	.00	.00	e.17	.92	.10	160	277	445	502	501	337
24	.01	.00	.00	e.69	.58	.24	176	317	431	503	501	333
25	.01	.00	.00	e1.1	.35	.54	222	361	413	503	501	334
26	.01	.16	.00	e.70	.26	.15	226	361	406	499	501	341
27	.01	.00	.00	e.60	.21	.18	232	361	406	488	501	340
28	.00	.00	.00	e.40	.16	.22	240	344	421	489	497	341
29	.00	.00	.00	e.50	---	.19	241	304	439	489	491	341
30	.00	.00	.00	e.90	---	.16	261	304	439	488	491	341
31	.00	---	.00	e1.0	---	.32	---	289	---	487	491	---
TOTAL	3082.11	0.54	0.22	61.86	73.23	4.66	1923.59	5898	11319	14918	15307	12159
MEAN	99.4	.018	.007	2.00	2.62	.15	64.1	190	377	481	494	405
MAX	309	.16	.15	10	12	.54	261	361	445	503	501	492
MIN	.00	.00	.00	.00	.16	.10	.06	45	268	448	485	333
AC-FT	6110	1.1	.4	123	145	9.2	3820	11700	22450	29590	30360	24120

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 1998, BY WATER YEAR (WY)

MEAN	95.6	4.96	1.04	1.66	2.18	48.7	226	358	373	369	335	251
MAX	404	51.5	15.8	71.0	77.9	364	496	544	552	554	547	518
(WY)	1979	1940	1987	1987	1976	1972	1962	1965	1965	1967	1967	1958
MIN	.000	.000	.000	.000	.000	.000	.004	97.5	49.8	25.8	.62	1.20
(WY)	1995	1915	1916	1916	1915	1918	1983	1915	1924	1924	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1914 - 1998	
ANNUAL TOTAL	77761.54		64747.21			
ANNUAL MEAN	213		177		175	
HIGHEST ANNUAL MEAN					277	1979
LOWEST ANNUAL MEAN					52.8	1924
HIGHEST DAILY MEAN	462	Jul 16	503	Jul 24	556	Jul 8 1967
LOWEST DAILY MEAN	.00	Jan 7	.00	Oct 28	.00	Jun 21 1914
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 7	.00	Oct 28	.00	Oct 16 1914
ANNUAL RUNOFF (AC-FT)	154200		128400		126700	
10 PERCENT EXCEEDS	433		490		475	
50 PERCENT EXCEEDS	306		7.0		77	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated.

11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA

LOCATION.—Lat 37°51'06", long 120°38'13", in Rancheria del Rio Estanislao Grant, Calaveras County, Hydrologic Unit 18040010, on right bank 250 ft upstream from Owl Creek, 0.9 mi downstream from Goodwin Dam, and 2.9 mi northeast of Knights Ferry.

DRAINAGE AREA.—986 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—February 1957 to current year. Records equivalent to those published as Stanislaus River at Knights Ferry, 1903–14, and as Stanislaus River near Knights Ferry, 1915–32, if adjusted for diversions in Stanislaus and San Joaquin Water Co.'s Canal and Oakdale and South San Joaquin Canals.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 252.83 ft above sea level.

REMARKS.—Records good. Flow regulated by New Melones Reservoir (station 11299000) since 1978 and Tulloch Reservoir (station 11299995) since 1957. South San Joaquin Canal (station 11300500) and Oakdale Canal (station 11301000) divert at Goodwin Dam.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 40,200 ft^3/s, Dec. 24, 1964, gage height, 28.85 ft in gage well, 31.2 ft outside, from floodmarks; minimum daily, 0.12 ft^3/s, Feb. 8, 1979.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 23, 1955, reached a stage of 37.7 ft, from floodmarks, discharge, 62,900 ft^3/s, by computation of flow over Goodwin Dam.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	364	349	352	356	2230	3460	1540	2050	1860	2050	1770	1770
2	368	349	353	359	1830	3270	1530	1990	1640	2050	1780	1770
3	373	348	353	356	2210	2920	1530	2030	1550	2050	1800	1800
4	330	348	354	368	3510	2480	1530	2090	1540	2070	1820	1800
5	298	358	357	351	3970	2260	1530	2080	1540	2060	1830	1790
6	299	347	353	349	3440	2280	1520	2030	1540	2030	1820	1760
7	301	349	359	353	3100	2260	1860	2030	1540	2020	1790	1790
8	302	351	355	353	3880	2270	2040	2070	1540	2050	1780	1450
9	746	350	351	357	4150	2300	2030	2070	1530	1900	1780	847
10	1190	354	347	363	3910	2310	2040	2040	1530	1810	1790	487
11	1190	353	354	374	4050	2120	2040	2030	1540	1800	1800	571
12	1190	350	353	1390	3810	1870	2050	2040	1540	1800	1780	1250
13	1190	347	352	2080	3760	1620	2070	2070	1510	1780	1800	1750
14	1200	344	351	1390	3450	1530	2040	2030	1530	1770	1800	1760
15	1200	347	350	1340	3730	1520	2010	2030	1590	1780	1780	1800
16	1190	346	351	2160	3860	1520	2020	2030	1680	1790	1780	1770
17	1190	349	352	1510	3840	1530	2040	2030	1950	1770	1800	1770
18	1190	353	351	1310	3980	1900	2040	2040	2040	1780	1760	1780
19	1190	353	350	1320	3540	2830	2040	2030	2090	1790	1790	1780
20	1030	352	354	1280	3650	3140	2050	2040	2080	1760	1800	1750
21	745	352	354	1170	3570	3040	2030	2040	2070	1780	1800	1780
22	468	353	354	1020	3660	2590	2050	2040	2070	1800	1780	1760
23	358	353	353	915	3520	2470	2050	2070	2050	1800	1800	1780
24	355	351	352	917	3440	2450	2070	2070	2080	1830	1810	1770
25	350	352	356	916	3460	2480	2060	2060	2080	1820	1800	1790
26	351	359	357	1080	3470	2200	2040	2070	2040	1800	1790	1790
27	351	353	356	1240	3460	1740	2060	2070	2030	1780	1780	1770
28	349	350	356	1240	3450	1530	2050	2050	2040	1790	1800	1800
29	345	349	357	1820	---	1520	2050	2030	2050	1800	1780	1760
30	349	350	356	2430	---	1530	2060	2030	2060	1810	1770	1780
31	348	---	355	2450	---	1540	---	2060	---	1780	1760	---
TOTAL	20700	10519	10958	32917	97930	68480	58070	63440	53930	57700	55520	49025
MEAN	668	351	353	1062	3498	2209	1936	2046	1798	1861	1791	1634
MAX	1200	359	359	2450	4150	3460	2070	2090	2090	2070	1830	1800
MIN	298	344	347	349	1830	1520	1520	1990	1510	1760	1760	487
AC-FT	41060	20860	21740	65290	194200	135800	115200	125800	107000	114400	110100	97240

11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1978, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	128	215	690	1194	1103	1060	1154	1651	1249	96.4	4.18	17.8
MAX	749	681	3521	5040	4309	3265	3686	6233	5100	1063	22.5	231
(WY)	1976	1966	1965	1969	1969	1969	1967	1969	1967	1967	1967	1969
MIN	.19	4.56	.40	11.5	2.19	4.74	2.48	1.52	1.35	1.60	1.09	.51
(WY)	1977	1977	1978	1977	1960	1960	1972	1961	1961	1960	1960	1960

SUMMARY STATISTICS	WATER YEARS 1957 - 1978	
ANNUAL MEAN	725	
HIGHEST ANNUAL MEAN	2131	1969
LOWEST ANNUAL MEAN	6.47	1977
HIGHEST DAILY MEAN	29400	Dec 24 1964
LOWEST DAILY MEAN	.14	Oct 6 1976
ANNUAL SEVEN-DAY MINIMUM	.15	Oct 13 1976
INSTANTANEOUS PEAK FLOW	40200	Dec 24 1964
INSTANTANEOUS PEAK STAGE	28.85	Dec 24 1964
ANNUAL RUNOFF (AC-FT)	525500	
10 PERCENT EXCEEDS	2300	
50 PERCENT EXCEEDS	43	
90 PERCENT EXCEEDS	1.9	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	430	418	806	1062	1154	1334	884	894	677	585	544	439
MAX	1228	2246	4581	6005	6036	4905	1936	2046	1798	1861	1791	1634
(WY)	1984	1984	1984	1997	1997	1986	1998	1998	1998	1998	1998	1998
MIN	172	161	140	132	141	143	236	275	185	229	157	155
(WY)	1991	1991	1992	1990	1990	1991	1991	1991	1984	1984	1991	1991

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1984 - 1998	
ANNUAL TOTAL	601990		579189			
ANNUAL MEAN	1649		1587		768	
HIGHEST ANNUAL MEAN					1893	1997
LOWEST ANNUAL MEAN					185	1991
HIGHEST DAILY MEAN	6840	Feb 26	4150	Feb 9	6840	Feb 26 1997
LOWEST DAILY MEAN	282	Aug 18	298	Oct 5	51	Oct 10 1990
ANNUAL SEVEN-DAY MINIMUM	286	Aug 15	324	Oct 2	85	Oct 10 1990
INSTANTANEOUS PEAK FLOW			4900	Feb 4	7350	Jan 3 1997
INSTANTANEOUS PEAK STAGE			14.00	Feb 4	15.59	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	1194000		1149000		556400	
10 PERCENT EXCEEDS	6110		2450		1580	
50 PERCENT EXCEEDS	543		1780		369	
90 PERCENT EXCEEDS	305		351		158	

11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: February 1966 to current year.

INSTRUMENTATION.—Temperature recorder since February 1966.

REMARKS.—Temperature recorder located 2,300 ft upstream from gaging station. Water temperature is affected by regulation from Goodwin Dam. Interruption in record was due to malfunction of the recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum recorded, 30.5°C, July 25, 1974; minimum recorded, 5.5°C, Feb. 3, 1972.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum recorded, 13.5°C, Oct. 1, 2, and Sept. 24; minimum recorded, 9.0°C, several days during December and January.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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

11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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

11302500 STANISLAUS RIVER AT OAKDALE, CA

LOCATION.—Lat 37°46'38", long 120°51'07", in Eight Square Leagues on Stanislaus River Grant, Stanislaus County, Hydrologic Unit 18040002, on left bank at State Highway 120 bridge at Oakdale.

DRAINAGE AREA.—1,032 mi^2.

PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: August 1985 to current year.

INSTRUMENTATION.—Water-temperature recorder since Aug. 28, 1985.

REMARKS.—Interruptions in record were due to malfunction of the recording instrument. Water temperature can be affected by releases from Goodwin Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.—
WATER TEMPERATURE: Maximum recorded, 26.0°C, June 21, 22, 1992; minimum recorded, 5.0°C, Dec. 22–25, 1990.

EXTREMES FOR CURRENT YEAR.—
WATER TEMPERATURE: Maximum recorded, 16.5°C, Oct. 1, 2; minimum recorded, 7.5°C, Dec. 25-28.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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

11302500 STANISLAUS RIVER AT OAKDALE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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

11303000 STANISLAUS RIVER AT RIPON, CA

LOCATION.—Lat 37°43'47", long 121°06'34", in NW 1/4 SE 1/4 sec.29, T.2 S., R.8 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 15 ft downstream from railroad bridge, 1.1 mi southeast of Ripon, and 15 mi upstream from mouth.

DRAINAGE AREA.—1,075 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1940 to current year. April to September 1940 in reports of California Department of Water Resources.

GAGE.—Water-stage recorder. Datum of gage is 0.72 ft above sea level. October 1940 to Nov. 17, 1953, at site 100 ft upstream at same datum.

REMARKS.—Records good. Flow regulated by reservoirs and powerplants upstream from station. South San Joaquin and Oakdale Canals (stations 11300500 and 11301000) divert at Goodwin Dam 34 mi upstream for irrigation in the vicinity of Oakdale. See REMARKS for Stanislaus River below Goodwin Dam, near Knights Ferry (station 11302000).

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 62,500 ft^3/s, Dec. 24, 1955, gage height, 63.25 ft; minimum daily, 0.11 ft^3/s, Aug. 4–6, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Feb. 12, 1938, reached a stage of 64.4 ft, from floodmarks.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	488	436	405	385	2270	3890	1780	2010	2120	2060	1830	1750
2	505	415	397	397	2220	3880	1740	2050	1960	2050	1780	1770
3	512	423	395	421	2650	3750	1760	2070	1760	2060	1790	1820
4	524	453	395	436	3620	3370	1860	2090	1690	2050	1770	1840
5	503	422	411	543	3740	2850	1730	2110	1660	2070	1800	1880
6	456	433	422	467	4310	2530	1680	2120	1650	2070	1800	1800
7	485	410	419	424	4560	2460	1660	2050	1690	2010	1790	1770
8	487	398	481	410	4650	2390	1910	2040	1680	2010	1830	1830
9	506	394	474	404	5120	2360	2040	2060	1680	2060	1840	1540
10	766	403	432	468	5030	2350	2040	2070	1640	1960	1810	1050
11	1210	412	402	591	4780	2340	2040	2040	1610	1840	1780	724
12	1330	408	398	657	4670	2220	2040	2080	1640	1830	1770	743
13	1330	400	394	1840	4690	2020	2100	2160	1660	1830	1750	1230
14	1340	396	399	2310	4590	1810	2250	2070	1630	1800	1760	1670
15	1390	395	399	1820	4560	1700	2170	1990	1620	1800	1800	1730
16	1650	399	391	2430	4430	1670	2110	1990	1640	1790	1790	1770
17	1630	388	389	2580	4500	1690	2060	2020	1700	1800	1780	1770
18	1420	388	388	1790	4330	1690	2030	2010	1900	1760	1800	1820
19	1290	396	386	1680	4580	1950	2090	2020	1990	1760	1790	1880
20	1290	396	383	1650	4520	2630	2020	2000	2070	1780	1800	1860
21	1160	392	387	1420	4510	3080	2020	2000	2080	1760	1790	1870
22	912	392	386	1280	4520	3100	1990	2000	2100	1780	1800	1900
23	673	392	384	1120	4530	2700	2000	2050	2120	1810	1780	1840
24	563	390	385	998	4420	2540	2040	2060	2100	1820	1790	1860
25	534	391	382	965	4150	2520	2060	2080	2130	1860	1800	1880
26	497	433	384	942	3990	2620	2030	2070	2150	1800	1790	1920
27	483	446	385	1060	3940	2360	2010	2080	2100	1810	1790	1870
28	466	409	386	1190	3900	2020	2000	2150	2070	1760	1790	1900
29	474	396	385	1220	---	1820	2000	2240	2090	1760	1770	1900
30	472	412	385	1680	---	1740	2010	2180	2080	1770	1800	1870
31	468	---	385	2180	---	1710	---	2120	---	1820	1780	---
TOTAL	25814	12218	12394	35758	117780	75760	59270	64080	56010	58140	55540	51057
MEAN	833	407	400	1153	4206	2444	1976	2067	1867	1875	1792	1702
MAX	1650	453	481	2580	5120	3890	2250	2240	2150	2070	1840	1920
MIN	456	388	382	385	2220	1670	1660	1990	1610	1760	1750	724
AC-FT	51200	24230	24580	70930	233600	150300	117600	127100	111100	115300	110200	101300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1998, BY WATER YEAR (WY)

MEAN	369	468	909	1237	1270	1420	1531	2047	1444	518	370	353
MAX	1775	4518	7602	6273	6499	5094	5047	7703	5531	3633	2834	2041
(WY)	1984	1951	1951	1997	1997	1943	1983	1952	1967	1983	1983	1983
MIN	6.34	20.3	26.0	77.8	64.3	47.5	41.0	42.8	25.1	9.88	.63	2.95
(WY)	1978	1978	1978	1977	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1941 - 1998	
ANNUAL TOTAL	678322		623821			
ANNUAL MEAN	1858		1709		993	
HIGHEST ANNUAL MEAN					2548	1983
LOWEST ANNUAL MEAN					44.9	1977
HIGHEST DAILY MEAN	7240	Feb 27	5120	Feb 9	47000	Dec 24 1955
LOWEST DAILY MEAN	382	Dec 25	382	Dec 25	.11	Aug 4 1977
ANNUAL SEVEN-DAY MINIMUM	384	Dec 20	384	Dec 20	.13	Aug 2 1977
INSTANTANEOUS PEAK FLOW			5170	Feb 9	62500	Dec 24 1955
INSTANTANEOUS PEAK STAGE			53.98	Feb 9	63.25	Dec 24 1955
ANNUAL RUNOFF (AC-FT)	1345000		1237000		719500	
10 PERCENT EXCEEDS	6510		2600		2660	
50 PERCENT EXCEEDS	796		1790		390	
90 PERCENT EXCEEDS	399		398		138	

11303000 STANISLAUS RIVER AT RIPON, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water year 1985–88, 1993 to current year. Data for the period October 1985 to March 1987 are available in U.S. Geological Survey Open-File Report 88-479. Data for the period April 1987 to September 1988 are available in U.S. Geological Survey Open-File Report 91-74.
CHEMICAL DATA: Water year 1985–88, 1994.
SPECIFIC CONDUCTANCE: Water years 1986–89. July 1997 to current year.
WATER TEMPERATURE: Water years 1986–89. October 1994 to current year.
SEDIMENT DATA: Water year 1985–88, 1994.

PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: Water years 1986–89. July 1997 to current year.
WATER TEMPERATURE: Water years 1986–89. October 1994 to current year.

INSTRUMENTATION.—Temperature recorder since October 1994.

REMARKS.—Water temperature may be affected by upstream regulation.

EXTREMES FOR PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: Maximum recorded, 226 microsiemens, Feb. 26, 1988; minimum recorded, 38 microsiemens, Mar. 2, 1989.
WATER TEMPERATURE: Maximum recorded, 27.5°C, July 21, 1989; minimum recorded, 2.5°C, Dec. 11, 22, 1997.

EXTREMES FOR CURRENT YEAR.—
SPECIFIC CONDUCTANCE: Maximum recorded, 157 microsiemens, Jan. 10; minimum recorded, 59 microsiemens, Oct. 17, 20, 21.
WATER TEMPERATURE: Maximum recorded, 19°C, Oct. 1, 2; minimum recorded, 2.5°C, Dec. 11, 22.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	88	84	98	89	116	102	119	117	102	102	94	93
2	87	83	98	93	114	108	123	118	105	102	94	92
3	87	83	97	93	108	106	121	117	110	104	97	92
4	87	83	96	88	107	105	132	117	108	96	97	94
5	90	83	95	92	111	105	122	115	102	99	105	96
6	97	90	95	91	118	105	139	122	100	99	104	97
7	95	92	103	92	119	111	139	133	102	98	97	96
8	95	91	102	96	120	102	135	134	101	97	102	96
9	95	91	98	96	118	102	151	135	104	99	100	97
10	92	69	107	97	119	114	157	127	103	100	99	96
11	69	67	103	96	115	114	153	137	101	100	99	96
12	67	66	98	95	114	111	149	133	101	99	104	97
13	66	65	101	97	115	113	135	107	102	99	106	103
14	65	64	101	95	120	112	117	107	99	97	115	105
15	65	62	110	98	115	112	114	104	98	96	112	110
16	62	60	99	96	116	114	114	99	96	93	111	108
17	60	59	100	97	116	114	102	100	98	93	124	106
18	61	60	102	97	116	115	103	101	97	94	109	104
19	62	60	99	96	115	114	108	101	95	94	109	97
20	62	59	99	97	116	114	108	105	96	93	100	97
21	66	59	99	97	116	115	105	104	95	93	99	98
22	77	65	99	98	118	115	105	103	94	92	100	96
23	89	75	100	99	117	115	107	104	94	93	104	99
24	93	84	100	98	118	115	107	107	110	93	102	100
25	94	84	108	98	117	115	108	107	101	95	103	100
26	95	89	108	96	116	114	108	107	95	94	103	100
27	96	88	116	96	115	114	109	104	94	93	113	100
28	95	90	110	107	116	114	106	104	94	92	112	105
29	94	88	107	103	118	115	107	105	---	---	111	109
30	92	88	111	102	116	115	107	102	---	---	112	109
31	93	88	---	---	117	115	102	101	---	---	112	109
MONTH	97	59	116	88	120	102	157	99	110	92	124	92

11303000 STANISLAUS RIVER AT RIPON, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	117	108	107	104	91	88	80	78	76	73	68	66
2	116	111	111	103	99	89	80	78	77	75	83	65
3	115	107	106	103	99	95	79	77	75	73	88	64
4	114	107	105	103	98	95	78	76	74	72	82	66
5	114	112	106	101	97	92	77	76	74	72	81	65
6	123	114	105	101	95	91	77	76	77	73	78	65
7	118	114	103	99	95	89	77	75	77	71	84	66
8	117	110	102	98	94	91	78	75	78	72	75	69
9	115	112	99	94	93	90	82	73	78	73	95	66
10	120	115	96	94	93	91	80	73	87	73	118	83
11	116	114	105	92	93	90	87	75	86	81	136	118
12	115	114	98	92	91	89	76	75	85	71	134	96
13	123	114	99	94	91	89	77	75	86	71	96	62
14	116	110	108	95	92	88	78	76	82	70	68	62
15	112	110	98	94	91	89	78	76	76	68	82	62
16	111	109	97	94	90	85	78	77	78	68	64	63
17	111	108	97	92	87	82	83	76	79	68	65	63
18	111	110	98	94	83	79	83	73	82	70	65	63
19	114	110	104	94	82	80	76	74	86	79	64	63
20	111	109	95	92	83	82	77	76	84	68	65	63
21	116	110	96	91	83	81	78	77	70	68	65	64
22	113	111	96	91	83	81	78	77	71	68	65	64
23	112	109	98	92	83	81	78	77	73	68	66	65
24	110	108	95	91	84	81	79	77	75	67	67	65
25	111	108	95	92	82	80	78	77	77	72	67	65
26	109	107	97	92	81	78	77	74	78	67	67	64
27	108	107	93	90	80	79	77	75	74	66	66	65
28	108	106	93	89	82	79	76	75	87	66	68	66
29	108	105	94	86	81	79	84	74	69	67	67	66
30	107	105	95	91	79	78	84	74	69	67	68	66
31	---	---	93	90	---	---	84	73	68	66	---	---
MONTH	123	105	111	86	99	78	87	73	87	66	136	62

