

11447650 Sacramento River at Freeport, CA

Sacramento River Basin

LOCATION.--Lat 38°27'22", long 121°30'01" referenced to North American Datum of 1927, in NE ¼ SE ¼ sec.14, T.7 N., R.4 E., Sacramento County, CA, Hydrologic Unit 18020109, 220 ft west of intersection of Highway 160 and county road E9, on eastern Freeport Bridge fender, upstream side, 11 mi south of Sacramento.

DRAINAGE AREA.--Indeterminate.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--January 1904 to July 1905 (gage heights only), June to November 1921, October 1948 to current year. Prior to October 1979, published as "Sacramento River at Sacramento" (station 11447500).

REVISED RECORDS.--WDR CA-96-4: 1994-1995 (peaks above base).

GAGE.--Short-range acoustic doppler velocity meter with upward-looking stage sensor. Datum of gage is 100 ft below NGVD of 1929. Prior to Nov. 16, 1956, nonrecording gage and water-stage recorder at various sites in vicinity of I Street Bridge in Sacramento, 13 mi upstream at datum of low-water mark of Oct. 23, 1856, 0.12 ft above NGVD of 1929. Nov. 17, 1956, to Sept. 20, 1979, at site 1,000 ft upstream from I Street Bridge. Sept. 21, 1979, to Oct. 1, 2001, datum was NGVD of 1929.

REMARKS.--Records rated good. Natural flow of stream affected by storage reservoirs, power development, diversions for irrigation, return flow from irrigated areas, and tide. Floodflows bypass station through Sacramento Weir Spill to Yolo Bypass (stations 11426000 and 11453000). See schematic diagrams of lower Sacramento River Basin and Sacramento-San Joaquin Delta available from the California Water Science Center.

EXTREMES FOR PERIOD OF RECORD.--(Since 1949) Maximum discharge, 117,000 ft³/s, Feb. 19, 1986, elevation, 125.00 ft, at present datum; minimum daily, 3,970 ft³/s, Oct. 15, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge known prior to Nov. 21, 1950, 103,000 ft³/s, Jan. 17, 1909, elevation, 129.6 ft, site then in use at present datum, from reports of California Department of Water Resources.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	12,400	10,200	31,100	43,600	19,100	13,000	14,100	12,500	13,200	19,000	16,900	17,000
2	12,400	10,300	47,600	38,400	18,800	12,700	15,600	e11,600	12,400	18,300	17,100	16,800
3	12,100	10,600	55,600	35,400	18,600	12,500	17,000	e10,200	10,900	18,300	16,900	16,500
4	12,700	10,800	57,700	33,500	18,300	12,800	17,200	9,230	10,800	17,600	16,700	16,400
5	14,300	10,600	56,500	30,400	17,700	12,400	17,300	8,530	10,900	16,800	16,800	16,600
6	14,400	10,600	56,600	28,500	18,400	12,000	16,300	8,410	10,900	17,200	e16,700	16,700
7	14,300	10,100	57,500	27,200	18,100	12,500	15,700	8,640	e10,900	17,700	e16,500	16,500
8	14,300	10,100	56,400	26,100	17,700	11,900	16,600	9,600	10,400	17,700	16,700	16,300
9	14,400	10,300	52,800	25,100	17,400	12,800	16,800	11,100	11,000	17,600	16,100	15,800
10	13,700	9,690	46,400	24,600	17,400	12,000	15,900	11,800	12,600	17,300	16,800	14,900
11	13,300	9,330	40,100	24,900	17,000	12,700	15,600	12,100	12,400	17,300	17,100	15,000
12	13,700	8,910	35,200	24,100	16,600	14,800	14,900	11,500	12,600	17,200	17,200	14,300
13	12,400	8,540	31,700	24,000	16,200	15,400	14,300	11,500	13,600	17,300	17,600	13,700
14	11,200	8,760	29,500	23,300	15,600	15,300	13,500	11,200	13,800	17,200	17,500	13,300
15	10,300	8,900	27,500	22,300	15,200	15,200	13,100	11,400	12,800	17,000	17,800	13,100
16	9,650	9,210	25,300	21,000	14,900	15,200	12,900	10,900	12,500	17,000	18,200	13,300
17	9,370	9,570	24,100	20,100	14,600	15,800	11,400	11,400	12,100	17,500	18,300	12,700
18	9,200	11,900	25,600	19,600	14,200	15,900	10,200	11,900	11,800	17,300	18,500	12,400
19	9,110	13,600	30,100	19,100	14,300	15,600	9,240	12,300	13,100	17,300	18,000	11,900
20	9,000	15,400	31,400	18,200	14,700	14,600	8,410	12,200	12,300	17,200	17,400	10,800
21	9,350	15,700	29,900	17,800	14,500	13,900	7,730	11,400	12,000	17,000	17,600	10,900
22	10,200	15,000	33,600	17,400	14,100	14,300	7,390	12,000	12,100	17,200	18,000	11,400
23	11,100	16,000	47,100	17,400	14,100	14,100	6,860	11,700	12,500	17,800	18,500	11,400
24	10,800	17,200	57,600	17,700	14,000	13,700	5,990	11,800	13,700	17,900	18,500	11,300
25	11,000	15,500	65,400	17,700	13,500	12,900	6,680	11,700	14,400	17,700	19,000	11,200
26	10,400	13,800	69,000	18,100	13,300	12,800	7,790	11,700	15,800	17,600	18,800	11,400
27	10,300	12,800	67,900	19,600	13,200	12,500	9,140	12,100	17,400	17,500	18,600	11,000
28	10,000	12,500	66,300	19,900	13,100	12,100	10,700	12,300	18,900	17,300	18,400	10,800
29	10,000	14,000	62,400	20,500	---	11,400	11,400	12,700	19,300	17,300	18,100	10,700
30	9,920	17,400	57,500	20,100	---	11,100	12,200	13,600	19,000	17,900	18,000	10,300
31	9,700	---	50,500	19,700	---	12,600	---	13,700	---	17,100	17,500	---
Total	355,000	357,310	1,425,900	735,300	444,600	416,500	371,930	352,710	396,100	542,100	545,800	404,400
Mean	11,450	11,910	46,000	23,720	15,880	13,440	12,400	11,380	13,200	17,490	17,610	13,480
Max	14,400	17,400	69,000	43,600	19,100	15,900	17,300	13,700	19,300	19,000	19,000	17,000
Min	9,000	8,540	24,100	17,400	13,100	11,100	5,990	8,410	10,400	16,800	16,100	10,300
Ac-ft	704,100	708,700	2,828,000	1,458,000	881,900	826,100	737,700	699,600	785,700	1,075,000	1,083,000	802,100

