

Water-Data Report 2010

06342500 MISSOURI RIVER AT BISMARCK, ND

Lake Oahe Basin
Painted Woods-Square Butte Subbasin

LOCATION.--Lat 46°48'51", long 100°49'17" referenced to North American Datum of 1983, in SE ¼ NW ¼ SE ¼ sec.31, T.139 N., R.80 W., Burleigh County, ND, Hydrologic Unit 10130101, on left bank 40 ft upstream from Bismarck City waterplant, 2,100 ft downstream from Burlington Northern Railway bridge, 1.6 mi northwest of Bismarck Post Office, 3.5 mi upstream from Heart River, and at mile 1,314.5.

DRAINAGE AREA.--186,400 mi², approximately.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--DAILY DISCHARGE--October to November 1927, April 1928 to current year. See WSP 1729 or 1917 for history of data prior to April 1928.

PERIOD OF RECORD.--DAILY GAGE HEIGHT--October 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,618.28 ft above National Geodetic Vertical Datum of 1929, revised. See WSP 1729 or 1917 for history of changes prior to September 30, 1937.

REMARKS.--Records good except for estimated daily discharges, which are fair.

REGULATION.--Flow regulated by Lake Sakakawea (station 06338000), 75.4 mi upstream, since November 1953.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 31.6 ft, March 31, 1881, present site and datum, ice jam. A stage of 30.4 ft occurred on March 14, 1910, present site and datum, ice jam.

EXTREMES FOR PERIOD PRIOR TO REGULATION.--Prior to completion of Garrison Dam in 1953, maximum discharge, 500,000 ft³/s, April 6, 1952, gage height, 27.90 ft.

EXTREMES FOR PERIOD AFTER REGULATION.--Since completion of Garrison Dam in 1953, maximum discharge, 68,900 ft³/s, July 13, 1975, gage height, 14.24 ft; maximum gage height, 16.11 ft, March 24, 2009, backwater from ice.