11303000 STANISLAUS RIVER AT RIPON, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.0	17.5	15.5	14.5	9.5	6.5	9.5	8.5	10.5	10.0	10.5	10.0
2	19.0	17.5	15.5	14.0	9.5	5.0	10.5	9.5	10.5	10.5	10.5	10.0
3	18.5	17.0	15.0	14.0	11.0	6.5	10.5	10.0	11.0	10.5	11.0	10.5
4	18.5	17.0	15.5	14.0	11.0	7.0	10.5	10.0	10.5	10.5	10.5	10.0
5	18.0	16.5	14.5	13.5	11.5	9.0	10.0	8.5	10.5	10.0	10.0	9.5
6	17.0	15.5	14.5	13.5	12.5	9.5	9.0	8.0	10.5	10.0	10.0	9.0
7	16.5	15.0	14.5	13.5	11.5	8.0	9.5	9.0	10.5	10.0	10.0	9.5
8	15.5	14.5	13.5	12.5	9.5	5.5	10.0	9.5	10.0	9.5	10.5	9.5
9	16.0	15.5	12.5	12.0	8.0	4.5	10.0	9.5	11.0	10.0	10.5	10.0
10	15.5	14.0	13.0	12.0	7.0	3.0	10.5	10.0	10.5	10.0	10.5	10.0
11	14.0	13.0	13.0	12.5	7.5	2.5	11.0	10.5	10.5	9.5	11.0	10.0
12	14.0	13.0	13.0	12.5	6.5	5.0	11.5	10.5	10.5	10.0	11.5	10.0
13	13.5	12.5	13.0	12.5	7.5	5.0	10.5	9.5	10.5	10.0	10.5	10.0
14	14.0	13.0	13.0	12.0	9.5	5.0	10.0	9.5	10.5	10.5	11.5	10.0
15	14.0	13.0	12.5	11.5	8.5	4.0	10.0	9.5	10.5	10.0	12.0	10.5
16	15.0	14.0	11.5	11.0	8.0	6.5	11.0	10.0	10.0	9.5	11.5	10.5
17	14.5	14.0	12.0	9.5	9.5	6.5	11.0	11.0	10.0	9.0	12.0	10.5
18	14.5	13.5	12.5	9.0	9.5	5.5	11.0	10.5	10.5	9.5	12.5	11.0
19	13.5	12.5	14.5	9.5	6.5	3.5	10.5	10.0	10.0	9.5	12.0	11.0
20	13.0	12.5	11.5	8.0	8.5	3.0	10.5	9.5	10.0	9.0	12.5	11.0
21	13.0	12.0	13.0	7.5	8.0	3.5	10.0	9.5	9.5	9.5	12.5	11.5
22	13.5	12.5	13.5	8.5	8.5	2.5	9.5	9.0	9.5	9.5	12.5	11.5
23	14.0	13.0	16.5	11.0	8.0	7.5	10.0	9.5	10.0	9.5	12.0	11.0
24	14.0	13.5	16.0	10.5	8.5	7.0	10.0	9.5	10.0	9.5	12.5	11.5
25	13.5	12.5	14.5	10.5	8.0	7.0	10.0	9.5	10.0	9.5	12.0	11.0
26	13.5	12.5	14.0	11.0	7.5	7.0	10.5	10.0	10.5	10.0	12.5	11.5
27	13.5	12.5	13.0	8.5	7.5	6.5	11.0	10.0	10.5	10.0	12.5	11.0
28	13.0	12.0	11.5	7.5	8.0	7.0	11.0	10.5	10.5	10.0	11.5	10.5
29	13.5	12.0	12.0	7.5	8.0	7.0	11.0	10.5	---	---	11.0	10.0
30	14.5	13.0	12.0	7.5	8.5	7.5	10.5	10.0	---	---	12.0	10.5
31	15.5	14.0	---	---	9.0	8.5	10.5	10.0	---	---	11.5	10.5
MONTH	19.0	12.0	16.5	7.5	12.5	2.5	11.5	8.0	11.0	9.0	12.5	9.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.0	10.0	14.5	13.5	15.0	13.5	16.0	14.5	17.0	15.5	16.5	15.5
2	10.5	10.0	14.5	13.0	15.5	13.5	16.0	14.5	17.5	15.5	17.0	15.5
3	11.0	10.5	14.5	13.0	14.5	13.5	16.0	14.5	17.5	16.0	17.0	15.5
4	11.5	10.0	14.5	14.0	14.5	12.5	16.0	14.5	17.5	16.0	17.0	15.5
5	12.5	10.5	14.0	13.0	15.0	13.5	16.5	15.0	17.5	16.0	17.0	16.0
6	12.0	11.0	14.0	12.5	15.0	14.0	16.5	15.5	17.5	16.0	16.5	15.5
7	12.0	10.5	13.5	12.5	14.5	14.0	16.5	15.0	17.0	16.0	16.5	16.0
8	12.0	11.0	13.5	12.5	14.5	13.5	16.5	15.0	17.0	16.0	16.5	16.0
9	12.5	11.0	13.5	12.0	15.5	14.5	16.5	15.5	17.0	15.5	17.0	15.5
10	13.0	12.0	13.5	12.0	15.5	14.5	16.5	15.0	17.0	15.5	17.0	15.5
11	12.0	11.0	13.0	11.5	15.0	14.0	16.5	15.0	17.0	16.0	17.5	16.0
12	11.5	10.5	12.0	11.0	15.0	14.0	16.5	15.0	17.0	16.0	18.0	17.0
13	12.0	11.0	12.5	10.5	15.5	14.5	17.0	15.5	17.0	15.5	17.5	15.5
14	11.5	10.5	12.5	11.0	16.5	15.0	17.0	15.5	17.5	16.0	16.5	15.5
15	12.0	10.5	13.5	11.5	17.0	15.5	17.5	15.5	17.0	16.0	16.5	15.5
16	12.5	11.5	13.0	12.0	16.5	15.5	17.5	16.0	17.0	15.5	16.0	15.0
17	12.5	11.5	13.0	11.0	16.5	15.0	17.5	16.0	16.5	15.5	16.0	15.0
18	13.0	12.0	14.0	12.5	15.5	14.5	17.5	15.5	16.5	15.0	15.5	15.0
19	13.0	12.0	14.0	12.5	16.0	14.5	17.5	16.0	16.0	15.0	15.5	15.0
20	13.5	12.0	14.0	12.5	16.0	15.0	17.5	16.0	16.0	15.0	15.5	14.5
21	14.0	12.5	14.0	12.0	16.0	15.0	17.0	16.0	16.0	15.0	15.5	14.5
22	14.0	12.5	14.5	12.5	16.0	15.0	17.0	16.0	16.0	14.5	15.5	14.5
23	13.5	12.5	14.5	13.0	16.0	15.0	16.5	15.5	16.5	15.0	15.0	14.0
24	13.0	12.0	15.0	13.0	16.0	15.0	17.0	15.5	16.5	15.0	15.0	14.0
25	13.5	12.5	14.5	13.5	16.5	15.0	17.0	16.0	16.5	15.0	15.0	14.0
26	13.5	12.5	14.0	13.0	16.0	15.0	17.0	15.5	16.0	15.0	15.0	14.0
27	14.0	13.0	13.0	12.0	16.0	15.0	17.5	15.5	16.0	15.0	14.0	13.5
28	14.0	13.0	13.0	12.0	16.5	15.0	17.0	16.0	16.5	15.0	15.0	14.0
29	14.5	13.5	13.0	12.0	16.0	15.0	17.0	15.5	16.5	15.0	15.0	14.0
30	14.5	13.5	15.0	12.5	16.0	14.5	16.5	15.5	16.5	15.5	15.0	14.0
31	---	---	14.5	13.0	---	---	17.0	15.5	16.5	15.0	---	---
MONTH	14.5	10.0	15.0	10.5	17.0	12.5	17.5	14.5	17.5	14.5	18.0	13.5

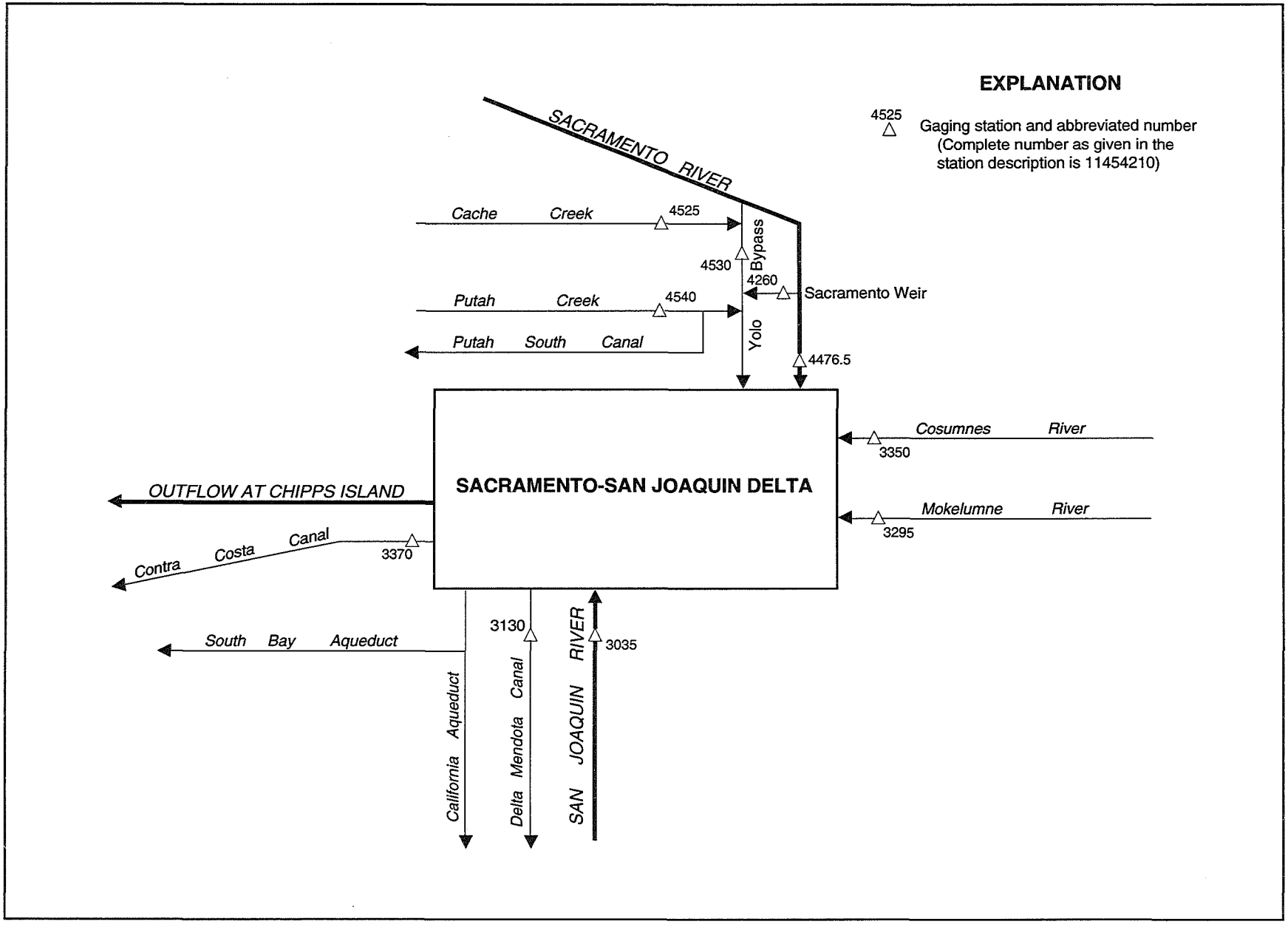


Figure 31. Principal inflows and diversions, Sacramento–San Joaquin Delta.

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA

LOCATION.—Lat 37°40'34", long 121°15'55", in El Pescadero Grant, San Joaquin County, Hydrologic Unit 18040003, on left bank 12 ft downstream from Durham Ferry highway bridge, 2.6 mi downstream from Stanislaus River, and 3.2 mi northeast of Vernalis.

DRAINAGE AREA.—13,536 mi^2, includes about 2,100 mi^2 in James Bypass.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—July 1922 to current year (1922–23 and 1925–29, low-flow records only).

REVISED RECORDS.—WSP 831: 1936. WSP 931: 1940. WSP 1930: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is sea level. See WSP 2130 for history of changes prior to Nov. 30, 1967.

REMARKS.—Records good except for periods of estimated record which are fair. Natural flow of stream affected by storage reservoirs, power developments, ground-water withdrawals, and diversions for irrigation; low flows consist mainly of return flow from irrigated areas. See schematic diagram of Sacramento–San Joaquin Delta.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge recorded, 79,000 ft^3/s, Dec. 9, 1950, elevation, 32.81 ft, present datum, including flow through breaks in levee; maximum elevation, 34.88 ft, Jan. 5, 1997; minimum discharge, 19 ft^3/s, Aug. 10, 1961.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2040	2110	2060	1810	10000	30600	22500	18100	18400	17900	6750	4840
2	2040	2050	2010	1820	11100	29200	21900	17900	18300	16800	6570	4740
3	2140	2020	2030	1850	13300	27700	21400	17700	18000	15700	6410	4740
4	2230	2050	2100	1880	17200	26300	21200	17200	17600	15000	6310	4740
5	2340	2060	2210	1970	19900	24800	21300	16600	17300	14500	6290	5000
6	2480	2010	2350	2130	21100	23500	21200	16300	16800	14600	6190	5400
7	2450	1960	2330	2120	22700	22600	21100	16300	16600	14900	5910	5640
8	2520	1960	2390	2020	26300	21300	21500	16400	16500	14900	5840	5770
9	2770	1970	2510	1960	30100	20400	22200	16500	16100	15300	5830	5750
10	2930	2000	2520	2030	32400	20000	22700	16600	15900	15500	5760	5730
11	3370	2030	2470	2200	33500	19500	22800	16500	16000	16500	5560	5310
12	3500	2030	2370	2630	34300	19000	22900	16600	16300	17500	5390	5210
13	3350	2010	2320	4160	35000	18600	23600	17500	16500	17900	5230	5680
14	3250	2020	2260	6750	34500	18100	24400	17800	16500	17500	5280	6450
15	3140	1990	2230	5770	34000	17500	24900	17800	16600	16100	5530	7120
16	3200	2020	2150	7140	33500	16900	24900	18000	16700	15200	5230	7110
17	3320	2000	2140	10600	32800	16300	25000	18200	17400	14700	5090	6220
18	3310	2000	2120	10700	32200	15500	24800	18400	18000	13400	5010	5830
19	3150	1990	2090	10600	32300	14400	24300	19000	18500	12400	4790	5690
20	3140	1970	2040	11400	32300	14000	23800	19400	18700	11700	4840	5810
21	3040	1950	2000	11400	31800	14600	23000	19600	18800	11400	4970	5920
22	2920	1900	1960	10900	31600	14700	21500	19600	18900	10800	5010	5860
23	2780	1870	1970	10300	31200	14400	20400	19500	19200	10500	5060	5860
24	2590	1840	1940	9550	30800	14100	20100	19400	19500	10200	5130	5860
25	2480	1830	1910	8820	30500	14000	19700	19100	19500	9860	5090	5860
26	2360	1910	1900	7690	31000	15000	19600	18600	19500	9060	4890	5880
27	2320	2010	e1890	6990	30900	16100	19300	18300	19100	8450	4810	6020
28	2250	1960	e1860	6790	31100	17100	19000	18100	18800	8170	4910	6170
29	2190	1920	e1840	6760	---	19200	18700	18500	18600	8030	4990	6150
30	2160	1980	e1820	7170	---	21800	18400	18500	18200	7460	5010	6390
31	2120	---	e1820	8870	---	22700	---	18400	---	7050	5020	---
TOTAL	83880	59420	65610	186780	787400	599900	658100	556400	532800	408980	168700	172750
MEAN	2706	1981	2116	6025	28120	19350	21940	17950	17760	13190	5442	5758
MAX	3500	2110	2520	11400	35000	30600	25000	19600	19500	17900	6750	7120
MIN	2040	1830	1820	1810	10000	14000	18400	16300	15900	7050	4790	4740
AC-FT	166400	117900	130100	370500	1562000	1190000	1305000	1104000	1057000	811200	334600	342600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1998, BY WATER YEAR (WY)

MEAN	2239	2308	3661	5276	7330	7591	7307	7838	6704	2676	1426	1781
MAX	13320	10680	25130	30380	35060	40040	36450	31770	36650	19230	9035	11310
(WY)	1984	1984	1951	1997	1997	1983	1983	1983	1938	1983	1983	1983
MIN	246	430	506	804	758	444	200	380	118	92.8	124	179
(WY)	1978	1978	1978	1962	1991	1961	1961	1961	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1924 - 1998	
ANNUAL TOTAL	3080490		4280720			
ANNUAL MEAN	8440		11730		4660	
HIGHEST ANNUAL MEAN					21280	1983
LOWEST ANNUAL MEAN					575	1977
HIGHEST DAILY MEAN	54300	Jan 5	35000	Feb 13	70000	Dec 9 1950
LOWEST DAILY MEAN	1560	Jul 19	1810	Jan 1	30	Aug 10 1961
ANNUAL SEVEN-DAY MINIMUM	1620	Jul 18	1830	Dec 28	59	Jul 19 1961
INSTANTANEOUS PEAK FLOW			35200	Feb 13	79000	Dec 9 1950
INSTANTANEOUS PEAK STAGE			28.78	Feb 13	34.88	Jan 5 1997
ANNUAL RUNOFF (AC-FT)	6110000		8491000		3376000	
10 PERCENT EXCEEDS	31500		22900		13000	
50 PERCENT EXCEEDS	2520		9550		2080	
90 PERCENT EXCEEDS	1820		2010		659	

e Estimated.

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1951 to current year.
CHEMICAL DATA: Water years 1951 to current year.
BIOLOGICAL DATA: Water years 1974–81.
SEDIMENT DATA: Water years 1957 to current year.
TURBIDITY: Water years 1972–84.

PERIOD OF DAILY RECORD.—
CHEMICAL DATA: March 1951 to May 1963.
SPECIFIC CONDUCTANCE: March 1951 to May 1963, January 1973 to October 1981, June 1985 to current year.
WATER TEMPERATURE: March 1951 to current year.
SUSPENDED-SEDIMENT DISCHARGE: November 1956 to current year.

INSTRUMENTATION.—Conductivity recorder, January 1973 to October 1981. Temperature recorder, October 1961 to September 1963 and since December 1972. Water-quality monitor since June 1985.

REMARKS.—Mean daily specific-conductance records, January 1973 to October 1981, provided by U.S. Bureau of Reclamation. Maximum and minimum specific-conductance values, June 1985 to September 1988, are available in files of the U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—
SPECIFIC CONDUCTANCE: Maximum daily, 2,350 microsiemens, Aug. 11, 1961; minimum daily, 60 microsiemens, June 21, 1953.
WATER TEMPERATURE: Maximum recorded, 35.5°C, Aug. 9, 1990; minimum recorded, 2.0°C, Dec. 26, 1987.
SEDIMENT CONCENTRATION: Maximum daily mean, 1,590 mg/L, Dec. 25, 1964; minimum daily mean, 6 mg/L, Jan. 1, 1991.
SEDIMENT LOAD: Maximum daily, 54,100 tons, Dec. 25, 1964; minimum daily, 2 tons, Aug. 10, 1961.

EXTREMES FOR CURRENT YEAR.—
SPECIFIC CONDUCTANCE: Maximum recorded, 1,390 microsiemens, Nov. 26; minimum recorded, 120 microsiemens, June 26, 27, 29.
WATER TEMPERATURE: Maximum recorded, 25.0°C, July 19, 20; minimum recorded, 7.0°C, Dec. 25–28.
SEDIMENT CONCENTRATION: Maximum daily mean, 550 mg/L, Feb. 3; minimum daily mean, 17 mg/L, Dec. 28, 29.
SEDIMENT LOAD: Maximum daily, 23,800 tons, Feb. 4; minimum daily, 86 tons, Dec. 28.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT											
09...	1020	2770	427	7.8	16.8	760	8.7	90	22	11	44
NOV											
06...	1040	2010	651	7.8	16.3	762	9.0	92	31	16	73
DEC											
22...	1420	1960	912	8.1	8.5	763	10.7	92	38	22	100
JAN											
08...	1100	2020	853	7.6	9.9	762	7.1	63	36	21	100
FEB											
06...	1100	21000	209	7.7	10.2	748	9.6	87	12	6.1	18
MAR											
05...	1040	24800	337	7.8	11.7	754	10.0	93	18	8.5	30
APR											
02...	1100	22000	272	7.9	13.0	764	11.0	104	15	7.1	26
MAY											
12...	1100	16400	183	7.5	15.5	750	9.0	92	12	4.9	16
JUN											
11...	1120	16000	171	7.3	19.2	756	8.3	91	11	4.2	16
JUL											
07...	1020	14800	137	7.4	22.6	761	7.4	86	9.0	3.3	12
AUG											
10...	1200	5770	345	7.9	20.5	761	8.7	97	19	8.9	35
SEP											
18...	1020	5880	245	7.8	18.4	762	8.4	90	--	--	--

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY WAT.DIS GRAN T. FIELD CACO3 (MG/L) (29802)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)
OCT											
09...	48	2.5	70	48	47	<.1	15	255	244	.35	.01
NOV											
06...	52	2.8	98	78	86	.1	16	388	374	.53	.04
DEC											
22...	54	4.1	130	120	140	.1	16	563	534	.77	.04
JAN											
08...	55	4.6	--	110	120	.1	15	503	494	.68	.02
FEB											
06...	39	3.6	47	22	16	<.1	11	132	122	.18	.02
MAR											
05...	44	2.2	59	51	28	.1	11	216	191	.29	<.01
APR											
02...	44	1.9	49	34	23	<.1	12	168	156	.23	.01
MAY											
12...	41	1.3	39	19	14	<.1	12	115	107	.16	.01
JUN											
11...	43	1.2	34	20	14	<.1	12	109	101	.15	.01
JUL											
07...	41	1.0	27	13	10	<.1	10	100	80	.14	.01
AUG											
10...	46	1.6	55	41	36	<.1	13	211	196	.29	.03
SEP											
18...	--	--	--	--	--	--	--	--	--	--	.01

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	BORON, DISSOLVED (UG/L AS B) (01020)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)
OCT											
09...	1.3	<.01	.6	.4	.25	.15	.14	209	14	16	<1
NOV											
06...	1.8	<.02	.4	.2	.10	.08	.10	321	9	26	<1
DEC											
22...	2.5	.20	.6	.5	.27	.21	.18	468	<10	78	<1
JAN											
08...	2.4	.19	.8	.7	.33	.24	.24	439	17	66	1
FEB											
06...	.59	.28	1.1	.7	.39	.20	.25	96.8	32	15	<1
MAR											
05...	.74	.03	.2	.4	.12	.14	.13	193	16	16	<1
APR											
02...	.70	.05	.3	.3	.10	.11	.09	153	26	13	<1
MAY											
12...	.41	.06	.4	.2	.10	.05	.07	91.4	31	17	<1
JUN											
11...	.36	.03	.4	.1	.14	.06	.07	90.7	22	18	<1
JUL											
07...	.33	.04	.4	.1	.19	.02	.05	79.5	23	15	<1
AUG											
10...	1.2	.07	.5	.2	.15	.06	.06	186	11	17	<1
SEP											
18...	.92	.03	.4	.1	.14	.06	.07	136	--	--	<1

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT						
03...	1433	2160	21.0	46	268	92
09...N	1020	2770	16.8	52	389	91
NOV						
06...N	1040	2010	16.3	33	179	90
18...	1447	2000	13.0	34	184	85
DEC						
22...N	1420	1960	8.5	22	116	86
23...	1329	1970	7.5	20	106	80
JAN						
08...N	1100	2020	9.9	33	180	88
21...	1740	11300	10.0	127	3870	62
FEB						
04...	1310	17300	11.5	495	23100	83
06...N	1100	21000	10.2	154	8730	85
10...	1050	32400	10.0	115	10100	87
MAR						
05...N	1040	24800	11.7	35	2340	84
10...	1215	20000	12.0	57	3080	70
APR						
01...	1228	22500	12.5	56	3400	67
02...N	1100	22000	13.0	49	2910	83
MAY						
07...	1213	16300	17.0	93	4090	79
12...N	1100	16400	15.5	83	3680	82
JUN						
10...	1307	15900	19.5	70	3010	85
11...N	1120	16000	19.2	85	3670	68
JUL						
07...N	1020	14800	22.6	94	3760	80
09...	1438	15300	23.0	92	3800	80
AUG						
05...	1104	6290	22.5	77	1310	86
10...N	1200	5770	20.5	79	1230	87
SEP						
04...	1232	4730	23.5	74	945	86
18...N	1020	5880	18.4	90	1430	72

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	NUMBER OF SAM-PLING POINTS (COUNT) (00063)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPER-ATURE WATER (DEG C) (00010)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	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)
FEB												
10...	1130	1	32400	10.0	--	--	--	20	76	95	99	100
10...	1135	1	32400	10.0	--	--	1	39	96	100	--	--
10...	1140	1	32400	10.0	--	--	4	46	92	99	100	--
10...	1145	1	32400	10.0	--	--	5	44	94	100	--	--
10...	1150	1	32400	10.0	20	35	55	83	86	88	91	100
SEP												
04...	1301	1	4720	23.0	--	5	64	90	97	100	--	--
04...	1305	1	4720	23.0	--	3	70	99	100	--	--	--
04...	1308	1	4720	23.0	--	--	31	82	98	100	--	--
04...	1310	1	4720	23.0	--	--	25	88	99	100	--	--
04...	1317	1	4720	23.0	--	1	8	65	96	99	100	--

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA—Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	561	550	628	618	740	663	887	878	287	211	301	292
2	577	558	643	626	1010	701	889	878	249	212	313	300
3	579	564	654	640	1140	1010	886	855	268	234	329	313
4	564	534	655	648	1210	1070	875	863	234	193	334	327
5	537	522	652	643	1200	1080	875	790	216	189	341	330
6	525	499	652	641	1250	1140	837	762	223	210	347	340
7	500	472	641	619	1140	962	841	779	244	223	354	340
8	475	446	620	602	962	799	862	814	258	232	377	354
9	446	407	602	582	799	677	836	804	254	232	376	368
10	408	385	582	565	678	650	858	806	257	246	369	363
11	385	353	565	543	650	644	809	759	275	254	374	363
12	358	347	543	524	660	648	---	---	271	255	364	355
13	375	353	529	511	755	660	674	405	276	251	363	358
14	383	375	533	525	---	---	443	350	266	256	363	353
15	386	379	537	526	---	---	448	406	270	260	368	354
16	389	383	542	533	---	---	445	250	281	267	376	368
17	401	388	540	529	---	---	250	237	290	277	379	373
18	413	400	569	535	---	---	237	215	296	280	388	375
19	433	413	595	548	---	---	232	213	280	268	407	388
20	447	433	615	553	---	---	242	213	278	267	408	382
21	463	445	561	532	---	---	290	242	283	275	382	366
22	477	462	540	531	---	---	290	272	293	279	385	367
23	491	477	556	540	---	---	311	280	308	293	384	368
24	502	490	789	556	---	---	330	311	311	303	370	358
25	507	498	1170	789	900	883	359	330	309	299	367	344
26	527	507	1390	1110	919	897	402	359	301	294	348	285
27	543	527	1150	614	919	902	403	396	305	296	304	262
28	565	542	737	605	904	885	406	394	301	291	308	280
29	583	564	843	684	905	892	400	380	---	---	281	262
30	601	583	775	725	906	893	383	335	---	---	262	256
31	618	600	---	---	901	879	345	287	---	---	264	256
MONTH	618	347	1390	511	---	---	---	---	311	189	408	256

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	273	263	198	196	170	167	129	124	318	305	---	---
2	283	271	199	195	169	167	150	127	324	316	---	---
3	291	283	202	196	167	161	140	134	329	323	---	---
4	294	290	207	201	164	161	142	140	330	323	---	---
5	292	286	219	207	162	159	147	141	327	316	334	311
6	290	281	216	212	166	162	144	139	328	318	311	283
7	287	282	214	204	163	159	140	134	336	328	283	270
8	286	280	211	196	159	155	136	132	332	322	270	258
9	284	276	202	196	162	157	132	126	337	331	267	254
10	276	268	203	199	168	162	135	130	351	335	281	254
11	278	271	199	185	173	168	134	129	362	350	309	281
12	276	262	186	178	173	166	131	125	362	356	313	298
13	262	245	181	176	176	167	133	127	366	356	311	258
14	248	240	188	181	176	164	142	133	364	325	258	217
15	252	243	200	188	164	158	151	142	340	313	217	192
16	251	248	208	198	158	146	154	149	397	337	224	191
17	249	243	209	204	146	139	163	153	452	393	247	223
18	250	243	204	193	141	137	174	163	457	416	265	245
19	252	249	194	187	141	137	187	174	---	---	270	258
20	250	241	188	183	140	137	190	187	---	---	263	253
21	243	234	183	179	138	134	199	189	---	---	253	240
22	254	243	179	175	138	134	210	199	---	---	253	240
23	253	249	175	173	135	130	219	210	---	---	261	251
24	251	243	174	169	135	132	224	218	---	---	266	260
25	246	243	174	170	133	127	236	224	---	---	265	250
26	244	204	174	172	128	120	258	236	---	---	263	252
27	204	197	172	168	129	120	278	258	---	---	260	243
28	202	197	168	161	129	121	279	267	---	---	243	227
29	199	196	166	162	126	120	274	268	---	---	234	227
30	198	195	167	163	130	126	294	273	---	---	234	222
31	---	---	170	163	---	---	305	294	---	---	---	---
MONTH	294	195	219	161	176	120	305	124	---	---	---	---