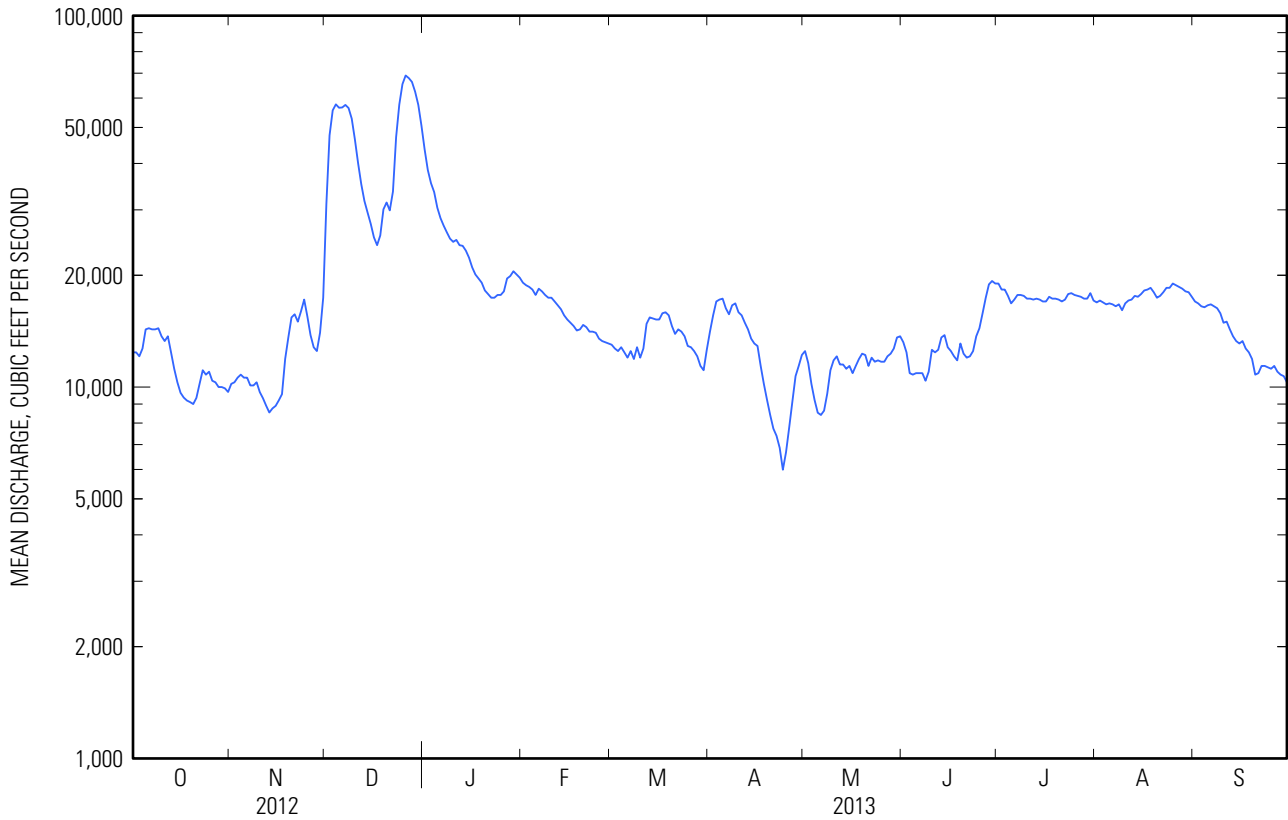
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	12,270	15,490	26,010	34,140	38,810	36,670	29,000	24,250	18,460	15,790	14,980	14,940
Max	28,690	48,820	74,510	87,110	81,370	78,290	77,650	69,820	55,690	31,000	25,180	25,320
(WY)	(1963)	(1984)	(1984)	(1997)	(1998)	(1983)	(2006)	(1952)	(1998)	(1983)	(1998)	(1998)
Min	4,494	6,380	7,208	8,984	8,003	6,573	5,961	6,414	6,865	6,345	7,061	6,838
(WY)	(1978)	(1993)	(1960)	(1991)	(1977)	(1977)	(1977)	(1992)	(1977)	(1949)	(1949)	(1977)

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SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1949 - 2013	
Annual total	6,848,770		6,347,650			
Annual mean	18,710		17,390		23,330	
Highest annual mean					46,900	1983
Lowest annual mean					7,608	1977
Highest daily mean	69,000	Dec 26	69,000	Dec 26	115,000	Feb 19, 1986
Lowest daily mean	8,540	Nov 13	5,990	Apr 24	3,970	Oct 15, 1977
Annual seven-day minimum	9,030	Nov 11	7,260	Apr 20	4,060	Oct 13, 1977
Maximum peak flow			72,700	Dec 26	117,000	Feb 19, 1986
Maximum peak stage			115.79	Dec 26	125.00	Feb 19, 1986
Annual runoff (ac-ft)	13,580,000		12,590,000		16,900,000	
10 percent exceeds	31,200		25,800		52,900	
50 percent exceeds	15,200		14,700		16,100	
90 percent exceeds	10,000		10,200		9,200	



11447650 Sacramento River at Freeport, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1957 to current year.

CHEMICAL DATA: Water years 1959 to current year.

BIOLOGICAL DATA: Water years 1974-81.

SEDIMENT DATA: Water years 1957 to current year (prior to water year 1980, published as 11447500 "Sacramento River at Sacramento").

PERIOD OF DAILY RECORD.--

CHEMICAL DATA: June 1960 to June 1963.

SPECIFIC CONDUCTANCE: February 1974 to July 1975, November 1988 to September 1994, October 1995 to September 1998.

WATER TEMPERATURE: June 1960 to current year.

SUSPENDED SEDIMENT DISCHARGE: October 1956 to current year.

INSTRUMENTATION.--Water-temperature recorder June 1960 to November 1988. Water-quality monitor since November 1988.

REMARKS.--Records of sediment discharge from 1957 to 1979 were obtained at "Sacramento River at Sacramento" (station 11447500) and are considered equivalent. Additional specific-conductance, monthly chemical, and trace-element data are available in files of the U.S. Geological Survey. Water-quality data collected as part of the National Stream Quality Accounting Network (NASQAN).

Water temperature records rated excellent except for Aug. 30 to Sept. 1, which are rated good; and Oct. 31 to Nov. 16, Dec. 7 to Jan. 30, May 30 to Aug. 2, which are rated fair. Interruptions in record are due to malfunction of recording and (or) sensing equipment.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 318 microsiemens, Nov. 22, 1974; minimum recorded, 32 microsiemens, Apr. 6, 1974.

WATER TEMPERATURE: Maximum recorded, 27.0°C, Sept. 8, 1977; minimum recorded, 3.0°C, Dec. 25-27, 1990.

SEDIMENT CONCENTRATION: Maximum daily mean, 1,960 mg/L, Dec. 24, 1964; minimum daily, 1 mg/L, Sept. 22, 2003, Oct. 14, 2010, Sept. 23, 27, 2014.

SEDIMENT LOAD: Maximum daily, 525,000 tons, Dec. 24, 1964; minimum daily, 35 tons, Jan. 31, 1991.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 24.6°C, June 9; minimum recorded, 6.3°C, Jan. 16.

SEDIMENT CONCENTRATION: Maximum daily mean, 307 mg/L, Dec. 5; minimum daily mean, 1 mg/L, Sept. 23, 27.

SEDIMENT LOAD: Maximum daily, 46,800 tons, Dec. 5; minimum daily, 36 tons, Sept. 27.

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 1 of 5

[%, percent; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Date	Sample start time	Barometric pressure, mm Hg (00025)	Absorbance, UV, 254 nm, 1 cm path length, water, filtered, units per cm (50624)	Absorbance, UV, organic constituents, 280 nm, 1 cm path length, water, filtered, units per cm (61726)	Discharge, instantaneous, ft ³ /s (00061)	Dissolved oxygen, unfiltered, mg/L (00300)	Dissolved oxygen, unfiltered, water, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)	Specific conductance, unfiltered, water, µS/cm at 25°C (00095)
10-18-2012	1220	760	0.041	0.032	11,700	9.2	--	7.7	128
12-04-2012	1120	768	.278	.222	57,800	8.3	78	7.0	102
12-19-2012	1430	769	.115	.091	30,900	10.3	89	7.7	168
01-08-2013	1330	768	.107	.083	22,100	12.6	105	7.6	178
01-22-2013	1330	766	.062	.047	12,800	--	--	7.9	172
02-05-2013	1240	764	.061	.047	12,400	10.8	95	7.8	177
02-19-2013	0950	758	.055	.043	11,600	10.8	97	7.5	151
03-12-2013	1130	765	.045	.034	17,500	8.6	81	8.0	152
04-11-2013	1100	759	.060	.044	18,000	7.3	74	7.8	146
05-16-2013	1130	760	.053	.040	10,700	7.7	88	7.7	147
05-30-2013	1100	760	.038	.026	11,200	8.8	98	7.6	174
06-04-2013	1230	758	.052	.038	15,800	8.6	101	7.8	162
06-26-2013	1200	762	.046	.034	18,600	14.3	156	7.7	134
07-29-2013	1230	760	.044	.034	15,800	7.7	87	7.5	139
08-12-2013	1330	760	.048	.037	19,300	9.0	102	7.8	151