06342500 MISSOURI RIVER AT BISMARCK, ND—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	14,100	13,800	14,300	e16,400	e18,700	e17,000	17,900	12,300	17,300	15,300	17,000	20,500
2	14,100	13,300	15,500	e16,600	e18,400	e16,900	19,600	10,200	17,100	15,400	16,900	22,400
3	13,800	13,400	e15,600	e16,700	e18,100	e16,900	18,800	11,300	17,000	15,200	16,700	27,000
4	14,200	13,800	e15,500	e17,200	e18,200	e16,700	16,700	13,600	17,100	15,100	16,500	27,200
5	13,900	13,800	e15,500	e17,900	e18,200	e16,600	15,400	10,800	16,500	14,900	16,600	28,200
6	14,300	13,600	e15,400	e17,700	e18,300	e16,700	14,200	12,700	16,800	15,000	16,500	28,600
7	13,900	13,800	e15,500	e17,500	e18,100	e16,600	13,300	13,600	16,900	14,900	16,400	29,500
8	14,000	13,700	e15,600	e17,900	e17,900	e16,500	12,500	11,200	17,200	14,700	16,500	28,600
9	13,900	13,600	e15,500	e18,800	e17,500	e16,500	12,100	12,300	16,700	14,700	16,300	28,000
10	13,900	13,700	e15,500	e18,800	e16,800	e16,600	11,800	15,000	16,600	14,600	16,300	28,400
11	13,900	14,100	e15,600	e18,800	e16,800	e16,400	11,400	13,000	16,600	14,800	16,100	28,500
12	13,700	14,200	e15,800	e19,100	e16,800	e15,700	10,900	13,300	16,500	14,800	16,500	28,700
13	13,900	14,000	e15,700	e19,200	e16,800	e15,200	11,100	15,900	16,400	14,900	16,800	28,600
14	13,700	13,900	e15,500	e19,000	e16,800	e14,400	11,800	14,200	e15,900	14,900	16,900	29,300
15	14,100	13,500	e15,400	e18,900	e16,700	e14,300	11,400	14,500	e16,000	14,900	16,400	28,500
16	14,100	13,400	e15,600	e18,900	e16,800	e13,900	10,900	16,800	15,900	14,400	16,100	28,300
17	13,600	13,700	e15,800	e18,900	e16,800	13,200	10,900	17,000	15,700	14,600	16,400	27,900
18	13,500	13,800	e15,700	e18,900	e16,700	12,300	10,700	17,000	16,600	14,800	16,500	28,600
19	13,700	14,300	e15,600	e18,900	e16,400	11,800	10,700	17,200	15,500	14,500	16,100	28,100
20	13,700	13,700	e15,600	e19,100	e16,500	11,600	10,400	17,000	15,200	14,500	16,600	28,700
21	13,800	14,400	e15,600	e19,100	e16,800	11,500	10,400	17,200	15,200	14,700	16,300	28,300
22	13,800	14,200	e15,600	e18,700	e17,000	11,800	10,200	17,400	15,500	14,800	16,200	28,300
23	13,700	14,300	e15,600	e18,500	e16,900	12,400	10,100	17,000	15,000	15,500	16,200	28,200
24	13,600	14,300	e15,600	e18,300	e16,700	12,600	10,000	16,900	15,100	17,500	15,800	28,500
25	13,800	14,300	e15,600	e18,500	e16,600	13,000	10,100	17,800	14,800	16,400	16,200	28,400
26	13,700	13,800	e15,700	e18,900	e16,600	13,700	10,100	17,700	15,000	16,600	16,100	28,300
27	13,700	13,900	e15,700	e18,500	e16,500	13,900	9,950	17,600	15,700	16,700	16,200	28,000
28	13,600	14,000	e15,900	e18,100	e16,700	13,900	9,880	17,900	15,400	16,600	16,200	27,800
29	13,900	13,900	e16,000	e18,800	---	14,000	10,100	17,900	15,300	16,200	16,100	28,500
30	14,000	14,000	e15,800	e19,100	---	13,900	12,400	18,000	15,300	16,700	16,400	27,300
31	13,900	---	e15,800	e18,900	---	15,400	---	17,800	---	16,800	17,300	---
Total	429,500	416,200	483,100	570,600	481,100	451,900	365,730	472,100	481,800	475,400	509,100	835,200
Mean	13,850	13,870	15,580	18,410	17,180	14,580	12,190	15,230	16,060	15,340	16,420	27,840
Max	14,300	14,400	16,000	19,200	18,700	17,000	19,600	18,000	17,300	17,500	17,300	29,500
Min	13,500	13,300	14,300	16,400	16,400	11,500	9,880	10,200	14,800	14,400	15,800	20,500
Ac-ft	851,900	825,500	958,200	1,132,000	954,300	896,300	725,400	936,400	955,700	943,000	1,010,000	1,657,000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2010, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	20,030	20,160	20,060	22,040	23,880	21,530	20,460	21,750	23,450	24,240	24,100	21,510
Max	48,180	43,240	31,690	32,350	34,840	34,370	40,370	42,030	43,540	64,610	57,010	45,060
(WY)	(1998)	(1998)	(1970)	(1969)	(1969)	(1972)	(1972)	(1972)	(1975)	(1975)	(1975)	(1997)
Min	8,399	8,155	7,890	6,519	5,883	6,317	10,420	9,234	8,445	10,840	9,271	8,121
(WY)	(1963)	(1963)	(1955)	(1955)	(1956)	(1955)	(1993)	(1963)	(1960)	(1960)	(1962)	(1962)

