

**WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005 STATION RECORDS, SURFACE WATER AND WATER
QUALITY**

SASKATCHEWAN RIVER BASIN

05013900 GRINNELL CREEK AT GRINNELL GLACIER, NEAR MANY GLACIER, MT

LOCATION.--Lat 48°45'28", long 113°43'29" (NAD 27), in SW¹/₄ sec.29, T.35 N., R.16 W., Glacier County, Hydrologic Unit 10010002, Glacier National Park, on left bank 0.2 mi downstream from outlet of Grinnell Glacier, 0.4 mi upstream from Grinnell Falls, 4 mi southwest of Many Glacier, and 15 mi southwest of Babb.

DRAINAGE AREA.--1.1 mi², approximately.

PERIOD OF RECORD.--July 1959 to September 1971, July 2004 to current year (no winter records).

GAGE.--Water-stage recorder. Elevation of gage is 6,322 ft (NGVD 29).

REMARKS.--Data for water year 2004 which were not available for publication in last year's report are included this year. Records good except those for estimated daily discharges, which are fair. No regulation or diversion upstream from station. Bureau of Reclamation satellite telemeter at station. Several unpublished observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, JULY 2004 TO OCTOBER 2005
DAILY MEAN VALUES

DAY	JUL 2004	AUG	SEP	OCT	NOV 2004 - JUN 2005	JUL 2005	AUG	SEP	OCT
1	e44	28	21	6.8		32	27	12	64
2	e42	27	19	5.7		26	24	12	23
3	e40	27	15	6.0		22	21	13	12
4	e38	27	14	5.7		22	21	13	9.7
5	e36	26	14	6.1		25	23	11	7.6
6	e38	24	12	6.7		28	23	9.3	6.4
7	e40	37	12	e7.0		30	23	9.0	8.3
8	e38	27	11	7.6		26	26	9.1	7.0
9	e36	21	12	7.8		27	25	9.7	e6.0
10	e34	20	10	8.0		23	29	15	e5.0
11	e32	21	14	6.2		20	26	13	4.5
12	e32	22	18	5.6		23	25	10	4.2
13	e30	24	19	5.6		31	17	8.4	6.2
14	e32	25	27	e8.0		30	15	11	5.3
15	e34	27	24	e12		28	16	11	5.2
16	e34	29	21	e14		35	18	9.0	9.6
17	e32	32	15	e11		31	20	7.9	25
18	e31	40	14	e10		28	20	8.1	23
19	e36	29	12	e9.0		30	14	8.2	15
20	e33	29	10	e9.0		30	16	7.2	22
21	e30	40	8.0	e8.0		28	19	5.9	14
22	e28	29	7.7	e9.0		25	19	4.9	9.5
23	e27	42	10	e9.0		26	16	4.6	7.9
24	e28	51	13	e8.0		23	16	6.1	7.0
25	e27	64	14	e7.0		21	14	3.2	6.2
26	e25	45	12	e6.0		18	15	2.5	6.5
27	e24	29	9.7	e7.0		21	15	2.5	6.7
28	e24	29	9.0	e6.0		23	15	2.3	5.9
29	26	26	8.6	e6.0		26	15	6.0	5.6
30	27	22	8.8	e6.0		27	13	126	e5.0
31	29	21	---	e6.0		27	12	---	e4.5
TOTAL	1,007	940	414.8	235.8		812	598	370.9	347.8
MEAN	32.5	30.3	13.8	7.61		26.2	19.3	12.4	11.2
MAX	44	64	27	14		35	29	126	64
MIN	24	20	7.7	5.6		18	12	2.3	4.2
AC-FT	2,000	1,860	823	468		1,610	1,190	736	690

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1959 - 2005*

MEAN	39.9	30.3	16.1	8.12		39.0	29.6	15.9	8.34
MAX	47.0	38.6	31.6	19.3		47.0	38.6	31.6	19.3
(WY)	(1967)	(1971)	(1968)	(1962)		(1967)	(1971)	(1968)	(1962)
MIN	32.5	25.2	6.93	4.83		26.2	19.3	6.93	4.83
(WY)	(2004)	(1964)	(1965)	(1967)		(2005)	(2005)	(1965)	(1967)

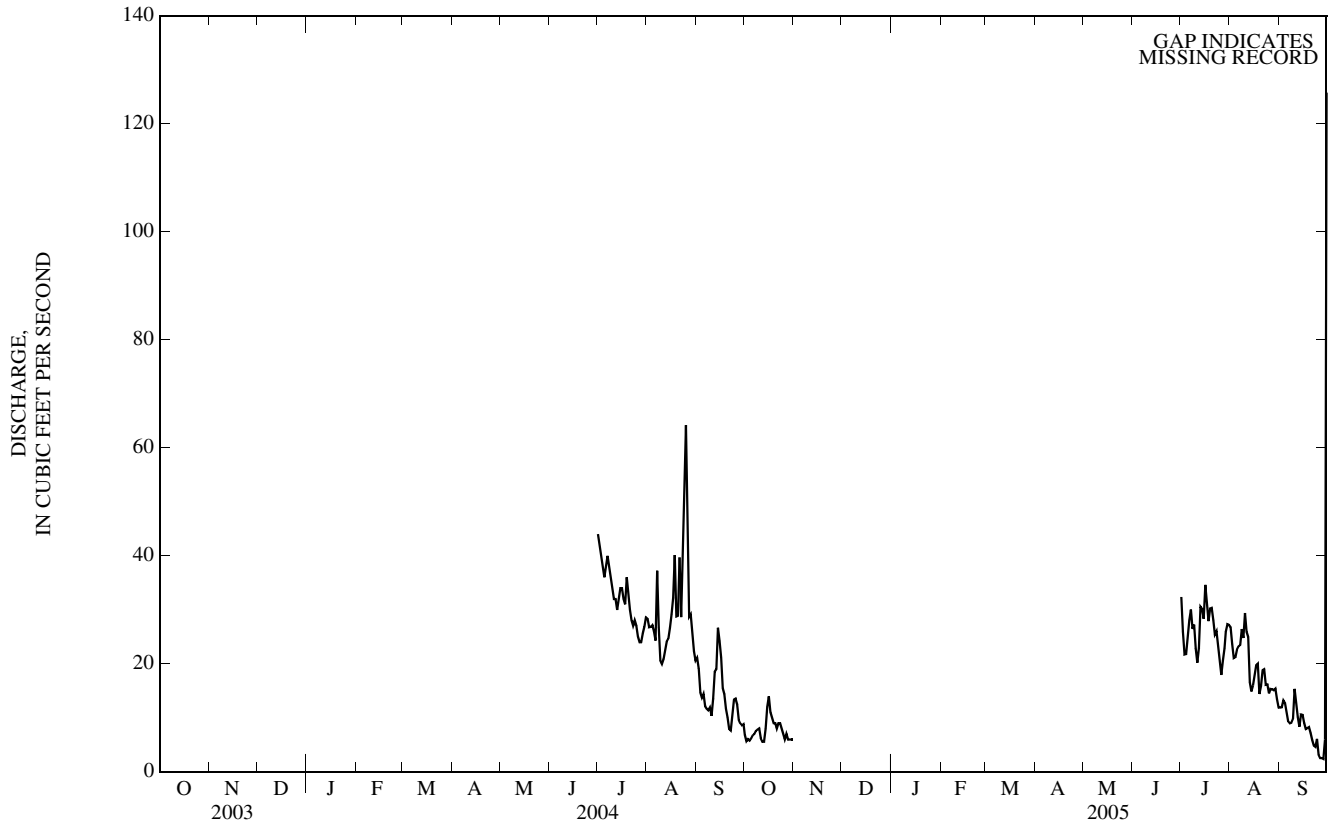
SUMMARY STATISTICS

	FOR 2004 SEASON		FOR 2005 SEASON		SEASONS 1959 - 2005*	
HIGHEST DAILY MEAN	64	Aug 25	126	Sep 30	126	Sep 30, 2005
LOWEST DAILY MEAN	5.6	Oct 13	2.3	Sep 28	0.00	Nov 29, 1961
MAXIMUM PEAK FLOW	74	Aug 21	229	Sep 30	229	Sep 30, 2005
MAXIMUM PEAK STAGE	3.10	Aug 21	4.43	Sep 30	4.43	Sep 30, 2005

*--For periods of seasonal records July 1959 to September 1971, July 2004 to current year.

e--Estimated.

05013900 GRINNELL CREEK AT GRINNELL GLACIER, NEAR MANY GLACIER, MT—Continued



05014300 SWIFTCURRENT CREEK ABOVE SWIFTCURRENT LAKE, AT MANY GLACIER, MT

(Hydrologic Network Benchmark station)

LOCATION.--Lat 48°47'43", long 113°40'45" (NAD 27), in NE¹/₄ sec.15, T.35 N., R.16 W., Glacier County, Hydrologic Unit 10010002, Glacier National Park, on left bank 0.7 mi upstream of inlet to Swiftcurrent Lake at Many Glacier, and 12 mi southwest of Babb.

DRAINAGE AREA.--14.5 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1, 2003 to current year (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 4,920 ft (NGVD 29).

REMARKS.--Seasonal water-discharge records good except those for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2005
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				e21	56	172	117	26	14	245		
2				e22	50	226	111	25	14	205		
3				e21	47	437	95	24	13	128		
4				e20	52	434	81	23	12	97		
5				e19	68	318	77	21	12	75		
6				e18	105	296	80	20	12	62		
7				e23	148	265	84	20	12	81		
8				e30	164	219	81	20	11	85		
9				e50	145	190	80	20	10	75		
10				e47	135	175	77	23	16	65		
11				e44	118	182	63	25	19	57		
12				e42	115	189	57	23	17	52		
13				e45	128	168	60	21	18	57		
14				e46	160	145	61	19	20	52		
15				e43	233	131	55	17	24	51		
16				e34	275	124	57	16	28	59		
17				e37	296	150	58	18	29	97		
18				e38	218	190	50	25	28	136		
19				e38	194	160	47	23	26	122		
20				38	173	141	46	22	22	138		
21				39	148	136	42	21	21	140		
22				44	130	152	40	21	21	116		
23				57	118	180	37	21	20	96		
24				76	110	141	36	23	18	80		
25				111	106	110	35	22	17	68		
26				126	109	96	32	19	15	61		
27				117	121	88	28	18	13	57		
28				100	135	101	27	17	14	52		
29				80	147	121	26	17	13	47		
30				65	145	118	26	15	97	42		
31				---	144	---	26	15	---	38		
TOTAL				1,491	4,293	5,555	1,792	640	606	2,736		
MEAN				49.7	138	185	57.8	20.6	20.2	88.3		
MAX				126	296	437	117	26	97	245		
MIN				18	47	88	26	15	10	38		
AC-FT				2,960	8,520	11,020	3,550	1,270	1,200	5,430		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 2003 - 2005

MEAN	68.6	156	185	74.3	36.7	27.7	44.8
MAX	87.5	175	196	96.6	66.7	52.0	88.3
(WY)	(2004)	(2003)	(2003)	(2004)	(2004)	(2004)	(2005)
MIN	87.5	154	174	68.5	22.6	10.9	16.5
(WY)	(2004)	(2004)	(2004)	(2003)	(2003)	(2003)	(2004)

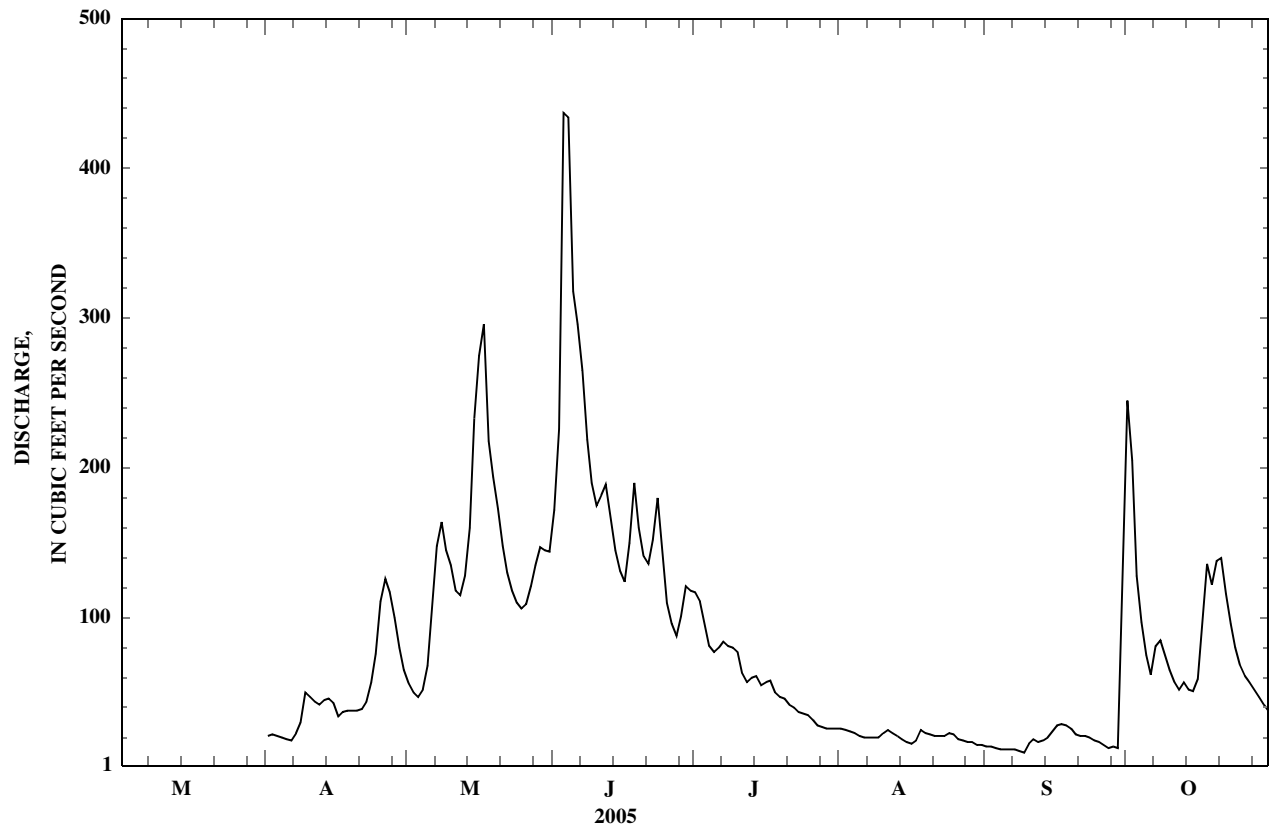
SUMMARY STATISTICS

	FOR 2005 SEASON		FOR SEASONS 2003 - 2005	
HIGHEST DAILY MEAN	437	Jun 3	700	May 26, 2003
LOWEST DAILY MEAN	10	Sep 9	6.6	Oct 8, 2003
MAXIMUM PEAK FLOW	491	Jun 3	a900	May 26, 2003
MAXIMUM PEAK STAGE	2.91	Jun 3	a3.76	May 26, 2003

a--About, from highwater mark.

e--Estimated.

05014300 SWIFTCURRENT CREEK ABOVE SWIFTCURRENT LAKE, AT MANY GLACIER, MT--Continued



05014300 SWIFTCURRENT CREEK ABOVE SWIFTCURRENT LAKE, AT MANY GLACIER, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2001 to current year (data not published for 2001-04).

REMARKS--Data collected under the direction of the USGS Water Science Center in Denver, Colorado. Several unpublished observations of water temperature and specific conductance were made during the year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unflab, uS/cm 25 degC (90095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, wat flt Gran, lab, mg/L as CaCO3 (29803)
OCT													
20...	1200	42	124	--	--	65	17.4	5.20	.189	.0	.59	2	61.5
20...	1215	42	126	--	--	67	17.4	5.67	.198	.0	.66	2	61.4
NOV													
15...	1150	26	124	--	--	61	15.6	5.27	.185	.0	.71	2	57.6
JAN													
04...	1130	24	122	--	--	61	16.0	5.22	.215	.0	.88	3	60.0
FEB													
17...	0930	22	125	--	0.0	67	17.6	5.51	.201	.0	.73	2	60.7
MAR													
24...	1145	14	125	--	1.5	65	17.1	5.45	.183	.0	.74	2	60.2
APR													
15...	1220	29	113	10.0	4.0	57	15.2	4.76	.183	.0	.64	2	54.4
19...	0010	34	107	--	--	54	14.1	4.58	.200	.0	.67	3	52.3
26...	0010	127	107	--	--	53	14.0	4.39	.189	.0	.52	2	52.2
MAY													
03...	0010	49	116	--	--	61	16.2	4.96	.195	.0	.54	2	58.1
10...	0010	143	118	--	--	61	16.4	4.88	.196	.0	.48	2	58.5
16...	1240	274	116	--	7.0	60	15.8	5.01	.186	.0	.42	1	57.9
16...	1241	274	125	--	--	66	18.2	4.90	.16	.0	.48	2	62.0
16...	1320	274	118	--	7.0	61	16.3	4.97	.178	.0	.42	1	59.1
23...	1240	117	118	--	--	64	17.7	4.78	.172	.0	.47	2	58.4
30...	1240	143	124	--	--	67	18.9	4.88	.184	.0	.42	1	61.9
JUN													
03...	0040	315	114	--	--	61	17.0	4.41	.24	.0	.37	1	55.9
03...	1215	466	88	--	5.5	45	11.2	4.00	.229	.0	.35	2	42.7
10...	1210	174	102	--	7.0	51	13.8	4.15	.148	.0	.34	1	49.5
17...	1345	147	116	--	--	62	17.3	4.50	.150	.0	.57	2	57.1
24...	1345	139	116	--	--	61	17.4	4.20	.181	.0	.42	1	57.4
JUL													
01...	1105	119	113	--	12.0	59	16.3	4.47	.133	.0	.45	2	54.5
14...	1625	60	113	--	--	61	17.1	4.37	.169	.0	.51	2	55.0
26...	1430	33	111	--	18.0	59	16.4	4.42	.139	.0	.60	2	55.2
26...	1445	32	112	--	18.0	59	16.3	4.33	.133	.0	.49	2	55.3
AUG													
28...	1800	16	119	--	16.0	62	17.0	4.85	.144	.0	.63	2	57.8
SEP													
22...	1210	21	132	--	9.0	65	17.2	5.45	.144	.0	.71	2	62.3
22...	1225	21	130	--	9.0	69	18.6	5.35	.133	.0	.64	2	62.3

05014300 SWIFTCURRENT CREEK ABOVE SWIFTCURRENT LAKE, AT MANY GLACIER, MT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Chloride, water, fltrd, mg/L (00940)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti- tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Total nitro- gen, wat flt by anal- ysis, mg/L (62854)	Organic carbon, water, fltrd, mg/L (00681)
OCT										
20...	.10	1.98	4.48	67	.09	7.64	E.006	.074	.15	.8
20...	.10	2.14	5.27	69	.09	7.82	E.006	.091	.14	.7
NOV										
15...	.09	2.59	4.77	64	.09	4.53	<.010	.105	.13	.6
JAN										
04...	.12	2.85	3.69	66	.09	4.17	<.010	.136	.18	.6
FEB										
17...	.11	2.67	3.49	67	.09	3.92	<.010	.170	.19	.5
MAR										
24...	.11	2.40	3.60	66	.09	2.45	--	.135	.20	.4
APR										
15...	.10	2.41	2.93	59	.08	4.61	--	.138	.18	.8
19...	.09	2.36	2.66	57	.08	5.19	--	.117	.50	--
26...	.11	2.43	2.20	56	.08	19.2	--	.181	.27	--
MAY										
03...	.09	2.44	2.53	63	.09	8.34	--	.153	.30	--
10...	.07	2.35	2.22	62	.08	24.1	--	.188	.28	--
16...	.08	2.33	2.20	62	.08	45.6	--	.193	.26	1.2
16...	.09	2.28	2.07	66	.09	49.0	--	.210	.33	--
16...	.07	2.31	2.17	63	.09	46.4	--	.193	.23	1.1
23...	.08	2.27	2.07	63	.09	20.0	--	.166	.23	--
30...	.08	2.02	2.08	66	.09	25.6	--	.139	.23	--
JUN										
03...	.08	1.98	1.91	60	.08	51.2	--	.120	.17	--
03...	.07	2.36	1.90	46	.06	58.4	--	.151	.21	1.8
10...	.06	2.29	2.37	53	.07	25.0	--	.125	.16	.8
17...	.07	1.96	2.15	61	.08	24.3	--	.086	.20	--
24...	.07	1.68	2.06	61	.08	22.7	--	.064	.12	--
JUL										
01...	.11	1.64	2.8	59	.08	19.0	--	.077	.15	.7
14...	.07	1.48	3.0	60	.08	9.71	--	.041	.09	.6
26...	.03	1.36	3.18	59	.08	5.22	--	.034	.33	.6
26...	.06	1.29	2.93	59	.08	5.04	--	.027	.08	.6
AUG										
28...	.08	1.71	4.4	64	.09	2.77	--	.045	.10	.9
SEP										
22...	.07	1.82	5.1	68	.09	3.87	--	.051	.12	.6
22...	.07	1.74	4.8	69	.09	3.92	--	.036	.09	.6

E--Estimated.

05014500 SWIFTCURRENT CREEK AT MANY GLACIER, MT

LOCATION.--Lat 48°47'57", long 113°39'21" (NAD 27), in SE¹/₄ sec.11, T.35 N., R.16 W., Glacier County, Hydrologic Unit 10010002, Glacier National Park, on right bank 100 ft upstream from outlet of Swiftcurrent Lake at Many Glacier, and 11 mi southwest of Babb.

DRAINAGE AREA.--30.9 mi².

PERIOD OF RECORD.--June 1912 to current year (records incomplete most years prior to 1959). Published as "at McDermott Lake" 1912-14. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1508: 1918(M), 1943. WDR -75-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,876.78 ft (NGVD 29). Prior to May 23, 1916, nonrecording gage on left bank of lake opposite present gage and at present elevation, and May 23, 1916, to June 15, 1918, nonrecording gage at present site and elevation.