11447650 Sacramento River at Freepoint, CA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 2 of 5

[%, percent; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Date	Sample start time	Temperature, water, °C (00010)	Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles including 90 +/- 30 degrees, ratiometric correction, NTRU (63676)	Dissolved solids dried at 180°C, water, filtered, mg/L (70300)	Calcium, water, filtered, mg/L (00915)	Magnesium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	Alkalinity, water, filtered, fixed endpoint (pH 4.5) titration, laboratory, mg/L as CaCO ₃ (29801)
10-18-2012	1220	--	< 2.0	80	10.8	5.77	1.08	6.77	56.9
12-04-2012	1120	12.9	97	73	8.36	4.06	1.80	5.40	37.7
12-19-2012	1430	9.2	24	117	13.5	7.23	1.57	10.7	68.0
01-08-2013	1330	7.9	E 19	119	13.9	7.67	1.31	10.2	73.4
01-22-2013	1330	7.7	E 12	111	14.3	7.64	1.10	10.1	72.4
02-05-2013	1240	9.9	E 9.8	126	15.0	7.89	1.25	10.2	75.4
02-19-2013	0950	10.6	E 6.6	112	12.9	6.87	1.23	8.36	67.3
03-12-2013	1130	12.9	E 5.0	99	13.6	6.55	1.19	7.95	67.2
04-11-2013	1100	15.8	E 14	103	12.6	5.76	1.12	8.26	60.4
05-16-2013	1130	21.5	E 5.6	105	11.3	5.76	1.25	10.0	60.1
05-30-2013	1100	20.3	E 6.1	102	12.4	6.73	1.26	12.8	68.2
06-04-2013	1230	23.1	E 8.9	102	11.8	6.58	1.20	9.99	66.4
06-26-2013	1200	19.8	E 7.3	87	9.24	4.81	.85	6.67	57.7
07-29-2013	1230	21.3	E 8.5	87	10.7	5.88	.98	8.53	62.0
08-12-2013	1330	21.4	23	96	11.6	6.58	.96	8.63	65.1

11447650 Sacramento River at Freeport, CA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 3 of 5

[%, percent; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Date	Sample start time	Alkalinity, water, filtered, Gran titration, field, milligrams per liter as calcium carbonate (29802)	Carbon (inorganic plus organic), suspended sediment, total, mg/L (00694)	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	Inorganic carbon, suspended sediment, total, mg/L (00688)	Silica, water, filtered, mg/L as SiO ₂ (00955)	Sulfate, water, filtered, mg/L (00945)	Ammonia plus organic nitrogen, water, filtered, mg/L as N (00623)	Ammonia plus organic nitrogen, water, unfiltered, mg/L as N (00625)
10-18-2012	1220	--	0.20	4.37	< .04	< .03	16.6	3.34	0.09	0.11
12-04-2012	1120	33.4	2.71	4.53	.05	< .03	15.9	5.93	.31	.76
12-19-2012	1430	63.1	.94	7.39	.06	< .03	18.9	10.2	.20	.29
01-08-2013	1330	66.7	.45	7.28	.07	< .03	17.0	11.1	.16	.23
01-22-2013	1330	65.1	.37	7.47	.07	< .03	19.3	8.85	.12	.16
02-05-2013	1240	69.1	.33	6.49	.08	< .03	19.0	8.68	.12	.17
02-19-2013	0950	60.2	.32	5.18	E .05	< .03	18.2	5.55	.13	.17
03-12-2013	1130	62.3	.27	5.47	.07	< .03	16.5	5.12	.09	.20
04-11-2013	1100	55.8	.74	5.56	E .04	< .03	17.7	6.56	.12	.23
05-16-2013	1130	53.8	.41	4.58	.07	< .03	17.4	7.86	.12	.17
05-30-2013	1100	61.1	.30	6.87	.07	.06	17.0	10.7	.12	.21
06-04-2013	1230	58.0	.53	5.87	.07	< .03	17.8	7.30	.13	.23
06-26-2013	1200	43.1	.62	4.28	.05	< .03	14.0	4.82	.07	.13
07-29-2013	1230	55.6	.33	4.14	.06	< .03	16.2	4.35	.11	.15
08-12-2013	1330	63.7	.50	4.34	.07	.03	15.9	4.64	.11	.17

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WATER-QUALITY DATA

WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

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[%, percent; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Date	Sample start time	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)	Nitrite, water, filtered, mg/L as N (00613)	Orthophosphate, water, filtered, mg/L as P (00671)	Particulate nitrogen, suspended in water, mg/L (49570)	Phosphorus, water, filtered, mg/L as P (00666)	Phosphorus, water, unfiltered, mg/L as P (00665)	Iron, water, filtered, µg/L (01046)
10-18-2012	1220	< .010	0.094	0.002	0.028	0.030	0.04	0.04	26.4
12-04-2012	1120	.016	.346	.003	.035	.257	.04	.25	294
12-19-2012	1430	< .010	.237	.003	.045	.133	.04	.10	114
01-08-2013	1330	.012	.328	.003	.042	.077	.05	.08	88.2
01-22-2013	1330	< .010	.197	.002	.034	.069	.04	.06	59.7
02-05-2013	1240	< .010	.160	.001	.031	.033	.03	.05	45.3
02-19-2013	0950	< .010	.140	.002	.023	.071	.02	.04	32.9
03-12-2013	1130	< .010	.217	< .001	.022	.051	.03	.04	21.9
04-11-2013	1100	< .010	.151	.002	.031	.114	.04	.07	61.1
05-16-2013	1130	< .010	.076	.002	.034	.054	.04	.05	15.2
05-30-2013	1100	< .010	.121	.003	.041	.051	.03	.04	18.3
06-04-2013	1230	< .010	.066	.002	.041	.093	.05	.06	18.2
06-26-2013	1200	.015	.062	.002	.033	.085	.03	.05	17.2
07-29-2013	1230	.014	< .040	< .001	.030	.045	.03	.04	13.2
08-12-2013	1330	< .010	< .040	< .001	.025	.063	.03	.04	20.1

WATER-QUALITY DATA

WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 5 of 5

[%, percent; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Date	Sample start time	Lithium, water, filtered, µg/L (01130)	Strontium, water, filtered, µg/L (01080)	Vanadium, water, filtered, µg/L (01085)	Arsenic, water, filtered, µg/L (01000)	Boron, water, filtered, µg/L (01020)	Selenium, water, filtered, µg/L (01145)	Organic carbon, suspended sediment, total, mg/L (00689)	Organic carbon, water, filtered, mg/L (00681)
10-18-2012	1220	1.38	71.0	2.8	1.3	34	0.08	0.20	1.47
12-04-2012	1120	1.44	58.4	3.6	1.2	38	.12	2.71	6.76
12-19-2012	1430	1.76	113	2.5	1.5	56	.10	.94	3.06
01-08-2013	1330	1.69	112	2.3	1.2	51	.11	.44	3.12
01-22-2013	1330	1.73	110	2.2	1.3	46	.11	.37	2.06
02-05-2013	1240	1.53	122	2.6	1.5	50	.11	.33	2.04
02-19-2013	0950	1.69	99.5	2.7	1.5	50	.09	.32	1.92
03-12-2013	1130	1.97	97.9	2.8	1.6	48	.08	.27	1.53
04-11-2013	1100	1.92	90.9	3.0	1.6	45	.08	.74	1.79
05-16-2013	1130	2.15	83.3	3.6	1.7	54	.12	.41	1.59
05-30-2013	1100	2.03	91.4	3.8	1.8	57	.11	.25	1.65
06-04-2013	1230	1.74	86.3	3.8	2.0	45	.12	.53	1.75
06-26-2013	1200	1.28	61.1	2.6	1.2	37	.07	.62	1.52
07-29-2013	1230	1.71	80.2	3.5	1.4	43	.06	.33	1.61
08-12-2013	1330	1.39	87.2	2.9	1.3	40	.10	.46	1.41

