Water-Data Report 2012

06294000 LITTLE BIGHORN RIVER NEAR HARDIN, MT

Big Horn Basin
Little Bighorn Subbasin

LOCATION.--Lat 45°44'09", long 107°33'27" referenced to North American Datum of 1983, in SE ¼ NE ¼ NE ¼ sec.19, T.1 S., R.34 E., Big Horn County, MT, Hydrologic Unit 10080016, on left bank 50 ft downstream from bridge on Sarpy Road, 0.2 mi upstream from terminal wasteway of Agency Canal, 0.6 mi upstream from mouth, and 2.3 mi east of Hardin.

DRAINAGE AREA.--1,294 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--June 1953 to current year.

REVISED RECORDS.--Water Data Report MT-86-1: 1978.

GAGE.--Water-stage recorder. Elevation of gage is 2,882.29 ft, referenced to the National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 7, 1953, nonrecording gage located at site 0.4 mi downstream. Oct. 7, 1953 to May 6, 1963, water-stage recorder located at site 0.3 mi downstream. May 6, 1963 to Nov. 6, 1963, nonrecording gage located at site 0.4 mi downstream. All locations had different elevations. Nov. 7, 1963 to Aug. 15, 1976, water-stage recorder located at site 35 ft downstream at present elevation. Aug. 15, 1976 to Sept. 30, 1979, water-stage recorders were located on each bank downstream from Sarpy Road bridge and were used depending on control conditions.

REMARKS.--Records are good except for estimated daily discharges, which are poor. Flow partly regulated by Willow Creek Reservoir (capacity 23,000 acre-ft). Diversions for irrigation include 20,980 acres upstream from station. Discharge values and summary statistics given herein include the flow of terminal wasteway of Agency Canal. 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 Several unpublished observations of water temperature and specific conductance were made during the year.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	166	194	e180	e180	e180	e260	218	437	514	210	99	49
2	166	199	e180	e170	e180	e250	217	376	493	180	92	48
3	167	215	e170	e180	e170	e240	226	330	569	164	76	47
4	163	205	e160	e180	e160	e250	234	307	719	154	75	37
5	163	202	e140	e170	e160	e300	228	293	849	150	84	34
6	164	206	e130	e170	e160	e500	225	283	863	147	86	36
7	186	e200	e140	e170	e160	e400	223	282	937	140	77	52
8	257	197	e180	e180	e160	e330	222	264	908	129	73	62
9	342	188	e220	e150	e160	e290	220	237	780	112	68	68
10	276	190	e210	e150	e150	304	214	228	726	90	62	69
11	237	187	e210	e140	e140	321	210	226	734	83	63	66
12	218	191	e200	e140	e150	338	207	242	634	78	61	65
13	209	196	e210	e140	e160	330	211	238	590	76	59	73
14	204	195	e210	e140	e160	305	228	224	500	82	55	83
15	202	193	e210	e120	e160	287	240	174	465	82	53	89
16	204	190	e220	e110	e160	278	251	197	452	72	55	84
17	204	188	e210	e120	e160	261	251	236	433	80	56	83
18	204	181	e190	e110	e160	254	242	301	425	87	63	81
19	212	e170	e190	e100	e150	272	237	390	421	120	55	85
20	207	e160	e190	e130	e140	280	231	504	416	107	43	82
21	203	e180	e190	e160	e140	277	228	499	405	108	38	72
22	203	e200	e190	e200	e200	259	222	471	371	109	35	67
23	200	e200	e180	e210	e400	244	214	487	320	107	34	59
24	197	e190	e180	e220	e600	234	208	576	296	105	33	52
25	198	e180	e180	e210	e400	229	215	582	289	99	34	54
26	206	e180	e180	e200	e300	228	238	603	277	87	45	57
27	218	e190	e180	e190	e280	228	277	622	260	86	51	63
28	208	e180	e180	e180	e250	227	354	629	246	91	46	67
29	203	e180	e180	e180	e250	228	463	577	238	85	47	69
30	202	e180	e180	e170	---	224	519	530	220	90	51	67
31	200	---	e180	e190	---	221	---	524	---	99	50	---
Total	6,389	5,707	5,750	5,060	6,000	8,649	7,473	11,869	15,350	3,409	1,819	1,920
Mean	206	190	185	163	207	279	249	383	512	110	58.7	64.0
Max	342	215	220	220	600	500	519	629	937	210	99	89
Min	163	160	130	100	140	221	207	174	220	72	33	34
Ac-ft	12,670	11,320	11,410	10,040	11,900	17,160	14,820	23,540	30,450	6,760	3,610	3,810