06342500 MISSOURI RIVER AT BISMARCK, ND—Continued

SUMMARY STATISTICS

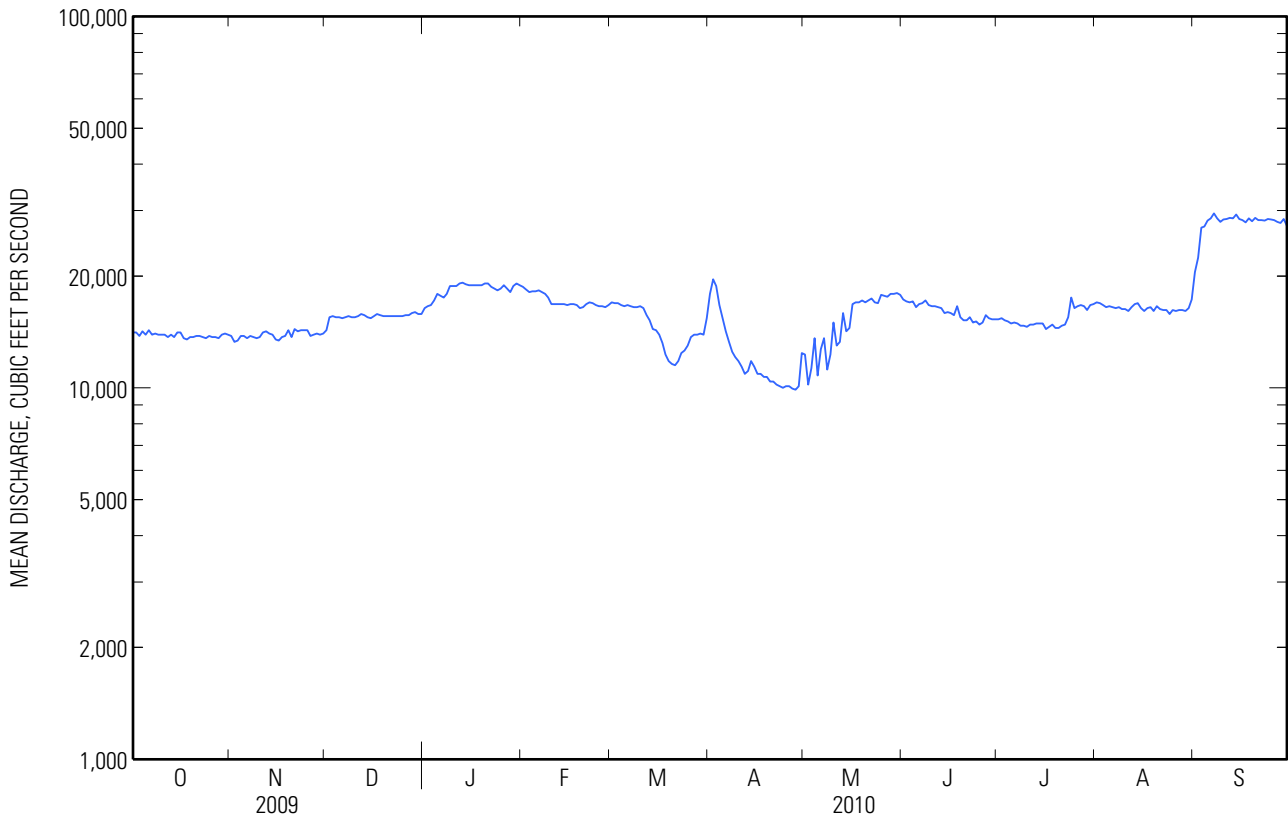
	Calendar Year 2009		Water Year 2010		Water Years 1954 - 2010	
Annual total	5,812,600		5,971,730			
Annual mean	15,920		16,360		^a 21,920	
Highest annual mean					^a 35,630 1975	
Lowest annual mean					^a 13,730 2008	
Highest daily mean	29,000	Mar 24	29,500	Sep 7	^a 68,800 Jul 13, 1975	
Lowest daily mean	9,200	Apr 7	9,880	Apr 28	^a 4,000 Mar 25, 1955	
Annual seven-day minimum	9,840	Apr 4	10,000	Apr 23	^a 4,860 Mar 21, 1955	
Maximum peak flow			^b 29,800	Sep 6	^{a,c} 68,900 Jul 13, 1975	
Maximum peak stage			^d 10.72	Jan 12	^{a,d} 16.11 Mar 24, 2009	
Annual runoff (ac-ft)	11,530,000		11,840,000		^a 15,880,000	
10 percent exceeds	17,900		19,000		^a 33,000	
50 percent exceeds	16,300		15,800		^a 21,000	
90 percent exceeds	13,200		12,700		^a 11,900	

^a Since completion of Garrison Dam in 1953.

^b Gage height, 9.11 ft.

^c Gage height, 14.24 ft.

^d Backwater from ice.

