

Water-Data Report 2010

06818000 MISSOURI RIVER AT ST. JOSEPH, MO

Missouri River Main Stem

LOCATION.--Lat 39°45'11.7", long 94°51'24.6" referenced to North American Datum of 1983, in NW ¼ SE ¼ sec.17, T.57 N., R.35 W., Buchanan County, MO, Hydrologic Unit 10240011, on left bank at downstream abutment of St. Joseph and Grand Island Railroad Bridge in St. Joseph, and at mile 448.2.

DRAINAGE AREA.--426,500 mi², the 3,959 mi² in Great Divide basin are not included.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1928 to current year. Gage-height records collected in vicinity 1873-99 are contained in reports of the Missouri River Commission; since 1900 in reports of the National Weather Service.

REVISED RECORDS.--WDR MO-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 788.19 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 21, 1931 nonrecording gage and from Oct. 21, 1931, to Dec. 31, 1933, water-stage recorder, both at same site at datum 5.50 ft higher.

REMARKS.--Water-discharge records good except for estimated daily discharge, which is fair. Some regulation from many upstream reservoirs.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 397,000 ft³/s, Apr. 22, 1952; maximum gage-height, 32.07 ft; July 26, 1993; minimum discharge, 2,300 ft³/s, Jan. 9, 1937.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 29, 1881, reached a stage of 27.2 ft, present datum, discharge, about 370,000 ft³/s, computed by the U.S. Army Corps of Engineers. Flood of June 1844 reached a stage of 24.5 ft, discharge, about 350,000 ft³/s, computed by the U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 190,000 ft³/s, June 25, gage height, 26.17 ft; minimum discharge, 23,200 ft³/s, Dec. 14, gage height, 3.62 ft.

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	42,100	55,000	37,500	31,300	38,600	32,200	91,800	72,500	60,100	126,000	96,200	80,900
2	42,800	52,800	37,200	31,000	38,100	32,600	89,200	69,900	81,000	122,000	98,900	85,300
3	43,000	51,900	36,700	30,700	37,500	33,000	86,400	64,300	93,000	120,000	101,000	91,800
4	43,400	50,900	36,000	30,300	36,900	33,500	83,100	62,500	78,300	121,000	105,000	81,700
5	43,400	49,800	35,500	30,100	37,000	36,000	80,700	62,100	69,900	132,000	120,000	75,200
6	43,100	49,100	35,300	29,800	36,600	41,800	79,200	59,500	90,200	139,000	126,000	73,200
7	42,600	48,700	33,800	30,400	36,200	53,000	78,200	60,600	88,800	133,000	124,000	72,000
8	42,100	47,900	33,300	31,600	36,300	59,900	76,400	66,600	76,200	126,000	120,000	70,700
9	42,400	47,300	32,000	31,200	35,800	65,200	74,500	61,000	81,400	118,000	115,000	70,600
10	42,300	46,300	28,500	30,700	34,500	81,200	71,700	59,900	88,400	111,000	e108,000	70,200
11	42,500	45,700	27,400	30,000	34,400	92,600	69,000	63,400	85,900	106,000	104,000	70,800
12	42,700	45,100	26,800	29,700	34,300	122,000	67,300	62,400	107,000	111,000	104,000	71,000
13	42,200	44,300	25,100	30,100	34,200	110,000	65,100	71,200	119,000	110,000	103,000	71,600
14	42,100	43,700	23,500	31,300	34,400	103,000	63,200	75,700	141,000	106,000	100,000	80,600
15	42,400	42,600	26,600	31,700	34,000	102,000	62,100	73,200	152,000	116,000	97,700	79,400
16	42,300	43,000	29,600	31,300	33,000	103,000	62,500	69,100	163,000	122,000	96,200	75,600
17	42,100	46,400	30,700	30,800	32,600	105,000	63,100	69,000	160,000	116,000	95,300	73,400
18	42,200	49,000	30,200	30,500	31,900	108,000	62,100	70,300	153,000	108,000	94,300	72,100
19	42,400	44,400	29,400	30,500	32,400	110,000	60,100	67,200	148,000	100,000	92,300	72,100
20	42,300	42,800	30,200	31,400	33,000	113,000	59,300	66,100	147,000	95,500	90,400	80,100
21	42,500	41,900	32,000	33,500	33,000	116,000	58,200	81,600	155,000	101,000	87,800	83,000
22	44,400	41,200	32,400	36,000	32,700	118,000	57,200	76,800	165,000	103,000	84,000	81,000
23	49,100	40,800	32,300	42,400	31,800	123,000	58,600	69,900	175,000	96,600	81,600	77,300
24	53,800	41,500	34,900	63,500	31,600	127,000	64,900	66,600	185,000	94,800	79,700	77,600
25	58,200	49,400	36,100	53,000	31,600	143,000	64,900	64,200	187,000	99,900	80,900	81,600
26	56,600	45,300	34,500	46,900	31,800	131,000	64,200	63,200	181,000	103,000	81,100	86,300
27	52,700	42,400	34,100	43,300	32,300	119,000	60,000	66,600	163,000	105,000	79,300	90,300
28	50,000	40,300	32,500	40,800	32,500	112,000	58,000	65,400	153,000	104,000	76,800	92,600
29	49,100	38,800	29,300	38,600	---	104,000	58,400	61,500	143,000	102,000	75,300	91,600
30	51,100	37,900	28,200	37,900	---	98,800	59,200	59,900	132,000	99,300	74,300	92,200
31	56,000	---	30,000	38,400	---	94,800	---	59,500	---	96,700	73,600	---
Mean	45,610	45,540	31,660	35,120	34,250	91,080	68,290	66,510	127,400	111,100	95,670	79,060
Max	58,200	55,000	37,500	63,500	38,600	143,000	91,800	81,600	187,000	139,000	126,000	92,600
Min	42,100	37,900	23,500	29,700	31,600	32,200	57,200	59,500	60,100	94,800	73,600	70,200
In.	0.12	0.12	0.09	0.09	0.08	0.25	0.18	0.18	0.33	0.30	0.26	0.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2010^a, BY WATER YEAR (WY)

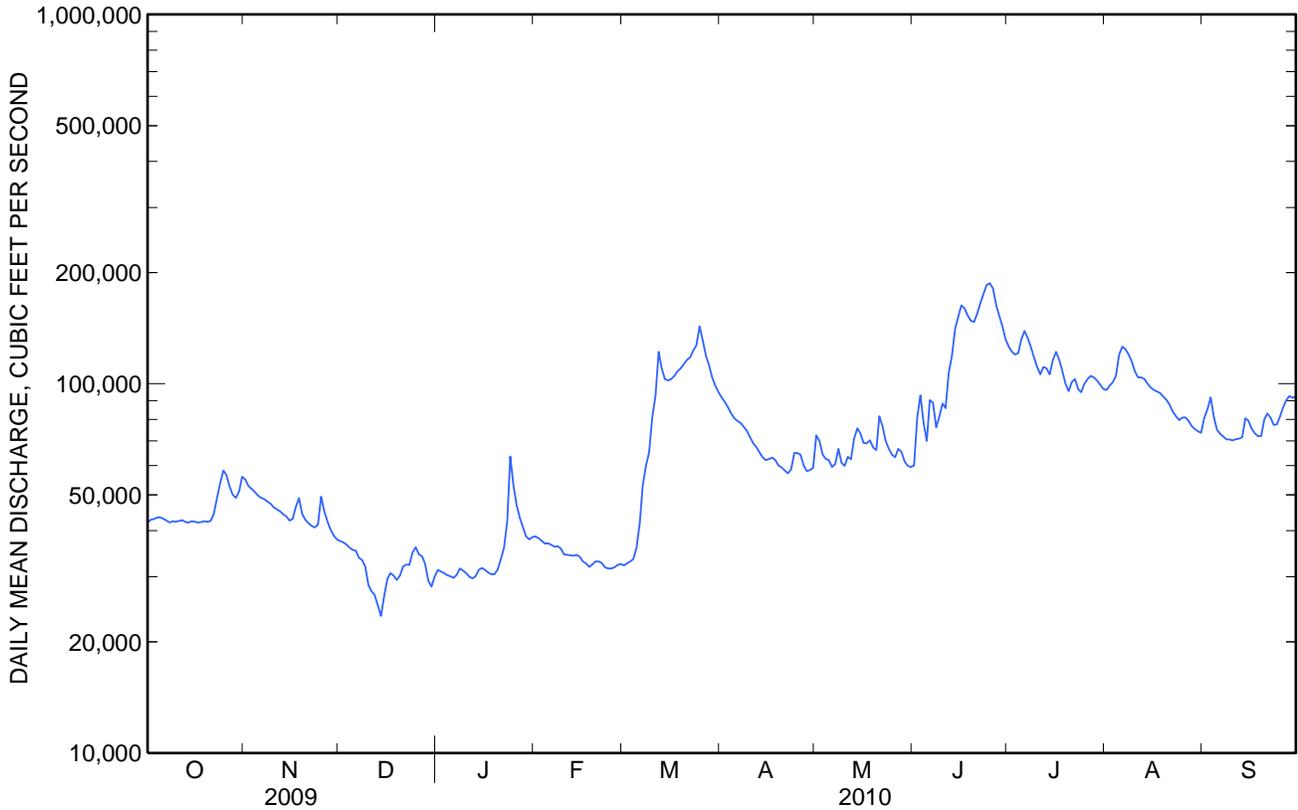
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	46,400	42,830	29,920	25,450	31,460	45,050	55,130	57,960	62,900	55,800	47,960	47,910
Max	87,650	85,040	61,820	45,740	60,570	96,800	113,600	106,600	144,700	195,400	95,670	79,160
(WY)	(1987)	(1998)	(1987)	(1973)	(1983)	(1979)	(1984)	(1997)	(1984)	(1993)	(2010)	(1997)
Min	25,890	18,510	11,560	12,210	15,790	19,490	32,920	36,390	34,650	31,450	30,900	31,670
(WY)	(2007)	(1991)	(1964)	(1959)	(1964)	(1964)	(1990)	(1958)	(2006)	(2002)	(2003)	(2005)

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SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1958 - 2010 ^a	
Annual mean	42,280		69,440		45,770	
Highest annual mean					76,050	1997
Lowest annual mean					29,790	2006
Highest daily mean	81,300	Jun 16	187,000	Jun 25	328,000	Jul 26, 1993
Lowest daily mean	20,300	Mar 4	23,500	Dec 14	4,000	Jan 17, 1963
Annual seven-day minimum	24,200	Jan 29	26,800	Dec 10	5,030	Dec 15, 1963
Maximum peak flow			190,000	Jun 25	335,000	Jul 26, 1993
Maximum peak stage			26.17	Jun 25	32.07	Jul 26, 1993
Instantaneous low flow			23,200	Dec 14	4,000	Jan 17, 1963
Annual runoff (inches)	1.35		2.21		1.46	
10 percent exceeds	56,700		119,000		72,200	
50 percent exceeds	42,400		63,200		41,000	
90 percent exceeds	26,500		31,800		21,500	

^a Period of Regulated Streamflow



06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--October 1969 to July 1992, November 1992 to current year. National Stream-Quality Accounting Network station October 1974 to September 1986. Ambient Water-Quality Monitoring Network station October 1969 to July 1992, November 1992 to current year. Discrete suspended and bed material sediment collection October 1947 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: February 2006 to current year (Seasonally).

pH: February 2006 to September 2007.

