

Water-Data Report 2012

06934500 MISSOURI RIVER AT HERMANN, MO

Missouri River Main Stem

LOCATION.--Lat 38°42'35.3", long 91°26'18.6" referenced to North American Datum of 1983, in SW ¼ sec.25, T.46 N., R.5 W., Montgomery County, MO, Hydrologic Unit 10300200, on downstream side of third pier from right abutment of bridge on State Highway 19 at Hermann, 7 miles downstream from Gasconade River, and at mile 97.9.

DRAINAGE AREA.--522,500 mi², the 3,959 mi² in Great Divide basin are not included.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1897 to current year. Prior to August 1928 monthly discharge only published in WSP 1310. Gage-height records 1873-99 collected at site 480 ft downstream are contained in reports of 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 481.56 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 26, 1930, nonrecording gage at site 480 ft downstream at datum 0.07 ft lower; Sept. 26, 1930, to Mar. 27, 1932, nonrecording gage; Mar. 28, 1932, to June 12, 1945, water-stage recorder; June 13, 1945, to Apr. 2, 1946, May 13 to Sept. 30, 1978, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Water-discharge records good. Some regulation from many upstream reservoirs.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1844 reached a stage of 35.5 ft, discharge, about 700,000 ft³/s, computed by the U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 188,000 ft³/s, Mar. 23, 25, 26, gage height, 20.73 ft, Mar. 23; minimum discharge, 43,800 ft³/s, Sept. 25, gage height, 4.91 ft.

06934500 MISSOURI RIVER AT HERMANN, MO—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	122,000	65,100	69,700	64,400	50,500	57,900	143,000	128,000	63,100	58,300	45,200	52,600
2	120,000	64,800	68,500	59,200	51,200	60,300	140,000	136,000	65,100	56,000	45,300	50,400
3	116,000	65,500	68,100	57,600	52,700	63,800	136,000	123,000	65,900	53,100	45,100	52,500
4	113,000	65,900	67,500	56,500	64,600	62,600	127,000	115,000	69,800	51,400	45,100	60,200
5	108,000	66,500	67,500	56,200	71,300	61,200	114,000	119,000	70,800	50,700	45,200	57,000
6	103,000	66,800	70,600	55,600	75,500	61,000	105,000	123,000	71,600	50,100	45,200	50,100
7	98,600	66,500	75,300	54,700	81,800	61,000	96,300	127,000	68,400	49,900	45,100	49,800
8	94,300	67,100	79,400	54,400	81,800	60,600	94,600	132,000	66,400	51,400	44,900	49,200
9	89,900	73,200	78,100	54,100	75,400	60,000	96,000	134,000	64,700	50,300	44,800	47,500
10	85,600	80,000	73,800	53,000	72,500	59,000	93,300	130,000	62,700	48,500	44,600	46,200
11	82,100	81,400	71,100	51,900	69,800	60,000	88,100	125,000	61,100	47,300	44,400	45,100
12	80,200	79,200	70,300	51,600	64,500	59,300	84,100	109,000	60,100	46,800	44,200	44,700
13	78,400	77,700	70,000	52,600	62,700	59,400	80,000	96,200	60,100	46,800	44,300	44,400
14	76,600	75,300	69,400	54,700	65,900	63,500	113,000	91,000	60,000	47,100	44,300	44,300
15	75,200	73,000	69,900	53,800	61,800	75,400	162,000	86,300	58,600	46,500	44,500	44,200
16	74,600	71,500	73,700	51,100	63,100	81,000	155,000	80,700	58,400	46,400	45,300	44,100
17	74,500	70,800	80,200	49,500	65,800	83,300	143,000	75,800	58,700	46,600	45,500	44,500
18	74,700	69,900	84,400	48,700	65,300	86,500	150,000	77,500	57,200	46,700	44,700	45,300
19	73,100	69,200	84,000	51,800	62,900	74,000	164,000	82,600	56,000	46,200	44,500	46,200
20	71,600	68,600	91,900	57,100	59,700	67,600	140,000	81,800	58,400	46,100	44,500	46,100
21	71,400	67,900	106,000	60,000	58,200	82,400	120,000	75,000	62,900	46,500	44,600	45,600
22	69,900	67,600	109,000	55,000	57,400	149,000	106,000	68,000	62,100	46,200	44,600	44,700
23	68,900	68,000	98,200	48,400	56,400	183,000	95,900	65,600	58,800	45,700	44,400	44,100
24	68,000	68,700	87,700	47,300	57,400	184,000	88,200	63,700	58,200	45,400	44,300	44,000
25	67,500	68,000	79,100	47,900	56,600	186,000	82,300	62,600	57,500	46,000	44,400	44,000
26	68,300	68,400	71,100	48,200	57,300	183,000	79,100	62,700	57,800	46,100	44,400	44,300
27	67,700	69,700	68,100	48,200	58,700	162,000	76,300	64,500	59,400	45,400	44,600	44,700
28	66,700	73,000	69,900	46,900	61,400	132,000	73,800	70,900	58,500	45,100	44,700	44,400
29	66,300	75,200	68,400	48,700	62,900	124,000	73,100	66,900	57,400	45,300	45,100	44,100
30	65,900	72,300	71,300	47,600	---	122,000	93,600	61,700	60,700	45,400	47,800	44,300
31	65,200	---	70,300	47,700	---	134,000	---	62,800	---	45,400	53,400	---
Mean	82,490	70,560	76,850	52,720	63,620	95,450	110,400	93,460	61,680	48,020	45,130	46,950
Max	122,000	81,400	109,000	64,400	81,800	186,000	164,000	136,000	71,600	58,300	53,400	60,200
Min	65,200	64,800	67,500	46,900	50,500	57,900	73,100	61,700	56,000	45,100	44,200	44,000
In.	0.18	0.15	0.17	0.12	0.13	0.21	0.24	0.21	0.13	0.11	0.10	0.10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2012^a, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	77,100	76,090	61,400	52,360	68,180	97,050	119,100	125,200	124,400	102,400	76,730	77,510
Max	286,700	174,800	178,900	129,000	136,800	267,500	333,400	313,000	282,300	376,300	306,600	243,500
(WY)	(1987)	(1999)	(1983)	(1973)	(1982)	(1973)	(1973)	(1995)	(1995)	(1993)	(1993)	(1993)
Min	35,230	24,820	17,060	17,350	19,250	22,810	45,800	47,710	46,150	40,970	37,920	37,800
(WY)	(2007)	(2007)	(1964)	(1963)	(1964)	(1964)	(1963)	(1989)	(1988)	(2006)	(2003)	(1963)

06934500 MISSOURI RIVER AT HERMANN, MO—Continued

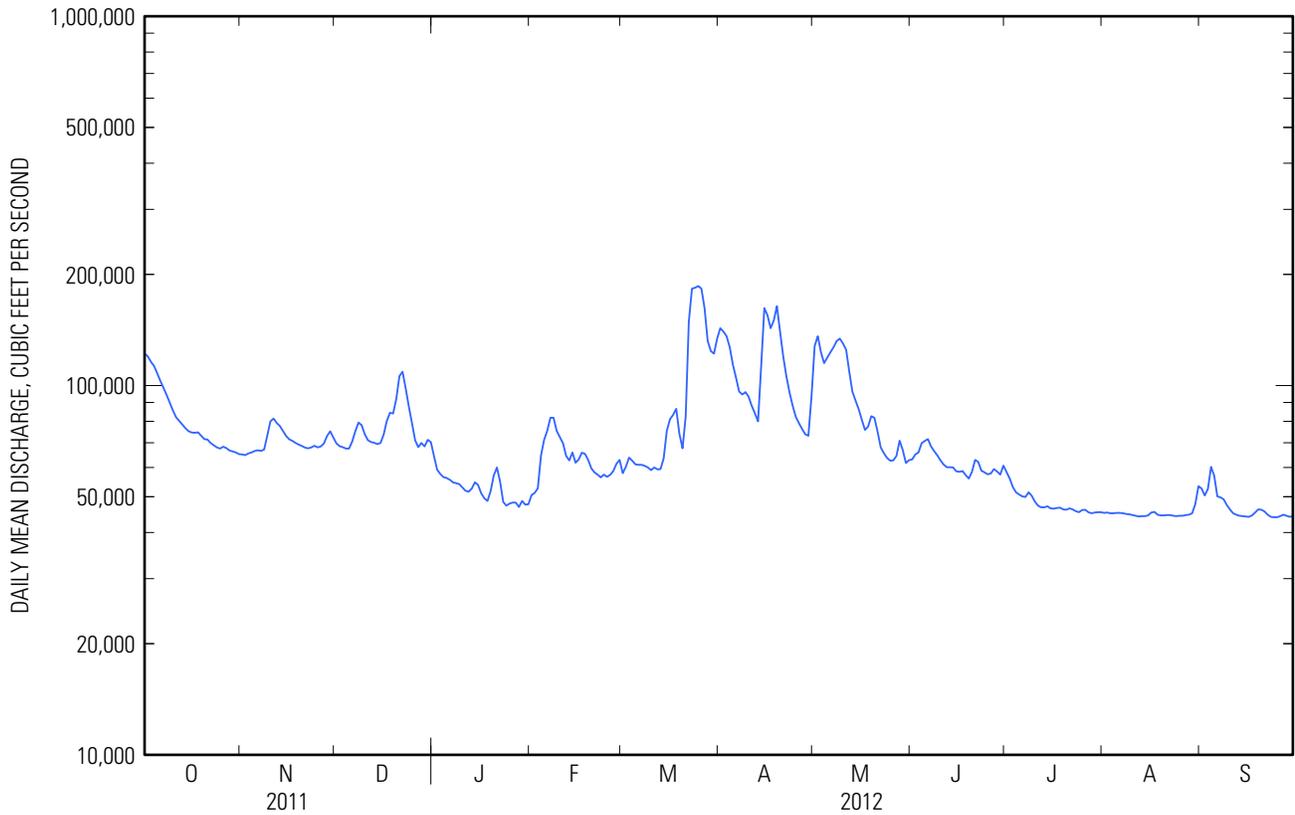
SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1958 - 2012 ^a	
Annual mean	137,100		70,630		88,150	
Highest annual mean					181,800	1993
Lowest annual mean					41,690	2006
Highest daily mean	274,000	May 28	186,000	Mar 25	739,000	Jul 31, 1993
Lowest daily mean	45,800	Jan 17	44,000	Sep 24 ^b	6,210	Dec 20, 1963
Annual seven-day minimum	47,900	Jan 25	44,200	Sep 23	7,400	Dec 20, 1963
Maximum peak flow			188,000	Mar 23 ^c	750,000	Jul 31, 1993
Maximum peak stage			20.73	Mar 23	36.97	Jul 31, 1993
Instantaneous low flow			43,800	Sep 25	602	Dec 23, 1963
Annual runoff (inches)	3.56		1.84		2.29	
10 percent exceeds	226,000		113,000		168,000	
50 percent exceeds	128,000		64,600		68,000	
90 percent exceeds	55,800		45,100		36,600	