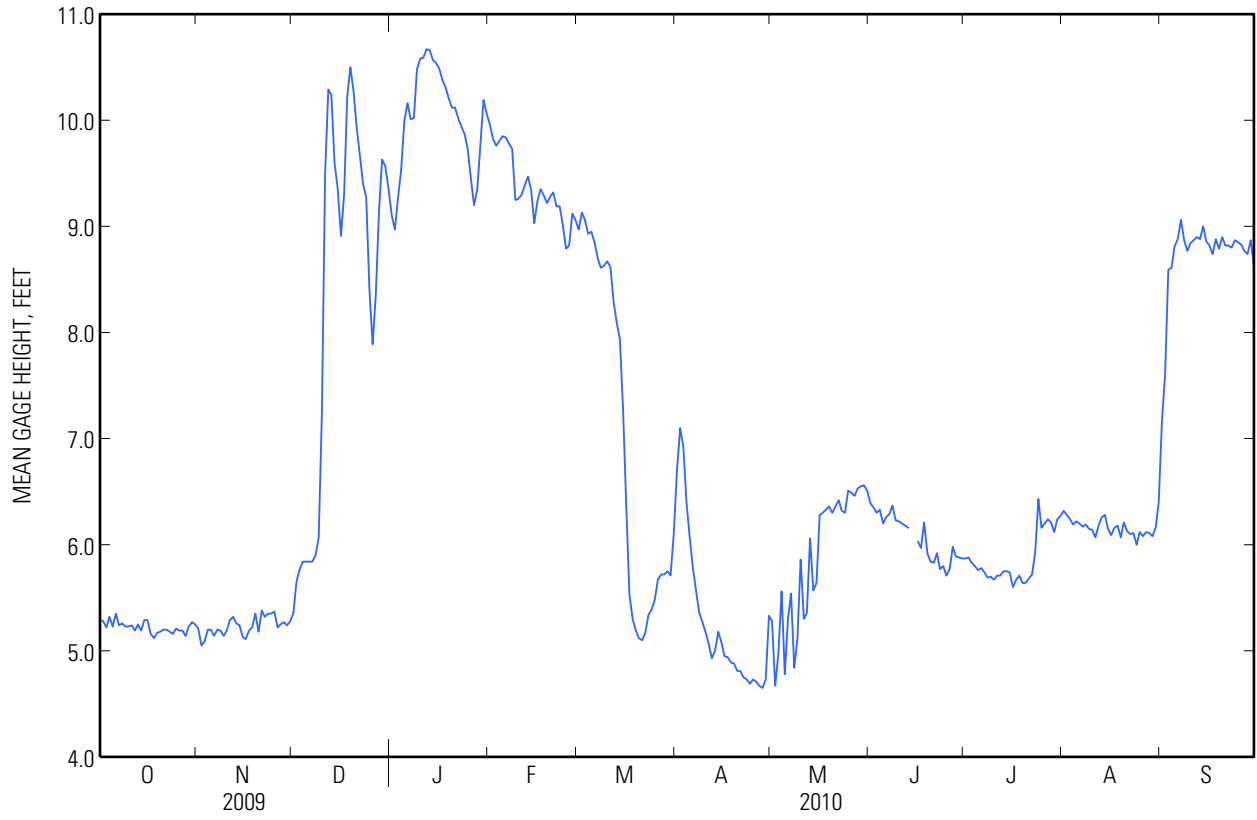


06342500 MISSOURI RIVER AT BISMARCK, ND—Continued

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	5.29	5.21	5.36	9.11	9.96	8.97	6.70	5.28	6.39	5.87	6.32	7.16
2	5.28	5.05	5.65	8.97	9.82	9.13	7.10	4.67	6.35	5.88	6.28	7.61
3	5.22	5.09	5.77	9.26	9.76	9.06	6.92	4.98	6.30	5.83	6.24	8.59
4	5.32	5.20	5.84	9.53	9.81	8.93	6.41	5.56	6.33	5.80	6.19	8.61
5	5.23	5.20	5.84	9.99	9.85	8.95	6.08	4.78	6.20	5.76	6.22	8.81
6	5.35	5.14	5.84	10.16	9.84	8.85	5.79	5.30	6.26	5.78	6.20	8.88
7	5.24	5.20	5.84	10.01	9.78	8.70	5.57	5.54	6.29	5.74	6.17	9.06
8	5.26	5.19	5.90	10.02	9.73	8.61	5.36	4.84	6.37	5.69	6.19	8.87
9	5.23	5.14	6.07	10.48	9.25	8.63	5.27	5.12	6.23	5.70	6.15	8.77
10	5.23	5.19	7.25	10.58	9.26	8.67	5.18	5.86	6.22	5.67	6.14	8.84
11	5.24	5.29	9.50	10.59	9.30	8.62	5.07	5.30	6.20	5.71	6.07	8.87
12	5.19	5.32	10.29	10.67	9.39	8.29	4.93	5.36	6.18	5.71	6.18	8.90
13	5.25	5.26	10.24	10.66	9.47	8.09	5.00	6.06	6.16	5.75	6.26	8.88
14	5.19	5.24	9.60	10.57	9.34	7.94	5.18	5.57	---	5.75	6.28	9.00
15	5.29	5.13	9.35	10.54	9.03	7.28	5.08	5.64	---	5.74	6.15	8.86
16	5.29	5.11	8.91	10.49	9.24	6.37	4.95	6.28	6.03	5.60	6.09	8.82
17	5.16	5.19	9.31	10.38	9.35	5.53	4.94	6.30	5.97	5.67	6.16	8.74
18	5.12	5.22	10.22	10.31	9.29	5.30	4.89	6.33	6.21	5.71	6.18	8.88
19	5.17	5.35	10.50	10.21	9.22	5.19	4.88	6.36	5.92	5.64	6.07	8.79
20	5.18	5.18	10.27	10.12	9.28	5.12	4.81	6.30	5.84	5.64	6.21	8.90
21	5.20	5.38	9.92	10.12	9.32	5.10	4.81	6.36	5.83	5.68	6.13	8.82
22	5.20	5.32	9.66	10.02	9.19	5.17	4.75	6.42	5.92	5.72	6.10	8.82
23	5.18	5.35	9.40	9.94	9.19	5.34	4.73	6.32	5.77	5.93	6.11	8.80
24	5.16	5.35	9.27	9.87	9.01	5.39	4.69	6.30	5.80	6.43	6.00	8.87
25	5.21	5.37	8.40	9.73	8.79	5.48	4.73	6.51	5.71	6.16	6.12	8.85
26	5.19	5.22	7.89	9.45	8.82	5.67	4.71	6.49	5.77	6.20	6.08	8.83
27	5.19	5.25	8.36	9.20	9.12	5.72	4.67	6.46	5.98	6.24	6.12	8.77
28	5.14	5.27	9.15	9.35	9.06	5.72	4.65	6.53	5.89	6.21	6.11	8.74
29	5.23	5.24	9.63	9.78	---	5.75	4.73	6.55	5.88	6.12	6.08	8.87
30	5.27	5.28	9.57	10.19	---	5.71	5.33	6.56	5.87	6.24	6.16	8.63
31	5.25	---	9.36	10.06	---	6.10	---	6.51	---	6.27	6.40	---
Mean	5.22	5.23	8.33	10.01	9.37	7.01	5.26	5.89	---	5.87	6.17	8.73