WATER TEMPERATURE: May 1984 to December 1984, July 1985 to September 1985, April 1986 to September 1986, February 2006 to current year (Seasonally).

DISSOLVED OXYGEN: May 1984 to November 1984, July 1985 to September 1985, April 1986 to September 1986, February 2006 to current year (Seasonally).

TURBIDITY: February 2006 to current year (Seasonally).

SUSPENDED-SEDIMENT CONCENTRATION: October 2008 to current year.

SUSPENDED-SEDIMENT LOAD: October 2008 to current year.

INSTRUMENTATION.--Water-quality monitor, May 1984 to December 1984, July 1985 to September 1985, April 1986 to September 1986, February 2006 to current year. U.S.G.S. satellite telemeter at station.

REMARKS.--The magnitude of extreme turbidity values has been found to vary depending on the probe used. The manufacturer's specified range for turbidity sensors used is 0 to 1,000 FNU. Values >1,000 FNU have been maintained in some cases for continuity of the record. All values greater than the manufacturer's specified limit should be considered as >1,000 FNU. In some cases partial daily maximum or minimum values were included with the record and were rated poor because no corresponding daily mean or median values were reported for these days. These values were reported because they are representative of stream conditions at the time and are a valid part of the record.

SPECIFIC CONDUCTANCE: Record is rated excellent, except for the following periods: Nov. 8, 10, 28-30, Dec 2, June 18, rated poor.

WATER TEMPERATURE: Record is rated excellent, except for the following periods: Nov. 8, 10, Apr. 27-28, rated poor.

DISSOLVED OXYGEN: Record is rated excellent, except for the following periods: Aug. 26-27, rated good; Nov. 8, 10, Apr. 27-28, June 16-17, rated poor.

TURBIDITY: Record is rated excellent, except for the following periods: Nov. 8, 10, Mar. 25, Apr. 26, 28, June 12, 18-19, rated poor. Data collected using a YSI 6136 turbidity sensor.

SUSPENDED SEDIMENT: Record is rated fair, except for estimated daily values, which are poor.

Interruptions or periods of missing record may be due to instrument failure, ice conditions, or data corrections exceeding allowable criteria, which were deleted.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 842 $\mu\text{S}/\text{cm}$, Jan. 20, 2007, but may have been higher during periods of missing record; minimum recorded 308 $\mu\text{S}/\text{cm}$, May 8, 2007.

pH: Maximum recorded, 8.8 standard units, June 15-19, Aug. 24-25, Oct. 10, 2006; minimum recorded, 7.6 standard units, May 6-11, 24-27, 2007.

WATER TEMPERATURE: Maximum recorded, 31.2 $^{\circ}\text{C}$, Jul. 20, 2006; minimum recorded, -0.2 $^{\circ}\text{C}$, Jan. 16, 30, Feb. 10, 16, 18, 2007, Jan. 2, 17-18, 2008.

DISSOLVED OXYGEN: Maximum recorded 13.6 mg/L, Jan. 2-4, 2008; minimum recorded, 1.0 mg/L, Jul. 21, 1985, but may have been lower during periods of missing record.

TURBIDITY: Maximum recorded, 1990 FNU, May 6, 2007, but may have been higher during periods of missing record; minimum recorded, 2.5 FNU, Jan. 3, 2008, but may have been lower during periods of missing record; .

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 835 $\mu\text{S}/\text{cm}$, Jan. 20, 2007, but may have been higher during periods of missing record; minimum daily, 313 $\mu\text{S}/\text{cm}$, May 8, 2007.

pH: Maximum daily, 8.8 standard units, Jun., 16, 18, 2006; minimum daily, 7.6 standard units, May 7-10, 25-26, 2007.

WATER TEMPERATURE: Maximum daily, 30.7 $^{\circ}\text{C}$, Jul. 20, 2006; minimum daily, -0.1 $^{\circ}\text{C}$, several days Jan.-Feb., 2007, Jan.-Feb., 2008.

DISSOLVED OXYGEN: Maximum daily, 13.5 mg/L, Jan. 3, 2008, but may have been higher during periods of missing record; minimum daily, 1.8 mg/L, Jul. 21, 1985, but may have been lower during periods of missing record.

TURBIDITY: Maximum daily, 1,780, May 7, 2007, but may have been higher during periods of missing record; minimum daily, 6.9 FNU, Jan. 25, 2008, but may have been lower during periods of missing record.

SUSPENDED-SEDIMENT CONCENTRATION: Maximum daily, 3,710 mg/L, Apr. 28, 2009; minimum daily, 238 mg/L, Dec. 14, 2009.

SUSPENDED-SEDIMENT LOAD: Maximum daily, 799,000 tons, Jun. 6, 2009; minimum daily, 11,700 tons, Dec. 14, 2009.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 823 $\mu\text{S}/\text{cm}$, Nov. 16; minimum recorded, 499 $\mu\text{S}/\text{cm}$, Jun. 14.

WATER TEMPERATURE: Maximum recorded, 29.7 $^{\circ}\text{C}$, Aug. 11, 12; minimum recorded, 3.7 $^{\circ}\text{C}$, Mar. 17, 21, 22.

DISSOLVED OXYGEN: Maximum recorded, 11.2 mg/L, Nov. 30, Dec. 1; minimum recorded, 2.8 mg/L, Jun. 13.

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TURBIDITY: Maximum recorded, 1,240 FNU, June 12, but may have been higher during periods of missing record; minimum recorded, 29 FNU, Oct. 19, Nov. 22-24.

SUSPENDED-SEDIMENT CONCENTRATION: Maximum daily mean 2,610 mg/L, Jun 3; minimum daily mean 238 mg/L, Dec 14.

SUSPENDED-SEDIMENT LOAD: Maximum daily 571,000 tons, Jun 12; minimum daily 11,700 tons, Dec 14.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 1 of 6

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; MF, membrane filter; N, nitrogen; P, phosphorus; col/100 mL, colonies per 100 milliliters; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm, millimeters; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	Sample start time	Medium name	Sample type	Temperature, air, °C (00020)	Discharge, instantaneous, ft ³ /s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)	Specific conductance, water, unfiltered, μS/cm at 25 °C (00095)
10-29-2009	1200	Surface water	Regular	12.0	42,200	10.5	96	8.1	723
11-19-2009	1040	Surface water	Regular	10.0	44,400	12.8	110	8.3	788
12-21-2009	1135	Surface water	Regular	7.0	32,000	14.7	107	7.8	874
12-21-2009	1136	<i>QC sample - Surface water</i>	<i>Replicate</i>	--	--	--	--	--	--
01-06-2010	1020	Surface water	Regular	-7.2	29,500	13.5	94	7.7	624
02-03-2010	1135	Surface water	Regular	2.0	37,500	13.4	95	8.1	750
03-09-2010	1100	Surface water	Regular	9.9	63,200	11.8	94	8.0	549
04-27-2010	1130	Surface water	Regular	19.0	59,400	9.1	94	8.2	725
05-25-2010	1120	Surface water	Regular	31.0	64,100	8.7	102	8.3	773
06-24-2010	1050	Surface water	Regular	26.0	185,000	4.2	52	7.7	545
07-20-2010	1045	Surface water	Regular	24.0	95,200	5.7	76	8.0	754
08-06-2010	1110	Surface water	Regular	27.5	126,000	5.3	69	7.8	629
09-01-2010	1055	Surface water	Regular	25.0	80,300	7.0	89	8.0	791

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 2 of 6

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; MF, membrane filter; N, nitrogen; P, phosphorus; col/100 mL, colonies per 100 milliliters; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm, millimeters; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	Temperature, water, °C (00010)	Dissolved solids dried at 180 °C, water, filtered, mg/L (70300)	Hardness, water, mg/L as CaCO ₃ (00900)	Suspended solids, water, unfiltered, mg/L (00530)	Calcium, water, filtered, mg/L (00915)	Magne- sium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	ANC, water, unfiltered, inflection- point, incremental titration method, field, mg/L as CaCO ₃ (00419)
10-29-2009	9.9	480	273	161	69.5	24.1	7.19	52.1	187
11-19-2009	8.0	--	--	178	--	--	--	--	--
12-21-2009	1.3	--	--	45	--	--	--	--	--
12-21-2009	--	--	--	72	--	--	--	--	--
01-06-2010	.1	521	283	92	69.9	26.2	6.19	49.6	213
02-03-2010	.8	--	--	64	--	--	--	--	--
03-09-2010	4.0	--	--	602	--	--	--	--	--
04-27-2010	15.6	--	--	516	--	--	--	--	--
05-25-2010	21.8	504	305	169	74.6	28.7	6.74	45.3	202
06-24-2010	25.5	--	--	314	--	--	--	--	--
07-20-2010	28.5	503	285	354	71.5	25.9	8.62	44.5	204
08-06-2010	27.7	--	--	965	--	--	--	--	--
09-01-2010	25.6	--	--	281	--	--	--	--	--

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 3 of 6

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; MF, membrane filter; N, nitrogen; P, phosphorus; col/100 mL, colonies per 100 milliliters; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm, millimeters; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	Bi-carbonate, water, unfiltered, inflection-point, incremental	Carbonate, water, unfiltered, inflection-point, incremental	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	Sulfate, water, filtered, mg/L (00945)	Ammonia plus organic	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus	Nitrite, water, filtered, mg/L as N (00613)
	titration method, field, mg/L (00450)	titration method, field, mg/L (00447)				nitrogen, water, unfiltered, mg/L as N (00625)		nitrite, water, filtered, mg/L as N (00631)	
10-29-2009	225	1.3	18.1	.46	163	.94	.025	1.57	.007
11-19-2009	--	--	--	--	--	.83	.037	1.81	.007
12-21-2009	--	--	--	--	--	.70	.132	2.48	.008
12-21-2009	--	--	--	--	--	.60	.134	2.46	.008
01-06-2010	259	.6	22.5	.41	155	.67	.111	2.12	.009
02-03-2010	--	--	--	--	--	.56	.101	2.59	.016
03-09-2010	--	--	--	--	--	2.6	.178	2.17	.018
04-27-2010	--	--	--	--	--	1.8	.039	2.61	.033
05-25-2010	246	2	19.2	.44	168	1.1	< .020	2.53	.013
06-24-2010	--	--	--	--	--	1.7	.051	2.35	.094
07-20-2010	245	1.7	18.1	.39	163	1.5	< .020	1.94	.036
08-06-2010	--	--	--	--	--	2.4	E .017	2.14	.048
09-01-2010	--	--	--	--	--	1.1	E .020	1.20	.008

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 4 of 6

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; MF, membrane filter; N, nitrogen; P, phosphorus; col/100 mL, colonies per 100 milliliters; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm, millimeters; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated
 Microbiology results with a remark code of E are based on non-ideal colony counts.]