REMARKS.--Records good. No regulation or diversion upstream from station. Bureau of Reclamation satellite telemeter at station. Several unpublished observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	67	42	37	83	26	34	114	339	257	78	47
2	68	68	40	37	77	27	36	100	432	248	77	47
3	63	92	38	37	67	27	34	92	758	217	75	45
4	60	89	38	35	60	27	34	92	871	185	71	42
5	56	87	39	31	64	26	32	108	714	170	66	42
6	55	68	39	27	64	27	31	159	640	174	64	42
7	53	71	40	29	57	30	36	243	561	185	64	41
8	54	69	40	30	52	32	56	305	462	187	64	38
9	55	69	39	29	48	33	75	288	372	179	65	36
10	58	71	45	27	44	36	78	270	333	175	71	48
11	56	70	150	26	42	36	77	242	350	153	77	61
12	53	67	231	26	39	40	74	224	383	134	76	59
13	52	63	197	27	39	42	70	237	360	137	71	56
14	51	60	162	30	38	43	72	294	304	142	63	55
15	62	56	137	31	36	42	69	441	272	137	57	58
16	85	55	110	31	33	40	59	556	255	136	53	65
17	134	56	92	29	32	41	64	647	283	148	56	68
18	146	55	79	37	31	39	71	536	377	134	73	67
19	129	53	75	122	32	36	73	436	354	120	72	64
20	115	51	75	301	32	35	73	392	303	120	66	56
21	109	44	71	343	29	34	73	331	291	115	62	54
22	116	43	66	281	28	32	76	281	318	112	63	53
23	103	43	53	226	27	30	92	246	396	104	64	52
24	97	41	50	227	27	29	119	218	348	94	67	49
25	81	58	54	224	25	27	172	203	266	92	67	46
26	76	64	53	199	26	25	222	203	221	86	61	42
27	72	56	47	171	26	28	228	227	196	78	56	35
28	69	50	46	146	26	39	196	259	202	74	55	39
29	70	44	45	124	---	44	161	293	252	73	55	36
30	71	43	44	106	---	42	133	299	261	74	50	170
31	70	---	39	93	---	38	---	295	---	77	49	---
TOTAL	2,414	1,823	2,276	3,119	1,184	1,053	2,620	8,631	11,474	4,317	2,008	1,613
MEAN	77.9	60.8	73.4	101	42.3	34.0	87.3	278	382	139	64.8	53.8
MAX	146	92	231	343	83	44	228	647	871	257	78	170
MIN	51	41	38	26	25	25	31	92	196	73	49	35
AC-FT	4,790	3,620	4,510	6,190	2,350	2,090	5,200	17,120	22,760	8,560	3,980	3,200
CFSM	2.52	1.97	2.38	3.26	1.37	1.10	2.83	9.01	12.4	4.51	2.10	1.74
IN.	2.91	2.19	2.74	3.75	1.43	1.27	3.15	10.39	13.81	5.20	2.42	1.94

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 2005, BY WATER YEAR (WY)*

MEAN	83.4	70.5	37.4	33.7	27.0	30.5	105	375	487	259	117	85.9
MAX	243	237	99.8	177	68.4	96.2	340	656	822	519	207	236
(WY)	(1948)	(2000)	(1981)	(1918)	(1995)	(1986)	(1934)	(1928)	(1975)	(1916)	(1916)	(1968)
MIN	19.5	13.0	13.6	10.1	6.93	9.71	16.9	205	193	114	57.4	32.5
(WY)	(1988)	(1988)	(1979)	(1979)	(1985)	(1975)	(1975)	(1955)	(1926)	(1944)	(1988)	(2001)

05014500 SWIFTCURRENT CREEK AT MANY GLACIER, MT—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1912 - 2005**	
ANNUAL TOTAL	51,246		42,532			
ANNUAL MEAN	140		117		140	
HIGHEST ANNUAL MEAN					184	1991
LOWEST ANNUAL MEAN					86.4	2001
HIGHEST DAILY MEAN	712	Aug 26	871	Jun 4	4,130	Jun 8, 1964
LOWEST DAILY MEAN	10	Jan 29	25	Feb 25	a0.00	Nov 14, 1976
ANNUAL SEVEN-DAY MINIMUM	12	Jan 28	26	Feb 23	4.6	Nov 13, 1976
MAXIMUM PEAK FLOW			894	Jun 4	b6,700	Jun 8, 1964
MAXIMUM PEAK STAGE			4.26	Jun 4	c10.00	Jun 8, 1964
ANNUAL RUNOFF (AC-FT)	101,600		84,360		101,500	
ANNUAL RUNOFF (CFSM)	4.53		3.77		4.53	
ANNUAL RUNOFF (INCHES)	61.69		51.20		61.58	
10 PERCENT EXCEEDS	346		285		384	
50 PERCENT EXCEEDS	88		67		65	
90 PERCENT EXCEEDS	15		32		18	

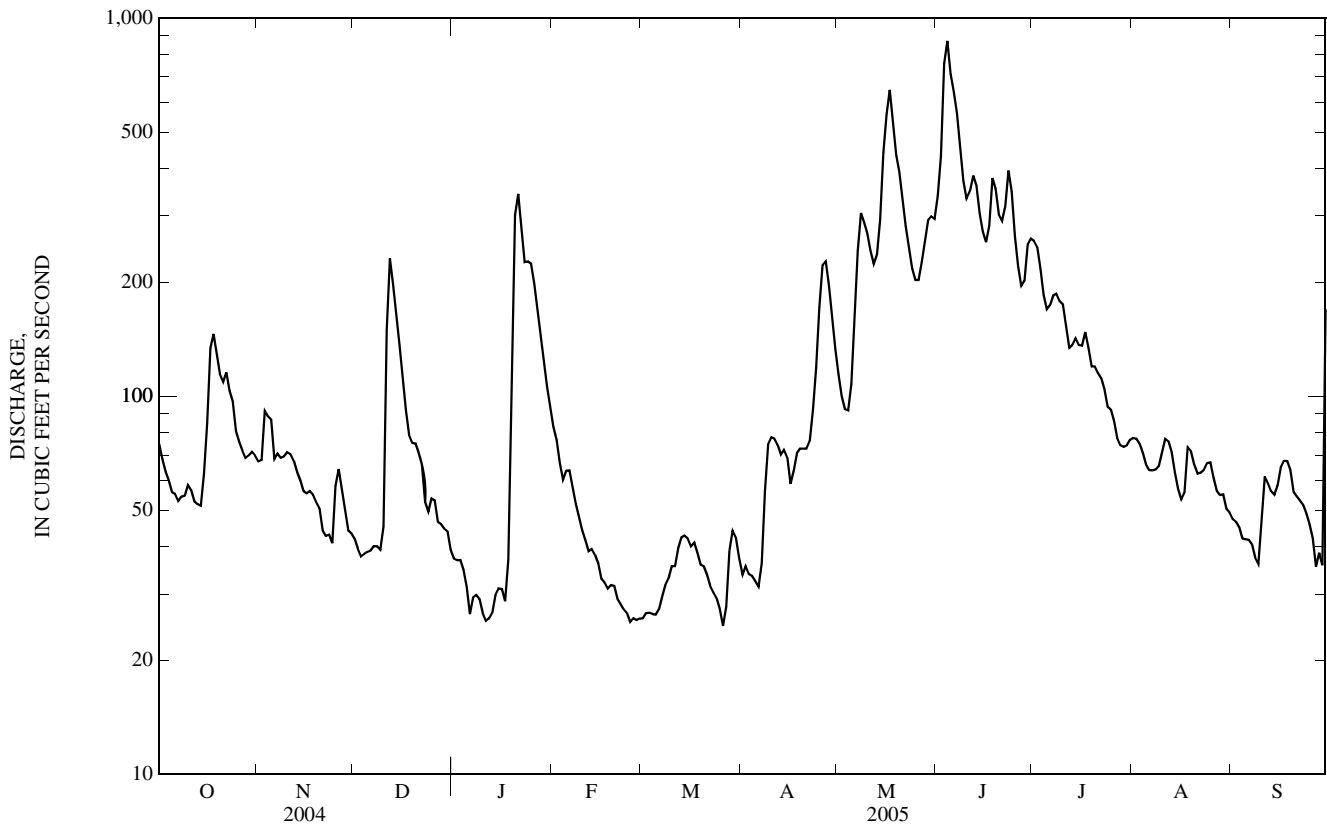
*--Only for complete months of operation (records incomplete most years prior to 1959).

**--For complete water years only.

a--Result of pumping operations, Nov. 14-16, 1976.

b--From rating curve extended above 1,100 ft³/s, on basis of flow over dam computation.

c--From floodmarks.



SASKATCHEWAN RIVER BASIN

05015500 LAKE SHERBURNE AT SHERBURNE, MT
(International gaging station)

LOCATION.--Lat 48°49'42", long 113°31'16" (NAD 27), in SE¹/₄SE¹/₄SE¹/₄ sec.35, T.36 N., R.15 W., Glacier County, Hydrologic Unit 10010002, Blackfeet Indian Reservation, in gatehouse at dam on Swiftcurrent Creek, 4.5 mi southwest of Babb.

DRAINAGE AREA.--64.1 mi².

PERIOD OF RECORD.--May 1915 to September 1923 (fragmentary), May 1924 to September 1925, November 1925 to June 1926 September 1926 to March 1936 (no winter records some years), May 1936 to September 1952 (monthend contents and daily elevations). October 1952 to current year (monthend contents only). Monthend contents for some periods, published in WSP 1308. Published as Sherburne Lake Reservoir at Sherburne 1915, 1917-28, 1931-52, and as Sherburne Lake Reservoir near Babb 1929-30.

REVISED RECORDS.--W 1983: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,709.45 ft (NGVD 29). Prior to May 7, 1931, nonrecording gage at present site, and May 8, 1931, to Sept. 30, 1974, water-stage recorder at present site, all at elevation 9.45 ft lower.

REMARKS.--Reservoir is formed on a natural lake by earthfill dam completed in 1921. Prior to 1919, flashboards on a temporary dam provided limited storage. Storage behind main dam began in 1919. The following capacity figures are from capacity table effective Jan. 1, 1983; see previous reports for superseded figures. Usable capacity, 64,790 acre-ft between gage height 29.3 ft, 9.3 ft, above lowest outlet gage sill, and 88.00 ft, spillway crest. Streambed above gates prevents withdrawal of storage to sill elevation. Dead storage, 3,060 acre-ft below gage height, 29.30 ft. Figures given herein represent usable contents. Water is used for irrigation on Milk River project of Bureau of Reclamation. Bureau of Reclamation satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 65,480 acre-ft, June 30, 1986, gage height, 88.40 ft; no usable contents at times.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 58,320 acre-ft, July 5, gage height, 84.07 ft; minimum, 5,440 acre-ft, Sept. 10, gage height, 37.60 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, SEPTEMBER 2004 TO SEPTEMBER 2005

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
September 30	49.56	15,570	--
October 31	56.44	22,460	+6,890
November 30	60.90	27,310	+4,850
December 31	66.23	33,460	+6,150
Calendar year 2004			+21,460
January 31	73.04	42,070	+8,610
February 28	75.50	45,490	+3,420
March 31	76.27	46,590	+1,100
April 30	60.31	26,660	-19,930
May 31	65.16	32,200	+5,540
June 30	83.78	57,860	+25,660
July 31	74.77	44,460	-13,400
August 31	48.01	14,130	-30,330
September 30	42.19	9,030	-5,100
Water year 2005	--	--	-6,540

05017500 ST. MARY RIVER NEAR BABB, MT

LOCATION.--Lat 48°50'00", long 113°25'08" (NAD 27), in NW¹/₄ NW¹/₄ SE¹/₄ sec.34, T.36 N., R.14 W., Glacier County, Hydrologic Unit 10010002, Blackfeet Indian Reservation, on right bank 0.7 mi upstream from outlet of Lower St. Mary Lake and 2.0 mi southeast of Babb.

DRAINAGE AREA.--276 mi².

PERIOD OF RECORD.--July 1901 to October 1902, May 1910 to September 1925, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as "at Main" in 1901-02, and as "below Swiftcurrent Creek, at Babb" 1910-15. Records published as "near Babb" for April 1902 to September 1915, May 1929 to September 1950 at sites about 1.5 mi downstream not equivalent because flow of Swiftcurrent Creek not included 1902-15 and because diversion by St. Mary Canal not included 1929-50.

REVISED RECORDS.--WSP 1308: 1913-14, 1920, 1922-24. WSP 1508: 1902.

GAGE.--Water-stage recorder. Elevation of gage is 4,468.13 ft (NGVD 29). Prior to Oct. 1, 1915, water-stage recorder or nonrecording gages at several sites about 3.8 mi downstream at different elevations. Oct. 1, 1915, to Sept. 30, 1925, water-stage recorder or nonrecording gages at several sites within 1.5 mi downstream at different elevations.

REMARKS.--Records good. Entire flow of Swiftcurrent Creek below Lake Sherburne is diverted into Lower St. Mary Lake upstream from station. Flow of Swiftcurrent Creek regulated by Lake Sherburne (station number 05015500) since 1919. October 1950 to September 1976, monthly discharge and runoff figures adjusted for change in contents in Lake Sherburne. U.S. Geological Survey satellite telemeter at station. Several unpublished observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	392	253	152	177	343	113	348	997	1,450	1,500	934	768
2	372	266	151	171	386	111	398	976	1,700	1,500	918	763
3	350	251	159	163	400	109	449	924	2,020	1,470	907	751
4	333	249	155	158	376	106	490	876	2,230	1,420	909	736
5	317	254	139	153	358	105	545	848	2,310	1,360	901	714
6	299	236	127	149	330	104	586	840	2,400	1,310	890	694
7	282	221	120	142	300	103	602	878	2,490	1,250	872	655
8	269	214	116	142	274	103	621	959	2,420	1,230	863	604
9	256	200	116	139	256	103	623	1,070	2,210	1,210	852	543
10	249	194	117	133	240	106	629	1,170	2,030	1,190	868	547
11	245	189	144	131	226	107	637	1,180	1,840	1,150	879	559
12	235	187	156	e125	210	113	641	1,100	1,730	1,110	904	466
13	225	185	177	e120	203	119	652	1,070	1,680	1,060	893	394
14	218	188	191	e115	193	122	690	1,090	1,590	1,080	860	340
15	225	198	159	e110	184	124	683	1,210	1,510	1,110	826	300
16	224	195	206	e115	175	126	686	1,420	1,430	1,130	801	279
17	245	200	269	120	168	128	686	1,660	1,410	1,140	804	267
18	268	187	297	128	161	128	685	1,820	1,460	1,130	846	263
19	289	179	327	137	153	129	691	1,860	1,500	1,110	849	257
20	307	174	319	164	150	129	690	1,780	1,500	1,100	843	246
21	323	180	297	207	144	130	685	1,740	1,490	1,070	826	238
22	346	176	277	265	139	129	686	1,670	1,490	1,050	808	227
23	352	163	257	334	133	130	682	1,540	1,530	1,050	795	221
24	345	160	219	376	129	130	687	1,460	1,590	1,010	808	215
25	335	160	176	412	125	129	704	1,410	1,600	1,010	806	209
26	317	161	179	451	122	157	743	1,340	1,540	994	783	202
27	303	156	188	476	119	188	841	1,300	1,470	998	754	192
28	289	152	188	478	116	212	918	1,270	1,470	995	733	189
29	283	160	187	471	---	225	971	1,280	1,480	978	726	185
30	280	159	186	405	---	233	992	1,330	1,500	957	739	204
31	266	---	183	308	---	266	---	1,370	---	942	764	---
TOTAL	9,039	5,847	5,934	6,975	6,113	4,217	19,941	39,438	52,070	35,614	25,961	12,228
MEAN	292	195	191	225	218	136	665	1,272	1,736	1,149	837	408
MAX	392	266	327	478	400	266	992	1,860	2,490	1,500	934	768
MIN	218	152	116	110	116	103	348	840	1,410	942	726	185
AC-FT	17,930	11,600	11,770	13,830	12,130	8,360	39,550	78,230	103,300	70,640	51,490	24,250

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2005, BY WATER YEAR (WY)*

MEAN	372	254	148	111	105	156	489	1,623	2,433	1,588	1,014	712
MAX	1,323	1,281	722	302	249	457	977	2,573	4,807	2,697	1,413	1,291
(WY)	(1952)	(2000)	(1996)	(1981)	(1996)	(1981)	(1988)	(1957)	(1975)	(1954)	(1976)	(1959)
MIN	67.4	45.0	33.5	37.2	33.8	38.6	85.0	670	1,289	687	320	119
(WY)	(2002)	(1988)	(1953)	(2001)	(2001)	(2001)	(1975)	(1955)	(1992)	(1977)	(1988)	(1988)

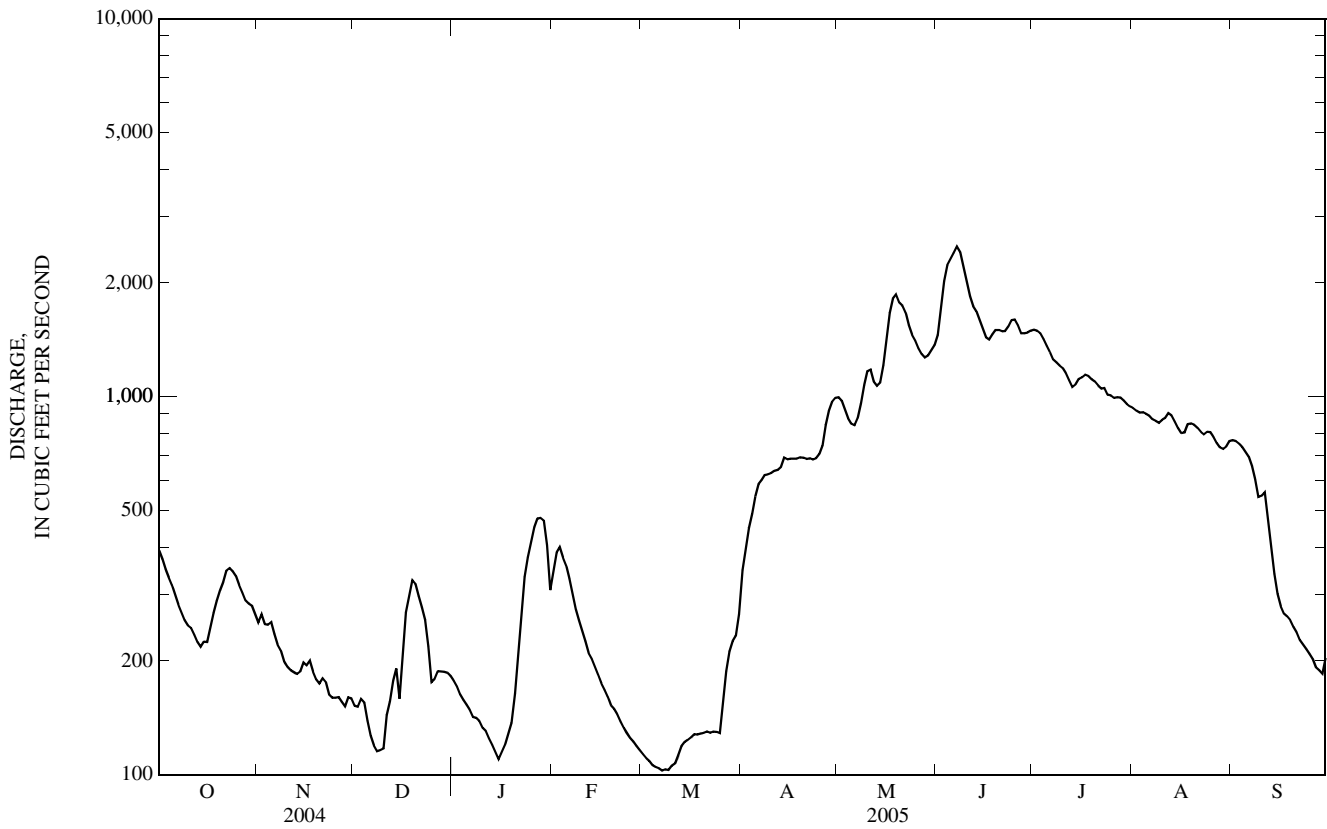
SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1951 - 2005*	
ANNUAL TOTAL	251,060		223,377			
ANNUAL MEAN	686		612		753	
HIGHEST ANNUAL MEAN					1,073	1951
LOWEST ANNUAL MEAN					442	2001
HIGHEST DAILY MEAN	2,050	Jun 7	2,490	Jun 7	15,600	Jun 9, 1964
LOWEST DAILY MEAN	45	Jan 1	103	Mar 7	27	Jan 3, 1953
ANNUAL SEVEN-DAY MINIMUM	47	Feb 26	104	Mar 4	28	Dec 30, 1952
MAXIMUM PEAK FLOW			2,530	Jun 7	a16,500	Jun 9, 1964
MAXIMUM PEAK STAGE			4.50	Jun 7	b12.96	Jun 9, 1964
INSTANTANEOUS LOW FLOW					27	Jan 3, 1953
ANNUAL RUNOFF (AC-FT)	498,000		443,100		545,400	
10 PERCENT EXCEEDS	1,610		1,460		1,860	
50 PERCENT EXCEEDS	362		345		357	
90 PERCENT EXCEEDS	54		129		74	

*--During periods of operation (October 1950 to current year).

a--From rating curve extended above 6,000 ft³/s on basis of slope-area measurement of peak flow.

b--From highwater mark in well.

c--Estimated.



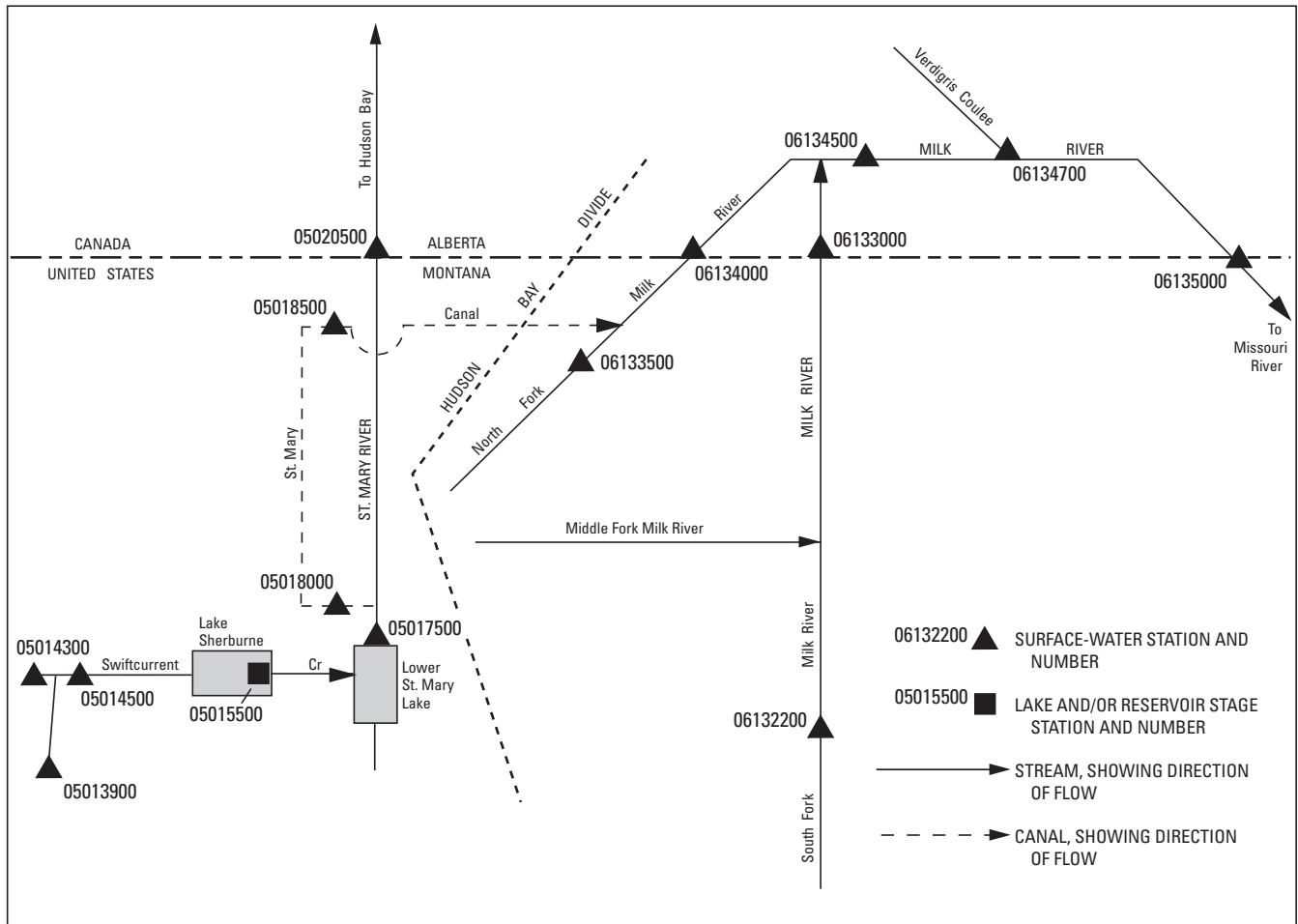


Figure 9. Schematic diagram showing diversion from St. Mary River in Part 5 to Milk River in Part 6.

