

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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	373	351	357	370	370	329	345	543	562	961	649	135
2	370	351	357	370	370	330	331	526	562	955	641	122
3	370	351	357	370	351	328	316	502	545	842	630	114
4	370	351	357	370	333	330	346	502	536	758	622	114
5	370	351	357	370	353	331	389	533	540	753	625	115
6	370	351	357	377	375	328	389	594	540	750	618	114
7	370	351	357	382	360	328	389	620	540	650	591	114
8	370	351	357	382	346	328	389	570	540	549	572	114
9	370	351	357	387	345	330	389	586	539	532	561	114
10	370	351	357	388	345	328	389	618	537	534	541	114
11	370	351	357	389	345	292	389	623	512	684	550	114
12	370	351	357	389	356	230	386	713	501	802	536	116
13	370	351	357	389	363	212	386	766	502	805	441	118
14	371	351	357	365	363	305	382	761	501	802	422	119
15	376	339	357	331	361	376	382	689	502	800	428	120
16	376	316	371	308	357	376	384	727	502	794	407	122
17	376	316	386	305	357	361	441	754	502	790	298	115
18	376	316	382	305	344	351	502	753	504	786	95	92
19	376	319	381	305	333	384	521	747	507	778	98	80
20	376	354	389	305	333	456	525	693	505	774	212	79
21	376	389	389	324	333	476	588	665	502	766	223	79
22	376	389	389	339	333	476	629	667	505	757	184	77
23	376	389	389	339	333	476	628	662	602	813	159	75
24	376	389	389	338	333	476	625	659	719	864	162	75
25	376	389	388	338	331	476	623	652	752	845	166	75
26	379	389	382	339	328	476	622	655	747	810	171	76
27	382	376	362	336	328	476	620	652	690	789	178	79
28	382	356	345	343	328	429	620	616	666	657	183	79
29	382	356	341	351	---	381	574	556	685	708	154	123
30	366	357	345	361	---	379	543	559	870	694	129	143
31	351	---	359	370	---	357	---	561	---	658	133	---
TOTAL	11,562	10,653	11,342	10,935	9,707	11,511	14,042	19,724	17,217	23,460	11,379	3,126
MEAN	373	355	366	353	347	371	468	636	574	757	367	104
MAX	382	389	389	389	375	476	629	766	870	961	649	143
MIN	351	316	341	305	328	212	316	502	501	532	95	75
AC-FT	22,930	21,130	22,500	21,690	19,250	22,830	27,850	39,120	34,150	46,530	22,570	6,200
CFSM	0.21	0.20	0.21	0.20	0.20	0.21	0.27	0.37	0.33	0.43	0.21	0.06
IN.	0.25	0.23	0.24	0.23	0.21	0.25	0.30	0.42	0.37	0.50	0.24	0.07

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2003, BY WATER YEAR (WY)

MEAN	258	269	262	254	258	342	508	612	597	457	309	257
MAX	973	831	740	737	742	785	1,199	1,427	1,442	1,246	1,080	1,026
(WY)	(1994)	(1986)	(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 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1931 - 2003	
ANNUAL TOTAL	187,165		154,658		366	
ANNUAL MEAN	513		424		846	
HIGHEST ANNUAL MEAN					1999	
LOWEST ANNUAL MEAN					1934	
HIGHEST DAILY MEAN	1,070	Jul 11	961	Jul 1	1,670	Jun 20, 1953
LOWEST DAILY MEAN	179	Aug 26	a75	Sep 23	b1.6	Feb 7, 1937
ANNUAL SEVEN-DAY MINIMUM	327	Aug 24	77	Sep 20	5.9	Sep 15, 1934
MAXIMUM PEAK FLOW			968	Jun 30	2,040	May 29, 2001
MAXIMUM PEAK STAGE			3.88	Jun 30	5.60	Jun 17, 1953
INSTANTANEOUS LOW FLOW			a60	Aug 18, Sep 18	b0.70	Aug 5, 1970
ANNUAL RUNOFF (AC-FT)	371,200		306,800		264,800	
ANNUAL RUNOFF (CFSM)	0.29		0.24		0.21	
ANNUAL RUNOFF (INCHES)	4.00		3.31		2.85	
10 PERCENT EXCEEDS	718		691		789	
50 PERCENT EXCEEDS	478		376		300	
90 PERCENT EXCEEDS	357		161		38	

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