^a Period of Regulated Streamflow

^b Also Sep 25

^c Also Mar 25, 26



06934500 MISSOURI RIVER AT HERMANN, MO—Continued

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
OBSERVATION AT 0800
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	15.17	8.66	9.17	8.44	5.99	7.24	16.80	14.87	8.07	7.46	5.06	6.52
2	14.99	8.64	8.96	7.52	6.22	7.60	16.41	16.10	8.36	7.04	5.12	6.02
3	14.68	8.74	8.89	7.25	6.34	8.21	16.08	14.96	8.44	6.51	5.04	6.20
4	14.30	8.77	8.80	7.09	7.99	8.07	15.34	13.83	9.01	6.22	5.07	7.53
5	13.85	8.88	8.75	7.02	9.29	7.80	14.09	14.39	9.24	6.08	5.07	7.41
6	13.32	9.01	9.07	6.94	9.66	7.75	13.21	14.52	9.46	5.98	5.08	5.99
7	12.78	8.92	9.77	6.75	10.46	7.77	12.35	15.10	8.91	5.90	5.07	5.91
8	12.29	8.88	10.34	6.71	10.86	7.71	11.87	15.46	8.63	6.21	4.99	5.86
9	11.76	9.66	10.31	6.64	9.77	7.64	12.32	15.94	8.35	6.05	5.01	5.56
10	11.25	10.62	9.73	6.51	9.52	7.39	11.91	15.40	8.08	5.72	4.96	5.34
11	10.78	10.95	9.31	6.28	9.19	7.62	11.46	15.12	7.81	5.48	4.94	5.10
12	10.53	10.64	9.16	6.23	8.37	7.52	10.91	13.67	7.65	5.39	4.86	5.03
13	10.28	10.46	9.08	6.35	7.97	7.48	10.57	12.24	7.62	5.35	4.89	4.98
14	10.09	10.10	8.98	6.75	8.55	7.86	11.28	11.80	7.65	5.44	4.90	4.96
15	9.92	9.80	9.05	e6.70	7.90	9.78	18.86	11.26	7.44	5.33	4.93	4.95
16	9.84	9.56	9.52	6.17	7.82	10.20	17.80	10.71	7.32	5.27	5.04	4.92
17	9.86	9.45	10.37	5.91	8.58	10.79	16.96	9.84	7.47	5.33	5.18	4.99
18	10.00	9.26	10.94	e5.76	8.40	11.73	16.57	10.02	7.19	5.35	4.99	5.12
19	9.78	9.17	11.05	5.94	8.15	9.91	18.89	10.60	6.96	5.26	4.95	5.35
20	9.62	9.06	11.42	6.97	7.61	8.61	16.76	10.70	7.19	5.22	4.93	5.37
21	9.63	8.99	13.39	7.56	7.30	9.23	14.65	10.06	8.01	5.32	4.95	e5.25
22	9.41	8.94	13.90	7.07	7.24	17.03	13.41	8.87	8.04	5.27	4.94	5.10
23	9.28	8.93	12.86	5.74	7.01	20.35	12.37	8.52	7.50	5.17	4.93	4.98
24	9.12	9.07	11.64	5.45	7.21	20.35	11.48	8.23	7.34	5.12	4.90	4.94
25	9.02	8.94	10.54	5.60	7.07	20.63	10.76	7.98	7.25	5.17	4.90	4.92
26	9.18	8.98	9.39	5.66	7.06	20.58	10.39	8.03	7.20	5.26	4.90	5.00
27	9.08	9.12	8.67	5.65	7.38	18.99	10.01	8.04	7.50	5.12	4.94	5.05
28	8.96	9.52	9.09	5.42	e7.53	15.87	9.70	9.29	7.43	5.07	4.99	5.03
29	8.88	9.98	8.86	5.71	8.29	14.80	9.30	8.87	7.12	5.09	5.03	4.96
30	8.79	9.57	9.16	5.56	---	14.64	10.92	7.86	7.85	5.12	5.34	4.99
31	8.70	---	9.19	5.35	---	15.55	---	8.02	---	5.11	6.43	---
Mean	10.81	9.38	9.98	6.41	8.09	11.51	13.45	11.62	7.87	5.59	5.04	5.44
Max	15.17	10.95	13.90	8.44	10.86	20.63	18.89	16.10	9.46	7.46	6.43	7.53
Min	8.70	8.64	8.67	5.35	5.99	7.24	9.30	7.86	6.96	5.07	4.86	4.92

06934500 MISSOURI RIVER AT HERMANN, MO—Continued**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--July 1969 to current year. National Stream-Quality Accounting Network station September 1989 to current year. Discrete suspended and bed material sediments October 1988 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to September 1996, February 2006 to current year (Seasonally).

pH: February 2006 to September 2007.

WATER TEMPERATURE: October 1974 to September 1996, February 2006 to September 2010 (Seasonally), October 2010 to current year.

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

TURBIDITY: February 2006 to September 2010 (Seasonally), October 2010 to current year.

SUSPENDED-SEDIMENT CONCENTRATION: October 2008 to current year.

SUSPENDED-SEDIMENT DISCHARGE: October 2008 to current year.

INSTRUMENTATION.--Water-quality monitor, February 2006 to current year. U.S.G.S. satellite telemeter at station.

REMARKS.--Interruptions in the record are generally due to malfunction or fouling of the sensors. Detailed records of the procedures employed for specific periods of record have been included with the station analysis and are kept on file. 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 and/or have been flagged as greater than (>). 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 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 rated good except Apr. 9-12, Sep. 3-10 which are fair, and Oc. 20, Nov. 9, Apr. 12-22, 27-31, Aug. 17, Sep. 11-25 which are poor.

WATER TEMPERATURE: Record good, except Oct. 17, 20, Mar. 21, 23 which are fair.

DISSOLVED OXYGEN: Record rated GOOD except Oct. 17, Jun. 25 which are fair.

TURBIDITY: Record rated good except Oct. 17, 20, Feb. 7, Mar. 28, Jun. 19, 20 which are fair, and Nov. 4-10, Mar. 21, 23, 29, May 24, 31, Jun. 22, 25 which are poor. Data collected using a YSI 6136 turbidity sensor.

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

SUSPENDED SEDIMENT: Record fair except for estimated days, which are poor.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 2,150 $\mu\text{S}/\text{cm}$ (once daily measurement), Dec. 9, 1978; minimum recorded 119 $\mu\text{S}/\text{cm}$, Mar. 22, 2008.

pH: Maximum recorded, 8.8 standard units, Sep. 14-16, 2006; minimum recorded 7.3 standard units, May 12-16, and 18, 2007.

WATER TEMPERATURE: Maximum recorded, 32.5 $^{\circ}\text{C}$ (once daily measurement), Jul. 31, 1987; minimum recorded, -0.2 $^{\circ}\text{C}$, Jan. 12-13, 2011.

DISSOLVED OXYGEN: Maximum recorded 14.6 mg/L, Mar. 26, 2006; minimum recorded, 1.7 mg/L, May 9, 2007.

TURBIDITY: Maximum recorded, 1,430 FNU, Jun. 10, 2008, but may have been higher during periods of missing record; minimum recorded, 2.1 FNU, Feb. 2, 3, 2012.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 865 $\mu\text{S}/\text{cm}$, Aug. 28, 2012; minimum daily, 126 $\mu\text{S}/\text{cm}$, Mar. 22, 2008.

pH: Maximum daily 8.7 standard units, Sep. 15, 16, 2006; minimum daily, 7.3 standard units, May 15, 2007.

WATER TEMPERATURE: Maximum daily, 31.5 $^{\circ}\text{C}$, Jul. 20, 2006; minimum daily, -0.1 $^{\circ}\text{C}$, Dec. 14, 2010, Jan. 12, 17, 18, 2011.

DISSOLVED OXYGEN: Maximum daily, 14.1 mg/L, Mar. 26, 2006; minimum daily, 2.4 mg/L, May 10, 2007.

TURBIDITY: Maximum daily, 1240 FNU, Jun. 10, 2008, but may have been higher during periods of missing record; minimum daily, 2.4 FNU, Feb. 2, 2012.

SUSPENDED-SEDIMENT CONCENTRATION: Maximum daily, 2,480 mg/L, Apr. 30, 2009; minimum daily, 37 mg/L, Feb. 1, 2, 2012.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 1,840,000 tons, May 1, 2009; minimum daily, 4,900 tons, Jan. 28, 31, 2012.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 869 $\mu\text{S}/\text{cm}$, Aug. 28, but may have been higher during periods of missing record; minimum recorded 352 $\mu\text{S}/\text{cm}$, Apr. 1, 2.

WATER TEMPERATURE: Maximum recorded, 31.9 $^{\circ}\text{C}$, Jul. 7, but may have been higher during periods of missing record; minimum recorded, 1.4 $^{\circ}\text{C}$, Jan. 24, but may have been lower during periods of missing record.

DISSOLVED OXYGEN: Maximum recorded 10.1 mg/L, Jul. 13, but may have been higher during periods of missing record; minimum recorded, 5.7 mg/L, May 7, 10, 11, Sep. 5, 6, but may have been lower during periods of missing record.