11447650 Sacramento River at Freeport, CA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	October			November			December			January		
1	---	---	---	16.1	15.8	15.9	---	---	---	7.9	7.6	7.8
2	---	---	---	16.2	15.7	16.0	---	---	---	7.7	7.5	7.6
3	---	---	---	16.2	15.8	16.0	---	---	---	7.6	7.3	7.5
4	---	---	---	16.1	15.7	15.9	---	---	---	7.6	7.4	7.5
5	---	---	---	16.1	15.7	15.9	---	---	---	7.6	7.4	7.5
6	---	---	---	16.3	15.7	16.0	---	---	---	7.8	7.5	7.7
7	---	---	---	16.5	15.8	16.0	12.6	12.3	12.5	8.0	7.7	7.9
8	---	---	---	16.1	15.2	15.8	12.5	12.2	12.4	8.3	7.9	8.1
9	---	---	---	15.2	14.4	15.0	12.2	11.7	12.0	8.4	8.2	8.3
10	---	---	---	14.4	13.6	14.2	11.7	11.3	11.6	8.4	8.2	8.2
11	---	---	---	13.7	13.0	13.5	11.4	11.0	11.3	8.2	8.0	8.1
12	---	---	---	13.2	12.6	12.9	11.1	11.0	11.0	8.0	7.7	7.8
13	---	---	---	13.2	12.4	12.6	11.0	10.9	10.9	7.7	7.2	7.5
14	---	---	---	12.8	12.3	12.5	10.9	10.4	10.6	7.2	6.7	6.9
15	---	---	---	12.7	12.2	12.5	10.4	10.0	10.0	6.7	6.4	6.6
16	---	---	---	12.8	12.4	12.6	10.0	9.6	9.6	6.7	6.3	6.5
17	---	---	---	---	---	---	9.7	9.5	9.6	6.8	6.4	6.6
18	---	---	---	---	---	---	9.8	9.6	9.7	7.1	6.6	6.9
19	---	---	---	---	---	---	9.6	9.2	9.4	7.4	6.9	7.2
20	---	---	---	---	---	---	9.2	8.8	8.9	7.7	7.2	7.5
21	---	---	---	---	---	---	8.8	8.5	8.5	7.9	7.5	7.8
22	---	---	---	---	---	---	8.9	8.5	8.8	8.2	7.8	8.0
23	---	---	---	---	---	---	8.9	8.8	8.8	8.4	8.1	8.2
24	---	---	---	---	---	---	8.8	8.5	8.6	8.7	8.3	8.5
25	---	---	---	---	---	---	8.8	8.7	8.7	9.3	8.7	8.9
26	---	---	---	---	---	---	8.7	8.6	8.6	9.9	9.3	9.7
27	---	---	---	---	---	---	8.8	8.6	8.8	10.2	9.8	10.1
28	---	---	---	---	---	---	8.6	8.2	8.5	10.2	9.8	10.0
29	---	---	---	---	---	---	8.2	7.9	8.1	9.9	9.5	9.7
30	---	---	---	---	---	---	8.0	7.9	8.0	9.7	9.4	9.7
31	16.2	15.8	16.0	---	---	---	7.9	7.7	7.9	9.7	9.3	9.6
Max	---	---	---	---	---	---	---	---	---	10.2	9.8	10.1
Min	---	---	---	---	---	---	---	---	---	6.7	6.3	6.5

11447650 Sacramento River at Freeport, CA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

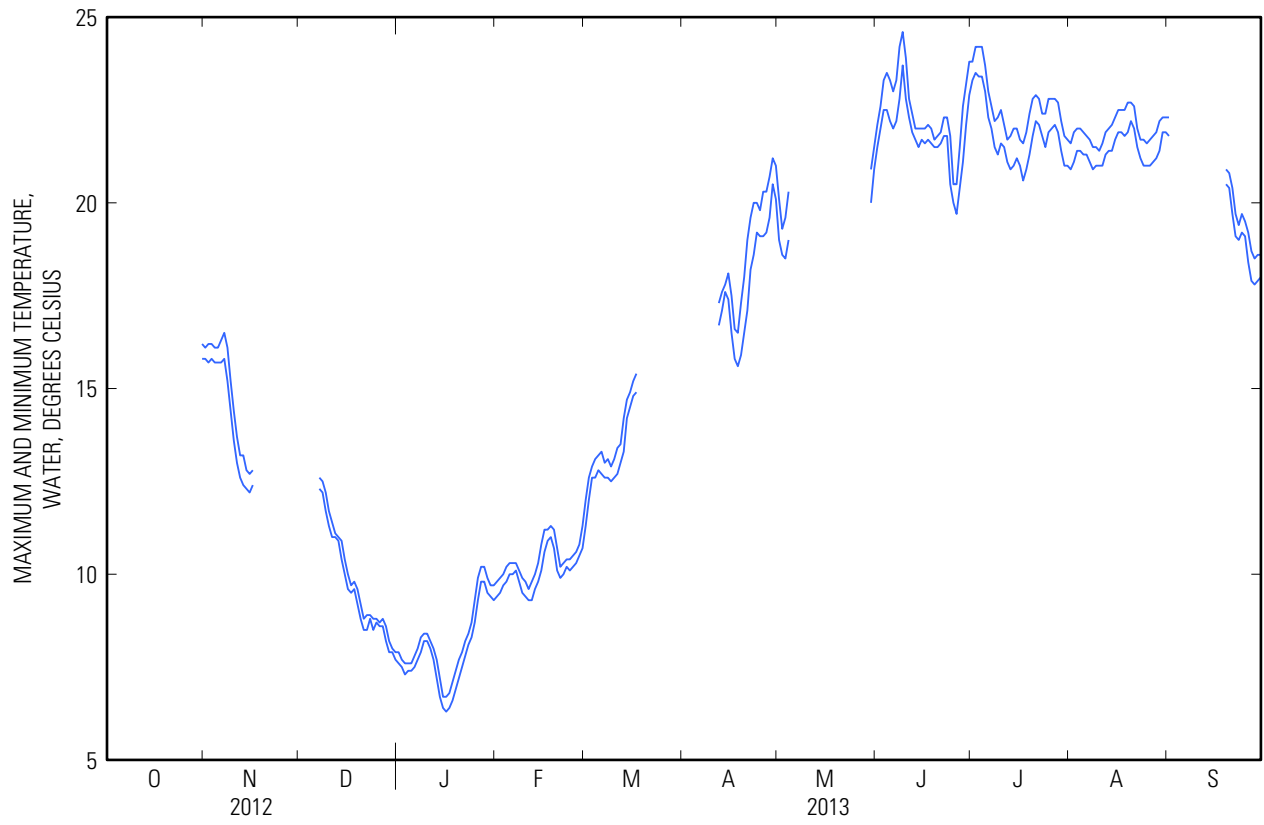
Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	February			March			April			May		
1	9.8	9.4	9.7	12.0	11.3	11.9	---	---	---	20.1	19.0	19.6
2	9.9	9.5	9.8	12.6	12.0	12.4	---	---	---	19.3	18.6	19.0
3	10.0	9.7	9.9	12.9	12.6	12.8	---	---	---	19.6	18.5	19.2
4	10.2	9.8	10.0	13.1	12.6	12.8	---	---	---	20.3	19.0	19.7
5	10.3	10.0	10.2	13.2	12.8	12.9	---	---	---	---	---	---
6	10.3	10.0	10.2	13.3	12.7	13.0	---	---	---	---	---	---
7	10.3	10.1	10.2	13.0	12.6	12.8	---	---	---	---	---	---
8	10.1	9.8	10.0	13.1	12.6	12.8	---	---	---	---	---	---
9	9.9	9.5	9.8	12.9	12.5	12.7	---	---	---	---	---	---
10	9.8	9.4	9.6	13.1	12.6	12.8	---	---	---	---	---	---
11	9.6	9.3	9.6	13.4	12.7	13.0	---	---	---	---	---	---
12	9.8	9.3	9.6	13.5	13.0	13.4	17.3	16.7	16.8	---	---	---
13	10.0	9.6	9.8	14.2	13.3	13.6	17.6	17.1	17.3	---	---	---
14	10.3	9.8	10.0	14.7	14.2	14.4	17.8	17.6	17.7	---	---	---
15	10.8	10.1	10.4	14.9	14.5	14.7	18.1	17.4	17.7	---	---	---
16	11.2	10.6	10.9	15.2	14.8	14.9	17.5	16.5	17.2	---	---	---
17	11.2	10.9	11.2	15.4	14.9	15.2	16.6	15.8	16.3	---	---	---
18	11.3	11.0	11.2	---	---	---	16.5	15.6	16.1	---	---	---
19	11.2	10.7	10.7	---	---	---	17.3	15.9	16.7	---	---	---
20	10.7	10.1	10.3	---	---	---	18.0	16.5	17.6	---	---	---
21	10.2	9.9	10.2	---	---	---	19.0	17.1	18.1	---	---	---
22	10.3	10.0	10.2	---	---	---	19.6	18.2	18.9	---	---	---
23	10.4	10.2	10.3	---	---	---	20.0	18.6	19.2	---	---	---
24	10.4	10.1	10.3	---	---	---	20.0	19.2	19.5	---	---	---
25	10.5	10.2	10.3	---	---	---	19.8	19.1	19.4	---	---	---
26	10.6	10.3	10.5	---	---	---	20.3	19.1	19.6	---	---	---
27	10.8	10.5	10.6	---	---	---	20.3	19.2	19.7	---	---	---
28	11.3	10.7	11.1	---	---	---	20.7	19.6	20.4	---	---	---
29	---	---	---	---	---	---	21.2	20.5	21.0	---	---	---
30	---	---	---	---	---	---	21.0	20.1	20.9	20.9	20.0	20.5
31	---	---	---	---	---	---	---	---	---	21.5	20.9	21.2
Max	11.3	11.0	11.2	---	---	---	---	---	---	---	---	---
Min	9.6	9.3	9.6	---	---	---	---	---	---	---	---	---