Max	5.35	5.38	10.50	10.67	9.96	9.13	7.10	6.56	---	6.43	6.40	9.06
Min	5.12	5.05	5.36	8.97	8.79	5.10	4.65	4.67	---	5.60	6.00	7.16

06342500 MISSOURI RIVER AT BISMARCK, ND—Continued



06342500 MISSOURI RIVER AT BISMARCK, ND—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1969 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1969 to April 1975, October 2008 to current year.

SPECIFIC CONDUCTIVITY: February 1972 to August 1975.

REMARKS.--Records rated fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 21.4 °C, June 30 and July 1, 2010; minimum recorded, 0.2 °C, many days in December 2008 and January 2009 winter months.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 21.4 °C, June 30 and July 1; minimum recorded, 0.4 °C, many days in December and January.

WATER-QUALITY DATA

WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 1 of 5

[% , percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than]

Date	Sample start time	Barometric pressure, mm Hg (00025)	Temperature, air, °C (00020)	Discharge, instantaneous, ft ³ /s (00061)	Dissolved oxygen, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)	pH, water, unfiltered, laboratory, standard units (00403)	Specific conductance, water, unfiltered, µS/cm at 25 °C (90095)	Specific conductance, water, unfiltered, µS/cm at 25 °C (00095)
04-21-2010	1000	721	14.0	10,500	--	--	8.1	8.4	647	634
09-03-2010	1200	728	16.5	27,400	10.1	104	8.0	8.2	615	600

WATER-QUALITY DATA

WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 2 of 5

[% , percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than]

Date	Sample start time	Temperature, water, °C (00010)	Dissolved solids, water, filtered, sum of constituents, milligrams per liter (70301)	Dissolved solids, water, tons per day (70302)	Hardness, water, mg/L as CaCO ₃ (00900)	Calcium, water, filtered, mg/L (00915)	Magnesium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium adsorption ratio, water, number (00931)	Sodium fraction of cations, water, percent in equivalents of major cations (00932)
04-21-2010	1000	8.6	401	11,400	219	52.2	21.4	4.10	1.8	37
09-03-2010	1200	14.7	381	28,200	192	47.0	18.2	2.96	1.4	34