TURBIDITY: Maximum recorded, 1,170 FNU, Apr. 20, 21; minimum recorded, 2.1 FNU, Feb. 2, 3.

SUSPENDED-SEDIMENT CONCENTRATION: Maximum daily, 2,390 mg/L, Apr. 21; minimum daily, 37 mg/L, Feb. 1, 2.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 858,000 tons, Apr. 20; minimum daily, 4,900 tons, Jan. 28, 31.

06934500 MISSOURI RIVER AT HERMANN, MO—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	730	727	729	763	757	760	---	---	---	---	---	---
2	730	727	728	765	760	763	---	---	---	---	---	---
3	728	725	726	768	763	765	---	---	---	---	---	---
4	728	724	726	774	767	771	---	---	---	---	---	---
5	726	724	725	784	773	780	---	---	---	---	---	---
6	731	726	728	789	783	785	---	---	---	---	---	---
7	732	730	731	785	773	780	---	---	---	---	---	---
8	737	731	734	778	775	776	---	---	---	---	---	---
9	741	735	738	---	776	---	---	---	---	---	---	---
10	743	738	741	---	---	---	---	---	---	---	---	---
11	745	740	742	---	---	---	---	---	---	---	---	---
12	744	740	742	---	---	---	---	---	---	---	---	---
13	751	744	748	---	---	---	---	---	---	---	---	---
14	761	751	755	---	---	---	---	---	---	---	---	---
15	765	761	763	---	---	---	---	---	---	---	---	---
16	767	761	766	---	---	---	---	---	---	---	---	---
17	768	749	762	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	733	---	---	---	---	---	---	---	---	---	---
21	734	725	728	---	---	---	---	---	---	---	---	---
22	732	726	729	---	---	---	---	---	---	---	---	---
23	741	731	735	---	---	---	---	---	---	---	---	---
24	744	738	740	---	---	---	---	---	---	---	---	---
25	741	734	738	---	---	---	---	---	---	---	---	---
26	734	728	730	---	---	---	---	---	---	---	---	---
27	742	730	736	---	---	---	---	---	---	---	---	---
28	749	741	746	---	---	---	---	---	---	---	---	---
29	753	748	751	---	---	---	---	---	---	---	---	---
30	754	751	753	---	---	---	---	---	---	---	---	---
31	760	752	756	---	---	---	---	---	---	---	---	---
Month	---	---	---	---	---	---	---	---	---	---	---	---

06934500 MISSOURI RIVER AT HERMANN, MO—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

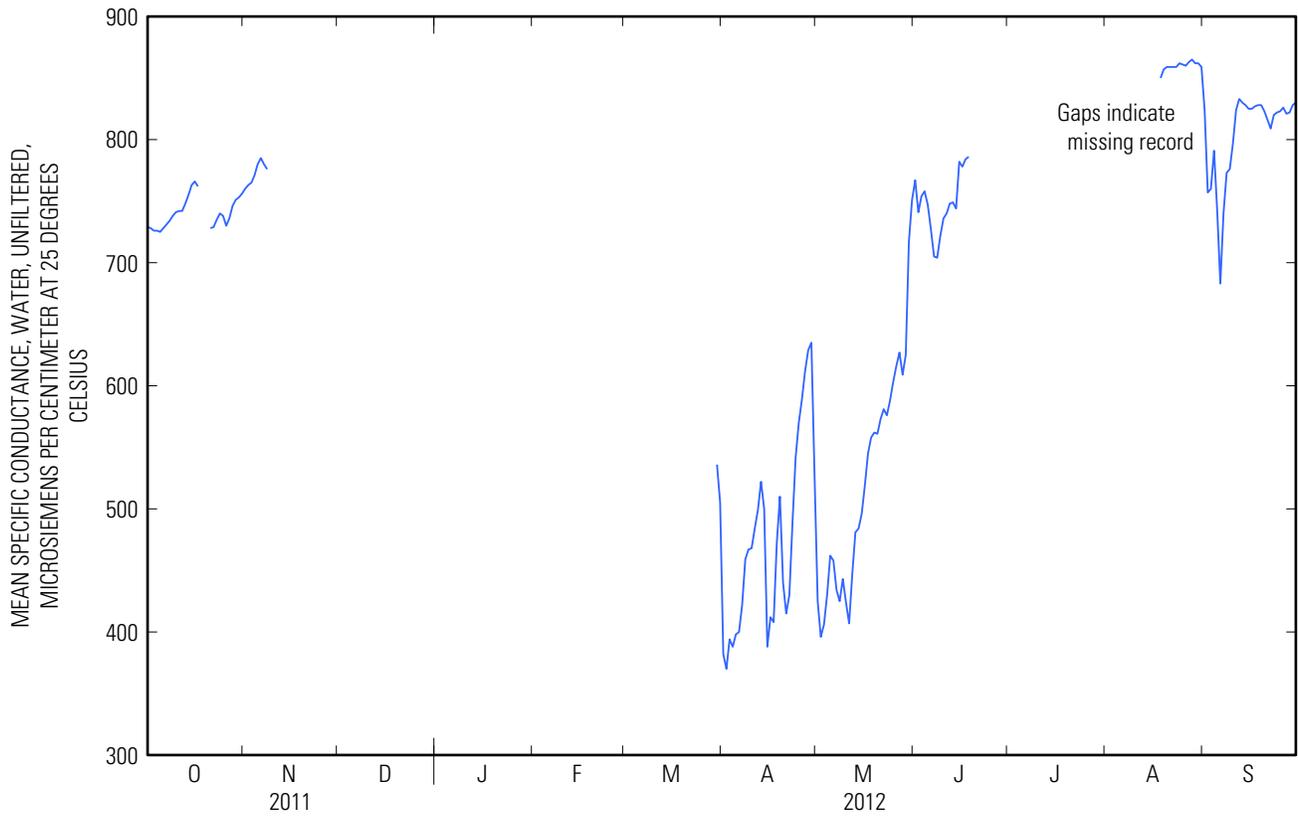
Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	---	---	---	---	---	---	428	352	382	469	405	425
2	---	---	---	---	---	---	389	352	370	405	388	396
3	---	---	---	---	---	---	406	380	394	415	396	406
4	---	---	---	---	---	---	397	379	388	453	410	430
5	---	---	---	---	---	---	405	390	398	469	448	462
6	---	---	---	---	---	---	407	394	400	467	452	458
7	---	---	---	---	---	---	441	405	422	456	418	434
8	---	---	---	---	---	---	473	439	459	437	418	425
9	---	---	---	---	---	---	474	460	467	451	432	443
10	---	---	---	---	---	---	479	460	468	442	405	424
11	---	---	---	---	---	---	493	469	484	423	400	407
12	---	---	---	---	---	---	507	489	499	468	422	447
13	---	---	---	---	---	---	538	501	522	489	466	481
14	---	---	---	---	---	---	539	402	500	489	479	484
15	---	---	---	---	---	---	416	371	388	508	485	496
16	---	---	---	---	---	---	431	397	412	535	505	519
17	---	---	---	---	---	---	425	396	408	553	533	545
18	---	---	---	---	---	---	522	422	472	567	548	558
19	---	---	---	---	---	---	528	476	510	570	550	562
20	---	---	---	---	---	---	477	418	440	568	551	561
21	---	---	---	---	---	---	420	411	415	585	560	573
22	---	---	---	---	---	---	459	412	430	585	576	581
23	---	---	---	---	---	---	520	459	489	581	573	576
24	---	---	---	---	---	---	563	520	542	599	579	588
25	---	---	---	---	---	---	580	561	570	612	596	603
26	---	---	---	---	---	---	604	576	589	625	609	616
27	---	---	---	---	---	---	625	601	612	633	611	627
28	---	---	---	---	---	---	639	620	629	615	599	609
29	---	---	---	---	---	---	647	580	635	659	594	625
30	---	---	---	570	508	536	580	469	528	746	653	717
31	---	---	---	580	400	505	---	---	---	761	743	751
Month	---	---	---	---	---	---	647	352	474	761	388	524

06934500 MISSOURI RIVER AT HERMANN, MO—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	775	754	767	---	---	---	---	---	---	848	788	824
2	765	724	741	---	---	---	---	---	---	791	739	757
3	764	740	754	---	---	---	---	---	---	779	743	760
4	765	751	758	---	---	---	---	---	---	797	779	791
5	753	741	747	---	---	---	---	---	---	787	691	742
6	743	713	727	---	---	---	---	---	---	703	674	683
7	718	693	705	---	---	---	---	---	---	768	703	740
8	710	695	704	---	---	---	---	---	---	777	768	773
9	734	704	722	---	---	---	---	---	---	783	769	776
10	742	729	736	---	---	---	---	---	---	813	781	797
11	746	735	740	---	---	---	---	---	---	831	811	824
12	756	737	748	---	---	---	---	---	---	836	829	833
13	755	745	749	---	---	---	---	---	---	833	825	830
14	771	720	744	---	---	---	---	---	---	831	825	828
15	790	763	782	---	---	---	---	---	---	828	823	825
16	787	767	778	---	---	---	---	---	---	829	823	825
17	794	778	784	---	---	---	848	---	---	830	824	827
18	797	771	786	---	---	---	857	842	850	831	825	828
19	---	---	---	---	---	---	861	851	857	831	823	828
20	---	---	---	---	---	---	863	855	859	825	820	823
21	---	---	---	---	---	---	861	855	859	821	808	816
22	---	---	---	---	---	---	864	855	859	812	806	809
23	---	---	---	---	---	---	862	855	859	828	812	820
24	---	---	---	---	---	---	865	857	862	827	817	822
25	---	---	---	---	---	---	865	857	861	832	815	823
26	---	---	---	---	---	---	865	856	860	829	823	826
27	---	---	---	---	---	---	866	857	863	825	818	821
28	---	---	---	---	---	---	869	863	865	827	818	822
29	---	---	---	---	---	---	867	856	862	830	824	828
30	---	---	---	---	---	---	864	859	862	833	827	830
31	---	---	---	---	---	---	865	847	859	---	---	---
Month	---	---	---	---	---	---	---	---	---	848	674	804