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA—Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	22.5	21.0	17.5	16.0	12.5	11.5	9.5	9.0	10.5	10.0	13.0	12.5
2	22.0	21.0	17.5	16.5	12.0	11.5	10.5	9.5	10.5	10.0	13.5	12.5
3	21.5	20.0	17.0	16.5	11.5	11.0	11.0	10.5	10.5	10.5	13.5	13.0
4	21.5	20.0	17.5	16.5	11.5	11.5	11.5	10.5	10.5	10.5	13.0	12.0
5	20.5	19.5	17.5	16.0	11.5	11.0	10.5	9.5	10.5	10.5	12.5	11.5
6	19.5	18.0	17.0	16.0	12.0	11.5	10.0	9.0	10.5	10.0	11.5	10.5
7	18.0	17.0	17.0	15.5	12.0	11.5	10.0	9.5	10.5	10.0	11.5	10.5
8	17.5	16.5	15.5	14.5	11.5	11.0	10.0	10.0	10.0	9.5	11.5	10.5
9	17.5	16.5	15.0	14.0	11.0	10.5	10.5	10.0	10.0	9.5	12.5	11.0
10	16.5	15.5	14.5	14.0	10.5	9.5	11.0	10.5	10.0	9.5	13.0	11.5
11	15.5	15.0	14.5	14.0	10.0	9.0	11.5	11.0	10.5	9.5	13.5	12.5
12	15.0	14.0	14.5	14.0	9.5	9.0	11.5	10.5	10.5	10.0	13.5	13.0
13	15.5	14.0	14.5	14.0	9.0	8.5	11.0	10.5	11.0	10.5	13.5	13.0
14	15.5	14.5	14.5	14.0	9.5	8.5	11.0	10.0	11.0	11.0	14.0	12.5
15	16.5	15.0	14.0	13.0	9.0	8.5	10.0	10.0	11.5	10.5	14.5	13.0
16	16.5	15.5	13.0	12.5	9.5	9.0	11.0	10.0	11.0	10.5	14.5	14.0
17	17.0	16.0	13.5	12.0	10.0	9.5	12.0	11.0	10.5	10.0	15.0	14.0
18	17.0	16.0	13.0	12.5	11.0	9.5	11.5	11.5	11.0	10.0	15.5	14.5
19	17.0	16.0	13.5	12.5	10.0	9.5	11.5	11.5	11.0	10.5	15.5	15.0
20	16.0	15.5	13.5	12.5	9.5	9.0	11.5	10.5	10.5	10.0	15.5	15.0
21	16.0	15.0	13.0	12.5	10.0	8.5	10.5	10.0	10.5	10.0	15.5	15.0
22	16.5	15.0	13.0	12.5	8.5	7.5	10.0	9.5	10.5	10.0	15.5	15.0
23	16.5	15.5	14.0	12.5	---	---	9.5	9.0	10.5	10.0	15.5	15.0
24	16.0	15.0	14.5	13.5	---	---	9.5	9.0	11.0	10.0	15.5	15.0
25	15.0	14.0	14.5	14.0	8.0	7.0	9.5	9.0	11.0	10.5	15.5	15.0
26	15.5	14.0	14.5	14.0	8.0	7.0	9.5	9.5	12.0	11.0	15.0	14.5
27	15.5	14.0	14.0	13.5	8.0	7.0	10.0	9.5	12.5	11.5	15.0	14.0
28	15.0	14.0	14.0	13.0	8.0	7.0	10.5	10.0	12.5	12.0	14.5	13.5
29	15.0	13.5	13.0	12.0	8.5	7.5	11.0	10.5	---	---	14.0	13.0
30	16.0	14.5	12.5	12.0	9.0	8.0	11.0	10.5	---	---	14.0	13.0
31	17.0	15.5	---	---	9.5	8.5	10.5	10.0	---	---	14.0	13.0
MONTH	22.5	13.5	17.5	12.0	---	---	12.0	9.0	12.5	9.5	15.5	10.5

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

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	2040	38	209	2110	35	200	2060	53	293
2	2040	37	203	2050	34	188	2010	46	252
3	2140	43	250	2020	34	187	2030	42	228
4	2230	39	236	2050	37	206	2100	39	224
5	2340	41	261	2060	36	201	2210	83	498
6	2480	43	288	2010	35	190	2350	92	581
7	2450	44	292	1960	33	173	2330	64	405
8	2520	49	331	1960	34	180	2390	59	383
9	2770	49	364	1970	35	185	2510	53	362
10	2930	47	369	2000	34	184	2520	51	350
11	3370	53	480	2030	33	179	2470	48	319
12	3500	48	449	2030	29	159	2370	49	315
13	3350	47	422	2010	32	173	2320	46	288
14	3250	45	399	2020	35	194	2260	41	253
15	3140	44	377	1990	40	213	2230	37	222
16	3200	48	411	2020	36	199	2150	38	223
17	3320	47	425	2000	35	187	2140	39	224
18	3310	47	418	2000	32	174	2120	41	233
19	3150	43	368	1990	30	162	2090	39	220
20	3140	40	336	1970	31	165	2040	36	196
21	3040	37	301	1950	32	167	2000	33	179
22	2920	47	373	1900	32	163	1960	27	144
23	2780	42	314	1870	27	139	1970	20	107
24	2590	37	257	1840	32	160	1940	18	93
25	2480	35	233	1830	29	144	1910	19	98
26	2360	30	191	1910	30	152	1900	20	101
27	2320	31	191	2010	35	188	e1890	18	92
28	2250	30	183	1960	36	190	e1860	17	86
29	2190	29	173	1920	37	190	e1840	17	87
30	2160	38	219	1980	39	209	e1820	21	102
31	2120	38	218	---	---	---	e1820	23	111
TOTAL	83880	---	9541	59420	---	5401	65610	---	7269
		JANUARY			FEBRUARY			MARCH	
1	1810	23	113	10000	108	2910	30600	24	1990
2	1820	30	148	11100	200	6000	29200	22	1710
3	1850	31	156	13300	550	19800	27700	24	1760
4	1880	29	149	17200	513	23800	26300	30	2120
5	1970	35	186	19900	255	13700	24800	37	2450
6	2130	39	226	21100	164	9350	23500	34	2190
7	2120	36	204	22700	181	11100	22600	39	2380
8	2020	37	199	26300	269	19100	21300	50	2860
9	1960	35	187	30100	185	15000	20400	46	2530
10	2030	37	201	32400	114	9960	20000	53	2860
11	2200	50	296	33500	77	7010	19500	56	2940
12	2630	87	620	34300	63	5860	19000	57	2910
13	4160	220	2470	35000	61	5790	18600	50	2530
14	6750	305	5570	34500	54	5020	18100	61	3000
15	5770	226	3520	34000	51	4680	17500	58	2750
16	7140	266	5130	33500	52	4730	16900	56	2580
17	10600	272	7800	32800	56	4930	16300	58	2550
18	10700	198	5720	32200	45	3900	15500	65	2720
19	10600	186	5330	32300	49	4300	14400	74	2860
20	11400	154	4720	32300	57	4980	14000	65	2450
21	11400	121	3720	31800	69	5890	14600	68	2680
22	10900	103	3030	31600	65	5560	14700	64	2560
23	10300	93	2580	31200	67	5620	14400	60	2310
24	9550	88	2280	30800	65	5420	14100	64	2430
25	8820	83	1990	30500	47	3850	14000	71	2670
26	7690	74	1540	31000	39	3260	15000	86	3470
27	6990	77	1460	30900	37	3100	16100	90	3910
28	6790	73	1330	31100	29	2410	17100	83	3840
29	6760	79	1440	---	---	---	19200	90	4670
30	7170	71	1370	---	---	---	21800	81	4750
31	8870	89	2140	---	---	---	22700	54	3320
TOTAL	186780	---	65825	787400	---	217030	599900	---	86750

e Estimated.

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	22500	58	3490	18100	63	3070	18400	64	3190
2	21900	59	3490	17900	68	3270	18300	68	3370
3	21400	62	3570	17700	65	3130	18000	72	3500
4	21200	62	3570	17200	71	3290	17600	70	3330
5	21300	64	3700	16600	80	3570	17300	72	3380
6	21200	67	3810	16300	82	3600	16800	80	3650
7	21100	62	3540	16300	86	3770	16600	83	3700
8	21500	63	3630	16400	75	3300	16500	80	3580
9	22200	57	3400	16500	75	3340	16100	73	3180
10	22700	55	3340	16600	77	3430	15900	74	3180
11	22800	51	3160	16500	78	3480	16000	89	3860
12	22900	47	2940	16600	85	3820	16300	90	3970
13	23600	51	3250	17500	80	3770	16500	83	3690
14	24400	50	3270	17800	73	3520	16500	75	3350
15	24900	46	3110	17800	69	3340	16600	70	3120
16	24900	47	3150	18000	67	3280	16700	71	3200
17	25000	47	3170	18200	66	3260	17400	78	3650
18	24800	41	2730	18400	59	2940	18000	72	3490
19	24300	38	2490	19000	58	2970	18500	64	3210
20	23800	42	2720	19400	55	2870	18700	71	3570
21	23000	46	2850	19600	58	3080	18800	73	3730
22	21500	49	2860	19600	57	3010	18900	63	3230
23	20400	49	2700	19500	59	3110	19200	64	3320
24	20100	43	2360	19400	57	2970	19500	62	3270
25	19700	41	2200	19100	59	3040	19500	60	3170
26	19600	49	2610	18600	78	3920	19500	59	3130
27	19300	54	2810	18300	74	3640	19100	69	3540
28	19000	52	2650	18100	80	3910	18800	71	3620
29	18700	56	2810	18500	65	3220	18600	74	3710
30	18400	56	2800	18500	61	3040	18200	78	3840
31	---	---	---	18400	63	3140	---	---	---
TOTAL	658100	---	92180	556400	---	103100	532800	---	103730
		JULY			AUGUST			SEPTEMBER	
1	17900	74	3560	6750	100	1830	4840	61	800
2	16800	86	3920	6570	85	1510	4740	61	779
3	15700	97	4120	6410	74	1280	4740	64	815
4	15000	100	4030	6310	71	1210	4740	69	885
5	14500	95	3710	6290	72	1230	5000	72	971
6	14600	93	3680	6190	76	1270	5400	74	1080
7	14900	92	3690	5910	72	1140	5640	81	1240
8	14900	93	3750	5840	69	1080	5770	77	1210
9	15300	90	3730	5830	73	1160	5750	80	1240
10	15500	103	4320	5760	70	1090	5730	91	1410
11	16500	76	3400	5560	72	1080	5310	90	1290
12	17500	77	3630	5390	81	1180	5210	85	1200
13	17900	68	3260	5230	77	1080	5680	92	1420
14	17500	77	3630	5280	79	1130	6450	97	1690
15	16100	83	3600	5530	77	1150	7120	109	2100
16	15200	89	3660	5230	75	1060	7110	107	2060
17	14700	87	3440	5090	71	975	6220	96	1620
18	13400	94	3400	5010	70	943	5830	95	1500
19	12400	106	3560	4790	73	942	5690	135	2080
20	11700	101	3200	4840	77	1000	5810	115	1800
21	11400	97	2990	4970	87	1170	5920	106	1690
22	10800	104	3020	5010	87	1180	5860	110	1740
23	10500	99	2810	5060	81	1110	5860	119	1880
24	10200	94	2600	5130	86	1200	5860	127	2010
25	9860	92	2450	5090	81	1110	5860	98	1550
26	9060	99	2430	4890	71	933	5880	92	1460
27	8450	100	2280	4810	71	920	6020	99	1610
28	8170	107	2350	4910	69	918	6170	96	1600
29	8030	127	2740	4990	70	948	6150	116	1920
30	7460	100	2010	5010	64	864	6390	128	2200
31	7050	92	1760	5020	64	873	---	---	---
TOTAL	408980	---	100730	168700	---	34566	172750	---	44850
YEAR	4280720		870972						

11313000 DELTA–MENDOTA CANAL AT TRACY PUMPING PLANT, NEAR TRACY, CA

LOCATION.—Lat 37°47'49", long 121°35'03", in SW 1/4 SW 1/4 sec.31, T.1 S., R.4 E., Alameda County, Hydrologic Unit 18040003, at Tracy Pumping Plant at intake to canal, 6 mi southeast of Byron, and 10 mi northwest of Tracy.

PERIOD OF RECORD.—June 1951 to current year. Prior to October 1959, published as "near Tracy."

GAGE.—Water-stage recorder on forebay, pressure gages on pump discharge lines, and operating time of pumps. Datum of gage is sea level (levels by U.S. Bureau of Reclamation).

REMARKS.—Discharge computed from records of operation of pumps. Water is diverted from Sacramento–San Joaquin Delta by way of Old River and a dredged channel to the Tracy Pumping Plant where it is lifted 200 ft into canal. Water, less intermediate diversions, flows into Mendota Pool on San Joaquin River to replace water diverted at Friant Dam. The canal is a part of the Central Valley Project. See schematic diagram of Sacramento–San Joaquin Delta.

COOPERATION.—Records were provided by U.S. Bureau of Reclamation; rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 4,940 ft^3/s, Aug. 11, 1969, Aug. 7, 1998; no flow for many days in some years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4300	4250	4080	4080	3720	1690	1750	1930	2010	3910	4470	4460
2	4320	4290	3980	4090	3610	1270	3490	1930	2010	3750	4220	4500
3	4280	4260	4200	4040	2090	764	2870	1930	2000	3790	4390	4500
4	4230	4340	4050	4080	2360	1410	1070	1920	2010	3680	4640	4470
5	4290	4290	4050	4110	2810	1790	731	1920	2010	3680	4550	4470
6	4360	4290	4100	4050	2810	1790	764	1920	2010	3680	4170	4440
7	4110	4310	4060	4090	2710	1790	1370	1920	2010	3680	4940	4410
8	4270	4220	4040	4090	2590	1780	1710	1920	2640	3680	4500	4420
9	4270	4290	4060	4180	3300	1750	1000	1920	2890	3530	4490	4480
10	4300	4270	4080	4110	3610	1710	738	1920	2900	3990	4460	4450
11	4210	4240	4080	4040	3560	1740	766	1930	2900	4310	4500	4420
12	4170	4210	4060	4090	3630	1830	762	1920	2890	4310	4510	4460
13	4250	4230	4110	4060	3630	1910	761	1920	2890	4300	4550	4450
14	4320	4210	4060	3900	3630	1900	758	1870	2880	4300	4520	4460
15	4230	4250	4080	3840	3620	1900	761	1840	2820	4300	4520	4150
16	4390	4210	4140	3830	3620	1890	609	2590	2800	4260	4520	4640
17	4330	4250	4170	3840	3440	1900	1000	2890	2790	4250	4510	4230
18	4270	4230	4040	3820	3510	1890	847	2880	2800	3670	4460	4270
19	4340	4200	4030	3830	3770	1890	847	2880	2800	3420	4500	4260
20	4250	4190	4030	3830	3880	1890	1530	2850	2790	3420	3870	4230
21	4270	4170	4040	3570	3730	1890	1920	2850	2800	3940	3600	4260
22	4250	4180	4010	3530	3050	1890	1920	2860	2790	4330	3610	4270
23	4280	4120	4110	3830	3520	1910	1920	2850	2800	4340	3610	4270
24	4340	4190	4090	3830	2490	2980	1940	3390	2780	4330	4230	4280
25	4250	4070	4030	3820	1160	3530	1910	3650	2870	4330	4510	4270
26	4480	4090	4050	3830	771	3550	1920	3120	3730	4270	4460	4290
27	4260	3990	4000	3840	768	2980	1920	2300	4270	4380	4430	4280
28	4270	4090	4040	4200	1380	2690	1920	2060	4280	4490	4430	4280
29	4340	4110	4130	4080	---	2680	1920	2040	4310	4500	4440	4180
30	4330	4030	4150	4140	---	2690	1920	2010	4400	4520	4430	4180
31	4340	---	4150	3870	---	2680	---	2010	---	4520	4460	---
TOTAL	132900	126070	126300	122540	82769	63954	43344	71940	85880	125860	135500	130730
MEAN	4287	4202	4074	3953	2956	2063	1445	2321	2863	4060	4371	4358
MAX	4480	4340	4200	4200	3880	3550	3490	3650	4400	4520	4940	4640
MIN	4110	3990	3980	3530	768	764	609	1840	2000	3420	3600	4150
AC-FT	263600	250100	250500	243100	164200	126900	85970	142700	170300	249600	268800	259300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1998, BY WATER YEAR (WY)

MEAN	2380	1810	1619	1889	2316	2583	2691	2590	2936	3677	3664	2881
MAX	4333	4239	4273	4271	4584	4563	4400	4540	4591	4740	4703	4591
(WY)	1996	1994	1996	1996	1976	1976	1976	1976	1973	1989	1989	1988
MIN	368	.000	.000	.000	.000	.000	99.6	58.3	113	354	977	539
(WY)	1952	1973	1953	1952	1952	1952	1952	1952	1951	1977	1952	1952

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1951 - 1998	
ANNUAL TOTAL	1270301.00		1247787			
ANNUAL MEAN	3480		3419		2607	
HIGHEST ANNUAL MEAN					4144	1976
LOWEST ANNUAL MEAN					230	1952
HIGHEST DAILY MEAN	4690	Jul 13	4940	Aug 7	4940	Aug 11 1969
LOWEST DAILY MEAN	.00	Jan 20	609	Apr 16	.00	Jun 1 1951
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 20	736	Apr 10	.00	Jun 1 1951
ANNUAL RUNOFF (AC-FT)	2520000		2475000		1889000	
10 PERCENT EXCEEDS	4520		4440		4430	
50 PERCENT EXCEEDS	4270		4010		2880	
90 PERCENT EXCEEDS	740		1880		128	

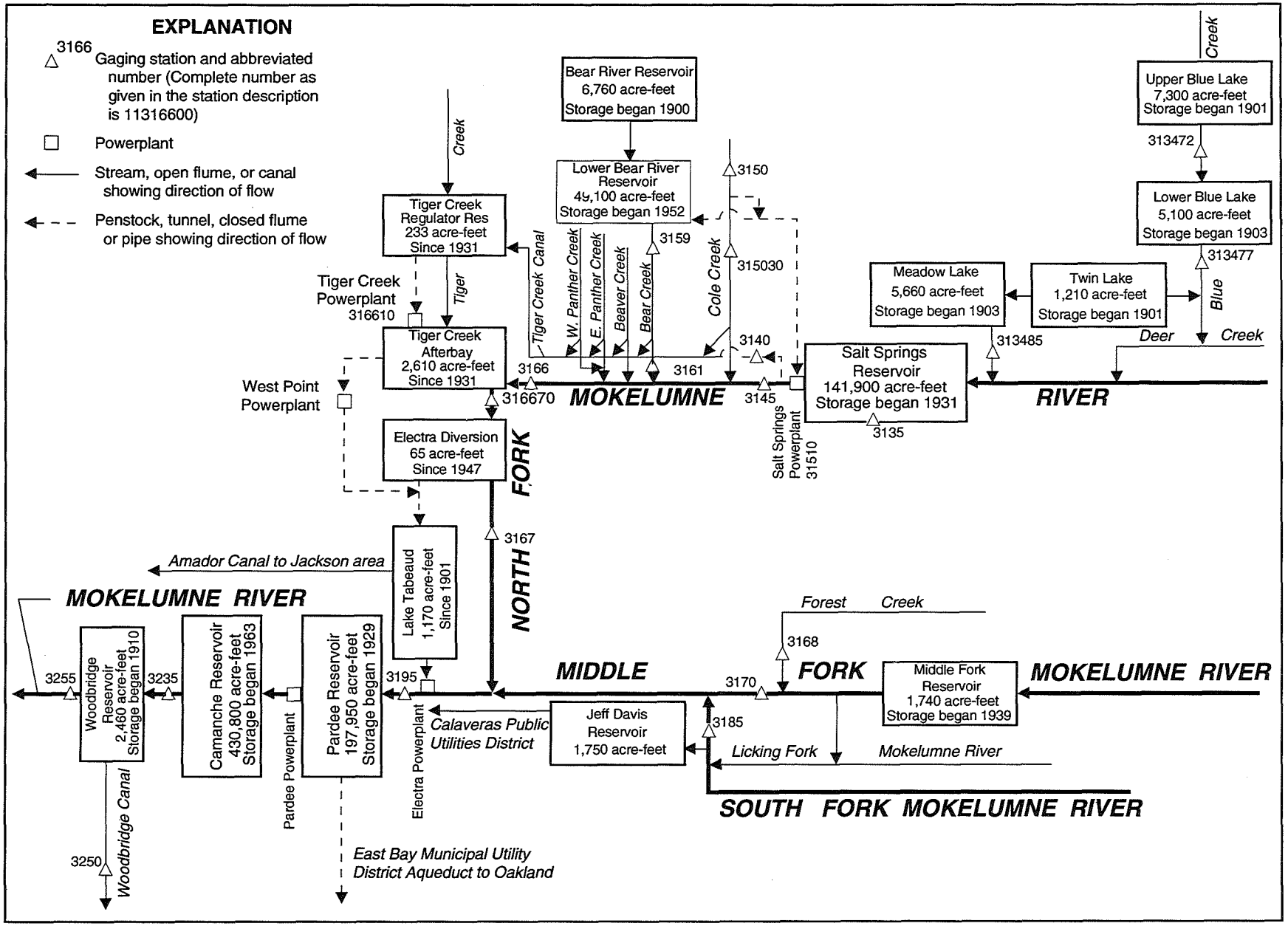


Figure 32. Diversions and storage in Mokelumne River Basin.

11313472 UPPER BLUE LAKE OUTLET NEAR MARKLEEVILLE, CA

LOCATION.—Lat 38°37'35", long 119°56'10", in NW 1/4 NW 1/4 sec.19, T.9 N., R.19 E., Alpine County, Hydrologic Unit 18040012, Eldorado National Forest, on left bank 1,000 ft downstream from Upper Blue Lake Dam, and 9.8 mi southwest of Markleeville.

DRAINAGE AREA.—2.64 mi^2.

PERIOD OF RECORD.—October 1988 to current year. Unpublished records for water years 1981–88 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 8,100 ft above sea level, from topographic map. Prior to October 1987, nonrecording gage at same site at different datum.

REMARKS.—Records not computed for winter months or above 9.9 ft^3/s. Low and medium flow regulated by Upper Blue Lake (capacity, 7,300 acre-ft) 1,000 ft upstream. See schematic diagram of Mokelumne River Basin.

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

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	3.6	---	---	---	---	---	---	---	---	---
2	---	---	3.6	---	---	---	---	---	---	---	---	---
3	---	---	3.5	---	---	---	---	---	---	---	---	---
4	---	---	3.5	---	---	---	---	---	---	---	---	---
5	---	---	3.5	---	---	---	---	---	---	---	---	---
6	---	---	3.5	---	---	---	---	---	---	---	---	---
7	---	---	3.6	---	---	---	---	---	---	---	---	---
8	---	---	3.7	---	---	---	---	---	---	---	---	---
9	---	---	3.7	---	---	---	---	---	---	---	---	---
10	---	---	3.7	---	---	---	---	---	---	---	---	---
11	---	---	3.7	---	---	---	---	---	---	---	---	---
12	---	---	3.7	---	---	---	---	---	---	---	---	---
13	---	3.6	3.6	---	---	---	---	---	---	---	---	---
14	---	3.6	3.6	---	---	---	---	---	---	---	---	---
15	---	3.5	3.6	---	---	---	---	---	---	---	---	---
16	---	3.5	3.6	---	---	---	---	---	---	---	---	---
17	---	3.6	---	---	---	---	---	---	---	---	---	---
18	---	3.6	---	---	---	---	---	---	---	---	---	---
19	---	3.6	---	---	---	---	---	---	---	---	---	---
20	---	3.6	---	---	---	---	---	---	---	---	---	---
21	---	3.6	---	---	---	---	---	---	---	9.4	---	---
22	---	3.6	---	---	---	---	---	---	---	9.2	---	---
23	---	3.6	---	---	---	---	---	---	---	9.0	---	---
24	---	3.5	---	---	---	---	---	---	---	8.9	---	---
25	---	3.5	---	---	---	---	---	---	---	8.7	---	---
26	---	3.6	---	---	---	---	---	---	---	8.7	---	---
27	---	3.6	---	---	---	---	---	---	---	8.6	---	---
28	---	3.6	---	---	---	---	---	---	---	8.5	---	---
29	---	3.6	---	---	---	---	---	---	---	---	---	---
30	---	3.6	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---
AC-FT	---	---	---	---	---	---	---	---	---	---	---	---

11313477 LOWER BLUE LAKE OUTLET NEAR MARKLEEVILLE, CA

LOCATION.—Lat 38°36'24", long 119°55'31", in SW 1/4 NE 1/4 sec.30, T.9 N., R.19 E., Alpine County, Hydrologic Unit 18040012, Eldorado National Forest, on left bank 800 ft downstream from Lower Blue Lake Dam and 10.0 mi southwest of Markleeville.

DRAINAGE AREA.—4.66 mi^2.

PERIOD OF RECORD.—October 1987 to current year. Unpublished records for water years 1981–87 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 7,870 ft above sea level, from topographic map. Prior to October 1987, nonrecording gage at same site and datum.

REMARKS.—Records not computed for winter months or above 75 ft^3/s. Low and medium flow regulated by Lower Blue Lake (capacity, 5,100 acre-ft) 800 ft upstream. See schematic diagram of Mokelumne River Basin.

