

Water-Data Report 2009

05331580 MISSISSIPPI RIVER BELOW LOCK AND DAM 2, AT HASTINGS, MN

Upper Mississippi Basin
Twin Cities Subbasin

LOCATION.--Lat 44°44'45", long 92°50'52" referenced to North American Datum of 1927, in SE ¼ SW ¼ SW ¼ sec.22, T.115 N., R.17 W., Dakota County, MN, Hydrologic Unit 07010206, near bridge on U.S. Highway 61 in Hastings, 1.2 mi downstream from Lock and Dam 2, 2.5 mi upstream from St. Croix River, and at mile 813.8 upstream from Ohio River.

DRAINAGE AREA.--37,100 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1996 to September 2004, October 2006 to current year.

GAGE.--Water-stage and velocity recorder.

REMARKS.--Records good to fair except for estimated flows, which are fair to poor. Discharges under 5,000 ft³/s are considered fair and those under 2,000 ft³/s are considered poor. Water-discharges computed on the basis of routed discharge for Mississippi River at St. Paul (station 05331000) adjusted for inflow (including Metropolitan Wastewater Treatment Plant) and travel time through Dec. 28, 2008.

05331580 MISSISSIPPI RIVER BELOW LOCK AND DAM 2, AT HASTINGS, MN—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	4,230	7,710	7,730	e5,190	e5,220	e5,610	60,200	25,600	10,500	10,800	4,540	6,560
2	4,140	7,580	8,140	e5,190	e5,230	e5,780	60,500	25,300	9,760	9,780	4,940	6,250
3	4,070	7,370	7,310	e4,960	e4,980	e5,780	59,400	25,300	9,540	9,070	5,220	6,200
4	4,330	7,400	6,580	e4,930	e4,770	e5,910	53,600	23,200	9,560	8,130	4,210	5,580
5	4,170	7,530	6,510	e4,940	e4,730	5,900	55,200	21,800	9,830	7,960	3,930	5,780
6	4,150	7,530	e6,330	e5,030	e4,940	5,910	53,000	23,000	8,620	7,490	3,590	5,330
7	3,960	7,600	e5,690	e5,170	e5,120	7,430	51,300	22,000	10,100	7,310	4,650	5,010
8	4,240	7,880	e4,760	e5,570	e5,170	6,680	50,600	22,400	9,810	5,680	9,600	4,790
9	4,640	8,120	e4,560	e5,640	e5,210	6,210	51,200	21,700	9,790	7,370	8,510	5,060
10	5,470	8,400	e4,420	e5,400	e6,110	7,370	49,600	20,900	9,790	6,390	5,590	4,530
11	5,130	8,650	e4,380	e5,130	7,230	8,950	44,300	19,700	10,000	4,940	5,320	4,240
12	5,680	8,600	e4,430	e5,240	7,020	5,920	42,700	18,700	10,300	5,410	5,670	4,460
13	5,670	9,040	e4,620	e5,210	6,270	7,410	42,300	19,000	10,600	4,860	5,660	4,570
14	6,750	9,560	e4,770	e5,160	6,470	8,310	41,600	19,500	11,400	5,150	5,510	4,490
15	6,640	9,590	e4,930	e4,830	5,830	8,320	37,700	17,900	10,500	7,630	4,990	4,310
16	7,260	9,880	e5,360	e4,570	5,970	8,160	36,200	19,700	10,000	7,570	6,810	4,650
17	7,190	9,840	e5,130	e4,700	7,210	10,200	37,100	18,300	10,400	7,750	6,600	4,450
18	7,820	9,990	e4,550	e5,180	8,250	13,600	36,800	16,300	12,200	7,950	5,000	4,160
19	7,460	9,470	e4,230	e5,550	7,640	16,000	35,100	16,500	11,000	6,290	6,490	3,730
20	8,010	9,520	e4,720	e5,690	7,450	17,400	34,800	15,000	10,200	6,230	9,910	3,880
21	7,660	9,100	e4,960	e5,590	8,230	20,900	33,600	16,300	10,000	6,790	8,860	3,710
22	7,660	8,930	e5,160	e5,080	7,630	21,600	31,000	15,300	11,900	8,090	7,640	3,690
23	7,510	8,070	e4,940	e5,190	6,730	24,100	27,800	14,900	10,300	7,220	8,460	3,800
24	7,070	7,140	e4,860	e5,390	7,080	29,400	28,100	13,700	10,800	5,770	8,030	4,700
25	7,570	7,790	e4,980	e5,050	7,320	40,200	28,400	12,700	12,000	5,690	9,160	5,060
26	7,860	7,330	e5,100	e4,960	6,760	49,700	26,900	12,600	12,300	5,770	8,050	4,420
27	7,330	6,800	e5,220	e4,920	5,880	54,800	27,800	12,900	11,200	5,120	7,610	4,560
28	7,440	6,750	e5,240	e4,860	5,460	57,200	25,300	11,900	12,100	6,210	8,330	4,220
29	7,480	7,520	e5,280	e5,170	---	60,100	24,700	11,100	11,900	6,480	7,840	3,240
30	8,200	7,550	e5,240	e5,250	---	58,800	25,200	11,300	11,000	5,510	7,190	3,420
31	8,080	---	e5,260	e5,240	---	59,200	---	10,600	---	4,910	6,260	---
Total	194,870	248,240	165,390	159,980	175,910	642,850	1,212,000	555,100	317,400	211,320	204,170	138,850
Mean	6,286	8,275	5,335	5,161	6,282	20,740	40,400	17,910	10,580	6,817	6,586	4,628
Max	8,200	9,990	8,140	5,690	8,250	60,100	60,500	25,600	12,300	10,800	9,910	6,560
Min	3,960	6,750	4,230	4,570	4,730	5,610	24,700	10,600	8,620	4,860	3,590	3,240
Ac-ft	386,500	492,400	328,100	317,300	348,900	1,275,000	2,404,000	1,101,000	629,600	419,200	405,000	275,400
Cfs/m	0.17	0.22	0.14	0.14	0.17	0.56	1.09	0.48	0.29	0.18	0.18	0.12
In.	0.20	0.25	0.17	0.16	0.18	0.64	1.22	0.56	0.32	0.21	0.20	0.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2009, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	10,540	11,420	8,454	6,728	6,407	13,380	40,050	31,190	26,200	19,490	10,450	7,886
Max	25,600	24,960	13,290	9,657	10,040	20,740	95,650	76,140	52,600	36,910	23,560	16,620
(WY)	(1996)	(1996)	(1997)	(1996)	(1998)	(2009)	(2001)	(2001)	(2001)	(1997)	(1997)	(2002)
Min	3,755	4,305	3,908	3,728	3,089	6,436	10,400	11,270	10,580	5,559	4,971	3,887
(WY)	(2004)	(2007)	(2007)	(2004)	(2007)	(2001)	(2000)	(2004)	(2009)	(2007)	(2007)	(2008)