06934500 MISSOURI RIVER AT HERMANN, MO—Continued



06934500 MISSOURI RIVER AT HERMANN, MO—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	18.8	18.6	18.7	13.4	12.8	13.1	6.6	6.3	6.4	5.6	4.9	5.3
2	18.7	18.4	18.6	13.6	13.1	13.4	6.6	6.3	6.4	4.9	4.0	4.4
3	18.8	18.3	18.6	13.5	12.6	13.1	7.1	6.6	6.8	4.0	3.5	3.6
4	19.0	18.4	18.7	12.6	12.3	12.4	7.2	6.8	7.0	3.7	3.3	3.5
5	18.9	18.6	18.8	12.3	12.0	12.1	6.8	6.0	6.4	4.0	3.4	3.7
6	18.9	18.4	18.7	12.0	11.8	11.9	6.0	5.3	5.6	4.6	3.9	4.2
7	19.1	18.6	18.9	12.2	11.9	12.1	5.3	4.6	4.9	4.9	4.5	4.7
8	19.2	18.7	18.9	12.4	12.2	12.3	4.6	4.4	4.5	4.8	4.6	4.7
9	19.3	18.8	19.0	12.4	11.8	12.2	4.4	4.1	4.3	4.6	4.3	4.5
10	19.3	18.9	19.1	11.8	11.0	11.4	4.1	3.7	3.9	4.4	4.1	4.3
11	19.5	19.1	19.3	11.0	10.5	10.7	3.7	3.3	3.5	4.4	4.1	4.2
12	19.5	19.3	19.4	10.5	10.2	10.3	3.3	3.0	3.1	4.3	3.0	3.7
13	19.5	19.1	19.3	10.6	10.1	10.4	3.2	3.1	3.2	3.0	2.4	2.6
14	19.2	18.7	19.0	10.7	10.4	10.5	3.8	3.2	3.5	2.4	2.1	2.2
15	18.7	18.3	18.5	10.6	10.3	10.4	4.2	3.8	4.0	2.5	2.0	2.2
16	18.5	18.1	18.3	10.4	9.8	10.1	4.1	3.8	3.9	3.7	2.4	2.9
17	18.3	17.6	17.9	9.8	9.2	9.5	4.0	3.7	3.9	3.8	3.5	3.7
18	---	---	---	9.2	8.8	8.9	4.4	4.0	4.2	3.5	3.0	3.2
19	---	---	---	8.9	8.6	8.7	4.7	4.4	4.6	3.2	2.9	3.0
20	---	15.0	---	8.9	8.5	8.7	5.3	4.7	5.0	3.0	2.5	2.6
21	15.0	14.5	14.7	8.5	8.4	8.4	5.4	5.2	5.4	2.7	2.2	2.5
22	14.8	14.3	14.6	8.6	8.4	8.5	5.2	4.8	5.0	2.2	1.9	2.0
23	15.1	14.6	14.8	8.6	8.4	8.5	4.8	4.6	4.8	2.0	1.7	1.9
24	15.3	14.8	15.0	8.5	8.2	8.4	4.6	4.2	4.4	1.8	1.4	1.6
25	15.3	14.8	15.1	8.6	8.2	8.4	4.2	3.9	4.0	1.9	1.6	1.8
26	15.3	14.7	15.0	8.8	8.5	8.7	3.9	3.5	3.6	2.2	1.9	2.1
27	14.7	14.2	14.5	8.7	8.0	8.4	3.7	3.4	3.5	2.1	1.8	2.0
28	14.2	13.8	14.0	8.0	7.2	7.5	4.0	3.6	3.8	2.5	2.0	2.2
29	13.9	13.4	13.6	7.2	6.8	7.0	4.5	4.0	4.2	3.0	2.3	2.6
30	13.4	13.1	13.2	6.8	6.4	6.6	5.5	4.5	5.0	3.5	2.8	3.1
31	13.3	12.9	13.1	---	---	---	5.6	5.3	5.5	4.2	3.4	3.7
Month	---	---	---	13.6	6.4	10.1	7.2	3.0	4.7	5.6	1.4	3.2

06934500 MISSOURI RIVER AT HERMANN, MO—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

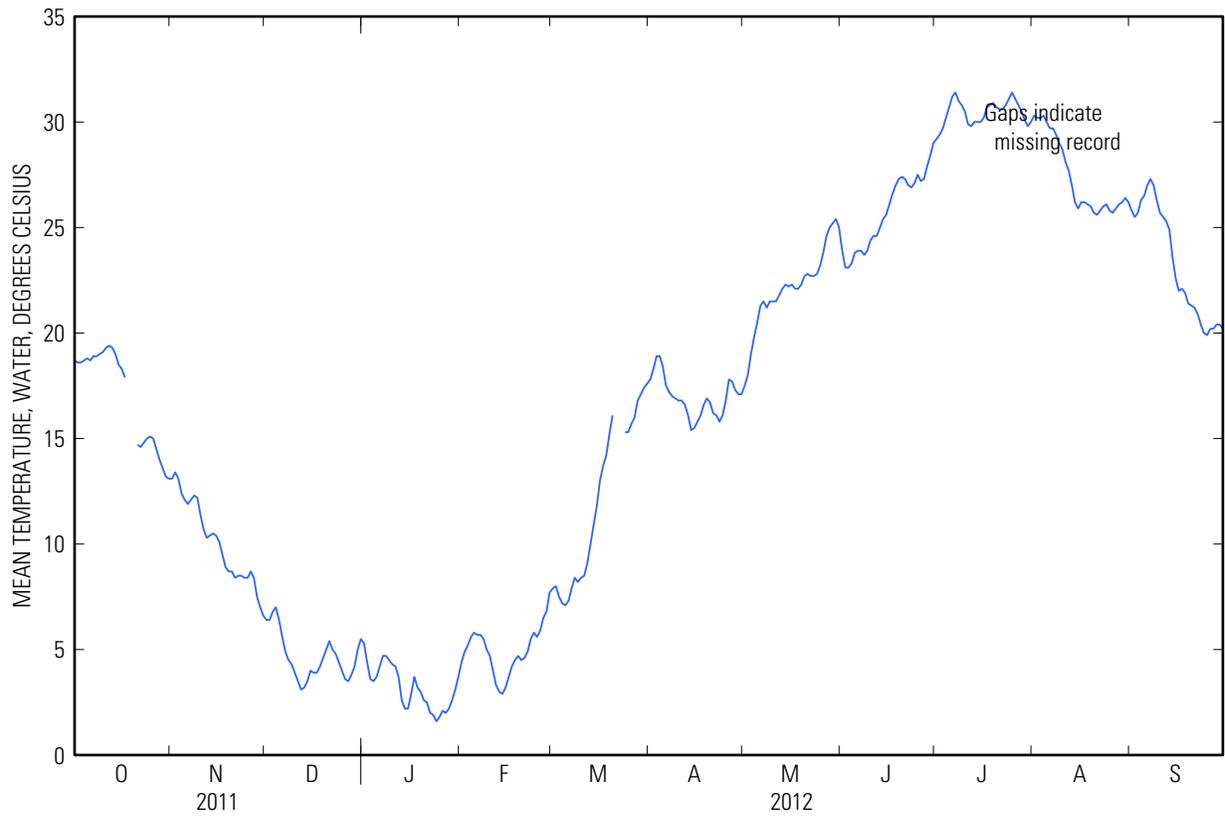
Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	4.8	4.1	4.4	8.2	7.5	7.9	18.3	17.5	17.8	17.8	17.1	17.5
2	5.2	4.6	4.9	8.1	7.7	8.0	18.8	17.8	18.3	18.6	17.6	18.0
3	5.4	5.0	5.2	7.7	7.3	7.5	19.2	18.6	18.9	19.5	18.6	19.0
4	5.7	5.4	5.6	7.3	7.0	7.2	19.2	18.7	18.9	20.2	19.5	19.8
5	6.0	5.7	5.8	7.4	6.8	7.1	18.9	17.9	18.4	20.9	20.1	20.5
6	5.9	5.6	5.7	7.7	7.0	7.3	18.0	17.2	17.5	21.7	20.8	21.3
7	5.8	5.6	5.7	8.4	7.6	7.9	17.3	17.0	17.2	21.7	21.2	21.5
8	5.7	5.2	5.5	8.4	8.2	8.4	17.3	16.7	17.0	21.4	20.9	21.2
9	5.3	4.9	5.0	8.5	7.8	8.2	17.1	16.6	16.9	21.8	21.3	21.5
10	5.0	4.3	4.7	8.7	8.0	8.4	17.1	16.6	16.8	21.8	21.2	21.5
11	4.4	3.6	4.0	8.6	8.3	8.5	17.1	16.5	16.8	21.8	21.3	21.5
12	3.6	3.1	3.3	9.7	8.6	9.1	16.9	16.3	16.6	22.1	21.5	21.8
13	3.2	2.8	3.0	10.6	9.6	10.0	16.6	15.7	16.1	22.6	21.8	22.1
14	3.1	2.7	2.9	11.4	10.5	10.9	15.7	15.2	15.4	22.6	22.0	22.3
15	3.5	3.0	3.2	12.4	11.3	11.8	15.9	15.2	15.5	22.6	21.8	22.2
16	4.0	3.4	3.7	13.6	12.4	13.0	16.1	15.6	15.8	22.6	22.0	22.3
17	4.6	3.9	4.2	13.8	13.4	13.7	16.4	15.9	16.1	22.5	21.8	22.1
18	4.8	4.2	4.5	14.6	13.7	14.2	17.0	16.3	16.6	22.5	21.7	22.1
19	5.0	4.4	4.7	15.8	14.6	15.2	17.0	16.7	16.9	22.7	22.0	22.3
20	4.7	4.2	4.5	16.5	15.7	16.1	16.9	16.4	16.7	23.0	22.4	22.7
21	4.9	4.3	4.6	---	16.3	---	16.4	16.0	16.2	23.1	22.5	22.8
22	5.2	4.5	4.9	---	---	---	16.2	15.9	16.1	23.1	22.3	22.7
23	6.1	5.1	5.5	---	15.3	---	16.0	15.6	15.8	23.1	22.3	22.7
24	6.0	5.7	5.8	15.6	14.9	15.3	16.4	15.7	16.1	23.2	22.4	22.8
25	5.9	5.3	5.6	15.7	14.9	15.3	17.4	16.3	16.8	23.6	22.9	23.2
26	6.3	5.4	5.9	16.1	15.5	15.7	18.4	17.3	17.8	24.3	23.4	23.8
27	6.8	6.1	6.5	16.6	15.6	16.0	18.3	17.2	17.7	25.1	24.1	24.6
28	7.3	6.4	6.8	17.2	16.4	16.8	17.5	17.0	17.3	25.3	24.8	25.0
29	8.1	7.2	7.7	17.4	16.8	17.1	17.4	16.8	17.1	25.7	24.7	25.2
30	---	---	---	17.8	17.2	17.4	17.4	16.8	17.1	25.8	25.1	25.4
31	---	---	---	17.9	17.3	17.6	---	---	---	25.5	24.6	25.0
Month	8.1	2.7	5.0	---	---	---	19.2	15.2	16.9	25.8	17.1	22.1