05018000 ST. MARY CANAL AT INTAKE, NEAR BABB, MT

LOCATION.--Lat 48°51'10", long 113°24'57" (NAD 27), in SE¹/₄ NW¹/₄ NE¹/₄ sec.27, T.36 N., R.14 W., Glacier County, Hydrologic Unit 10010002, Blackfeet Indian Reservation, on right bank of canal 500 ft upstream from St. Mary intake structure, and 1.0 mi east of Babb.

PERIOD OF RECORD.--July 1918 to November 1951, May 1997 to current season (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 4,470 ft (NGVD 29). Prior to April 17, 1919, staff gage at site 300 ft upstream at different elevation.

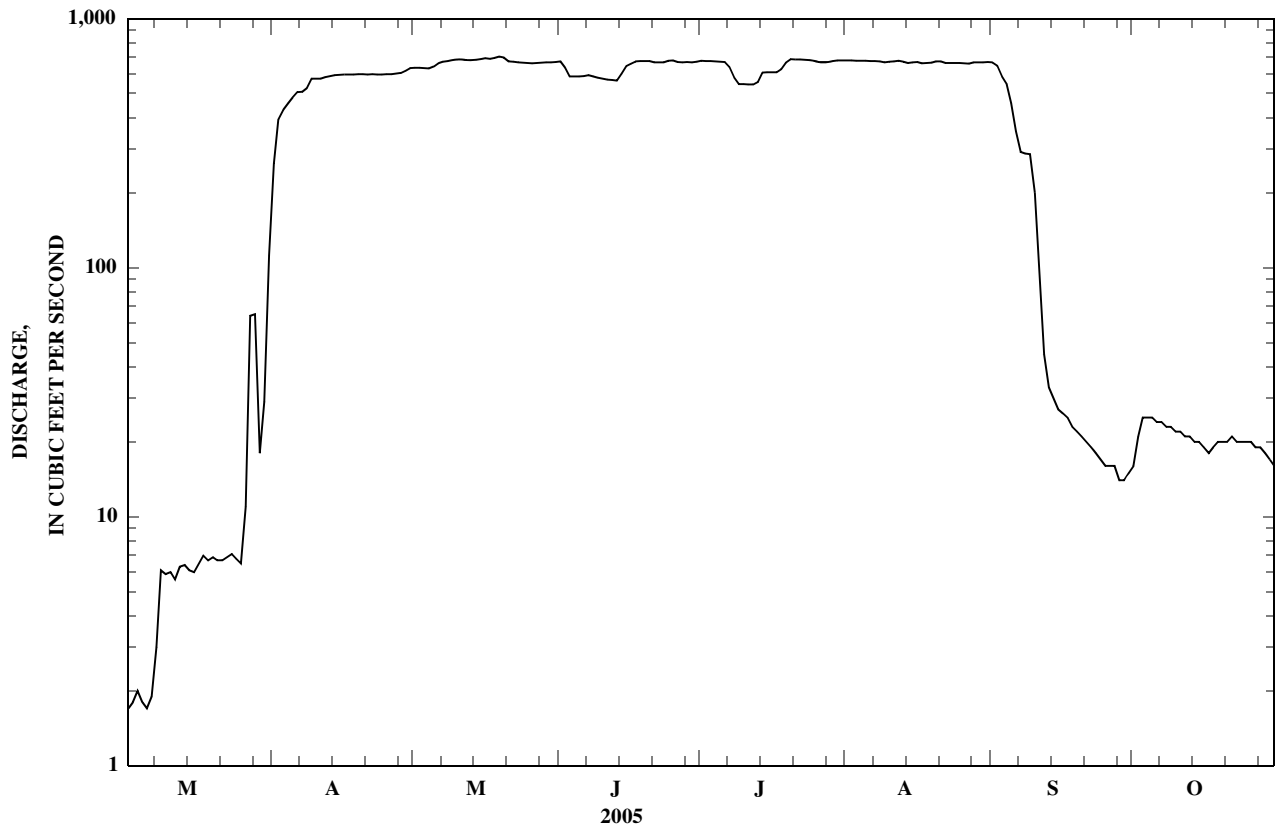
REMARKS.--Records good. Canal diverts water from left bank of St. Mary River near Babb and discharges into North Fork Milk River. This water flows in the natural channel of Milk River through Canada and then back into Montana where it is used for irrigation in Milk River Valley downstream from Havre, Montana. U.S. Geological Survey satellite telemeter at station. Several unpublished observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 871 ft³/s, May 26, 27, 1936; no flow at times most seasons.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2005
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			1.7	262	634	673	676	679	667	16		
2			1.8	395	634	634	675	678	647	21		
3			2.0	430	632	585	674	677	586	25		
4			1.8	457	630	586	673	677	546	25		
5			1.7	482	642	586	671	676	458	25		
6			1.9	507	660	587	669	675	353	24		
7			3.0	508	670	592	639	674	291	24		
8			6.1	525	675	586	580	673	287	23		
9			5.9	573	680	578	545	667	285	23		
10			6.0	573	684	573	545	670	200	22		
11			5.6	574	685	568	544	672	91	22		
12			6.3	582	681	566	544	676	45	21		
13			6.4	588	680	563	557	671	33	21		
14			6.1	592	682	602	606	663	30	20		
15			6.0	594	687	646	609	666	27	20		
16			6.5	596	692	659	609	668	26	19		
17			7.0	596	688	672	609	661	25	18		
18			6.7	596	695	674	627	663	23	19		
19			6.9	597	704	675	667	664	22	20		
20			6.7	597	696	674	687	673	21	20		
21			6.7	596	673	666	685	673	20	20		
22			6.9	597	671	666	684	662	19	21		
23			7.1	596	667	667	683	662	18	20		
24			6.8	596	664	676	680	663	17	20		
25			6.5	597	663	679	676	662	16	20		
26			11	597	660	669	669	660	16	20		
27			64	602	662	667	669	659	16	19		
28			65	605	665	669	669	666	14	19		
29			18	617	666	667	675	666	14	18		
30			29	633	667	670	678	667	15	17		
31			112	---	668	---	678	668	---	16		
TOTAL			429.1	16,660	20,757	18,975	19,852	20,731	4,828	638		
MEAN			13.8	555	670	632	640	669	161	20.6		
MAX			112	633	704	679	687	679	667	25		
MIN			1.7	262	630	563	544	659	14	16		
AC-FT			851	33,050	41,170	37,640	39,380	41,120	9,580	1,270		

05018000 ST. MARY CANAL AT INTAKE, NEAR BABB, MT—Continued



SASKATCHEWAN RIVER BASIN

05018500 ST. MARY CANAL AT ST. MARY CROSSING, NEAR BABB, MT
(International gaging station)

LOCATION.--Lat 48°56'50", long 113°22'28" (NAD 27), in NE¹/₄SW¹/₄SW¹/₄ sec.19, T.37 N., R.13 W., Glacier County, Hydrologic Unit 10010002, Blackfeet Indian Reservation, on left bank 50 ft upstream from inlet of St. Mary siphon, 6.6 mi northeast of Babb, and 9 mi downstream from intake.

PERIOD OF RECORD.--July 1918 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1308, 1728.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,450 ft (NGVD 29). Prior to June 14, 1951, water-stage recorder at several sites 0.8 mi downstream at different elevations.

REMARKS.--Records excellent. Canal diverts water from left bank of St. Mary River near Babb and discharges into North Fork Milk River. This water flows in the natural channel of Milk River through Canada and then back into Montana where it is used for irrigation in Milk River Valley downstream from Havre, . Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

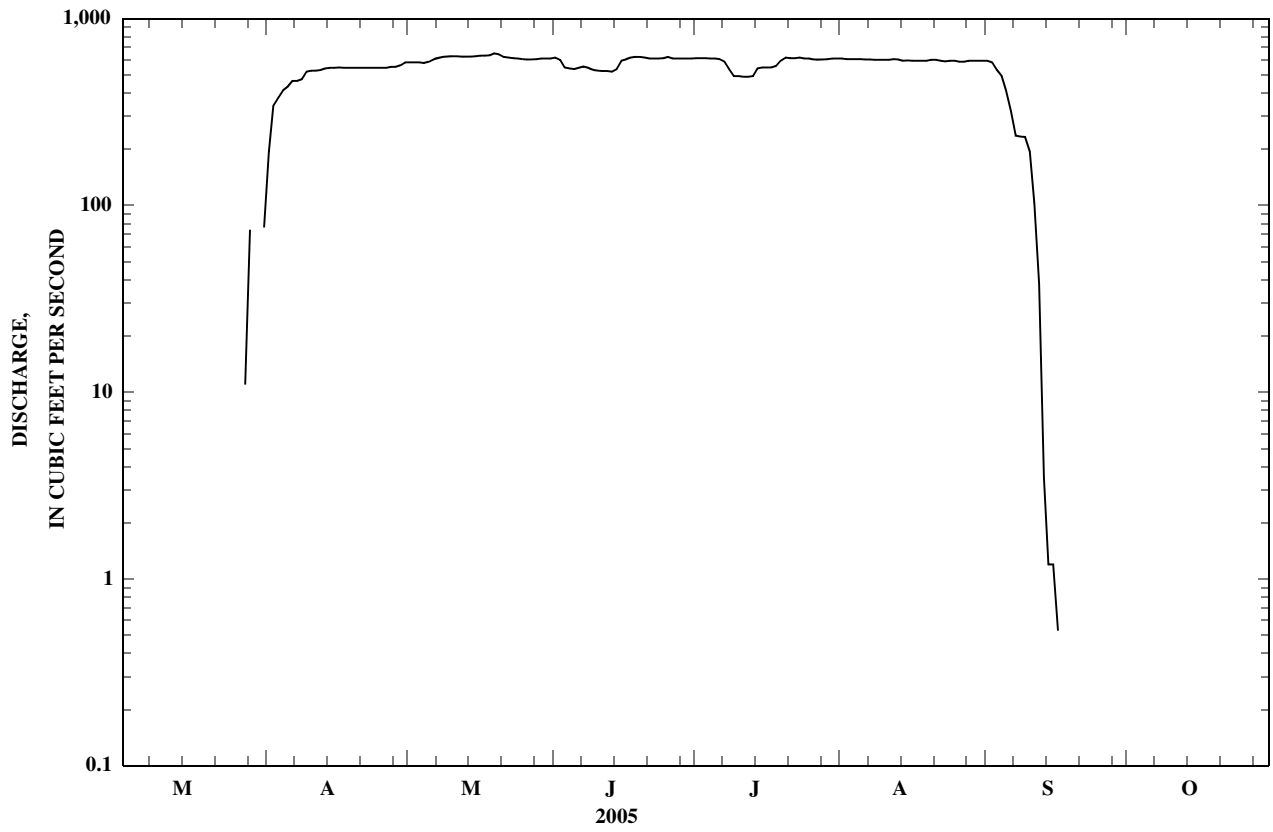
COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 767 ft³/s, June 19, 28, 1936; no flow at times each season.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2005
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0.00	194	583	618	614	611	593	0.00		
2			0.00	343	583	600	614	607	583	0.00		
3			0.00	378	583	547	614	607	530	0.00		
4			0.00	413	579	540	611	607	491	0.00		
5			0.00	431	586	537	611	607	410	0.00		
6			0.00	463	604	544	607	604	320	0.00		
7			0.00	463	614	554	590	604	236	0.00		
8			0.00	473	622	544	537	600	233	0.00		
9			0.00	519	625	533	491	600	232	0.00		
10			0.00	526	629	526	491	600	194	0.00		
11			0.00	526	629	523	487	600	103	0.00		
12			0.00	530	625	523	487	607	38	0.00		
13			0.00	540	625	519	491	604	3.5	0.00		
14			0.00	544	625	537	540	593	1.2	0.00		
15			0.00	544	629	593	547	597	1.2	0.00		
16			0.00	547	632	604	547	593	0.53	0.00		
17			0.00	544	632	618	547	593	0.00	0.00		
18			0.00	544	636	622	558	593	0.00	0.00		
19			0.00	544	650	622	597	593	0.00	0.00		
20			0.00	544	643	618	618	600	0.00	0.00		
21			0.00	544	622	611	614	600	0.00	0.00		
22			0.00	544	618	611	614	593	0.00	0.00		
23			0.00	544	614	611	618	590	0.00	0.00		
24			0.00	544	611	614	611	593	0.00	0.00		
25			0.00	544	607	622	611	593	0.00	0.00		
26			0.00	544	604	611	604	586	0.00	0.00		
27			11	551	604	611	604	586	0.00	0.00		
28			74	551	607	611	604	593	0.00	0.00		
29			0.00	562	611	611	607	593	0.00	0.00		
30			0.00	583	611	611	611	593	0.00	0.00		
31			76	---	611	---	611	593	---	0.00		
TOTAL			161.00	15,121	19,054	17,446	17,908	18,533	3,969.43	0.00		
MEAN			5.19	504	615	582	578	598	132	0.00		
MAX			76	583	650	622	618	611	593	0.00		
MIN			0.00	194	579	519	487	586	0.00	0.00		
AC-FT			319	29,990	37,790	34,600	35,520	36,760	7,870	0.00		

05018500 ST. MARY CANAL AT ST. MARY CROSSING, NEAR BABB, MT—Continued



05020500 ST. MARY RIVER AT INTERNATIONAL BOUNDARY
(International gaging station)

LOCATION.--Lat 49°00'43", long 113°17'57" (NAD 27), in NE¹/₄ sec.5, T.1, R.25 W., fourth meridian, in Alberta, Hydrologic Unit 10010002, on left bank 1.0 mi north of international boundary, 3.6 mi downstream from Boundary Creek, 6.5 mi southwest of Kimball, Alberta, and 13 mi northeast of Babb.

DRAINAGE AREA.--465 mi².

PERIOD OF RECORD.--September 1902 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as "near Cardston, Alberta" and "at Cook's Ranch, Alberta" 1902-12 and as "near Kimball, Alberta" 1913-55.

REVISED RECORDS.--WSP 1308: 1902, 1908-12. WSP 1508: 1902, 1908-9. W 1983: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,087.40 ft (NGVD 29) based upon levels from elevation established at previous site 1.1 mi upstream by Prairie Farm Rehabilitation Administration. Prior to Jan. 1, 1913, nonrecording gages at two sites within 0.3 mi of previous site at different elevations. Jan. 1, 1913, to Oct. 25, 1955, water-stage recorder at several sites about 7 mi downstream from present site at various elevations. Oct. 26, 1955, to Mar. 23, 1965, water-stage recorder at site 200 ft upstream from previous site at elevation 2 ft higher. Mar. 24, 1965, to Sept. 8, 1975, water-stage recorder at site 100 ft upstream from previous site at same elevation. Water-stage recorder at site 1.1 miles upstream June 22, 1975 to Oct. 31, 1999.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since 1917, St. Mary Canal has diverted water from the river near Babb, to North Fork Milk River. Some regulation by Lake Sherburne on Swiftcurrent Creek. Bureau of Reclamation satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	455	327	e190	e220	359	153	202	535	1,010	1,120	400	269
2	436	356	e190	e200	437	147	129	518	1,520	1,100	384	287
3	410	351	e180	e190	429	142	145	463	3,300	1,090	370	343
4	391	340	e200	e180	428	139	136	417	3,200	1,010	371	381
5	371	351	196	e170	410	140	166	375	2,830	944	359	472
6	350	330	189	e170	383	142	164	340	2,880	886	345	560
7	336	307	167	e160	360	133	183	374	3,350	850	332	603
8	320	297	e160	e160	e330	134	203	507	3,180	896	325	509
9	304	265	e160	e160	e320	140	150	683	2,670	908	320	423
10	297	248	e170	e150	e300	139	153	859	2,300	887	359	528
11	289	241	e180	e150	288	139	160	812	2,020	854	358	826
12	279	231	e210	e140	269	148	162	680	1,910	807	437	743
13	269	233	e230	e140	256	151	161	657	1,830	739	394	638
14	289	237	287	e130	242	157	201	695	1,600	679	361	500
15	320	250	251	e130	e225	161	206	858	1,370	725	321	469
16	310	247	264	e130	e220	163	205	971	1,220	740	295	471
17	328	e240	352	e140	e215	159	221	1,320	1,220	756	302	459
18	351	242	398	e145	e210	159	214	1,630	1,310	727	358	404
19	365	239	442	e160	e200	e160	220	1,670	1,280	651	353	367
20	383	241	445	e180	e190	e160	222	1,530	1,240	608	335	346
21	400	e230	432	e220	e180	e160	218	1,400	1,210	584	318	335
22	421	e230	415	e280	e180	e160	213	1,300	1,200	568	306	326
23	449	e220	e380	e360	e170	e160	211	1,160	1,250	570	301	309
24	432	230	e350	e440	e165	e160	216	1,040	1,300	517	343	300
25	415	227	318	e480	e160	e160	239	993	1,270	517	355	286
26	392	224	252	e520	e155	167	272	907	1,190	504	325	272
27	377	e200	e240	526	e150	198	353	855	1,130	502	293	261
28	369	e190	e260	549	e150	170	450	823	1,180	492	257	252
29	360	e180	e260	537	---	231	527	846	1,170	466	248	243
30	370	e190	e250	502	---	231	515	882	1,170	436	252	272
31	349	---	e230	366	---	206	---	919	---	409	266	---
TOTAL	11,187	7,694	8,248	7,985	7,381	4,969	6,817	27,019	53,310	22,542	10,343	12,454
MEAN	361	256	266	258	264	160	227	872	1,777	727	334	415
MAX	455	356	445	549	437	231	527	1,670	3,350	1,120	437	826
MIN	269	180	160	130	150	133	129	340	1,010	409	248	243
AC-FT	22,190	15,260	16,360	15,840	14,640	9,860	13,520	53,590	105,700	44,710	20,520	24,700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1902 - 2005, BY WATER YEAR (WY)

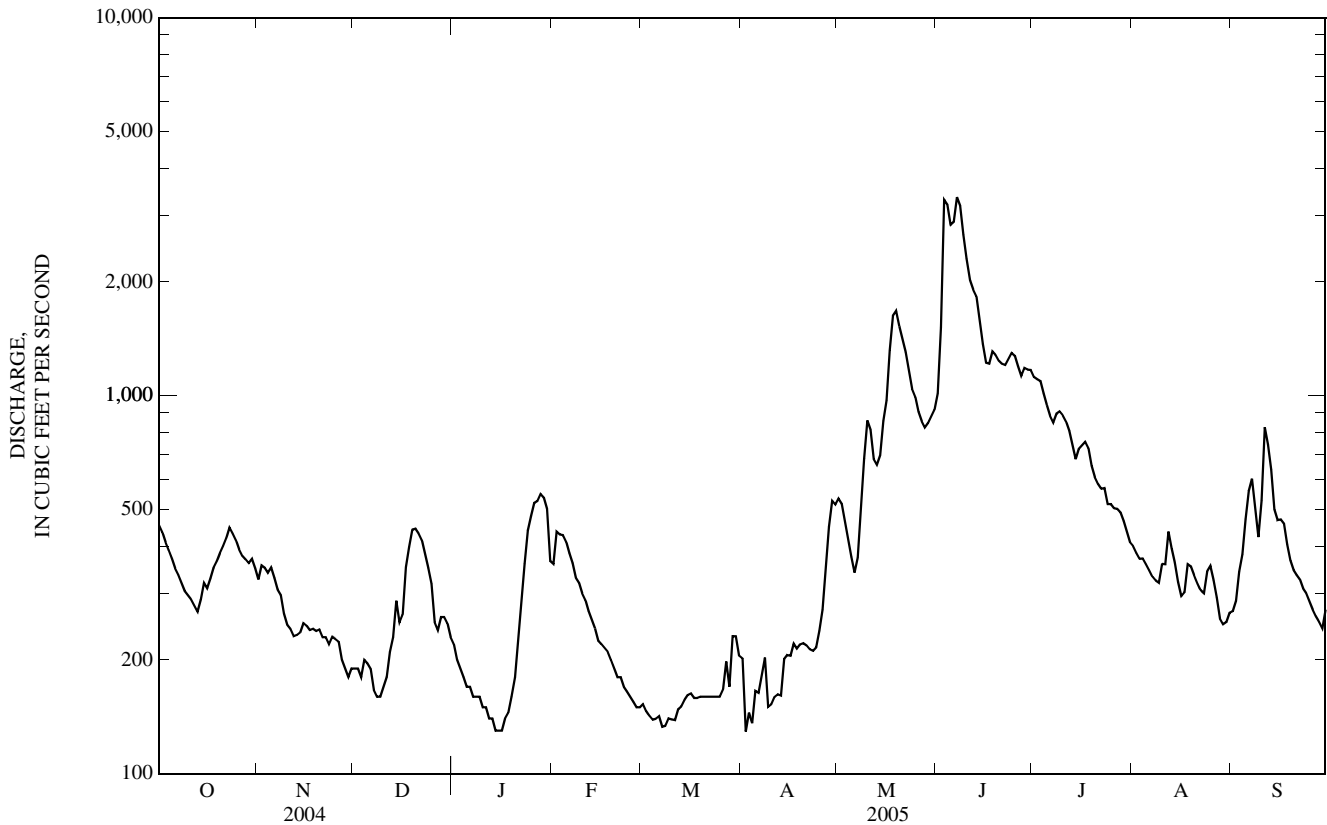
MEAN	447	337	202	154	151	189	469	1,658	2,578	1,318	594	488
MAX	1,588	1,423	844	729	411	512	1,330	3,565	5,941	3,032	1,065	1,511
(WY)	(1952)	(2000)	(1996)	(1918)	(1934)	(1972)	(1934)	(1928)	(1975)	(2002)	(1995)	(1927)
MIN	88.4	80.3	64.3	55.5	41.6	54.7	136	678	694	496	246	153
(WY)	(2002)	(1988)	(2001)	(1944)	(1936)	(2001)	(1975)	(1941)	(1941)	(1988)	(1988)	(1988)

05020500 ST. MARY RIVER AT INTERNATIONAL BOUNDARY—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1902 - 2005	
ANNUAL TOTAL	192,242		179,949			
ANNUAL MEAN	525		493		717	
HIGHEST ANNUAL MEAN					1,353	1908
LOWEST ANNUAL MEAN					316	1941
HIGHEST DAILY MEAN	1,780	Jun 7	3,350	Jun 7	28,000	Jun 5, 1908
LOWEST DAILY MEAN	58	Jan 2	129	Apr 2	16	Nov 29, 1936
ANNUAL SEVEN-DAY MINIMUM	65	Jan 1	136	Jan 12	27	Nov 26, 1936
MAXIMUM PEAK FLOW			3,980	Jun 3	a40,000	Jun 5, 1908
MAXIMUM PEAK STAGE			6.95	Jun 3	b13.46	Jun 21, 1975
ANNUAL RUNOFF (AC-FT)	381,300		356,900		519,300	
10 PERCENT EXCEEDS	1,240		1,120		1,810	
50 PERCENT EXCEEDS	388		330		357	
90 PERCENT EXCEEDS	74		160		110	

SUMMARY STATISTICS	WATER YEARS 1902 - 1916*		WATER YEARS 1917 - 2005**	
ANNUAL MEAN	1,002		672	
HIGHEST ANNUAL MEAN	1,353	1908	1,285	1927
LOWEST ANNUAL MEAN	646	1905	316	1941
HIGHEST DAILY MEAN	28,000	Jun 5, 1908	17,000	Jun 9, 1964
LOWEST DAILY MEAN	70	Feb 5, 1914	16	Nov 29, 1936
ANNUAL SEVEN-DAY MINIMUM	75	Feb 1, 1914	27	Nov 26, 1936
MAXIMUM PEAK FLOW	a40,000	Jun 5, 1908	23,300	Jun 21, 1975
MAXIMUM PEAK STAGE	b12.75	Jun 5, 1908	b13.46	Jun 21, 1975
ANNUAL RUNOFF (AC-FT)	726,000		486,800	
10 PERCENT EXCEEDS	2,470		1,670	
50 PERCENT EXCEEDS	538		336	
90 PERCENT EXCEEDS	150		105	

*--Before St. Mary Canal diversions.
 **--Post operation of St. Mary Canal.
 a--From rating curve extended above 6,000 ft³/s.
 b--From floodmarks at site and datum then in use.
 e--Estimated.