11447650 Sacramento River at Freeport, CA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	June			July			August			September		
1	22.1	21.5	22.0	23.8	23.3	23.6	21.6	20.9	21.3	22.3	21.8	22.0
2	22.6	22.0	22.4	24.2	23.5	23.8	21.9	21.1	21.5	---	---	---
3	23.3	22.5	22.8	24.2	23.4	23.8	22.0	21.4	21.8	---	---	---
4	23.5	22.5	23.0	24.2	23.4	23.8	22.0	21.4	21.8	---	---	---
5	23.3	22.2	22.7	23.7	23.0	23.4	21.9	21.3	21.7	---	---	---
6	23.0	22.0	22.5	23.0	22.3	22.5	21.8	21.3	21.6	---	---	---
7	23.3	22.2	23.0	22.6	22.0	22.2	21.7	21.1	21.4	---	---	---
8	24.2	22.8	23.8	22.2	21.5	21.9	21.5	20.9	21.3	---	---	---
9	24.6	23.7	24.1	22.3	21.3	21.7	21.5	21.0	21.3	---	---	---
10	23.9	22.8	23.5	22.5	21.6	22.0	21.4	21.0	21.2	---	---	---
11	22.8	22.3	22.5	22.1	21.5	21.9	21.6	21.0	21.4	---	---	---
12	22.4	21.9	22.1	21.7	21.1	21.4	21.9	21.3	21.6	---	---	---
13	22.0	21.7	21.8	21.8	20.9	21.3	22.0	21.4	21.8	---	---	---
14	22.0	21.5	21.8	22.0	21.0	21.5	22.1	21.4	21.8	---	---	---
15	22.0	21.7	21.9	22.0	21.2	21.7	22.3	21.7	22.1	---	---	---
16	22.0	21.6	21.8	21.7	21.0	21.4	22.5	21.9	22.2	---	---	---
17	22.1	21.7	21.9	21.6	20.6	21.2	22.5	21.9	22.3	---	---	---
18	22.0	21.6	21.9	21.9	20.9	21.4	22.5	21.8	22.3	---	---	---
19	21.7	21.5	21.6	22.4	21.3	21.7	22.7	21.9	22.4	20.9	20.5	20.7
20	21.8	21.5	21.6	22.8	21.8	22.2	22.7	22.2	22.5	20.8	20.4	20.6
21	21.9	21.6	21.8	22.9	22.2	22.5	22.6	22.0	22.1	20.4	19.7	20.3
22	22.3	21.8	22.0	22.8	22.1	22.4	22.0	21.5	21.7	19.7	19.1	19.5
23	22.3	21.8	22.0	22.4	21.8	22.1	21.7	21.2	21.6	19.4	19.0	19.3
24	21.8	20.5	21.1	22.4	21.5	21.9	21.7	21.0	21.5	19.7	19.2	19.5
25	20.5	20.0	20.2	22.8	21.9	22.3	21.6	21.0	21.4	19.5	19.1	19.3
26	20.5	19.7	20.0	22.8	22.0	22.5	21.7	21.0	21.4	19.2	18.4	18.9
27	21.5	20.4	20.7	22.8	22.1	22.5	21.8	21.1	21.6	18.7	17.9	18.2
28	22.6	21.1	21.6	22.7	21.9	22.3	21.9	21.2	21.6	18.5	17.8	18.1
29	23.2	22.1	22.6	22.2	21.4	21.8	22.2	21.4	21.8	18.6	17.9	18.1
30	23.8	22.9	23.3	21.8	21.0	21.5	22.3	21.9	22.1	18.6	18.0	18.3
31	---	---	---	21.7	21.0	21.5	22.3	21.9	22.2	---	---	---
Max	24.6	23.7	24.1	24.2	23.5	23.8	22.7	22.2	22.5	---	---	---
Min	20.5	19.7	20.0	21.6	20.6	21.2	21.4	20.9	21.2	---	---	---

11447650 Sacramento River at Freeport, CA—Continued



11447650 Sacramento River at Freeport, CA—Continued

**PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT
 WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**

Part 1 of 3

[ft³/s, cubic feet per second; mg/L, milligrams per liter; mm, millimeters; °C, degrees Celsius;
 --, no data; A, average]

Sample date-time	Discharge, instantaneous, ft ³ /s (00061)	Temperature, water, °C (00010)	Suspended sediment concentration, mg/L (80154)	Suspended sediment discharge, tons per day (80155)	Suspended sediment, sieve diameter, percent smaller than 0.0625 mm (70331)
SS 10-18-2012 1220	11,700	--	8	253	98
10-25-2012 1146	13,000	15.3	10	351	97
10-25-2012 1148	13,000	15.3	14	491	82
10-25-2012 1151	13,000	15.3	34	1,190	84
10-25-2012 1153	12,400	15.3	23	770	76
10-25-2012 1155	12,400	15.3	17	569	89
10-25-2012 1156	12,400	15.3	A 17	A 569	A 89
10-25-2012 1157	12,400	15.3	14	469	90
10-25-2012 1158	12,400	15.3	A 20	A 670	A 85
10-25-2012 1159	12,400	15.3	A 19	A 636	A 87
10-25-2012 1200	12,400	15.3	15	502	88
10-25-2012 1203	12,400	15.3	20	670	87
10-25-2012 1205	12,400	15.3	11	368	98
10-25-2012 1207	12,400	15.3	31	1,040	91
SS 12-04-2012 1120	57,800	12.9	173	27,000	83
12-06-2012 1322	56,200	12.7	214	32,500	83
12-06-2012 1325	56,300	12.7	227	34,500	83
12-06-2012 1328	56,300	12.7	249	37,900	74
12-06-2012 1330	56,300	12.7	258	39,200	74
12-06-2012 1331	56,300	12.7	239	36,300	A 74
12-06-2012 1332	56,300	12.7	A 256	A 38,900	A 75
12-06-2012 1333	56,300	12.7	256	38,900	74
12-06-2012 1335	56,300	12.7	228	34,700	74
12-06-2012 1336	56,300	12.7	283	43,000	66
12-06-2012 1338	56,700	12.7	187	28,600	65
12-06-2012 1340	56,700	12.7	250	38,300	76
12-06-2012 1342	56,700	12.7	240	36,700	76
SS 12-19-2012 1430	30,900	9.2	44	3,670	94
SS 01-08-2013 1330	22,100	7.9	28	1,670	96
SS 01-22-2013 1330	12,800	7.7	14	484	96
01-30-2013 1055	20,100	10.1	21	1,140	--
01-30-2013 1057	20,100	10.1	23	1,250	100
01-30-2013 1059	20,100	10.1	22	1,190	--
01-30-2013 1101	20,100	10.1	23	1,250	100
01-30-2013 1102	20,100	10.1	A 23	A 1,250	--
01-30-2013 1103	20,100	10.1	23	1,250	100
01-30-2013 1104	20,100	10.1	A 24	A 1,300	--
01-30-2013 1105	20,100	10.1	29	1,570	95
01-30-2013 1106	20,100	10.1	A 25	A 1,360	A 98
01-30-2013 1107	20,100	10.1	27	1,470	99