06934500 MISSOURI RIVER AT HERMANN, MO—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	24.6	23.4	23.9	29.5	28.9	29.2	30.6	30.0	30.3	26.0	25.7	25.8
2	23.4	22.8	23.1	29.8	29.1	29.4	30.4	30.0	30.2	25.7	25.4	25.5
3	23.4	22.8	23.1	30.2	29.3	29.7	30.7	29.8	30.2	26.3	25.3	25.7
4	23.9	22.9	23.3	30.7	29.7	30.2	30.6	30.0	30.3	26.6	26.1	26.3
5	24.1	23.4	23.8	31.2	30.1	30.7	30.3	29.8	30.0	26.8	26.3	26.5
6	24.3	23.6	23.9	31.7	30.7	31.2	30.0	29.2	29.7	27.3	26.7	27.0
7	24.1	23.6	23.9	31.9	31.1	31.4	30.0	29.2	29.7	27.8	26.9	27.3
8	24.1	23.3	23.7	31.3	30.6	31.0	29.8	29.1	29.4	27.4	26.7	27.0
9	24.4	23.4	23.9	31.2	30.4	30.8	29.5	28.6	29.0	26.8	26.0	26.3
10	24.8	24.0	24.4	30.9	30.2	30.5	29.2	28.4	28.7	26.0	25.4	25.7
11	24.7	24.5	24.6	30.4	29.6	29.9	28.4	27.7	28.1	25.8	25.1	25.5
12	25.1	24.2	24.6	30.2	29.4	29.8	28.2	27.4	27.7	25.6	24.9	25.3
13	25.5	24.6	25.0	30.6	29.6	30.0	27.5	26.5	27.0	25.3	24.4	24.9
14	25.9	25.0	25.4	30.3	29.7	30.0	26.5	26.0	26.2	24.4	23.1	23.6
15	26.1	25.2	25.6	30.4	29.5	30.0	26.3	25.4	25.9	23.1	22.2	22.6
16	26.6	25.6	26.1	30.7	29.8	30.2	26.4	25.9	26.2	22.2	21.8	22.0
17	27.1	26.1	26.6	31.0	30.3	30.7	26.7	25.7	26.2	22.3	21.9	22.1
18	27.5	26.6	27.0	31.2	30.4	30.8	26.5	25.8	26.1	22.1	21.6	21.9
19	27.6	26.8	27.3	31.2	30.5	30.9	26.2	25.7	26.0	21.8	21.1	21.4
20	27.8	27.0	27.4	31.0	30.4	30.7	25.9	25.4	25.7	21.6	21.0	21.3
21	27.5	27.1	27.3	30.9	30.2	30.6	26.0	25.1	25.6	21.5	20.8	21.2
22	27.4	26.7	27.0	31.0	30.1	30.6	26.3	25.3	25.8	21.2	20.7	20.9
23	27.2	26.6	26.9	31.3	30.3	30.8	26.4	25.6	26.0	20.8	20.1	20.4
24	27.6	26.6	27.1	31.6	30.6	31.1	26.3	25.8	26.1	20.4	19.7	20.0
25	27.9	27.2	27.5	31.7	31.0	31.4	26.1	25.6	25.8	20.2	19.6	19.9
26	27.5	26.8	27.2	31.5	30.9	31.1	25.9	25.6	25.7	20.4	20.0	20.2
27	27.9	26.8	27.3	31.2	30.4	30.8	26.4	25.6	25.9	20.3	20.1	20.2
28	28.4	27.4	27.9	30.8	30.1	30.5	26.5	25.7	26.1	20.6	20.1	20.4
29	29.0	27.8	28.4	30.4	29.7	30.1	26.6	25.8	26.2	20.7	20.0	20.4
30	29.4	28.6	29.0	30.1	29.5	29.8	26.8	26.0	26.4	20.5	20.0	20.2
31	---	---	---	30.6	29.5	30.0	26.6	26.0	26.2	---	---	---
Month	29.4	22.8	25.7	31.9	28.9	30.4	30.7	25.1	27.4	27.8	19.6	23.2

06934500 MISSOURI RIVER AT HERMANN, MO—Continued



06934500 MISSOURI RIVER AT HERMANN, MO—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	8.3	8.2	8.2	8.6	8.2	8.3	---	---	---	---	---	---
2	8.4	8.2	8.3	8.5	8.2	8.3	---	---	---	---	---	---
3	8.4	7.9	8.2	8.3	7.7	8.0	---	---	---	---	---	---
4	8.1	6.8	7.6	8.3	8.0	8.1	---	---	---	---	---	---
5	---	---	---	8.3	8.0	8.2	---	---	---	---	---	---
6	---	---	---	8.5	8.2	8.3	---	---	---	---	---	---
7	8.3	7.1	7.9	8.7	7.9	8.2	---	---	---	---	---	---
8	8.4	7.1	7.9	8.6	7.9	8.1	---	---	---	---	---	---
9	8.6	7.7	8.2	8.0	7.8	7.9	---	---	---	---	---	---
10	8.4	7.6	8.1	7.8	7.6	7.7	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	8.5	6.6	7.5	---	---	---	---	---	---	---	---	---
16	8.6	7.8	8.3	---	---	---	---	---	---	---	---	---
17	8.6	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	7.9	7.4	7.5	---	---	---	---	---	---	---	---	---
22	7.6	7.4	7.5	---	---	---	---	---	---	---	---	---
23	7.8	7.6	7.6	---	---	---	---	---	---	---	---	---
24	8.0	7.8	7.8	---	---	---	---	---	---	---	---	---
25	7.9	7.6	7.8	---	---	---	---	---	---	---	---	---
26	7.8	7.5	7.7	---	---	---	---	---	---	---	---	---
27	8.2	7.5	7.6	---	---	---	---	---	---	---	---	---
28	8.2	7.7	7.8	---	---	---	---	---	---	---	---	---
29	8.8	8.1	8.2	---	---	---	---	---	---	---	---	---
30	8.7	8.3	8.4	---	---	---	---	---	---	---	---	---
31	8.8	8.2	8.3	---	---	---	---	---	---	---	---	---
Month	---	---	---	---	---	---	---	---	---	---	---	---