06342500 MISSOURI RIVER AT BISMARCK, ND—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 3 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than]

Date	Sample start time	Sodium, water, filtered, mg/L (00930)	ANC, water, unfiltered, fixed endpoint (pH 4.5) titration, laboratory, mg/L as CaCO ₃ (90410)	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	Silica, water, filtered, mg/L as SiO ₂ (00955)	Sulfate, water, filtered, mg/L (00945)	Aluminum, water, filtered, µg/L (01106)	Barium, water, filtered, µg/L (01005)	Beryllium, water, filtered, µg/L (01010)
04-21-2010	1000	59.7	167	11.2	.44	6.14	152	< 50	53	< 5.00
09-03-2010	1200	45.8	154	7.72	.45	4.38	141	< 50	51	< 5.00

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 4 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than]

Date	Sample start time	Cadmium, water, filtered, µg/L (01025)	Chromium, water, filtered, µg/L (01030)	Copper, water, filtered, µg/L (01040)	Iron, water, filtered, µg/L (01046)	Lead, water, filtered, µg/L (01049)	Manga- nese, water, filtered, µg/L (01056)	Nickel, water, filtered, µg/L (01065)	Silver, water, filtered, µg/L (01075)	Thallium, water, filtered, µg/L (01057)
04-21-2010	1000	< 5.00	< 5.0	< 5.0	< 50	< 5.00	< 10.0	< 5.0	< 5.00	< 5.00
09-03-2010	1200	< 5.00	< 5.0	< 5.0	57	< 5.00	< 10.0	< 5.0	< 5.00	< 5.00

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 5 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than]

Date	Sample start time	Zinc, water, filtered, µg/L (01090)	Antimony, water, filtered, µg/L (01095)	Arsenic, water, filtered, µg/L (01000)	Boron, water, filtered, µg/L (01020)	Selenium, water, filtered, µg/L (01145)
04-21-2010	1000	8.7	< 5.00	< 5.0	136	< 5.0
09-03-2010	1200	< 5.0	< 5.00	< 5.0	145	< 5.0

06342500 MISSOURI RIVER AT BISMARCK, ND—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	13.1	11.7	12.6	8.2	6.9	7.5	---	---	---	0.8	0.4	0.6
2	11.7	10.8	11.2	8.1	7.5	7.9	---	---	---	0.8	0.4	0.5
3	11.2	10.6	10.9	8.0	7.3	7.5	---	---	---	0.4	0.4	0.4
4	12.9	11.0	11.9	7.9	7.0	7.4	---	---	---	0.4	0.4	0.4
5	12.9	11.9	12.5	8.0	7.3	7.6	---	---	---	0.4	0.4	0.4
6	11.9	11.0	11.4	---	---	---	---	---	---	0.4	0.4	0.4
7	11.3	10.6	11.1	---	---	---	---	---	---	0.7	0.4	0.5
8	10.6	9.2	10.1	---	---	---	---	---	---	0.4	0.4	0.4
9	9.2	6.8	8.3	---	---	---	---	---	---	0.4	0.4	0.4
10	6.8	5.7	6.2	7.9	7.4	7.6	---	---	---	0.5	0.4	0.4
11	6.7	5.7	6.4	---	---	---	---	---	---	0.4	0.4	0.4
12	8.3	6.7	7.6	---	---	---	---	---	---	0.4	0.4	0.4
13	8.8	8.0	8.5	---	---	---	---	---	---	0.5	0.4	0.4
14	8.0	6.9	7.6	---	---	---	---	---	---	0.6	0.4	0.5
15	7.8	6.8	7.3	---	---	---	---	---	---	0.5	0.4	0.4
16	8.8	7.8	8.4	---	---	---	---	---	---	0.6	0.4	0.5
17	9.8	8.6	9.1	---	---	---	0.4	0.4	0.4	0.6	0.4	0.5
18	10.9	9.3	10	---	---	---	0.4	0.4	0.4	0.6	0.4	0.4
19	11.3	10.3	10.8	---	---	---	0.6	0.4	0.4	0.7	0.4	0.5
20	11.0	9.9	10.4	---	---	---	1.2	0.4	0.8	0.8	0.4	0.5
21	10.0	9.6	9.8	---	---	---	1.2	0.4	0.8	0.5	0.4	0.4
22	9.8	9.2	9.6	---	---	---	1.1	0.4	0.7	0.8	0.4	0.5
23	10.0	9.1	9.5	---	---	---	1.2	0.4	0.7	0.7	0.4	0.5
24	10.0	9.5	9.7	---	---	---	1.7	0.4	0.9	0.7	0.4	0.5
25	9.7	9.4	9.6	---	---	---	2.1	0.8	1.8	1.0	0.4	0.5
26	9.4	8.8	9.1	---	---	---	1.6	0.4	0.7	1.3	0.4	0.9
27	9.4	8.7	9.0	---	---	---	0.4	0.4	0.4	0.9	0.4	0.5
28	9.3	9.0	9.2	---	---	---	0.4	0.4	0.4	0.5	0.4	0.4
29	9.0	7.7	8.5	---	---	---	0.4	0.4	0.4	0.4	0.4	0.4
30	7.7	7.0	7.2	---	---	---	0.7	0.4	0.5	0.5	0.4	0.4
31	7.1	6.8	7.0	---	---	---	0.9	0.4	0.6	0.9	0.4	0.6
Month	13.1	5.7	9.4	---	---	---	---	---	---	1.3	0.4	0.5

