

MINNESOTA RIVER BASIN--Continued

05317000 COTTONWOOD RIVER NEAR NEW ULM, MN

LOCATION.--Lat 44°17'29", long 94°26'24", in SW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 33, T.110 N., R.30 W., Brown County, Hydrologic Unit 07020008, on left bank 600 ft upstream from highway bridge, 1.8 mi south of New Ulm, and 3.2 mi upstream from mouth.

DRAINAGE AREA.--1,300 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1909 to December 1913, March 1931 to March 1938, August 1938 to current year (winter records incomplete prior to 1936).

REVISED RECORDS.--WSP 355: 1912.

GAGE.--Water-stage recorder. Datum of gage is 796.83 ft above sea level. July 1, 1909 to Dec. 13, 1913, nonrecording gage at site 2.7 mi upstream at different datum. Mar. 15, 1931 to Mar. 31, 1938, nonrecording gage 2.2 mi upstream at datum 11.41 ft higher. Aug. 23, 1938 to June 25, 1948, nonrecording gage at present site and datum.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft<sup>3</sup>/s (revised) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr 12	2100	*2,900	*9.51	Jun 11	0900	1,460	7.23
May 9	1800	1,510	7.33	Jul 3	1600	1,230	6.78
May 23	0400	1,390	7.10	Jul 8	0800	1,190	6.70

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	222	489	e108	e101	e238	483	821	700	643	174	57
2	53	214	476	e108	e104	e250	474	790	674	594	155	54
3	52	202	463	e106	e107	e260	459	762	659	916	140	58
4	52	190	448	e103	e110	e270	446	745	651	1160	126	71
5	65	180	440	e101	e111	e280	447	751	641	1150	114	70
6	64	169	426	e99	e111	e280	459	796	628	1020	105	62
7	60	162	409	e99	e110	e280	464	920	594	827	98	57
8	77	157	395	e98	e110	e280	569	1180	559	835	93	54
9	127	164	383	e97	e115	e280	887	1480	546	686	227	54
10	115	251	368	e96	e120	e278	1740	1480	651	582	181	55
11	101	332	e348	e95	e130	e278	2620	1400	1360	508	150	54
12	92	443	e340	e94	e145	e277	2820	1310	1150	450	134	50
13	82	453	e350	e93	e150	e280	2830	1210	992	404	117	47
14	83	520	e368	e92	e152	e290	2550	1130	840	365	104	44
15	88	562	370	e92	e154	e310	2280	1070	729	336	96	44
16	97	546	354	e92	e156	e370	2010	1030	657	315	89	46
17	121	564	347	e93	e160	e500	1780	1040	606	276	82	48
18	121	593	336	e96	e170	e660	1630	998	571	285	79	45
19	118	605	268	e95	e182	e850	1520	953	575	279	74	46
20	123	606	156	e93	e185	e880	1410	963	559	332	70	44
21	132	678	139	e91	e188	e860	1310	977	584	435	71	41
22	139	708	e110	e91	e189	e750	1230	1250	602	517	69	40
23	131	676	e92	e93	e190	677	1150	1360	598	521	75	43
24	121	628	e94	e94	e191	595	1090	1250	567	476	71	42
25	120	605	e98	e96	e196	536	1020	1130	525	428	69	39
26	113	599	e103	e97	e205	496	971	1030	503	378	66	35
27	161	582	e107	e97	e215	475	936	945	809	339	62	34
28	184	560	e110	e98	e228	470	902	878	731	312	89	33
29	240	533	e112	e98	---	466	872	822	691	263	106	32
30	241	509	e114	e99	---	469	853	770	678	229	67	31
31	231	---	e111	e99	---	479	---	724	---	201	62	---
TOTAL	3567	13213	8724	3003	4285	13664	38212	31965	20630	16062	3215	1430
MEAN	115	440	281	96.9	153	441	1274	1031	688	518	104	47.7
MAX	241	708	489	108	228	880	2830	1480	1360	1160	227	71
MIN	52	157	92	91	101	238	446	724	503	201	62	31
AC-FT	7080	26210	17300	5960	8500	27100	75790	63400	40920	31860	6380	2840
CFSM	.09	.34	.22	.07	.12	.34	.98	.79	.53	.40	.08	.04
IN.	.10	.38	.25	.09	.12	.39	1.09	.91	.59	.46	.09	.04

e Estimated

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	177	163	109	57.2	101	664	1026	582	617	367	191	153
MAX	3208	1099	572	282	628	3350	7075	3497	5831	3815	1791	2438
(WY)	1969	1980	1980	1992	1983	1997	1969	1993	1993	1993	1993	1986
MIN	4.57	7.97	5.77	1.61	1.47	13.9	40.0	7.57	8.58	4.37	1.05	3.28
(WY)	1934	1940	1936	1940	1940	1965	1959	1934	1911	1934	1934	1933

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1909 - 1999
ANNUAL TOTAL	179445	157970	
ANNUAL MEAN	492	433	378 <sup>a</sup>
HIGHEST ANNUAL MEAN			1796
LOWEST ANNUAL MEAN			41.1
HIGHEST DAILY MEAN	5920	Apr 2	2830
LOWEST DAILY MEAN	52	Oct 3	31
ANNUAL SEVEN-DAY MINIMUM	58	Oct 1	35
INSTANTANEOUS PEAK FLOW			2900
INSTANTANEOUS PEAK STAGE			9.51
INSTANTANEOUS LOW FLOW			29
ANNUAL RUNOFF (AC-FT)	355900	313300	273800
ANNUAL RUNOFF (CFSM)	.38	.33	.29
ANNUAL RUNOFF (INCHES)	5.13	4.52	3.95
10 PERCENT EXCEEDS	859	1010	850
50 PERCENT EXCEEDS	311	277	84
90 PERCENT EXCEEDS	74	65	12

a Median of annual mean discharges is 240 ft<sup>3</sup>/s.