RED ROCK RIVER BASIN

06012500 RED ROCK RIVER BELOW LIMA RESERVOIR, NEAR MONIDA, MT

LOCATION.--Lat 44°39'22", long 112°22'14" (NAD 27), in NE¹/₄SE¹/₄SE¹/₄ sec.31, T.13 S., R.6 W., Beaverhead County, Hydrologic Unit 10020001, on right bank just downstream from Lima Reservoir, 7 mi northwest of Monida, and at river mile 2,542.1.

DRAINAGE AREA.--570 mi².

PERIOD OF RECORD.--January 1911 to December 1918, April 1919, May 1925 to October 1933, April 1934 to September 1935, May 1936 to October 1938, May 1939 to September 1969, seasonal records only June 1974 to September 1982 and April 1985 to current year. Monthly discharge only for some periods, published in WSP 1309. Prior to October 1950, published as "below Red Rock Reservoir".

REVISED RECORDS.--WSP 1309: 1935. WSP 1389: 1912, 1934. WSP 1559: Drainage area.

GAGE.--Water-stage recorder and sharp-crested weir. Elevation of gage is 6,530 ft (NGVD 29), estimated from spillway elevation based on Montana Department of Natural Resources and Conservation elevation. Prior to Oct. 1, 1978, at elevation 1.00 ft higher. See WSP 1709 for history of nonrecording gage changes prior to May 8, 1939.

REMARKS.--Seasonal records good except those for estimated daily discharges, which are fair. Flow regulated by Lima Reservoir (station number 06012000). No storage during 1934. Diversions for irrigation of about 10,000 acres upstream from reservoir. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1984 reached a discharge of 1,500 ft³/s, gage height, 5.15 ft, from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, JANUARY TO DECEMBER 2005
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				0.00	121	512	439	336	305	19		
2				0.00	121	525	423	335	332	19		
3				0.00	121	524	400	335	332	19		
4				0.00	121	523	383	335	331	19		
5				0.00	121	524	383	335	330	19		
6				0.00	120	521	383	347	328	18		
7				0.00	121	516	381	361	326	18		
8				0.00	121	479	380	361	325	19		
9				0.00	121	424	380	361	324	18		
10				0.00	121	409	379	361	322	18		
11				e10	146	453	379	364	322	19		
12				e23	201	482	378	364	315	18		
13				e23	263	482	377	366	289	18		
14				e23	323	466	376	365	289	19		
15				e35	322	440	374	366	288	25		
16				e46	322	470	374	365	287	29		
17				e46	323	488	360	340	286	29		
18				e46	359	487	331	321	285	29		
19				e46	434	486	331	321	285	29		
20				e50	420	486	330	321	268	30		
21				e55	392	486	329	321	248	30		
22				e60	394	485	326	320	247	30		
23				87	396	486	325	304	247	30		
24				88	399	486	324	290	167	29		
25				88	400	485	322	289	18	29		
26				88	401	485	321	288	18	29		
27				89	452	460	320	287	18	32		
28				89	482	449	320	288	18	33		
29				89	479	448	330	287	18	33		
30				103	474	448	336	286	19	33		
31				---	483	---	337	285	---	32		
TOTAL				1,184.00	9,074	14,415	11,131	10,205	7,187	771		
MEAN				39.5	293	480	359	329	240	24.9		
MAX				103	483	525	439	366	332	33		
MIN				0.00	120	409	320	285	18	18		
AC-FT				2,350	18,000	28,590	22,080	20,240	14,260	1,530		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1969 AND SEASONS 1974 - 2005*

	21.5	19.9	18.8	68.2	298	535	324	219	143	55.4	54.0	28.0
MEAN	21.5	19.9	18.8	68.2	298	535	324	219	143	55.4	54.0	28.0
MAX	57.9	55.3	48.0	571	948	754	652	513	384	430	353	97.6
(WY)	(1928)	(1928)	(1918)	(1913)	(1917)	(1917)	(1982)	(1982)	(1995)	(1917)	(1913)	(1926)
MIN	0.00	0.00	0.00	0.00	26.2	4.62	0.63	0.00	0.00	0.00	0.00	0.00
(WY)	(1932)	(1932)	(1932)	(1980)	(1934)	(1934)	(1934)	(1934)	(1937)	(1932)	(1932)	(1932)

06012500 RED ROCK RIVER BELOW LIMA RESERVOIR, NEAR MONIDA, MT—Continued

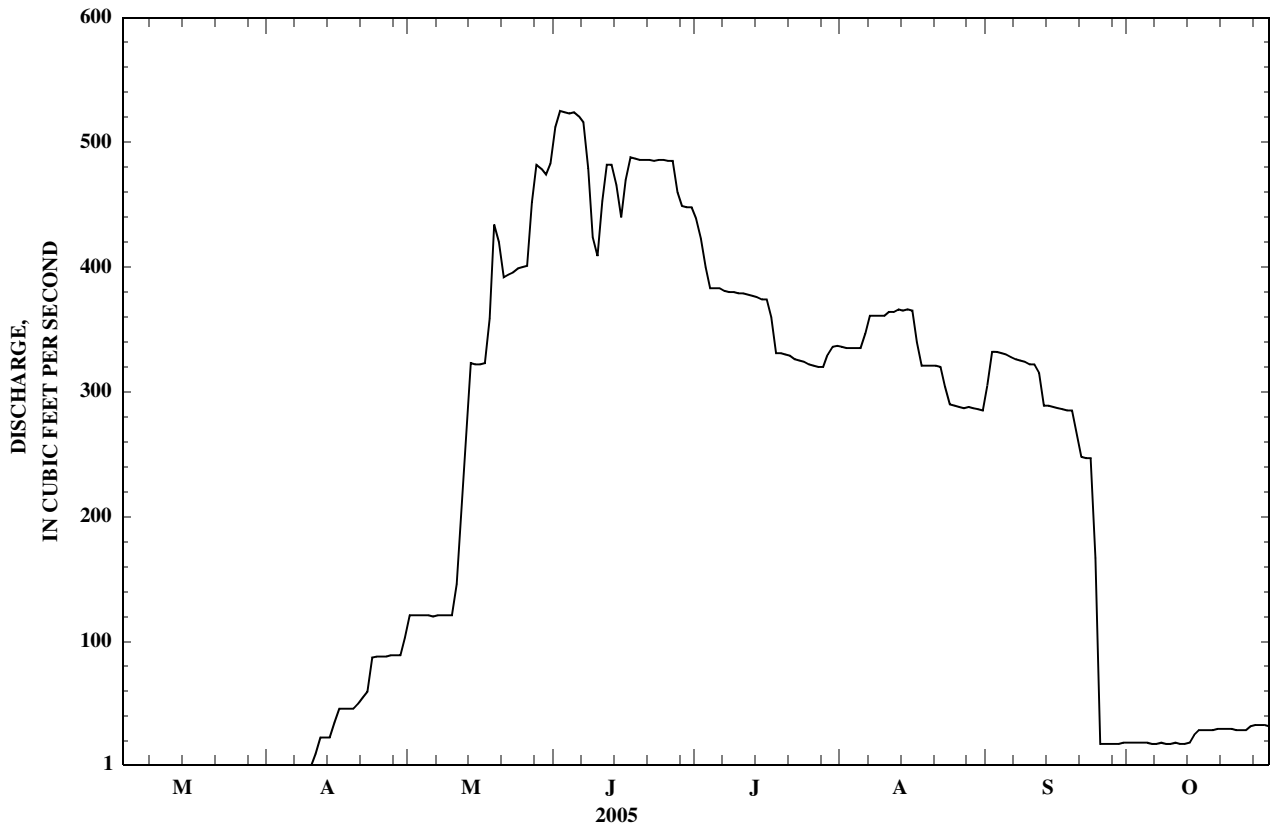
SUMMARY STATISTICS	FOR 2005 SEASON		WATER YEARS 1911 - 1969*		SEASONS 1974 - 2005*	
ANNUAL MEAN			143			
HIGHEST ANNUAL MEAN			271		1913	
LOWEST ANNUAL MEAN			59.5		1935	
HIGHEST DAILY MEAN	525	Jun 1	a2,500	May 15, 1933	946	May 28, 1975
LOWEST DAILY MEAN	.00	Apr 1	0.00	Oct 1, 1931	.00	Oct 9, 1978
ANNUAL SEVEN DAY MINIMUM			0.00		Oct 1, 1931	
MAXIMUM PEAK FLOW	542	Jun 1	a2,500	May 15, 1933	b946	May 28, 1975
MAXIMUM PEAK STAGE	3.32	Jun 1	6.4	May 15, 1933	4.00	Jun 26, 1981
ANNUAL RUNOFF (AC-FT)			103,300			
10 PERCENT EXCEEDS			449			
50 PERCENT EXCEEDS			56			
90 PERCENT EXCEEDS			8.0			

*--During periods of operation (January 1911 to December 1918, April 1919, May 1925 to October 1933, April 1934 to September 1935, May 1936 to October 1938, May 1939 to September 1969, June 1974 to September 1982, April 1985 to current year; seasonal records beginning water year 1974).

a--Observed, estimated by dam tender; released to prevent dam failure.

b--Gage height, 3.38 ft, datum then in use.

c--Estimated.



06015300 CLARK CANYON RESERVOIR NEAR GRANT, MT

LOCATION.--Lat 44°59'59", long 112°51'34" (NAD 27), in SE¹/₄ SW¹/₄ sec 32, T.9 S., R.10 W., Beaverhead County, Hydrologic Unit 10020001, in shaft house near left end of dam on Beaverhead River, 1.5 mi upstream from Clark Canyon Creek, 10 mi east of Grant, and at river mile 2,483.9.

DRAINAGE AREA.--2,321 mi².

PERIOD OF RECORD.--May 1964 to current year (monthend contents only). Records of daily elevations are in files of the USGS Water Science Center located in Helena, Montana.

GAGE.--Water-stage recorder in shaft house. Elevation of gage is 5,455 ft (NGVD 29) (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by zoned earthfill dam with concrete control works and spillway completed in October 1964. Storage began Aug. 28, 1964 (uncontrolled storage began June 10, 1964). Capacity table effective Oct. 1, 2001. Elevations are referenced to the National Geodetic Vertical Datum of 1929. Usable capacity, 253,400 acre-ft between elevation 5,470.60 ft, invert of outlet works, and 5,560.40 ft, top of flood control. Dead storage, 1,060 acre-ft, below elevation 5,470.60 ft. Normal operating level, 174,400 acre-ft at elevation 5,546.10 ft. Minimum operating level, 1,060 acre-ft at elevation 5,470.60 ft. Figures given herein represent usable contents. Total contents published in previous water-supply papers and annual reports for May 1964 to September 1975. Water is used for irrigation, flood control, and recreation.

COOPERATION.--Elevations and capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 283,000 acre-ft, June 25, 1984, elevation, 5,564.70 ft; minimum since normal operating level was reached, 9,660 acre-ft, Aug. 18, 19, 2003, elevation, 5,490.01 ft

EXTREMES FOR CURRENT YEAR.--Maximum contents, 65,310 acre-ft, May 24, 25, elevation, 5,519.98 ft; minimum, 23,810 acre-ft, Oct. 1, elevation, 5,501.32 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, SEPTEMBER 2004 TO SEPTEMBER 2005

Date	Elevation (feet)	Contents (acre-feet)	Change in Contents (acre-feet)
September 30	5,501.23	23,670	--
October 31	5,504.08	28,440	+4,770
November 30	5,507.66	35,180	+6,740
December 31	5,510.82	41,820	+6,640
Calendar Year 2004	--	--	+7,140
January 31	5,513.45	47,880	+6,060
February 28	5,515.71	53,480	+5,600
March 31	5,517.56	58,400	+4,920
April 30	5,518.83	61,960	+3,560
May 31	5,519.25	63,170	+1,210
June 30	5,519.07	62,650	-520
July 31	5,511.72	43,840	-18,810
August 31	5,508.27	36,410	-7,430
September 30	5,511.32	42,930	+6,520
Water Year 2005	--	--	+19,260

06016000 BEAVERHEAD RIVER AT BARRETT'S, MT

LOCATION.--Lat 45°06'59", long 112°44'59" (NAD 27), in SE¹/₄SW¹/₄SE¹/₄ sec.19, T.8 S., R.9 W., Beaverhead County, Hydrologic Unit 10020002, on left bank 1.4 mi upstream from Barretts, 2.2 mi downstream from Grasshopper Creek, 8.9 mi southwest of Dillon, and at river mile 2,469.2.

DRAINAGE AREA.--2,737 mi².

PERIOD OF RECORD.--August 1907 to September 1986, October 1986 to current year (seasonal records only). Monthly discharge only for some periods, published in WSP 1309. Prior to October 1963, published as "at Barratts".

REVISED RECORDS.--WSP 1279: 1908(M), 1910-12(M), 1929(M), 1935-36. WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,268.17 ft (NGVD 29). Prior to Oct. 19, 1934, nonrecording gages at same site and elevation.

REMARKS.--Seasonal records good. Some regulation by Lima Reservoir (station number 06012000) and nearly complete regulation by Clark Canyon Reservoir (station number 06015300) since August 1964. Diversions for irrigation of about 90,000 acres above station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2005
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			95	95	86	492	351	690	166	85		
2			97	96	86	458	327	647	153	88		
3			97	97	87	394	315	614	153	88		
4			97	100	88	351	309	586	151	90		
5			98	98	89	342	338	547	143	96		
6			101	96	99	346	409	545	144	89		
7			103	99	103	343	427	568	155	88		
8			105	104	106	330	455	549	144	95		
9			107	102	120	284	519	527	146	97		
10			108	97	145	254	526	464	158	92		
11			104	95	221	244	509	376	159	92		
12			104	94	171	265	471	342	155	95		
13			98	94	155	289	458	343	148	99		
14			90	98	151	238	493	344	134	99		
15			95	96	151	211	531	333	126	99		
16			96	95	167	250	550	308	125	98		
17			95	95	229	264	568	294	133	97		
18			89	100	210	292	624	296	130	96		
19			94	102	188	307	697	282	129	99		
20			98	104	180	310	736	262	130	95		
21			98	104	185	336	773	261	128	95		
22			96	102	169	422	818	257	122	95		
23			97	101	167	478	881	246	107	97		
24			93	101	194	512	864	233	100	98		
25			94	104	216	528	866	217	101	98		
26			93	101	223	543	856	181	96	100		
27			95	99	261	563	814	162	83	103		
28			100	94	307	462	775	169	83	102		
29			98	91	352	421	754	169	85	96		
30			96	89	385	394	703	173	85	99		
31			91	---	433	---	706	172	---	100		
TOTAL			3,022	2,943	5,724	10,923	18,423	11,157	3,872	2,960		
MEAN			97.5	98.1	185	364	594	360	129	95.5		
MAX			108	104	433	563	881	690	166	103		
MIN			89	89	86	211	309	162	83	85		
AC-FT			5,990	5,840	11,350	21,670	36,540	22,130	7,680	5,870		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEAR 1908 - 1986 AND SEASONS 1987 - 2005*

	293	290	321	434	605	795	565	457	340	347	409	346
MEAN	293	290	321	434	605	795	565	457	340	347	409	346
MAX	547	513	934	1,347	1,913	2,608	2,147	1,929	1,645	1,093	889	685
(WY)	(1984)	(1984)	(1910)	(1913)	(1917)	(1908)	(1984)	(1984)	(1984)	(1985)	(1913)	(1984)
MIN	120	132	97.5	98.1	131	146	95.5	96.1	76.2	76.8	138	133
(WY)	(1932)	(1975)	(2005)	(2005)	(1934)	(1934)	(1934)	(1934)	(2002)	(2003)	(1975)	(1975)

SUMMARY STATISTICS

FOR 2005 SEASON

SEASONS 1987 - 2005

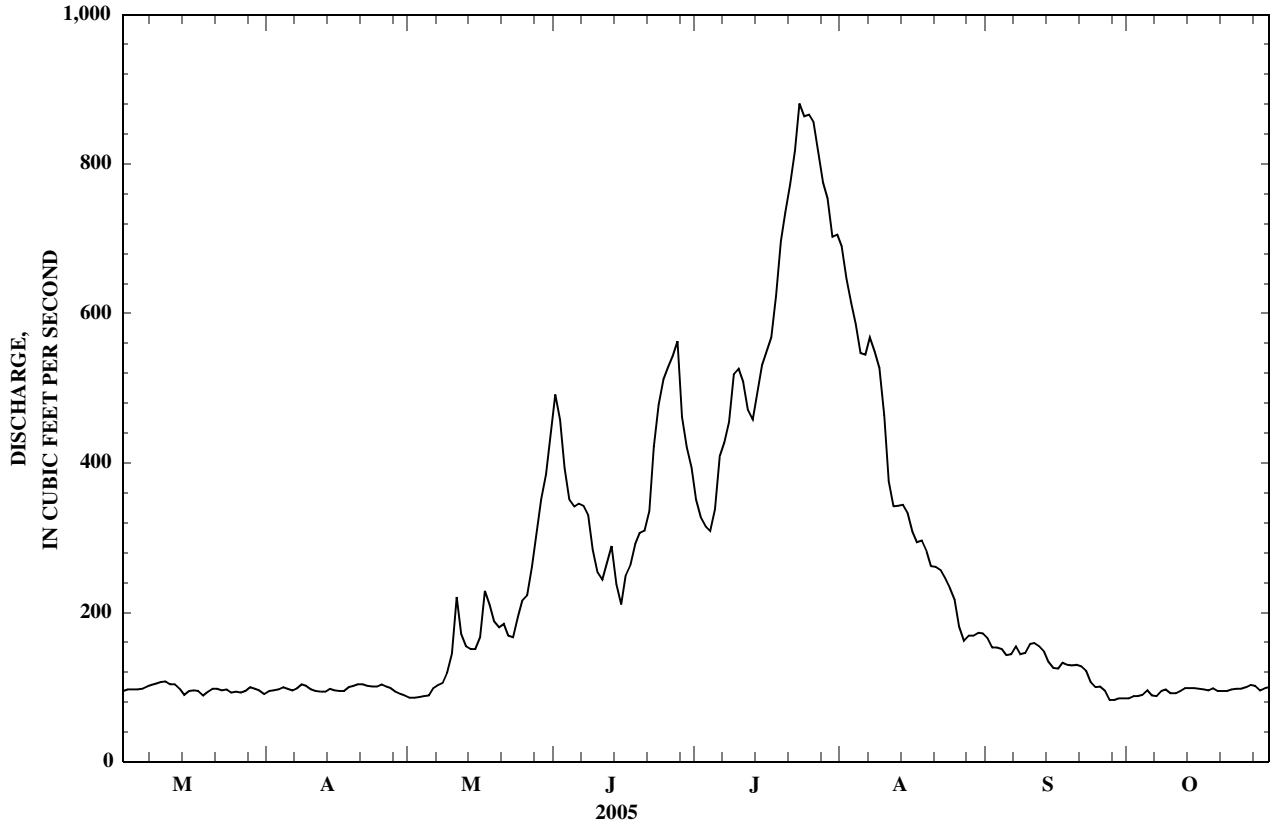
WATER YEARS 1908 - 2005*

ANNUAL MEAN										441		
HIGHEST ANNUAL MEAN										1,101		1984
LOWEST ANNUAL MEAN										168		1934
HIGHEST DAILY MEAN				881		Jul 23	1,640		Jul 26, 1995	3,640		Jun 19, 1908
LOWEST DAILY MEAN				83		Sep 27	64		Sep 11, 2002	64		Sep 11, 2002
ANNUAL SEVEN-DAY MINIMUM										64		Sep 10, 2002
MAXIMUM PEAK FLOW				891		Jul 23	1,650		Jul 25, 1995	3,720		Jun 20, 1908
MAXIMUM PEAK STAGE				2.28		Jul 23	3.25		Jul 25, 1995	6.10		Jun 20, 1908
INSTANTANEOUS LOW FLOW				a74		Mar 15				b61		Sep 15, 2002
ANNUAL RUNOFF (AC-FT)										319,200		
10 PERCENT EXCEEDS										836		
50 PERCENT EXCEEDS										347		
90 PERCENT EXCEEDS										182		

06016000 BEAVERHEAD RIVER AT BARRETTS, MT—Continued

SUMMARY STATISTICS	WATER YEARS 1908 - 1986**		WATER YEARS 1908 - 1964***		WATER YEARS 1965 - 1986****	
ANNUAL MEAN	441		401		543	
HIGHEST ANNUAL MEAN	1,101	1984	738	1913	1,101	1984
LOWEST ANNUAL MEAN	168		168		293	
HIGHEST DAILY MEAN	3,640	Jun 19, 1908	3,640	Jun 23, 1908	2,930	Jun 23, 1984
LOWEST DAILY MEAN	80	Jan 22, 1962	80	Jan 22, 1962	110	Jan 29, 1975
ANNUAL SEVEN-DAY MINIMUM	81	Sep 11, 1934	81	Sep 11, 1934	119	Jan 28, 1975
MAXIMUM PEAK FLOW	3,720	Jun 2, 1908	3,720	Jun 20, 1908	3,000	Jun 22, 1984
MAXIMUM PEAK STAGE	6.10	Jun 2, 1908	6.10	Jun 20, 1908	5.04	Jun 22, 1984
INSTANTANEOUS LOW FLOW	c69	Jun 30, 1939	c69	Jan 30, 1939		
ANNUAL RUNOFF (AC-FT)	319,200		290,500		393,700	
10 PERCENT EXCEEDS	830		676		1,000	
50 PERCENT EXCEEDS	344		330		454	
90 PERCENT EXCEEDS	177		179		190	

*--Seasonal records after 1986 water year.
 **--Annual record.
 ***--Prior to Clark Canyon Dam construction.
 ****--After Clark Canyon Dam construction.
 a--Gage height, 0.49 ft.
 b--Gage height, 0.33 ft.
 c--Gage height, 0.76 ft.