Date	Orthophosphate, water, filtered, mg/L as P (00671)	Phosphorus, water, filtered, mg/L as P (00666)	Phosphorus, water, unfiltered, mg/L as P (00665)	Escherichia coli, modified m-TEC MF method, water, col/100 mL (90902)	Fecal coliform, M-FC MF (0.7 micron) method, water, col/100 mL (31625)	Aluminum, water, filtered, μg/L (01106)	Aluminum, water, unfiltered, recoverable, μg/L (01105)	Cadmium, water, filtered, μg/L (01025)	Cadmium, water, unfiltered, μg/L (01027)
10-29-2009	.116	.13	.39	1,000	1,300	< 3.4	2,550	.03	.26
11-19-2009	.147	.15	.32	2,600	2,400	--	--	--	--
12-21-2009	.109	.11	.24	460	330	--	--	--	--
12-21-2009	.106	.10	.19	--	--	--	--	--	--
01-06-2010	.092	.08	.23	76	92	< 3.4	1,070	E .02	.09
02-03-2010	.118	.10	.28	180	180	--	--	--	--
03-09-2010	.152	.21	1.46	1,100	980	--	--	--	--
04-27-2010	.128	.13	.66	1,300	1,300	--	--	--	--
05-25-2010	.089	.09	.40	E 54	E 83	67.5	2,090	.02	.13
06-24-2010	.151	.15	.56	780	570	--	--	--	--
07-20-2010	.189	.19	.60	230	220	8.0	3,450	E .02	.21
08-06-2010	.173	.17	1.16	2,100	E 2,100	--	--	--	--
09-01-2010	.105	.11	.55	1,100	830	--	--	--	--

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 5 of 6

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; MF, membrane filter; N, nitrogen; P, phosphorus; col/100 mL, colonies per 100 milliliters; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm, millimeters; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	Copper, water, filtered, μg/L (01040)	Iron, water, filtered, μg/L (01046)	Lead, water, filtered, μg/L (01049)	Lead, water, unfiltered, recover- able, μg/L (01051)	Lithium, water, filtered, μg/L (01130)	Manga- nese, water, filtered, μg/L (01056)	Mercury, water, unfiltered, recover- able, μg/L (71900)	Strontium, water, filtered, μg/L (01080)	Zinc, water, filtered, μg/L (01090)	Zinc, water, unfiltered, recover- able, μg/L (01092)
10-29-2009	1.2	E 3	E .02	4.78	55	.7	E .007	504	< 2.8	16.7
11-19-2009	--	--	--	--	--	--	--	--	--	--
12-21-2009	--	--	--	--	--	--	--	--	--	--
12-21-2009	--	--	--	--	--	--	--	--	--	--
01-06-2010	E .85	E 3	< .03	1.52	56	10.7	< .010	533	< 2.8	8.2
02-03-2010	--	--	--	--	--	--	--	--	--	--
03-09-2010	--	--	--	--	--	--	--	--	--	--
04-27-2010	--	--	--	--	--	--	--	--	--	--
05-25-2010	1.7	26	.06	4.06	56	4.4	< .010	468	< 2.8	13.3
06-24-2010	--	--	--	--	--	--	--	--	--	--
07-20-2010	1.9	E 6	.03	5.98	49	3.2	.011	441	< 2.8	21.4
08-06-2010	--	--	--	--	--	--	--	--	--	--
09-01-2010	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER
2010

Part 6 of 6

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; MF, membrane filter; N, nitrogen; P, phosphorus; col/100 mL, colonies per 100 milliliters; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm, millimeters; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	Arsenic, water, filtered, μg/L (01000)	Boron, water, filtered, μg/L (01020)	Selenium, water, filtered, μg/L (01145)
10-29-2009	3.3	103	2.9
11-19-2009	--	--	--
12-21-2009	--	--	--
12-21-2009	--	--	--
01-06-2010	2.4	100	3.2
02-03-2010	--	--	--
04-27-2010	--	--	--
05-25-2010	1.6	90	.46
06-24-2010	--	--	--
07-20-2010	5.8	97	3.1
07-20-2010	--	--	--
08-06-2010	--	--	--
09-01-2010	--	--	--

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 1 of 2

[ft³/s, cubic feet per second; mg/L, milligrams per liter; mm, millimeters; °C, degrees Celsius]

Date	Sample start time	Medium name	Sample type	Discharge, instantaneous, ft ³ /s (00061)	Temperature, water, °C (00010)	Suspended sediment, fall diameter (deionized water), percent smaller than 0.0625 mm (70342)	Suspended sediment, fall diameter (deionized water), percent smaller than 0.125 mm (70343)	Suspended sediment, fall diameter (deionized water), percent smaller than 0.5 mm (70345)	Suspended sediment, sieve diameter, percent smaller than 0.0625 mm (70331)
12-21-2009	1145	Surface water	Regular	32,000	1.0	--	--	--	32
01-27-2010	1050	Surface water	Regular	43,600	.5	64	68	100	--
02-03-2010	1225	Surface water	Regular	37,500	1.0	--	--	--	36
03-09-2010	1100	Surface water	Regular	63,200	4.0	--	--	--	84
03-22-2010	1120	Surface water	Regular	118,000	4.0	62	77	97	--
04-15-2010	1305	Surface water	Regular	61,800	6.2	--	--	--	64
04-20-2010	1045	Surface water	Regular	59,400	16.0	--	--	--	53
04-27-2010	1150	Surface water	Regular	59,900	15.0	--	--	--	70
05-04-2010	1030	Surface water	Regular	62,400	19.0	--	--	--	64
05-21-2010	1030	Surface water	Regular	83,200	17.0	--	--	--	87
05-25-2010	1130	Surface water	Regular	64,000	23.0	--	--	--	62
06-07-2010	1130	Surface water	Regular	89,100	24.0	92	95	100	--
06-11-2010	1045	Surface water	Regular	83,300	24.0	--	--	--	90
06-17-2010	1105	Surface water	Regular	160,000	23.0	--	--	--	57
06-24-2010	1055	Surface water	Regular	184,000	27.0	--	--	--	80
07-07-2010	1050	Surface water	Regular	133,000	25.0	87	92	99	--
07-14-2010	1050	Surface water	Regular	106,000	27.0	--	--	--	78
07-20-2010	1057	Surface water	Regular	95,300	28.0	--	--	--	86
08-05-2010	1105	Surface water	Regular	120,000	29.0	--	--	--	85
08-12-2010	1050	Surface water	Regular	104,000	30.0	--	--	--	64
08-18-2010	1100	Surface water	Regular	94,500	27.0	--	--	--	58
09-01-2010	1100	Surface water	Regular	80,300	26.0	67	78	99	--
09-07-2010	1145	Surface water	Regular	71,800	23.0	--	--	--	53
09-14-2010	1045	Surface water	Regular	82,300	23.0	--	--	--	75

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

**WATER-QUALITY DATA
WATER YEAR OCTOBER
2009 TO SEPTEMBER
2010**

Part 2 of 2

[ft³/s, cubic feet per
second; mg/L, milligrams
per liter; mm, millimeters;
°C, degrees Celsius]

Date	Suspended sediment concentration, mg/L (80154)
12-21-2009	242
01-27-2010	665
02-03-2010	277
03-09-2010	2,040
03-22-2010	1,730
04-15-2010	436
04-20-2010	420
04-27-2010	760
05-04-2010	761
05-21-2010	3,380
05-25-2010	430
06-07-2010	2,860
06-11-2010	1,780
06-17-2010	1,190
06-24-2010	566
07-07-2010	1,600
07-14-2010	691
07-20-2010	480
08-05-2010	1,450
08-12-2010	573
08-18-2010	460
09-01-2010	511
09-07-2010	390
09-14-2010	961

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 1 of 2

[ft³/s, cubic feet per second]

Date	Sample start time	Medium name	Sample type	Discharge, instantaneous, ft ³ /s (00061)	Bed sediment, dry sieved, sieve diameter, percent smaller than 2 millimeters (80169)	Bed sediment, dry sieved, sieve diameter, percent smaller than 4 millimeters (80170)	Bed sediment, dry sieved, sieve diameter, percent smaller than 8 millimeters (80171)	Bed sediment, fall diameter (deionized water), percent smaller than 0.0625 millimeters (80158)	Bed sediment, fall diameter (deionized water), percent smaller than 0.125 millimeters (80159)
01-27-2010	1031	Bottom material	Regular	43,600	--	--	--	.0	.0
01-27-2010	1038	Bottom material	Regular	43,600	--	--	--	.0	.0
01-27-2010	1041	Bottom material	Regular	43,600	--	--	--	.0	.0
01-27-2010	1044	Bottom material	Regular	43,600	50	61	100	.0	.0
07-07-2010	1100	Bottom material	Regular	133,000	--	--	--	.0	.0
07-07-2010	1102	Bottom material	Regular	133,000	92	100	--	.0	.0
07-07-2010	1106	Bottom material	Regular	133,000	52	85	100	1	1
07-07-2010	1108	Bottom material	Regular	133,000	95	100	--	1	1

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 2 of 2

[ft³/s, cubic feet per second]

Date	Bed sediment, fall diameter (deionized water), percent smaller than 0.25 millimeters (80160)	Bed sediment, fall diameter (deionized water), percent smaller than 0.5 millimeters (80161)	Bed sediment, fall diameter (deionized water), percent smaller than 1 millimeter (80162)	Bed sediment, fall diameter (deionized water), percent smaller than 2 millimeters (80163)
01-27-2010	15	80	99	--
01-27-2010	44	97	100	--
01-27-2010	62	97	100	--
01-27-2010	3	21	43	50
07-07-2010	4	50	97	--
07-07-2010	9	35	84	92
07-07-2010	1	5	7	52
07-07-2010	9	53	94	95

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	757	733	750	701	668	680	816	798	810	---	---	---
2	762	753	757	710	697	705	---	811	---	---	---	---
3	761	752	757	717	705	711	---	---	---	---	---	---
4	760	746	751	721	712	717	---	---	---	---	---	---
5	750	736	742	735	718	726	---	---	---	---	---	---
6	738	729	735	751	734	742	---	---	---	---	---	---
7	743	731	736	763	750	756	---	---	---	---	---	---
8	741	730	733	---	763	---	---	---	---	---	---	---
9	747	730	736	---	---	---	---	---	---	---	---	---
10	748	733	740	796	---	---	---	---	---	---	---	---
11	741	728	734	805	796	801	---	---	---	---	---	---
12	746	739	743	810	802	807	---	---	---	---	---	---
13	742	734	736	812	799	807	---	---	---	---	---	---
14	742	734	738	808	802	805	---	---	---	---	---	---
15	747	736	742	814	806	810	---	---	---	---	---	---
16	745	734	740	823	789	803	---	---	---	---	---	---
17	737	730	734	794	721	764	---	---	---	---	---	---
18	749	735	742	723	698	706	---	---	---	---	---	---
19	743	736	740	769	723	755	---	---	---	---	---	---
20	742	734	739	787	769	782	---	---	---	---	---	---
21	750	735	743	799	785	796	---	---	---	---	---	---
22	739	714	730	809	798	805	---	---	---	---	---	---
23	726	694	710	812	794	808	---	---	---	---	---	---
24	694	666	681	808	775	800	---	---	---	---	---	---
25	698	666	684	792	689	721	---	---	---	---	---	---
26	680	634	653	733	693	721	---	---	---	---	---	---
27	650	630	639	763	733	753	---	---	---	---	---	---
28	685	648	665	774	---	---	---	---	---	---	---	---
29	711	674	696	781	761	773	---	---	---	---	---	---
30	721	704	717	800	779	792	---	---	---	---	---	---
31	704	665	676	---	---	---	---	---	---	---	---	---
Month	762	630	723	---	---	---	---	---	---	---	---	---

