

Water-Data Report 2012

06140500 MILK RIVER AT HAVRE, MT

Milk Basin
Middle Milk Subbasin

LOCATION.--Lat 48°33'49", long 109°41'45" referenced to North American Datum of 1983, in SE ¼ NE ¼ NE ¼ sec.6, T.32 N., R.16 E., Hill County, MT, Hydrologic Unit 10050004, on left bank, 1.25 mi upstream from Bullhook Creek and 7th Avenue East highway bridge in Havre, 8.2 mi downstream from Big Sandy Creek, 15.8 mi downstream from Fresno Dam, and at river mile 419.2.

DRAINAGE AREA.--5,785 mi², of which 670 mi² is probably non-contributing.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May to November 1898, April 1899 to November 1922, March, April 1923, March, April 1952 [gage heights only, in Water Supply Paper (WSP) 1260-B], June 1953 (in WSP 1320-B), September 1954 to September 2006, March 2007 to September 2009 (seasonal records only), October 2009 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.-- WSP 1309: 1899-1900; 1902-4; 1907-8; 1909, maximum discharge (M); 1912; 1917 (M); 1920 (M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,465.24 ft, referenced to the National Geodetic Vertical Datum of 1929. Prior to Nov. 4, 1902, nonrecording gage at site 0.75 mi downstream at different elevation. Nov. 4, 1902, to Aug. 6, 1980, nonrecording gages 1.25 mi downstream on 7th Avenue East highway bridges, all at elevations then in use.

REMARKS.--Records are fair except for estimated daily discharges, which are poor. Diversions for irrigation of about 6,000 acres occur upstream from station. Beginning in 1917, flow has increased during irrigation season by water from St. Mary Canal (station number 05018500). Beginning in 1939, flow has been regulated by Fresno Reservoir (station number 06136500). A U.S. Geological Survey satellite telemeter is located at the station. Several unpublished observations of water temperature and specific conductance were made during the year.

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

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	195	108	e79	e79	e98	e67	78	635	994	1,160	949	912
2	181	115	e82	e80	e98	e62	68	712	978	1,120	939	881
3	174	115	e81	e84	e91	e62	65	807	963	1,090	939	874
4	170	115	e80	e91	e91	e62	61	860	934	1,050	943	918
5	165	115	e79	e97	e91	e61	67	907	924	954	947	915
6	165	116	e80	e94	e76	e57	72	974	901	984	963	850
7	168	115	e79	e94	e61	e56	78	925	863	1,020	950	799
8	160	116	e77	e98	e59	e61	97	882	860	972	941	807
9	160	115	e77	e98	e60	e70	90	877	888	966	938	791
10	158	118	e77	e95	e61	e80	84	914	932	1,030	940	780
11	157	118	e78	e92	e61	68	82	894	979	1,080	962	709
12	154	121	e79	e98	e65	72	84	896	1,020	1,100	964	651
13	152	120	e79	e97	e66	72	82	915	1,100	1,250	954	563
14	151	116	e79	e91	e65	69	81	906	1,140	1,330	962	463
15	148	e101	e78	e89	e67	73	82	897	1,200	1,340	971	290
16	144	e106	e75	e87	e65	81	87	882	1,210	1,320	956	254
17	141	e115	e78	e86	e66	79	90	879	1,220	1,300	923	242
18	133	e112	e85	e83	e65	75	90	862	1,200	1,230	920	186
19	127	e109	e81	e86	e66	78	92	838	1,140	1,170	904	200
20	125	e110	e84	e87	e66	68	95	825	1,120	1,170	852	183
21	121	e110	e82	e89	e65	82	94	818	1,090	1,170	858	184
22	118	e110	e81	e92	e67	78	89	823	1,080	1,170	859	121
23	112	e94	e84	e91	e67	75	87	827	1,070	1,160	863	113
24	108	e81	e86	e98	e66	71	85	830	1,080	1,070	860	100
25	107	e78	e86	e98	e65	71	83	802	1,080	1,040	860	93
26	104	e78	e86	e98	e66	73	163	793	1,120	1,040	893	89
27	102	e81	e81	e98	e66	74	423	857	1,140	1,020	963	84
28	99	e81	e86	e98	e68	76	547	919	1,190	967	957	58
29	98	e78	e86	e98	e65	75	579	948	1,200	976	933	50
30	94	e81	e81	e97	---	75	585	1,000	1,210	971	933	48
31	93	---	e82	e98	---	75	---	1,000	---	957	924	---
Total	4,284	3,148	2,508	2,861	2,033	2,198	4,360	26,904	31,826	34,177	28,720	13,208
Mean	138	105	80.9	92.3	70.1	70.9	145	868	1,061	1,102	926	440
Max	195	121	86	98	98	82	585	1,000	1,220	1,340	971	918
Min	93	78	75	79	59	56	61	635	860	954	852	48
Ac-ft	8,500	6,240	4,970	5,670	4,030	4,360	8,650	53,360	63,130	67,790	56,970	26,200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2012, BY WATER YEAR (WY)*

