

UPPER MISSISSIPPI RIVER MAIN STEM--Continued

05267000 MISSISSIPPI RIVER NEAR ROYALTON, MN

LOCATION.--Lat 45°49'34", long 94°21'18", sec. 32, T. 39 N., R. 32 W., Morrison County, Hydrologic Unit 07010201, on left bank at upstream side of bridge on County Highway 26, 2.5 mi west of Royalton, and at mile 954 upstream from Ohio River.

DRAINAGE AREA.--11,600 mi² (approximately).

PERIOD OF RECORD.--March 1924 to Sept. 30, 1993, discharges obtained from Minnesota Power and adjusted to U.S. Geological Survey streamflow measurements; Oct. 1993 to Sept. 30, 2000, discharges flow-averaged between Mississippi River at Ft. Ripley (05261000) and Mississippi River at St. Cloud (05270700); Oct. 2000 to July, 2001, discharges obtained from Minnesota Power and adjusted to U.S. Geological Survey streamflow measurements; July 2001 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records good except those for adjusted and estimated discharge, which are fair. Flow partly regulated by power plants and Winnibigoshish, Leech, Pokegama, Sandy, and Gull Lakes and by Pine River Reservoir.

COOPERATION.--Minnesota Power Co. in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3310	5020	5320	e4210	e3450	e3440	5480	8380	4670	10300	7190	4980
2	2890	4750	5710	e4310	e3430	e3400	5210	7880	4310	9810	6730	5370
3	3090	4620	5810	e4370	e3420	e3360	5160	7420	4170	9600	7090	5120
4	3030	5020	5430	e4440	e3400	e3320	5050	7490	3530	9140	7280	4930
5	2880	4620	5940	e4480	e3400	e3270	4780	7240	3680	9150	7160	4970
6	2790	4770	5980	e4710	e3390	e3250	4470	6910	3650	8600	7080	5740
7	2920	4720	6080	e4900	e3380	e3210	4260	6870	3330	8180	6570	4780
8	3240	4560	5630	e5040	e3370	e3190	4810	7860	3270	9320	6060	4340
9	3210	4040	5280	e5020	e3360	e3220	5380	8400	3300	11000	5630	3900
10	3310	4470	5590	e5030	e3360	e3280	6000	9150	2890	13600	5260	4350
11	3560	4490	5870	e4970	e3360	e3280	7160	9270	2890	16500	5070	4250
12	3600	4500	5910	e4960	e3350	e3280	8360	9630	2790	16900	4810	3650
13	3740	5200	5650	e4940	e3350	e3350	9000	9860	2680	16100	5360	4320
14	4410	4670	5340	e4960	e3350	e3300	9600	10400	2690	15900	4960	3860
15	4320	4300	5670	e4960	e3340	e3260	9740	10500	2700	15200	5220	4090
16	4810	4740	5520	e4960	e3340	e3200	10000	10600	2630	14300	5160	3770
17	4820	4460	6690	e4300	e3340	e3100	9750	10600	2360	13700	5040	3500
18	5390	4570	7140	e4000	e3340	e3050	9980	10000	2440	12800	5590	3900
19	4790	4350	5550	e3710	e3410	e3050	10200	9820	3120	12300	5780	3400
20	4940	3980	4640	e3720	e3500	e3050	10300	9120	3640	11400	5430	3430
21	4800	4410	e4090	e3740	e3630	e3040	10300	8480	3790	10700	5930	3160
22	4750	4310	e4070	e3750	e3650	e3060	9870	8100	3570	10600	5420	3180
23	5200	4300	e3920	e3750	e3650	e3100	10100	7060	4600	9470	5190	3010
24	5130	4320	e3540	e3750	e3700	e3150	9910	6740	6110	9160	5380	3160
25	4760	4840	e3500	e3720	e3800	e3050	9500	6510	6460	8710	6290	3230
26	4900	4600	e3600	e3670	e3600	e3000	9080	6180	8710	8340	5260	3020
27	4780	5390	e3650	e3620	e3300	e3030	8890	5520	9590	8100	5010	2910
28	5000	4950	e3840	e3570	e3400	e3200	8740	5270	10300	7930	4620	3170
29	5210	4620	e3960	e3540	---	e3500	8380	4700	10500	7770	4650	2970
30	5560	4970	e4060	e3500	---	5480	8330	4400	10100	7990	4970	3270
31	5030	---	e4130	e3480	---	5780	---	4610	---	7550	4490	---
TOTAL	130170	138560	157110	132080	96370	104250	237790	244970	138470	340120	175680	117730
MEAN	4199	4619	5068	4261	3442	3363	7926	7902	4616	10970	5667	3924
MAX	5560	5390	7140	5040	3800	5780	10300	10600	10500	16900	7280	5740
MIN	2790	3980	3500	3480	3300	3000	4260	4400	2360	7550	4490	2910
AC-FT	258200	274800	311600	262000	191100	206800	471700	485900	274700	674600	348500	233500
CFSM	0.36	0.40	0.44	0.37	0.30	0.29	0.68	0.68	0.40	0.95	0.49	0.34
IN.	0.42	0.44	0.50	0.42	0.31	0.33	0.76	0.79	0.44	1.09	0.56	0.38

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4186	4066	3194	2807	2692	3894	9362	8760	6546	5041	3760	3590
MAX	12930	14640	7297	5713	5480	12290	25430	24600	18160	15250	15230	12940
(WY)	1966	1972	1997	1966	1997	1966	1997	1950	1965	1993	1953	1986
MIN	632	618	627	534	758	968	1924	1663	1071	648	449	535
(WY)	1937	1937	1935	1935	1937	1940	1931	1977	1988	1988	1934	1934

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1924 - 2002
ANNUAL TOTAL	2959060	2013300	
ANNUAL MEAN	8107	5516	4852
HIGHEST ANNUAL MEAN			9555
LOWEST ANNUAL MEAN			1213
HIGHEST DAILY MEAN	35500	Apr 13	16900
LOWEST DAILY MEAN	2790	Oct 6	2360
ANNUAL SEVEN-DAY MINIMUM	2980	Oct 2	2610
ANNUAL RUNOFF (AC-FT)	5869000	3993000	3515000
ANNUAL RUNOFF (CFSM)	0.70	0.48	0.42
ANNUAL RUNOFF (INCHES)	9.49	6.46	5.68
10 PERCENT EXCEEDS	19500	9670	9880
50 PERCENT EXCEEDS	4670	4760	3560
90 PERCENT EXCEEDS	3490	3200	1340

e Estimated.