05331580 MISSISSIPPI RIVER BELOW LOCK AND DAM 2, AT HASTINGS, MN—Continued

SUMMARY STATISTICS

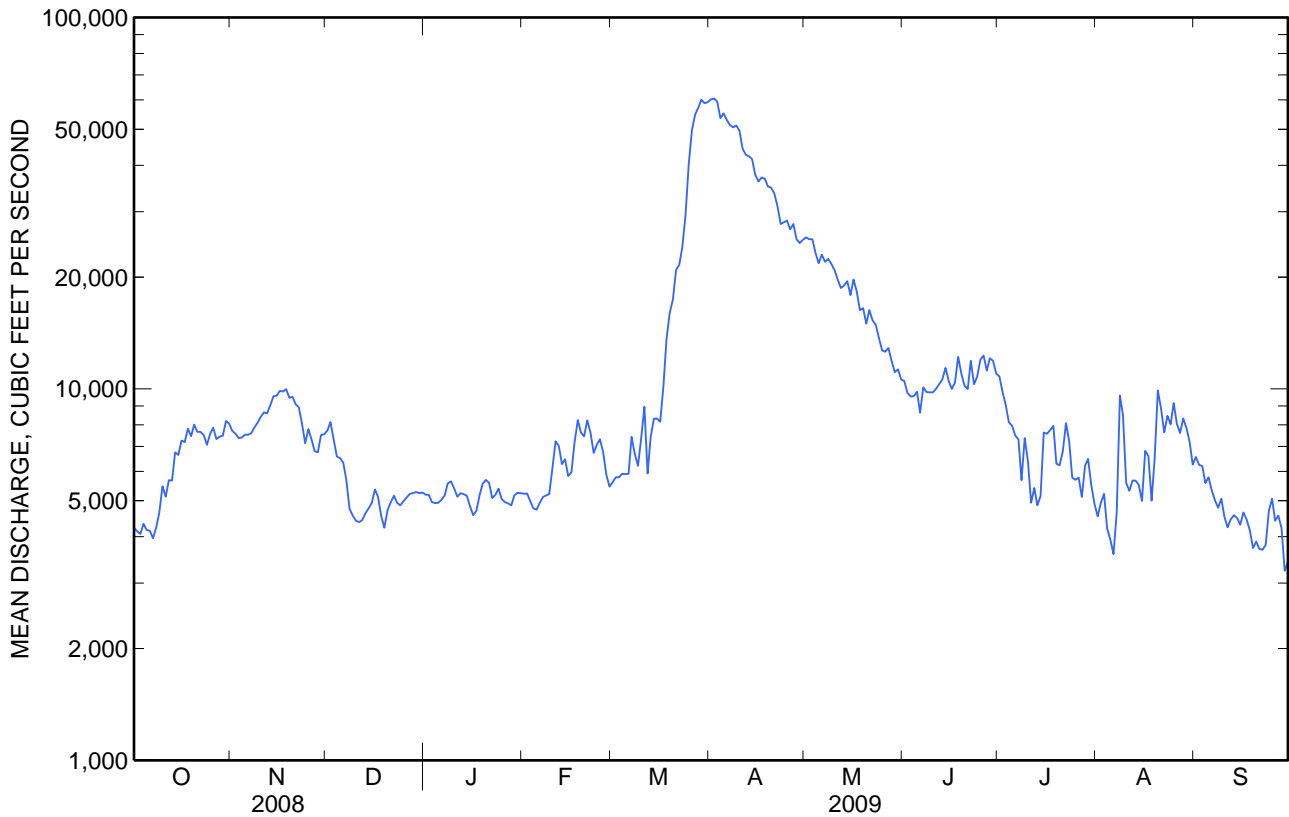
	Calendar Year 2008		Water Year 2009		Water Years 1996 - 2009	
Annual total	4,897,140		4,226,080			
Annual mean	13,380		11,580		16,030	
Highest annual mean					25,040 2001	
Lowest annual mean					10,310 2000	
Highest daily mean	49,300	May 12	60,500	Apr 2	147,000	Apr 19, 2001
Lowest daily mean	3,320	Sep 11	3,240	Sep 29	2,390	Dec 5, 2006
Annual seven-day minimum	3,520	Sep 8	3,920	Sep 17	2,710	Feb 16, 2007
Maximum peak flow			^a 67,100	Apr 2	^b 147,000	Apr 19, 2001
Maximum peak stage			^c 16.26	Apr 1		
Instantaneous low flow			^d 3,240	Sep 29	^d 2,390	Dec 5, 2006
Annual runoff (ac-ft)	9,713,000		8,382,000		11,610,000	
Annual runoff (cfsm)	0.361		0.312		0.432	
Annual runoff (inches)	4.91		4.24		5.87	
10 percent exceeds	36,700		25,400		35,500	
50 percent exceeds	7,080		7,330		10,200	
90 percent exceeds	4,170		4,570		4,430	

^a Affected by regulation.

^b Daily-mean discharge.

^c Variable backwater conditions.

^d Minimum daily-mean discharge. Affected by regulation.



05331580 MISSISSIPPI RIVER BELOW LOCK AND DAM 2, AT HASTINGS, MN—Continued**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--Water years 1936-41, 1943-1977, 1995 to current year. NASQAN samples previously collected at Mississippi River at Ninninger (station no. 05331570), January 1977 to September 1995.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: 1996 to 1998 (non-winter months).