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

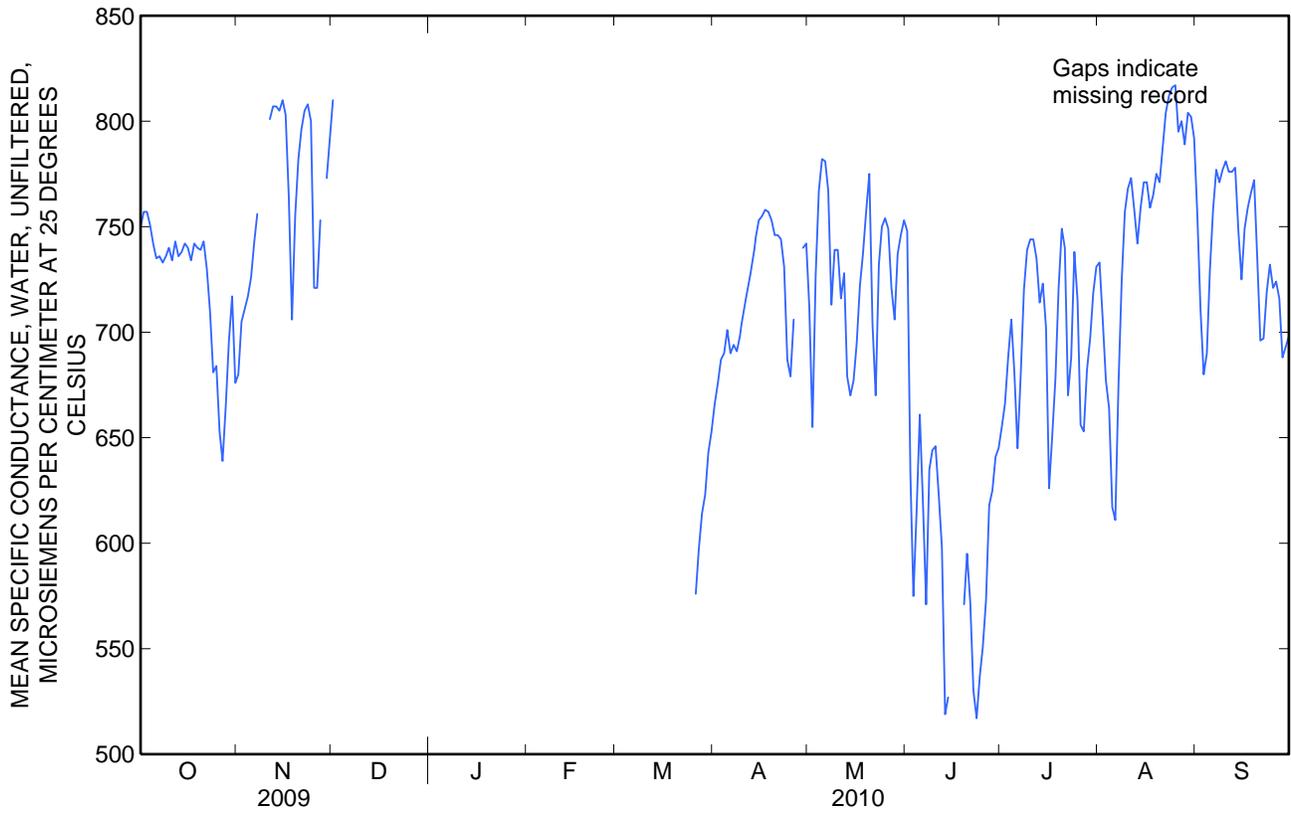
Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	---	---	---	---	---	---	671	658	666	755	652	712
2	---	---	---	---	---	---	682	651	676	702	635	655
3	---	---	---	---	---	---	690	681	687	755	702	727
4	---	---	---	---	---	---	694	688	690	778	755	767
5	---	---	---	---	---	---	709	693	701	784	778	782
6	---	---	---	---	---	---	697	686	690	785	775	781
7	---	---	---	---	---	---	699	686	694	779	736	767
8	---	---	---	---	---	---	699	680	691	736	696	713
9	---	---	---	---	---	---	703	693	698	743	727	739
10	---	---	---	---	---	---	716	702	709	756	699	739
11	---	---	---	---	---	---	720	714	716	732	708	716
12	---	---	---	---	---	---	730	720	725	735	646	728
13	---	---	---	---	---	---	740	729	734	709	646	679
14	---	---	---	---	---	---	748	739	745	684	658	670
15	---	---	---	---	---	---	757	747	753	686	668	677
16	---	---	---	---	---	---	759	744	755	712	684	695
17	---	---	---	---	---	---	761	753	758	737	683	722
18	---	---	---	---	---	---	760	754	757	744	729	737
19	---	---	---	---	---	---	758	750	753	777	739	757
20	---	---	---	---	---	---	750	744	746	781	762	775
21	---	---	---	---	---	---	749	741	746	779	635	704
22	---	---	---	---	---	---	748	735	744	706	636	670
23	---	---	---	---	---	---	745	706	731	745	706	732
24	---	---	---	---	---	---	706	673	687	755	742	750
25	---	---	---	---	---	---	690	659	679	761	749	754
26	---	---	---	590	556	576	726	680	706	750	747	749
27	---	---	---	614	584	597	---	---	---	749	662	721
28	---	---	---	617	608	614	---	---	---	727	662	706
29	---	---	---	632	617	623	746	733	740	744	726	737
30	---	---	---	649	632	643	753	725	742	753	737	746
31	---	---	---	659	644	653	---	---	---	758	747	753
Month	---	---	---	---	---	---	---	---	---	785	635	728

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	755	708	748	662	648	655	735	732	733	785	669	756
2	711	506	633	675	661	666	732	677	706	729	689	711
3	601	507	575	702	675	688	679	675	677	689	663	680
4	666	563	615	718	634	706	676	651	664	702	684	690
5	683	648	661	705	646	681	651	589	617	749	702	729
6	683	594	619	662	635	645	643	588	611	768	749	758
7	613	538	571	706	662	680	701	643	675	782	768	777
8	651	593	635	733	706	720	745	701	724	774	769	771
9	653	634	644	743	733	739	767	745	757	780	770	777
10	654	635	646	748	740	744	770	766	768	784	770	781
11	641	611	623	749	658	744	776	769	773	778	774	776
12	641	550	598	753	711	735	772	744	758	781	773	776
13	550	501	519	744	689	714	753	650	742	784	693	778
14	572	499	527	733	650	723	770	748	759	787	696	748
15	---	---	---	737	637	702	773	769	771	744	711	725
16	---	---	---	653	610	626	773	767	771	755	743	749
17	---	---	---	657	645	651	767	755	759	768	753	759
18	546	---	---	701	655	678	773	760	765	768	764	766
19	586	544	571	738	701	721	780	771	775	774	768	772
20	602	564	595	760	737	749	786	672	771	774	708	734
21	600	541	572	760	689	740	799	776	787	708	687	696
22	541	513	530	689	658	670	813	799	804	717	687	697
23	525	510	517	707	682	688	817	807	812	730	662	719
24	545	525	537	755	707	738	819	813	816	735	724	732
25	558	545	551	755	667	715	821	813	817	735	703	721
26	596	558	573	668	638	656	814	785	795	745	704	724
27	633	596	618	667	638	653	803	791	800	745	688	716
28	635	618	625	690	667	682	797	784	789	697	682	688
29	648	630	641	706	689	697	809	797	804	699	687	693
30	648	642	645	730	705	719	815	794	802	700	694	698
31	---	---	---	734	728	731	798	716	792	---	---	---
Month	---	---	---	760	610	699	821	588	755	787	662	737

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued



06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	18.8	17.9	18.4	10.6	10.1	10.3	6.5	6.1	6.3	---	---	---
2	17.9	16.4	17.2	10.4	10.1	10.3	---	---	---	---	---	---
3	16.4	15.3	15.7	10.3	10.0	10.2	---	---	---	---	---	---
4	15.4	14.8	15.1	10.1	9.4	9.7	---	---	---	---	---	---
5	15.1	14.6	14.9	9.4	8.8	9.0	---	---	---	---	---	---
6	15.1	14.6	14.9	9.7	9.0	9.4	---	---	---	---	---	---
7	14.6	13.8	14.1	10.0	9.6	9.8	---	---	---	---	---	---
8	13.8	13.3	13.6	---	9.7	---	---	---	---	---	---	---
9	13.4	12.9	13.2	---	---	---	---	---	---	---	---	---
10	13.2	12.1	12.7	11.2	---	---	---	---	---	---	---	---
11	12.1	10.9	11.4	11.3	10.9	11.1	---	---	---	---	---	---
12	10.9	10.6	10.8	11.2	10.8	11.0	---	---	---	---	---	---
13	10.8	10.3	10.6	10.8	10.6	10.7	---	---	---	---	---	---
14	10.3	10.0	10.0	10.8	10.5	10.7	---	---	---	---	---	---
15	10.0	9.6	9.8	10.5	10.0	10.3	---	---	---	---	---	---
16	9.6	9.4	9.5	10.0	8.8	9.4	---	---	---	---	---	---
17	9.6	9.3	9.4	8.8	7.8	8.1	---	---	---	---	---	---
18	9.8	9.1	9.4	7.8	7.6	7.7	---	---	---	---	---	---
19	10.4	9.5	9.9	8.2	7.8	8.0	---	---	---	---	---	---
20	11.3	10.4	10.8	8.2	7.9	8.0	---	---	---	---	---	---
21	12.0	11.3	11.7	8.0	7.7	7.9	---	---	---	---	---	---
22	12.2	11.6	11.9	8.2	8.0	8.1	---	---	---	---	---	---
23	11.6	10.6	11.1	8.7	8.1	8.3	---	---	---	---	---	---
24	10.6	10.0	10.2	8.8	8.6	8.8	---	---	---	---	---	---
25	10.0	9.6	9.8	8.7	8.1	8.4	---	---	---	---	---	---
26	9.6	9.0	9.2	8.1	7.3	7.7	---	---	---	---	---	---
27	9.0	8.5	8.7	7.5	7.0	7.3	---	---	---	---	---	---
28	9.7	8.9	9.2	7.3	7.0	7.2	---	---	---	---	---	---
29	10.5	9.7	10.0	7.2	6.7	7.1	---	---	---	---	---	---
30	10.6	10.3	10.4	6.7	6.3	6.5	---	---	---	---	---	---
31	10.4	10.1	10.3	---	---	---	---	---	---	---	---	---
Month	18.8	8.5	11.7	---	---	---	---	---	---	---	---	---

