

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

LOCATION.--Lat 48°47'43", long 113°40'45" (NAD 27), in NE¼ sec.15, T.35 N., R.16 W., Glacier County, Hydrologic Unit 10010002, Glacier National Park, on left bank .7 mi upstream of inlet to Swiftcurrent Lake at Many Glacier, and 12 mi southwest of Babb.

DRAINAGE AREA.--14.5 mi².

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 records good. No regulation or diversion upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				53	111	155	205	42	61	30		
2				47	136	152	196	39	55	28		
3				44	284	170	170	39	51	26		
4				51	294	204	149	38	46	25		
5				64	245	252	131	37	41	23		
6				74	179	301	120	34	37	21		
7				86	151	280	141	43	36	22		
8				94	167	231	145	41	34	21		
9				83	172	176	116	35	31	22		
10				75	148	146	105	32	29	22		
11				74	132	176	104	30	32	21		
12				84	110	200	94	28	39	19		
13				107	95	186	87	27	49	20		
14				126	84	182	84	27	62	20		
15				114	79	157	92	27	87	24		
16				99	78	130	95	27	97	32		
17				82	83	127	93	29	95	43		
18				73	98	117	91	51	85	47		
19				67	128	113	91	44	76	44		
20				62	156	115	99	39	70	42		
21				60	164	121	87	70	63	43		
22				60	146	148	71	61	55	42		
23				68	124	165	60	79	50	40		
24				81	106	179	54	143	47	37		
25				86	97	179	50	243	44	31		
26				96	128	193	50	239	43	31		
27				137	200	173	50	158	41	30		
28				197	244	153	45	118	37	29		
29				159	250	158	42	98	34	28		
30				122	211	172	39	81	33	29		
31				---	174	---	40	69	---	30		
TOTAL				2,625	4,774	5,211	2,996	2,068	1,560	922		
MEAN				87.5	154	174	96.6	66.7	52.0	29.7		
MAX				197	294	301	205	243	97	47		
MIN				44	78	113	39	27	29	19		
AC-FT				5,210	9,470	10,340	5,940	4,100	3,090	1,830		

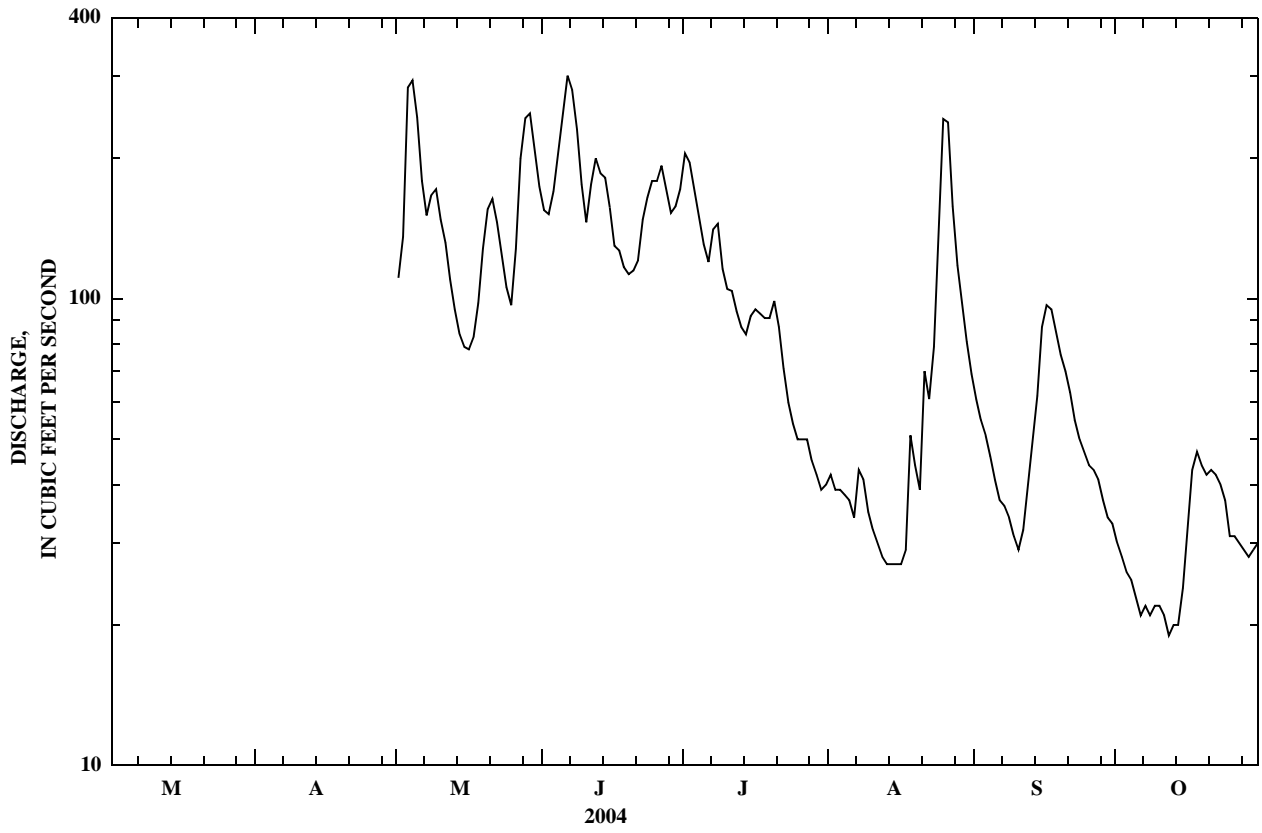
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 2003 - 2004

