

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

LOCATION.--Lat 46°12'35", long 96°11'05", in NE $\frac{1}{4}$ 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 ((NGVD 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 by power plant upstream.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	574	833	794	862	670	674	684	953	1,030	1,190	627	729
2	573	826	760	861	670	740	667	903	1,030	1,190	627	723
3	575	868	766	856	664	732	675	867	1,070	1,190	632	716
4	614	885	771	854	664	725	641	867	1,100	1,200	633	708
5	651	909	773	848	664	719	618	872	1,100	1,190	633	709
6	646	907	773	844	664	717	627	876	1,100	1,190	631	714
7	597	905	775	752	669	715	634	878	1,100	1,180	627	763
8	568	854	823	669	670	715	685	876	1,110	1,170	584	833
9	573	830	850	664	670	716	729	927	1,120	1,160	559	853
10	575	833	849	664	670	747	734	1,000	1,130	1,150	561	842
11	579	833	843	670	670	780	739	1,020	1,140	1,140	562	701
12	615	833	840	710	668	773	839	939	1,150	1,130	562	368
13	658	833	837	751	664	761	946	942	1,150	1,080	563	608
14	657	833	740	733	664	751	976	944	1,160	992	565	835
15	631	784	556	685	664	742	980	941	1,170	906	568	834
16	585	756	456	682	664	727	982	944	1,180	870	568	784
17	585	812	391	683	664	713	981	959	1,190	867	568	759
18	631	844	372	627	664	704	982	959	1,190	854	568	755
19	713	843	380	585	664	696	980	958	1,190	779	569	754
20	744	844	428	586	664	690	973	957	1,190	724	573	753
21	691	843	553	642	662	722	966	954	1,200	722	578	750
22	660	839	621	670	610	738	969	953	1,200	721	626	787
23	668	841	621	670	568	730	968	908	1,200	721	658	817
24	678	839	621	678	570	727	964	878	1,200	721	657	808
25	791	837	621	682	573	727	964	883	1,190	723	656	693
26	930	833	621	681	573	727	964	965	1,190	817	656	410
27	971	833	714	679	579	728	962	1,020	1,180	825	662	397
28	999	833	837	676	579	737	959	1,020	1,170	742	663	354
29	991	833	864	674	---	755	959	1,020	1,180	660	711	356
30	992	833	861	670	---	780	955	1,020	1,190	627	744	650
31	985	---	867	670	---	746	---	1,020	---	627	734	---
TOTAL	21,700	25,229	21,578	21,978	18,039	22,654	25,702	29,223	34,500	29,058	19,125	20,763
MEAN	700	841	696	709	644	731	857	943	1,150	937	617	692
MAX	999	909	867	862	670	780	982	1,020	1,200	1,200	744	853
MIN	568	756	372	585	568	674	618	867	1,030	627	559	354
AC-FT	43,040	50,040	42,800	43,590	35,780	44,930	50,980	57,960	68,430	57,640	37,930	41,180
CFSM	0.40	0.48	0.40	0.41	0.37	0.42	0.49	0.54	0.66	0.54	0.35	0.40
IN.	0.46	0.54	0.46	0.47	0.39	0.48	0.55	0.62	0.74	0.62	0.41	0.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2005, BY WATER YEAR (WY)

MEAN	262	275	265	259	262	347	511	615	605	464	314	266
MAX	973	841	740	737	742	785	1,199	1,427	1,442	1,246	1,080	1,026
(WY)	(1994)	(2005)	(1999)	(1999)	(1999)	(1999)	(1997)	(1986)	(2001)	(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)

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SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1931 - 2005	
ANNUAL TOTAL	175,548		289,549		371	
ANNUAL MEAN	480		793		846	
HIGHEST ANNUAL MEAN					20.4	1934
LOWEST ANNUAL MEAN					1,670	Jun 20, 1953
HIGHEST DAILY MEAN	999	Oct 28	a1,200	Jun21-24July4	a1.6	Feb 7, 1937
LOWEST DAILY MEAN	99	Feb 5	a354	Sep 28	5.9	Sep 15, 1934
ANNUAL SEVEN-DAY MINIMUM	101	Jan 21	448	Dec 15	2,040	May 29, 2001
MAXIMUM PEAK FLOW			a1,220	Jun 20	5.60	Jun 17, 1953
MAXIMUM PEAK STAGE			a4.24	Jun 20	b0.70	Aug 5, 1970
INSTANTANEOUS LOW FLOW			b184	Sep 29	268,500	
ANNUAL RUNOFF (AC-FT)	348,200		574,300		0.213	
ANNUAL RUNOFF (CFSM)	0.276		0.456		2.89	
ANNUAL RUNOFF (INCHES)	3.75		6.19		798	
10 PERCENT EXCEEDS	833		1,100		306	
50 PERCENT EXCEEDS	448		751		40	
90 PERCENT EXCEEDS	150		579			

a Due in part to regulation.
 b Due to regulation.
 e Estimated