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

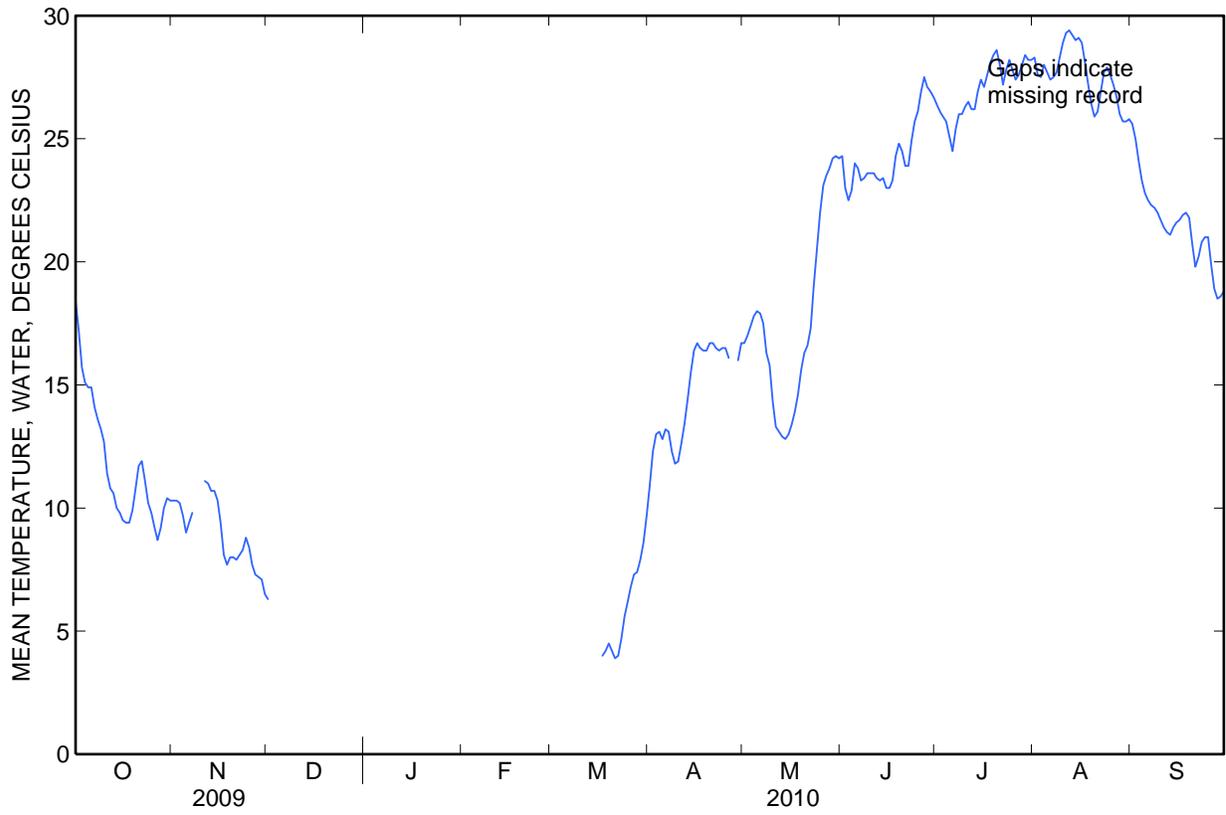
Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	---	---	---	---	---	---	11.8	10.3	10.9	17.1	16.4	16.7
2	---	---	---	---	---	---	12.8	11.8	12.3	17.4	16.8	17.0
3	---	---	---	---	---	---	13.4	12.6	13.0	17.9	17.0	17.4
4	---	---	---	---	---	---	13.3	12.8	13.1	18.2	17.3	17.8
5	---	---	---	---	---	---	13.0	12.5	12.8	18.4	17.6	18.0
6	---	---	---	---	---	---	13.7	12.8	13.2	18.1	17.6	17.9
7	---	---	---	---	---	---	13.6	12.5	13.1	17.9	17.1	17.5
8	---	---	---	---	---	---	12.6	12.0	12.3	17.1	15.9	16.3
9	---	---	---	---	---	---	12.3	11.5	11.8	16.2	15.2	15.8
10	---	---	---	---	---	---	12.4	11.4	11.9	15.2	13.5	14.3
11	---	---	---	---	---	---	13.1	12.1	12.6	13.5	13.1	13.3
12	---	---	---	---	---	---	14.0	13.0	13.4	13.5	12.9	13.1
13	---	---	---	---	---	---	15.1	13.9	14.4	13.1	12.8	12.9
14	---	---	---	---	---	---	16.2	15.0	15.5	13.1	12.5	12.8
15	---	---	---	---	---	---	16.8	16.0	16.4	13.2	12.8	13.0
16	---	---	---	---	---	---	16.8	16.5	16.7	13.6	13.2	13.4
17	---	---	---	4.2	3.7	4.0	16.8	16.2	16.5	14.4	13.6	13.9
18	---	---	---	4.5	4.0	4.2	16.6	16.1	16.4	15.1	14.2	14.6
19	---	---	---	4.7	4.3	4.5	16.9	16.0	16.4	16.1	15.1	15.6
20	---	---	---	4.3	4.1	4.2	16.9	16.3	16.7	16.7	16.1	16.3
21	---	---	---	4.1	3.7	3.9	16.8	16.5	16.7	16.8	16.4	16.6
22	---	---	---	4.4	3.7	4.0	16.7	16.4	16.5	18.3	16.6	17.3
23	---	---	---	5.3	4.4	4.7	16.7	16.1	16.4	19.8	18.3	19.0
24	---	---	---	5.9	5.3	5.6	16.6	16.4	16.5	21.5	19.8	20.5
25	---	---	---	6.5	5.9	6.2	16.6	16.4	16.5	22.7	21.5	22.0
26	---	---	---	7.1	6.4	6.8	16.4	15.8	16.1	23.6	22.7	23.1
27	---	---	---	7.4	7.1	7.3	---	15.4	---	24.0	23.1	23.5
28	---	---	---	7.6	7.2	7.4	15.9	---	---	24.2	23.4	23.8
29	---	---	---	8.3	7.5	7.9	16.8	15.4	16.0	24.7	23.9	24.2
30	---	---	---	9.2	8.1	8.6	16.8	16.5	16.7	24.6	24.0	24.3
31	---	---	---	10.3	9.2	9.7	---	---	---	24.5	23.8	24.2
Month	---	---	---	---	---	---	---	---	---	24.7	12.5	17.6

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	24.7	23.9	24.3	26.6	26.2	26.4	28.6	28.1	28.3	26.0	25.2	25.6
2	24.0	21.8	23.0	26.2	25.9	26.1	28.2	27.2	27.6	25.2	24.7	25.0
3	23.0	21.8	22.5	26.1	25.8	25.9	28.0	27.0	27.5	24.7	23.8	24.1
4	23.7	22.4	22.9	25.8	25.2	25.7	28.2	27.8	28.0	23.8	23.0	23.3
5	24.5	23.6	24.0	25.4	24.6	25.1	28.0	27.3	27.7	23.1	22.5	22.8
6	24.4	23.4	23.8	24.8	24.4	24.5	27.8	27.2	27.4	22.8	22.2	22.5
7	23.6	23.1	23.3	25.8	24.8	25.4	27.7	27.4	27.5	22.6	22.1	22.3
8	23.6	23.0	23.4	26.1	25.8	26.0	28.1	27.4	27.7	22.4	22.0	22.2
9	23.9	23.3	23.6	26.2	25.9	26.0	28.8	27.9	28.3	22.2	21.8	22.0
10	23.8	23.4	23.6	26.8	26.0	26.3	29.3	28.5	28.9	21.9	21.6	21.7
11	23.9	23.3	23.6	26.7	25.8	26.5	29.7	29.0	29.3	21.7	21.1	21.4
12	23.9	23.2	23.4	26.3	26.1	26.2	29.7	29.2	29.4	21.4	20.9	21.2
13	23.6	23.1	23.3	26.7	25.7	26.2	29.5	28.5	29.2	21.5	20.7	21.1
14	23.6	23.2	23.4	27.4	26.4	26.9	29.4	28.6	29.0	21.8	21.1	21.4
15	23.2	22.8	23.0	27.7	26.7	27.4	29.3	28.8	29.1	21.7	21.4	21.6
16	23.3	22.8	23.0	27.5	26.8	27.1	29.1	28.7	28.9	21.8	21.5	21.7
17	23.8	23.0	23.3	28.0	27.2	27.6	28.7	27.5	28.1	22.3	21.5	21.9
18	24.8	23.8	24.3	28.4	27.9	28.1	27.5	27.0	27.2	22.1	21.9	22.0
19	25.0	24.7	24.8	28.8	28.0	28.4	27.0	26.2	26.4	21.9	21.6	21.8
20	24.7	24.4	24.5	28.8	28.4	28.6	26.2	25.4	25.9	21.7	20.0	20.7
21	24.4	23.7	23.9	28.5	27.3	28.0	26.6	25.6	26.1	20.1	19.5	19.8
22	24.5	23.5	23.9	27.7	26.8	27.2	27.5	26.4	26.9	20.6	19.8	20.2
23	25.6	24.4	24.9	28.3	27.3	27.8	28.2	27.3	27.7	21.3	20.5	20.8
24	26.0	25.4	25.7	28.4	28.1	28.2	28.1	27.7	27.9	21.4	20.6	21.0
25	26.6	25.8	26.1	28.2	27.4	27.8	27.9	27.2	27.6	21.3	20.4	21.0
26	27.4	26.5	26.9	27.7	27.1	27.4	27.6	26.8	27.2	20.4	19.3	19.9
27	27.6	27.3	27.5	28.0	27.3	27.6	27.1	26.4	26.7	19.3	18.6	18.9
28	27.4	27.0	27.1	28.4	27.7	28.0	26.4	25.6	26.0	18.7	18.2	18.5
29	27.1	26.8	26.9	28.7	28.1	28.4	26.0	25.3	25.7	18.9	18.3	18.6
30	26.8	26.6	26.7	28.4	28.1	28.2	25.9	25.3	25.7	19.1	18.6	18.8
31	---	---	---	28.6	27.8	28.2	26.2	25.4	25.8	---	---	---
Month	27.6	21.8	24.4	28.8	24.4	27.0	29.7	25.3	27.6	26.0	18.2	21.5