06017000 BEAVERHEAD RIVER AT DILLON, MT

LOCATION.--Lat 45°13'05", long 112°39'18" (NAD 27), in NW¹/₄NE¹/₄NW¹/₄ sec.24, T.7 S., R.9 W., Beaverhead County, Hydrologic Unit 10020002, on right bank 0.2 mi downstream from West Side Canal and county road bridge, at Dillon, and at river mile 2,456.1.

DRAINAGE AREA.--2,895 mi².

PERIOD OF RECORD.--August to September 1907 (gage heights only), October 1950 to September 1952, September 1963 to September 1971, April 2002 to current year (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 5,100 ft (NGVD 29). Prior to Sept. 30, 1952, nonrecording gages at same site at different elevation.

REMARKS.--Seasonal records good. Some regulation by Lima Reservoir (station number 06012000) and nearly complete regulation by Clark Canyon Reservoir (station number 06015300) since August 1964. Diversions for irrigation of about 125,500 acres, of which about 23,000 acres lies downstream from station. Bureau of Reclamation satellite telemeter at station. Several unpublished observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2005
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				84	86	138	73	211	106	70		
2				84	84	142	85	202	98	73		
3				83	78	111	82	180	90	76		
4				83	79	86	78	176	93	79		
5				87	76	81	75	162	95	85		
6				83	78	85	92	150	94	89		
7				81	81	95	99	173	88	90		
8				82	82	105	108	180	76	97		
9				80	91	85	136	176	69	100		
10				77	93	70	142	170	74	96		
11				76	144	69	146	168	84	95		
12				76	103	79	131	166	83	95		
13				78	79	126	109	175	77	98		
14				80	85	95	109	179	74	106		
15				84	77	60	115	189	66	124		
16				93	78	64	107	178	55	124		
17				92	118	70	98	168	60	124		
18				99	127	62	117	169	59	124		
19				122	112	66	131	154	52	129		
20				135	101	65	137	148	51	132		
21				127	104	33	151	146	52	127		
22				114	93	63	167	146	60	126		
23				109	78	79	212	149	62	126		
24				111	60	102	213	142	68	128		
25				113	48	108	226	137	69	129		
26				105	31	122	245	127	71	128		
27				94	33	161	210	106	67	129		
28				93	38	137	210	98	65	131		
29				94	70	104	212	95	68	125		
30				89	87	94	212	100	68	125		
31				---	98	---	202	105	---	126		
TOTAL				2,808	2,592	2,757	4,430	4,825	2,194	3,406		
MEAN				93.6	83.6	91.9	143	156	73.1	110		
MAX				135	144	161	245	211	106	132		
MIN				76	31	33	73	95	51	70		
AC-FT				5,570	5,140	5,470	8,790	9,570	4,350	6,760		

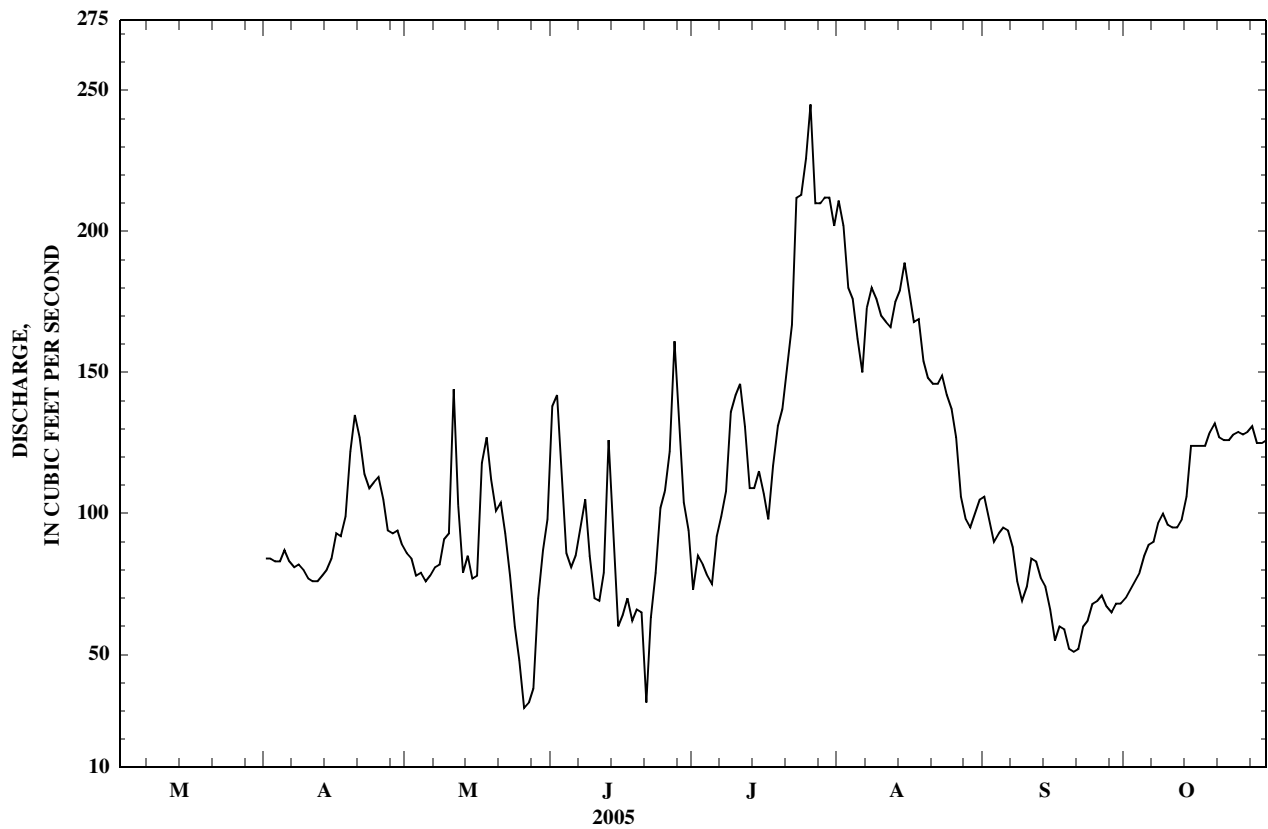
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 -1971 AND SEASONS 2002 - 2005*

MEAN	372	385	388	357	268	335	230	218	282	268	457	429
MAX	462	539	606	1,078	742	1,157	493	475	796	680	700	613
(WY)	(1971)	(1971)	(1969)	(1969)	(1969)	(1964)	(1971)	(1965)	(1965)	(1966)	(1966)	(1966)
MIN	221	218	204	90.0	83.6	91.9	67.1	114	65.1	81.7	230	226
(WY)	(1967)	(1967)	(1967)	(2004)	(2005)	(2005)	(1951)	(2004)	(2004)	(2005)	(1965)	(1967)

06017000 BEAVERHEAD RIVER AT DILLON, MT—Continued

SUMMARY STATISTICS	FOR 2005 SEASON		SEASONS 2002 - 2005		WATER YEARS 1951 - 1971*	
ANNUAL MEAN					370	
HIGHEST ANNUAL MEAN					523	1971
LOWEST ANNUAL MEAN					183	1967
HIGHEST DAILY MEAN	245	Jul 26	288	Jul 21, 2003	1,700	Jun 21, 1964
LOWEST DAILY MEAN	31	May 26	31	May 26, 2005	18	Jun 19, 1952
ANNUAL SEVEN-DAY MINIMUM					32	Jul 27, 1951
MAXIMUM PEAK FLOW	256	Jul 26	317	Jul 21, 2003	1,740	Jun 21, 1964
MAXIMUM PEAK STAGE	4.17	Jul 26	4.56	Jul 21, 2003	6.63	Jun 21, 1964
INSTANTANEOUS LOW FLOW					a18	Jun 19, 1952
ANNUAL RUNOFF (AC-FT)					267,800	
10 PERCENT EXCEEDS					615	
50 PERCENT EXCEEDS					357	
90 PERCENT EXCEEDS					134	

*--During periods of operation [October 1950 to September 1952, September 1963 to September 1971, April 2002 to current year (seasonal records only)].
 a--Observed.



06018500 BEAVERHEAD RIVER NEAR TWIN BRIDGES, MT

LOCATION.--Lat 45°23'01", long 112°27'07" (NAD 27), in SW¹/₄NW¹/₄SE¹/₄ sec.22, T.5 S., R.7 W., Madison County, Hydrologic Unit 10020002, on left bank at downstream side of bridge on State Highway 41, 11.5 mi upstream from Ruby River, 12.7 mi southwest of Twin Bridges, 14.5 mi northeast of Dillon, and at river mile 2,430.4.

DRAINAGE AREA.--3,619 mi².

PERIOD OF RECORD.--August 1935 to current year. Prior to October 1968, published as "at Blaine."

REVISED RECORDS.--WSP 1309: 1938(M), 1945(M). WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,809.15 ft (NGVD 29). Prior to Feb. 17, 1949, nonrecording gage at bridge 0.5 mi upstream at different elevation. Feb. 17, 1949, to June 28, 1951, nonrecording gage at present site and elevation.

REMARKS.--Records good. Flow partly regulated by Lima Reservoir (station number 06012000) and Clark Canyon Reservoir (station number 06015300) since August 1964. Diversions upstream from station for irrigation of about 135,400 acres of which about 5,000 acres are irrigated by imported water from Birch and Willow Creeks and of which about 9,200 acres lies downstream from station including 600 acres in Ruby River drainage. Bureau of Reclamation satellite telemeter at station. Several unpublished observations of water temperature and conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	125	208	e180	e170	208	207	138	138	98	93	139	84
2	131	195	202	e180	207	209	139	134	148	83	127	102
3	128	203	193	e180	208	208	131	119	137	89	116	82
4	124	210	193	e180	212	206	131	99	101	83	104	80
5	118	206	196	e170	212	206	123	101	97	71	106	95
6	115	204	197	e170	204	206	120	99	100	63	99	101
7	118	205	207	e170	203	208	110	99	117	55	108	99
8	114	201	206	e180	201	208	114	112	112	48	114	86
9	109	202	206	e180	201	195	113	126	129	62	124	69
10	107	202	202	e180	198	191	114	149	129	92	117	81
11	109	208	210	e190	201	189	111	181	119	101	106	105
12	108	208	216	e190	205	187	111	221	120	110	88	103
13	113	207	217	e180	202	189	99	167	166	86	99	119
14	122	200	215	e180	203	188	105	148	198	74	107	136
15	120	202	214	e180	194	182	115	132	152	65	120	140
16	127	205	214	e200	197	185	136	129	116	56	101	125
17	136	205	213	244	204	167	135	148	114	35	93	108
18	139	202	e210	253	220	159	150	172	111	23	97	106
19	143	209	e210	219	199	160	192	167	101	23	94	108
20	150	206	e200	212	197	157	241	149	102	26	90	95
21	160	201	e190	212	199	161	228	141	76	25	91	104
22	166	196	e180	217	195	147	208	137	60	22	95	106
23	171	214	e160	220	201	148	187	124	64	32	104	116
24	170	220	e180	219	201	152	183	101	68	68	107	142
25	169	226	194	215	205	155	182	89	57	78	107	162
26	170	228	199	217	211	150	175	75	65	122	96	152
27	171	e200	196	216	211	149	161	53	85	136	89	156
28	177	e200	e190	220	212	151	158	46	127	117	89	146
29	211	e190	201	216	---	148	155	49	123	124	81	134
30	214	e180	210	211	---	151	149	59	108	125	73	140
31	217	---	e190	210	---	142	---	68	---	124	78	---
TOTAL	4,452	6,143	6,191	6,181	5,711	5,461	4,414	3,732	3,300	2,311	3,159	3,382
MEAN	144	205	200	199	204	176	147	120	110	74.5	102	113
MAX	217	228	217	253	220	209	241	221	198	136	139	162
MIN	107	180	160	170	194	142	99	46	57	22	73	69
AC-FT	8,830	12,180	12,280	12,260	11,330	10,830	8,760	7,400	6,550	4,580	6,270	6,710

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2005, BY WATER YEAR (WY)

MEAN	436	540	476	402	416	465	466	307	377	275	243	374
MAX	1,328	1,065	852	725	707	799	1,251	1,117	1,615	1,586	1,581	1,691
(WY)	(1985)	(1985)	(1984)	(1976)	(1984)	(1972)	(1969)	(1984)	(1984)	(1984)	(1984)	(1984)
MIN	32.4	205	200	173	191	176	95.5	40.8	24.2	28.0	25.8	28.1
(WY)	(1938)	(2005)	(2005)	(1937)	(2004)	(2005)	(1961)	(1937)	(1940)	(1937)	(1937)	(1937)

06018500 BEAVERHEAD RIVER NEAR TWIN BRIDGES, MT—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1935 - 2005	
ANNUAL TOTAL	51,035		54,437			
ANNUAL MEAN	139		149		398	
HIGHEST ANNUAL MEAN					1,097	1984
LOWEST ANNUAL MEAN					142	2004
HIGHEST DAILY MEAN	228	Mar 20	253	Jan 18	3,130	Jun 12, 1944
LOWEST DAILY MEAN	38	Sep 12	22	Jul 22	7.0	May 25, 1940
ANNUAL SEVEN-DAY MINIMUM	49	Sep 10	27	Jul 17	8.7	May 13, 1954
MAXIMUM PEAK FLOW			a263	Feb 17	d3,130	Jun 12, 1944
MAXIMUM PEAK STAGE			b4.46	Dec 18	7.88	Jun 25, 1984
INSTANTANEOUS LOW FLOW			c17	Jul 18	f7.0	May 25, 1940
ANNUAL RUNOFF (AC-FT)	101,200		108,000		288,300	
10 PERCENT EXCEEDS	206		210		713	
50 PERCENT EXCEEDS	136		149		378	
90 PERCENT EXCEEDS	66		83		96	

SUMMARY STATISTICS	WATER YEARS 1935 - 1964*		WATER YEARS 1965 - 2005**	
ANNUAL MEAN	391		403	
HIGHEST ANNUAL MEAN	642	1984	1,097	1984
LOWEST ANNUAL MEAN	170	1937	142	2004
HIGHEST DAILY MEAN	3,130	Jun 12, 1944	2,180	Jun 25, 1984
LOWEST DAILY MEAN	7.0	May 25, 1940	22	Jul 22, 2005
ANNUAL SEVEN-DAY MINIMUM			27	Jul 17, 2005
MAXIMUM PEAK FLOW	3,130	Jun 12, 1944	2,200	Jun 25, 1984
MAXIMUM PEAK STAGE	6.76	Jun 12, 1944	7.88	Jun 25, 1984
INSTANTANEOUS LOW FLOW	f7.0	May 25, 1940	c17	Jul 18, 2005
ANNUAL RUNOFF (AC-FT)	283,100		291,900	
10 PERCENT EXCEEDS	648		772	
50 PERCENT EXCEEDS	410		346	
90 PERCENT EXCEEDS	60		115	

*--Prior to construction of Clark Canyon Dam.

**--After construction of Clark Canyon Dam.

a--Gage height, 4.30 ft.

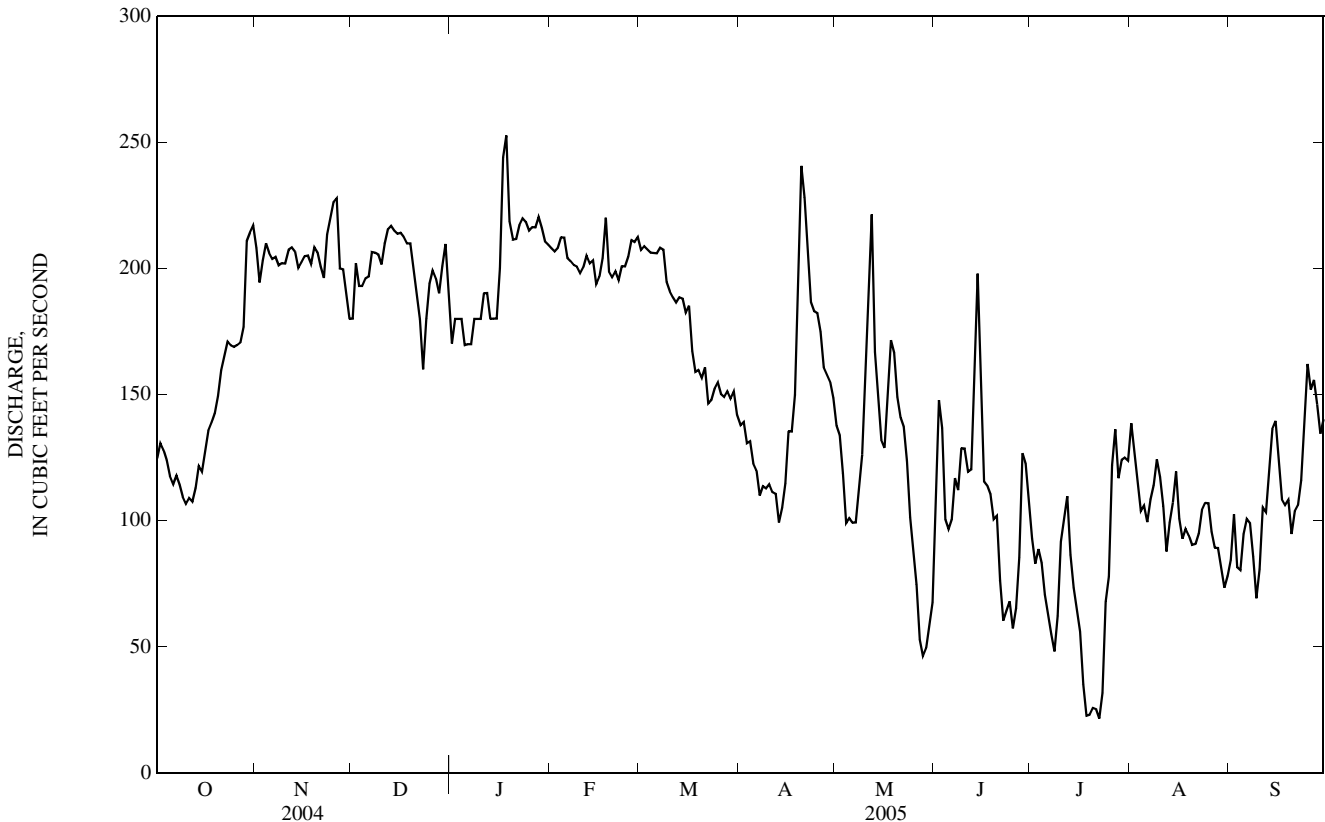
b--Backwater from ice.

c--Gage height, 2.94 ft.

d--Observed, gage height, 6.76 ft, site and datum then in use.

e--Estimated.

f--Observed, site and datum then in use.



06019500 RUBY RIVER ABOVE RESERVOIR, NEAR ALDER, MT

LOCATION.--Lat 47°11'57", long 112°05'44" (NAD 27), in NW¹/₄SE¹/₄SW¹/₄ sec.30, T.7 S., R.4 W., Madison County, Hydrologic Unit 10020003, on right bank at county road bridge, 0.7 mi downstream from Mormon Creek, 4.2 mi upstream from Ruby Dam, 9.3 mi south of Alder, and at river mile 52.1.

DRAINAGE AREA.--534 mi².