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	152	149	132	135	190	295	297	616	837	268	117	126
Max	276	248	223	366	610	987	748	2,852	2,113	1,333	382	267
(WY)	(1979)	(1979)	(1979)	(1975)	(1971)	(1972)	(1965)	(1978)	(2011)	(1975)	(1975)	(1978)
Min	60.7	82.6	65.6	50.5	68.5	71.1	54.8	71.9	117	8.50	2.46	19.1
(WY)	(2002)	(2002)	(2002)	(2005)	(2005)	(2002)	(1961)	(1961)	(1961)	(1961)	(1961)	(1960)

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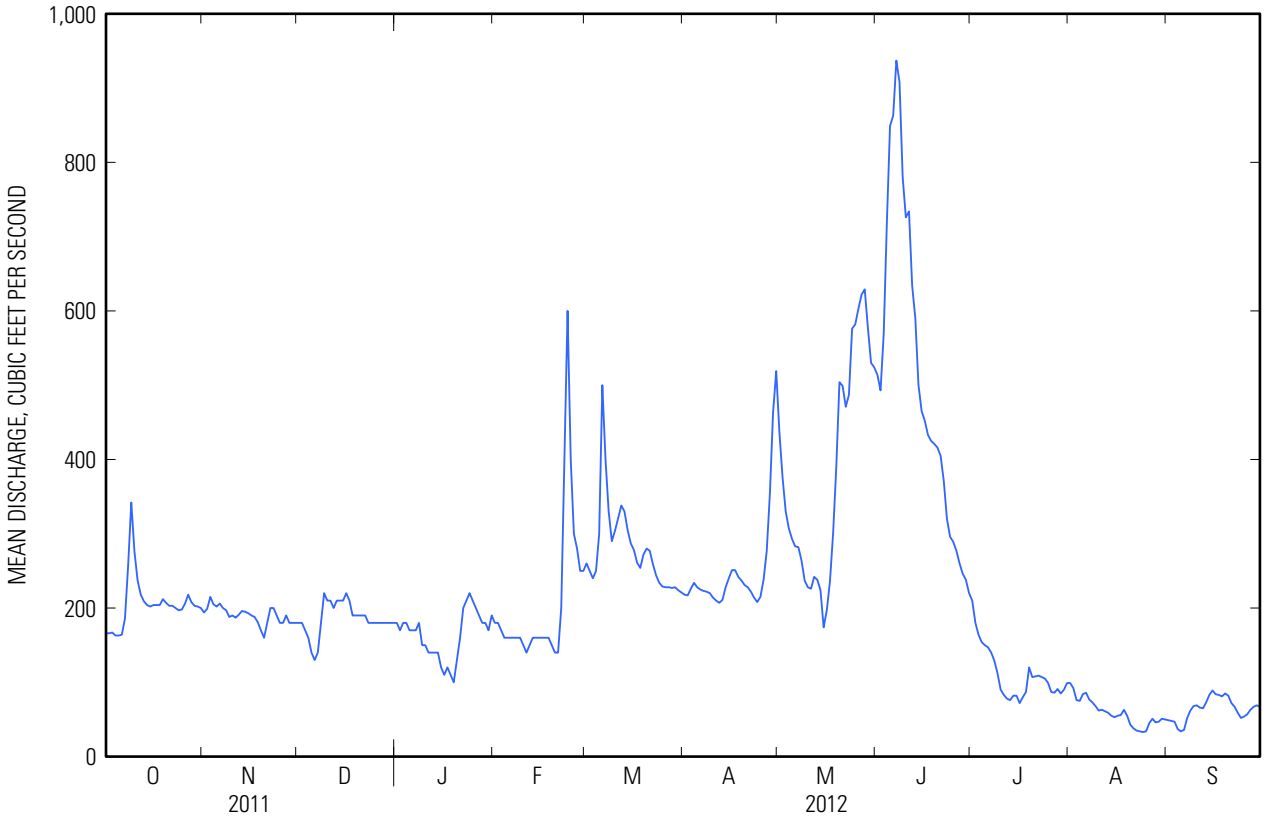
SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1954 - 2012	
Annual total	213,986		79,395			
Annual mean	586		217		276	
Highest annual mean					676	1975
Lowest annual mean					70.4	1961
Highest daily mean	13,500	May 23	937	Jun 7	15,800	May 20, 1978
Lowest daily mean	40	Feb 3	33	Aug 24	0.30	Aug 5, 1961
Annual seven-day minimum	65	Jan 30	37	Aug 20	0.40	Aug 3, 1961
Maximum peak flow			[a]984	Jun 7	[c]22,600	May 19, 1978
Maximum peak stage			[b]7.02	Feb 24	12.32	May 23, 2011
Instantaneous low flow					[d]0.20	Aug 7, 1961
Annual runoff (ac-ft)	424,400		157,500		199,900	
10 percent exceeds	1,920		418		594	
50 percent exceeds	207		190		160	
90 percent exceeds	100		66		74	

[a]Gage height, 4.42 ft., includes Agency Canal.
[b]Backwater from ice jam.
[c]Gage height, 11.20 ft.
[d]Result of discharge measurement.