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	140	76.2	54.2	57.8	88.7	300	501	812	852	790	593	329
Max	628	325	160	780	1,400	2,106	2,700	2,191	2,612	2,045	1,303	956
(WY)	(1994)	(1976)	(1900)	(1918)	(1916)	(1918)	(1899)	(1967)	(2011)	(1902)	(1978)	(1993)
Min	0.00	0.00	0.00	0.00	0.00	5.00	25.0	61.4	35.2	15.3	0.00	0.00
(WY)	(1906)	(1906)	(1906)	(1906)	(1922)	(1919)	(1983)	(1905)	(1905)	(1910)	(1910)	(1905)

*During periods of operation (May 1898 to November 1898, April 1898 to November 1922, March 1923 to April 1923, September 1954 to September 2006, seasonal records beginning March 2007 to September 2009 (seasonal records only), October 2009 to current year.

06140500 MILK RIVER AT HAVRE, MT—Continued**SUMMARY STATISTICS**

	Calendar Year 2011		Water Year 2012		Water Years 1898 – 2012*				
Annual total	265,159		156,227						
Annual mean	726		427		386				
Highest annual mean					745				
Lowest annual mean					39.2				
Highest daily mean	4,560	Jun 13	1,340	Jul 15	c16,000Apr 12, 1899				
Lowest daily mean	75	Dec 16	48	Sep 30	0.00	Jul 11, 1898d			
Annual seven-day minimum	78	Dec 10	60	Mar 2	0.00	Aug 15, 1905			
Maximum peak flow			a1,370Jul 15		e20,000Apr 12, 1899				
Maximum peak stage			b6.99Nov 19		f19.30Apr 12, 1899				
Instantaneous low flow			44	Sep 30	44	Sep 30, 2012			
Annual runoff (ac-ft)	525,900	309,900		279,300					
10 percent exceeds	1,480	1,040		1,050					
50 percent exceeds	500	115		133					
90 percent exceeds	86	68		29					
					Water Years 1900 – 1916**	Water Years 1917 – 2012***			
Annual mean			273.7		417				
Highest annual mean			571		745	2011			
Lowest annual mean			39.2		1905	160			
Highest daily mean			9,600	Jun 9, 1908	9,150	May 20, 1918			
Lowest daily mean			a0.0	Aug 16, 1904	0.0	Jan 1, 1922			
Annual seven-day minimum			0.0	Aug 15, 1905	0.0	Jan 1, 1922			
Maximum peak flow			11,000	Jun 9, 1908	g11,400Apr 3, 1952				
Maximum peak stage			16.50	Jun 9, 1908	18.60	Apr 3, 1952			
Annual runoff (ac-ft)	198,300				301,900				
10 percent exceeds	640				1,080				
50 percent exceeds	110				159				
90 percent exceeds	5.0				31				

*During periods of operation (May 1898 to November 1898, April 1898 to November 1922, March 1923 to April 1923, September 1954 to September 2006, seasonal records beginning March 2007 to September 2009 (seasonal records only), October 2009 to current year.

**Prior to operation of St. Mary Canal.

***Post operation of St. Mary Canal.

aGage height, 4.55 ft.

bBackwater from ice.

cObserved.

dObserved, no flow at times in several years.

eObserved, from rating curve extended above 5,200 ft³/s.

fSite and datum then in use, from floodmark.

gObserved, about.

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