

Water-Data Report 2009

05078500 CLEARWATER RIVER AT RED LAKE FALLS, MN

Lower Red Basin
Clearwater Subbasin

LOCATION.--Lat 47°53'15", long 96°16'25" referenced to North American Datum of 1927, in NW ¼ NE ¼ sec.22, T.151 N., R.44 W., Red Lake County, MN, Hydrologic Unit 09020305, on left bank 900 ft downstream from U.S. highway 59 bridge in Red Lake Falls, 1.4 mi upstream from mouth, and 3 mi downstream from Badger Creek.

DRAINAGE AREA.--1,380 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--June 1909 to September 1917, October 1934 to September 1981, March 1982 to current year. Monthly-mean discharge only for October, November, 1934, published in WSP 1308.

REVISED RECORDS.--WSP 355: 1911-12. WSP 1438: 1910-11, 1917(M). WDR MN-84-1:1983. Unpublished (2009): 1960 (M).

GAGE.--Water-stage recorder. Datum of gage is 948.94 ft above sea level (NGVD of 1929, levels by U.S. Army Corps of Engineers). Prior to Sept. 12, 1911, non-recording gage at site 0.5 mi upstream, and Sept. 12, 1911 to Sept. 30, 1917, non-recording gage at site 40 ft upstream at different datum.

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

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	94	340	e228	e151	e133	e107	4,450	1,320	682	389	114	127
2	93	320	e219	e150	e133	e106	4,090	1,310	645	301	109	114
3	89	305	e204	e148	e133	e107	3,660	1,230	600	242	127	104
4	97	296	e195	e148	e131	e111	3,270	1,130	567	190	121	103
5	102	305	e195	e146	e128	e119	3,100	1,030	518	165	122	99
6	116	337	e193	e146	e123	e113	2,980	943	466	147	118	90
7	142	564	e190	e143	e123	e110	2,890	878	427	128	117	81
8	243	942	e182	e143	e123	e112	2,990	842	411	126	131	83
9	280	948	e177	e143	e125	e116	3,120	822	400	130	140	98
10	261	826	e174	e143	e124	e117	2,810	781	414	128	141	109
11	245	704	e172	e140	e124	e116	2,570	743	414	115	131	115
12	374	646	e170	e140	e124	e116	2,410	693	404	107	142	131
13	1,100	617	e168	e140	e124	e126	2,320	709	390	106	149	137
14	1,340	635	e168	e138	e124	e142	2,290	807	364	109	138	142
15	1,100	648	e166	e138	e123	e181	2,160	883	350	104	136	134
16	843	617	e165	e138	e120	e229	2,020	869	335	115	198	121
17	677	518	e163	e138	e119	e312	1,910	862	302	127	272	109
18	571	431	e161	e138	e114	e420	1,830	814	288	128	416	106
19	511	e383	e161	e138	e111	e655	1,780	753	303	130	359	94
20	472	e339	e159	e135	e109	e1,050	1,720	680	291	119	306	83
21	428	267	e158	e135	e109	e1,670	1,640	639	289	98	340	74
22	378	e274	e158	e133	e107	e3,130	1,540	615	285	85	348	76
23	353	e274	e157	e133	e107	e5,870	1,430	594	271	86	293	75
24	365	e278	e157	e133	e107	9,220	1,310	571	232	95	249	74
25	393	e274	e157	e133	e107	11,600	1,240	550	204	139	211	73
26	422	e266	e156	e133	e107	e9,530	1,210	1,180	184	147	188	72
27	430	e266	e155	e133	e108	e7,930	1,230	1,440	1,090	145	171	71
28	417	e259	e154	e133	e109	7,000	1,280	1,190	1,420	132	166	72
29	385	e252	e153	e133	---	6,350	1,220	972	853	128	166	72
30	370	e238	e153	e133	---	5,870	1,250	857	549	118	149	77
31	352	---	e152	e133	---	5,170	---	744	---	112	138	---
Total	13,043	13,369	5,320	4,309	3,329	77,805	67,720	27,451	13,948	4,391	5,906	2,916
Mean	421	e446	172	139	119	2,510	2,257	886	465	142	191	97.2
Max	1,340	948	228	151	133	11,600	4,450	1,440	1,420	389	416	142
Min	89	238	152	133	107	106	1,210	550	184	85	109	71
Ac-ft	25,870	26,520	10,550	8,550	6,600	154,300	134,300	54,450	27,670	8,710	11,710	5,780
Cfsm	0.30	0.32	0.12	0.10	0.09	1.82	1.64	0.64	0.34	0.10	0.14	0.07
In.	0.35	0.36	0.14	0.12	0.09	2.10	1.83	0.74	0.38	0.12	0.16	0.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 2009, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	195	169	98.2	78.7	75.1	286	1,177	692	538	400	209	196
Max	1,350	1,233	321	221	385	2,510	3,507	5,059	3,042	2,389	1,686	1,599
(WY)	(1972)	(1972)	(2001)	(1998)	(1998)	(2009)	(1997)	(1950)	(1962)	(1997)	(1985)	(1999)
Min	10.0	19.0	21.4	21.4	19.1	13.6	61.0	32.2	26.5	8.34	1.49	2.92
(WY)	(1935)	(1935)	(1937)	(1940)	(1937)	(1937)	(1981)	(1977)	(1980)	(1936)	(1936)	(1936)

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SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1909 - 2009	
Annual total	101,717		239,507			
Annual mean	278		656		^a 340	
Highest annual mean					855	1950
Lowest annual mean					64.4	1939
Highest daily mean	1,340	Oct 14	11,600	Mar 25	11,600	Mar 25, 2009
Lowest daily mean	47	Aug 29	71	Sep 27	0.10	Sep 15, 1936
Annual seven-day minimum	53	Aug 26	73	Sep 23	0.24	Sep 12, 1936
Maximum peak flow			12,400	Mar 25	^b 12,400	Mar 25, 2009
Maximum peak stage			13.75	Mar 25	^c 15.85	Mar 6, 1983
Instantaneous low flow			70	Sep 26	^d 0.00	Sep 15, 1936
Annual runoff (ac-ft)	201,800		475,100		246,500	
Annual runoff (cfsm)	0.201		0.475		0.247	
Annual runoff (inches)	2.74		6.46		3.35	
10 percent exceeds	682		1,370		804	
50 percent exceeds	157		184		120	
90 percent exceeds	55		107		40	

^a Median of annual-mean discharges is 300 ft³/s.

^b Gage-height, 13.75 ft.

^c From highwater mark, backwater from ice.

^d Also occurred Sep. 14, 1939, and, Aug. 19-22, 1940.