06342500 MISSOURI RIVER AT BISMARCK, ND—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	0.6	0.4	0.5	0.7	0.4	0.5	---	---	---	8.3	7.7	7.9
2	0.7	0.4	0.5	0.5	0.4	0.4	---	---	---	7.7	6.2	6.9
3	0.6	0.4	0.4	0.6	0.4	0.5	---	---	---	7.9	5.8	6.7
4	0.5	0.4	0.4	0.6	0.4	0.5	---	---	---	8.2	7.3	7.7
5	0.5	0.4	0.4	0.5	0.4	0.4	---	---	---	8.3	7.6	7.9
6	0.6	0.4	0.4	0.6	0.4	0.5	---	---	---	7.8	6.3	7.2
7	0.7	0.4	0.5	0.6	0.4	0.5	---	---	---	6.7	6.0	6.3
8	1.2	0.4	0.5	0.6	0.4	0.5	---	---	---	7.8	5.5	6.6
9	1.5	0.4	0.9	0.5	0.4	0.4	---	---	---	7.6	7.1	7.3
10	0.4	0.4	0.4	0.5	0.4	0.4	7.7	6.2	7.0	7.1	6.6	6.7
11	0.8	0.4	0.5	0.9	0.4	0.5	8.4	6.2	6.9	7.4	6.5	6.9
12	0.4	0.4	0.4	1.1	0.4	0.6	---	---	---	8.0	7.2	7.6
13	0.6	0.4	0.4	1.1	0.4	0.7	---	---	---	7.5	6.7	7.1
14	0.7	0.4	0.5	1.9	0.4	0.8	---	---	---	9.8	6.9	8.1
15	1.0	0.4	0.6	3.1	1.7	2.4	---	---	---	12.4	9.3	10.6
16	0.4	0.4	0.4	---	---	---	8.3	6.4	7.4	12.2	10.3	11.3
17	0.5	0.4	0.4	---	---	---	---	---	---	13.2	10.8	12.1
18	0.6	0.4	0.5	---	---	---	---	---	---	13.7	11.2	12.5
19	0.5	0.4	0.4	---	---	---	---	---	---	14.0	11.4	12.8
20	0.4	0.4	0.4	---	---	---	10.0	7.6	8.7	13.9	11.6	12.9
21	0.5	0.4	0.4	---	---	---	---	---	---	13.4	11.5	12.3
22	0.7	0.4	0.5	---	---	---	---	---	---	11.8	10.8	11.3
23	0.7	0.4	0.4	---	---	---	---	---	---	12.7	10.5	11.6
24	0.7	0.4	0.5	---	---	---	---	---	---	12.3	11.0	11.5
25	0.8	0.4	0.5	---	---	---	---	---	---	11.9	10.4	11.2
26	0.5	0.4	0.4	---	---	---	9.2	7.0	7.8	14.1	10.6	12.2
27	0.4	0.4	0.4	---	---	---	8.0	6.0	7.0	14.9	12.4	13.8
28	0.6	0.4	0.4	---	---	---	9.8	7.3	8.3	17.4	14.0	15.8
29	---	---	---	---	---	---	10.1	9.0	9.4	17.3	14.6	15.9
30	---	---	---	---	---	---	9.5	8.3	8.9	14.6	12.0	13.2
31	---	---	---	---	---	---	---	---	---	14.5	12.0	13.3
Month	1.5	0.4	0.5	---	---	---	---	---	---	17.4	5.5	10.2