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued



06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	9.0	8.4	8.7	9.5	9.1	9.3	11.2	11.1	11.2	---	---	---
2	8.8	8.2	8.5	9.7	9.4	9.6	---	---	---	---	---	---
3	8.9	8.5	8.7	9.9	9.6	9.8	---	---	---	---	---	---
4	9.2	8.6	8.9	10.1	9.7	9.9	---	---	---	---	---	---
5	9.3	8.8	9.1	10.2	10.0	10.1	---	---	---	---	---	---
6	9.5	9.0	9.3	10.2	10.0	10.1	---	---	---	---	---	---
7	9.7	9.2	9.5	10.1	9.9	10.0	---	---	---	---	---	---
8	9.5	9.2	9.3	---	9.9	---	---	---	---	---	---	---
9	9.6	9.2	9.3	---	---	---	---	---	---	---	---	---
10	9.6	9.3	9.5	10.0	---	---	---	---	---	---	---	---
11	9.9	9.6	9.7	10.0	9.9	10.0	---	---	---	---	---	---
12	10.0	9.7	9.9	10.1	9.9	10.0	---	---	---	---	---	---
13	10.2	9.9	10.0	10.1	10.0	10.1	---	---	---	---	---	---
14	10.2	10.1	10.2	10.0	9.9	10.0	---	---	---	---	---	---
15	10.2	10.1	10.2	10.1	9.9	10.0	---	---	---	---	---	---
16	10.3	10.1	10.2	10.2	10.0	10.1	---	---	---	---	---	---
17	10.5	10.2	10.3	10.4	10.2	10.3	---	---	---	---	---	---
18	10.6	10.3	10.4	10.4	10.2	10.3	---	---	---	---	---	---
19	10.6	10.4	10.5	10.5	10.3	10.5	---	---	---	---	---	---
20	10.4	10.2	10.3	10.8	10.5	10.6	---	---	---	---	---	---
21	10.2	9.9	10.0	10.8	10.7	10.8	---	---	---	---	---	---
22	9.9	9.5	9.7	10.8	10.7	10.8	---	---	---	---	---	---
23	9.5	9.1	9.3	10.8	10.5	10.7	---	---	---	---	---	---
24	9.2	9.1	9.2	10.6	10.5	10.5	---	---	---	---	---	---
25	9.5	9.2	9.4	10.5	9.6	10.0	---	---	---	---	---	---
26	9.6	9.5	9.5	10.6	10.0	10.3	---	---	---	---	---	---
27	9.8	9.6	9.7	10.8	10.6	10.7	---	---	---	---	---	---
28	9.9	9.7	9.8	10.9	10.8	10.8	---	---	---	---	---	---
29	9.8	9.6	9.7	11.0	10.9	10.9	---	---	---	---	---	---
30	9.7	9.5	9.6	11.2	11.0	11.1	---	---	---	---	---	---
31	9.5	9.0	9.1	---	---	---	---	---	---	---	---	---
Month	10.6	8.2	9.6	---	---	---	---	---	---	---	---	---

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

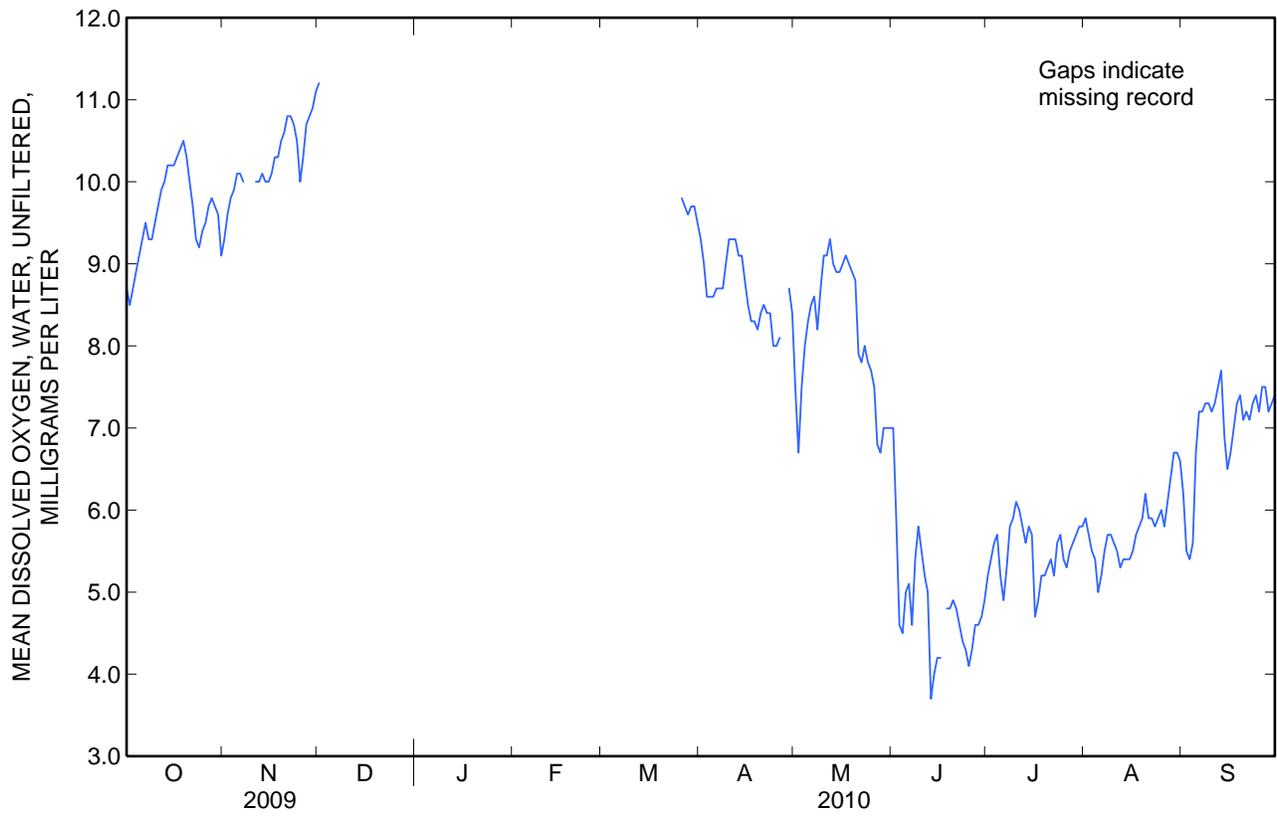
Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	---	---	---	---	---	---	9.4	9.1	9.3	8.3	6.6	7.5
2	---	---	---	---	---	---	9.2	8.7	9.0	7.1	6.2	6.7
3	---	---	---	---	---	---	8.8	8.5	8.6	7.7	7.1	7.5
4	---	---	---	---	---	---	8.6	8.4	8.6	8.3	7.7	8.0
5	---	---	---	---	---	---	8.7	8.5	8.6	8.5	8.1	8.3
6	---	---	---	---	---	---	8.8	8.6	8.7	8.7	8.3	8.5
7	---	---	---	---	---	---	8.8	8.6	8.7	8.9	8.4	8.6
8	---	---	---	---	---	---	8.9	8.4	8.7	8.6	8.0	8.2
9	---	---	---	---	---	---	9.2	8.8	9.0	9.0	8.4	8.7
10	---	---	---	---	---	---	9.4	9.2	9.3	9.3	8.9	9.1
11	---	---	---	---	---	---	9.4	9.3	9.3	9.3	9.0	9.1
12	---	---	---	---	---	---	9.3	9.2	9.3	9.3	9.2	9.3
13	---	---	---	---	---	---	9.3	9.0	9.1	9.3	8.8	9.0
14	---	---	---	---	---	---	9.2	8.9	9.1	9.1	8.7	8.9
15	---	---	---	---	---	---	9.0	8.6	8.8	9.1	8.8	8.9
16	---	---	---	---	---	---	8.7	8.3	8.5	9.1	8.9	9.0
17	---	---	---	---	---	---	8.5	8.2	8.3	9.2	9.0	9.1
18	---	---	---	---	---	---	8.4	8.1	8.3	9.1	8.8	9.0
19	---	---	---	---	---	---	8.6	8.0	8.2	9.1	8.8	8.9
20	---	---	---	---	---	---	8.7	8.2	8.4	9.0	8.6	8.8
21	---	---	---	---	---	---	8.7	8.3	8.5	8.6	7.2	7.9
22	---	---	---	---	---	---	8.6	8.2	8.4	8.0	7.4	7.8
23	---	---	---	---	---	---	8.6	8.2	8.4	8.1	7.8	8.0
24	---	---	---	---	---	---	8.3	7.6	8.0	8.1	7.6	7.8
25	---	---	---	---	---	---	8.1	7.8	8.0	7.9	7.4	7.7
26	---	---	---	9.8	9.8	9.8	8.3	8.0	8.1	7.8	7.3	7.5
27	---	---	---	9.8	9.6	9.7	---	8.0	---	7.5	5.9	6.8
28	---	---	---	9.7	9.6	9.6	8.7	---	---	6.9	6.0	6.7
29	---	---	---	9.7	9.6	9.7	8.8	8.6	8.7	7.2	6.8	7.0
30	---	---	---	9.7	9.6	9.7	8.6	8.2	8.4	7.3	6.8	7.0
31	---	---	---	9.7	9.4	9.5	---	---	---	7.4	6.5	7.0
Month	---	---	---	---	---	---	---	---	---	9.3	5.9	8.1

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	7.3	6.8	7.0	5.3	5.0	5.2	6.0	5.7	5.9	6.9	5.0	6.2
2	7.3	4.1	5.9	5.6	5.3	5.4	5.9	5.5	5.7	5.8	5.0	5.5
3	5.1	3.7	4.6	5.7	5.6	5.6	5.6	5.4	5.5	5.8	5.0	5.4
4	5.0	3.8	4.5	5.9	5.5	5.7	5.5	5.3	5.4	6.2	5.2	5.6
5	5.5	4.7	5.0	5.7	4.9	5.2	5.4	4.8	5.0	7.1	6.2	6.7
6	5.7	4.8	5.1	5.0	4.8	4.9	5.4	4.9	5.2	7.4	7.0	7.2
7	5.3	3.8	4.6	5.6	5.0	5.3	5.7	5.4	5.5	7.4	7.1	7.2
8	5.8	4.8	5.4	5.8	5.6	5.8	5.7	5.6	5.7	7.5	7.1	7.3
9	6.1	5.5	5.8	6.0	5.8	5.9	5.8	5.6	5.7	7.4	7.2	7.3
10	5.9	5.3	5.5	6.2	6.0	6.1	5.7	5.5	5.6	7.3	7.2	7.2
11	5.6	4.8	5.2	6.3	5.9	6.0	5.6	5.4	5.5	7.6	7.1	7.3
12	5.6	4.4	5.0	6.0	5.6	5.8	5.4	5.1	5.3	7.8	7.3	7.5
13	4.4	2.8	3.7	5.8	5.4	5.6	5.8	5.2	5.4	8.0	7.5	7.7
14	4.2	3.6	4.0	6.0	5.6	5.8	5.5	5.3	5.4	7.7	5.6	6.9
15	4.4	3.9	4.2	6.3	4.8	5.7	5.4	5.3	5.4	6.7	6.0	6.5
16	4.2	4.0	4.2	4.9	4.4	4.7	5.6	5.3	5.5	6.8	6.6	6.7
17	4.7	---	---	5.1	4.7	4.9	5.8	5.5	5.7	7.3	6.8	7.0
18	4.9	4.7	4.8	5.3	5.0	5.2	5.8	5.7	5.8	7.5	7.0	7.3
19	5.0	4.7	4.8	5.3	5.1	5.2	6.2	5.8	5.9	7.6	7.2	7.4
20	4.9	4.8	4.9	5.5	5.1	5.3	6.5	6.0	6.2	7.4	6.6	7.1
21	5.1	4.6	4.8	5.5	5.1	5.4	6.1	5.8	5.9	7.4	7.0	7.2
22	4.6	4.6	4.6	5.5	4.9	5.2	6.0	5.8	5.9	7.3	6.7	7.1
23	4.6	4.3	4.4	5.7	5.5	5.6	5.9	5.6	5.8	7.4	7.0	7.3
24	4.3	4.2	4.3	5.7	5.6	5.7	6.0	5.7	5.9	7.5	7.3	7.4
25	4.2	4.0	4.1	5.7	5.1	5.4	6.1	5.7	6.0	7.3	7.0	7.2
26	4.5	4.1	4.3	5.4	5.1	5.3	6.2	5.3	5.8	7.7	7.1	7.5
27	4.6	4.5	4.6	5.6	5.4	5.5	6.3	5.8	6.1	7.7	7.2	7.5
28	4.8	4.4	4.6	5.8	5.5	5.6	6.6	6.2	6.4	7.3	7.1	7.2
29	4.9	4.6	4.7	5.8	5.7	5.7	7.0	6.5	6.7	7.4	7.2	7.3
30	5.0	4.7	4.9	5.8	5.7	5.8	6.8	6.6	6.7	7.5	7.4	7.4
31	---	---	---	5.9	5.8	5.8	6.7	6.5	6.6	---	---	---
Month	7.3	---	---	6.3	4.4	5.5	7.0	4.8	5.8	8.0	5.0	7.0