REMARKS.--Additional water quality data for this site, including pesticide analyses, are available at: URL <http://water.usgs.gov/mn/nwis/qw>

WATER-QUALITY DATA
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

Part 1 of 10

[Remark codes: <, less than; E, estimated.]

Date	Time	Medium name	Baro- metric pres- sure, mm Hg (00025)	Temper- ature, air, deg C (00020)	Instan- taneous dis- charge, ft ³ /s (00061)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf lab, µS/cm @ 25 degC (90095)	Specif- ic conduc- tance, wat unf µS/cm @ 25 degC (00095)
Oct										
15...	1130	Surface water	748	--	--	8.7	84	8.0	574	566
Nov										
04...	0820	Surface water	746	11.1	--	11.1	103	8.4	568	566
Dec										
10...	0940	Surface water	748	-14.5	E4,100	18.6	127	7.8	603	701
Jan										
13...	1030	Surface water	748	-20.0	4,000	13.0	90	7.5	663	646
Feb										
26...	0930	Surface water	744	-2.8	5,510	13.5	93	7.9	615	602
Mar										
10...	0845	Surface water	740	3.5	5,130	13.1	92	8.0	717	717
Apr										
28...	1430	Surface water	760	13.9	27,500	12.0	112	8.5	520	492
May										
14...	1030	Surface water	744	15.0	23,300	9.7	96	8.4	531	523
28...	1130	Surface water	747	20.0	12,100	10.3	108	8.3	540	525
Jun										
25...	1120	Surface water	749	27.9	12,400	7.0	87	8.0	575	583
30...	0905	Surface water	742	17.5	10,500	7.9	90	8.1	568	566
Jul										
15...	1030	Surface water	745	18.2	7,840	7.1	84	8.2	618	617
28...	1010	Surface water	745	20.4	5,820	12.0	143	8.5	563	555
Aug										
11...	1040	Surface water	752	27.5	6,210	8.3	102	8.2	527	529
Sep										
29...	0815	Surface water	748	9.0	3,090	8.7	88	8.3	685	671