PERIOD OF RECORD.--May 1938 to current year. Monthly discharge only for May 1938, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1938(M). WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,400 ft (NGVD 29). Prior to Oct. 1, 1938, nonrecording gage at bridge 2.0 mi upstream at different elevation. Oct. 1, 1938, to Aug. 5, 1955, water-stage recorder at site 2.2 mi upstream at different elevation. Aug. 6, 1955 to Sept. 30, 1997, water-stage recorder 2.3 mi upstream at different elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversion for irrigation of about 3,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several unpublished observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	118	107	95	94	92	91	88	144	456	325	153	118
2	115	105	97	e90	89	89	91	146	472	303	147	119
3	114	116	97	e85	92	88	95	157	417	286	157	118
4	114	117	96	e90	91	89	107	173	424	273	145	114
5	115	111	100	e85	92	89	106	199	405	261	137	115
6	114	115	96	e80	85	90	103	259	482	244	136	116
7	113	113	96	e90	91	90	114	333	543	239	137	112
8	115	113	96	e95	90	91	149	346	613	240	143	109
9	112	116	97	e90	90	93	132	399	592	234	145	106
10	115	115	98	e85	88	98	113	436	522	233	145	111
11	119	115	101	e90	88	96	106	376	496	287	140	124
12	116	112	104	e90	92	100	108	298	639	239	137	120
13	116	107	101	e90	92	91	119	258	667	221	145	121
14	116	105	100	e85	91	89	141	257	560	212	140	129
15	114	106	100	e85	87	92	120	323	590	204	130	130
16	113	111	98	e90	e85	91	117	457	652	195	117	121
17	113	109	97	e95	e85	90	122	904	670	188	116	123
18	117	103	99	e100	e86	84	156	584	728	187	114	134
19	120	106	98	95	88	92	144	556	631	169	115	127
20	118	104	96	95	90	96	132	817	536	159	112	122
21	119	93	90	94	91	95	125	846	516	145	110	121
22	118	93	e85	94	89	97	118	714	543	147	111	123
23	117	102	e80	93	88	97	124	811	514	151	118	126
24	119	105	e85	93	89	88	145	724	514	152	115	133
25	110	107	e90	92	90	89	192	528	454	155	112	135
26	114	106	e92	92	89	89	210	449	415	156	112	129
27	120	95	e92	93	88	88	227	421	402	153	109	126
28	121	99	93	93	89	92	186	427	382	150	109	123
29	133	93	92	92	---	88	160	459	396	146	108	122
30	124	85	94	92	---	90	155	420	355	144	115	122
31	119	---	95	88	---	85	---	380	---	144	121	---
TOTAL	3,621	3,184	2,950	2,815	2,497	2,827	4,005	13,601	15,586	6,342	3,951	3,649
MEAN	117	106	95.2	90.8	89.2	91.2	134	439	520	205	127	122
MAX	133	117	104	100	92	100	227	904	728	325	157	135
MIN	110	85	80	80	85	84	88	144	355	144	108	106
AC-FT	7,180	6,320	5,850	5,580	4,950	5,610	7,940	26,980	30,910	12,580	7,840	7,240

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2005, BY WATER YEAR (WY)

MEAN	122	122	111	103	102	110	164	416	469	193	120	115
MAX	185	177	170	158	135	181	288	1,010	1,117	482	235	171
(WY)	(1984)	(1984)	(1948)	(1948)	(1971)	(1960)	(1962)	(1984)	(1984)	(1975)	(1975)	(1984)
MIN	83.4	87.8	80.3	69.8	79.2	84.3	94.6	187	136	74.8	59.3	73.3
(WY)	(1940)	(1940)	(1940)	(1943)	(1942)	(1945)	(1945)	(2002)	(1987)	(1961)	(1940)	(1988)

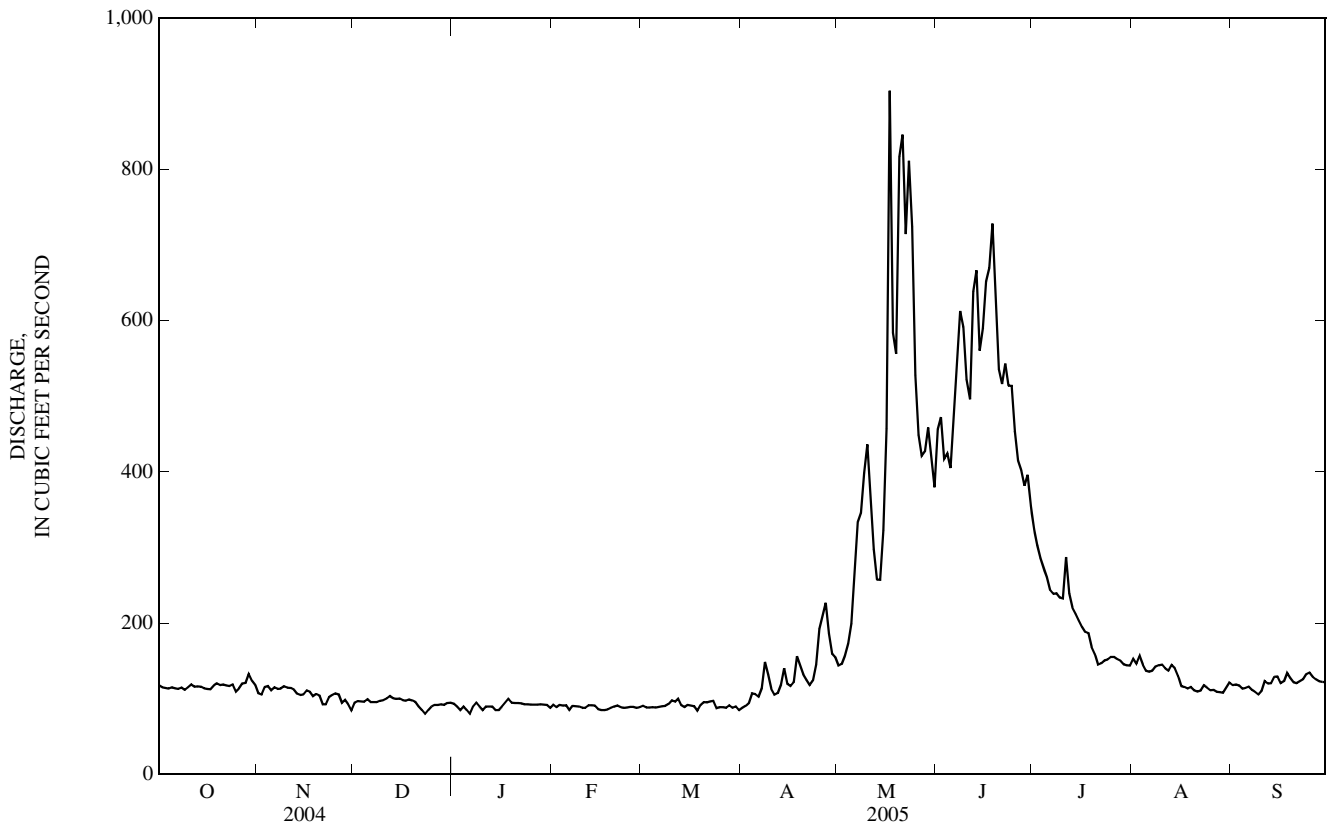
06019500 RUBY RIVER ABOVE RESERVOIR, NEAR ALDER, MT—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1938 - 2005	
ANNUAL TOTAL	48,970		65,028			
ANNUAL MEAN	134		178		179	
HIGHEST ANNUAL MEAN					336	1984
LOWEST ANNUAL MEAN					119	1961
HIGHEST DAILY MEAN	604	Jun 11	904	May 17	2,940	May 16, 1984
LOWEST DAILY MEAN	78	Aug 14	80	Dec 23	35	Jan 23, 1962
ANNUAL SEVEN-DAY MINIMUM	83	Aug 10	87	Feb 14	38	Aug 14, 1992
MAXIMUM PEAK FLOW			1,070	May 17	3,810	May 16, 1984
MAXIMUM PEAK STAGE			5.15	May 17	a6.24	May 16, 1984
INSTANTANEOUS LOW FLOW					b34	Aug 14, 1992
ANNUAL RUNOFF (AC-FT)	97,130		129,000		129,700	
10 PERCENT EXCEEDS	233		425		350	
50 PERCENT EXCEEDS	108		115		119	
90 PERCENT EXCEEDS	90		89		90	

a--Site and datum then in use.

b--Gage height, 1.99 ft, site and datum then in use.

c--Estimated.



06020600 RUBY RIVER BELOW RESERVOIR, NEAR ALDER, MT

LOCATION.--Lat 45°14'32", long 112°06'36" (NAD 27), in SE¹/₄SE¹/₄NE¹/₄ sec.8, T.7 S., R.4 W., Madison County, Hydrologic Unit 10020003, on right bank 0.2 mi downstream from Ruby Dam, 5.7 mi south of Alder, and at river mile 47.8.

DRAINAGE AREA.--596 mi².

PERIOD OF RECORD.--December 1962 to current year.

REVISED RECORDS.--1985 (M).

GAGE.--Water-stage recorder. Elevation of gage is 5,286.63 ft (NGVD 29) (levels by U.S. Army Corps of Engineers).

REMARKS.--Records good. Flow regulated by Ruby River Reservoir (station number 06020500). Diversions for irrigation of about 3,500 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several unpublished observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	54	43	29	30	21	33	46	448	390	393	276
2	65	50	40	29	30	21	33	46	485	356	381	267
3	57	50	38	29	30	21	33	53	455	341	380	265
4	58	50	38	29	31	21	33	59	443	315	375	264
5	59	50	38	29	31	21	33	61	437	303	381	263
6	59	50	38	29	28	21	33	111	451	288	395	261
7	60	49	38	29	25	21	33	211	518	259	398	264
8	60	49	38	29	25	21	33	295	586	250	328	265
9	61	49	39	29	25	21	33	360	588	239	288	277
10	61	44	39	29	22	21	33	414	558	233	269	282
11	61	40	39	29	21	21	34	416	529	277	262	281
12	62	41	33	29	21	21	33	367	578	272	303	281
13	62	40	28	29	21	21	34	307	645	266	323	280
14	61	41	28	29	21	21	33	261	601	272	308	278
15	61	41	28	29	21	21	33	293	572	274	312	277
16	61	41	28	29	21	21	33	361	614	251	324	276
17	60	41	28	29	21	21	33	644	640	230	322	275
18	60	41	29	29	21	21	33	695	683	263	312	273
19	60	41	29	29	21	22	33	558	677	296	310	260
20	61	41	29	29	21	22	33	686	605	332	307	250
21	61	42	29	29	21	22	33	761	555	362	307	229
22	61	42	29	29	21	22	36	726	553	390	304	202
23	61	42	28	30	21	28	39	705	540	392	301	202
24	61	42	29	30	21	34	39	705	533	398	299	202
25	61	42	29	30	21	33	38	591	512	390	297	183
26	61	42	29	30	21	33	38	499	475	387	295	168
27	61	42	29	30	21	33	42	454	459	387	294	168
28	61	41	29	30	21	33	45	435	436	386	293	168
29	61	41	29	30	---	33	45	439	433	385	291	168
30	61	42	29	30	---	33	45	437	423	382	290	168
31	61	---	29	30	---	33	---	419	---	382	288	---
TOTAL	1,898	1,321	1,006	908	655	759	1,062	12,415	16,032	9,948	9,930	7,273
MEAN	61.2	44.0	32.5	29.3	23.4	24.5	35.4	400	534	321	320	242
MAX	78	54	43	30	31	34	45	761	683	398	398	282
MIN	57	40	28	29	21	21	33	46	423	230	262	168
AC-FT	3,760	2,620	2,000	1,800	1,300	1,510	2,110	24,630	31,800	19,730	19,700	14,430

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2005, BY WATER YEAR (WY)

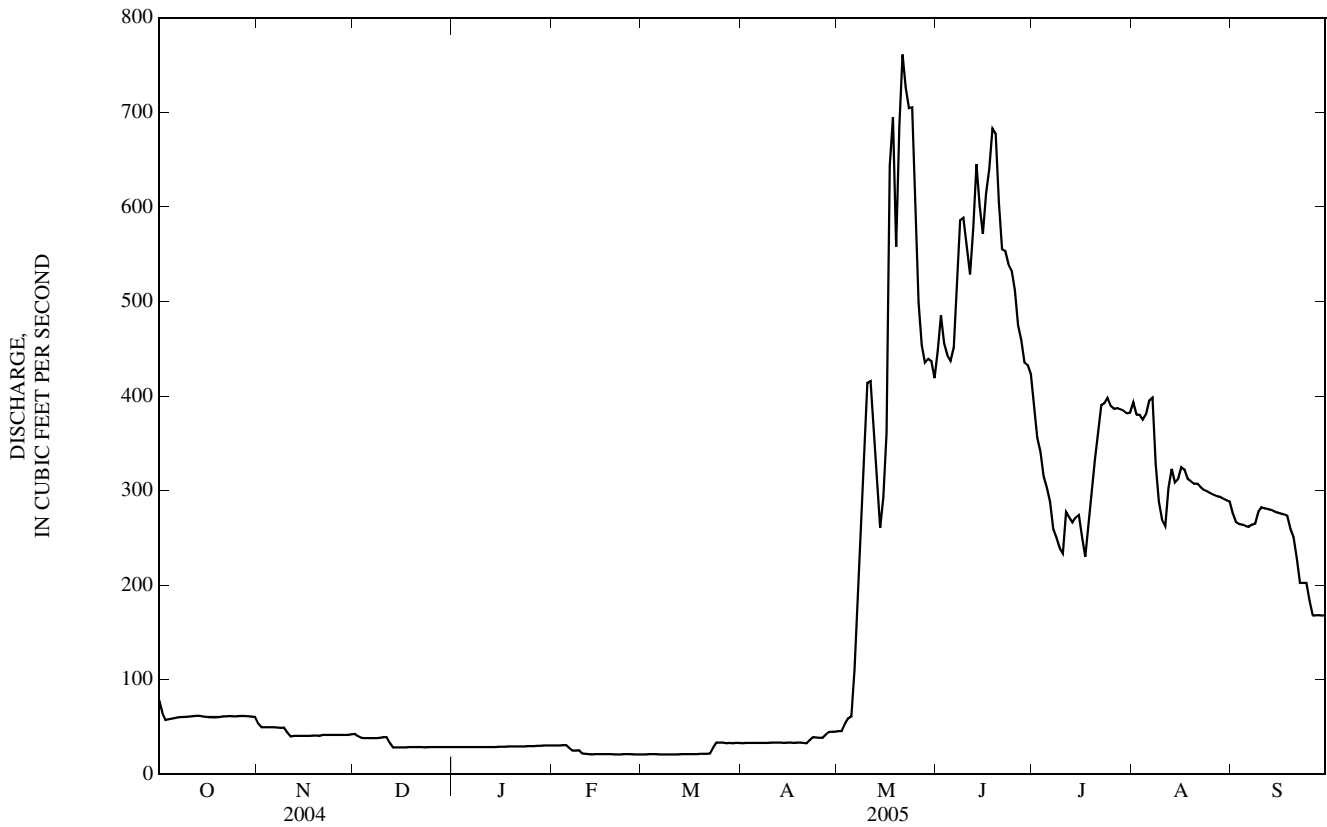
	118	71.7	53.6	49.5	44.7	55.4	87.9	416	582	349	352	247
MEAN	244	222	142	139	92.4	174	192	1,035	1,209	559	473	399
(WY)	(1965)	(1985)	(1984)	(1984)	(1971)	(1998)	(1965)	(1984)	(1984)	(1975)	(1970)	(1975)
MIN	38.0	28.9	23.6	20.9	21.4	19.3	30.5	189	281	197	222	59.4
(WY)	(1986)	(2003)	(2003)	(1989)	(1991)	(1991)	(1991)	(1963)	(2004)	(1992)	(1985)	(1994)

06020600 RUBY RIVER BELOW RESERVOIR, NEAR ALDER, MT—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1963 - 2005	
ANNUAL TOTAL	50,204		63,207			
ANNUAL MEAN	137		173		204	
HIGHEST ANNUAL MEAN					352	1984
LOWEST ANNUAL MEAN					128	2002
HIGHEST DAILY MEAN	507	May 12	761	May 21	2,500	May 17, 1984
LOWEST DAILY MEAN	27	Jan 1	21	Feb 11	15	Feb 17, 1995
ANNUAL SEVEN-DAY MINIMUM	27	Jan 1	21	Feb 11	16	Jan 3, 1989
MAXIMUM PEAK FLOW			822	May 21	3,010	May 16, 1984
MAXIMUM PEAK STAGE			4.90	May 21	a8.52	May 16, 1984
INSTANTANEOUS LOW FLOW					b1.4	Dec 5, 1974
ANNUAL RUNOFF (AC-FT)	99,580		125,400		147,800	
10 PERCENT EXCEEDS	328		445		448	
50 PERCENT EXCEEDS	54		53		108	
90 PERCENT EXCEEDS	28		22		31	

a--From floodmark.

b--Dam closure, result of discharge measurement. May have been less on Oct. 1, 2004, but discharge was not verified.



06024450 BIG HOLE RIVER BELOW BIG LAKE CREEK, AT WISDOM, MT

LOCATION.--Lat 45°37'07", long 113°27'25" (NAD 27), in SW¹/₄SW¹/₄NE¹/₄ sec.33, T.2 S., R.15 W., Beaverhead County, Hydrologic Unit 10020004, on downstream side of State Highway 43 bridge, 0.3 mi west of Wisdom, 0.6 mi downstream from Big Lake Creek, and at river mile 116.0.

DRAINAGE AREA.--575 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1988 to current year (seasonal records only).

REVISED RECORDS.--WDR--95-1: 1991 (M).

GAGE.--Water-stage recorder. Elevation of gage is 6,040 ft (NGVD 29).

REMARKS.--Seasonal water-discharge records good. Diversions for irrigation of about 66,900 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2005
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				e90	65	331	157	42	19	32		
2				e100	59	658	110	44	19	41		
3				111	58	535	82	51	19	50		
4				111	65	388	67	54	19	54		
5				97	69	276	57	44	18	52		
6				95	79	233	56	38	18	47		
7				115	96	335	59	37	17	47		
8				144	93	345	64	42	16	48		
9				134	113	277	68	49	15	53		
10				109	161	254	81	56	18	52		
11				95	220	202	109	50	21	54		
12				93	194	381	99	45	22	67		
13				91	127	835	83	42	24	67		
14				95	81	490	80	42	25	61		
15				95	68	260	77	39	25	56		
16				108	79	212	69	33	24	53		
17				110	175	255	58	29	28	51		
18				127	233	335	57	27	36	49		
19				115	250	325	56	27	35	48		
20				104	416	250	53	25	36	48		
21				113	440	195	55	19	30	47		
22				122	382	186	54	18	29	47		
23				102	342	202	52	20	29	46		
24				59	338	200	51	21	34	45		
25				62	250	172	49	21	43	45		
26				66	175	161	51	23	44	45		
27				89	127	197	49	22	40	45		
28				98	114	242	42	22	36	50		
29				100	98	279	46	20	34	51		
30				86	98	230	47	18	33	51		
31				---	111	---	42	19	---	47		
TOTAL				3,036	5,176	9,241	2,080	1,039	806	1,549		
MEAN				101	167	308	67.1	33.5	26.9	50.0		
MAX				144	440	835	157	56	44	67		
MIN				59	58	161	42	18	15	32		
AC-FT				6,020	10,270	18,330	4,130	2,060	1,600	3,070		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1988 - 2005

MEAN	359	449	532	203	59.7	38.6	65.1
MAX	614	1,476	1,797	739	215	95.4	139
(WY)	(1996)	(1997)	(1997)	(1995)	(1997)	(1997)	(1998)
MIN	86.5	45.4	68.9	21.4	1.11	2.42	23.5
(WY)	(2004)	(2004)	(1994)	(1988)	(1988)	(1988)	(2004)

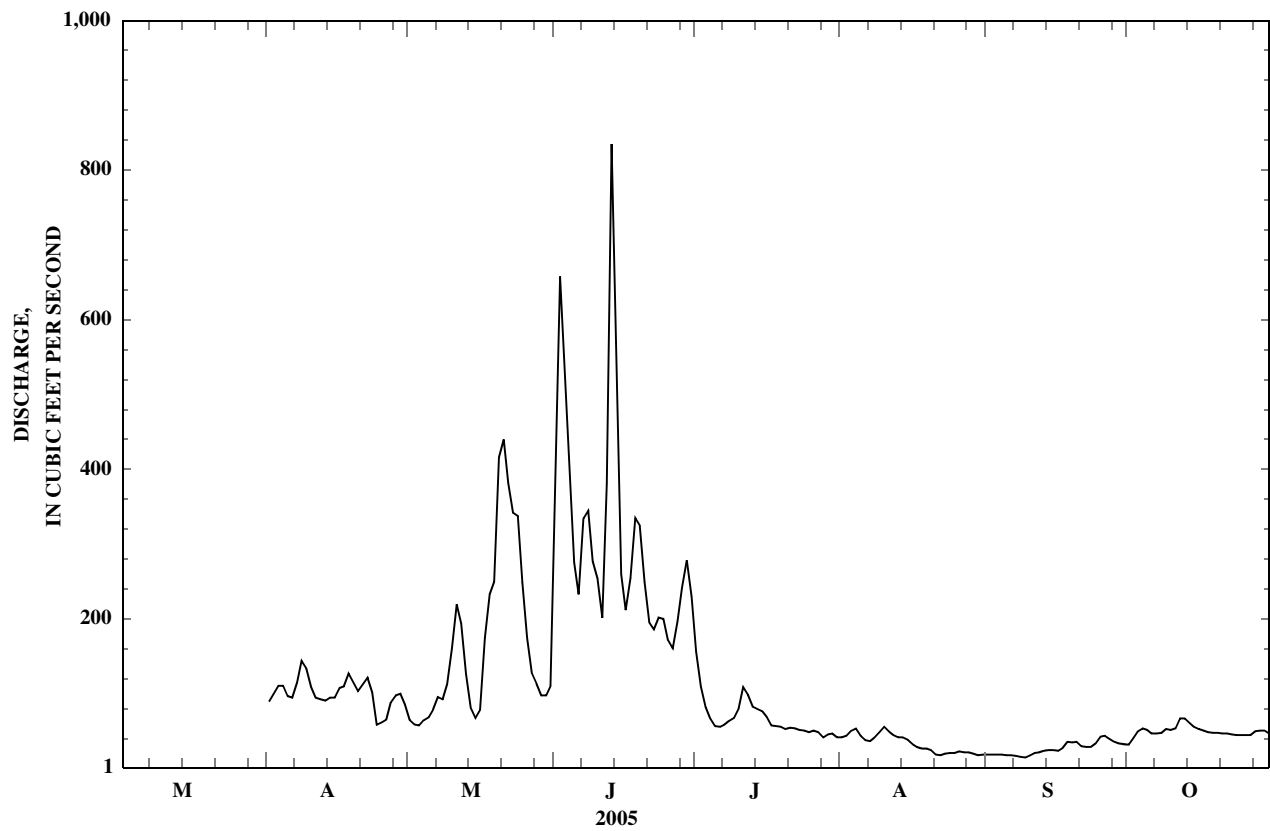
SUMMARY STATISTICS

	FOR 2005 SEASON		SEASONS 1988 - 2005	
HIGHEST DAILY MEAN	835	Jun 13	3,830	Jun 7 1991
LOWEST DAILY MEAN	15	Sep 9	b.00	Aug 28 1988
MAXIMUM PEAK FLOW	918	Jun 13	4,200	Jun 6 1995
MAXIMUM PEAK STAGE	4.51	Jun 13	6.37	Jun 6 1995
INSTANTANOUS LOW FLOW	a14	Sep 10	b.00	Aug 28 1988

a--Gage height, 2.35 ft.

b--No flow many days in August and September 1988.

c--Estimated.



WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: May 1988 to current year (seasonal records only).

INSTRUMENTATION.--Temperature recorder since Apr. 27, 1988.

REMARKS.--Daily water temperatures record excellent. Several unpublished observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (seasonal records): Maximum, 26.5°C, July 12, 2002, minimum, 0.0°C many days during winter period.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE (seasonal records): Maximum, 24.5°C, July 13, 21, 23, and Aug. 7; minimum, 0.0°C, Apr. 1.