06934500 MISSOURI RIVER AT HERMANN, MO—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

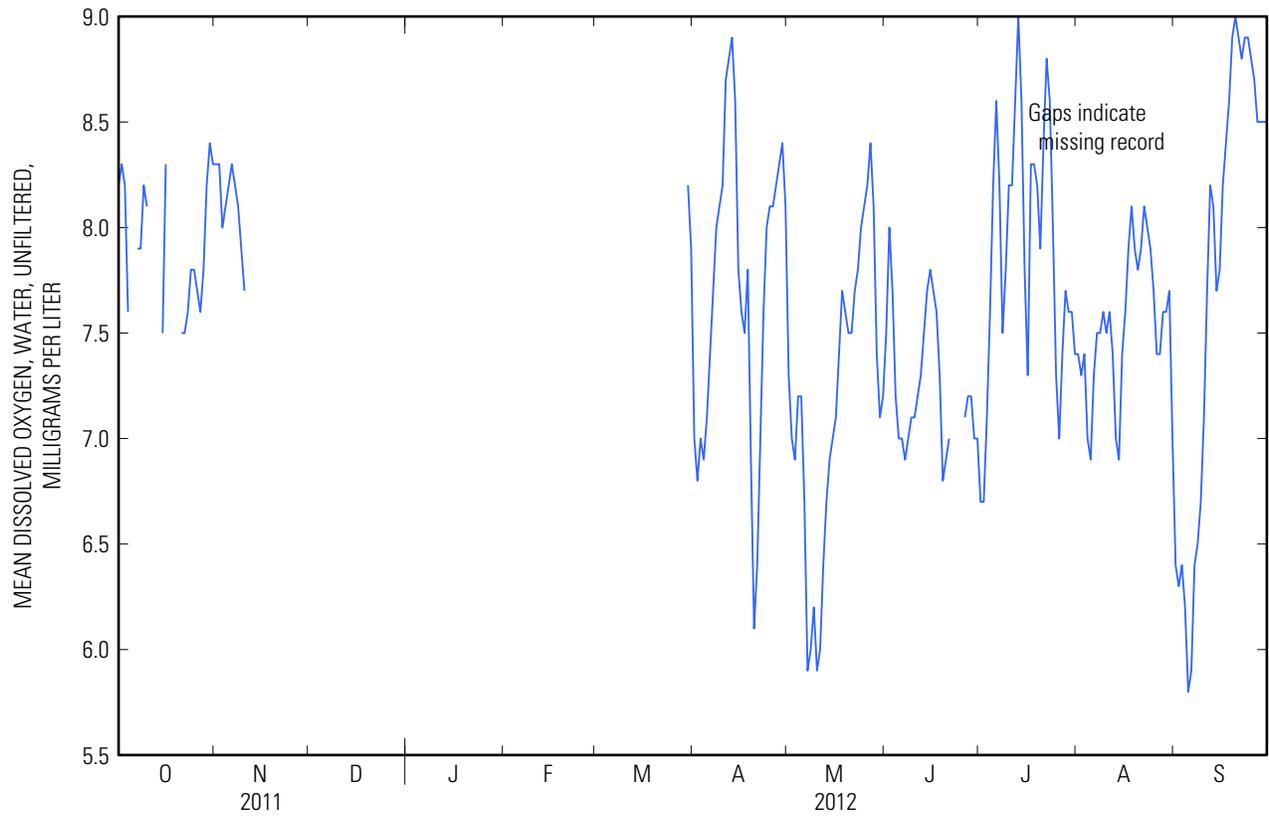
Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	---	---	---	---	---	---	7.5	6.7	7.0	7.7	7.1	7.3
2	---	---	---	---	---	---	7.0	6.6	6.8	7.1	6.9	7.0
3	---	---	---	---	---	---	7.1	6.8	7.0	7.0	6.9	6.9
4	---	---	---	---	---	---	7.1	6.8	6.9	7.4	6.9	7.2
5	---	---	---	---	---	---	7.2	7.0	7.1	7.5	6.9	7.2
6	---	---	---	---	---	---	7.7	7.2	7.4	6.9	6.4	6.7
7	---	---	---	---	---	---	7.8	7.6	7.7	6.4	5.7	5.9
8	---	---	---	---	---	---	8.2	7.8	8.0	6.3	5.8	6.0
9	---	---	---	---	---	---	8.2	8.1	8.1	6.3	6.1	6.2
10	---	---	---	---	---	---	8.5	8.1	8.2	6.1	5.7	5.9
11	---	---	---	---	---	---	8.9	8.5	8.7	6.3	5.7	6.0
12	---	---	---	---	---	---	8.9	8.6	8.8	6.6	6.3	6.4
13	---	---	---	---	---	---	9.0	8.8	8.9	6.8	6.6	6.7
14	---	---	---	---	---	---	9.0	7.8	8.6	7.0	6.8	6.9
15	---	---	---	---	---	---	7.9	7.7	7.8	7.0	7.0	7.0
16	---	---	---	---	---	---	7.8	7.5	7.6	7.3	7.0	7.1
17	---	---	---	---	---	---	7.5	7.4	7.5	7.6	7.3	7.4
18	---	---	---	---	---	---	8.0	7.5	7.8	7.8	7.5	7.7
19	---	---	---	---	---	---	7.7	6.3	6.9	7.7	7.6	7.6
20	---	---	---	---	---	---	6.3	6.0	6.1	7.6	7.4	7.5
21	---	---	---	---	---	---	6.7	6.2	6.4	7.7	7.3	7.5
22	---	---	---	---	---	---	7.4	6.7	7.0	7.9	7.6	7.7
23	---	---	---	---	---	---	7.9	7.4	7.6	8.1	7.6	7.8
24	---	---	---	---	---	---	8.0	7.9	8.0	8.3	7.8	8.0
25	---	---	---	---	---	---	8.1	8.0	8.1	8.3	7.8	8.1
26	---	---	---	---	---	---	8.1	8.1	8.1	8.6	7.8	8.2
27	---	---	---	---	---	---	8.4	8.1	8.2	8.9	7.9	8.4
28	---	---	---	---	---	---	8.4	8.3	8.3	8.5	7.7	8.1
29	---	---	---	---	---	---	8.4	8.1	8.4	7.7	7.2	7.4
30	---	---	---	8.3	8.0	8.2	8.2	7.7	8.1	7.3	6.9	7.1
31	---	---	---	8.2	7.4	7.9	---	---	---	7.3	7.0	7.2
Month	---	---	---	---	---	---	9.0	6.0	7.7	8.9	5.7	7.2

06934500 MISSOURI RIVER AT HERMANN, MO—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	8.0	7.2	7.5	6.9	6.6	6.7	8.2	6.6	7.4	6.7	6.3	6.4
2	8.3	7.6	8.0	6.9	6.6	6.7	7.7	6.8	7.3	6.4	6.2	6.3
3	8.0	7.5	7.7	7.7	6.8	7.1	8.4	6.6	7.4	6.5	6.3	6.4
4	7.5	7.0	7.2	8.4	7.0	7.6	7.6	6.4	7.0	6.4	6.0	6.2
5	7.0	6.9	7.0	9.3	7.3	8.2	7.7	6.2	6.9	6.0	5.7	5.8
6	7.0	7.0	7.0	9.5	7.7	8.6	8.2	6.5	7.3	6.2	5.7	5.9
7	7.0	6.9	6.9	9.0	7.6	8.2	8.3	6.8	7.5	6.7	6.2	6.4
8	7.0	6.9	7.0	7.9	6.8	7.5	8.1	6.9	7.5	6.8	6.2	6.5
9	7.1	7.0	7.1	9.0	6.8	7.8	8.4	6.8	7.6	7.1	6.4	6.7
10	7.2	7.1	7.1	9.3	7.2	8.2	8.1	6.9	7.5	7.6	6.8	7.1
11	7.2	7.2	7.2	8.9	7.3	8.2	8.4	6.9	7.6	8.3	7.2	7.7
12	7.5	7.2	7.3	9.8	7.5	8.6	7.9	7.0	7.4	8.9	7.6	8.2
13	7.8	7.3	7.5	10.1	8.0	9.0	7.4	6.8	7.0	8.4	7.8	8.1
14	8.0	7.4	7.7	9.5	7.5	8.6	7.3	6.4	6.9	8.1	7.4	7.7
15	8.0	7.5	7.8	8.7	7.2	7.8	8.3	6.7	7.4	8.3	7.5	7.8
16	8.1	7.4	7.7	8.2	6.6	7.3	7.9	7.2	7.6	8.8	7.8	8.2
17	7.8	7.3	7.6	9.3	7.4	8.3	8.8	7.2	7.9	8.9	8.0	8.4
18	7.6	7.0	7.3	9.2	7.4	8.3	8.7	7.5	8.1	9.3	8.0	8.6
19	7.0	6.7	6.8	9.2	7.2	8.2	8.4	7.4	7.9	9.5	8.3	8.9
20	7.1	6.7	6.9	9.0	6.9	7.9	8.3	7.3	7.8	9.6	8.4	9.0
21	7.1	6.8	7.0	9.5	7.2	8.4	8.6	7.3	7.9	9.4	8.4	8.9
22	---	---	---	10.0	7.6	8.8	8.7	7.5	8.1	9.3	8.2	8.8
23	---	---	---	9.7	7.6	8.6	8.6	7.5	8.0	9.5	8.4	8.9
24	---	---	---	8.8	7.2	8.0	8.4	7.3	7.9	9.4	8.5	8.9
25	7.0	---	---	8.0	6.6	7.3	8.2	7.2	7.7	9.2	8.3	8.8
26	7.2	6.9	7.1	7.6	6.3	7.0	7.7	7.1	7.4	9.0	8.4	8.7
27	7.5	7.0	7.2	8.6	6.5	7.4	8.1	6.8	7.4	8.7	8.2	8.5
28	7.3	7.0	7.2	8.7	6.8	7.7	8.2	7.1	7.6	9.0	8.1	8.5
29	7.3	6.8	7.0	8.5	6.8	7.6	8.2	7.1	7.6	9.0	8.2	8.5
30	7.1	6.8	7.0	8.1	7.0	7.6	8.1	7.2	7.7	8.8	8.2	8.5
31	---	---	---	8.4	6.6	7.4	7.6	6.7	7.0	---	---	---
Month	---	---	---	10.1	6.3	7.9	8.8	6.2	7.5	9.6	5.7	7.8

06934500 MISSOURI RIVER AT HERMANN, MO—Continued



06934500 MISSOURI RIVER AT HERMANN, MO—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	87	73	80	20	12	15	26	7.9	11	15	8.6	11
2	82	71	77	18	12	14	12	7.2	8.3	12	7.4	8.8
3	81	62	73	15	9.6	12	9.5	6.3	7.6	13	6.8	8.2
4	75	38	57	17	8.6	11	11	5.9	6.8	12	5.4	6.7
5	61	22	44	13	7.8	9.5	8.1	5.3	6.2	8.3	4.7	5.5
6	62	22	42	13	7.5	9.4	11	5.7	7.2	8.2	4.4	4.9
7	60	36	52	14	7.1	9.6	31	9.4	20	7.2	4.4	5.2
8	58	36	49	14	6.2	8.4	35	24	29	5.4	4.1	4.7
9	56	42	47	14	6.4	9.3	61	29	44	5.8	4.2	4.7
10	53	15	40	36	13	21	61	28	44	6.0	4.1	4.5
11	44	13	28	41	22	26	44	30	36	8.6	4.3	5.2
12	35	13	21	36	20	24	32	20	26	9.8	4.8	7.0
13	36	7.9	19	22	16	18	26	14	20	16	5.3	7.5
14	30	6.5	12	27	15	18	44	14	20	19	11	15
15	35	13	24	17	13	15	17	9.6	13	16	7.9	12
16	37	26	32	27	13	17	21	10	14	9.5	4.3	5.8
17	34	15	24	14	9.5	12	110	20	48	7.7	4.3	5.4
18	---	---	---	14	9.1	11	140	79	97	6.3	3.8	4.3
19	---	---	---	13	11	12	130	74	98	13	3.5	6.2
20	32	19	25	15	9.8	11	140	68	110	20	11	13
21	30	18	23	17	10	12	180	120	140	17	9.0	11
22	24	18	21	17	12	13	180	140	160	11	5.9	8.5
23	23	17	20	16	11	13	150	96	120	21	5.8	8.8
24	25	17	20	22	11	14	110	62	80	9.2	4.9	6.1
25	22	14	17	17	10	13	79	34	54	7.1	3.7	4.6
26	20	13	16	15	11	12	39	24	31	14	3.9	5.6
27	18	11	14	17	11	13	69	22	30	5.4	3.4	3.9
28	19	11	14	20	12	15	44	20	29	4.9	2.9	3.6
29	22	14	17	29	13	17	33	13	20	5.6	2.8	3.7
30	27	14	18	22	12	15	32	18	26	8.7	2.8	3.8
31	20	12	16	---	---	---	20	9.5	13	3.2	2.6	2.8
Month	---	---	---	41	6.2	14	180	5.3	44	21	2.6	6.7

