



Water-Data Report 2012

12323720 WILLOW CREEK AT OPPORTUNITY, MT

Pend Oreille Basin
Upper Clark Fork Subbasin

LOCATION.--Lat 46°06'26", long 112°48'38" referenced to North American Datum of 1983, in NW ¼ NE ¼ NW ¼ sec.14, T.4 N., R.10 W., Deer Lodge County, MT, Hydrologic Unit 17010201, 1,300 ft upstream from Stuart Street culverts, at Opportunity, 1.2 mi upstream from Mill-Willow Bypass, and at river mile 1.2.

DRAINAGE AREA.--30.8 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April 2003 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,930 ft, referenced to the National Geodetic Vertical Datum of 1929.

REMARKS.--Records are good. Flow is not regulated, however minor diversions for irrigation occur upstream from station. U.S. Geological Survey satellite telemeter is installed at station.

Water-Data Report 2012

12323720 WILLOW CREEK AT OPPORTUNITY, MT—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	6.2	6.5	6.3	5.4	5.1	5.1	13	20	19	10	7.1	5.3
2	6.2	6.2	5.9	5.4	5.1	4.9	12	16	20	12	7.1	5.0
3	6.2	6.1	5.9	5.4	5.1	5.0	10	15	23	11	7.1	5.1
4	6.4	6.5	5.8	5.5	5.0	5.8	10	15	22	11	6.7	5.1
5	7.7	6.8	5.6	5.7	4.9	6.9	9.7	16	24	11	6.6	5.1
6	7.6	6.3	5.4	5.7	4.9	6.4	9.9	14	33	11	6.6	5.2
7	7.6	5.9	5.5	5.3	4.9	5.7	9.5	13	26	10	6.6	5.3
8	7.4	6.3	5.4	5.2	4.8	5.5	11	12	22	9.5	6.7	5.1
9	7.1	6.4	5.3	5.2	4.9	6.1	11	12	22	9.2	6.7	5.0
10	7.1	6.5	5.1	5.4	5.0	7.2	9.8	12	21	8.9	6.9	5.3
11	6.9	6.7	5.1	5.3	5.1	7.2	9.9	12	21	8.8	6.8	5.4
12	7.1	6.8	5.1	5.0	5.1	7.1	12	12	18	9.0	6.3	5.5
13	6.8	6.3	4.9	4.7	5.1	6.9	14	11	19	8.9	6.3	5.7
14	6.8	6.4	4.7	4.9	5.1	6.6	13	11	17	9.3	6.2	5.5
15	7.2	6.2	4.8	5.0	5.0	7.0	11	11	16	12	6.2	5.4
16	7.6	6.0	4.9	4.9	4.9	8.9	11	10	16	11	6.3	5.2
17	7.4	6.0	5.0	4.7	4.9	8.7	12	9.7	17	12	6.3	5.3
18	7.1	6.0	5.1	4.7	4.9	8.2	12	11	17	10	6.0	5.1
19	7.2	6.0	5.1	4.8	4.8	7.2	12	10	18	9.2	5.9	5.0
20	7.0	5.9	5.1	5.1	4.9	6.8	12	10	18	8.7	5.9	5.0
21	7.1	6.0	5.1	5.5	5.0	10	13	9.6	15	8.8	5.8	5.1
22	7.0	6.2	5.0	5.2	5.9	15	15	11	15	8.0	6.0	4.9
23	6.8	6.7	4.7	4.9	5.5	11	17	11	14	7.7	5.7	4.9
24	7.0	6.6	4.8	4.7	5.3	10	18	11	13	7.3	5.9	5.0
25	7.1	6.6	4.9	4.7	5.4	9.4	19	13	12	7.2	5.6	5.1
26	6.8	6.6	4.9	4.8	5.2	9.2	21	13	12	7.2	5.5	5.1
27	6.8	6.5	4.8	4.8	5.2	8.8	29	19	12	7.8	5.5	5.0
28	6.6	7.1	5.0	4.7	5.1	8.3	27	17	11	9.1	5.4	4.8
29	7.0	6.9	6.1	5.0	5.1	8.2	25	16	11	8.3	5.4	4.7
30	6.7	6.8	5.9	5.2	---	8.7	23	17	10	7.6	5.4	4.6
31	6.6	---	5.8	5.2	---	10	---	18	---	7.2	5.6	---
Total	216.1	191.8	163.0	158.0	147.2	241.8	431.8	408.3	534	288.7	192.1	153.8
Mean	6.97	6.39	5.26	5.10	5.08	7.80	14.4	13.2	17.8	9.31	6.20	5.13
Max	7.7	7.1	6.3	5.7	5.9	15	29	20	33	12	7.1	5.7
Min	6.2	5.9	4.7	4.7	4.8	4.9	9.5	9.6	10	7.2	5.4	4.6
Ac-ft	429	380	323	313	292	480	856	810	1,060	573	381	305

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2003 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	7.24	6.51	5.41	4.85	4.93	6.22	9.43	27.0	32.0	10.8	7.44	6.72
Max	9.03	8.68	6.29	6.37	5.64	7.80	14.5	43.8	77.8	17.6	11.2	9.35
(WY)	(2010)	(2010)	(2011)	(2009)	(2011)	(2012)	(2003)	(2009)	(2011)	(2011)	(2009)	(2008)
Min	6.19	5.33	4.62	3.63	4.00	4.71	5.37	12.8	17.6	6.68	4.90	5.01
(WY)	(2004)	(2004)	(2006)	(2008)	(2008)	(2005)	(2005)	(2010)	(2006)	(2003)	(2006)	(2010)

12323720 WILLOW CREEK AT OPPORTUNITY, MT—Continued**SUMMARY STATISTICS**

	Calendar Year 2011	Water Year 2012	Water Years 2003 - 2012	
Annual total	5,988.8	3,126.6		
Annual mean	16.4	8.54	10.8	
Highest annual mean			16.6	2011
Lowest annual mean			7.61	2004
Highest daily mean	165	Jun 9	165	Jun 9, 2011
Lowest daily mean	4.0	Jan 1	2.5	Jan 21, 2008
Annual seven-day minimum	4.9	Dec 22	2.9	Jan 21, 2008
Maximum peak flow		36	202	Jun 9, 2011
Maximum peak stage		4.52	6.37	Jun 9, 2011
Instantaneous low flow		^a 4.3	^b 2.2	Feb 7, 2008
Annual runoff (ac-ft)	11,880	6,200	7,840	
10 percent exceeds	42	15	20	
50 percent exceeds	6.9	6.7	6.7	
90 percent exceeds	5.3	4.9	4.6	

^aGage height, 3.88 ft.^bGage height, 3.74 ft.