06024450 BIG HOLE RIVER BELOW BIG LAKE CREEK, AT WISDOM, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	APRIL			MAY			JUNE			JULY		
1	4.0	0.0	2.0	14.5	4.0	8.5	12.5	9.0	10.5	21.0	13.5	17.0
2	5.5	0.5	3.0	13.5	5.0	9.0	10.5	9.0	9.5	20.5	13.5	17.0
3	5.5	1.5	3.0	11.5	5.5	8.5	10.0	8.0	9.0	20.0	12.0	16.0
4	4.0	1.5	2.5	12.0	5.5	9.0	16.0	7.0	11.0	22.0	12.0	17.0
5	7.5	0.5	3.5	13.0	5.5	9.0	15.0	11.0	13.0	23.0	13.5	18.0
6	10.5	1.5	6.0	14.0	7.0	10.5	11.5	9.0	10.5	22.5	14.5	18.5
7	10.0	4.0	7.0	14.5	7.0	10.5	10.5	7.5	9.0	24.0	14.5	19.0
8	8.0	4.0	6.0	13.5	8.5	11.0	11.5	8.0	9.5	22.5	15.5	19.0
9	6.5	2.5	4.5	12.0	7.5	9.0	11.5	8.0	10.0	20.0	15.5	18.0
10	8.0	1.5	4.0	10.0	5.5	7.5	16.5	9.0	12.0	17.0	14.0	15.5
11	8.5	1.5	4.5	6.5	4.5	5.5	14.5	9.5	12.0	22.0	13.0	17.0
12	8.0	2.5	5.0	9.5	3.5	6.0	11.5	9.0	10.0	24.0	14.5	19.5
13	8.0	4.0	6.0	15.5	4.5	9.5	16.0	7.0	11.0	24.5	17.0	20.5
14	8.0	1.5	4.5	15.0	7.5	11.5	16.0	11.0	13.5	24.0	15.5	19.5
15	10.0	0.5	5.0	12.0	8.0	10.0	19.0	12.0	15.0	23.5	15.5	19.5
16	12.0	3.0	7.5	11.5	8.5	10.0	15.5	12.0	13.5	23.5	17.0	20.0
17	8.5	5.0	6.5	12.0	7.0	9.0	13.5	11.5	12.5	22.0	13.5	18.0
18	5.5	3.5	4.5	10.0	7.5	9.0	15.5	10.0	12.5	23.5	14.5	19.0
19	5.5	2.0	3.5	13.0	8.0	10.0	18.0	10.5	14.0	23.0	15.5	19.0
20	6.0	1.5	4.0	12.0	9.0	10.5	20.5	12.0	16.0	23.5	15.0	19.0
21	8.5	1.5	5.0	14.5	8.0	11.0	20.5	13.5	17.0	24.5	15.0	19.5
22	13.0	4.0	8.0	15.5	10.5	12.5	20.5	13.5	17.0	22.5	17.0	20.0
23	11.0	5.5	8.5	16.0	8.5	12.0	21.5	14.0	17.5	24.5	16.5	20.5
24	12.5	4.0	8.0	14.0	9.5	11.5	21.0	13.5	17.0	22.5	15.0	19.0
25	14.5	5.0	9.5	15.5	7.0	11.0	19.5	14.0	16.0	21.5	15.5	18.5
26	14.5	5.0	9.5	17.5	8.0	12.5	16.5	12.5	14.5	22.5	13.0	17.5
27	10.5	3.0	6.0	19.5	9.0	14.0	15.5	12.0	13.5	23.5	14.0	18.5
28	10.0	1.5	5.0	20.5	10.5	15.0	15.0	11.5	13.0	19.5	14.5	16.0
29	9.0	1.5	5.5	18.5	11.0	14.5	15.0	12.0	13.5	20.0	12.0	16.0
30	11.0	2.5	6.5	19.0	9.5	14.0	20.0	11.0	15.0	22.5	14.0	18.5
31	---	---	---	14.0	9.5	12.0	---	---	---	23.5	16.5	19.0
MONTH	14.5	0.0	5.5	20.5	3.5	10.5	21.5	7.0	13.0	24.5	12.0	18.5
	AUGUST			SEPTEMBER								
1	22.5	15.0	18.5	19.0	9.0	14.0						
2	23.0	15.5	19.0	19.0	10.0	14.5						
3	23.0	14.5	19.0	18.5	11.0	15.0						
4	23.5	14.5	19.0	19.0	10.5	14.5						
5	24.0	15.5	20.0	18.0	10.5	14.5						
6	23.5	15.5	19.0	19.5	9.5	14.0						
7	24.5	15.0	19.0	19.0	10.5	14.5						
8	21.5	16.0	18.0	19.0	10.0	14.5						
9	22.5	15.0	18.5	16.5	11.0	13.5						
10	21.0	14.5	18.0	14.0	8.0	11.0						
11	22.0	14.5	18.5	14.0	6.5	10.0						
12	20.0	13.5	16.5	11.5	6.5	9.0						
13	19.5	12.5	15.0	12.0	8.0	9.5						
14	21.0	11.5	16.0	15.0	6.0	10.0						
15	22.0	12.5	17.0	15.0	8.5	11.5						
16	21.0	13.5	17.0	14.0	8.5	11.0						
17	19.0	13.0	16.0	11.5	9.0	10.0						
18	19.5	12.5	16.0	12.0	8.5	9.5						
19	21.0	11.5	16.0	14.5	6.0	10.0						
20	22.0	12.0	17.0	15.5	7.5	11.5						
21	23.5	13.0	18.0	15.0	9.0	11.5						
22	21.0	14.5	17.5	14.0	7.0	10.5						
23	19.5	12.5	16.0	15.5	9.5	11.5						
24	18.0	11.0	14.5	10.5	7.5	9.0						
25	19.5	9.5	14.0	13.5	6.5	9.5						
26	19.0	10.5	14.5	14.0	6.0	10.0						
27	20.5	11.0	15.5	13.5	7.5	10.0						
28	21.5	11.5	16.5	13.5	6.0	9.5						
29	19.5	12.0	16.0	13.0	6.0	9.5						
30	15.5	12.0	13.5	13.5	9.0	11.0						
31	18.5	8.0	13.0	---	---	---						
MONTH	24.5	8.0	17.0	19.5	6.0	11.5						

06024540 BIG HOLE RIVER BELOW MUDD CREEK, NEAR WISDOM, MT

LOCATION.--Lat 45°48'27", long 113°18'45" (NAD 27), in SE¹/₄ SW¹/₄ NW¹/₄ sec.26, T.1 N., R.14 W., Beaverhead County, Hydrologic Unit 10020004, on right bank at bridge on Montana Highway 43, 0.5 mi downstream from Mudd Creek, 15.0 mi northeast of Wisdom, 17.3 mi west of Wise River, and at river mile 91.6.

DRAINAGE AREA.--1,267 mi².

PERIOD OF RECORD.--October 1997 to current year (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 5,880 ft (NGVD 29).

REMARKS.--Seasonal records good except those for July to October, which are fair. U.S. Geological Survey satellite telemeter at station. Several unpublished observations of water temperature and specific conductances were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2005
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				233	312	937	684	193	63	111		
2				241	294	1,460	515	198	63	147		
3				264	287	1,560	395	189	61	163		
4				275	305	1,340	326	184	59	172		
5				253	284	1,080	290	176	60	172		
6				241	300	1,040	266	160	57	166		
7				265	359	1,190	247	142	57	158		
8				333	400	1,210	228	152	55	161		
9				360	443	1,100	216	166	55	171		
10				309	640	979	225	173	81	170		
11				268	812	857	285	181	79	168		
12				255	786	1,120	299	165	82	199		
13				258	665	1,650	268	153	87	203		
14				279	573	1,650	237	150	89	192		
15				272	548	1,090	234	146	90	178		
16				278	600	875	221	134	84	171		
17				297	894	989	200	119	98	164		
18				327	1,170	1,090	192	107	129	158		
19				327	1,220	1,080	189	105	132	154		
20				306	1,450	915	178	98	121	155		
21				295	1,620	731	170	93	114	154		
22				293	1,490	642	174	85	124	150		
23				303	1,350	591	181	78	109	149		
24				296	1,280	548	174	79	116	145		
25				307	1,090	502	172	75	133	142		
26				342	953	580	181	79	144	142		
27				386	813	636	187	78	143	146		
28				411	734	806	179	77	129	164		
29				368	671	832	177	76	119	172		
30				348	619	820	201	69	111	169		
31				---	619	---	203	53	---	161		
TOTAL				8,990	23,581	29,900	7,694	3,933	2,844	5,027		
MEAN				300	761	997	248	127	94.8	162		
MAX				411	1,620	1,650	684	198	144	203		
MIN				233	284	502	170	53	55	111		
AC-FT				17,830	46,770	59,310	15,260	7,800	5,640	9,970		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1998 - 2005

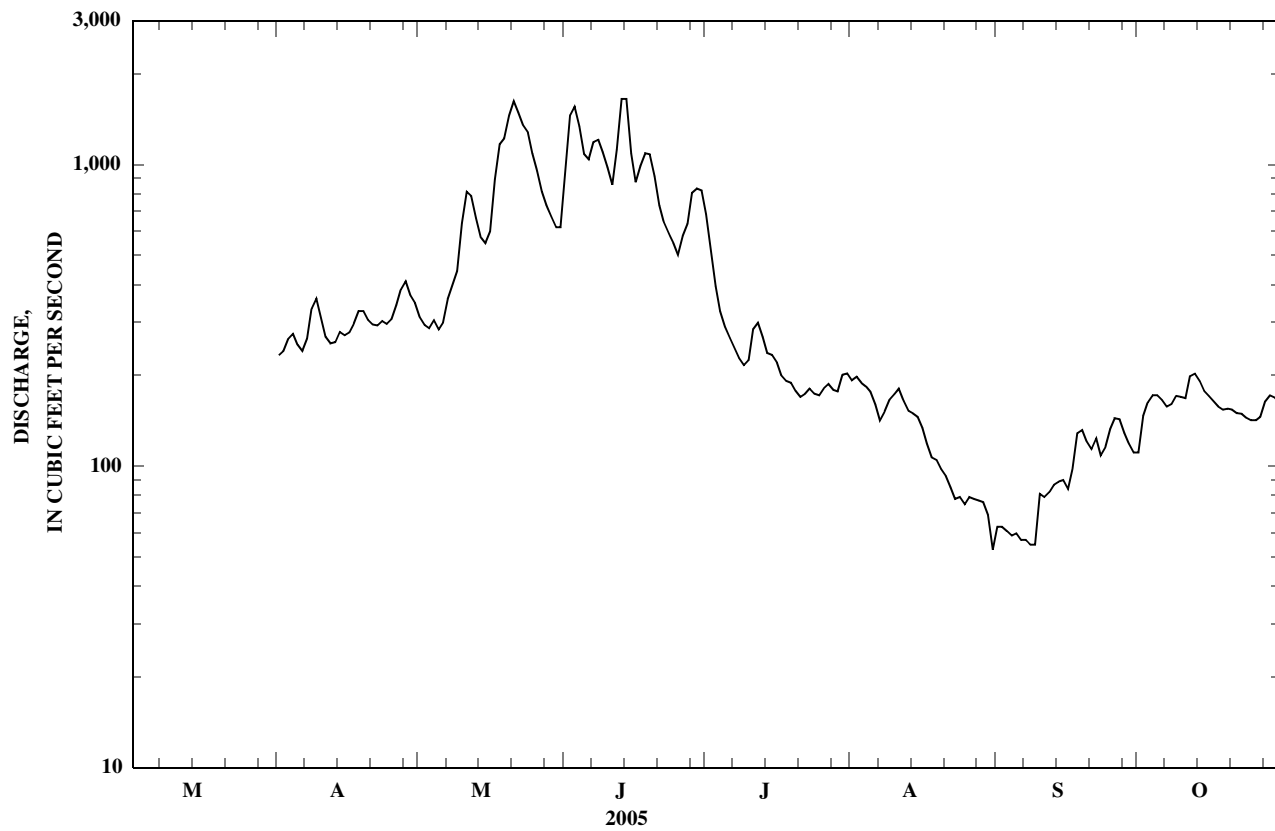
MEAN	734	1,153	1,297	336	123	116	171
MAX	1,086	2,306	2,272	961	244	209	258
(WY)	(2003)	(1998)	(1999)	(1998)	(1998)	(2004)	(1998)
MIN	300	670	506	113	48.5	75.6	104
(WY)	(2005)	(2004)	(2000)	(2000)	(2000)	(2000)	(2004)

SUMMARY STATISTICS

	FOR 2005 SEASON		SEASONS 1998 - 2005	
HIGHEST DAILY MEAN	1,650	Jun 13	4,810	Jun 1, 2003
LOWEST DAILY MEAN	53	Aug 31	38	Aug 28, 2000
MAXIMUM PEAK FLOW	1,840	Jun 14	4,900	Jun 1, 2003
MAXIMUM PEAK STAGE	4.22	Jun 14	5.97	Jun 1, 2003
INSTANTANEOUS LOW FLOW	a31	Aug 31	a31	Aug 31, 2005

a--Gage height, 2.31 ft.

06024540 BIG HOLE RIVER BELOW MUDD CREEK, NEAR WISDOM, MT—Continued



06025500 BIG HOLE RIVER NEAR MELROSE, MT

LOCATION.--Lat 45°31'36", long 112°42'03" (NAD 27), in SE¹/₄ SE¹/₄ SW¹/₄ sec.34, T.3 S., R.9 W., Madison County, Hydrologic Unit 10020004, on left bank 50 ft downstream from bridge, on frontage road east of Interstate 15, 0.1 mi downstream from Rock Creek, 7 mi south of Melrose, and at river mile 31.1.

DRAINAGE AREA.--2,476 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 5,032.87 ft (NGVD 29). Prior to June 14, 1927, water-stage recorder, and July 17, 1927, to Sept. 30, 1931, nonrecording gage, at site 1.7 mi upstream at different elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 136,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	496	471	e270	e260	e300	294	415	562	2,470	1,810	281	187
2	483	468	e300	e260	e310	280	429	520	2,850	1,590	306	177
3	463	502	e330	e270	e310	293	435	494	2,980	1,370	310	174
4	457	502	e360	e270	e310	296	461	487	2,810	1,200	294	169
5	459	467	e340	e260	e300	306	454	537	2,490	1,070	279	173
6	453	495	e340	e260	e290	325	429	581	2,480	965	277	176
7	440	507	e350	e270	e290	333	436	680	2,640	883	268	174
8	436	502	e360	e280	e300	371	511	805	2,530	827	265	171
9	433	508	e370	e270	e290	420	581	986	2,400	788	276	170
10	430	513	e380	e270	e280	486	566	1,220	2,190	780	299	177
11	429	513	e420	e280	e280	553	496	1,790	1,990	789	315	192
12	427	496	e410	e290	291	617	442	1,620	2,010	805	311	200
13	426	459	e400	e300	291	557	427	1,390	2,560	767	307	209
14	428	419	e400	e280	285	496	469	1,260	2,760	682	299	221
15	429	391	e400	e260	e260	464	458	1,240	2,430	622	275	221
16	430	389	e390	e280	e260	433	444	1,360	2,150	580	261	219
17	434	431	e380	e300	e265	435	475	2,100	2,350	545	245	249
18	440	440	e370	e320	271	369	528	2,390	2,820	509	223	280
19	472	386	e390	e330	269	387	550	2,590	2,660	471	214	299
20	484	400	e370	e350	284	421	525	3,110	2,400	438	206	319
21	511	320	e350	e360	275	439	496	3,290	2,250	405	199	320
22	509	e240	e340	e350	266	454	477	3,160	2,330	393	189	309
23	502	332	e250	e330	274	459	490	3,080	2,390	394	187	310
24	495	428	e220	e320	276	337	522	2,930	2,130	381	185	324
25	479	462	e240	e310	277	269	560	2,570	1,900	376	182	331
26	477	491	e260	e310	279	420	611	2,250	1,900	378	178	336
27	489	e320	e270	e310	280	418	654	2,070	1,970	359	177	339
28	499	e280	e260	e320	279	468	662	1,990	2,130	318	177	341
29	509	e260	e270	e310	---	523	627	2,010	2,110	319	175	337
30	509	e250	e280	e305	---	534	593	2,000	1,980	294	186	329
31	500	---	e270	e300	---	443	---	1,910	---	275	191	---
TOTAL	14,428	12,642	10,340	9,185	7,942	12,900	15,223	52,982	71,060	21,383	7,537	7,433
MEAN	465	421	334	296	284	416	507	1,709	2,369	690	243	248
MAX	511	513	420	360	310	617	662	3,290	2,980	1,810	315	341
MIN	426	240	220	260	260	269	415	487	1,900	275	175	169
AC-FT	28,620	25,080	20,510	18,220	15,750	25,590	30,190	105,100	140,900	42,410	14,950	14,740

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2005, BY WATER YEAR (WY)

MEAN	489	488	390	346	359	476	1,470	3,223	3,885	1,283	458	369
MAX	1,109	1,037	763	716	800	958	3,515	8,294	8,380	4,120	1,457	870
(WY)	(1947)	(1928)	(1976)	(1928)	(1971)	(1986)	(1943)	(1976)	(1965)	(1975)	(1975)	(1965)
MIN	184	255	223	143	143	247	490	1,108	814	254	87.6	114
(WY)	(1936)	(1938)	(1933)	(1937)	(1937)	(1937)	(1975)	(1977)	(1992)	(1931)	(1988)	(1988)

06025500 BIG HOLE RIVER NEAR MELROSE, MT—Continued

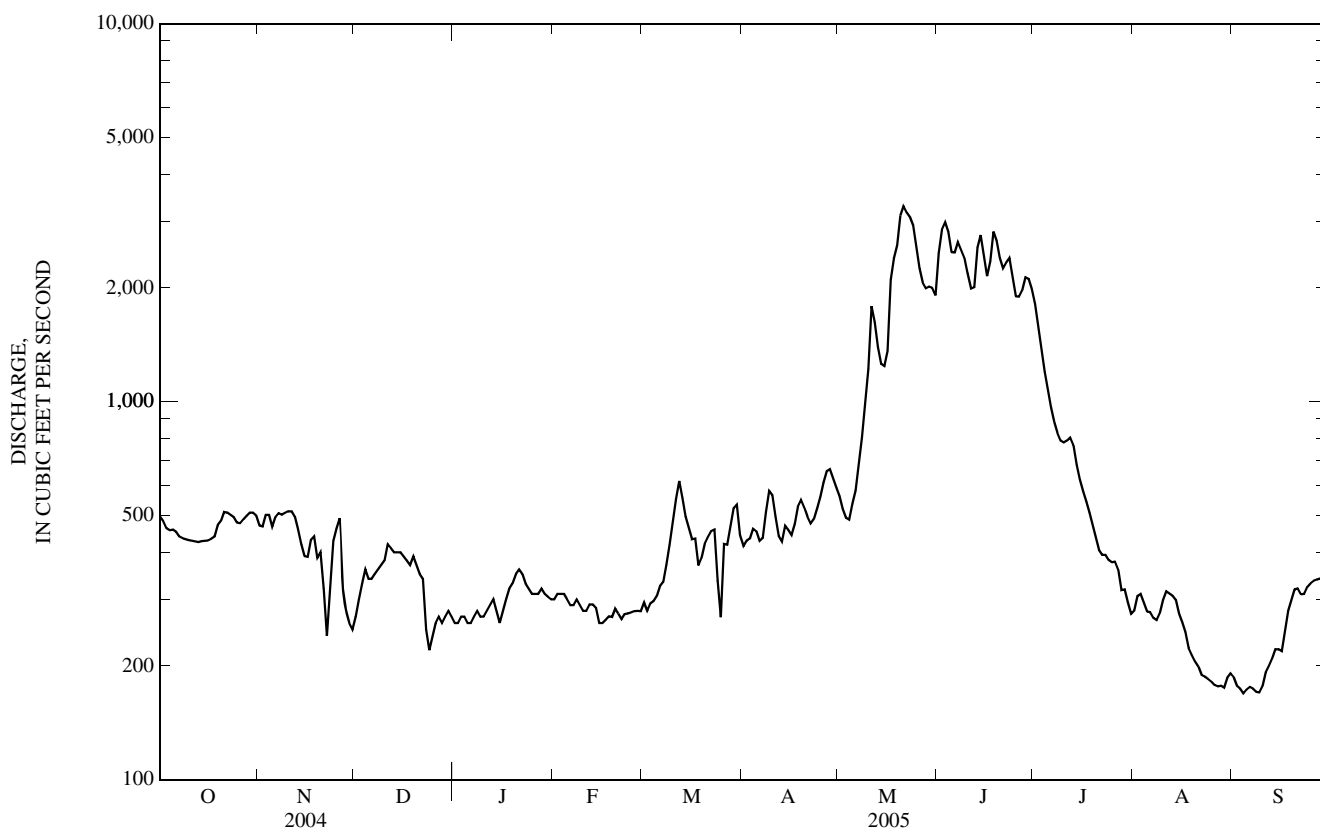
SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1924 - 2005	
ANNUAL TOTAL	217,341		243,055			
ANNUAL MEAN	594		666		1,104	
HIGHEST ANNUAL MEAN					2,024	1976
LOWEST ANNUAL MEAN					486	1931
HIGHEST DAILY MEAN	2,180	Jun 12	3,290	May 21	13,800	Jun 4, 1948
LOWEST DAILY MEAN	157	Aug 16	169	Sep 4	49	Aug 17, 1931
ANNUAL SEVEN-DAY MINIMUM	176	Aug 12	172	Sep 3	55	Aug 30, 1988
MAXIMUM PEAK FLOW			3,430	May 21	b23,000	Jun 14, 1927
MAXIMUM PEAK STAGE			3.93	May 21	14.00	Jun 14, 1927
INSTANTANEOUS LOW FLOW			a161	Sep 4	c49	Aug 17, 1931
ANNUAL RUNOFF (AC-FT)	431,100		482,100		799,600	
10 PERCENT EXCEEDS	1,260		2,010		2,940	
50 PERCENT EXCEEDS	430		405		470	
90 PERCENT EXCEEDS	270		250		255	

a--Gage height, 0.99 ft.

b--When Wise River Reservoir dam failed; maximum discharge unaffected by dam failure, 14,300 ft³/s, June 10, 1972.

c--Observed, gage height, 0.70 ft, site and datum then in use.

e--Estimated.



06025500 BIG HOLE RIVER NEAR MELROSE, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1956 to September 1957, August 1960 to September 1964, June 1977 to current year.

SUSPENDED-SEDIMENT DISCHARGE: August 1956 to September 1957, August 1960 to September 1964.

INSTRUMENTATION.--Temperature recorder since June 1977.

REMARKS--Daily water temperature record rated excellent. Several unpublished observations of specific conductance and water temperature were made during the year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 24.0°C, June 25, 1988, July 12, and 19-22, 2003; minimum, 0.0°C on many days during winter most years.

SEDIMENT CONCENTRATION (water years 1956-57, 1960-64): Maximum daily mean, 200 mg/L, June 29, 1961; minimum daily mean, 1 mg/L, on many days in 1960-64.

