



Water-Data Report 2009

**05061000 BUFFALO RIVER NEAR HAWLEY, MN**

Upper Red Basin  
Buffalo Subbasin

LOCATION.--Lat 46°51'00", long 96°19'45" referenced to North American Datum of 1927, in NW ¼ SE ¼ sec.14, T.139 N., R.45 W., Clay County, MN, Hydrologic Unit 09020106, near left downstream end of bridge on farm lane, 2 mi southwest of Hawley.

DRAINAGE AREA.--325 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--March 1945 to current year. Water year 1981 (annual maximum only); March 1982 to September 1985 (no winter records).

REVISED RECORDS.--WSP 1308: 1945-46(M), 1948(M).

GAGE.--Water-stage recorder. Datum of gage is 1,111.91 ft above sea level (NGVD of 1929). Prior to Jan. 29, 1953, non-recording gage at bridge 1,800 ft upstream at datum 3.17 ft lower.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 11.3 ft, present datum, spring of 1921, from information by local resident.

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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	46	239	e127	e70	e64	e75	932	331	322	152	59	44
2	43	229	e121	e69	e64	e74	817	320	291	142	57	46
3	39	223	e118	e69	e64	e74	642	306	257	134	56	44
4	34	217	e113	e69	e64	e73	548	306	232	124	55	44
5	32	222	e110	e68	e64	e72	489	287	212	116	52	43
6	47	276	e105	e68	e65	e71	447	280	205	107	53	42
7	96	e370	e103	e68	e66	e70	422	272	205	100	52	41
8	96	e460	e101	e68	e69	e67	420	265	210	96	52	42
9	86	e478	e99	e67	e75	e62	508	257	214	96	52	55
10	121	400	e97	e66	e78	e64	725	248	205	94	50	74
11	285	347	e94	e65	e81	e66	1,010	236	193	91	48	79
12	351	307	e92	e65	e83	e70	937	241	179	87	46	76
13	516	284	e89	e65	e85	e78	794	271	180	84	44	73
14	563	272	e87	e65	e87	e94	687	291	165	85	44	68
15	532	262	e85	e65	e89	e117	641	293	154	86	47	63
16	489	244	e83	e65	e91	e140	600	283	152	84	83	60
17	435	228	e82	e65	e92	e190	563	269	178	79	154	57
18	373	e207	e80	e65	e93	e300	536	252	177	77	99	58
19	310	e188	e78	e65	e93	e439	514	238	193	77	80	55
20	262	e180	e77	e64	e92	e689	494	252	274	81	73	51
21	234	e176	e76	e64	e89	e969	477	262	273	88	73	49
22	220	e171	e74	e64	e87	e1,280	460	248	233	93	70	50
23	220	e159	e73	e64	e87	1,830	442	233	226	83	65	49
24	242	e157	e72	e64	e86	2,090	423	222	224	80	61	48
25	310	e154	e72	e64	e80	2,170	413	233	214	77	60	49
26	323	e151	e71	e64	e79	2,050	398	419	187	73	56	49
27	317	e148	e71	e64	e78	e1,800	394	508	192	71	53	50
28	297	e145	e71	e64	e76	e1,610	386	475	198	68	51	51
29	274	e139	e71	e64	---	e1,460	358	435	182	61	49	51
30	258	e134	e70	e64	---	e1,320	339	392	164	58	49	51
31	250	---	e70	e64	---	1,180	---	354	---	59	47	---
<b>Total</b>	7,701	7,167	2,732	2,035	2,221	20,644	16,816	9,279	6,291	2,803	1,890	1,612
<b>Mean</b>	248	239	88.1	65.6	79.3	666	561	299	210	90.4	61.0	53.7
<b>Max</b>	563	478	127	70	93	2,170	1,010	508	322	152	154	79
<b>Min</b>	32	134	70	64	64	62	339	222	152	58	44	41
<b>Ac-ft</b>	15,270	14,220	5,420	4,040	4,410	40,950	33,350	18,400	12,480	5,560	3,750	3,200
<b>Cfs/m</b>	0.76	0.74	0.27	0.20	0.24	2.05	1.72	0.92	0.65	0.28	0.19	0.17
<b>In.</b>	0.88	0.82	0.31	0.23	0.25	2.36	1.92	1.06	0.72	0.32	0.22	0.18

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	50.7	52.4	33.4	26.7	29.0	103	280	146	130	111	52.8	44.2
<b>Max</b>	248	298	127	70.2	170	666	1,036	383	589	784	472	192
<b>(WY)</b>	(2009)	(2001)	(1999)	(2001)	(1998)	(2009)	(1997)	(1998)	(2000)	(1993)	(1955)	(1999)
<b>Min</b>	11.6	12.2	10.6	9.94	9.88	15.0	33.3	21.5	12.7	10.1	5.87	8.52
<b>(WY)</b>	(1979)	(1977)	(1977)	(1962)	(1949)	(1969)	(1981)	(1977)	(1977)	(1976)	(1976)	(1976)

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SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1945 - 2009	
Annual total	48,857		81,191			
Annual mean	133		222		89.3	
Highest annual mean					222	2009
Lowest annual mean					16.7	1977
Highest daily mean	626	Jun 8	2,170	Mar 25	2,360	Apr 6, 1997
Lowest daily mean	23	Mar 10	32	Oct 5	3.2	Aug 25, 1976
Annual seven-day minimum	24	Mar 8	43	Sep 2	4.3	Aug 22, 1976
Maximum peak flow			2,270	Mar 25	2,420	Apr 1, 2006
Maximum peak stage			10.60	Mar 25	10.86	Jun 22, 2000
Instantaneous low flow			30	Oct 5	2.8	Aug 26, 1977
Annual runoff (ac-ft)	96,910		161,000		64,690	
Annual runoff (cfsm)	0.411		0.684		0.275	
Annual runoff (inches)	5.59		9.29		3.73	
10 percent exceeds	310		476		206	
50 percent exceeds	80		96		37	
90 percent exceeds	28		52		14	