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued



06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	65	42	49	220	160	200	44	35	39	---	---	---
2	59	47	52	170	92	130	---	34	---	---	---	---
3	60	48	53	100	67	82	---	---	---	---	---	---
4	58	44	52	73	55	65	---	---	---	---	---	---
5	54	42	48	75	55	64	---	---	---	---	---	---
6	47	36	42	76	61	68	---	---	---	---	---	---
7	46	36	39	74	62	69	---	---	---	---	---	---
8	54	39	47	---	63	---	---	---	---	---	---	---
9	51	38	44	---	---	---	---	---	---	---	---	---
10	45	36	42	---	54	---	---	---	---	---	---	---
11	43	36	40	71	51	59	---	---	---	---	---	---
12	47	38	42	64	49	56	---	---	---	---	---	---
13	47	39	43	57	47	52	---	---	---	---	---	---
14	44	34	38	54	46	50	---	---	---	---	---	---
15	41	34	37	49	45	47	---	---	---	---	---	---
16	42	33	38	49	41	46	---	---	---	---	---	---
17	37	31	34	130	48	77	---	---	---	---	---	---
18	37	30	33	180	96	140	---	---	---	---	---	---
19	35	29	31	98	59	73	---	---	---	---	---	---
20	36	30	32	60	40	48	---	---	---	---	---	---
21	41	30	33	41	32	36	---	---	---	---	---	---
22	52	31	42	35	29	32	---	---	---	---	---	---
23	130	44	71	40	29	32	---	---	---	---	---	---
24	190	120	150	45	29	36	---	---	---	---	---	---
25	190	130	160	410	37	260	---	---	---	---	---	---
26	150	130	140	260	95	170	---	---	---	---	---	---
27	130	93	110	100	63	86	---	---	---	---	---	---
28	99	73	88	65	47	55	---	---	---	---	---	---
29	87	65	75	48	42	45	---	---	---	---	---	---
30	96	67	73	49	37	42	---	---	---	---	---	---
31	300	95	240	---	---	---	---	---	---	---	---	---
Month	300	29	65	---	---	---	---	---	---	---	---	---

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

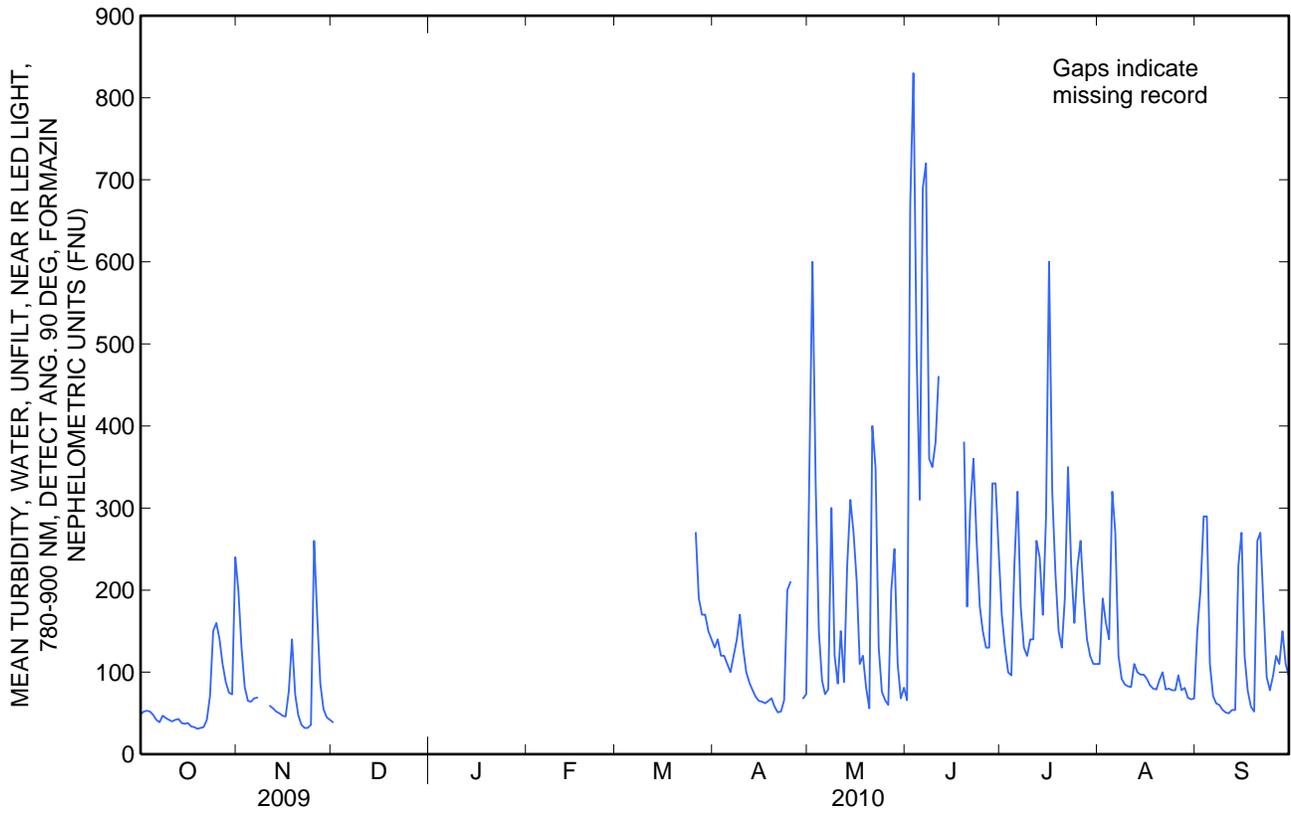
Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	---	---	---	---	---	---	150	110	130	640	65	340
2	---	---	---	---	---	---	280	110	140	720	480	600
3	---	---	---	---	---	---	140	110	120	540	210	330
4	---	---	---	---	---	---	150	100	120	230	99	150
5	---	---	---	---	---	---	150	96	110	120	71	90
6	---	---	---	---	---	---	130	90	100	100	63	73
7	---	---	---	---	---	---	150	100	120	160	57	79
8	---	---	---	---	---	---	210	110	140	410	150	300
9	---	---	---	---	---	---	200	120	170	190	75	120
10	---	---	---	---	---	---	160	100	130	140	64	86
11	---	---	---	---	---	---	120	88	100	190	96	150
12	---	---	---	---	---	---	110	69	87	160	76	88
13	---	---	---	---	---	---	96	66	78	360	93	230
14	---	---	---	---	---	---	82	59	70	400	220	310
15	---	---	---	---	---	---	88	49	65	330	210	270
16	---	---	---	---	---	---	89	49	64	280	130	210
17	---	---	---	---	---	---	89	50	62	140	77	110
18	---	---	---	---	---	---	89	50	65	180	71	120
19	---	---	---	---	---	---	92	51	68	140	59	81
20	---	---	---	---	---	---	72	49	58	70	48	56
21	---	---	---	---	---	---	72	43	51	650	50	400
22	---	---	---	---	---	---	64	42	52	580	180	350
23	---	---	---	---	---	---	180	40	66	190	79	130
24	---	---	---	---	---	---	300	120	200	110	55	76
25	---	---	---	700	---	---	290	170	210	88	54	66
26	---	---	---	430	200	270	180	---	---	88	47	60
27	---	---	---	220	170	190	---	---	---	540	50	200
28	---	---	---	200	150	170	---	58	---	520	160	250
29	---	---	---	200	130	170	84	58	68	160	69	110
30	---	---	---	160	130	150	100	64	73	89	52	68
31	---	---	---	150	120	140	---	---	---	190	52	81
Month	---	---	---	---	---	---	---	---	---	720	47	180

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	160	46	66	220	140	170	120	100	110	410	63	150
2	1,230	110	670	150	110	130	260	100	190	350	140	200
3	1,220	590	830	120	89	100	220	120	160	400	200	290
4	780	310	490	180	80	96	160	120	140	360	170	290
5	370	230	310	420	96	230	460	150	320	180	79	110
6	980	230	690	420	220	320	420	160	270	90	58	71
7	940	440	720	240	140	180	160	97	120	74	55	62
8	480	280	360	150	120	130	110	82	92	68	53	60
9	430	270	350	140	110	120	95	76	85	66	44	54
10	420	340	380	170	120	140	99	76	83	59	42	51
11	530	360	460	160	110	140	89	77	82	63	43	50
12	1,240	360	---	390	110	260	120	83	110	63	46	54
13	---	---	---	350	170	240	170	88	100	110	45	54
14	---	---	---	190	150	170	110	88	97	680	52	230
15	---	---	---	590	130	290	110	88	97	400	150	270
16	---	---	---	880	390	600	100	83	92	150	95	120
17	---	---	---	400	240	320	93	75	84	99	61	77
18	700	180	---	280	160	220	98	73	80	68	50	58
19	710	230	380	180	120	150	90	71	79	59	46	52
20	250	150	180	150	110	130	130	73	91	480	46	260
21	460	180	300	390	110	190	150	78	100	330	220	270
22	420	300	360	450	260	350	88	68	79	300	110	180
23	310	210	260	270	180	230	88	72	80	110	76	94
24	210	160	180	190	130	160	91	70	78	110	68	78
25	170	140	150	350	130	230	99	68	78	160	64	96
26	140	120	130	300	220	260	130	72	96	160	79	120
27	130	120	130	230	150	190	88	66	78	160	75	110
28	520	130	330	160	120	140	99	73	81	170	120	150
29	380	300	330	130	110	120	79	60	69	130	98	110
30	310	200	250	120	100	110	81	57	67	100	87	95
31	---	---	---	120	100	110	100	58	68	---	---	---
Month	---	---	---	880	80	200	460	57	110	680	42	130