SS, Suspended sediment data determined from a sample collected and processed according to National Water-Quality Assessment (NAQUA) protocol.

11447650 Sacramento River at Freeport, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 2 of 3

[ft³/s, cubic feet per second; mg/L, milligrams per liter; mm, millimeters; °C, degrees Celsius;
--, no data; A, average]

Sample date-time	Discharge, instantaneous, ft ³ /s (00061)	Temperature, water, °C (00010)	Suspended sediment concentration, mg/L (80154)	Suspended sediment discharge, tons per day (80155)	Suspended sediment, sieve diameter, percent smaller than 0.0625 mm (70331)
01-30-2013 1109	20,600	10.1	26	1,450	96
01-30-2013 1111	20,600	10.1	22	1,220	100
01-30-2013 1113	20,600	10.1	23	1,280	100
SS 02-19-2013 0950	11,600	10.6	9	282	97
SS 03-12-2013 1130	17,500	12.9	9	426	97
04-11-2013 1100	18,000	15.8	24	1,170	97
04-11-2013 1200	19,000	16.0	31	1,590	98
04-11-2013 1201	19,000	16.0	A 30	A 1,540	A 96
04-11-2013 1203	19,000	16.0	29	1,490	94
04-11-2013 1205	19,000	16.0	25	1,280	96
04-11-2013 1207	19,000	16.0	24	1,230	98
04-11-2013 1210	19,100	16.0	29	1,500	96
04-11-2013 1212	19,100	16.0	28	1,440	97
04-11-2013 1215	19,100	16.0	31	1,600	99
04-11-2013 1216	19,100	16.0	A 28	A 1,440	A 98
04-11-2013 1217	19,100	16.0	32	1,650	95
04-11-2013 1218	19,100	16.0	A 31	A 1,600	A 95
04-11-2013 1219	19,100	16.0	A 30	A 1,550	A 96
04-11-2013 1220	19,100	16.0	31	1,600	99
SS 05-16-2013 1130	10,700	21.5	7	202	97
05-29-2013 1146	15,000	19.8	18	729	94
05-29-2013 1149	15,000	19.8	12	486	98
05-29-2013 1156	15,300	19.8	13	537	92
05-29-2013 1159	15,300	19.8	13	537	100
05-29-2013 1201	15,300	19.8	A 16	A 661	A 91
05-29-2013 1202	15,300	19.8	15	620	94
05-29-2013 1203	15,300	19.8	A 13	A 537	A 98
05-29-2013 1204	15,300	19.8	A 14	A 578	A 95
05-29-2013 1205	15,300	19.8	14	578	100
05-29-2013 1208	15,700	19.8	15	636	95
05-29-2013 1210	15,700	19.8	14	593	100
05-29-2013 1213	15,700	19.8	17	721	83
05-29-2013 1216	15,700	19.8	13	551	94
SS 05-30-2013 1100	11,200	20.3	7	213	97
SS 06-04-2013 1230	15,800	23.1	18	766	98
SS 06-26-2013 1200	18,600	19.8	20	1,000	97
SS 07-29-2013 1230	15,800	21.3	16	682	97
08-02-2013 1135	21,300	21.0	22	1,270	87
08-02-2013 1138	21,100	21.0	27	1,540	87
08-02-2013 1142	21,100	21.0	29	1,650	92

SS, Suspended sediment data determined from a sample collected and processed according to National Water-Quality Assessment (NAQUA) protocol.

11447650 Sacramento River at Freeport, CA—Continued

**PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT
 WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**

Part 3 of 3

[ft³/s, cubic feet per second; mg/L, milligrams per liter; mm, millimeters; °C, degrees Celsius;
 --, no data; A, average]

Sample date-time	Discharge, instantaneous, ft ³ /s (00061)	Temperature, water, °C (00010)	Suspended sediment concentration, mg/L (80154)	Suspended sediment discharge, tons per day (80155)	Suspended sediment, sieve diameter, percent smaller than 0.0625 mm (70331)
08-02-2013 1145	21,100	21.0	28	1,600	93
08-02-2013 1146	21,100	21.0	A 30	A 1,710	A 90
08-02-2013 1147	21,100	21.0	A 28	A 1,600	A 91
08-02-2013 1148	21,100	21.0	37	2,110	88
08-02-2013 1149	21,100	21.0	A 27	A 1,540	A 92
08-02-2013 1150	21,100	21.0	32	1,820	91
08-02-2013 1152	21,100	21.0	35	1,990	88
08-02-2013 1153	20,800	21.0	26	1,460	94
08-02-2013 1155	20,800	21.0	25	1,400	93
08-02-2013 1200	20,800	21.0	20	1,120	94
SS 08-12-2013 1330	19,300	21.4	21	1,090	94
09-18-2013 1335	16,800	20.6	13	590	89
09-18-2013 1339	16,100	20.6	10	435	95
09-18-2013 1341	16,100	20.6	16	696	86
09-18-2013 1344	16,100	20.6	15	652	91
09-18-2013 1347	16,100	20.6	15	652	90
09-18-2013 1348	16,100	20.6	A 14	A 609	A 90
09-18-2013 1349	16,100	20.6	A 15	A 652	A 89
09-18-2013 1350	16,100	20.6	16	696	85
09-18-2013 1351	16,100	20.6	A 15	A 652	A 89
09-18-2013 1355	15,900	20.6	14	601	93
09-18-2013 1358	15,900	20.6	18	773	86
09-18-2013 1400	15,900	20.6	12	515	95
09-18-2013 1405	15,900	20.6	16	687	88

SS, Suspended sediment data determined from a sample collected and processed according to National Water-Quality Assessment (NAQUA) protocol.