06934500 MISSOURI RIVER AT HERMANN, MO—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

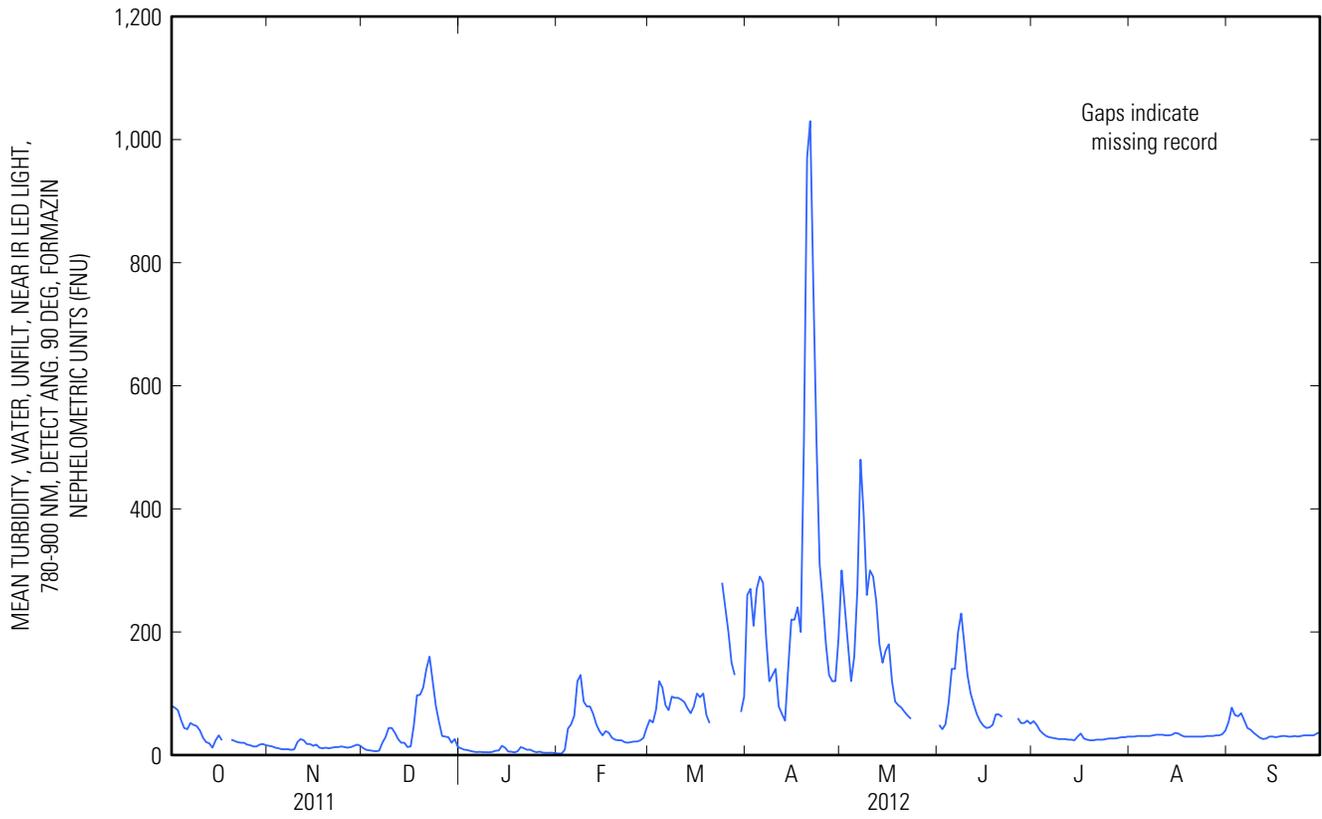
Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	3.0	2.2	2.5	59	55	57	330	160	260	330	280	300
2	3.7	2.1	2.4	56	50	53	320	220	270	290	210	240
3	42	2.1	8.8	93	55	74	240	190	210	220	140	180
4	75	11	43	130	93	120	300	230	270	150	97	120
5	64	34	50	130	93	110	330	240	290	230	97	160
6	85	54	64	94	71	81	330	220	280	370	220	270
7	140	81	120	82	68	73	230	150	190	530	370	480
8	140	100	130	100	82	95	160	97	120	460	280	390
9	100	76	87	98	88	93	160	94	130	300	240	260
10	86	75	79	110	90	93	160	98	140	320	270	300
11	86	73	79	98	86	90	99	67	79	310	270	290
12	76	58	67	90	81	86	73	62	67	280	210	250
13	59	43	50	84	69	76	64	51	56	210	150	180
14	45	34	39	73	64	68	330	52	140	170	140	150
15	36	30	32	95	67	79	320	160	220	200	150	170
16	55	29	39	130	77	100	270	150	220	200	140	180
17	48	30	36	120	76	94	260	200	240	160	97	120
18	32	25	28	150	70	100	300	160	200	100	81	87
19	26	24	25	71	57	65	730	280	510	91	76	81
20	26	24	24	59	49	52	1,170	730	970	85	73	77
21	26	23	24	---	45	---	1,170	870	1,030	75	66	70
22	23	20	21	---	---	---	930	640	760	69	61	64
23	21	19	20	300	---	---	650	400	510	63	56	59
24	22	19	21	300	250	280	400	270	310	---	56	---
25	23	21	22	280	220	240	280	200	250	---	---	---
26	23	21	22	240	160	200	280	140	180	---	---	---
27	26	22	24	200	130	150	140	120	130	---	---	---
28	35	24	28	160	110	130	130	110	120	---	---	---
29	56	34	44	---	82	---	240	99	120	---	---	---
30	---	---	---	83	62	70	280	110	190	---	---	---
31	---	---	---	160	62	95	---	---	---	---	54	---
Month	140	2.1	42	---	---	---	1,170	51	280	---	---	---

06934500 MISSOURI RIVER AT HERMANN, MO—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	55	43	49	58	53	55	31	29	30	71	43	54
2	44	40	42	55	44	49	31	29	30	80	69	77
3	60	43	50	45	37	40	33	30	31	74	59	65
4	130	60	85	38	32	35	33	30	31	68	58	63
5	150	130	140	34	29	31	32	30	31	73	64	68
6	160	130	140	31	26	29	32	30	31	66	48	56
7	230	160	200	30	26	28	32	30	31	49	42	44
8	230	210	230	31	25	27	35	30	32	44	38	41
9	210	150	180	28	25	26	34	32	33	40	33	36
10	160	120	130	30	25	26	34	32	33	35	29	32
11	120	89	100	29	24	26	34	32	33	31	25	28
12	90	73	82	32	24	25	35	31	32	31	24	26
13	74	59	66	30	24	25	35	31	32	32	25	27
14	61	50	55	29	22	24	43	32	33	32	28	30
15	52	45	48	39	23	30	46	31	36	32	28	30
16	46	42	44	40	30	35	44	31	35	31	26	29
17	48	43	45	33	25	27	39	30	32	32	28	30
18	60	44	49	27	23	25	32	29	30	33	29	31
19	72	58	66	26	22	24	32	28	30	33	29	31
20	73	62	66	25	23	24	32	29	30	32	28	30
21	72	58	62	26	24	25	31	29	30	32	28	30
22	---	72	---	28	24	25	32	28	30	33	30	31
23	---	---	---	28	24	25	32	28	30	32	29	30
24	---	---	---	31	24	26	33	29	30	33	29	31
25	---	65	---	31	25	27	33	29	31	34	31	32
26	65	56	60	31	25	27	34	29	31	33	31	32
27	57	47	52	28	26	27	34	30	31	33	30	32
28	59	47	52	29	27	28	34	31	32	35	30	32
29	60	52	56	31	28	29	34	31	32	37	33	35
30	53	49	51	32	28	29	38	32	34	38	35	37
31	---	---	---	31	29	30	44	36	40	---	---	---
Month	---	---	---	58	22	29	46	28	32	80	24	38

06934500 MISSOURI RIVER AT HERMANN, MO—Continued



06934500 MISSOURI RIVER AT HERMANN, MO—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

[e, estimated]