05331580 MISSISSIPPI RIVER BELOW LOCK AND DAM 2, AT HASTINGS, MN—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

Part 2 of 10

[Remark codes: <, less than; E, estimated.]

Date	Stream velocity, ft/s (00055)	Temperature, water, deg C (00010)	Altitude of land surface, feet (72000)	Drainage area, mi ² (81024)	Gage height, feet (00065)	Weather WMO code (00041)	Alkalinity, wat flt inf tit field, mg/L as CaCO ₃ (39086)	Bicarbonate, wat flt infl pt titr., field, mg/L (00453)	Total carbon, suspnd sedimnt total, mg/L (00694)	Carbonate, wat flt infl pt titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)
Oct 15...	<1.00	13.7	675	37,100	--	Cloudy	172	209	--	.0	42.5
Nov 04...	<.50	10.7	675	37,100	--	Cloudless	168	204	--	.0	35.0
Dec 10...	1.50	.0	675	37,100	7.02	Cloudy	198	242	--	.0	42.2
Jan 13...	3.00	.0	675	37,100	--	Partly cloudy	215	262	--	.0	42.8
Feb 26...	2.00	.0	675	37,100	7.01	Cloudy	187	228	--	.0	38.5
Mar 10...	3.00	1.0	675	37,100	6.94	Cloudy	207	253	--	.0	59.1
Apr 28...	2.20	12.1	675	37,100	10.09	Cloudless	153	186	--	.0	19.3
May 14...	E2.00	13.8	675	37,100	8.70	Cloudless	166	202	--	.0	--
28...	<1.50	17.5	675	37,100	7.20	Cloudless	176	214	--	.0	23.1
Jun 25...	1.25	25.9	675	37,100	7.18	Cloudless	187	228	--	.0	29.2
30...	E1.50	21.9	675	37,100	7.04	Cloudy	182	222	7.6	.0	26.2
Jul 15...	1.00	23.4	675	37,100	7.09	Cloudy	174	212	8.6	.0	35.3
28...	.60	23.9	675	37,100	6.80	Partly cloudy	174	212	4.1	.0	33.1
Aug 11...	.60	25.4	675	37,100	7.05	Cloudless	154	187	2.1	.0	35.3
Sep 29...	.30	15.4	675	37,100	6.89	Partly cloudy	193	235	2.6	.0	55.1

05331580 MISSISSIPPI RIVER BELOW LOCK AND DAM 2, AT HASTINGS, MN—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

Part 3 of 10

[Remark codes: <, less than; E, estimated.]