11447650 Sacramento River at Freeport, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 1 of 2

[ft³/s, cubic feet per second; mm, millimeters; °C, degrees Celsius; --, no data; <, less than]

Sample date-time	Number of sampling points, count (00063)	Discharge, instanta- neous, ft ³ /s (00061)	Tempera- ture, water, °C (00010)	Bed	Bed	Bed	Bed	Bed	Bed
				sediment, dry sieved, sieve diameter, percent smaller than 0.0625 mm (80164)	sediment, dry sieved, sieve diameter, percent smaller than 0.125 mm (80165)	sediment, dry sieved, sieve diameter, percent smaller than 0.25 mm (80166)	sediment, dry sieved, sieve diameter, percent smaller than 0.5 mm (80167)	sediment, dry sieved, sieve diameter, percent smaller than 1 mm (80168)	sediment, dry sieved, sieve diameter, percent smaller than 2 mm (80169)
10-25-2012 1220	1	12,200	15.4	5	16	27	68	96	100
10-25-2012 1223	1	11,600	15.4	2	7	21	79	96	99
10-25-2012 1227	1	11,600	15.4	< 1	< 1	23	86	99	100
10-25-2012 1230	1	11,600	15.4	< 1	1	25	95	100	--
10-25-2012 1234	1	11,600	15.4	1	3	8	14	16	17
12-09-2012 1250	1	51,000	7.0	2	5	7	60	92	99
12-09-2012 1254	1	50,900	7.0	2	3	5	76	96	99
12-09-2012 1257	1	50,900	7.0	< 1	2	30	95	99	100
12-09-2012 1300	1	50,900	7.0	1	2	19	91	98	100
12-09-2012 1304	1	50,900	7.0	1	2	39	93	96	98
04-11-2013 1333	1	19,500	16.0	< 1	2	8	66	89	97
04-11-2013 1336	1	19,500	16.0	1	2	10	73	86	91
04-11-2013 1338	1	19,300	16.0	< 1	< 1	12	92	98	100
04-11-2013 1340	1	19,300	16.0	1	5	52	98	99	100
04-11-2013 1344	1	19,300	16.0	1	3	31	98	100	--
05-29-2013 1231	1	15,800	19.8	10	23	28	66	88	97
05-29-2013 1234	1	15,800	19.8	1	2	6	94	99	100
05-29-2013 1236	1	15,800	19.8	< 1	< 1	12	95	100	--
05-29-2013 1239	1	16,100	19.8	4	8	46	95	99	100
05-29-2013 1249	1	16,100	19.8	1	1	3	4	4	5
08-02-2013 1223	1	20,400	21.0	2	11	17	82	94	98
08-02-2013 1224	1	20,400	21.0	< 1	1	4	87	99	100
08-02-2013 1226	1	20,400	21.0	< 1	2	26	92	96	97
08-02-2013 1230	1	20,400	21.0	1	2	24	96	100	--
08-02-2013 1232	1	20,400	21.0	9	25	53	69	75	84

11447650 Sacramento River at Freeport, CA—Continued

**PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**

Part 2 of 2

[ft³/s, cubic feet per second; mm, millimeters; °C, degrees Celsius; --, no data; <, less than]

Sample date-time	Bed sediment, dry sieved, sieve diameter, percent smaller than 4 mm (80170)	Bed sediment, dry sieved, sieve diameter, percent smaller than 8 mm (80171)	Bed sediment, dry sieved, sieve diameter, percent smaller than 16 mm (80172)	Bed sediment, dry sieved, sieve diameter, percent smaller than 32 mm (80173)	Bed sediment, dry sieved, sieve diameter, percent smaller than 64 mm (80174)
	10-25-2012 1220	--	--	--	--
10-25-2012 1223	100	--	--	--	--
10-25-2012 1227	--	--	--	--	--
10-25-2012 1230	--	--	--	--	--
10-25-2012 1234	18	19	26	100	--
12-09-2012 1250	100	--	--	--	--
12-09-2012 1254	100	--	--	--	--
12-09-2012 1257	--	--	--	--	--
12-09-2012 1300	--	--	--	--	--
12-09-2012 1304	98	100	--	--	--
04-11-2013 1333	99	100	--	--	--
04-11-2013 1336	96	99	100	--	--
04-11-2013 1338	--	--	--	--	--
04-11-2013 1340	--	--	--	--	--
04-11-2013 1344	--	--	--	--	--
05-29-2013 1231	100	--	--	--	--
05-29-2013 1234	--	--	--	--	--
05-29-2013 1236	--	--	--	--	--
05-29-2013 1239	--	--	--	--	--
05-29-2013 1249	6	18	26	51	100
08-02-2013 1223	99	100	--	--	--
08-02-2013 1224	--	--	--	--	--
08-02-2013 1226	98	100	--	--	--
08-02-2013 1230	--	--	--	--	--
08-02-2013 1232	91	100	--	--	--

11447650 Sacramento River at Freeport, CA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

[e, estimated]

Day	Mean discharge (ft ³ /s)	Mean concentration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft ³ /s)	Mean concentration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft ³ /s)	Mean concentration (mg/L)	Sediment discharge (tons/day)
	October			November			December		
1	12,400	15	500	10,200	27	729	31,100	87	7,500
2	12,400	13	455	10,300	28	787	47,600	137	17,800
3	12,100	15	473	10,600	35	987	55,600	184	27,700
4	12,700	18	617	10,800	52	1,470	57,700	215	33,500
5	14,300	20	785	10,600	37	1,070	56,500	307	46,800
6	14,400	22	847	10,600	38	1,100	56,600	218	33,300
7	14,300	17	653	10,100	42	1,150	57,500	134	20,900
8	14,300	11	447	10,100	38	1,030	56,400	129	19,700
9	14,400	6	250	10,300	10	259	52,800	112	16,000
10	13,700	4	151	9,690	6	157	46,400	112	14,000
11	13,300	8	277	9,330	6	142	40,100	112	12,100
12	13,700	12	428	8,910	5	127	35,200	113	10,800
13	12,400	13	441	8,540	6	129	31,700	118	10,100
14	11,200	8	230	8,760	10	241	29,500	118	9,370
15	10,300	8	220	8,900	20	478	27,500	111	8,270
16	9,650	11	291	9,210	18	457	25,300	87	5,970
17	9,370	9	234	9,570	18	473	24,100	61	3,990
18	9,200	7	170	11,900	20	649	25,600	43	2,990
19	9,110	7	185	13,600	22	816	30,100	51	4,110
20	9,000	7	163	15,400	23	970	31,400	55	4,680
21	9,350	5	134	15,700	22	939	29,900	64	5,200
22	10,200	7	192	15,000	26	1,040	33,600	58	5,270
23	11,100	12	355	16,000	27	1,170	47,100	88	11,600
24	10,800	17	494	17,200	25	1,170	57,600	188	29,200
25	11,000	22	658	15,500	7	293	65,400	163	28,800
26	10,400	27	759	13,800	6	227	69,000	137	25,600
27	10,300	21	588	12,800	15	507	67,900	120	21,900
28	10,000	17	474	12,500	21	718	66,300	127	22,800
29	10,000	21	571	14,000	25	958	62,400	125	21,100
30	9,920	23	616	17,400	38	1,860	57,500	122	18,900
31	9,700	25	649	---	---	---	50,500	117	16,000
Total	355,000	---	13,307	357,310	---	22,103	1,425,900	---	515,950

11447650 Sacramento River at Freeport, CA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

[e, estimated]

Day	Mean discharge (ft ³ /s)	Mean concentration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft ³ /s)	Mean concentration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft ³ /s)	Mean concentration (mg/L)	Sediment discharge (tons/day)
	January			February			March		
1	43,600	108	12,800	19,100	96	4,940	13,000	48	1,680
2	38,400	99	10,300	18,800	131	6,620	12,700	31	1,060
3	35,400	89	8,550	18,600	165	8,300	12,500	33	1,120
4	33,500	73	6,580	18,300	175	8,640	12,800	36	1,260
5	30,400	45	3,720	17,700	183	8,720	12,400	39	1,330
6	28,500	68	5,210	18,400	176	8,730	12,000	50	1,700
7	27,200	51	3,720	18,100	132	6,450	12,500	80	2,700
8	26,100	38	2,690	17,700	132	6,310	11,900	73	2,330
9	25,100	69	4,680	17,400	138	6,480	12,800	60	2,070
10	24,600	50	3,360	17,400	127	5,970	12,000	46	1,500
11	24,900	75	5,010	17,000	59	2,740	12,700	28	960
12	24,100	84	5,460	16,600	96	4,270	14,800	12	495
13	24,000	61	3,990	16,200	172	7,470	15,400	18	731
14	23,300	45	2,860	15,600	294	12,400	15,300	24	993
15	22,300	66	3,970	15,200	222	9,150	15,200	26	1,090
16	21,000	89	5,020	14,900	176	7,070	15,200	42	1,730
17	20,100	98	5,290	14,600	141	5,530	15,800	59	2,520
18	19,600	105	5,560	14,200	132	5,060	15,900	78	3,360
19	19,100	107	5,490	14,300	162	6,280	15,600	97	4,060
20	18,200	77	3,750	14,700	175	6,900	14,600	91	3,570
21	17,800	27	1,280	14,500	122	4,770	13,900	82	3,090
22	17,400	17	799	14,100	100	3,790	14,300	79	3,050
23	17,400	28	1,340	14,100	81	3,070	14,100	81	3,080
24	17,700	34	1,610	14,000	62	2,330	13,700	47	1,740
25	17,700	8	407	13,500	98	3,600	12,900	54	1,900
26	18,100	6	302	13,300	245	8,800	12,800	59	2,050
27	19,600	16	844	13,200	79	2,840	12,500	56	1,910
28	19,900	26	1,420	13,100	53	1,890	12,100	117	3,840
29	20,500	16	873	---	---	---	11,400	123	3,760
30	20,100	26	1,400	---	---	---	11,100	54	1,650
31	19,700	62	3,300	---	---	---	12,600	130	4,440
Total	735,300	---	121,585	444,600	---	169,120	416,500	---	66,769

