

RED RIVER OF THE NORTH BASIN--Continued

05046000 OTTER TAIL RIVER BELOW ORWELL DAM, NEAR FERGUS FALLS, MN

LOCATION.--Lat 46°12'35", long 96°11'05", in NE¹/₄ sec. 34, T.132 N., R.44 W., Otter Tail County, Hydrologic Unit 09020103, on left bank 0.7 mi downstream from Orwell Dam on County Highway 15, 6.1 mi downstream from Dayton Hollow Dam, 8 mi southwest of Fergus Falls, and 11.1 mi downstream from Pelican River.

DRAINAGE AREA.--1,740 mi².

PERIOD OF RECORD.--October 1930 to current year. Prior to October 1952, published as Otter Tail River below Pelican River, near Fergus Falls. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 785: 1934(M). WSP 1208: 1947(M). WSP 1308: 1931(M).

GAGE.--Water-stage recorder. Datum of gage is 1,029.65 ft above sea level, adjustment of 1912 (levels by U.S. Army Corps of Engineers). Oct. 11, 1930 to Nov. 17, 1933, at same site at datum 2.00 ft higher; Nov. 18, 1933 to Mar. 21, 1953, at site 6.1 mi upstream at datum 40.30 ft higher.

REMARKS.--Records good. Flow regulated at Orwell Lake (station 05045950) beginning Mar. 21, 1953 and power plant upstream.

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	458	597	896	705	759	737	1070	1150	1140	1170	776	587
2	425	601	808	705	763	823	1120	1150	1110	1170	544	717
3	390	561	777	715	761	853	1110	1150	1120	1150	306	695
4	394	606	778	721	765	800	1100	1150	1130	1150	291	668
5	397	668	783	710	765	765	1040	1150	1150	1140	280	674
6	397	810	785	717	765	765	975	1160	1160	1160	500	676
7	502	896	881	753	765	760	951	1170	1220	1170	727	774
8	612	820	945	783	765	755	978	1170	1300	1160	709	865
9	541	417	883	783	764	713	1000	1170	1300	1160	706	878
10	464	431	818	786	760	681	1010	1180	1300	1150	778	839
11	465	546	796	746	764	681	1010	1190	1290	1140	847	805
12	466	553	796	705	765	681	1010	1200	1280	1140	861	808
13	466	849	796	704	765	681	1020	1190	1280	1100	987	808
14	427	1040	811	699	765	681	1060	1170	1280	1040	944	808
15	466	1020	821	698	760	683	1100	1170	1270	1040	869	804
16	470	936	821	693	721	768	1100	1180	1260	1020	786	802
17	477	596	820	688	693	840	1100	1180	1260	998	747	802
18	477	538	821	700	709	838	1100	1160	1250	984	757	802
19	578	682	821	690	752	785	1130	1160	1240	967	710	802
20	633	767	809	690	765	759	1170	1160	1230	958	659	784
21	630	835	719	691	765	764	1170	1150	1230	946	629	765
22	628	833	550	770	744	769	1170	1140	1220	950	630	750
23	624	774	379	827	729	826	1170	1150	1220	952	622	736
24	623	741	392	827	701	883	1170	1150	1220	934	533	740
25	628	747	460	825	682	833	1170	1150	1210	923	407	741
26	625	753	466	768	685	796	1160	1160	1200	901	438	746
27	741	757	475	723	693	796	1160	1160	1190	882	447	761
28	833	761	607	741	698	798	1160	1150	1190	845	457	765
29	818	765	802	755	---	833	1150	1140	1180	806	463	765
30	694	873	865	759	---	960	1150	1150	1180	795	468	725
31	595	---	771	759	---	1020	---	1150	---	783	473	---
TOTAL	16944	21773	22952	22836	20788	24327	32784	36010	36610	31684	19351	22892
MEAN	547	726	740	737	742	785	1093	1162	1220	1022	624	763
MAX	833	1040	945	827	765	1020	1170	1200	1300	1170	987	878
MIN	390	417	379	688	682	681	951	1140	1110	783	280	587
AC-FT	33610	43190	45530	45300	41230	48250	65030	71430	72620	62850	38380	45410
CFSM	.31	.42	.43	.42	.43	.45	.63	.67	.70	.59	.36	.44
IN.	.36	.47	.49	.49	.44	.52	.70	.77	.78	.68	.41	.49

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	246	257	249	240	245	329	494	598	580	435	297	250
MAX	973	831	740	737	742	785	1199	1427	1425	1246	1080	1026
(WY)	1994	1986	1999	1999	1999	1999	1997	1986	1986	1953	1985	1993
MIN	9.15	8.42	8.10	15.1	10.8	23.5	39.5	14.1	14.2	12.8	11.5	7.99
(WY)	1977	1977	1977	1937	1935	1937	1934	1977	1934	1936	1934	1934

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1931 - 1999
ANNUAL TOTAL	264265	308951	
ANNUAL MEAN	724	846	352
HIGHEST ANNUAL MEAN			846 1999
LOWEST ANNUAL MEAN			20.4 1934
HIGHEST DAILY MEAN	1240	Jul 16	1300 Jun 8-10 1670 Jun 20 1953
LOWEST DAILY MEAN	69	Jun 22	280 Aug 5 1.6 Feb 7 1937
ANNUAL SEVEN-DAY MINIMUM	303	Sep 20	423 Oct 1 5.9 Sep 15 1934
INSTANTANEOUS PEAK FLOW			1310 Jun 7 1710 Jun 17 1953
INSTANTANEOUS PEAK STAGE			4.43 Jun 7 5.60 Jun 17 1953
INSTANTANEOUS LOW FLOW			215 Aug 3 .70 Aug 5 1970
ANNUAL RUNOFF (AC-FT)	524200	612800	255000
ANNUAL RUNOFF (CFSM)	.42	.49	.20
ANNUAL RUNOFF (INCHES)	5.65	6.61	2.75
10 PERCENT EXCEEDS	1030	1170	776
50 PERCENT EXCEEDS	727	796	278
90 PERCENT EXCEEDS	462	540	35