Date	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrate + nitrite water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Partic- ulate nitro- gen, susp, water, mg/L (49570)	Phos- phorus, water, unfltrd mg/L as P (00665)	Total nitro- gen, wat flt by anal ysis, mg/L (62854)	Total nitro- gen, wat unf by anal ysis, mg/L (62855)	1-Naph- thol, water, fltrd 0.7µ GF µg/L (49295)	2,6-Di- ethyl- aniline water, fltrd 0.7µ GF µg/L (82660)	2Chloro -2',6'- diethyl acet- anilide wat flt µg/L (61618)	CIAT, water, fltrd, µg/L (04040)
Oct													
15...	40.8	.044	1.16	.045	.020	--	.140	--	1.92	--	--	--	--
Nov													
04...	49.4	--	--	--	--	--	.106	--	--	<.04	<.006	<.010	E.013
Dec													
10...	75.1	.093	2.10	.069	.046	--	.056	--	2.85	--	--	--	--
Jan													
13...	61.0	.376	1.92	.080	.028	--	.055	--	2.83	<.04	<.006	<.010	E.020
Feb													
26...	47.6	.359	2.47	.072	.154	--	.209	--	3.37	--	--	--	--
Mar													
10...	67.5	.232	2.17	.057	.057	--	.128	--	2.94	<.04	<.006	<.010	E.026
Apr													
28...	71.0	<.020	.56	.011	E.007	--	.119	--	1.59	<.04	<.006	<.010	<.022
May													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	63.1	E.018	.79	.014	.009	--	.119	--	1.77	<.04	<.006	<.010	E.018
Jun													
25...	60.6	E.010	2.47	.011	.058	--	.170	--	3.52	<.04	<.006	<.010	E.008
30...	61.3	.028	2.39	.049	.060	.71	.264	3.06	3.50	<.04	<.006	<.010	E.027
Jul													
15...	70.0	.085	1.17	.047	.055	1.41	.205	1.75	2.38	<.04	<.006	<.010	E.025
28...	52.3	.036	1.66	.046	.009	.47	.139	2.25	2.74	<.04	<.006	<.010	E.027
Aug													
11...	47.1	.038	.85	.040	.041	.27	.146	1.40	1.66	<.04	<.006	<.010	E.021
Sep													
29...	59.4	.239	1.46	.071	.076	.44	.193	2.22	2.58	<.04	<.006	<.010	E.022

05331580 MISSISSIPPI RIVER BELOW LOCK AND DAM 2, AT HASTINGS, MN—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

Part 4 of 10

[Remark codes: <, less than; E, estimated.]

Date	2-Ethyl-6-methyl-aniline wat flt µg/L (61620)	3,4-Di-chloro-aniline water, fltrd, µg/L (61625)	3,5-Di-chloro-aniline water, fltrd, µg/L (61627)	4-Chloro-2-methyl-phenol, wat flt µg/L (61633)	Aceto-chlor, water, fltrd, µg/L (49260)	Ala-chlor, water, fltrd, µg/L (46342)	alpha-Endo-sulfan, water, fltrd, µg/L (34362)	Amino-methyl-phos-phonic acid, wat flt µg/L (62649)	Atra-zine, water, fltrd, µg/L (39632)	Azin-phos-methyl oxon, water, fltrd, µg/L (61635)	Azin-phos-methyl, water, fltrd 0.7µ GF µg/L (82686)	Ben-flur-alin, water, fltrd 0.7µ GF µg/L (82673)	Car-baryl, water, fltrd 0.7µ GF µg/L (82680)
Oct 15...	--	--	--	--	--	--	--	--	--	--	--	--	--
Nov 04...	<.010	E.010	<.004	<.005	<.010	<.008	<.006	--	.022	<.04	<.120	<.014	<.200
Dec 10...	--	--	--	--	--	--	--	--	--	--	--	--	--
Jan 13...	<.010	E.016	<.004	<.005	<.010	<.008	<.006	--	.028	<.04	<.120	<.014	<.200
Feb 26...	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar 10...	<.010	E.011	<.004	<.005	.038	<.008	<.006	--	.033	<.04	<.120	<.014	<.200
Apr 28...	<.010	<.004	<.004	<.005	.030	<.008	<.006	.53	.032	<.04	<.120	<.014	<.200
May 14...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	<.010	<.004	<.004	<.005	.029	<.008	<.006	.11	.032	<.04	<.120	<.014	<.200
Jun 25...	<.010	E.004	<.004	E.005	<.010	<.008	<.006	.19	.012	<.04	<.120	<.014	E.010
30...	<.010	E.009	<.004	<.005	.063	<.008	<.006	.24	.081	<.04	<.120	<.014	<.200
Jul 15...	<.010	E.010	<.004	<.005	.026	<.008	<.006	.21	.062	<.04	<.120	<.014	<.200
28...	<.010	E.008	<.004	<.005	.018	<.008	<.006	.28	.056	<.04	<.120	<.014	<.200
Aug 11...	<.010	E.011	<.004	<.005	E.010	<.008	<.006	.22	.031	<.04	<.120	<.014	<.200
Sep 29...	<.010	E.010	<.004	<.005	.173	<.008	<.006	.47	.447	<.04	<.120	<.014	<.200

05331580 MISSISSIPPI RIVER BELOW LOCK AND DAM 2, AT HASTINGS, MN—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

Part 5 of 10

[Remark codes: <, less than; E, estimated.]