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

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	36	4.0	---	---	---	---	---	---	61	54	52
2	49	35	4.0	---	---	---	---	---	---	60	53	52
3	48	35	4.0	---	---	---	---	---	---	60	54	53
4	48	34	4.0	---	---	---	---	---	---	58	56	54
5	47	34	4.0	---	---	---	---	---	---	56	55	53
6	47	33	4.0	---	---	---	---	---	---	56	55	53
7	46	33	4.0	---	---	---	---	---	---	55	55	53
8	46	32	4.0	---	---	---	---	---	---	54	55	53
9	46	31	4.0	---	---	---	---	---	---	52	55	52
10	45	31	4.0	---	---	---	---	---	---	49	55	52
11	45	30	4.0	---	---	---	---	---	---	46	55	52
12	45	17	4.0	---	---	---	---	---	---	42	54	51
13	45	3.8	4.0	---	---	---	---	---	---	41	54	51
14	45	3.8	4.0	---	---	---	---	---	---	39	54	51
15	44	3.8	4.1	---	---	---	---	---	---	37	54	51
16	44	3.8	4.1	---	---	---	---	---	---	29	54	50
17	44	3.8	4.3	---	---	---	---	---	---	23	53	50
18	44	3.8	4.3	---	---	---	---	---	25	23	54	50
19	43	3.8	4.3	---	---	---	---	---	38	23	55	50
20	43	3.8	4.3	---	---	---	---	---	69	23	54	49
21	42	3.8	4.3	---	---	---	---	---	---	23	53	49
22	42	3.8	4.3	---	---	---	---	---	74	23	53	51
23	41	3.8	4.3	---	---	---	---	---	68	22	53	54
24	41	3.9	4.3	---	---	---	---	---	63	22	54	53
25	40	3.9	4.3	---	---	---	---	---	71	22	55	53
26	40	4.0	4.3	---	---	---	---	---	73	22	55	53
27	39	4.0	4.3	---	---	---	---	---	65	22	54	53
28	39	4.0	4.3	---	---	---	---	---	64	22	54	53
29	38	4.0	4.5	---	---	---	---	---	66	38	54	52
30	37	4.0	---	---	---	---	---	---	65	54	54	52
31	37	---	---	---	---	---	---	---	---	54	53	---
TOTAL	1350	450.6	---	---	---	---	---	---	---	1211	1680	1555
MEAN	43.5	15.0	---	---	---	---	---	---	---	39.1	54.2	51.8
MAX	50	36	---	---	---	---	---	---	---	61	56	54
MIN	37	3.8	---	---	---	---	---	---	---	22	53	49
AC-FT	2680	894	---	---	---	---	---	---	---	2400	3330	3080

11313485 MEADOW LAKE OUTLET NEAR MARKLEEVILLE, CA

LOCATION.—Lat 38°35'53", long 119°58'40", in SE 1/4 SE 1/4 sec.27, T.9 N., R.18 E., Alpine County, Hydrologic Unit 18040012, Eldorado National Forest, on right bank 700 ft downstream from Meadow Lake Dam and 12.5 mi southwest of Markleeville.

DRAINAGE AREA.—5.66 mi^2.

PERIOD OF RECORD.—October 1987 to current year. Unpublished records for water years 1981–87 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 7,660 ft above sea level, from topographic map. Prior to October 1987, nonrecording gage at same site and datum.

REMARKS.—Records not computed for winter months or above 60 ft^3/s. Low and medium flow regulated by Meadow Lake, capacity, 5,660 acre-ft. See schematic diagram of Mokelumne River Basin.

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

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	17	4.5	4.0	---	---	---	---	---	---	25	40
2	21	17	4.5	4.1	---	---	---	---	---	---	23	40
3	21	17	4.5	---	---	---	---	---	---	---	22	39
4	21	17	4.5	---	---	---	---	---	---	---	22	39
5	20	16	4.4	---	---	---	---	---	---	---	25	39
6	21	16	4.4	---	---	---	---	---	---	---	30	39
7	22	16	4.5	---	---	---	---	---	---	---	29	38
8	22	17	4.6	---	---	---	---	---	---	---	29	38
9	22	17	4.8	---	---	---	---	---	---	---	29	38
10	22	16	4.8	---	---	---	---	---	---	---	29	38
11	22	16	4.5	---	---	---	---	---	---	---	28	38
12	22	9.9	4.4	---	---	---	---	---	---	---	28	38
13	21	4.4	4.3	---	---	---	---	---	---	---	28	37
14	20	4.6	4.3	---	---	---	---	---	---	---	28	37
15	19	4.6	4.5	---	---	---	---	---	---	---	28	37
16	19	4.6	4.4	---	---	---	---	---	---	---	28	42
17	19	4.5	4.3	---	---	---	---	---	---	---	28	46
18	19	4.5	4.5	---	---	---	---	---	---	---	28	46
19	19	4.4	4.8	---	---	---	---	---	---	---	28	46
20	19	4.4	4.5	---	---	---	---	---	---	---	27	45
21	19	4.5	4.8	---	---	---	---	---	---	---	27	45
22	18	4.4	5.0	---	---	---	---	---	---	---	27	44
23	18	4.3	4.7	---	---	---	---	---	---	---	27	44
24	19	4.3	4.7	---	---	---	---	---	---	---	35	43
25	19	4.3	4.8	---	---	---	---	---	---	---	42	43
26	19	4.4	4.6	---	---	---	---	---	---	---	41	42
27	18	4.7	4.3	---	---	---	---	---	---	35	41	42
28	18	4.6	4.2	---	---	---	---	---	---	---	41	42
29	18	4.5	4.0	---	---	---	---	---	---	---	41	41
30	18	4.5	4.0	---	---	---	---	---	---	---	40	40
31	17	---	4.0	---	---	---	---	---	---	26	40	---
TOTAL	612	272.4	139.1	---	---	---	---	---	---	---	944	1226
MEAN	19.7	9.08	4.49	---	---	---	---	---	---	---	30.5	40.9
MAX	22	17	5.0	---	---	---	---	---	---	---	42	46
MIN	17	4.3	4.0	---	---	---	---	---	---	---	22	37
AC-FT	1210	540	276	---	---	---	---	---	---	---	1870	2430

11313500 SALT SPRINGS RESERVOIR NEAR WEST POINT, CA

LOCATION.—Lat 38°29'55", long 120°12'52", in NW 1/4 SE 1/4 sec.33, T.8 N., R.16 E., Calaveras County, Hydrologic Unit 18040012, Eldorado National Forest, near center of Salt Springs Dam on North Fork Mokelumne River, 1.8 mi upstream from Cole Creek, and 18 mi northeast of West Point.

DRAINAGE AREA.—169 mi^2.

PERIOD OF RECORD.—March 1931 to current year. Prior to October 1964, records published as usable contents.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Prior to Oct. 1, 1991, nonrecording gage read once daily. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by concrete-faced rockfill dam, completed in 1931; storage began in March 1931. Capacity, 141,857 acre-ft between elevations 3,667.75 ft, outlet drain, and 3,958.0 ft, top of radial gates. Storage of 1,860 acre-ft available for release to river only. Water is released through Salt Springs Powerplant (station 11313510) just downstream from dam and discharged into Tiger Creek Powerplant Conduit (station 11314000). Figures given, including extremes, represent total contents. See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 142,091 acre-ft, July 3, 1993, elevation, 3,958.24 ft; no contents at times in 1932–33, 1945, 1962.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 139,446 acre-ft, July 25, elevation, 3,955.48 ft; minimum, 9,669, acre-ft, Jan. 9, elevation, 3,749.51 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated October 1964)

3,700	1,251	3,720	3,519	3,740	7,324	3,800	28,017
3,705	1,679	3,725	4,324	3,750	9,799	3,850	54,852
3,710	2,199	3,730	5,229	3,760	12,689	3,900	90,786
3,715	2,812	3,735	6,230	3,780	19,632	3,960	143,788

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70137	46252	24407	10105	17635	21059	34027	58353	90454	132989	136812	108796
2	69613	45187	24407	10121	18461	20638	34057	61775	93486	133121	136286	107753
3	69054	44402	24407	10040	20881	20462	34127	e64800	95491	132914	135993	106235
4	68300	43814	24283	10010	21830	20256	34082	68061	96662	132923	135234	105211
5	67302	43219	23648	9910	22541	20001	34037	70251	98403	132905	134372	104278
6	66558	42569	23040	9815	23414	19831	33986	72056	102313	133149	133561	103348
7	66043	41755	22636	9765	23991	19150	33863	73341	107840	133093	132763	102251
8	65778	40740	22113	9688	24309	18424	33696	75075	109823	133262	131951	101300
9	65278	39711	21533	9669	24484	17817	33545	77375	112780	133449	131058	100453
10	64824	38898	20865	9698	24450	17099	33409	79089	114802	133355	130212	99549
11	63996	38208	20012	9866	24330	16380	33314	80187	116605	133036	129382	98599
12	63028	37495	19037	10367	24152	15849	33154	81119	118129	133318	128418	97675
13	62201	36769	18037	10601	23978	15590	32999	81720	120368	134146	127493	96607
14	61463	36003	17309	10725	24071	e15400	32784	82079	123447	134524	126572	95601
15	61268	35095	16417	10725	23999	e15500	32654	82308	126391	134724	125652	94718
16	60689	33986	15504	13385	23750	e15900	32437	82483	129512	135619	124701	93928
17	60107	33014	14696	14516	23460	e16300	32253	82232	131245	136507	123722	93329
18	59244	32234	14137	15011	23248	e16700	32224	82148	133233	137210	122707	92473
19	58197	31474	13559	15435	23131	e17100	32551	82552	133196	137664	121713	91680
20	57416	30713	12975	15721	23003	e17500	33437	83241	133196	137993	120736	90938
21	56752	29968	12382	15825	22887	e17900	35339	83518	133299	138204	119724	e90400
22	56035	28967	11825	15587	22775	e18400	37987	83349	133083	138884	118767	e89900
23	55232	28122	11480	15518	22648	18875	40767	83733	132942	139294	117776	89400
24	54476	27388	11106	15652	22451	26774	42173	84248	133064	139370	116730	88699
25	53483	26801	10942	15738	22186	29848	43100	86364	133327	139446	115759	87998
26	e53300	26628	10792	15814	21955	31274	44071	87051	133121	139209	114740	87371
27	51115	26162	10652	16058	21701	32372	45534	87285	132952	139018	113722	86793
28	49985	25549	10509	16424	21281	33114	47669	87168	133074	138798	112709	86286
29	48877	24986	10337	16946	---	33563	50505	87223	133327	138377	111758	85858
30	47864	24369	10189	17305	---	33744	53958	87020	133140	137983	110769	85331
31	47255	---	10214	17436	---	33904	---	87975	---	137400	109823	---
MAX	70137	46252	24407	17436	24484	33904	53958	87975	133327	139446	136812	108796
MIN	47255	24369	10189	9669	17635	15400	32224	58353	90454	132905	109823	85331
a	3837.40	3791.72	3751.53	3774.09	3784.23	3812.41	3848.67	3896.44	3948.81	3953.33	3922.90	3993.05
b	-23447	-22886	-14155	+7222	+3845	+12623	+20054	+34017	+45165	+4260	-27577	-24492
c	7630	8740	2070	4030	6860	2050	6040	11740	11180	11350	11410	11380

CAL YR 1997 MAX 141568 MIN 10189 b -47951 c 115800
WTR YR 1998 MAX 139446 MIN 9669 b +14629 c 94500

e Estimated.

a Elevation, in feet, at end of month.
b Change in contents, in acre-feet.
c Release, in acre-feet, through Salt Springs Powerplant, provided by Pacific Gas & Electric Co.

11314500 NORTH FORK MOKELUMNE RIVER BELOW SALT SPRINGS DAM, CA

LOCATION.—Lat 38°29'37", long 120°13'12", in NE 1/4 NW 1/4 sec.4, T.7 N., R.16 E., Calaveras County, Hydrologic Unit 18040012, Stanislaus National Forest, on left bank 0.5 mi downstream from Salt Springs Dam, 1.3 mi upstream from Cole Creek, and 18 mi northeast of West Point.

DRAINAGE AREA.—170 mi^2.

PERIOD OF RECORD.—September 1926 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "above Moore Creek" 1926–30.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 3,590 ft above sea level, from topographic map. Prior to Sept. 12, 1928, at site 100 ft upstream and Sept. 12, 1928, to Sept. 23, 1940, at present site at datum 2.0 ft higher.

REMARKS.—Flow regulated since 1931 by Salt Springs Reservoir (station 11313500) 0.5 mi upstream. Water is imported from Bear River and Cole Creek to Salt Springs No. 2 Powerplant (station 11313510) upstream from station since December 1952. Then most of the water bypasses station through Tiger Creek Powerplant Conduit (station 11314000). See schematic diagram of Mokelumne River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 17,000 ft^3/s, May 16, 1996, gage height, 17.66 ft, from rating curve extended above 3,900 ft^3/s on basis of computations of flow over dam and discharge through powerplant; minimum daily, 0.3 ft^3/s, Mar. 17, 23, 31, and Apr. 1, 1931.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	218	41	23	23	24	38	694	680	2340	253	273
2	41	65	36	23	24	23	38	707	692	2280	239	292
3	41	64	36	23	27	23	39	716	712	2320	145	291
4	41	63	38	23	23	23	39	717	928	2130	270	292
5	41	63	28	23	23	23	38	730	933	2130	280	290
6	41	61	27	23	24	24	38	727	941	2120	263	289
7	40	60	23	23	23	23	38	739	957	2200	261	287
8	41	40	23	23	23	23	37	742	1390	1990	260	288
9	40	28	23	23	23	80	36	746	1840	1930	258	301
10	40	70	23	23	23	183	35	750	1840	1880	257	297
11	40	85	23	24	23	224	35	753	1930	1680	253	478
12	41	79	23	24	24	184	35	756	1910	1160	259	288
13	41	77	22	26	23	161	72	758	1880	900	277	288
14	41	74	23	23	23	86	186	759	1890	954	279	296
15	41	71	23	23	23	25	137	764	1940	873	278	303
16	41	79	23	23	24	25	182	772	1980	526	279	184
17	41	85	23	23	205	25	181	611	1960	497	292	103
18	41	80	23	23	23	26	180	454	2320	751	291	180
19	41	79	23	23	86	25	202	451	3310	403	285	205
20	72	80	23	23	109	23	593	495	3250	389	276	192
21	88	82	23	25	103	23	610	616	3300	398	282	195
22	87	46	23	23	107	24	620	662	3270	203	294	206
23	87	25	23	23	109	28	633	662	2760	273	307	210
24	87	25	23	23	69	35	642	662	2530	323	313	136
25	93	26	23	23	23	40	647	669	3050	301	289	103
26	95	26	23	23	23	31	650	675	3130	274	360	94
27	95	27	23	23	24	32	655	675	2630	237	663	70
28	98	27	22	23	24	38	662	701	2580	254	294	63
29	103	27	22	23	---	39	672	790	2810	270	256	75
30	102	33	22	23	---	31	682	718	2710	653	256	80
31	98	---	23	23	---	31	---	676	---	277	260	---
TOTAL	1879	1865	777	720	1281	1605	8652	21347	62053	32916	8829	6649
MEAN	60.6	62.2	25.1	23.2	45.8	51.8	288	689	2068	1062	285	222
MAX	103	218	41	26	205	224	682	790	3310	2340	663	478
MIN	40	25	22	23	23	23	35	451	680	203	145	63
AC-FT	3730	3700	1540	1430	2540	3180	17160	42340	123100	65290	17510	13190
a	31550	30550	18530	13150	20270	29600	15720	16240	31170	28900	32380	30710

a Diversion, in acre-feet, to Tiger Creek Powerplant Conduit, provided by Pacific Gas & Electric Co.

11314500 NORTH FORK MOKELUMNE RIVER BELOW SALT SPRINGS DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1998, BY WATER YEAR (WY)

MEAN	42.9	54.5	82.8	80.7	104	125	243	757	925	189	66.1	52.7
MAX	320	802	1390	665	710	969	1502	2473	3267	1887	406	330
(WY)	1996	1951	1951	1997	1942	1928	1938	1982	1983	1995	1983	1965
MIN	1.33	1.11	.73	.94	.91	1.87	1.55	3.11	3.77	3.02	2.89	2.80
(WY)	1941	1941	1944	1944	1944	1944	1944	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1927 - 1998	
ANNUAL TOTAL	115860		148573			
ANNUAL MEAN	317		407		227	
HIGHEST ANNUAL MEAN					710	1983
LOWEST ANNUAL MEAN					4.27	1977
HIGHEST DAILY MEAN	5900	Jan 3	3310	Jun 19	11400	May 16 1996
LOWEST DAILY MEAN	22	Dec 13	22	Dec 13	.30	Mar 17 1931
ANNUAL SEVEN-DAY MINIMUM	23	Dec 24	23	Dec 24	.39	Mar 19 1931
INSTANTANEOUS PEAK FLOW			4350	Jun 22	17000	May 16 1996
INSTANTANEOUS PEAK STAGE			10.11	Jun 22	17.66	May 16 1996
ANNUAL RUNOFF (AC-FT)	229800		294700		164300	
ANNUAL RUNOFF (AC-FT) a	360200		298800			
10 PERCENT EXCEEDS	851		955		620	
50 PERCENT EXCEEDS	98		93		21	
90 PERCENT EXCEEDS	32		23		4.4	

a Diversion, in acre-feet, to Tiger Creek Powerplant Conduit, provided by Pacific Gas & Electric Co.

11315000 COLE CREEK NEAR SALT SPRINGS DAM, CA

LOCATION.—Lat 38°31'09", long 120°12'42", in SW 1/4 NE 1/4 sec.28, T.8 N., R.16 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on left bank 200 ft downstream from bridge, 0.3 mi upstream from diversion dam, 1.4 mi north of Salt Springs Dam, 3.2 mi upstream from mouth, and 6.5 mi southwest of Mokelumne Peak.

DRAINAGE AREA.—21.0 mi^2.

PERIOD OF RECORD.—July 1927 to November 1942, October 1943 to current year. Prior to October 1958, published as Cold Creek near Mokelumne Peak. October 1958 to September 1960, published as "near Mokelumne Peak."

REVISED RECORDS.—WSP 1515: 1928, 1930–31, 1938(M), 1944, 1947. WSP 1930: Drainage area.

GAGE.—Water-stage recorder and concrete control since Oct. 30, 1974. Elevation of gage is 5,920 ft above sea level, from topographic map. Prior to Oct. 30, 1974, at site 0.4 mi upstream at different datum.

REMARKS.—Occasional pumping upstream from station for domestic use in summer-home tract began in September 1961. See schematic diagram of Mokelumne River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 6,140 ft^3/s, Dec. 23, 1964, gage height, 10.21 ft, site and datum then in use, from rating curve extended above 900 ft^3/s on basis of slope-area measurement at gage height 9.69 ft, site and datum then in use; no flow for many days in some years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	.18	8.1	14	26	26	60	376	394	309	14	.38
2	.42	.18	9.9	12	32	32	54	445	400	318	12	.35
3	.35	.18	10	12	124	37	54	342	320	289	10	.32
4	.23	.18	6.5	8.4	61	39	51	316	273	284	8.8	.34
5	.20	.18	5.0	9.3	42	32	48	237	343	284	7.5	1.1
6	.18	.18	10	9.2	37	28	47	193	578	292	6.2	2.4
7	.17	.18	12	9.9	33	41	44	171	662	282	5.5	.92
8	.23	.18	9.0	12	29	23	42	214	463	257	4.9	.64
9	.42	.18	12	11	28	27	42	286	419	246	4.2	3.1
10	.69	.18	8.4	11	27	29	48	221	465	223	3.6	6.8
11	.72	.23	7.1	10	26	39	46	161	485	182	3.1	2.9
12	.51	.31	7.6	16	26	51	42	148	550	164	2.7	1.6
13	.37	.34	6.8	110	30	48	40	119	578	159	2.2	1.1
14	.31	.35	6.9	37	34	41	38	100	560	139	2.0	.79
15	.27	.29	6.6	252	30	60	42	105	537	120	e1.8	.73
16	.25	.27	6.3	239	35	99	40	140	521	121	e1.6	.63
17	.22	.27	8.2	265	25	108	42	109	419	121	e1.4	.52
18	.23	.29	7.6	124	26	111	66	122	474	110	e1.3	.47
19	.22	1.0	6.5	74	24	126	118	191	475	94	e1.2	.44
20	.20	.97	5.9	54	25	151	173	211	450	82	e1.1	.40
21	.20	.54	6.2	73	23	148	259	184	445	73	e1.0	.40
22	.20	.44	5.8	39	23	216	306	161	332	68	e.90	.39
23	.20	.42	6.6	41	22	345	281	200	324	59	.82	.37
24	.19	.40	8.1	38	26	785	157	243	357	50	.72	.40
25	.18	1.3	11	45	22	298	135	368	406	40	.63	.46
26	.17	32	11	33	20	161	156	192	388	33	.59	.54
27	.18	14	8.4	30	20	135	221	136	348	29	.55	.77
28	.18	14	7.4	32	21	106	290	132	368	25	.51	.88
29	.18	14	15	33	---	85	350	145	383	22	.47	2.1
30	.18	8.4	31	37	---	78	385	143	345	20	.44	6.9
31	.18	---	22	29	---	67	---	267	---	17	.40	---
TOTAL	8.37	91.62	292.9	1719.8	897	3572	3677	6378	13062	4512	102.13	39.14
MEAN	.27	3.05	9.45	55.5	32.0	115	123	206	435	146	3.29	1.30
MAX	.72	32	31	265	124	785	385	445	662	318	14	6.9
MIN	.14	.18	5.0	8.4	20	23	38	100	273	17	.40	.32
AC-FT	17	182	581	3410	1780	7090	7290	12650	25910	8950	203	78

e Estimated.

11315000 COLE CREEK NEAR SALT SPRINGS DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1998, BY WATER YEAR (WY)

MEAN	4.22	22.4	38.2	38.9	42.4	65.2	144	252	151	22.1	1.44	.93
MAX	88.3	368	361	292	228	212	242	509	564	263	25.2	15.6
(WY)	1983	1951	1965	1997	1982	1986	1936	1969	1983	1983	1983	1983
MIN	.045	.10	.14	.30	.30	1.87	38.9	50.1	5.22	.38	.013	.000
(WY)	1967	1960	1960	1933	1933	1933	1975	1934	1992	1976	1931	1931

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1928 - 1998	
ANNUAL TOTAL	28442.24		34351.96			
ANNUAL MEAN	77.9		94.1		65.3	
HIGHEST ANNUAL MEAN					131	1983
LOWEST ANNUAL MEAN					16.6	1977
HIGHEST DAILY MEAN	3320	Jan 2	785	Mar 24	3760	Dec 23 1964
LOWEST DAILY MEAN	.14	Sep 24	.14	Oct 1	.00	Aug 1 1931
ANNUAL SEVEN-DAY MINIMUM	.15	Sep 8	.18	Oct 25	.00	Aug 1 1931
INSTANTANEOUS PEAK FLOW			1240	Mar 24	6140	Dec 23 1964
INSTANTANEOUS PEAK STAGE			4.27	Mar 24	10.21	Dec 23 1964
ANNUAL RUNOFF (AC-FT)	56420		68140		47300	
10 PERCENT EXCEEDS	198		322		202	
50 PERCENT EXCEEDS	14		26		15	
90 PERCENT EXCEEDS	.18		.28		.17	

11315030 COLE CREEK BELOW DIVERSION DAM, NEAR SALT SPRINGS DAM, CA

LOCATION.—Lat 38°30'54", long 120°12'53", in NW 1/4 SE 1/4 sec.28, T.8 N., R.16 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on right bank 200 ft downstream from diversion dam, 1.1 mi north of Salt Springs Dam, and 6.7 mi southwest of Mokelumne Peak.

DRAINAGE AREA.—21.8 mi^2.

PERIOD OF RECORD.—December 1987 to current year (low-flow records only). Unpublished records for water years 1981–87 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and broad-crested weir. Elevation of gage is 5,830 ft above sea level, from topographic map. Prior to Dec. 3, 1987, nonrecording gage at same site and datum.

REMARKS.—No records computed above 3.9 ft^3/s. Flow regulated by Cole Creek Diversion Dam. Water is diverted for power since December 1952 to a tunnel from Lower Bear River Reservoir to Salt Springs Powerplant No. 2 (station 11313510) on North Fork Mokelumne River. Water diverted occasionally from Cole Creek into Lower Bear River Reservoir. See schematic diagram of Mokelumne River Basin.

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

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	.28	---	3.7	---	3.6	---	---	---	---	3.4	.58
2	.43	.27	---	3.7	---	3.6	---	---	---	---	3.3	.35
3	.48	.27	---	3.7	---	3.7	---	---	---	---	3.3	.37
4	.30	.27	---	---	---	3.6	---	---	---	---	3.3	.47
5	.25	.26	---	---	---	3.6	---	---	---	---	3.3	1.0
6	.22	.26	---	---	---	3.7	---	---	---	---	3.3	3.2
7	.20	.26	---	---	---	3.6	---	---	---	---	3.3	1.3
8	.19	.26	---	---	---	3.6	---	---	---	---	3.3	.89
9	.48	.28	---	---	---	3.6	---	---	---	---	3.3	2.8
10	.97	.30	---	---	---	3.7	---	---	---	---	3.2	3.5
11	1.0	.37	---	---	---	3.7	---	---	---	---	3.2	3.3
12	.68	---	---	3.8	---	3.8	---	---	---	---	3.2	2.3
13	.48	.54	---	3.8	---	3.7	---	---	---	---	2.9	1.4
14	.40	.52	---	3.8	---	3.8	---	---	---	---	2.5	1.1
15	.35	.39	---	3.7	---	---	---	---	---	---	2.6	1.1
16	.32	.36	---	3.7	---	---	---	---	---	---	3.4	.95
17	.28	.38	---	3.7	---	---	---	---	---	---	3.2	.77
18	.27	.39	---	3.7	---	---	---	---	---	---	2.2	.67
19	.26	1.2	---	3.7	---	---	---	---	---	---	2.0	.62
20	.25	1.2	---	3.7	---	---	---	---	---	---	1.8	.59
21	.24	.73	---	3.7	---	---	---	---	---	3.6	1.6	.55
22	.25	.59	---	3.7	---	---	---	---	---	3.5	1.5	.55
23	.24	.53	---	3.7	---	---	---	---	---	3.6	1.3	.55
24	.24	.49	3.9	3.6	---	---	---	---	---	3.6	1.2	.59
25	.25	.68	3.9	3.6	3.6	---	---	---	---	3.5	1.1	.69
26	.23	---	---	3.6	3.6	---	---	---	---	3.5	1.1	.79
27	.22	---	3.9	3.6	3.6	---	---	---	---	3.5	1.0	1.1
28	.23	---	3.8	3.6	3.6	---	---	---	---	3.4	.94	1.2
29	.24	---	3.8	3.6	---	---	---	---	---	3.4	.88	2.3
30	.26	---	3.8	3.6	---	---	---	---	---	3.4	.81	3.3
31	.27	---	3.8	---	---	---	---	---	---	3.4	.76	---
TOTAL	10.64	---	---	---	---	---	---	---	---	---	72.19	38.88
MEAN	.34	---	---	---	---	---	---	---	---	---	2.33	1.30
MAX	1.0	---	---	---	---	---	---	---	---	---	3.4	3.5
MIN	.16	---	---	---	---	---	---	---	---	---	.76	.35
AC-FT	21	---	---	---	---	---	---	---	---	---	143	77

11315900 BEAR RIVER BELOW LOWER BEAR RIVER DAM, CA

LOCATION.—Lat 38°32'11", long 120°15'24", in NW 1/4 NW 1/4 sec.19, T.8 N., R.16 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on left bank 250 ft downstream from outlet valve on Lower Bear River Reservoir, 0.2 mi below Lower Bear River Reservoir Dam, 1.4 mi upstream from Rattlesnake Creek, and 3.5 mi northwest of Salt Springs Dam.