Day	Mean	Mean	Sediment	Mean	Mean	Sediment	Mean	Mean	Sediment
	discharge	concentration	discharge	discharge	concentration	discharge	discharge	concentration	discharge
	(ft ³ /s)	(mg/L)	(tons/day)	(ft ³ /s)	(mg/L)	(tons/day)	(ft ³ /s)	(mg/L)	(tons/day)
	October			November			December		
1	122,000	215	70,800	65,100	65	11,400	69,700	57	10,700
2	120,000	208	67,400	64,800	64	11,200	68,500	50	9,200
3	116,000	200	62,600	65,500	58	10,300	68,100	49	9,000
4	113,000	163	49,700	65,900	56	10,000	67,500	47	8,600
5	108,000	134	39,100	66,500	53	9,500	67,500	46	8,400
6	103,000	128	35,600	66,800	53	9,600	70,600	48	9,100
7	98,600	151	40,200	66,500	53	9,500	75,300	77	15,700
8	94,300	144	36,700	67,100	51	9,200	79,400	99	21,200
9	89,900	140	34,000	73,200	53	10,500	78,100	134	28,300
10	85,600	123	28,400	80,000	e70	e15,100	73,800	133	26,500
11	82,100	96	21,300	81,400	91	20,000	71,100	114	21,900
12	80,200	80	17,300	79,200	86	18,400	70,300	91	17,300
13	78,400	75	15,900	77,700	74	15,500	70,000	77	14,600
14	76,600	e80	e16,500	75,300	73	14,800	69,400	78	14,600
15	75,200	85	17,300	73,000	66	13,000	69,900	60	11,300
16	74,600	105	21,100	71,500	69	13,300	73,700	64	12,700
17	74,500	e110	e22,100	70,800	58	11,100	80,200	142	30,700
18	74,700	e107	e21,600	69,900	56	10,600	84,400	255	58,100
19	73,100	e100	e19,700	69,200	58	10,800	84,000	256	58,100
20	71,600	e96	e18,500	68,600	58	10,700	91,900	281	69,700
21	71,400	84	16,200	67,900	60	11,000	106,000	348	99,600
22	69,900	79	14,900	67,600	62	11,300	109,000	400	118,000
23	68,900	78	14,500	68,000	61	11,200	98,200	309	81,900
24	68,000	76	14,000	68,700	64	11,900	87,700	215	50,900
25	67,500	71	12,900	68,000	60	11,000	79,100	156	33,300
26	68,300	69	12,700	68,400	59	10,900	71,100	103	19,800
27	67,700	62	11,300	69,700	60	11,300	68,100	101	18,600
28	66,700	64	11,500	73,000	65	12,800	69,900	98	18,500
29	66,300	70	12,500	75,200	71	14,400	68,400	78	14,400
30	65,900	73	13,000	72,300	67	13,100	71,300	90	17,300
31	65,200	67	11,800	---	---	---	70,300	62	11,800
Total	2,557,200	---	801,100	2,116,800	---	363,400	2,382,500	---	939,800

06934500 MISSOURI RIVER AT HERMANN, MO—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

[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	64,400	57	9,900	50,500	37	5,000	57,900	162	25,300
2	59,200	52	8,300	51,200	37	5,100	60,300	153	24,900
3	57,600	50	7,800	52,700	52	7,400	63,800	202	34,800
4	56,500	47	7,200	64,600	131	22,800	62,600	296	50,000
5	56,200	44	6,700	71,300	146	28,100	61,200	294	48,600
6	55,600	43	6,500	75,500	179	36,500	61,000	217	35,700
7	54,700	43	6,400	81,800	e238	e52,600	61,000	200	32,900
8	54,400	42	6,200	81,800	319	70,500	60,600	249	40,700
9	54,100	42	6,100	75,400	232	47,200	60,000	244	39,500
10	53,000	42	6,000	72,500	213	41,700	59,000	245	39,000
11	51,900	43	6,000	69,800	213	40,100	60,000	237	38,400
12	51,600	47	6,500	64,500	186	32,400	59,300	229	36,700
13	52,600	48	6,800	62,700	147	24,900	59,400	206	33,000
14	54,700	65	9,600	65,900	121	21,500	63,500	187	32,100
15	53,800	59	8,600	61,800	104	17,400	75,400	214	43,600
16	51,100	45	6,200	63,100	121	20,600	81,000	261	57,100
17	49,500	44	5,900	65,800	114	20,300	83,300	247	55,600
18	48,700	41	5,400	65,300	96	16,900	86,500	267	62,400
19	51,800	46	6,400	62,900	89	15,100	74,000	181	36,200
20	57,100	61	9,400	59,700	87	14,000	67,600	152	27,700
21	60,000	57	9,200	58,200	85	13,400	82,400	e241	e53,600
22	55,000	51	7,600	57,400	81	12,600	149,000	e507	e204,000
23	48,400	52	6,800	56,400	77	11,700	183,000	e643	e318,000
24	47,300	45	5,700	57,400	80	12,400	184,000	683	339,000
25	47,900	42	5,400	56,600	81	12,400	186,000	591	297,000
26	48,200	44	5,700	57,300	81	12,500	183,000	501	248,000
27	48,200	40	5,200	58,700	86	13,600	162,000	376	164,000
28	46,900	39	4,900	61,400	96	15,900	132,000	e300	e156,000
29	48,700	40	5,300	62,900	132	22,400	124,000	e210	e136,000
30	47,600	40	5,100	---	---	---	122,000	193	63,600
31	47,700	38	4,900	---	---	---	134,000	249	90,100
Total	1,634,400	---	207,700	1,845,100	---	667,000	2,958,800	---	2,863,500

06934500 MISSOURI RIVER AT HERMANN, MO—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

[e, estimated]

Day	Mean	Mean	Sediment	Mean	Mean	Sediment	Mean	Mean	Sediment
	discharge	concentration	discharge	discharge	concentration	discharge	discharge	concentration	discharge
	(ft ³ /s)	(mg/L)	(tons/day)	(ft ³ /s)	(mg/L)	(tons/day)	(ft ³ /s)	(mg/L)	(tons/day)
	April			May			June		
1	143,000	627	242,000	128,000	718	248,000	63,100	143	24,400
2	140,000	661	250,000	136,000	587	216,000	65,100	129	22,700
3	136,000	520	191,000	123,000	446	148,000	65,900	147	26,200
4	127,000	654	224,000	115,000	299	92,800	69,800	228	43,000
5	114,000	687	212,000	119,000	401	129,000	70,800	364	69,600
6	105,000	682	193,000	123,000	645	214,000	71,600	347	67,100
7	96,300	465	121,000	127,000	1,130	388,000	68,400	484	89,400
8	94,600	315	80,500	132,000	931	332,000	66,400	549	98,400
9	96,000	329	85,300	134,000	637	230,000	64,700	451	78,800
10	93,300	351	88,400	130,000	725	254,000	62,700	341	57,700
11	88,100	214	50,900	125,000	700	236,000	61,100	268	44,200
12	84,100	185	42,000	109,000	599	176,000	60,100	219	35,500
13	80,000	161	34,800	96,200	434	113,000	60,100	183	29,700
14	113,000	356	109,000	91,000	380	93,400	60,000	157	25,400
15	162,000	543	238,000	86,300	426	99,300	58,600	141	22,300
16	155,000	526	220,000	80,700	442	96,300	58,400	132	20,800
17	143,000	578	223,000	75,800	306	62,600	58,700	135	21,400
18	150,000	480	194,000	77,500	232	48,500	57,200	144	22,200
19	164,000	1,210	536,000	82,600	219	48,800	56,000	e135	e20,400
20	140,000	2,270	858,000	81,800	209	46,200	58,400	e145	e22,900
21	120,000	2,390	774,000	75,000	191	38,700	62,900	173	29,400
22	106,000	1,770	507,000	68,000	179	32,900	62,100	e159	e26,700
23	95,900	1,190	308,000	65,600	167	29,600	58,800	e146	e23,200
24	88,200	749	178,000	63,700	e166	e28,600	58,200	e144	e22,600
25	82,300	601	134,000	62,600	e161	e27,200	57,500	e141	e21,900
26	79,100	456	97,400	62,700	e162	e27,400	57,800	169	26,400
27	76,300	321	66,100	64,500	e169	e29,400	59,400	150	24,100
28	73,800	308	61,400	70,900	e195	e37,300	58,500	152	24,000
29	73,100	307	60,600	66,900	e179	e32,300	57,400	159	24,600
30	93,600	466	118,000	61,700	e158	e26,300	60,700	148	24,300
31	---	---	---	62,800	e162	e27,500	---	---	---
Total	3,312,700	---	6,497,400	2,897,300	---	3,609,100	1,850,400	---	1,089,300

06934500 MISSOURI RIVER AT HERMANN, MO—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

[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	58,300	157	24,700	45,200	99	12,100	52,600	155	22,000
2	56,000	145	21,900	45,300	101	12,400	50,400	208	28,300
3	53,100	124	17,800	45,100	104	12,700	52,500	181	25,700
4	51,400	111	15,400	45,100	104	12,700	60,200	175	28,400
5	50,700	103	14,100	45,200	102	12,400	57,000	188	28,900
6	50,100	97	13,100	45,200	102	12,400	50,100	161	21,800
7	49,900	95	12,800	45,100	103	12,500	49,800	133	17,900
8	51,400	93	12,900	44,900	104	12,600	49,200	126	16,700
9	50,300	92	12,500	44,800	106	12,800	47,500	114	14,600
10	48,500	92	12,000	44,600	108	13,000	46,200	104	13,000
11	47,300	91	11,600	44,400	108	12,900	45,100	96	11,700
12	46,800	89	11,200	44,200	106	12,700	44,700	92	11,100
13	46,800	89	11,200	44,300	106	12,700	44,400	94	11,300
14	47,100	e98	e12,400	44,300	108	12,900	44,300	100	12,000
15	46,500	e97	e12,000	44,500	114	13,700	44,200	100	11,900
16	46,400	e95	e12,000	45,300	112	13,700	44,100	98	11,700
17	46,600	94	11,800	45,500	105	12,900	44,500	100	12,000
18	46,700	88	11,100	44,700	101	12,200	45,300	102	12,500
19	46,200	86	10,700	44,500	99	11,900	46,200	102	12,700
20	46,100	86	10,700	44,500	100	12,000	46,100	99	12,300
21	46,500	88	11,000	44,600	101	12,200	45,600	100	12,300
22	46,200	89	11,100	44,600	101	12,200	44,700	103	12,400
23	45,700	89	11,000	44,400	100	12,000	44,100	101	12,000
24	45,400	91	11,200	44,300	101	12,100	44,000	103	12,200
25	46,000	93	11,600	44,400	102	12,200	44,000	105	12,500
26	46,100	93	11,600	44,400	102	12,200	44,300	105	12,600
27	45,400	93	11,400	44,600	104	12,500	44,700	105	12,700
28	45,100	96	11,700	44,700	106	12,800	44,400	105	12,600
29	45,300	97	11,900	45,100	106	12,900	44,100	111	13,200
30	45,400	99	12,100	47,800	108	13,900	44,300	e109	e13,000
31	45,400	100	12,300	53,400	124	17,900	---	---	---
Total	1,488,700	---	398,800	1,399,000	---	396,100	1,408,600	---	462,000

	Total discharge (ft ³ /s)	Total suspended sediment discharge (tons)
Year	25,851,500	18,295,200