Date	Carbo- furan, water, fltrd 0.7µ GF µg/L (82674)	Chlor- pyrifos oxon, water, fltrd, µg/L (61636)	Chlor- pyrifos water, fltrd, µg/L (38933)	cis- Per- methrin water fltrd 0.7µ GF µg/L (82687)	cis- Propi- cona- zole, water, fltrd, µg/L (79846)	Cyana- zine, water, fltrd, µg/L (04041)	Cyflu- thrin, water, fltrd, µg/L (61585)	Cyper- methrin water, fltrd, µg/L (61586)	DCPA, water, fltrd 0.7µ GF µg/L (82682)	Desulf- inyl- fipro- nil amide, wat flt µg/L (62169)	Desulf- inyl- fipro- nil, water, fltrd, µg/L (62170)	Diazi- non, water, fltrd, µg/L (39572)	Diaz- oxon, water, fltrd, µg/L (61638)
Oct 15...	--	--	--	--	--	--	--	--	--	--	--	--	--
Nov 04...	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020	<.006	<.029	<.012	<.005	--
Dec 10...	--	--	--	--	--	--	--	--	--	--	--	--	--
Jan 13...	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020	<.006	<.029	<.012	<.005	--
Feb 26...	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar 10...	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020	<.006	<.029	E.004	<.005	--
Apr 28...	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020	<.006	<.029	<.012	<.005	--
May 14...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020	<.006	<.029	<.012	<.005	--
Jun 25...	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020	<.006	<.029	E.003	<.005	<.01
30...	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020	<.006	<.029	E.003	<.005	<.01
Jul 15...	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020	<.006	<.029	E.005	<.005	<.01
28...	<.060	--	<.010	<.014	<.006	<.040	<.016	<.020	<.006	<.029	E.002	<.005	<.01
Aug 11...	<.060	<.05	E.008	<.014	<.006	<.040	<.016	<.020	<.006	<.029	E.005	<.005	<.01
Sep 29...	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020	<.006	<.029	E.005	<.005	--

05331580 MISSISSIPPI RIVER BELOW LOCK AND DAM 2, AT HASTINGS, MN—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

Part 6 of 10

[Remark codes: <, less than; E, estimated.]

Date	Di-chlor- vos, water, fltrd, µg/L (38775)	Dicro- tophos, water, fltrd, µg/L (38454)	Diel- drin, water, fltrd, µg/L (39381)	Dimeth- oate, water, fltrd 0.7µ GF µg/L (82662)	Disulf- oton sulfone water, fltrd, µg/L (61640)	Disul- foton, water, fltrd 0.7µ GF µg/L (82677)	Endo- sulfan sulfate water, fltrd, µg/L (61590)	EPTC, water, fltrd 0.7µ GF µg/L (82668)	Ethion monoxon water, fltrd, µg/L (61644)	Ethion, water, fltrd, µg/L (82346)	Etho- prop, water, fltrd 0.7µ GF µg/L (82672)	Fenami- phos sulfone water, fltrd, µg/L (61645)	Fenami- phos sulf- oxide, water, fltrd, µg/L (61646)
Oct 15...	--	--	--	--	--	--	--	--	--	--	--	--	--
Nov 04...	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002	<.02	<.012	<.016	<.053	<.08
Dec 10...	--	--	--	--	--	--	--	--	--	--	--	--	--
Jan 13...	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002	<.02	<.012	<.016	<.053	<.08
Feb 26...	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar 10...	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002	<.02	<.012	<.016	<.053	<.08
Apr 28...	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002	<.02	<.012	<.016	<.053	<.08
May 14...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002	<.02	<.012	<.016	<.053	<.08
Jun 25...	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002	<.02	<.012	<.016	<.053	<.08
30...	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002	<.02	<.012	<.016	<.053	<.08
Jul 15...	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002	<.02	<.012	<.016	<.053	<.08
28...	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002	<.02	<.012	<.016	<.053	<.08
Aug 11...	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002	<.02	<.012	<.016	<.053	<.08
Sep 29...	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002	<.02	<.012	<.016	<.053	<.08

05331580 MISSISSIPPI RIVER BELOW LOCK AND DAM 2, AT HASTINGS, MN—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

Part 7 of 10

[Remark codes: <, less than; E, estimated.]