06342500 MISSOURI RIVER AT BISMARCK, ND—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	14.8	13.1	14.0	21.4	18.5	20.6	19.0	16.9	18.1	15.6	14.4	15.0
2	14.3	12.4	13.5	20.9	17.5	19.7	19.0	16.6	17.9	15.9	14.9	15.3
3	13.8	12.5	13.2	20.7	18.4	19.9	18.4	16.3	17.4	15.9	14.7	15.3
4	14.6	12.3	13.4	20.0	17.3	18.8	18.0	16.1	17.1	17.2	15.2	16.1
5	15.9	12.7	14.3	18.6	16.5	17.6	18.1	16.3	17.2	17.6	16.6	17.0
6	16.1	13.4	15.0	17.4	16.0	16.4	18.4	16.3	17.4	16.8	14.9	16.1
7	15.8	13.9	14.9	17.6	15.2	16.4	19.3	16.8	18.1	15.2	14.2	14.8
8	15.8	13.6	14.8	18.7	15.9	17.4	19.7	17.2	18.5	16.3	14.6	15.3
9	16.1	12.9	14.8	19.7	16.8	18.3	19.8	17.4	18.8	16.3	15.6	16.0
10	15.6	13.9	14.7	19.8	17.0	18.7	19.9	17.7	19.0	---	---	---
11	14.3	13.2	13.9	19.3	17.5	18.4	19.8	17.2	18.8	15.9	15.1	15.5
12	14.0	12.4	13.0	18.0	16.5	17.5	19.5	17.3	18.7	16.2	14.9	15.5
13	14.2	12.0	13.1	18.8	16.7	17.7	19.7	17.8	18.9	17.0	15.7	16.3
14	14.7	12.5	13.6	19.4	17.0	18.4	19.0	17.1	17.8	16.7	15.9	16.4
15	15.7	13.0	14.4	19.2	16.9	18.2	17.2	15.7	16.5	16.2	14.9	15.4
16	17.0	12.9	15.2	20.6	16.9	18.6	17.6	15.6	16.6	14.9	14.0	14.6
17	18.1	15.6	17.0	20.3	17.5	19.2	18.5	16.2	17.4	15.0	13.6	14.5
18	17.2	14.4	15.4	19.8	17.7	19.0	18.8	16.3	17.7	13.8	12.7	13.2
19	---	---	---	19.4	17.0	18.5	18.1	16.3	17.3	14.2	13.3	13.9
20	16.9	13.3	14.9	19.1	17.2	18.2	19.0	16.8	17.8	14.4	14.0	14.2
21	18.5	15.0	16.9	18.3	16.8	17.5	19.9	16.4	18.2	14.8	14.0	14.3
22	---	---	---	17.6	16.6	17.1	20.7	17.3	19.3	14.5	13.9	14.2
23	---	---	---	17.2	15.4	16.2	20.3	17.7	19.2	14.1	12.9	13.6
24	---	---	---	16.6	14.7	15.6	18.6	16.2	17.0	---	---	---
25	---	---	---	18.7	15.4	16.8	17.2	15.5	16.4	---	---	---
26	---	---	---	20.5	17.1	18.9	19.1	15.9	17.4	15.9	14.7	15.2
27	---	---	---	20.0	18.0	19.0	19.8	16.9	18.5	16.7	15.2	15.9
28	20.1	19.1	19.7	18.6	17.0	17.8	19.2	16.5	18.3	16.5	15.3	15.9
29	20.8	19.1	19.9	19.1	16.0	17.7	18.5	16.6	17.5	16.5	15.4	16.0
30	21.4	19.8	20.4	20.3	17.6	19.0	17.5	16.3	16.9	16.0	15.0	15.6
31	---	---	---	19.8	17.8	18.9	16.7	15.3	15.9	---	---	---
Month	---	---	---	21.4	14.7	18.1	20.7	15.3	17.8	---	---	---