DRAINAGE AREA.—37.4 mi^2.

PERIOD OF RECORD.—December 1987 to current year (low-flow records only). Unpublished records for water years 1981–87 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 5,500 ft above sea level, from topographic map. Prior to Dec. 3, 1987, nonrecording gage at same site and datum.

REMARKS.—No records computed above 5.9 ft^3/s. Flow regulated since 1900 by Bear River Reservoir, capacity, 6,760 acre-ft, and since December 1952 by Lower Bear River Reservoir 0.2 mi upstream, capacity, 49,100 acre-ft. Water diverted for power since December 1952 from Lower Bear River Reservoir through tunnel to Salt Springs Powerplant No. 2 (station 11313510) on North Fork Mokelumne River. Water diverted occasionally from Cole Creek into Lower Bear River Reservoir. See schematic diagram of Mokelumne River Basin.

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

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	5.0	---	2.9	---	---	---	---	---	---	---	5.2
2	5.2	5.0	---	2.9	---	---	---	---	---	---	5.9	5.3
3	5.2	5.0	---	3.0	---	---	---	---	---	---	5.6	5.5
4	5.2	4.9	---	2.9	---	---	---	---	---	---	5.6	5.5
5	5.1	4.9	---	3.0	---	---	---	---	---	---	5.6	5.5
6	5.1	4.9	---	3.0	---	---	---	---	---	---	5.6	5.5
7	5.1	4.8	---	3.1	---	---	---	---	---	---	5.6	5.5
8	5.1	4.8	---	3.0	---	---	---	---	---	---	5.5	5.5
9	5.1	4.8	5.9	3.1	---	---	---	---	---	---	5.5	5.6
10	5.1	4.7	5.1	3.4	---	---	---	---	---	---	5.5	5.3
11	5.1	4.7	5.1	3.6	---	---	---	---	---	---	5.4	5.3
12	5.1	4.7	5.2	5.1	---	---	---	---	---	---	5.4	5.3
13	5.1	3.9	5.2	3.9	---	---	---	---	---	---	5.4	5.3
14	5.1	3.0	5.3	3.6	---	---	---	---	---	---	5.4	5.3
15	5.1	3.0	4.6	---	---	---	---	---	---	---	5.4	5.3
16	5.1	3.0	3.2	---	---	---	---	---	---	---	5.3	5.3
17	5.1	3.0	3.2	---	---	---	---	---	---	---	5.3	5.3
18	5.1	2.9	3.2	---	---	---	---	---	---	---	5.3	5.3
19	5.1	3.3	3.2	---	---	---	---	---	---	---	5.3	5.3
20	5.1	3.0	3.3	---	---	---	---	---	---	---	5.3	5.2
21	5.1	2.9	3.2	---	---	---	---	---	---	---	5.3	5.2
22	5.1	2.8	---	---	---	---	---	---	---	---	5.2	---
23	5.1	2.8	---	---	---	---	---	---	---	---	5.2	---
24	5.1	2.8	---	---	---	---	---	---	---	---	5.2	5.1
25	5.1	4.2	5.1	---	---	---	---	---	---	---	5.2	5.1
26	5.1	---	4.3	---	---	---	---	---	---	---	---	5.0
27	5.1	---	3.5	---	---	---	---	---	---	---	---	5.1
28	5.1	---	3.4	---	---	---	---	---	---	---	---	5.1
29	5.1	---	3.2	---	---	---	---	---	---	---	5.2	5.0
30	5.1	---	2.6	---	---	---	---	---	---	---	5.2	4.9
31	5.1	---	2.8	---	---	---	---	---	---	---	5.1	---
TOTAL	158.6	---	---	---	---	---	---	---	---	---	---	---
MEAN	5.12	---	---	---	---	---	---	---	---	---	---	---
MAX	5.3	---	---	---	---	---	---	---	---	---	---	---
MIN	5.1	---	---	---	---	---	---	---	---	---	---	---
AC-FT	315	---	---	---	---	---	---	---	---	---	---	---

11316100 BEAR RIVER BELOW BEAR RIVER DIVERSION DAM, CA

LOCATION.—Lat 38°29'33", long 120°17'21", in NE 1/4 NW 1/4 sec.2, T.7 N., R.15 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on right bank 200 ft downstream from diversion dam on Bear River and highway bridge, 1.4 mi upstream from mouth, and 3.5 mi northwest of Salt Springs Dam.

DRAINAGE AREA.—47.8 mi^2.

PERIOD OF RECORD.—December 1987 to current year (low-flow records only). Unpublished records for water years 1983–87 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and sharp-crested weir. Elevation of gage is 3,710 ft above sea level, from topographic map. Prior to Dec. 8, 1987, nonrecording gage at same site and datum.

REMARKS.—No records computed above 10 ft^3/s. Flow regulated since 1900 by Bear River Reservoir, capacity, 6,760 acre-ft, and since December 1952 by Lower Bear River Reservoir 4 mi upstream, capacity, 49,100 acre-ft. Water diverted for power since December 1952 from Lower Bear River Reservoir through tunnel to Salt Springs Powerplant No. 2 (station 11313510) on North Fork Mokelumne River. Water diverted at diversion dam 200 ft upstream to Tiger Creek Powerplant Conduit for use at Tiger Creek Powerplant (station 11316610). Spill at the diversion bypasses this site. See schematic diagram of Mokelumne River Basin.

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

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	4.7	6.8	5.2	6.6	4.9	5.2	---	5.6	5.6	9.2	6.5
2	5.0	5.3	6.5	5.2	6.7	4.9	5.2	---	5.6	5.6	5.2	6.5
3	5.0	5.4	5.3	5.1	6.2	5.2	5.2	---	5.6	5.6	7.9	6.5
4	5.0	5.3	5.3	5.1	5.7	5.3	5.2	---	5.6	5.6	7.6	6.5
5	5.0	5.3	5.1	5.1	6.3	5.3	5.2	---	5.6	5.6	5.2	6.5
6	5.0	5.3	5.1	5.1	6.3	5.3	5.2	---	5.6	5.6	5.2	6.5
7	6.0	5.3	4.9	5.1	6.3	5.3	5.2	---	5.6	5.6	5.2	6.5
8	8.2	5.3	4.8	5.1	6.3	5.3	5.2	---	5.6	5.6	5.2	5.9
9	7.2	5.3	5.0	5.1	7.1	5.2	5.2	---	5.6	5.6	5.2	5.5
10	5.2	5.3	5.1	5.1	8.5	5.2	5.2	---	5.6	5.6	5.2	7.9
11	5.0	5.3	5.1	5.1	6.4	5.1	5.2	---	5.4	5.5	5.2	8.0
12	5.0	5.3	5.1	5.2	5.0	5.1	5.2	---	5.4	5.5	5.2	5.3
13	5.0	5.3	5.0	5.1	5.2	5.2	5.2	---	5.6	5.5	5.2	5.2
14	5.0	5.3	4.7	5.7	5.3	5.3	5.2	---	5.6	5.5	5.2	5.2
15	4.8	5.2	4.8	6.0	5.3	5.3	5.2	---	5.6	5.5	5.2	5.2
16	5.0	5.2	5.3	5.3	5.3	5.3	5.2	---	5.6	5.5	5.2	5.2
17	5.2	5.3	5.4	5.3	5.3	5.3	5.2	5.3	5.5	5.6	5.2	5.2
18	5.2	5.3	4.9	5.3	5.3	5.2	5.2	5.6	---	---	5.2	5.1
19	5.2	5.1	5.0	5.2	5.3	5.2	5.1	5.6	5.6	5.4	5.2	5.1
20	5.1	5.3	5.1	5.2	5.3	5.2	---	5.6	5.6	5.2	5.2	5.1
21	5.0	5.3	5.1	4.0	5.3	5.2	---	5.6	5.6	5.0	5.1	5.0
22	5.0	5.3	5.7	5.2	5.3	5.1	---	5.6	5.6	5.0	5.1	5.0
23	4.9	5.2	5.8	5.2	5.2	5.0	---	5.6	5.6	5.0	5.0	---
24	5.2	5.2	5.2	5.2	5.4	4.9	---	5.6	5.6	5.0	5.0	5.4
25	5.4	5.3	5.2	5.2	5.4	5.2	---	5.6	5.6	4.9	5.0	5.4
26	5.4	5.0	5.2	5.2	8.2	5.3	---	5.5	5.6	4.9	5.0	5.4
27	5.4	5.2	5.2	5.0	6.7	5.2	---	5.5	5.6	4.9	---	5.4
28	5.4	5.3	5.2	5.2	5.0	5.1	---	5.5	5.6	4.9	6.4	5.4
29	5.4	5.3	5.2	5.4	---	5.1	---	5.2	5.6	4.9	6.5	5.4
30	5.3	5.3	5.2	5.9	---	5.3	---	5.4	5.6	---	6.5	5.3
31	5.2	---	5.2	6.6	---	5.3	---	5.6	---	---	6.5	---
TOTAL	164.7	157.5	162.5	162.7	166.2	160.8	---	---	---	---	---	---
MEAN	5.31	5.25	5.24	5.25	5.94	5.19	---	---	---	---	---	---
MAX	8.2	5.4	6.8	6.6	8.5	5.3	---	---	---	---	---	---
MIN	4.8	4.7	4.7	4.0	5.0	4.9	---	---	---	---	---	---
AC-FT	327	312	322	323	330	319	---	---	---	---	---	---

11316600 NORTH FORK MOKELUMNE RIVER ABOVE TIGER CREEK, NEAR WEST POINT, CA

LOCATION.—Lat 38°26'48", long 120°29'21", in SW 1/4 NE 1/4 sec.24, T.7 N., R.13 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on right bank 0.4 mi upstream from Tiger Creek and Tiger Creek Powerplant, 3.9 mi northeast of West Point, 18.3 mi downstream from Salt Springs Dam, and at mile 106.4.

DRAINAGE AREA.—333 mi^2.

PERIOD OF RECORD.—October 1985 to current year. Unpublished records for water years 1970–85 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 2,337.50 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Flow regulated since 1931 by Salt Springs Reservoir (station 11313500) 18.3 mi upstream. Some water is diverted through Tiger Creek Powerplant Conduit (station 11314000). Additional water is diverted out of the Bear River and several smaller tributaries into Tiger Creek Powerplant Conduit. All the water enters the North Fork Mokelumne River at Tiger Creek Powerplant (station 11316610) 0.4 mi downstream. Water is occasionally diverted at the weir for cooling at the Tiger Creek Powerplant. See schematic diagram of Mokelumne River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 38,500 ft^3/s, Jan. 2, 1997, gage height, 12.49 ft; minimum daily, 29 ft^3/s, Jul. 26, 1996.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	437	107	85	226	335	682	1910	1560	2900	280	320
2	91	156	92	106	459	326	628	2180	1690	2800	269	340
3	89	81	90	112	1380	328	641	2070	1720	2700	238	340
4	87	107	89	113	859	326	608	2010	1890	2600	212	340
5	87	106	92	97	614	322	585	1900	2010	2500	313	340
6	87	103	98	92	661	311	578	1790	2380	2400	291	340
7	88	101	171	98	720	282	551	1670	3030	2300	287	340
8	92	78	179	102	781	281	522	1400	3030	2200	284	340
9	113	71	115	101	626	294	508	1740	3420	2100	282	350
10	113	75	100	126	550	396	513	1680	3520	2000	281	350
11	125	125	91	206	539	489	533	1510	3800	1800	278	450
12	102	123	85	457	504	456	511	1490	3820	1200	276	370
13	97	131	83	357	520	440	515	1420	4180	1000	290	370
14	93	129	85	245	630	404	644	1370	4080	1200	295	370
15	95	123	95	1010	605	309	576	1300	4020	1000	293	375
16	108	120	87	987	531	358	612	1400	3940	700	293	230
17	90	125	87	941	667	387	617	1260	4100	620	300	150
18	90	129	85	654	440	405	648	1030	4500	930	302	230
19	87	137	82	632	491	412	711	1090	4900	533	298	250
20	95	151	81	453	542	447	1150	1180	4500	500	288	240
21	150	136	79	354	551	467	1380	1260	4400	487	289	250
22	156	127	76	275	585	548	1550	1240	4300	326	296	260
23	160	80	74	252	587	854	1680	1330	3800	343	307	250
24	163	75	82	233	538	2970	1470	1300	3500	395	318	161
25	162	90	88	216	421	2390	1390	1660	3700	399	290	170
26	172	300	95	205	372	1450	1370	1450	3700	360	366	162
27	168	205	110	198	354	1190	1460	1280	3100	310	700	150
28	168	120	112	194	351	982	1610	1270	3000	299	330	127
29	159	103	84	278	---	885	1740	1410	3200	321	320	140
30	144	99	74	242	---	780	1850	1310	3100	516	310	149
31	138	---	80	237	---	728	---	1350	---	347	300	---
TOTAL	3651	3943	2948	9658	16104	20552	27833	46260	101890	38086	9476	8254
MEAN	118	131	95.1	312	575	663	928	1492	3396	1229	306	275
MAX	172	437	179	1010	1380	2970	1850	2180	4900	2900	700	450
MIN	82	71	74	85	226	281	508	1030	1560	299	212	127
AC-FT	7240	7820	5850	19160	31940	40760	55210	91760	202100	75540	18800	16370
a	30760	2580	0	0	15050	31700	16700	16140	31200	28750	31670	29770

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

11316600 NORTH FORK MOKELUMNE RIVER ABOVE TIGER CREEK, NEAR WEST POINT, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1998, BY WATER YEAR (WY)

MEAN	106	81.1	139	387	384	516	558	1086	1112	362	121	116
MAX	323	301	948	3242	1702	1855	1602	2796	4265	2303	340	323
(WY)	1996	1997	1997	1997	1986	1986	1986	1996	1995	1995	1993	1995
MIN	39.4	44.2	46.9	49.8	51.4	76.8	87.3	70.0	49.8	37.0	36.2	34.2
(WY)	1989	1992	1994	1991	1991	1988	1988	1992	1987	1987	1987	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1986 - 1998	
ANNUAL TOTAL	272727		288655			
ANNUAL MEAN	747		791		414	
HIGHEST ANNUAL MEAN					1052	1995
LOWEST ANNUAL MEAN					59.9	1988
HIGHEST DAILY MEAN	25200	Jan 2	4900	Jun 19	25200	Jan 2 1997
LOWEST DAILY MEAN	70	Sep 24	71	Nov 9	29	Jul 26 1996
ANNUAL SEVEN-DAY MINIMUM	71	Sep 24	80	Dec 18	32	Aug 4 1987
INSTANTANEOUS PEAK FLOW			Unknown	Jun 19	38500	Jan 2 1997
INSTANTANEOUS PEAK STAGE			Unknown	Jun 19	12.49	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	541000		572500		299700	
ANNUAL DIVERSION (AC-FT) a	315900		234300			
10 PERCENT EXCEEDS	1510		2130		1180	
50 PERCENT EXCEEDS	172		350		82	
90 PERCENT EXCEEDS	75		91		42	

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

11316670 NORTH FORK MOKELUMNE RIVER BELOW TIGER CREEK RESERVOIR, NEAR WEST POINT, CA

LOCATION.—Lat 38°26'25", long 120°30'14", in SE 1/4 SE 1/4 sec.23, T.7 N., R.13 E., Amador County, Hydrologic Unit 18040012, on right bank 500 ft downstream from Tiger Creek Reservoir Dam and 3.1 mi northeast of West Point.

DRAINAGE AREA.—357 mi^2.

PERIOD OF RECORD.—October 1985 to current year (low-flow records only). Unpublished records for water years 1982–85 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 2,220 ft above sea level, from topographic map.

REMARKS.—No records computed above 50 ft^3/s. Flow regulated since 1931 by Salt Springs Reservoir (station 11313500) 20 mi upstream. Most of the water is diverted at Tiger Creek Reservoir to West Point Powerplant. See schematic diagram of Mokelumne River Basin.

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

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	31	---	30	29	---	---	---	---	---	---	---
2	31	31	---	30	31	---	---	---	---	---	---	---
3	31	31	---	30	---	---	---	---	---	---	---	---
4	31	31	---	30	---	---	---	---	---	---	---	---
5	31	31	38	30	---	---	---	---	---	---	---	---
6	31	31	37	30	---	---	---	---	---	---	---	---
7	31	31	46	30	---	---	---	---	---	---	---	---
8	31	31	---	30	---	---	---	---	---	---	---	---
9	31	31	---	30	---	---	---	---	---	---	---	---
10	31	31	30	30	---	---	---	---	---	---	---	---
11	31	31	30	31	---	---	---	---	---	---	---	---
12	31	31	30	32	---	---	---	---	---	---	---	---
13	31	31	30	---	---	---	---	---	---	---	---	---
14	31	31	30	30	---	---	---	---	---	---	---	---
15	31	31	30	---	---	---	---	---	---	---	---	---
16	31	31	30	---	---	---	---	---	---	---	---	---
17	31	31	30	---	---	---	---	---	---	---	---	29
18	31	31	30	---	---	---	---	---	---	---	---	29
19	31	31	30	---	---	---	---	---	---	---	---	30
20	31	31	30	---	---	---	---	---	---	---	---	30
21	31	31	30	31	---	---	---	---	---	---	---	30
22	31	31	30	29	---	---	---	---	---	---	---	30
23	31	31	30	29	---	---	---	---	---	---	---	30
24	31	30	30	29	---	---	---	---	---	---	---	30
25	31	31	30	29	---	---	---	---	---	---	---	30
26	31	37	30	29	---	---	---	---	---	---	---	30
27	31	31	30	29	---	---	---	---	---	---	---	30
28	31	30	30	29	---	---	---	---	---	---	---	30
29	31	30	30	29	---	---	---	---	---	---	---	30
30	31	30	30	29	---	---	---	---	---	---	---	30
31	31	---	30	29	---	---	---	---	---	---	---	---
TOTAL	961	932	---	---	---	---	---	---	---	---	---	---
MEAN	31.0	31.1	---	---	---	---	---	---	---	---	---	---
MAX	31	37	---	---	---	---	---	---	---	---	---	---
MIN	31	30	---	---	---	---	---	---	---	---	---	---
AC-FT	1910	1850	---	---	---	---	---	---	---	---	---	---

11316700 NORTH FORK MOKELUMNE RIVER BELOW ELECTRA DIVERSION DAM, NEAR WEST POINT, CA

LOCATION.—Lat 38°25'15", long 120°32'56", in SW 1/4 NE 1/4 sec.33, T.7 N., R.13 E., Amador County, Hydrologic Unit 18040012, on right bank 300 ft downstream from Electra Diversion Dam and 2.0 mi northwest of West Point.

DRAINAGE AREA.—365 mi^2.

PERIOD OF RECORD.—October 1985 to current year (low-flow records only). Unpublished records for water years 1982–84 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and sharp-crested weir since March 1987. Elevation of gage is 1,980 ft above sea level, from topographic map.

REMARKS.—No records computed above 30 ft^3/s. Flow regulated since 1931 by numerous reservoirs and diversions upstream. Most of the water is diverted at Electra Diversion Dam to Electra Powerplant. See schematic diagram of Mokelumne River Basin.

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

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	17	30	13	21	---	---	---	---	---	19	18
2	19	13	---	14	---	---	---	---	---	---	20	18
3	19	13	---	13	---	---	---	---	---	---	19	18
4	19	13	---	14	---	---	---	---	---	---	19	18
5	19	13	22	14	---	---	---	---	---	---	19	18
6	19	13	20	13	---	---	---	---	---	---	19	18
7	19	13	24	13	---	---	---	---	---	---	19	18
8	19	13	---	13	---	---	---	---	---	---	19	18
9	19	13	23	13	---	---	---	---	---	---	19	19
10	20	13	14	13	---	21	---	---	---	---	19	19
11	19	13	14	18	---	---	---	---	---	---	19	21
12	19	13	14	---	---	---	---	---	---	---	19	20
13	19	13	14	---	---	---	---	---	---	---	19	22
14	19	13	14	17	---	---	---	---	---	---	19	19
15	19	13	14	---	---	---	---	---	---	---	19	18
16	19	13	14	---	---	---	---	---	---	---	20	18
17	19	13	14	---	---	---	---	---	---	---	19	18
18	18	13	14	---	---	---	---	---	---	---	19	20
19	18	13	14	---	---	---	---	---	---	---	20	20
20	18	13	14	---	---	---	---	---	---	---	23	19
21	19	13	14	---	---	---	---	---	---	---	19	19
22	19	13	14	19	---	---	---	---	---	---	19	18
23	19	13	14	17	---	---	---	---	---	---	19	18
24	19	13	14	17	---	---	---	---	---	---	19	18
25	19	13	13	16	---	---	---	---	---	---	19	18
26	19	17	13	20	---	---	---	---	---	22	19	18
27	19	20	13	19	---	---	---	---	---	22	18	18
28	19	13	13	19	---	---	---	---	---	19	---	18
29	19	13	13	---	---	---	---	---	---	19	21	18
30	19	13	13	25	---	---	---	---	---	19	18	18
31	19	---	13	22	---	---	---	---	---	21	18	---
TOTAL	587	405	---	---	---	---	---	---	---	---	---	558
MEAN	18.9	13.5	---	---	---	---	---	---	---	---	---	18.6
MAX	20	20	---	---	---	---	---	---	---	---	---	22
MIN	18	13	---	---	---	---	---	---	---	---	---	18
AC-FT	1160	803	---	---	---	---	---	---	---	---	---	1110

11316800 FOREST CREEK NEAR WILSEYVILLE, CA

LOCATION.—Lat 38°24'12", long 120°26'45", in SW 1/4 NW 1/4 sec.4, T.6 N., R.14 E., Calaveras County, Hydrologic Unit 18040012, on left bank 1.0 mi downstream from Lion Creek, 1.8 mi upstream from mouth, and 4 mi northeast of Wilseyville.

DRAINAGE AREA.—20.8 mi^2.

PERIOD OF RECORD.—July 1960 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 2,950 ft above sea level, from topographic map.

REMARKS.—Records good. No regulation. Minor diversions upstream from station for irrigation and domestic use. See schematic diagram of Mokelumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,020 ft^3/s, Feb. 19, 1986, gage height, 8.12 ft, from rating curve extended above 500 ft^3/s on basis of slope-area measurement at gage height 7.41 ft; minimum daily, 0.11 ft^3/s, Aug. 14, 1977.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 120 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 15	1315	281	4.99	Mar. 24	2245	651	5.72
Feb. 3	0745	511	5.43	May 2	1445	149	4.43

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	4.5	7.3	6.3	36	54	120	105	64	26	13	7.4
2	5.9	4.2	6.9	8.9	92	53	107	139	63	25	13	7.1
3	4.7	4.0	6.9	10	327	53	115	140	63	26	12	7.2
4	3.9	4.0	6.6	9.7	160	52	108	138	61	25	11	7.4
5	3.4	3.9	6.8	9.3	109	51	107	136	58	25	11	8.0
6	3.3	3.8	8.0	9.2	137	53	100	136	62	23	11	9.5
7	3.4	3.9	19	11	161	48	94	124	79	23	11	7.8
8	3.5	4.1	19	11	179	47	87	118	68	22	11	7.2
9	6.8	4.0	12	11	122	45	83	110	66	22	11	11
10	9.8	4.2	9.5	15	101	44	80	103	67	21	11	9.4
11	10	5.0	8.7	36	103	44	90	95	75	20	10	8.8
12	6.5	5.2	7.9	92	91	45	85	100	76	19	10	9.3
13	5.1	5.6	7.5	47	95	48	84	99	82	19	10	8.0
14	4.6	6.4	7.9	39	131	50	83	92	75	19	9.5	7.6
15	4.1	6.1	8.7	186	117	51	81	84	68	18	9.5	7.5
16	3.8	6.4	7.6	109	96	54	79	81	63	17	9.3	6.9
17	3.7	6.2	7.2	93	82	58	79	80	58	17	9.0	7.0
18	3.5	6.0	7.1	82	71	61	79	74	53	17	8.7	7.0
19	3.5	9.1	6.9	93	75	63	80	71	50	16	8.2	7.2
20	3.6	8.3	6.9	63	73	67	81	69	46	15	8.2	7.1
21	3.6	6.6	6.6	50	86	70	86	66	43	15	8.6	6.9
22	4.1	6.1	6.5	42	92	83	96	64	41	15	8.7	6.2
23	4.9	5.6	6.7	37	84	98	107	61	40	16	8.4	6.7
24	4.7	5.6	6.5	32	78	387	107	59	38	15	7.9	7.6
25	4.6	10	6.4	29	72	441	101	81	36	15	7.6	7.5
26	4.5	29	6.4	26	64	263	95	74	34	15	8.1	8.2
27	4.6	16	6.9	25	60	226	94	65	31	14	8.4	8.4
28	4.7	9.7	6.8	24	56	194	97	66	29	14	8.2	8.4
29	4.7	8.3	6.6	55	---	162	101	76	28	14	8.3	10
30	4.6	7.7	6.3	43	---	143	104	70	26	13	8.0	9.2
31	4.6	---	6.2	35	---	133	---	66	---	14	7.6	---
TOTAL	144.3	209.5	250.3	1339.4	2950	3241	2810	2842	1643	575	297.2	237.5
MEAN	4.65	6.98	8.07	43.2	105	105	93.7	91.7	54.8	18.5	9.59	7.92
MAX	10	29	19	186	327	441	120	140	82	26	13	11
MIN	1.6	3.8	6.2	6.3	36	44	79	59	26	13	7.6	6.2
AC-FT	286	416	496	2660	5850	6430	5570	5640	3260	1140	589	471

11316800 FOREST CREEK NEAR WILSEYVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.03	9.10	20.6	40.8	45.7	53.2	50.3	35.7	14.2	6.32	3.80	3.24
MAX	11.9	59.5	138	244	243	209	174	129	54.8	18.5	10.5	8.36
(WY)	1983	1984	1965	1997	1986	1983	1982	1995	1998	1998	1983	1983
MIN	.63	1.80	2.17	2.40	2.35	4.58	2.96	3.92	1.59	.46	.33	.50
(WY)	1978	1993	1977	1991	1991	1977	1977	1977	1977	1977	1977	1992

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998	
ANNUAL TOTAL	12331.16		16539.2			
ANNUAL MEAN	33.8		45.3		23.8	
HIGHEST ANNUAL MEAN					67.9	1983
LOWEST ANNUAL MEAN					2.39	1977
HIGHEST DAILY MEAN	1550	Jan 2	441	Mar 25	1550	Jan 2 1997
LOWEST DAILY MEAN	.88	Aug 19	1.6	Oct 1	.11	Aug 14 1977
ANNUAL SEVEN-DAY MINIMUM	2.1	Aug 13	3.7	Oct 15	.15	Aug 11 1977
INSTANTANEOUS PEAK FLOW			651	Mar 24	2020	Feb 19 1986
INSTANTANEOUS PEAK STAGE			5.72	Mar 24	8.12	Feb 19 1986
ANNUAL RUNOFF (AC-FT)	24460		32810		17240	
10 PERCENT EXCEEDS	60		103		61	
50 PERCENT EXCEEDS	9.4		20		7.9	
90 PERCENT EXCEEDS	3.1		5.1		2.1	

11317000 MIDDLE FORK MOKELUMNE RIVER AT WEST POINT, CA

LOCATION.—Lat 38°23'23", long 120°31'32", in SE 1/4 NE 1/4 sec.10, T.6 N., R.13 E., Calaveras County, Hydrologic Unit 18040012, on right bank 200 ft downstream from highway bridge, 0.6 mi south of West Point, and 4.5 mi upstream from South Fork Mokelumne River.