11447650 Sacramento River at Freeport, CA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

[e, estimated]

Day	Mean discharge (ft ³ /s)	Mean concentration (mg/L)	Sediment discharge (tons/ day)				Mean discharge (ft ³ /s)	Mean concentration (mg/L)	Sediment discharge (tons/ day)
				Mean discharge (ft ³ /s)	Mean concentration (mg/L)	Sediment discharge (tons/ day)			
			April				June		
1	14,100	113	4,270	12,500	28	941	13,200	15	544
2	15,600	85	3,550	e11,600	e31	e970	12,400	17	586
3	17,000	60	2,750	e10,200	e29	e795	10,900	14	418
4	17,200	50	2,300	9,230	27	682	10,800	17	512
5	17,300	57	2,650	8,530	26	599	10,900	18	530
6	16,300	65	2,860	8,410	26	597	10,900	17	501
7	15,700	69	2,940	8,640	28	658	e10,900	e14	e418
8	16,600	55	2,460	9,600	23	590	10,400	17	479
9	16,800	31	1,400	11,100	20	600	11,000	32	953
10	15,900	41	1,760	11,800	17	558	12,600	47	1,610
11	15,600	33	1,410	12,100	16	508	12,400	60	2,010
12	14,900	32	1,290	11,500	17	522	12,600	60	2,030
13	14,300	35	1,350	11,500	17	543	13,600	55	2,030
14	13,500	44	1,610	11,200	16	474	13,800	51	1,880
15	13,100	49	1,730	11,400	14	420	12,800	42	1,410
16	12,900	49	1,710	10,900	9	274	12,500	39	1,340
17	11,400	46	1,420	11,400	9	283	12,100	23	762
18	10,200	38	1,060	11,900	11	362	11,800	12	375
19	9,240	43	1,080	12,300	13	437	13,100	13	472
20	8,410	58	1,340	12,200	14	469	12,300	15	511
21	7,730	74	1,580	11,400	15	468	12,000	14	490
22	7,390	73	1,420	12,000	18	603	12,100	15	503
23	6,860	28	491	11,700	25	786	12,500	8	259
24	5,990	44	724	11,800	21	656	13,700	5	186
25	6,680	51	914	11,700	22	696	14,400	5	209
26	7,790	20	466	11,700	24	743	15,800	15	666
27	9,140	20	543	12,100	24	801	17,400	13	609
28	10,700	21	627	12,300	22	718	18,900	10	493
29	11,400	19	577	12,700	17	581	19,300	6	326
30	12,200	23	750	13,600	11	414	19,000	5	258
31	---	---	---	13,700	16	583	---	---	---
Total	371,930	---	49,032	352,710	---	18,331	396,100	---	23,370

11447650 Sacramento River at Freeport, CA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

[e, estimated]

Day	Mean discharge (ft ³ /s)	Mean concentration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft ³ /s)	Mean concentration (mg/L)	Sediment discharge (tons/day)			
							Mean discharge (ft ³ /s)	Mean concentration (mg/L)	Sediment discharge (tons/day)
July			August			September			
1	19,000	18	923	16,900	27	1,230	17,000	6	282
2	18,300	24	1,200	17,100	25	1,170	16,800	9	401
3	18,300	16	780	16,900	16	730	16,500	10	463
4	17,600	14	661	16,700	13	596	16,400	10	428
5	16,800	15	729	16,800	10	442	16,600	12	521
6	17,200	28	1,340	e16,700	e11	e515	16,700	12	542
7	17,700	13	585	e16,500	e13	e593	16,500	12	525
8	17,700	23	1,100	16,700	15	660	16,300	10	421
9	17,600	50	2,370	16,100	14	612	15,800	9	400
10	17,300	41	1,910	16,800	14	634	14,900	10	392
11	17,300	28	1,330	17,100	15	691	15,000	10	413
12	17,200	33	1,610	17,200	27	1,320	14,300	11	411
13	17,300	35	1,610	17,600	12	550	13,700	11	398
14	17,200	36	1,680	17,500	13	635	13,300	10	354
15	17,000	23	1,080	17,800	12	574	13,100	12	433
16	17,000	23	1,040	18,200	11	556	13,300	25	898
17	17,500	23	1,100	18,300	16	837	12,700	28	908
18	17,300	25	1,150	18,500	18	914	12,400	13	442
19	17,300	48	2,300	18,000	13	643	11,900	12	375
20	17,200	76	3,570	17,400	16	767	10,800	8	237
21	17,000	34	1,510	17,600	9	416	10,900	6	167
22	17,200	50	2,370	18,000	8	386	11,400	5	174
23	17,800	72	3,470	18,500	7	365	11,400	1	45
24	17,900	79	3,810	18,500	7	330	11,300	2	54
25	17,700	48	2,320	19,000	6	299	11,200	2	74
26	17,600	51	2,440	18,800	7	347	11,400	2	79
27	17,500	58	2,730	18,600	12	617	11,000	1	36
28	17,300	57	2,670	18,400	5	251	10,800	2	46
29	17,300	24	1,130	18,100	6	309	10,700	2	58
30	17,900	20	954	18,000	7	332	10,300	2	58
31	17,100	24	1,080	17,500	4	180	---	---	---
Total	542,100	---	52,552	545,800	---	18,501	404,400	---	10,035

	Total discharge (ft ³ /s)	Total suspended sediment discharge (tons)
Year	6,347,650	1,080,655

11447650 Sacramento River at Freeport, CA—Continued

CROSS SECTION ANALYSES
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

[ft, feet; °C, degrees Celsius]

Sample date-time	Temperature, °C (00010)	Depth to bottom at sample location, ft (81903)	Sampling depth, ft (00003)	Stream width, ft (00004)	Location in cross section, distance from left bank looking downstream, ft (00009)
09-18-2013 1503	20.7	17.0	13.6	580	172
09-18-2013 1504	20.8	17.0	3.40	580	172
09-18-2013 1505	20.8	17.0	9.50	580	172
09-18-2013 1507	20.7	22.0	17.7	580	274
09-18-2013 1508	20.7	22.0	4.40	580	274
09-18-2013 1509	20.7	22.0	13.2	580	274
09-18-2013 1511	20.7	24.0	19.1	580	377
09-18-2013 1512	20.7	24.0	4.80	580	377
09-18-2013 1513	20.7	24.0	14.4	580	377
09-18-2013 1514	20.7	23.0	4.60	580	462
09-18-2013 1515	20.7	23.0	18.5	580	462
09-18-2013 1516	20.7	23.0	13.8	580	462
09-18-2013 1517	20.7	25.0	22.5	580	547
09-18-2013 1518	20.7	25.0	5.00	580	547
09-18-2013 1519	20.7	25.0	15.0	580	547

Note; Instantaneous discharge at mean time of cross-sectional measurements:
 Sept. 18, 12,750 ft³/s.