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued



06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

[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	42,100	297	26,300	55,000	745	86,000	37,500	267	21,000
2	42,800	306	27,500	52,800	522	57,900	37,200	262	20,500
3	43,000	309	27,900	51,900	395	43,100	36,700	e354	e27,300
4	43,400	304	27,700	50,900	344	36,800	36,000	e348	e26,300
5	43,400	294	26,800	49,800	342	35,800	35,500	e343	e25,600
6	43,100	275	24,900	49,100	354	36,500	35,300	e342	e25,300
7	42,600	268	24,000	48,700	356	36,400	33,800	e329	e23,300
8	42,100	290	25,600	47,900	352	35,400	33,300	e324	e22,700
9	42,400	283	25,200	47,300	e444	e44,100	32,000	e313	e21,000
10	42,300	275	24,400	46,300	330	32,100	28,500	e282	e16,900
11	42,500	270	24,100	45,700	327	31,400	27,400	e273	e15,700
12	42,700	275	24,700	45,100	316	29,900	26,800	e267	e15,000
13	42,200	278	24,600	44,300	304	28,300	25,100	e252	e13,300
14	42,100	263	23,300	43,700	300	27,500	23,500	e238	e11,700
15	42,400	262	23,300	42,600	290	25,900	26,600	e266	e14,800
16	42,300	263	23,400	43,000	286	25,800	29,600	e292	e18,200
17	42,100	251	22,200	46,400	379	36,900	30,700	e302	e19,500
18	42,200	250	22,200	49,000	572	58,900	30,200	e297	e18,900
19	42,400	244	21,700	44,400	366	34,100	29,400	e290	e17,900
20	42,300	246	21,900	42,800	293	26,300	30,200	e297	e18,900
21	42,500	250	22,300	41,900	259	22,800	32,000	e313	e21,000
22	44,400	274	25,500	41,200	245	21,200	32,400	e317	e21,500
23	49,100	363	37,400	40,800	247	21,200	32,300	e316	e21,400
24	53,800	592	66,900	41,500	259	22,600	34,900	e338	e24,800
25	58,200	616	75,300	49,400	909	94,300	36,100	e349	e26,400
26	56,600	564	67,000	45,300	656	62,400	34,500	e335	e24,300
27	52,700	480	53,100	42,400	405	36,100	34,100	e331	e23,700
28	50,000	411	43,200	40,300	315	26,700	32,500	e317	e21,700
29	49,100	373	38,500	38,800	283	23,100	29,300	e289	e17,800
30	51,100	366	39,300	37,900	276	22,000	28,200	e280	e16,600
31	56,000	861	101,000	---	---	---	30,000	e296	e18,600
Total	1,413,900	---	1,061,200	1,366,200	---	1,121,500	981,600	---	631,600

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

[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	31,300	e307	e20,200	38,600	e370	e30,000	32,200	e315	e21,300
2	31,000	e304	e19,800	38,100	e366	e29,300	32,600	e318	e21,800
3	30,700	e302	e19,500	37,500	e361	e28,400	33,000	e322	e22,300
4	30,300	e298	e19,000	36,900	e356	e27,600	33,500	e326	e22,900
5	30,100	e296	e18,700	37,000	e356	e27,700	36,000	e348	e26,300
6	29,800	e294	e18,400	36,600	e353	e27,100	41,800	e397	e34,900
7	30,400	e299	e19,100	36,200	e350	e26,600	53,000	e491	e54,700
8	31,600	e310	e20,500	36,300	e350	e26,700	59,900	e548	e68,900
9	31,200	e306	e20,100	35,800	e346	e26,000	65,200	e591	e80,900
10	30,700	e302	e19,500	34,500	e335	e24,300	81,200	e719	e123,000
11	30,000	e296	e18,600	34,400	e334	e24,100	92,600	e808	e157,000
12	29,700	e293	e18,300	34,300	e333	e24,000	122,000	e1,030	e265,000
13	30,100	e296	e18,700	34,200	e332	e23,900	110,000	e942	e218,000
14	31,300	e307	e20,200	34,400	e334	e24,100	103,000	e888	e192,000
15	31,700	e311	e20,700	34,000	e331	e23,600	102,000	e881	e189,000
16	31,300	e307	e20,200	33,000	e322	e22,300	103,000	e888	e192,000
17	30,800	e303	e19,600	32,600	e318	e21,800	105,000	e904	e199,000
18	30,500	e300	e19,200	31,900	e312	e20,900	108,000	e927	e210,000
19	30,500	e300	e19,200	32,400	e317	e21,500	110,000	e942	e218,000
20	31,400	e308	e20,300	33,000	e322	e22,300	113,000	e965	e229,000
21	33,500	e326	e22,900	33,000	e322	e22,300	116,000	e988	e241,000
22	36,000	e348	e26,300	32,700	e319	e21,900	118,000	e1,000	e249,000
23	42,400	e402	e35,800	31,800	e311	e20,800	123,000	e1,040	e269,000
24	63,500	e577	e76,900	31,600	e310	e20,500	127,000	e1,070	e286,000
25	53,000	e491	e54,700	31,600	e310	e20,500	143,000	1,570	471,000
26	46,900	e440	e43,400	31,800	e311	e20,800	131,000	945	260,000
27	43,300	e410	e37,300	32,300	e316	e21,400	119,000	721	180,000
28	40,800	e389	e33,300	32,500	e317	e21,700	112,000	663	156,000
29	38,600	e370	e30,000	---	---	---	104,000	663	145,000
30	37,900	e364	e29,000	---	---	---	98,800	584	121,000
31	38,400	e368	e29,700	---	---	---	94,800	554	110,000
Total	1,088,700	---	809,100	959,000	---	672,100	2,823,600	---	5,034,000

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

[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)
1	91,800	530	102,000	72,500	1,150	175,000	60,100	348	43,900
2	89,200	556	104,000	69,900	1,940	285,000	81,000	2,130	362,000
3	86,400	516	93,600	64,300	1,140	154,000	93,000	2,610	510,000
4	83,100	502	87,600	62,500	610	80,100	78,300	1,620	266,000
5	80,700	483	81,900	62,100	416	54,300	69,900	1,060	156,000
6	79,200	462	76,800	59,500	369	46,100	90,200	2,210	419,000
7	78,200	500	82,100	60,600	384	48,900	88,800	2,280	425,000
8	76,400	573	91,900	66,600	1,040	145,000	76,200	1,230	197,000
9	74,500	645	101,000	61,000	503	64,400	81,400	1,190	203,000
10	71,700	533	80,300	59,900	406	51,100	88,400	1,270	236,000
11	69,000	455	65,900	63,400	585	77,900	85,900	1,500	271,000
12	67,300	409	57,800	62,400	411	53,900	107,000	2,540	571,000
13	65,100	381	52,100	71,200	847	127,000	119,000	e1,010	e253,000
14	63,200	360	47,800	75,700	1,070	170,000	141,000	e1,180	e348,000
15	62,100	345	45,000	73,200	947	146,000	152,000	e1,260	e401,000
16	62,500	340	44,600	69,100	774	112,000	163,000	e1,340	e458,000
17	63,100	334	44,300	69,000	463	67,100	160,000	e1,320	e442,000
18	62,100	343	44,700	70,300	502	74,100	153,000	1,270	408,000
19	60,100	352	44,400	67,200	392	55,300	148,000	1,270	395,000
20	59,300	323	40,200	66,100	317	44,000	147,000	673	208,000
21	58,200	301	36,800	81,600	1,350	231,000	155,000	1,040	339,000
22	57,200	304	36,500	76,800	1,180	190,000	165,000	1,210	419,000
23	58,600	346	42,600	69,900	523	76,800	175,000	936	344,000
24	64,900	748	102,000	66,600	375	52,400	185,000	688	267,000
25	64,900	779	106,000	64,200	345	46,500	187,000	599	235,000
26	64,200	561	75,600	63,200	328	43,500	181,000	543	206,000
27	60,000	e549	e69,100	66,600	749	105,000	163,000	528	181,000
28	58,000	361	44,000	65,400	901	124,000	153,000	1,120	360,000
29	58,400	353	43,300	61,500	475	61,300	143,000	1,140	342,000
30	59,200	367	45,600	59,900	353	44,400	132,000	883	245,000
31	---	---	---	59,500	391	48,900	---	---	---
Total	2,048,600	---	1,989,500	2,061,700	---	3,055,000	3,822,200	---	9,510,900

06818000 MISSOURI RIVER AT ST. JOSEPH, MO—Continued

**SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
 WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

[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	126,000	669	177,000	96,200	475	96,000	80,900	608	103,000
2	122,000	537	138,000	98,900	712	148,000	85,300	746	134,000
3	120,000	457	115,000	101,000	634	134,000	91,800	1,010	195,000
4	121,000	435	111,000	105,000	563	124,000	81,700	1,010	173,000
5	132,000	824	228,000	120,000	1,110	280,000	75,200	490	77,400
6	139,000	1,100	321,000	126,000	944	250,000	73,200	361	55,500
7	133,000	676	189,000	124,000	520	135,000	72,000	334	50,500
8	126,000	537	142,000	120,000	424	107,000	70,700	329	48,800
9	118,000	512	127,000	115,000	403	97,300	70,600	310	46,000
10	111,000	559	130,000	e108,000	396	89,800	70,200	302	44,500
11	106,000	552	123,000	104,000	393	85,800	70,800	300	44,600
12	111,000	910	212,000	104,000	463	101,000	71,000	312	46,500
13	110,000	866	200,000	103,000	453	98,000	71,600	312	46,900
14	106,000	652	145,000	100,000	438	92,000	80,600	819	139,000
15	116,000	1,010	246,000	97,700	438	89,900	79,400	950	158,000
16	122,000	1,930	494,000	96,200	423	85,500	75,600	503	79,900
17	116,000	1,090	266,000	95,300	400	80,100	73,400	379	58,400
18	108,000	797	181,000	94,300	387	76,600	72,100	323	48,900
19	100,000	606	127,000	92,300	385	74,600	72,100	305	46,200
20	95,500	529	106,000	90,400	420	79,700	80,100	936	157,000
21	101,000	709	150,000	87,800	455	83,900	83,000	954	166,000
22	103,000	1,190	257,000	84,000	384	67,700	81,000	697	119,000
23	96,600	841	171,000	81,600	387	66,300	77,300	431	70,000
24	94,800	618	123,000	79,700	383	64,100	77,600	382	62,300
25	99,900	844	177,000	80,900	381	64,700	81,600	435	74,500
26	103,000	917	198,000	81,100	434	73,900	86,300	501	90,800
27	105,000	704	155,000	79,300	382	63,600	90,300	488	92,500
28	104,000	562	123,000	76,800	392	63,200	92,600	596	116,000
29	102,000	512	110,000	75,300	355	56,100	91,600	477	91,800
30	99,300	481	100,000	74,300	350	54,600	92,200	432	83,600
31	96,700	480	97,500	73,600	354	54,700	---	---	---
Total	3,443,800	---	5,439,500	2,965,700	---	3,037,100	2,371,800	---	2,719,600

	Total discharge (ft ³ /s)	Total suspended sediment discharge (tons)
Year	25,346,800	35,081,100