DRAINAGE AREA.—68.4 mi^2.

PERIOD OF RECORD.—October 1911 to current year. Monthly discharge only for October 1911, published in WSP 1315-A.

REVISED RECORDS.—WSP 1515: 1919–20, 1927–28(M), 1936(M). WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 2,450 ft above sea level, from topographic map. Prior to Oct. 6, 1926, nonrecording gage at site 1,200 ft upstream at different datum. Oct. 6, 1926, to Aug. 18, 1928, nonrecording gage at present site and datum.

REMARKS.—Records good except for period of estimated record and June 21 to September 30, which are fair. Flow slightly regulated by Schaads Reservoir, capacity, 1,740 acre-ft, 6 mi upstream from station, since January 1940. Maximum output of Schaads Powerplant is 35 ft^3/s and is operational only when reservoir level is within 4 ft of spill gates. Several small diversions upstream from station. At times water is diverted 4 mi upstream from station to Licking Fork Mokelumne River via Middle Fork Ditch, capacity, 10 ft^3/s; because of leakage, only 5 ft^3/s may reach Licking Fork Mokelumne River. See schematic diagram of Mokelumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,040 ft^3/s, Jan. 2, 1997, gage height, 9.28 ft, from rating curve extended above 4,010 ft^3/s; no flow for many days in 1931 and Sept. 9, 1934.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 400 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 15	1415	868	4.90	Mar. 25	0145	1,580	5.96
Feb. 3	0915	1,760	6.22				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	17	22	17	98	157	294	283	205	90	74	24
2	11	17	20	23	240	153	266	360	208	86	75	25
3	11	17	19	29	1110	151	306	394	207	83	52	24
4	10	12	18	32	478	147	286	381	196	82	24	26
5	9.7	9.4	19	28	280	145	286	382	191	81	27	29
6	9.6	9.4	24	25	402	154	269	363	195	79	30	32
7	9.6	9.6	54	26	539	142	259	330	262	77	35	22
8	9.8	10	69	26	581	137	244	316	224	75	50	19
9	15	10	40	27	353	134	229	298	213	72	56	30
10	18	11	29	36	273	129	222	285	201	75	55	25
11	19	12	26	92	e280	130	239	265	230	75	54	16
12	14	12	23	262	e245	131	235	285	228	75	53	28
13	13	13	22	146	e255	133	241	278	238	65	40	30
14	12	14	23	86	e355	140	243	259	221	70	13	26
15	12	13	27	538	e335	142	238	241	209	65	13	24
16	12	14	25	318	e265	150	229	235	199	66	16	22
17	12	14	23	228	e240	161	233	231	184	68	18	20
18	12	14	22	196	e210	163	227	220	171	70	18	21
19	11	19	21	252	e208	166	226	216	166	72	18	23
20	11	23	20	155	e205	174	229	211	161	74	17	22
21	12	18	20	125	244	180	239	206	155	77	19	22
22	12	15	19	108	272	202	261	198	149	78	19	19
23	15	14	18	97	251	233	287	196	140	79	22	17
24	16	14	17	89	231	913	284	191	134	68	27	17
25	16	22	17	82	205	1240	269	242	132	39	25	12
26	17	78	16	77	185	704	255	229	128	47	25	17
27	17	62	16	73	170	550	253	205	124	47	25	18
28	18	33	17	71	163	470	263	222	119	62	26	17
29	18	26	17	142	---	389	272	238	115	76	25	25
30	18	24	17	117	---	338	277	217	108	77	24	28
31	17	---	17	101	---	321	---	207	---	77	24	---
TOTAL	416.7	576.4	737	3624	8673	8479	7661	8184	5413	2227	999	680
MEAN	13.4	19.2	23.8	117	310	274	255	264	180	71.8	32.2	22.7
MAX	19	78	69	538	1110	1240	306	394	262	90	75	32
MIN	9.0	9.4	16	17	98	129	222	191	108	39	13	12
AC-FT	827	1140	1460	7190	17200	16820	15200	16230	10740	4420	1980	1350

e Estimated.

11317000 MIDDLE FORK MOKELUMNE RIVER AT WEST POINT, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	11.0	22.4	50.3	93.1	124	140	148	109	44.0	16.7	9.29	7.68
MAX	37.5	223	389	680	768	653	561	372	181	71.8	40.8	31.1
(WY)	1983	1951	1956	1997	1986	1983	1982	1983	1983	1998	1969	1969
MIN	.86	2.64	3.33	4.75	5.70	9.06	6.47	4.17	.95	.22	.071	.15
(WY)	1932	1930	1977	1977	1991	1977	1977	1931	1924	1924	1931	1931

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1912 - 1998	
ANNUAL TOTAL	36257.8		47670.1			
ANNUAL MEAN	99.3		131		64.4	
HIGHEST ANNUAL MEAN					218	1983
LOWEST ANNUAL MEAN					5.25	1977
HIGHEST DAILY MEAN	3740	Jan 2	1240	Mar 25	3740	Jan 2 1997
LOWEST DAILY MEAN	8.3	Sep 4	9.0	Oct 1	.00	Aug 23 1931
ANNUAL SEVEN-DAY MINIMUM	9.2	Aug 25	10	Oct 1	.00	Aug 23 1931
INSTANTANEOUS PEAK FLOW			1760	Feb 3	5040	Jan 2 1997
INSTANTANEOUS PEAK STAGE			6.22	Feb 3	9.28	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	71920		94550		46630	
10 PERCENT EXCEEDS	165		280		168	
50 PERCENT EXCEEDS	26		76		21	
90 PERCENT EXCEEDS	11		14		3.9	

11318500 SOUTH FORK MOKELUMNE RIVER NEAR WEST POINT, CA

LOCATION.—Lat 38°22'06", long 120°32'40", in SE 1/4 SE 1/4 sec.16, T.6 N., R.13 E., Calaveras County, Hydrologic Unit 18040012, on right bank 500 ft upstream from highway bridge, 2.4 mi southwest of West Point, and 2.5 mi upstream from mouth.

DRAINAGE AREA.—75.1 mi^2.

PERIOD OF RECORD.—October 1933 to current year.

REVISED RECORDS.—WSP 1315-A: 1934(M). WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 1,950 ft above sea level, from topographic map. October 1933 to Sept. 19, 1957, at site 1,100 ft downstream at different datum.

REMARKS.—Records good except estimated daily discharges and period of September 6–30, which are fair. The Middle Fork Ditch can divert 10 ft^3/s from the Middle Fork Mokelumne River which, due to leakage, delivers about 5 ft^3/s to the Licking Fork Mokelumne River. There are two pumps with a combined capacity of 8.9 ft^3/s that can pump water to Jeff Davis Reservoir upstream from the station. There are other small diversions upstream from the station for irrigation and domestic use. See schematic diagram of Mokelumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 7,610 ft^3/s, Jan. 2, 1997, gage height, 12.72 ft, from rating curve extended above 2,700 ft^3/s on basis of slope-area measurement of peak flow; no flow many days during August and September 1934.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 15	1515	1,130	6.22	Mar. 25	0115	2,000	7.51
Feb. 3	0900	2,710	8.35				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	13	23	19	127	200	374	364	210	89	42	20
2	12	13	21	30	e470	192	334	470	208	88	40	19
3	13	11	19	39	1590	188	417	493	203	85	40	19
4	12	8.0	18	54	727	182	385	467	196	84	39	20
5	12	8.0	20	44	434	181	375	482	190	81	39	21
6	12	7.7	27	38	615	198	350	446	188	78	37	28
7	12	8.1	87	41	895	173	339	e406	239	76	35	24
8	13	7.9	95	42	862	165	310	e389	203	74	34	22
9	16	8.1	51	37	555	159	292	e367	192	72	34	29
10	20	8.5	37	64	410	156	284	e351	189	71	34	27
11	26	11	32	141	382	157	302	e326	214	68	32	24
12	17	12	28	438	342	160	290	e351	200	66	32	24
13	15	12	26	270	340	169	323	333	200	64	31	22
14	15	15	26	153	517	179	340	306	186	61	31	20
15	14	13	33	761	519	186	328	284	174	57	30	20
16	14	15	27	520	392	204	310	280	165	57	30	19
17	13	12	25	359	327	223	296	273	155	55	30	19
18	13	12	25	338	269	230	289	261	147	54	29	19
19	13	18	23	442	303	239	290	251	139	54	28	19
20	13	24	22	e260	300	252	305	241	133	52	28	19
21	13	18	22	197	368	263	341	231	127	52	28	19
22	13	16	21	158	444	300	386	218	123	53	28	19
23	13	16	21	e140	417	348	426	213	119	52	26	21
24	13	15	20	121	364	1150	410	206	114	49	26	22
25	13	22	19	108	305	1550	373	262	111	48	25	23
26	13	107	19	98	264	883	350	241	108	46	25	23
27	13	76	19	93	233	690	346	215	103	47	25	25
28	13	35	19	e86	212	593	359	242	99	45	24	24
29	13	27	19	e168	---	497	368	257	95	44	22	28
30	14	24	18	e140	---	429	369	226	92	44	22	26
31	13	---	19	122	---	407	---	215	---	44	21	---
TOTAL	429	593.3	881	5521	12983	10903	10261	9667	4822	1910	947	664
MEAN	13.8	19.8	28.4	178	464	352	342	312	161	61.6	30.5	22.1
MAX	26	107	95	761	1590	1550	426	493	239	89	42	29
MIN	10	7.7	18	19	127	156	284	206	92	44	21	19
AC-FT	851	1180	1750	10950	25750	21630	20350	19170	9560	3790	1880	1320

e Estimated.

11318500 SOUTH FORK MOKELUMNE RIVER NEAR WEST POINT, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	13.6	30.8	74.7	136	175	190	184	123	47.5	21.8	12.5	10.2
MAX	41.6	270	465	907	959	825	704	461	163	62.9	36.1	31.6
(WY)	1983	1951	1956	1997	1986	1983	1982	1995	1983	1983	1952	1983
MIN	1.65	3.21	2.83	1.85	2.53	11.3	7.48	10.9	4.49	1.00	.039	.13
(WY)	1989	1991	1991	1991	1991	1977	1977	1977	1992	1934	1934	1934

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1934 - 1998	
ANNUAL TOTAL	46339.8		59581.3			
ANNUAL MEAN	127		163		84.5	
HIGHEST ANNUAL MEAN					264	1983
LOWEST ANNUAL MEAN					6.14	1977
HIGHEST DAILY MEAN	5120	Jan 2	1590	Feb 3	5780	Feb 17 1986
LOWEST DAILY MEAN	5.4	Sep 6	7.7	Nov 6	.00	Aug 6 1934
ANNUAL SEVEN-DAY MINIMUM	5.8	Sep 6	8.0	Nov 4	.00	Aug 12 1934
INSTANTANEOUS PEAK FLOW			2710	Feb 3	7610	Jan 2 1997
INSTANTANEOUS PEAK STAGE			8.35	Feb 3	12.72	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	91910		118200		61240	
10 PERCENT EXCEEDS	254		387		218	
50 PERCENT EXCEEDS	25		74		27	
90 PERCENT EXCEEDS	8.1		13		6.0	

11319500 MOKELUMNE RIVER NEAR MOKELUMNE HILL, CA

LOCATION.—Lat 38°18'46", long 120°43'09", in SW 1/4 SW 1/4 sec.1, T.5 N., R.11 E., Calaveras County, Hydrologic Unit 18040012, on downstream side of bridge 1.2 mi northwest of Mokelumne Hill and 8 mi downstream from confluence of north and south Forks of Mokelumne River.

DRAINAGE AREA.—544 mi^2.

PERIOD OF RECORD.—January to June 1901, May 1903 to December 1904, October 1927 to current year. Yearly estimate only for water year 1928 (incomplete), published in WSP 1315-A. Published as "at Electra" 1901, 1903–4.
CHEMICAL DATA: Water year 1980. Water years 1971–79 in files of California Department of Water Resources.
WATER TEMPERATURE: Water years 1961–79 (daily record).

REVISED RECORDS.—WSP 1445: 1903–4, 1928(M), 1936(M), 1938(M), 1940(M), 1943(M), 1945(M). WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 584.88 ft above sea level (levels by California Division of Highways). Jan. 1 to June 30, 1901, and May 11, 1903, to Dec. 31, 1904, nonrecording gage at site 3 mi upstream at different datum. Nov. 10, 1927, to Aug. 26, 1952, water-stage recorder at site 40 ft upstream at datum 5.00 ft higher. Aug. 27, 1952, to Oct. 14, 1977, at present site at datum 5.00 ft higher.

REMARKS.—Flow regulated by Salt Springs Reservoir (station 11313500) beginning in 1931, several smaller reservoirs, and four powerplants. Diversion upstream from station for irrigation and domestic use. See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by East Bay Municipal Utility District, under general supervision of the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 41,300 ft^3/s, Jan. 2, 1997, gage height, 25.60 ft, present datum; minimum observed, 5 ft^3/s, Aug. 13–15, 17, 18, 1904.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	563	586	170	219	595	1480	2150	2740	2860	4250	973	942
2	542	670	154	210	1330	1410	1970	3080	2910	4140	976	890
3	698	684	135	292	6100	1380	2120	3400	2930	4310	957	947
4	536	697	158	344	3210	1400	2050	3110	3070	3950	765	880
5	630	597	632	241	2220	1380	1860	3230	3210	3930	937	871
6	594	607	708	268	2410	1400	1890	3020	3420	3680	949	938
7	630	697	746	269	3430	1230	1870	2730	4550	4060	929	894
8	440	628	993	251	3430	1370	1800	2570	4200	3490	982	945
9	432	561	760	282	2470	1220	1760	2650	4780	3540	950	880
10	740	738	666	338	2210	1330	1630	2680	4800	3280	971	964
11	706	619	588	602	2170	1300	1560	2510	5230	3160	962	866
12	700	684	686	1700	1930	1200	1690	2300	5060	2580	944	900
13	660	717	668	1530	1850	1300	1920	2470	5520	2070	935	841
14	649	729	603	945	2270	1350	1980	2230	5380	1860	933	967
15	430	709	569	3020	2440	1350	1870	2020	5290	2050	940	907
16	433	512	663	2910	2000	1400	1770	2290	5290	1180	921	865
17	674	642	725	2390	1690	1410	1860	2530	4670	1250	940	822
18	613	685	374	1830	1600	1540	1800	2310	4530	1190	931	701
19	639	731	489	2190	1840	1540	1700	2320	6130	1220	885	748
20	661	649	402	1570	1850	1730	2050	2390	6080	1150	930	716
21	635	725	417	1130	1810	1670	2230	2430	5870	1130	909	731
22	687	710	445	997	2350	1700	2590	2440	5910	1190	937	758
23	740	705	298	1030	2270	2070	2660	2520	5270	1030	964	452
24	761	682	301	881	2050	5820	2490	2410	4770	1020	905	686
25	617	660	145	888	1860	7040	2400	2980	5280	1020	911	692
26	686	762	254	812	1560	4240	2180	2890	5640	995	918	743
27	737	943	165	729	1570	3420	2350	2510	4950	964	869	754
28	694	811	223	501	1480	2990	2510	2530	4680	890	965	782
29	742	720	176	1110	---	2500	2570	2700	4960	1010	920	716
30	600	692	190	935	---	2330	2770	2470	4860	910	935	710
31	654	---	199	719	---	2300	---	2490	---	937	884	---
TOTAL	19523	20552	13702	31133	61995	63800	62050	80950	142100	67436	28827	24508
MEAN	630	685	442	1004	2214	2058	2068	2611	4737	2175	930	817
MAX	761	943	993	3020	6100	7040	2770	3400	6130	4310	982	967
MIN	430	512	135	210	595	1200	1560	2020	2860	890	765	452
AC-FT	38720	40760	27180	61750	123000	126500	123100	160600	281900	133800	57180	48610

11319500 MOKELUMNE RIVER NEAR MOKELUMNE HILL, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	511	583	772	932	1044	1176	1382	1919	1820	746	554	527
MAX	898	3275	4375	5659	4788	3950	4114	5092	6243	3384	1117	949
(WY)	1984	1951	1951	1997	1986	1983	1982	1952	1983	1983	1983	1983
MIN	8.97	25.3	70.1	65.5	100	115	221	273	262	106	77.5	67.7
(WY)	1978	1930	1931	1991	1977	1977	1977	1987	1977	1928	1930	1930

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1928 - 1998	
ANNUAL TOTAL	552196		616576			
ANNUAL MEAN	1513		1689		996	
HIGHEST ANNUAL MEAN					2511	1983
LOWEST ANNUAL MEAN					208	1977
HIGHEST DAILY MEAN	31300	Jan 2	7040	Mar 25	31300	Jan 2 1997
LOWEST DAILY MEAN	135	Dec 3	135	Dec 3	6.6	Oct 2 1977
ANNUAL SEVEN-DAY MINIMUM	193	Dec 25	193	Dec 25	7.0	Sep 28 1977
INSTANTANEOUS PEAK FLOW			9570	Feb 3	41300	Jan 2 1997
INSTANTANEOUS PEAK STAGE			15.17	Feb 3	25.60	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	1095000		1223000		721500	
10 PERCENT EXCEEDS	2650		3510		2190	
50 PERCENT EXCEEDS	811		1030		618	
90 PERCENT EXCEEDS	543		540		240	

11323500 MOKELUMNE RIVER BELOW CAMANCHE DAM, CA

LOCATION.—Lat 38°13'14", long 121°02'19", in NW 1/4 NW 1/4 sec.7, T.4 N., R.9 E., San Joaquin County, Hydrologic Unit 18040005, on left bank 0.7 mi downstream from Murphy Creek, 1.0 mi downstream from Camanche Dam, and 3.4 mi northeast of Clements.

DRAINAGE AREA.—627 mi^2.

PERIOD OF RECORD.—October 1904 to current year. Monthly discharge only for some periods, published in WSP 1315-A and 1735. Prior to October 1961, published as "near Clements."
CHEMICAL DATA: Water years 1906–07, 1965–66. Published as "at Clements" in 1906–07.
WATER TEMPERATURE: Water years 1962–68, 1970–76.
SEDIMENT DATA: Water years 1956–70. Prior to 1962 water year, published as "near Clements."

REVISED RECORDS.—WSP 751: Drainage area. WSP 881: 1905–09 (yearly summaries only). WSP 1445: 1911, 1917(M), 1925(M). WDR CA-94-3: 1993(M).

GAGE.—Water-stage recorder. Datum of gage is 82.71 ft above sea level. See WSP 1930 for history of changes prior to Oct. 1, 1961.

REMARKS.—Flow regulated by Camanche Reservoir (station 11322300) 1 mi upstream beginning December 1963, Salt Springs Reservoir (station 11313500) beginning March 1931, Pardee Reservoir (station 11320000) beginning March 1929, and several small reservoirs. East Bay Municipal Utility District aqueducts, maximum capacity 511 ft^3/s with Pardee Reservoir full, are the largest of several diversions upstream from the station. See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by East Bay Municipal Utility District, under general supervision of the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 28,800 ft^3/s, Nov. 21, 1950, gage height, 24.40 ft, site and datum then in use; no flow on several days in 1924. Maximum discharge since construction of Camanche Dam in 1963, 6,060 ft^3/s, Feb. 19, 1986, gage height, 11.21 ft; minimum daily, 23 ft^3/s, Oct. 6, 1977.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	316	324	465	634	1030	3130	1310	1620	2060	3580	2040	335
2	317	322	468	602	1170	3130	1310	1620	2060	3570	2040	312
3	320	326	468	599	1930	3120	1380	1620	2060	3570	2040	310
4	326	309	468	611	2440	3120	1650	1630	2060	3570	2040	312
5	327	325	468	596	3120	3120	1650	1630	2060	3560	2040	318
6	326	325	468	592	3180	3120	1640	1720	2050	3560	2040	316
7	324	322	483	595	3170	3120	1640	1850	2050	3560	2030	315
8	327	316	519	598	3140	3120	1630	1850	2050	3560	2030	320
9	326	319	612	601	3270	3120	1630	1850	2050	3550	2040	321
10	327	317	608	610	3580	3120	1620	1850	2040	3200	2040	320
11	329	315	606	627	3570	3040	1610	1850	2040	3170	2040	321
12	331	323	605	702	3580	2860	1610	1850	2040	3170	2040	319
13	331	320	605	628	3570	2660	1610	1850	2040	3150	2040	319
14	330	320	608	628	3670	2570	1620	1850	2040	2880	2040	319
15	328	323	611	708	3590	2570	1600	1850	2040	2580	2050	320
16	311	324	607	633	3570	2560	1600	1850	2050	2560	2050	321
17	317	327	605	617	3570	2560	1600	1850	2040	2560	2050	319
18	319	325	605	730	3430	2450	1600	1850	2040	2570	2050	325
19	318	326	605	854	3250	2220	1600	1840	2160	2570	2050	325
20	319	376	605	822	3150	2000	1610	1840	2260	2570	2050	325
21	319	468	603	896	3170	1770	1610	1840	2260	2570	2040	325
22	319	468	604	1030	3150	1660	1610	1840	2680	2580	2020	322
23	316	465	599	1030	3160	1660	1620	1840	3100	2580	2030	319
24	320	463	599	1030	3140	1660	1620	1840	3090	2580	1850	319
25	319	468	599	1030	3130	1710	1620	1840	3100	2580	1540	318
26	322	475	599	1030	3130	1660	1620	1940	3570	2580	1210	319
27	325	469	599	1030	3130	1640	1630	2070	3570	2580	970	319
28	325	468	599	1020	3130	1520	1630	2070	3570	2570	784	319
29	325	468	599	1090	---	1340	1620	2070	3580	2570	627	319
30	327	468	599	1040	---	1310	1620	2070	3580	2570	525	319
31	332	---	614	1020	---	1310	---	2060	---	2080	427	---
TOTAL	10018	11164	17702	24233	86120	73950	47720	57200	73390	90900	54863	9590
MEAN	323	372	571	782	3076	2385	1591	1845	2446	2932	1770	320
MAX	332	475	614	1090	3670	3130	1650	2070	3580	3580	2050	335
MIN	311	309	465	592	1030	1310	1310	1620	2040	2080	427	310
AC-FT	19870	22140	35110	48070	170800	146700	94650	113500	145600	180300	108800	19020

11323500 MOKELUMNE RIVER BELOW CAMANCHE DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1963, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	450	543	710	745	883	913	1193	1608	1458	557	478	467
MAX	670	3188	4568	3529	2473	3155	3451	4217	3164	1194	691	678
(WY)	1939	1951	1951	1956	1938	1938	1938	1952	1952	1952	1962	1958
MIN	58.0	63.1	95.6	112	77.6	132	136	179	241	296	267	108
(WY)	1932	1932	1960	1962	1948	1931	1961	1961	1931	1961	1961	1931

SUMMARY STATISTICS	WATER YEARS 1931 - 1963	
ANNUAL MEAN	832	
HIGHEST ANNUAL MEAN	1669	1938
LOWEST ANNUAL MEAN	221	1961
HIGHEST DAILY MEAN	26900	Nov 21 1950
LOWEST DAILY MEAN	35	Apr 24 1955
ANNUAL SEVEN-DAY MINIMUM	49	Feb 12 1948
INSTANTANEOUS PEAK FLOW	28800	Nov 21 1950
INSTANTANEOUS PEAK STAGE	24.40	Nov 21 1950
ANNUAL RUNOFF (AC-FT)	603000	
10 PERCENT EXCEEDS	1890	
50 PERCENT EXCEEDS	551	
90 PERCENT EXCEEDS	213	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	571	490	520	867	1006	1059	981	1072	1043	842	672	557
MAX	2061	2157	2938	4978	4315	5117	3726	3889	3847	2932	1770	1447
(WY)	1966	1984	1984	1997	1997	1986	1983	1982	1995	1998	1998	1995
MIN	33.3	83.6	78.7	83.6	60.8	77.9	125	170	254	249	235	123
(WY)	1978	1989	1967	1967	1967	1989	1991	1988	1977	1991	1991	1992

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1965 - 1998	
ANNUAL TOTAL	451315		556850			
ANNUAL MEAN	1236		1526		806	
HIGHEST ANNUAL MEAN					2400	1983
LOWEST ANNUAL MEAN					172	1988
HIGHEST DAILY MEAN	5190	Jan 22	3670	Feb 14	5750	Feb 18 1986
LOWEST DAILY MEAN	224	Aug 28	309	Nov 4	23	Oct 6 1977
ANNUAL SEVEN-DAY MINIMUM	226	Aug 27	315	Sep 2	28	Oct 14 1977
INSTANTANEOUS PEAK FLOW			3870	Feb 14	6060	Feb 19 1986
INSTANTANEOUS PEAK STAGE			8.52	Feb 14	11.21	Feb 19 1986
ANNUAL RUNOFF (AC-FT)	895200		1105000		583700	
10 PERCENT EXCEEDS	4970		3140		2040	
50 PERCENT EXCEEDS	534		1620		465	
90 PERCENT EXCEEDS	262		320		109	

11325000 WOODBRIDGE CANAL AT WOODBRIDGE, CA

LOCATION.—Lat 38°09'07", long 121°18'00", in NE 1/4 SE 1/4 sec.34, T.4 N., R.6 E., San Joaquin County, Hydrologic Unit 18040005, on right bank at Woodbridge, at point of diversion from Woodbridge Reservoir.

