

Water-Data Report 2009

05242300 MISSISSIPPI RIVER AT BRAINERD, MN

Mississippi Headwaters Basin
Elk-Nokasippi Subbasin

LOCATION.--Lat 46°22'40", long 94°10'59" referenced to North American Datum of 1927, in SE ¼ SW ¼ sec.18, T.45 N., R.30 W., Crow Wing County, MN, Hydrologic Unit 07010104, on left bank in hydropower plant of Wausau Paper Corporation in Brainerd, 12.7 mi upstream from Crow Wing River, and at mile 1,003.7 upstream from Ohio River.

DRAINAGE AREA.--7,320 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,146.96 ft above sea level (NGVD of 1929).

REMARKS.--Records good except those for estimated daily discharge, which are fair to poor. Flow regulated by Winnibigoshish Lake, Leech Lake, Pokegama Lake, Sandy Lake, Pine River Reservoir at Cross Lake, and by hydropower plant in Brainerd.

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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	1,090	2,290	e2,050	e1,630	e1,880	e2,300	10,500	7,760	4,380	2,590	1,310	760
2	1,100	2,380	e1,910	e1,630	e1,870	e2,290	10,200	7,790	4,310	2,470	1,230	755
3	1,140	2,340	e1,780	e1,620	e1,880	e2,300	10,300	7,780	3,810	2,380	1,260	774
4	1,150	2,320	e1,680	e1,610	e1,900	e2,300	10,600	7,800	4,090	2,170	1,220	889
5	1,140	2,380	e1,630	e1,600	e1,930	e2,300	11,000	7,830	3,930	2,170	1,170	875
6	1,270	2,460	e1,580	e1,600	e1,960	e2,290	11,200	7,770	3,780	2,220	1,150	750
7	1,470	2,610	e1,510	e1,600	e1,980	e2,280	11,300	7,580	3,710	1,960	1,140	691
8	1,340	2,780	e1,480	e1,600	e1,990	e2,270	10,300	7,190	3,630	1,780	1,160	688
9	1,230	2,930	e1,530	e1,610	e2,000	e2,250	9,450	7,620	3,630	1,800	1,200	685
10	1,820	3,280	e1,590	e1,610	e2,010	e2,220	9,260	7,090	3,610	1,790	1,130	686
11	1,690	3,350	e1,620	e1,620	e2,030	e2,210	8,950	7,170	3,600	1,570	1,130	692
12	1,930	3,440	e1,650	e1,620	e2,060	e2,200	8,780	7,020	3,520	1,430	1,120	707
13	2,000	3,570	e1,670	e1,610	e2,090	e2,220	8,710	6,820	3,510	1,450	1,020	651
14	2,150	3,580	e1,680	e1,610	e2,110	e2,220	8,610	6,720	3,510	1,750	973	582
15	2,360	3,440	e1,680	e1,600	e2,130	e2,200	8,580	6,530	3,190	2,200	860	561
16	2,450	3,410	e1,690	e1,610	e2,150	e2,390	8,490	6,580	3,510	1,900	921	557
17	2,510	3,410	e1,700	e1,620	e2,180	e2,650	8,470	6,470	3,090	1,560	964	529
18	2,560	3,340	e1,700	e1,630	e2,230	e2,890	8,500	6,470	3,040	1,410	752	466
19	2,540	3,220	e1,700	e1,640	e2,250	e3,060	8,440	6,620	3,300	1,460	699	491
20	2,390	3,210	e1,700	e1,640	e2,300	e3,270	8,380	6,310	3,110	1,400	900	497
21	2,420	2,710	e1,690	e1,650	e2,330	e3,450	8,370	6,580	3,340	1,350	861	504
22	2,430	2,090	e1,690	e1,650	e2,360	e3,630	8,290	6,370	3,520	1,360	856	512
23	2,330	e2,180	e1,670	e1,660	e2,350	4,710	8,190	6,190	3,400	1,300	894	521
24	2,240	e2,200	e1,660	e1,680	e2,350	6,560	8,100	5,900	3,580	1,460	849	521
25	2,200	2,080	e1,660	e1,690	e2,340	8,060	7,920	5,520	3,570	1,410	825	527
26	2,110	2,090	e1,650	e1,700	e2,330	9,020	7,820	5,160	3,590	1,320	866	526
27	2,270	e2,320	e1,650	e1,730	e2,310	9,580	7,670	4,910	3,620	1,490	871	526
28	2,290	e2,620	e1,650	e1,740	e2,300	10,000	7,730	4,610	3,360	1,400	869	534
29	2,100	e2,460	e1,640	e1,750	---	10,300	7,750	4,650	3,190	1,340	870	536
30	2,140	e2,260	e1,640	e1,810	---	10,500	7,750	4,560	2,750	1,260	852	545
31	2,210	---	e1,640	e1,850	---	10,600	---	4,390	---	1,250	795	---
Total	60,070	82,750	51,770	51,220	59,600	134,520	269,610	201,760	106,180	52,400	30,717	18,538
Mean	1,938	2,758	1,670	1,652	2,129	4,339	8,987	6,508	3,539	1,690	991	618
Max	2,560	3,580	2,050	1,850	2,360	10,600	11,300	7,830	4,380	2,590	1,310	889
Min	1,090	2,080	1,480	1,600	1,870	2,200	7,670	4,390	2,750	1,250	699	466
Ac-ft	119,100	164,100	102,700	101,600	118,200	266,800	534,800	400,200	210,600	103,900	60,930	36,770
Cfsm	0.26	0.38	0.23	0.23	0.29	0.59	1.23	0.89	0.48	0.23	0.14	0.08
In.	0.31	0.42	0.26	0.26	0.30	0.68	1.37	1.03	0.54	0.27	0.16	0.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2009, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	3,127	3,414	2,854	2,476	2,271	2,646	6,025	5,730	4,217	3,876	2,217	2,107
Max	8,002	6,655	5,926	4,081	3,973	4,339	12,890	12,890	10,100	10,260	6,950	6,925
(WY)	(1996)	(2001)	(1997)	(1997)	(1997)	(2009)	(1997)	(2001)	(2001)	(1993)	(1999)	(1999)
Min	858	987	1,029	923	735	1,228	2,184	1,928	662	442	517	483
(WY)	(2004)	(2007)	(2007)	(2007)	(2007)	(2008)	(2003)	(1988)	(1988)	(1988)	(2007)	(2006)

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SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1987 - 2009	
Annual total	1,070,172		1,119,135			
Annual mean	2,924		3,066		3,438	
Highest annual mean					5,707	2001
Lowest annual mean					1,540	2007
Highest daily mean	10,800	May 4	11,300	Apr 7	17,400	Apr 28, 2001
Lowest daily mean	539	Sep 4	466	Sep 18	348	Jul 30, 1988
Annual seven-day minimum	617	Sep 3	502	Sep 18	357	Jul 29, 1988
Maximum peak flow			^a 11,400	Apr 6	17,500	Apr 30, 2001
Maximum peak stage			13.03	Apr 7	16.70	Apr 30, 2001
Instantaneous low flow			^b 450	Sep 17	^b 203	Nov 30, 2006
Annual runoff (ac-ft)	2,123,000		2,220,000		2,490,000	
Annual runoff (cfsm)	0.399		0.419		0.470	
Annual runoff (inches)	5.44		5.69		6.38	
10 percent exceeds	7,500		7,780		6,640	
50 percent exceeds	1,800		2,150		2,880	
90 percent exceeds	908		861		1,100	

^a Gage height 12.99

^b Result of regulation.