Date	Fenamiphos, water, fltrd, µg/L (61591)	Fipro-nil sulfide water, fltrd, µg/L (62167)	Fipro-nil sulfone water, fltrd, µg/L (62168)	Fipro-nil, water, fltrd, µg/L (62166)	Fonofos water, fltrd, µg/L (04095)	Glufosinate, water, fltrd 0.7µ GF µg/L (62721)	Glyphosate, water, fltrd 0.7µ GF µg/L (62722)	Hexazinone, water, fltrd, µg/L (04025)	Iprodione, water, fltrd, µg/L (61593)	Isofenphos, water, fltrd, µg/L (61594)	lambda-Cyhalothrin, water, fltrd, µg/L (61595)	Malathion, water, fltrd, µg/L (61652)	Malathion, water, fltrd, µg/L (39532)
Oct													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
Nov													
04...	<.03	<.013	<.024	<.040	<.010	--	--	<.008	<.014	<.006	<.010	<.080	<.020
Dec													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
Jan													
13...	<.03	<.013	<.024	E.008	<.010	--	--	<.008	<.014	<.006	<.010	<.080	<.020
Feb													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar													
10...	<.03	<.013	<.024	<.040	<.010	--	--	<.008	<.014	<.006	<.010	<.080	<.020
Apr													
28...	<.03	<.013	<.024	<.040	<.010	<.02	.28	<.008	<.014	<.006	<.010	<.080	<.020
May													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	<.03	<.013	<.024	E.006	<.010	<.02	.02	<.008	<.014	<.006	<.010	<.080	<.020
Jun													
25...	<.03	<.013	<.024	E.003	<.010	<.02	.04	<.008	<.014	<.006	<.010	<.080	<.020
30...	<.03	E.003	E.004	E.005	<.010	<.02	.10	<.008	<.014	<.006	<.010	<.080	<.020
Jul													
15...	<.03	E.005	<.024	<.040	<.010	<.02	.04	<.008	<.014	<.006	<.010	<.080	<.020
28...	<.03	<.013	<.024	<.040	<.010	<.02	.10	<.008	<.014	<.006	<.010	<.080	<.020
Aug													
11...	<.03	E.006	<.024	E.012	<.010	<.02	.13	<.008	<.014	<.006	<.010	<.080	<.020
Sep													
29...	<.03	E.003	<.024	E.015	<.010	<.02	3.1	<.008	<.014	<.006	<.010	<.080	<.020

05331580 MISSISSIPPI RIVER BELOW LOCK AND DAM 2, AT HASTINGS, MN—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

Part 8 of 10

[Remark codes: <, less than; E, estimated.]

Date	Meta- laxyl, water, fltrd, µg/L (61596)	Methodi- athion, water, fltrd, µg/L (61598)	Methyl para- oxon, water, fltrd, µg/L (61664)	Methyl para- thion, water, fltrd 0.7µ GF µg/L (82667)	Metola- chlor, water, fltrd, µg/L (39415)	Metri- buzin, water, fltrd, µg/L (82630)	Moli- nate, water, fltrd 0.7µ GF µg/L (82671)	Myclo- butanil water, fltrd, µg/L (61599)	Oxy- fluor- fen, water, fltrd, µg/L (61600)	Pendi- meth- alin, water, fltrd 0.7µ GF µg/L (82683)	Phorate oxon, water, fltrd, µg/L (61666)	Phorate water, fltrd 0.7µ GF µg/L (82664)	Phosmet oxon, water, fltrd, µg/L (61668)
Oct 15...	--	--	--	--	--	--	--	--	--	--	--	--	--
Nov 04...	<.007	<.006	<.01	<.008	E.007	<.016	<.002	<.010	<.006	<.012	<.03	<.020	--
Dec 10...	--	--	--	--	--	--	--	--	--	--	--	--	--
Jan 13...	<.007	<.006	<.01	<.008	E.010	<.016	<.002	<.010	<.006	<.012	<.03	<.020	<.05
Feb 26...	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar 10...	<.007	<.006	<.01	<.008	.173	<.016	<.002	<.010	<.006	<.012	<.03	<.020	<.05
Apr 28...	<.007	<.006	<.01	<.008	.044	<.016	<.002	<.010	<.006	<.012	<.03	<.020	<.05
May 14...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	<.007	<.006	<.01	<.008	.028	<.016	<.002	<.010	<.006	<.012	<.03	<.020	<.05
Jun 25...	<.007	<.006	<.01	<.008	E.005	<.016	<.002	.010	<.006	<.012	<.03	<.020	<.05
30...	<.007	<.006	<.01	<.008	.073	<.016	<.002	<.010	<.006	<.012	<.03	<.020	<.05
Jul 15...	<.007	<.006	<.01	<.008	.045	<.016	<.002	<.010	<.006	<.012	<.03	<.020	<.05
28...	<.007	<.006	<.01	<.008	.035	<.016	<.002	<.010	<.006	<.012	<.03	<.020	<.05
Aug 11...	<.007	<.006	<.01	<.008	.018	<.016	<.002	<.010	<.006	<.012	<.03	<.020	<.05
Sep 29...	<.015	<.006	<.01	<.008	.042	<.016	<.002	<.010	<.006	<.012	<.03	<.020	<.05

05331580 MISSISSIPPI RIVER BELOW LOCK AND DAM 2, AT HASTINGS, MN—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

Part 9 of 10

[Remark codes: <, less than; E, estimated.]