PERIOD OF RECORD.—April 1926 to current year.

GAGE.—Water-stage recorder. Datum of gage is 32.18 ft above sea level (levels by East Bay Municipal Utility District). Prior to Mar. 15, 1931, water-stage recorder at site 0.2 mi downstream at different datum.

REMARKS.—Discharge computed from records of gate openings and effective head as shown by differential recorder. Canal diverts from Woodbridge Reservoir on Mokelumne River for irrigation south and west of Woodbridge. See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by Woodbridge Irrigation District, under general supervision of the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 482 ft^3/s, July 8, 1953; no flow at times in each year. Lowest daily mean, −64 ft^3/s, May 4, 1938 (the water level in Woodbridge Reservoir was drawn down and water from the canal drained back into the reservoir. In order that the figures may represent the net diverted flow, the reverse flow was indicated by negative figures).

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	76	.00	.00	.00	.00	.00	27	85	178	234	134
2	80	74	.00	.00	.00	.00	.00	26	85	177	232	134
3	83	74	.00	.00	.00	.00	.00	28	88	176	240	150
4	84	30	.00	.00	.00	.00	.00	34	90	176	239	161
5	78	.00	.00	.00	.00	.00	.00	38	90	177	240	161
6	70	.00	.00	.00	.00	.00	.00	37	89	176	237	157
7	71	.00	.00	.00	.00	.00	.00	38	89	183	239	151
8	68	.00	.00	.00	.00	.00	.00	36	89	199	237	157
9	69	.00	.00	.00	.00	.00	.00	35	91	219	238	162
10	68	.00	.00	.00	.00	.00	.00	33	94	228	237	162
11	63	.00	.00	.00	.00	.00	.00	34	94	223	245	159
12	63	.00	.00	.00	.00	.00	.00	41	100	225	250	161
13	62	.00	.00	.00	.00	.00	.00	55	105	226	252	157
14	62	.00	.00	.00	.00	.00	.00	72	105	227	252	150
15	63	.00	.00	.00	.00	.00	.00	84	118	230	248	151
16	64	.00	.00	.00	.00	.00	.00	85	125	230	247	148
17	62	.00	.00	.00	.00	.00	.00	89	136	233	230	148
18	63	.00	.00	.00	.00	.00	.00	89	144	240	207	149
19	67	.00	.00	.00	.00	.00	.00	88	158	241	223	148
20	71	.00	.00	.00	.00	.00	.00	87	165	243	239	152
21	64	.00	.00	.00	.00	.00	8.3	87	165	244	241	148
22	62	.00	.00	.00	.00	.00	26	87	175	247	240	153
23	57	.00	.00	.00	.00	.00	28	87	190	244	239	148
24	48	.00	.00	.00	.00	.00	28	87	193	247	237	148
25	47	.00	.00	.00	.00	.00	29	85	194	245	237	148
26	47	.00	.00	.00	.00	.00	29	85	192	245	222	141
27	52	.00	.00	.00	.00	.00	26	87	194	245	213	139
28	64	.00	.00	.00	.00	.00	26	86	189	241	201	143
29	68	.00	.00	.00	---	.00	28	85	187	242	178	143
30	69	.00	.00	.00	---	.00	28	85	184	240	162	136
31	72	---	.00	.00	---	.00	---	85	---	238	147	---
TOTAL	2036	254.00	0.00	0.00	0.00	0.00	256.30	2002	4003	6885	7083	4499
MEAN	65.7	8.47	.000	.000	.000	.000	8.54	64.6	133	222	228	150
MAX	84	76	.00	.00	.00	.00	29	89	194	247	252	162
MIN	47	.00	.00	.00	.00	.00	.00	26	85	176	147	134
AC-FT	4040	504	.00	.00	.00	.00	508	3970	7940	13660	14050	8920

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1926 - 1998, BY WATER YEAR (WY)

MEAN	106	24.6	4.65	.24	.19	22.7	113	207	259	272	254	180
MAX	218	137	83.5	5.95	5.55	158	295	376	401	412	378	294
(WY)	1955	1959	1959	1931	1931	1953	1953	1950	1950	1953	1953	1948
MIN	.000	-.14	.000	.000	.000	.000	.000	64.6	95.9	63.0	66.8	5.37
(WY)	1978	1939	1927	1927	1927	1927	1927	1998	1926	1926	1926	1992

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1926 - 1998	
ANNUAL TOTAL	29486.00		27018.30			
ANNUAL MEAN	80.8		74.0		122	
HIGHEST ANNUAL MEAN					206	1953
LOWEST ANNUAL MEAN					49.2	1928
HIGHEST DAILY MEAN	221	Jun 25	252	Aug 13	482	Jul 8 1953
LOWEST DAILY MEAN	.00	Jan 1	.00	Nov 5	-64	May 4 1938
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Nov 5	-6.3	Oct 31 1938
ANNUAL RUNOFF (AC-FT)	58490		53590		88110	
10 PERCENT EXCEEDS	179		232		312	
50 PERCENT EXCEEDS	81		34		98	
90 PERCENT EXCEEDS	.00		.00		.00	

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA

LOCATION.—Lat 38°09'31", long 121°18'09", in NW 1/4 NE 1/4 sec.34, T.4 N., R.6 E., San Joaquin County, Hydrologic Unit 18040005, on right bank at Woodbridge, 0.4 mi downstream from County Highway Bridge, and 0.5 mi downstream from dam and canal intake of Woodbridge Irrigation District.

DRAINAGE AREA.—661 mi^2.

PERIOD OF RECORD.—Water years 1924–94 (low-flow records only 1924–25). October 1996 to current year.
CHEMICAL DATA: Water years 1951–94.
SPECIFIC CONDUCTANCE: Water years 1952–58, 1975–77.
WATER TEMPERATURE: Water years 1951–58, 1961–86.
SEDIMENT: Water years 1975–94.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 14.9 ft above sea level (levels by East Bay Municipal Utility District). See WSP 2130 for history of changes prior to July 26, 1968.

REMARKS.—Concerning regulation and diversions see REMARKS for Mokelumne River below Camanche Dam (station 11323500). Between Woodbridge and Camanche Dam there are many additional diversions for irrigation, including Woodbridge Canal (station 11325000). See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by East Bay Municipal Utility District, under general supervision of the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 27,000 ft^3/s, Nov. 22, 1950, gage height 29.58 ft, from rating curve extended above 6,200 ft^3/s on basis of contracted-opening measurement of peak flow; minimum daily, 0.23 ft^3/s, Nov. 15, 1977. Maximum discharge since construction of Camanche Dam in 1963, 5,340 ft^3/s, Mar. 8, 1986, gage height, 23.19 ft; maximum gage height, 23.31 ft, Jan. 9, 1997.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	150	173	401	572	927	2900	1290	1520	1820	3180	1730	225
2	144	167	396	577	975	2890	1280	1530	1820	3190	1700	148
3	149	172	398	554	1380	2900	1310	1530	1820	3190	1700	137
4	151	466	398	588	1930	2890	1440	1520	1810	3180	1680	132
5	157	443	423	571	2470	2900	1540	1530	1820	3180	1680	125
6	173	305	414	557	2820	2900	1540	1560	1810	3190	1680	117
7	172	275	454	554	2960	2890	1540	1650	1820	3170	1660	119
8	172	270	430	557	2930	2880	1530	1690	1810	3150	1660	110
9	198	269	488	569	2930	2880	1530	1700	1810	3140	1660	111
10	185	281	538	575	3090	2880	1530	1700	1800	3070	1670	105
11	194	283	541	561	3270	2870	1540	1700	1810	2820	1650	105
12	189	275	543	661	3350	2770	1540	1720	1790	2760	1650	102
13	189	281	546	647	3350	2590	1550	1630	1800	2750	1640	101
14	189	278	586	573	3410	2410	1550	1660	1800	2680	1650	108
15	187	280	555	630	3470	2350	1380	1650	1780	2430	1650	112
16	181	271	549	624	3420	2340	1420	1660	1770	2210	1650	115
17	177	269	548	544	3400	2330	1510	1650	1750	2180	1680	108
18	176	271	550	565	3370	2310	1520	1650	1750	2160	1700	112
19	176	277	551	730	3280	2170	1520	1650	1740	2160	1660	115
20	180	276	550	711	3080	1990	1520	1650	1870	2160	1660	118
21	184	339	549	697	3000	1810	1520	1640	1900	2150	1660	120
22	192	386	555	806	3010	1640	1510	1640	1950	2150	1630	122
23	191	389	556	857	2990	1620	1510	1640	2380	2160	1620	121
24	194	391	557	863	2980	1630	1510	1630	2550	2140	1610	120
25	203	397	556	864	2950	1630	1510	1630	2590	2140	1370	123
26	206	467	552	866	2930	1620	1510	1650	2720	2130	1140	127
27	195	424	552	876	2930	1580	1520	1770	3010	2140	878	127
28	177	401	554	887	2920	1550	1520	1840	3130	2130	726	130
29	185	399	554	971	---	1400	1510	1840	3150	2140	523	131
30	183	417	554	961	---	1300	1510	1820	3170	2140	413	133
31	177	---	551	912	---	1310	---	1820	---	2010	327	---
TOTAL	5576	9592	15949	21480	79522	70130	44710	51470	62550	79380	45307	3679
MEAN	180	320	514	693	2840	2262	1490	1660	2085	2561	1462	123
MAX	206	467	586	971	3470	2900	1550	1840	3170	3190	1730	225
MIN	144	167	396	544	927	1300	1280	1520	1740	2010	327	101
AC-FT	11060	19030	31630	42610	157700	139100	88680	102100	124100	157500	89870	7300

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1963, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	277	469	655	713	870	848	989	1282	1121	200	133	198
MAX	571	2529	4283	3435	2341	3032	3278	3990	2958	728	309	400
(WY)	1939	1951	1951	1956	1938	1938	1938	1952	1952	1952	1931	1958
MIN	3.76	13.6	29.4	56.6	45.0	34.5	7.02	11.3	11.3	17.1	17.2	10.0
(WY)	1932	1932	1960	1962	1948	1961	1931	1931	1931	1955	1955	1931

SUMMARY STATISTICS	WATER YEARS 1931 - 1963	
ANNUAL MEAN	644	
HIGHEST ANNUAL MEAN	1507	1938
LOWEST ANNUAL MEAN	62.2	1960
HIGHEST DAILY MEAN	19600	Dec 9 1950
LOWEST DAILY MEAN	2.4	Oct 2 1931
ANNUAL SEVEN-DAY MINIMUM	2.4	Oct 2 1931
INSTANTANEOUS PEAK FLOW	27000	Nov 22 1950
INSTANTANEOUS PEAK STAGE	29.58	Nov 22 1950
ANNUAL RUNOFF (AC-FT)	466700	
10 PERCENT EXCEEDS	1680	
50 PERCENT EXCEEDS	346	
90 PERCENT EXCEEDS	28	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	432	456	470	827	899	849	712	688	568	386	279	283
MAX	1716	1979	2825	4746	4285	4711	3641	3522	2736	2561	1462	1067
(WY)	1966	1984	1984	1997	1997	1986	1983	1982	1983	1998	1998	1983
MIN	2.12	23.3	38.5	33.1	20.2	9.34	9.02	8.66	8.34	9.24	6.58	5.13
(WY)	1978	1978	1990	1977	1977	1989	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1965 - 1998	
ANNUAL TOTAL	391940		489345			
ANNUAL MEAN	1074		1341		569	
HIGHEST ANNUAL MEAN					2170	1983
LOWEST ANNUAL MEAN					21.8	1977
HIGHEST DAILY MEAN	5020	Jan 23	3470	Feb 15	5240	Mar 8 1986
LOWEST DAILY MEAN	32	Aug 24	101	Sep 13	.23	Nov 15 1977
ANNUAL SEVEN-DAY MINIMUM	32	Aug 24	106	Sep 8	.24	Nov 12 1977
INSTANTANEOUS PEAK FLOW			3530	Feb 15	5340	Mar 8 1986
INSTANTANEOUS PEAK STAGE			19.96	Feb 15	23.31	Jan 9 1997
ANNUAL RUNOFF (AC-FT)	777400		970600		412200	
10 PERCENT EXCEEDS	4670		2910		1680	
50 PERCENT EXCEEDS	322		1520		194	
90 PERCENT EXCEEDS	36		172		25	

11329500 DRY CREEK NEAR GALT, CA

LOCATION.—Lat 38°14'53", long 121°13'33", in NE 1/4 NE 1/4 sec.32, T.5 N., R.7 E., San Joaquin County, Hydrologic Unit 18040005, on left bank of main channel 35 ft downstream from county road bridge, 2 mi downstream from Coyote Creek, and 4 mi east of Galt.

DRAINAGE AREA.—324 mi^2.

PERIOD OF RECORD.—Water years 1927–33, 1945–87, October 1995 to December 1997 (discontinued) (low-flow records only). Monthly figures for some periods published in WSP 1315-A.

REVISED RECORDS.—WDR CA-78-3: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 42.83 ft above sea level (levels by East Bay Municipal Utility District). Dec. 4, 1926, to Sept. 30, 1933, at site 4 mi downstream at different datum. Oct. 1, 1944, to Sept. 30, 1945, on left bank at datum 13.00 ft. higher. Oct. 1, 1945, to June 14, 1966, on right bank and June 15, 1966, to Dec. 4, 1978, on left bank, both at datum 10.00 ft higher.

REMARKS.—No records computed above 400 ft^3/s. Records poor. Many small diversions above station for irrigation. Total storage of many small reservoirs, 1,000 acre-ft. See schematic diagram of Sacramento–San Joaquin Delta.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 30,300 ft^3/s, Feb. 17, 1986, gage height, 26.02 ft, from rating curve extended above 16,000 ft^3/s; no flow for many days in each year.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	21	---	---	---	---	---	---	---	---	---
2	.00	.00	22	---	---	---	---	---	---	---	---	---
3	.00	.00	15	---	---	---	---	---	---	---	---	---
4	.00	.00	11	---	---	---	---	---	---	---	---	---
5	.00	.00	11	---	---	---	---	---	---	---	---	---
6	.00	.00	15	---	---	---	---	---	---	---	---	---
7	.00	.00	---	---	---	---	---	---	---	---	---	---
8	.00	.00	---	---	---	---	---	---	---	---	---	---
9	.00	.00	---	---	---	---	---	---	---	---	---	---
10	.00	.00	---	---	---	---	---	---	---	---	---	---
11	2.1	.00	---	---	---	---	---	---	---	---	---	---
12	11	.00	---	---	---	---	---	---	---	---	---	---
13	5.4	10	---	---	---	---	---	---	---	---	---	---
14	3.7	9.6	---	---	---	---	---	---	---	---	---	---
15	1.5	9.4	---	---	---	---	---	---	---	---	---	---
16	.76	8.1	---	---	---	---	---	---	---	---	---	---
17	.26	8.7	---	---	---	---	---	---	---	---	---	---
18	.01	5.1	---	---	---	---	---	---	---	---	---	---
19	.00	3.8	---	---	---	---	---	---	---	---	---	---
20	.00	4.8	---	---	---	---	---	---	---	---	---	---
21	.00	4.0	---	---	---	---	---	---	---	---	---	---
22	.00	2.7	---	---	---	---	---	---	---	---	---	---
23	.00	3.6	---	---	---	---	---	---	---	---	---	---
24	.00	2.5	---	---	---	---	---	---	---	---	---	---
25	.00	2.1	---	---	---	---	---	---	---	---	---	---
26	.00	78	---	---	---	---	---	---	---	---	---	---
27	.00	243	---	---	---	---	---	---	---	---	---	---
28	.00	95	---	---	---	---	---	---	---	---	---	---
29	.00	35	---	---	---	---	---	---	---	---	---	---
30	.00	24	---	---	---	---	---	---	---	---	---	---
31	.00	---	---	---	---	---	---	---	---	---	---	---
TOTAL	24.73	549.40	---	---	---	---	---	---	---	---	---	---
MEAN	.80	18.3	---	---	---	---	---	---	---	---	---	---
MAX	11	243	---	---	---	---	---	---	---	---	---	---
MIN	.00	.00	---	---	---	---	---	---	---	---	---	---
AC-FT	49	1090	---	---	---	---	---	---	---	---	---	---

11333000 CAMP CREEK NEAR SOMERSET, CA

LOCATION.—Lat 38°39'26", long 120°39'46", in SW 1/4 SW 1/4 sec.4, T.9 N., R.12 E., El Dorado County, Hydrologic Unit 18040013, on right bank 0.2 mi upstream from mouth, 1.3 mi northeast of Somerset, and 5.6 mi south of Camino.

DRAINAGE AREA.—62.6 mi^2.

PERIOD OF RECORD.—February to May 1924 (published as "near Pleasant Valley"), October 1954 to current year.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 1,820 ft above sea level, from topographic map. Feb. 1 to May 31, 1924, nonrecording gage at site 0.2 mi upstream at different datum.

REMARKS.—Records good. Flow partly regulated since January 1955 by Jenkinson Lake, usable capacity, 40,570 acre-ft. Water is released from Jenkinson Lake through Camino Conduit for irrigation and domestic supply in North Fork Cosumnes and South Fork American River Basins. Seepage from North Fork Extension Ditch siphon could constitute a major part or all the flow at low stages. Some water is released from Jenkinson Lake for irrigation downstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 22,400 ft^3/s, Jan. 2, 1997, gage height, 20.30 ft, from rating curve extended above 5,000 ft^3/s; no flow Aug. 7–18, 1977.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	7.6	7.2	6.4	34	216	394	350	284	42	14	9.1
2	9.0	6.7	6.9	11	53	205	357	470	295	41	13	9.0
3	8.5	6.7	6.8	11	300	220	373	501	286	38	13	9.0
4	6.9	6.7	6.7	16	167	220	356	446	263	33	13	8.9
5	6.8	6.7	7.0	13	98	224	353	446	256	29	12	9.3
6	6.7	6.6	8.6	11	132	259	347	439	264	23	12	10
7	6.7	7.1	37	13	201	216	341	395	378	19	12	9.5
8	6.9	6.7	32	13	184	201	322	374	329	17	12	9.3
9	12	6.7	17	13	140	186	307	363	300	17	12	10
10	16	6.8	12	15	110	178	298	342	300	16	12	9.9
11	17	7.7	10	54	121	176	307	316	322	16	11	9.5
12	12	7.5	9.8	159	104	184	318	322	302	16	11	9.3
13	10	7.7	9.0	85	102	200	335	321	326	16	11	9.1
14	9.2	11	9.0	44	133	209	323	303	306	15	11	8.9
15	8.9	8.6	11	264	147	220	297	285	292	15	11	8.7
16	9.1	7.7	8.7	147	113	243	280	283	271	14	11	8.6
17	8.7	6.8	8.2	109	89	275	270	286	239	14	11	8.6
18	8.5	6.6	7.8	89	72	287	266	267	216	14	11	8.6
19	8.4	7.8	7.5	128	236	294	270	259	154	14	11	8.6
20	8.2	8.7	7.4	72	350	307	278	257	104	13	11	8.6
21	8.2	7.0	7.4	47	349	318	296	248	151	13	11	8.6
22	8.2	6.7	7.0	37	383	359	332	232	164	15	10	8.6
23	8.2	6.7	6.8	32	371	428	371	229	166	19	10	8.8
24	8.2	6.7	6.8	28	352	1570	380	218	133	19	10	9.0
25	7.9	11	6.9	24	317	1490	359	294	114	19	10	9.2
26	8.0	35	6.6	21	282	1000	335	290	105	18	10	9.4
27	8.0	23	7.1	20	252	807	324	262	97	18	9.9	10
28	8.0	11	7.1	e20	231	682	329	270	81	18	9.7	9.9
29	7.9	8.9	6.9	e33	---	548	337	305	58	15	9.5	10
30	8.1	8.4	6.9	47	---	470	343	284	43	15	9.4	10
31	8.2	---	6.5	36	---	429	---	277	---	14	9.2	---
TOTAL	274.1	272.8	305.6	1618.4	5423	12621	9798	9934	6599	605	343.7	276.0
MEAN	8.84	9.09	9.86	52.2	194	407	327	320	220	19.5	11.1	9.20
MAX	17	35	37	264	383	1570	394	501	378	42	14	10
MIN	5.7	6.6	6.5	6.4	34	176	266	218	43	13	9.2	8.6
AC-FT	544	541	606	3210	10760	25030	19430	19700	13090	1200	682	547
a	-1994	-963	-684	+6802	+10808	-208	-207	+6	-45	-1857	-2705	-1323
b	2424	1853	1779	1206	532	633	766	996	1511	4227	3902	2013
c	71	17	6	12	2	42	52	65	146	264	257	128

e Estimated.

a Change in contents, in acre-feet, in Jenkinson Lake.
b Diversion, in acre-feet, from Jenkinson Lake provided by U.S. Bureau of Reclamation.
c Evaporation, in acre-feet, from Jenkinson Lake provided by U.S. Bureau of Reclamation; not reviewed by U.S. Geological Survey.

11333000 CAMP CREEK NEAR SOMERSET, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.08	8.63	45.2	97.4	110	139	153	111	28.9	11.6	7.10	5.31
MAX	32.9	71.3	469	1095	820	745	621	452	220	37.2	23.7	17.2
(WY)	1983	1984	1984	1997	1986	1983	1982	1967	1998	1995	1972	1982
MIN	.71	1.62	2.01	2.82	2.43	2.84	1.59	2.42	.57	.51	.12	.67
(WY)	1978	1978	1977	1977	1977	1977	1977	1977	1977	1977	1977	1988

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1955 - 1998	
ANNUAL TOTAL	44552.6		48070.6			
ANNUAL MEAN	122		132		60.2	
ANNUAL MEAN a	144		174		88.7	
HIGHEST ANNUAL MEAN					215	1983
LOWEST ANNUAL MEAN					1.89	1977
HIGHEST DAILY MEAN	10700	Jan 2	1570	Mar 24	10700	Jan 2 1997
LOWEST DAILY MEAN	5.4	Jul 19	5.7	Oct 1	.00	Aug 7 1977
ANNUAL SEVEN-DAY MINIMUM	5.8	Sep 24	6.7	Nov 2	.00	Aug 7 1977
INSTANTANEOUS PEAK FLOW			2190	Mar 24	22400	Jan 2 1997
INSTANTANEOUS PEAK STAGE			8.74	Mar 24	20.30	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	88370		95350		43590	
ANNUAL RUNOFF (AC-FT) a	104500		125900		64260	
10 PERCENT EXCEEDS	162		341		176	
50 PERCENT EXCEEDS	9.8		19		8.0	
90 PERCENT EXCEEDS	6.4		7.2		2.9	

a Adjusted for change in contents, evaporation, and diversion from Jenkinson Lake.

11335000 COSUMNES RIVER AT MICHIGAN BAR, CA

LOCATION.—Lat 38°30'01", long 121°02'39", in NW 1/4 SE 1/4 sec.36, T.8 N., R.8 E., Sacramento County, Hydrologic Unit 18040013, on downstream side of midstream pier of county bridge at Michigan Bar, 5.5 mi southwest of Latrobe, and 12 mi downstream from confluence of north and middle Forks of Cosumnes River.

DRAINAGE AREA.—536 mi^2.

PERIOD OF RECORD.—October 1907 to current year. Monthly discharge only for some periods, published in WSP 1315-A.
CHEMICAL DATA: Water years 1953–80.
WATER TEMPERATURE: Water years 1963–79.
SEDIMENT DATA: Water years 1958–74.

REVISED RECORDS.—WSP 331: 1911–12. WSP 1315-A: 1908–9, 1911(M). WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 168.09 ft above sea level. Prior to July 10, 1930, nonrecording gage at same site and datum.

