

Water-Data Report 2009

05247500 CROW WING RIVER NEAR PILLAGER, MN

Mississippi Headwaters Basin
Crow Wing Subbasin

LOCATION.--Lat 46°18'18", long 94°22'38" referenced to North American Datum of 1927, in SW ¼ NE ¼ sec.30, T.133 N., R.29 W., Cass County, MN, Hydrologic Unit 07010106, at Sylvan Dam power plant of Minnesota Power Co., 3.6 mi above mouth and 4.9 mi southeast of Pillager.

DRAINAGE AREA.--3,760 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1968 to September 1986, October 1987 to current year. Records for August 1924 to September 1968 available in files of the Minnesota District Office.

REVISED RECORDS.--Unpublished, 2009: 1993(M).

GAGE.--Water-stage recorder. Datum of gage is 1,151.00 ft above sea level, adjustment of 1912. Prior to January 16, 1991, staff gage attached to retaining wall approximately 20 ft below the turbine outlet bays, at datum 1,150.00 ft, adjustment of 1912.

COOPERATION.--Prior to February 1991, records collected by Minnesota Power Company in connection with a Federal Energy Regulatory Commission project.

REMARKS.--Records good. Prior to January 16, 1991, discharges computed on the basis of power plant. Records for Oct. 1, 1968 to Sept. 30, 1975, were adjusted for storage change in the Sylvan dam reservoir. Flow partly regulated by Sylvan Dam power plant and Gull Lake reservoir.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum daily discharge since 1924, 18,300 ft³/s, Apr. 14, 1965.

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

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	582	1,660	1,200	829	853	884	9,150	3,090	1,890	1,590	1,320	731
2	497	1,590	1,110	843	811	864	7,750	3,120	1,570	1,520	1,210	690
3	522	1,610	974	879	842	797	7,390	3,090	1,680	1,410	1,170	763
4	471	1,590	973	831	805	869	7,180	3,130	1,510	1,350	1,200	599
5	568	1,520	883	817	887	885	6,890	2,920	1,420	1,100	1,170	715
6	768	1,650	845	868	810	831	5,970	3,030	1,400	1,170	1,040	651
7	808	1,680	824	791	870	882	5,910	2,920	1,420	988	982	537
8	1,220	1,740	764	870	813	865	5,670	2,860	1,370	1,020	1,060	680
9	1,270	1,810	744	872	797	890	5,580	2,840	1,360	891	938	604
10	1,340	1,780	853	864	916	930	5,750	2,830	1,310	985	957	622
11	1,440	1,750	824	912	874	958	5,550	2,690	1,240	883	935	633
12	1,710	1,760	896	876	900	880	5,490	2,520	1,150	808	920	650
13	1,910	1,670	980	952	910	870	5,380	2,780	1,160	826	786	622
14	1,950	1,780	990	876	940	815	4,690	2,600	1,170	998	832	669
15	1,950	1,580	978	966	916	812	4,260	2,770	1,100	2,080	744	540
16	1,890	1,650	919	901	984	955	4,060	2,630	1,110	2,060	942	647
17	1,930	1,590	806	912	961	1,320	4,090	2,650	1,180	1,980	817	566
18	1,840	1,170	755	936	966	1,910	3,900	2,640	1,560	1,820	876	589
19	1,880	1,380	859	847	944	2,170	3,850	2,520	1,580	1,780	963	489
20	1,720	1,140	872	861	970	2,630	3,620	2,680	1,770	1,680	1,020	569
21	1,910	860	818	922	935	2,870	3,600	2,470	1,640	1,790	970	548
22	1,740	752	859	825	936	3,050	3,540	2,460	1,890	1,700	1,130	533
23	1,770	1,000	790	952	897	4,950	3,520	2,390	1,930	1,820	939	559
24	1,780	1,370	842	897	920	6,910	3,380	2,300	1,910	1,720	1,060	562
25	1,780	1,280	814	876	891	8,390	3,520	2,230	1,960	1,590	974	561
26	1,830	1,180	775	900	948	10,900	3,520	2,190	1,870	1,590	885	581
27	1,710	1,350	894	832	889	12,800	3,420	2,110	1,830	1,690	851	574
28	1,740	1,470	824	868	901	13,200	3,170	1,990	1,880	1,400	865	524
29	1,710	1,280	820	810	---	13,100	3,180	1,940	1,730	1,540	785	536
30	1,690	1,270	958	885	---	12,600	3,200	1,910	1,670	1,360	731	532
31	1,720	---	804	795	---	11,300	---	1,720	---	1,300	766	---
Total	45,646	43,912	27,247	27,065	25,086	122,087	146,180	80,020	46,260	44,439	29,838	18,076
Mean	1,472	1,464	879	873	896	3,938	4,873	2,581	1,542	1,434	963	603
Max	1,950	1,810	1,200	966	984	13,200	9,150	3,130	1,960	2,080	1,320	763
Min	471	752	744	791	797	797	3,170	1,720	1,100	808	731	489
Ac-ft	90,540	87,100	54,040	53,680	49,760	242,200	289,900	158,700	91,760	88,140	59,180	35,850
Cfsm	0.39	0.39	0.23	0.23	0.24	1.05	1.30	0.69	0.41	0.38	0.26	0.16
In.	0.45	0.43	0.27	0.27	0.25	1.21	1.45	0.79	0.46	0.44	0.30	0.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2009, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	1,260	1,246	900	742	738	1,437	3,421	2,493	1,860	1,486	974	944
Max	3,771	3,674	1,699	1,394	1,360	3,938	8,266	5,671	5,307	3,295	3,520	3,309
(WY)	(1974)	(1972)	(1999)	(2006)	(1998)	(2009)	(2001)	(1986)	(2001)	(1972)	(1972)	(1986)
Min	215	215	199	218	255	548	882	545	447	206	120	161
(WY)	(1977)	(1977)	(1977)	(1977)	(1977)	(1981)	(1981)	(1977)	(1988)	(1988)	(1976)	(1976)

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SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1969 - 2009	
Annual total	495,544		655,856			
Annual mean	1,354		1,797		1,459	
Highest annual mean					2,564	1972
Lowest annual mean					446	1977
Highest daily mean	4,300	Jun 15	13,200	Mar 28	16,900	Apr 12, 2001
Lowest daily mean	340	Sep 4	471	Oct 4	60	Aug 10, 1976
Annual seven-day minimum	407	Sep 4	546	Sep 19	68	Aug 9, 1976
Maximum peak flow			13,400	Mar 28	17,500	Apr 12, 2001
Maximum peak stage			10.47	Mar 28	^a 12.11	Apr 12, 2001
Instantaneous low flow			^b 398	Feb 9	^{b,c} 78	Jul 17, 2001
Annual runoff (ac-ft)	982,900		1,301,000		1,057,000	
Annual runoff (cfsm)	0.360		0.478		0.388	
Annual runoff (inches)	4.90		6.49		5.27	
10 percent exceeds	2,990		3,270		2,960	
50 percent exceeds	918		1,140		993	
90 percent exceeds	503		744		472	

^a Since USGS stage record began, Jan. 16, 1991.

^b Result of regulation.

^c Also occurred, Aug. 10, 2007.