SEDIMENT LOAD (water years 1956-57, 1960-64): Maximum daily, 4,300 tons, June 9, 1964; minimum daily, less than 0.5 ton on several days in 1961.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 23.0°C, July 23; minimum, 0.0°C many days November through March.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	12.5	9.5	11.0	2.5	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
2	13.0	8.5	11.0	3.5	1.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0
3	13.0	9.0	11.0	4.0	2.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0
4	12.5	9.0	10.5	3.5	1.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
5	12.5	8.5	10.5	4.0	0.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0
6	12.0	8.0	10.0	3.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
7	13.0	10.0	11.5	4.5	2.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0
8	12.5	8.5	10.5	4.5	2.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0
9	11.5	9.0	10.5	5.5	3.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0
10	10.5	8.0	9.5	4.5	3.0	4.0	0.5	0.0	0.0	0.0	0.0	0.0
11	10.5	6.5	8.5	4.5	2.5	3.5	1.0	0.0	0.5	0.0	0.0	0.0
12	10.0	7.0	8.5	3.5	1.5	2.5	1.5	0.5	1.0	0.0	0.0	0.0
13	10.0	6.5	8.5	3.0	0.5	1.5	0.5	0.0	0.0	0.0	0.0	0.0
14	11.0	7.0	9.0	2.0	0.0	1.5	0.5	0.0	0.0	0.0	0.0	0.0
15	11.0	9.0	10.0	2.0	0.0	1.0	1.5	0.0	0.5	0.0	0.0	0.0
16	11.0	9.0	10.0	2.5	0.5	1.5	0.5	0.0	0.5	0.0	0.0	0.0
17	10.0	8.0	9.0	2.5	0.0	1.5	0.5	0.0	0.0	0.0	0.0	0.0
18	8.0	7.0	7.5	2.0	0.0	1.0	0.5	0.0	0.0	0.0	0.0	0.0
19	8.0	5.0	6.5	2.0	0.0	1.0	1.0	0.0	0.5	0.0	0.0	0.0
20	7.5	6.5	7.0	1.0	0.0	0.5	1.0	0.0	0.5	0.0	0.0	0.0
21	7.0	5.5	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	7.5	4.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	6.5	5.5	6.0	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
24	6.0	3.5	4.5	2.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
25	4.5	2.0	3.5	3.5	1.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0
26	5.5	3.0	4.0	2.5	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
27	6.5	4.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	5.5	4.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
29	5.0	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
30	4.0	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
31	3.5	2.0	3.0	---	---	---	0.0	0.0	0.0	0.5	0.0	0.0
MONTH	13.0	2.0	8.0	5.5	0.0	1.5	1.5	0.0	0.0	0.5	0.0	0.0

06025500 BIG HOLE RIVER NEAR MELROSE, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	0.5	0.0	0.0	5.0	2.0	3.5	7.0	3.0	5.0	11.5	5.5	8.0
2	0.5	0.0	0.0	5.0	1.5	3.5	9.5	4.5	6.5	13.0	6.5	9.5
3	0.5	0.0	0.0	5.5	1.5	3.5	8.0	5.0	7.0	12.0	8.0	10.0
4	0.5	0.0	0.0	5.5	1.5	3.5	7.0	5.0	6.0	11.5	8.5	10.0
5	0.5	0.0	0.0	5.5	1.5	3.5	8.5	3.0	5.5	13.0	9.0	11.0
6	0.5	0.0	0.0	5.5	2.0	4.0	11.0	4.5	7.5	14.5	9.5	12.0
7	0.0	0.0	0.0	5.0	2.0	3.5	11.0	7.0	9.0	13.5	10.0	12.0
8	0.5	0.0	0.0	6.5	2.5	4.5	9.5	7.0	8.0	13.5	11.0	12.0
9	0.0	0.0	0.0	7.5	3.0	5.5	9.0	5.5	7.0	11.5	9.5	10.5
10	0.0	0.0	0.0	8.0	3.5	5.5	10.0	5.0	7.5	9.5	8.0	9.0
11	0.5	0.0	0.0	6.5	2.5	4.5	9.5	5.0	7.0	8.0	6.0	7.0
12	0.5	0.0	0.0	4.5	1.5	3.0	10.0	5.5	7.5	7.5	5.0	6.0
13	1.0	0.0	0.5	3.5	0.0	2.0	10.5	6.0	8.5	11.5	6.0	8.5
14	1.0	0.0	0.5	3.5	0.5	2.0	9.0	5.5	7.5	12.5	9.0	10.5
15	0.0	0.0	0.0	4.0	0.5	2.0	10.0	4.0	7.0	12.0	10.5	11.5
16	0.0	0.0	0.0	4.0	1.0	2.5	12.0	5.5	8.5	12.0	11.0	11.5
17	0.0	0.0	0.0	4.5	2.0	3.0	11.0	8.0	9.5	11.0	9.0	10.0
18	0.0	0.0	0.0	4.0	0.0	2.0	9.5	5.5	7.0	10.0	8.5	9.5
19	0.5	0.0	0.0	5.5	2.0	3.5	7.0	5.0	5.5	13.0	9.5	11.0
20	1.5	0.0	0.5	6.0	3.5	4.5	6.5	4.0	5.5	11.0	9.5	10.5
21	3.5	1.0	2.0	6.5	4.0	5.0	7.5	4.0	6.0	11.5	8.5	10.0
22	2.5	0.0	1.0	4.5	2.0	3.5	12.0	5.0	8.0	12.5	10.0	11.5
23	2.5	0.0	1.0	4.0	0.0	2.0	12.0	7.5	10.0	13.0	10.5	12.0
24	3.0	0.0	1.5	2.0	0.0	1.0	14.0	8.0	10.5	12.5	10.5	11.5
25	3.5	0.0	2.0	3.5	0.0	1.5	14.5	8.5	11.5	12.0	9.5	11.0
26	4.0	0.0	2.0	5.0	0.0	2.5	13.0	9.0	11.0	13.5	9.5	11.5
27	4.0	0.0	2.0	5.5	3.0	4.0	11.5	7.0	9.0	15.0	11.0	12.5
28	4.0	0.0	2.0	6.5	4.0	5.0	9.0	4.5	6.5	15.5	12.0	13.5
29	---	---	---	4.5	3.0	4.0	8.5	3.0	6.0	15.0	12.5	13.5
30	---	---	---	4.5	2.0	3.0	9.0	4.0	6.5	14.5	11.0	13.0
31	---	---	---	6.5	1.0	3.5	---	---	---	12.5	10.5	11.5
MONTH	4.0	0.0	0.5	8.0	0.0	3.5	14.5	3.0	7.5	15.5	5.0	10.5
	JUNE			JULY			AUGUST			SEPTEMBER		
1	10.5	9.0	10.0	17.5	13.5	15.5	19.5	15.5	17.5	18.0	12.0	15.0
2	9.0	8.5	9.0	18.5	15.0	16.5	20.5	16.5	18.5	17.5	12.5	15.5
3	10.5	8.5	9.5	18.0	13.5	15.5	21.5	16.5	18.5	17.0	13.5	15.5
4	12.0	9.0	10.5	19.0	13.5	16.0	21.5	16.0	19.0	16.5	13.0	15.0
5	14.0	11.0	12.5	20.0	14.5	17.0	22.0	16.5	19.5	15.5	12.5	14.5
6	12.5	9.5	11.0	19.5	15.5	17.5	21.0	17.0	19.0	17.5	12.0	14.5
7	10.5	8.5	9.5	21.0	15.5	18.5	21.5	16.5	19.0	18.0	12.5	15.5
8	10.0	8.5	9.5	21.0	16.5	19.0	19.5	17.0	18.5	17.5	13.0	15.5
9	10.5	8.5	9.5	19.0	16.5	17.5	20.0	16.5	18.0	17.0	13.5	15.5
10	11.0	8.5	10.0	17.5	14.5	16.0	19.5	16.0	18.0	14.5	11.5	12.5
11	12.0	10.0	11.0	20.0	13.5	16.5	21.0	15.5	18.0	14.0	9.0	11.5
12	11.5	10.0	11.0	22.0	15.5	18.5	18.5	15.5	17.0	13.0	9.5	11.5
13	13.5	9.0	11.0	22.5	17.0	19.5	17.5	13.0	15.0	13.0	9.0	11.0
14	15.0	11.5	13.0	22.5	16.0	19.0	19.5	13.0	16.0	14.5	8.5	11.5
15	16.0	13.0	14.5	22.5	16.5	19.5	20.0	14.0	17.0	15.5	10.5	12.5
16	16.0	14.0	14.5	22.5	17.5	19.5	19.5	15.0	17.0	14.5	10.5	12.5
17	14.5	12.0	13.5	21.5	15.5	18.5	18.0	15.0	16.5	12.5	10.5	11.5
18	12.5	11.0	11.5	22.0	15.5	18.5	18.5	14.0	16.0	13.5	9.5	11.5
19	14.5	10.5	12.5	22.5	16.5	19.0	19.5	13.0	16.0	14.0	8.5	11.0
20	16.0	12.5	14.0	22.5	16.5	19.5	20.0	14.0	17.0	14.5	9.5	12.0
21	16.5	14.0	15.5	22.5	16.5	19.5	21.0	14.5	17.5	13.5	11.0	12.0
22	18.0	14.5	16.0	21.5	17.5	19.5	20.0	16.0	18.0	13.5	9.0	11.5
23	18.0	15.0	16.5	23.0	17.5	20.0	20.0	15.0	17.5	12.5	10.5	11.0
24	18.0	14.0	16.0	21.5	16.5	19.0	18.0	13.5	16.0	10.5	8.5	9.0
25	16.5	13.5	15.0	19.5	16.5	17.5	18.0	12.0	15.0	12.5	8.5	10.0
26	14.5	12.5	13.5	20.5	14.0	17.0	18.5	12.5	15.5	13.0	8.0	10.5
27	15.5	12.0	13.5	22.0	15.0	18.5	19.0	13.5	16.0	13.5	10.0	11.5
28	14.5	12.5	13.0	19.5	15.5	17.0	19.0	14.5	17.0	12.5	8.5	10.5
29	14.5	12.5	13.5	18.5	14.0	16.5	18.5	14.0	16.5	12.0	8.0	10.0
30	16.5	12.5	14.0	21.0	15.0	18.0	16.5	13.0	14.5	12.5	10.0	11.5
31	---	---	---	20.0	16.5	18.5	17.0	11.0	14.0	---	---	---
MONTH	18.0	8.5	12.5	23.0	13.5	18.0	22.0	11.0	17.0	18.0	8.0	12.5

BIG HOLE RIVER BASIN

06026210 BIG HOLE RIVER NEAR GLEN, MT

LOCATION.--Lat 45°26'26", long 112°33'20" (NAD 27), in NW¹/₄SW¹/₄SE¹/₄ sec.35, T.4 S, R.8 W, Madison County, Hydrologic Unit 10020004, on left bank 50 ft downstream from private suspension bridge, 0.1 mi downstream from Sandy Hollow, 7.0 mi southeast of Glen, and at river mile 17.2.

DRAINAGE AREA.--2,655 mi².

PERIOD OF RECORD.--October 1997 to current year (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 4,850 ft (NGVD 29).

REMARKS.--Seasonal records good. Figures of discharge for seasons 1998-99 are the sum of river flow, Fred Bryan Ditch on left bank, and Upper and Lower Raffety Ditches on right bank. U.S. Geological Survey satellite telemeter at station. Several unpublished observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2005
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				402	558	2,190	1,750	263	190	337		
2				411	511	2,700	1,560	288	178	353		
3				411	478	2,850	1,350	312	170	388		
4				448	468	2,730	1,200	301	166	420		
5				448	496	2,380	1,090	290	168	420		
6				421	550	2,310	986	278	169	419		
7				412	629	2,530	896	271	167	417		
8				472	756	2,410	829	271	168	424		
9				557	937	2,290	796	266	170	440		
10				549	1,150	2,080	792	285	182	430		
11				488	1,650	1,870	794	308	192	432		
12				435	1,600	1,880	810	311	195	435		
13				410	1,380	2,340	783	331	198	452		
14				448	1,230	2,600	692	320	209	461		
15				449	1,190	2,350	623	306	207	454		
16				424	1,270	2,040	573	277	211	444		
17				436	1,880	2,170	518	260	252	429		
18				509	2,270	2,690	487	236	286	420		
19				545	2,380	2,580	446	228	306	416		
20				534	3,030	2,290	408	217	313	408		
21				498	3,200	2,100	381	203	313	404		
22				466	3,180	2,150	354	191	301	403		
23				467	3,010	2,290	341	174	306	395		
24				493	2,880	2,030	332	170	342	395		
25				528	2,490	1,820	339	177	342	396		
26				575	2,130	1,790	355	179	352	391		
27				635	1,910	1,890	332	177	361	386		
28				658	1,810	1,990	304	175	362	403		
29				619	1,810	2,020	286	171	358	427		
30				577	1,810	1,900	277	176	346	437		
31				---	1,760	---	262	191	---	443		
TOTAL				14,725	50,403	67,260	20,946	7,603	7,480	12,879		
MEAN				491	1,626	2,242	676	245	249	415		
MAX				658	3,200	2,850	1,750	331	362	461		
MIN				402	468	1,790	262	170	166	337		
AC-FT				29,210	99,970	133,400	41,550	15,080	14,840	25,550		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1998 - 2005

MEAN	1,125	2,058	2,665	859	302	293	452
MAX	1,572	3,829	4,432	2,138	565	398	708
(WY)	(2003)	(1998)	(1999)	(1998)	(1998)	(2004)	(1998)
MIN	491	1,133	1,274	399	149	207	318
(WY)	(2005)	(2004)	(2004)	(2000)	(2000)	(2001)	(2004)

SUMMARY STATISTICS

HIGHEST DAILY MEAN
LOWEST DAILY MEAN
MAXIMUM PEAK FLOW
MAXIMUM PEAK STAGE
INSTANTANEOUS LOW FLOW

FOR 2005 SEASON

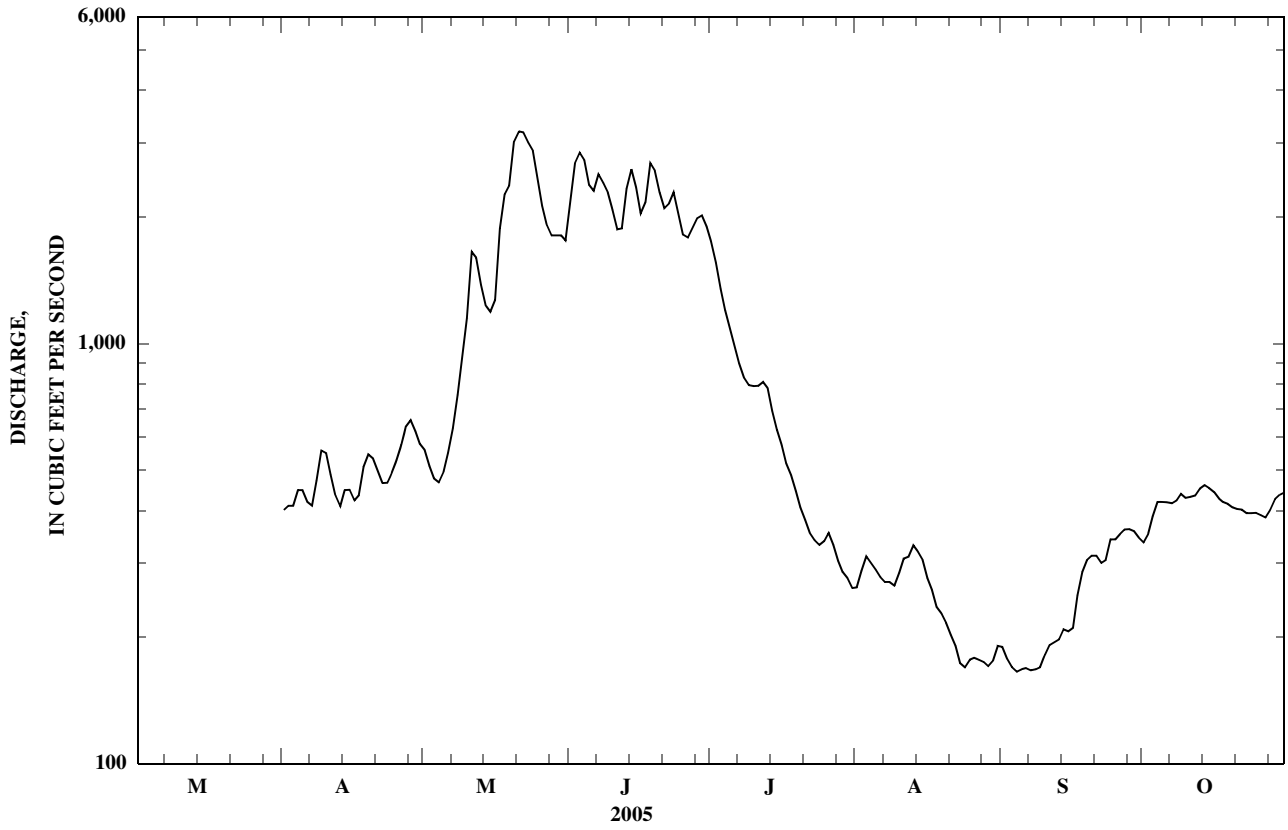
3,200 May 21
166 Sep 4
3,420 May 21
4.48 May 21
a150 Aug 29

SEASONS 1998 - 2005

10,000 Jun 1, 2003
122 Aug 29, 2000
10,500 May 31, 2003
7.05 May 31, 2003
119 Aug 28, 2000

a--Gage height, 1.98 ft.

06026210 BIG HOLE RIVER NEAR GLEN, MT—Continued



06026500 JEFFERSON RIVER NEAR TWIN BRIDGES, MT

LOCATION.--Lat 45°36'45", long 112°19'47" (NAD 27), in SE¹/₄ SE¹/₄ SW¹/₄ sec.34, T.2 S., R.6 W., Madison County, Hydrologic Unit 10020005, on left bank 0.4 mi upstream from Hells Canyon Creek, 4.8 mi north of Twin Bridges, and at river mile 2,399.7.

DRAINAGE AREA.--7,632 mi².

PERIOD OF RECORD.--August 1940 to September 1943, October 1957 to September 1972, May 1994 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,560 ft (NGVD 29). August 1940 to September 1943, nonrecording gage at site 500 ft downstream at different elevation. October 1957 to June 3, 1972, water-stage recorder at site 250 ft downstream and June 4 to September 30, 1972, nonrecording gage 6.5 mi downstream at different elevations.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by Clark Canyon, Lima and Ruby River Reservoirs. Diversion for irrigation of about 310,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several unpublished observations of specific conductance and water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	828	942	660	e500	729	647	670	797	2,430	2,430	436	375
2	816	911	717	e500	712	647	672	751	3,250	2,180	461	391
3	811	923	746	e500	725	640	676	699	3,440	1,950	489	393
4	800	950	800	e500	731	638	694	671	3,340	1,750	442	375
5	800	924	813	e500	714	636	707	656	2,950	1,560	421	390
6	783	910	786	e500	672	642	683	689	2,830	1,380	402	392
7	789	926	790	e550	707	644	657	704	3,290	1,230	392	390
8	788	936	787	e550	670	651	664	878	3,280	1,110	404	380
9	787	934	813	e550	673	672	735	1,150	3,230	1,100	403	357
10	775	942	812	e600	653	716	752	1,460	3,080	1,190	403	365
11	772	938	880	e600	641	754	733	1,970	2,790	1,150	421	439
12	779	922	902	e600	651	802	695	2,200	2,770	1,130	412	453
13	784	905	858	e550	649	818	645	1,930	3,240	1,070	444	459
14	793	869	835	e500	642	795	661	1,660	3,660	967	456	495
15	801	842	890	e450	598	757	707	1,520	3,540	858	443	493
16	804	844	831	e500	606	728	702	1,550	3,080	752	441	492
17	810	848	819	e600	608	705	703	2,030	3,160	659	430	507
18	832	871	804	e650	620	683	778	2,780	3,760	616	422	559
19	859	861	832	e700	641	654	869	2,940	3,850	562	402	573
20	889	840	818	e800	635	677	908	3,480	3,470	520	404	571
21	923	789	742	e900	642	697	879	3,780	3,090	493	385	579
22	924	738	776	e1,000	628	715	829	3,990	3,050	473	368	599
23	916	758	572	e900	622	692	803	3,790	3,310	459	344	611
24	912	843	549	e850	630	695	794	3,680	2,990	433	325	701
25	904	893	676	e800	637	627	798	3,250	2,660	435	313	738
26	889	928	726	e800	645	647	818	2,690	2,590	471	323	746
27	905	861	e650	783	641	665	860	2,300	2,740	485	326	753
28	914	767	e600	773	637	689	896	2,020	2,760	463	315	743
29	988	677	e600	750	---	732	865	1,920	2,850	451	319	735
30	982	636	e600	742	---	763	830	1,940	2,680	443	317	719
31	972	---	e550	719	---	723	---	1,860	---	434	367	---
TOTAL	26,329	25,928	23,234	20,217	18,359	21,551	22,683	61,735	93,160	29,204	12,230	15,773
MEAN	849	864	749	652	656	695	756	1,991	3,105	942	395	526
MAX	988	950	902	1,000	731	818	908	3,990	3,850	2,430	489	753
MIN	772	636	549	450	598	627	645	656	2,430	433	313	357
AC-FT	52,220	51,430	46,080	40,100	36,420	42,750	44,990	122,500	184,800	57,930	24,260	31,290

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2005, BY WATER YEAR (WY)*

MEAN	1,284	1,420	1,207	1,025	1,097	1,265	2,236	3,640	5,432	1,924	804	964
MAX	2,052	2,025	1,864	1,424	1,690	2,092	4,634	7,025	9,816	4,477	1,700	2,114
(WY)	(1966)	(1966)	(1996)	(1996)	(1971)	(1972)	(1943)	(1997)	(1997)	(1995)	(1995)	(1965)
MIN	632	775	708	506	627	622	756	1,303	1,296	527	208	288
(WY)	(2004)	(2004)	(2002)	(2004)	(2002)	(2002)	(2005)	(2004)	(1994)	(1966)	(1961)	(1994)

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SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1940 - 2005*	
ANNUAL TOTAL	318,818		370,403			
ANNUAL MEAN	871		1,015		1,884	
HIGHEST ANNUAL MEAN					2,824	
LOWEST ANNUAL MEAN					845	
HIGHEST DAILY MEAN	2,520	Jun 12	3,990	May 22	14,900	Jun 9, 1997
LOWEST DAILY MEAN	235	Aug 17	313	Aug 25	165	Aug 19, 1961
ANNUAL SEVEN-DAY MINIMUM	252	Aug 12	320	Aug 24	176	Aug 16, 1961
MAXIMUM PEAK FLOW			a4,100	May 22	d16,500	Jun 10, 1964
MAXIMUM PEAK STAGE			b8.78	Jan 2	12.60	Jun 8, 1995
INSTANTANEOUS LOW FLOW			c291	Aug 30	f82	Aug 17, 1966
ANNUAL RUNOFF (AC-FT)	632,400		734,700		1,365,000	
10 PERCENT EXCEEDS	1,400		2,670		4,020	
50 PERCENT EXCEEDS	794		742		1,280	
90 PERCENT EXCEEDS	499		436		658	

*--During periods of operation (August 1940 to September 1943, October 1957 to September 1972, May 1994 to current year).

a--Gage height, 6.96 ft.

b--Backwater from ice.

c--Gage height, 3.11 ft.

d--Gage height, 9.04 ft, site and datum then in use.

e--Estimated.

f--Gage height, 1.61 ft, site and datum then in use.