REMARKS.—Records good. Flow partly regulated since January 1955 by Jenkinson Lake, usable capacity, 40,570 acre-ft. See REMARKS for Camp Creek near Somerset (station 11333000) for diversion out of basin. Numerous small diversions upstream from station for irrigation and domestic use. See schematic diagram of Sacramento–San Joaquin Delta.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 93,000 ft^3/s, Jan. 2, 1997, gage height, 18.54 ft, from rating curve extended above 34,000 ft^3/s on basis of slope-area determination of peak flow; no flow at times in many years.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood in March 1907 reached a stage of 16.3 ft, discharge unknown.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 4,000 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 15	1715	11,400	9.73	Feb. 21	2330	6,300	8.17
Feb. 3	1215	29,700	13.29	Mar. 25	0800	14,500	10.40

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	42	109	78	911	1450	2320	1790	1330	536	135	64
2	22	42	98	111	2320	1350	2010	2350	1350	507	131	62
3	24	47	89	194	14700	1380	3410	3140	1330	490	125	60
4	32	41	86	614	5070	1310	2890	2530	1250	462	118	59
5	35	39	84	437	2900	1280	2400	2720	1190	438	111	58
6	32	40	88	254	4780	2300	2180	2650	1180	413	106	64
7	29	43	615	204	7380	1670	2320	2300	1720	388	104	74
8	28	42	896	199	6130	1420	2000	2110	1530	366	101	76
9	44	47	368	199	3700	1310	1810	1990	1380	346	98	72
10	61	45	232	270	2680	1210	1700	1950	1310	328	98	71
11	91	48	181	1150	2590	1150	1710	1720	1440	312	96	83
12	98	55	151	5270	2270	1130	1820	2140	1420	296	92	74
13	75	56	128	3040	2290	1160	2810	2340	1460	278	89	69
14	65	68	126	1380	3900	1200	2580	1930	1410	264	87	67
15	53	88	141	6730	3770	1180	2070	1700	1340	249	83	64
16	54	83	147	4440	2580	1230	1810	1590	1250	234	79	61
17	47	78	124	3120	2340	1330	1650	1600	1150	223	81	58
18	45	64	115	3150	1850	1390	1550	1440	1050	213	80	57
19	44	65	112	4390	2240	1400	1500	1370	1020	205	80	56
20	43	65	105	2090	2880	1440	1500	1340	890	195	80	56
21	43	90	99	1440	3350	1500	1560	1300	894	185	81	58
22	43	75	95	1120	4190	1620	1720	1220	867	180	78	58
23	42	66	90	934	3780	1910	1910	1170	845	183	77	59
24	42	65	87	802	3370	7820	2110	1140	778	183	74	61
25	42	63	85	698	2410	11000	1940	1320	727	174	72	63
26	41	198	81	623	2020	6150	1770	1460	716	166	70	67
27	39	534	74	575	1770	4370	1670	1290	687	159	71	70
28	44	242	76	532	1580	3670	1670	1600	642	152	72	77
29	41	152	81	1640	---	3030	1720	2320	602	145	71	81
30	44	124	80	1400	---	2540	1760	1520	567	136	68	85
31	43	---	80	957	---	2420	---	1360	---	137	66	---
TOTAL	1407	2707	4923	48041	99751	73320	59870	56400	33325	8543	2774	1984
MEAN	45.4	90.2	159	1550	3563	2365	1996	1819	1111	276	89.5	66.1
MAX	98	534	896	6730	14700	11000	3410	3140	1720	536	135	85
MIN	21	39	74	78	911	1130	1500	1140	567	136	66	56
AC-FT	2790	5370	9760	95290	197900	145400	118800	111900	66100	16950	5500	3940

11335000 COSUMNES RIVER AT MICHIGAN BAR, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	31.0	141	441	961	1179	1204	1069	694	257	61.2	20.5	14.6
MAX	335	2493	3380	7129	6610	5255	3992	2362	1111	346	114	82.0
(WY)	1963	1951	1965	1997	1986	1983	1982	1995	1998	1983	1983	1983
MIN	.000	7.90	18.3	21.4	35.9	43.5	33.7	48.5	4.42	.096	.000	.000
(WY)	1978	1930	1977	1991	1991	1977	1977	1977	1924	1977	1908	1924

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1908 - 1998	
ANNUAL TOTAL	310523		393045			
ANNUAL MEAN	851		1077		503	
HIGHEST ANNUAL MEAN					1687	1983
LOWEST ANNUAL MEAN					21.8	1977
HIGHEST DAILY MEAN	61600	Jan 2	14700	Feb 3	61600	Jan 2 1997
LOWEST DAILY MEAN	20	Sep 28	21	Oct 1	.00	Jul 25 1908
ANNUAL SEVEN-DAY MINIMUM	21	Sep 25	28	Oct 1	.00	Jul 25 1908
INSTANTANEOUS PEAK FLOW			29700	Feb 3	93000	Jan 2 1997
INSTANTANEOUS PEAK STAGE			13.29	Feb 3	18.54	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	615900		779600		364000	
10 PERCENT EXCEEDS	1330		2580		1300	
50 PERCENT EXCEEDS	112		388		102	
90 PERCENT EXCEEDS	27		54		7.0	

11336580 MORRISON CREEK NEAR SACRAMENTO, CA

LOCATION.—Lat 38°29'55", long 121°27'06", in SW 1/4 SE 1/4 sec. 32, T.8 N, R.5 E., Sacramento County, Hydrologic Unit 18020109, on right bank 750 ft upstream from Florin Road, 1.6 mi upstream from Elder Creek, and 3.8 mi south of State Capitol Building in Sacramento.

DRAINAGE AREA.—53.4 mi^2.

PERIOD OF RECORD.—July 1959 to September 1987, Oct. 1, 1997, to Sept. 30, 1998.

REVISED RECORDS.— WDR CA-72-2: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 7.60 ft above sea level. Prior to June 29, 1960, at site 650 ft downstream at datum 1.55 ft higher. June 29, 1960, to Sept. 12, 1965, at site 475 ft upstream at datum 2.71 ft higher.

REMARKS.— Records good except for periods of backwater, which are poor. No regulation or diversion above station. Summer flow is sustained by waste-water from domestic and industrial use. During major storm events record can be affected by backwater from Beach Lake located 5.7 mi downstream from gage.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,730 ft^3/s, Feb. 17, 1986, gage height, 10.40 ft; no flow at times in 1960, 1962, 1965.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than a base discharge of 400 ft^3/s, or maximum:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 26	0245	774	5.77	Feb. 7	2100	1,200	7.41
Dec. 7	1300	1,110	6.80	Feb. 14	1345	1,310	7.30
Jan. 12	1500	1,300	6.80	Feb. 21	1330	710	5.11
Jan. 29	0345	626	4.75	May 28	1715	698	4.98
Feb. 3	1030	1,920	8.79				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	5.0	17	e3.4	50	13	16	18	5.5	5.4	6.7	6.8
2	10	4.5	7.6	e33	638	12	15	26	4.1	5.0	7.0	5.9
3	5.3	5.0	4.7	e24	1580	11	66	23	3.2	5.6	6.7	5.8
4	4.7	4.6	3.4	e100	603	9.9	69	16	3.8	5.6	7.6	5.4
5	4.4	4.5	38	e25	174	39	29	13	3.1	5.9	7.5	5.6
6	4.3	4.7	14	e17	298	78	19	9.7	4.3	6.5	8.1	5.7
7	3.9	4.5	318	e14	611	28	18	8.5	7.5	7.1	7.4	5.9
8	3.8	4.6	60	e7.9	538	23	16	8.5	2.9	7.0	6.7	6.5
9	103	4.9	15	e22	208	15	13	10	2.8	7.1	6.9	15
10	5.3	16	8.1	e38	154	13	11	9.2	3.4	7.4	8.0	5.4
11	4.3	29	e5.3	e83	127	11	10	13	3.3	7.2	7.3	4.8
12	3.5	3.3	e3.8	e422	166	11	9.0	52	3.5	7.9	7.4	4.9
13	3.9	14	e3.4	239	135	13	59	19	4.7	8.3	8.3	4.5
14	4.2	25	e110	159	599	8.9	35	11	3.6	7.3	8.0	4.9
15	4.0	27	e80	442	389	8.2	18	8.5	4.2	7.7	8.2	4.4
16	3.9	3.3	e14	258	207	7.9	13	6.8	3.4	8.0	8.2	3.8
17	4.0	3.9	e8.5	55	204	7.8	11	5.9	3.6	8.5	8.2	3.4
18	4.0	3.2	e5.6	205	99	7.2	9.5	5.5	3.3	8.3	8.1	3.1
19	4.3	20	e5.9	227	253	7.3	8.4	5.1	3.6	8.1	8.4	2.2
20	4.1	2.7	e4.8	69	198	6.0	7.6	4.9	3.1	7.9	8.4	3.1
21	4.4	2.8	e3.6	33	273	7.0	7.3	5.0	3.1	7.5	8.8	2.6
22	4.2	2.8	e3.0	21	198	10	6.6	4.6	3.3	6.0	9.5	1.8
23	4.5	2.7	e3.2	16	160	34	10	4.8	3.6	6.7	9.4	2.4
24	3.9	6.7	e2.8	15	160	35	8.0	4.8	3.7	6.6	10	2.5
25	4.2	7.6	e2.8	13	52	62	8.7	5.9	4.2	6.6	9.7	1.9
26	4.7	248	e2.6	17	27	24	6.2	5.8	4.0	6.8	9.6	2.4
27	4.8	61	e2.8	15	19	14	6.3	6.5	4.0	7.1	8.6	6.5
28	4.5	13	e2.8	13	14	27	5.5	174	4.5	6.8	6.9	3.3
29	4.5	6.5	e2.8	212	---	13	5.3	40	4.6	6.3	6.5	5.0
30	4.5	92	e4.0	50	---	11	5.1	12	4.3	6.5	6.7	6.6
31	5.1	---	e3.0	31	---	54	---	7.4	---	6.0	7.1	---
TOTAL	238.4	632.8	760.5	2879.3	8134	621.2	521.5	544.4	116.2	214.7	245.9	142.1
MEAN	7.69	21.1	24.5	92.9	291	20.0	17.4	17.6	3.87	6.93	7.93	4.74
MAX	103	248	318	442	1580	78	69	174	7.5	8.5	10	15
MIN	3.5	2.7	2.6	3.4	14	6.0	5.1	4.6	2.8	5.0	6.5	1.8
AC-FT	473	1260	1510	5710	16130	1230	1030	1080	230	426	488	282

e Estimated.

11336580 MORRISON CREEK NEAR SACRAMENTO, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	10.4	21.3	28.0	60.6	68.3	32.6	15.3	6.31	5.74	6.20	5.87	6.44
MAX	77.8	67.5	106	212	415	213	91.4	17.6	8.71	17.6	12.4	21.9
(WY)	1963	1982	1984	1969	1986	1983	1982	1998	1970	1974	1959	1981
MIN	2.59	3.16	3.32	4.24	6.26	6.72	2.45	3.68	2.62	2.09	2.37	3.20
(WY)	1978	1960	1976	1976	1964	1960	1977	1979	1977	1977	1977	1984

SUMMARY STATISTICS	FOR 1998 WATER YEAR		WATER YEARS 1959 - 1998	
ANNUAL TOTAL	15051.0			
ANNUAL MEAN	41.2		22.0	
HIGHEST ANNUAL MEAN			59.6	1983
LOWEST ANNUAL MEAN			4.76	1977
HIGHEST DAILY MEAN	1580	Feb 3	1940	Jan 5 1982
LOWEST DAILY MEAN	1.8	Sep 22	.00	Jul 12 1960
ANNUAL SEVEN-DAY MINIMUM	2.4	Sep 19	.07	Jul 11 1960
INSTANTANEOUS PEAK FLOW	1920	Feb 3	2730	Feb 17 1986
INSTANTANEOUS PEAK STAGE	8.79	Feb 3	10.40	Feb 17 1986
ANNUAL RUNOFF (AC-FT)	29850		15910	
10 PERCENT EXCEEDS	99		33	
50 PERCENT EXCEEDS	7.4		5.9	
90 PERCENT EXCEEDS	3.4		3.0	

11336585 LAGUNA CREEK NEAR ELK GROVE, CA

LOCATION.—Lat 38°25'24", long 121°21'08", in NE 1/4 NE 1/4. sec. 31, T.7 N, R.6 E in Sacramento County, Hydrologic Unit 18020109, on left bank 50 ft downstream from bridge on Waterman Road, at intersection with Bond Road, and 1 mi northeast of Elk Grove.

DRAINAGE AREA.—31.9 mi^2.

PERIOD OF RECORD.—October 1995 to current year.

GAGE.—Water-stage recorder. Datum of gage is 40 ft above sea level, from topographic map.

REMARKS.—Records good except for discharges below 1 ft^3/s which are poor. Low summer flow sustained by residential and agricultural waste water.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,020 ft^3/s, Jan. 23, 1997, gage height, 7.54 ft; no flow for many days in some years.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 12	2130	633	5.63	Feb. 8	0600	1,100	6.44
Jan. 15	2030	549	5.46	Feb. 14	1945	657	5.67
Feb. 3	1745	2,010	7.53				

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	.06	5.3	.00	23	9.2	6.0	.05	1.3	1.8	.46	.47
2	1.4	.06	4.7	.03	387	7.4	8.7	.74	.29	1.0	.30	.39
3	1.1	.05	3.6	.35	1530	6.1	13	2.4	.24	1.1	.11	1.7
4	1.3	.02	2.3	21	775	4.7	68	1.5	.36	.99	.10	1.8
5	1.7	.00	3.0	27	118	4.0	25	.56	.23	.52	.22	1.8
6	.99	.22	5.4	9.2	190	41	14	.43	.25	1.3	.19	2.3
7	.77	.36	35	5.8	636	21	11	.52	.32	.79	.20	2.4
8	.81	.45	78	4.4	877	11	15	1.7	.67	.71	.30	1.8
9	3.1	.38	16	3.8	217	8.1	8.7	1.9	.52	.61	.12	2.9
10	1.9	.21	7.0	11	70	5.7	5.7	1.7	.41	.38	.11	2.2
11	.88	.17	3.5	46	58	4.4	4.2	2.2	.22	.18	.26	1.8
12	.64	.11	1.8	370	84	3.6	3.2	3.7	.19	.04	.23	2.1
13	.58	.10	1.3	316	150	3.3	12	8.9	.14	.37	.19	1.8
14	.32	.14	6.9	75	395	2.6	30	6.1	.10	.53	.38	1.5
15	.16	.19	31	414	356	2.0	14	4.6	.07	.33	.25	.95
16	.08	.19	15	342	73	1.5	8.9	3.7	.05	.24	.23	.77
17	.07	.10	7.1	64	137	.90	5.3	2.8	.03	.39	.21	.27
18	.08	.08	4.6	90	43	.51	3.8	2.5	.03	.36	.42	.16
19	.08	.08	3.1	334	132	.15	2.8	1.9	.02	1.0	.28	.49
20	.07	.07	2.0	97	215	.12	2.1	1.7	.02	.76	.16	.39
21	.07	.06	1.3	27	173	.09	1.4	1.3	.03	.73	.15	.12
22	.39	.05	1.1	15	266	.07	1.2	.74	.05	.76	.23	.02
23	.62	.03	.64	10	103	.32	.76	.35	.02	.93	.22	.00
24	.43	.03	.45	7.5	248	6.2	.74	.17	.22	.91	.10	.00
25	.21	.04	.41	6.3	52	22	.75	.07	1.4	.42	.09	.00
26	.10	11	.22	5.5	20	19	.57	.02	1.4	.12	.11	.00
27	.07	17	.09	5.9	14	10	.26	.00	1.7	.01	.18	.00
28	.05	8.2	.06	5.4	11	6.7	.09	.85	.54	.00	.13	.00
29	.05	4.0	.04	119	---	5.8	.02	8.8	.08	.00	.36	.00
30	.05	6.8	.02	68	---	9.4	.02	4.2	.16	.14	1.3	.04
31	.06	---	.00	19	---	6.5	---	3.4	---	.48	.88	---
TOTAL	19.13	50.25	240.93	2519.18	7353	223.36	267.21	69.50	11.06	17.90	8.47	28.17
MEAN	.62	1.67	7.77	81.3	263	7.21	8.91	2.24	.37	.58	.27	.94
MAX	3.1	17	78	414	1530	41	68	8.9	1.7	1.8	1.3	2.9
MIN	.05	.00	.00	.00	11	.07	.02	.00	.02	.00	.09	.00
AC-FT	38	100	478	5000	14580	443	530	138	22	36	17	56

11336585 LAGUNA CREEK NEAR ELK GROVE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.25	1.03	34.9	106	124	9.69	5.09	1.33	.31	.33	.51	.72
MAX	.62	1.67	92.1	206	263	21.9	8.91	2.24	.55	.58	1.20	.95
(WY)	1998	1998	1997	1997	1998	1996	1998	1998	1997	1998	1997	1996
MIN	.000	.000	4.79	31.7	3.51	.000	.39	.75	.000	.000	.048	.26
(WY)	1996	1996	1996	1996	1997	1997	1997	1996	1996	1996	1996	1997

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1996 - 1998	
ANNUAL TOTAL	6925.86		10808.16			
ANNUAL MEAN	19.0		29.6		23.2	
HIGHEST ANNUAL MEAN					29.6	1998
LOWEST ANNUAL MEAN					14.0	1996
HIGHEST DAILY MEAN	1460	Jan 2	1530	Feb 3	1530	Feb 3 1998
LOWEST DAILY MEAN	.00	Feb 27	.00	Nov 5	.00	Oct 1 1995
ANNUAL SEVEN-DAY MINIMUM	.00	Feb 27	.00	Sep 23	.00	Oct 1 1995
INSTANTANEOUS PEAK FLOW			2010	Feb 3	2020	Jan 23 1997
INSTANTANEOUS PEAK STAGE			7.53	Feb 3	7.54	Jan 23 1997
ANNUAL RUNOFF (AC-FT)	13740		21440		16820	
10 PERCENT EXCEEDS	7.0		48		20	
50 PERCENT EXCEEDS	.38		.90		.34	
90 PERCENT EXCEEDS	.00		.05		.00	

11337000 CONTRA COSTA CANAL NEAR OAKLEY, CA

LOCATION.—Lat 37°59'44", long 121°42'03", in NW 1/4 NE 1/4 sec.25, T.2 N., R.2 E., Contra Costa County, Hydrologic Unit 18040003, at Pumping Plant No. 1, 0.7 mi east of Oakley, and 2.6 mi northwest of Knightsen.

PERIOD OF RECORD.—February 1950 to September 1987, October 1993 to current year.

GAGE.—Water-stage recorder and acoustic-velocity meter. From Jan. 1, 1953, to Sept. 30, 1993, recording flow meters on pumps. Prior to Jan. 1, 1953, water-stage recorder at site 3.2 mi downstream at datum 121.72 ft above sea level (levels by U.S. Bureau of Reclamation).

REMARKS.—Water is diverted from Sacramento–San Joaquin Delta by way of Old River, Rock Slough, and a dredged channel. A series of four pumps lift the water 115 ft into the canal. Water is used for municipal, agricultural, and industrial purposes. The canal is a part of the Central Valley Project. See schematic diagram of Sacramento–San Joaquin Delta.

COOPERATION.—Records of daily discharge were provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 436 ft^3/s, Aug. 19, 1995; no flow, on some days in most years.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	203	13	3	16	1	57	16	143	82	102	111	184
2	202	1	1	3	4	19	32	141	56	20	111	225
3	200	.00	.00	7	.00	50	29	130	50	2	121	231
4	192	2	1	10	.00	45	25	111	11	4	79	214
5	191	.00	19	10	20	51	12	93	57	58	24	203
6	176	2	33	12	3	64	29	85	108	131	28	205
7	183	1	.00	13	.00	59	26	90	108	131	96	206
8	174	1	.00	10	1	71	55	87	92	118	110	203
9	167	1	2	10	2	91	73	87	99	122	108	189
10	168	16	.00	4	4	88	69	91	97	114	115	189
11	164	.00	.00	11	20	73	81	86	107	129	158	182
12	156	1	15	5	4	70	37	77	112	125	224	187
13	159	1	38	2	5	51	72	62	112	122	227	185
14	159	.00	31	1	1	43	89	89	108	137	231	182
15	157	2	40	.00	1	39	90	90	120	175	216	183
16	162	.00	31	19	.00	40	100	89	108	198	226	184
17	158	1	29	16	.00	37	84	84	125	178	227	181
18	161	41	34	24	5	44	84	95	128	164	218	180
19	160	.00	30	18	.00	52	82	99	134	164	206	179
20	149	.00	25	13	4	35	81	96	132	163	203	176
21	156	2	27	15	.00	39	84	101	137	154	191	182
22	161	1	12	20	1	15	81	104	148	127	164	183
23	155	1	9	19	.00	1	84	97	154	159	153	190
24	149	.00	28	17	2	5	83	99	145	152	158	185
25	153	4	26	15	.00	5	81	105	152	149	151	114
26	166	3	26	14	1	5	82	123	158	146	167	42
27	156	.00	27	4	45	6	84	117	160	167	160	19
28	157	.00	29	5	66	1	88	122	157	177	157	110
29	155	.00	38	1	---	.00	119	106	162	184	162	163
30	151	1	12	1	---	2	140	105	165	146	170	158
31	140	---	17	.00	---	2	---	106	---	108	172	---
TOTAL	5140	95.00	583.00	315.00	190.00	1160.00	2092	3110	3484	4026	4844	5214
MEAN	166	3.17	18.8	10.2	6.79	37.4	69.7	100	116	130	156	174
MAX	203	41	40	24	66	91	140	143	165	198	231	231
MIN	140	.00	.00	.00	.00	.00	12	62	11	2.0	24	19
AC-FT	10200	188	1160	625	377	2300	4150	6170	6910	7990	9610	10340

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1998, BY WATER YEAR (WY)

MEAN	116	89.5	73.8	68.7	68.7	73.9	97.0	130	161	175	177	150
MAX	305	218	213	182	167	185	206	238	302	339	398	359
(WY)	1995	1995	1995	1995	1995	1988	1988	1987	1995	1995	1995	1995
MIN	36.5	3.17	18.8	10.2	6.79	17.9	23.6	32.3	46.9	56.6	59.0	59.1
(WY)	1953	1998	1998	1998	1998	1951	1950	1951	1952	1952	1952	1950

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1950 - 1998	
ANNUAL TOTAL	50796.00		30253.00			
ANNUAL MEAN	139		82.9		117	
HIGHEST ANNUAL MEAN					253	1995
LOWEST ANNUAL MEAN					41.0	1952
HIGHEST DAILY MEAN	248	Aug 7	231	Aug 14	436	Aug 19 1995
LOWEST DAILY MEAN	.00	Nov 3	.00	Nov 3	.00	Mar 2 1994
ANNUAL SEVEN-DAY MINIMUM	.71	Nov 11	.71	Nov 11	.71	Nov 11 1997
ANNUAL RUNOFF (AC-FT)	100800		60010		84550	
10 PERCENT EXCEEDS	224		182		211	
50 PERCENT EXCEEDS	162		82		102	
90 PERCENT EXCEEDS	7.0		1.0		42	

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. In addition, discharge measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at crest-stage partial-record stations are presented in the following table.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage station is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for the current year is given. Information on some lower floods may have been obtained but is not published here. The years given in the period of record represent water years for which the annual maximum has been obtained.

Annual maximum discharge at crest-stage partial-record stations during water year 1998

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum		
					Date	Gage height (ft)	Discharge (ft^3/s)
		TULARE LAKE BASIN					
11205690	Lewis Creek near Lindsay, CA	Lat 36°11'11", long 118°59'46", in NW 1/4 NE 1/4 sec.13, T.20 S., R.27 E., Tulare County, Hydrologic Unit 18030012, at culvert on Road 258, 0.2 mi downstream from unnamed tributary, and 7.0 mi southeast of Lindsay.	21.5	1969a, 1974–98	02-23-98	23.58	412

a Published as a miscellaneous measurement.

Discharge measurements made at miscellaneous sites during water year 1998

Station No.	Station name	Location	Drainage area (mi^2)	Measured previously (water year)	Annual maximum		
					Date	Gage height (ft)	Discharge (ft^3/s)
		SAN JOAQUIN RIVER BASIN					
37173012056 3300	Mud Slough at Highway 140, near Gustine, CA	Lat 37°17'30", long 120°56'33", in SE 1/4 SE 1/4 sec.26, T.7 S., R.9 E., Merced County, Hydrologic Unit 18040001, at State Highway 140, 3.5 mi northeast of Gustine.	—		12-16-97 09-02-98 09-03-98		213 95.6 80.9
11267050	Merced River at Rancheria Flat, near El Portal, CA	Lat 37°40'10", long 119°48'25", unsurveyed, Mariposa County, Hydrologic Unit 18040008, Sierra National Forest, at Foresta Road, 2.0 mi southwest of El Portal, and 2.9 mi downstream of Crane Creek.	393	1997	10-03-97	.32	41.2
11267300	South Fork Merced River at Wawona, CA	Lat 37°32'20", long 119°39'40", in SW 1/4 sec.34, T.4 S., R.21 E., Mariposa County, in Yosemite National Park, 1,000 ft downstream from highway bridge at Wawona and 1,200 ft upstream from Big Creek.	100	1958–68a, 1969–71b, 1974–75b, 1976–78c, 1991–92d 1997f	10-01-97f 01-08-98f 01-13-98f	1.63f 2.16f 2.66f	3.36 26.2 75.1

a Operated as a continuous-record gaging station.
b Published as a miscellaneous measurement.
c Discontinued.
d Seepage investigation.
f At different gage datum.

☆U.S. GOVERNMENT PRINTING OFFICE:1999-646-070/99007

CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
	Length	
inch (in.)	2.54×10^{1}	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^{0}	kilometer
	Area	
acre	4.047×10^{3}	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi^2)	2.590×10^{0}	square kilometer
	Volume	
gallon (gal)	3.785×10^{0}	liter
	3.785×10^{0}	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^{3}	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft^3)	2.832×10^{1}	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft^3/s) d]	2.447×10^{3}	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^{3}	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
	Flow	
cubic foot per second (ft^3/s)	2.832×10^{1}	liter per second
	2.832×10^{1}	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^{1}	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
	Mass	
ton (short)	9.072×10^{-1}	megagram or metric ton

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

U.S. DEPARTMENT OF THE INTERIOR
U.S. Geological Survey
Placer Hall
6000 J Street
Sacramento CA 95819-6129

Printed on recycled paper