Date	Phosmet water, fltrd, µg/L (61601)	Prometon, water, fltrd, µg/L (04037)	Prometryn, water, fltrd, µg/L (04036)	Propanil, water, fltrd 0.7µ GF µg/L (82679)	Propargite, water, fltrd 0.7µ GF µg/L (82685)	Propyzamide, water, fltrd 0.7µ GF µg/L (82676)	Simazine, water, fltrd, µg/L (04035)	Tebuconazole, water, fltrd, µg/L (62852)	Tebu-thiuron water, fltrd 0.7µ GF µg/L (82670)	Tefluthrin, water, fltrd, µg/L (61606)	Terbufosoxon sulfone water, fltrd, µg/L (61674)	Terbufos, water, fltrd 0.7µ GF µg/L (82675)	Terbutylazine, water, fltrd, µg/L (04022)
Oct 15...	--	--	--	--	--	--	--	--	--	--	--	--	--
Nov 04...	<.200	E.01	<.006	<.014	<.02	<.004	<.010	--	<.02	<.010	<.04	<.02	<.01
Dec 10...	--	--	--	--	--	--	--	--	--	--	--	--	--
Jan 13...	<.200	<.01	<.006	<.014	<.02	<.004	<.010	--	<.02	<.010	<.04	<.02	<.01
Feb 26...	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar 10...	<.200	<.01	<.006	<.014	<.02	<.004	<.010	--	<.02	<.010	<.04	<.02	<.01
Apr 28...	<.200	<.01	<.006	<.014	<.02	<.004	<.010	--	<.02	<.010	<.04	<.02	<.01
May 14...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	<.200	E.01	<.006	<.014	<.02	<.004	<.010	--	<.02	<.010	<.04	<.02	<.01
Jun 25...	<.200	.01	<.006	<.014	<.02	<.004	E.005	<.02	<.02	<.010	<.04	<.02	<.01
30...	<.200	E.01	<.006	<.014	<.02	<.004	<.010	<.02	<.02	<.010	<.04	<.02	<.01
Jul 15...	<.200	.01	<.006	<.014	<.02	<.004	<.010	<.02	<.02	<.010	<.04	<.02	<.01
28...	<.200	.02	<.006	<.014	<.02	<.004	<.010	<.02	<.02	<.010	<.04	<.02	<.01
Aug 11...	<.200	E.02	<.006	<.014	<.02	<.004	<.010	<.02	<.02	<.010	<.04	<.02	<.01
Sep 29...	<.200	E.01	<.006	<.014	<.02	<.004	<.010	--	<.02	<.010	<.04	<.02	.01

05331580 MISSISSIPPI RIVER BELOW LOCK AND DAM 2, AT HASTINGS, MN—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

Part 10 of 10

[Remark codes: <, less than; E, estimated.]

Date	Thio- bencarb water, fltrd 0.7µ GF µg/L (82681)	trans- Propi- conazole, water, fltrd, µg/L (79847)	Tribu- phos, water, fltrd, µg/L (61610)	Tri- flur- alin, water, fltrd 0.7µ GF µg/L (82661)	Sus- pended sedi- ment concentration mg/L (80154)
Oct					
15...	--	--	--	--	43
Nov					
04...	<.016	<.02	<.035	<.012	35
Dec					
10...	--	--	--	--	62
Jan					
13...	<.016	<.02	<.035	<.012	3
Feb					
26...	--	--	--	--	3
Mar					
10...	<.016	<.02	<.035	<.012	6
Apr					
28...	<.016	<.02	<.035	<.012	32
May					
14...	--	--	--	--	61
28...	<.016	<.02	<.035	<.012	29
Jun					
25...	<.016	<.02	<.035	<.012	73
30...	<.016	<.02	<.035	<.012	121
Jul					
15...	<.016	<.02	<.035	<.012	65
28...	<.016	<.02	<.035	<.012	46
Aug					
11...	<.016	<.02	<.035	<.012	22
Sep					
29...	<.016	<.02	<.035	<.012	23