MEAN	87.5	164	185	82.5	44.7	31.5	23.1
MAX	87.5	175	196	96.6	66.7	52.0	29.7
(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 2004 SEASON		FOR SEASONS 2003 - 2004	
HIGHEST DAILY MEAN	301	Jun 6	700	May 26, 2003
LOWEST DAILY MEAN	19	Oct 12	6.6	Oct 8, 2003
MAXIMUM PEAK FLOW	346	May 3	a900	May 26, 2003
MAXIMUM PEAK STAGE	2.61	May 3	a3.76	May 26, 2003

a--About, from highwater mark.



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 MT-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 observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	61	34	18	13	17	92	220	332	442	105	171
2	22	58	32	19	14	16	86	242	310	456	103	153
3	21	56	35	18	14	14	79	465	340	411	99	136
4	20	51	35	17	17	15	82	588	416	361	95	121
5	20	46	32	15	42	14	105	519	530	329	92	108
6	20	41	41	14	53	13	126	400	642	302	87	99
7	19	39	45	14	37	11	147	319	622	321	103	94
8	17	37	40	15	27	18	170	337	506	345	114	88
9	19	36	37	17	22	40	162	360	383	287	102	81
10	18	35	31	21	19	70	143	322	308	251	88	77
11	18	40	29	22	18	70	136	286	336	243	80	81
12	20	39	29	20	16	62	148	234	438	223	76	88
13	22	32	30	18	15	57	188	195	426	203	74	109
14	23	30	32	18	15	49	238	170	415	193	74	142
15	22	29	31	17	14	43	236	153	370	203	73	224
16	27	28	24	17	14	38	207	145	298	216	75	265
17	25	30	25	15	13	35	173	151	277	214	80	259
18	19	39	28	15	16	38	147	175	258	208	113	224
19	23	90	26	15	17	40	135	230	241	207	117	197
20	32	90	24	15	15	43	122	291	239	231	109	177
21	85	70	24	14	14	40	112	324	244	218	145	154
22	143	57	22	13	14	39	107	308	295	184	150	130
23	131	48	22	13	13	42	116	262	349	154	166	117
24	101	48	21	15	13	52	133	220	416	137	277	113
25	82	46	21	15	13	59	147	195	423	126	550	109
26	68	45	22	17	15	61	161	228	462	122	712	106
27	56	40	21	16	17	58	218	394	423	123	471	101
28	62	33	20	13	18	55	363	513	360	118	330	92
29	78	37	21	10	17	51	344	552	352	108	274	85
30	76	37	18	11	---	54	262	480	368	101	232	81
31	67	---	16	12	---	75	---	388	---	100	195	---
TOTAL	1,380	1,368	868	489	545	1,289	4,885	9,666	11,379	7,137	5,361	3,982
MEAN	44.5	45.6	28.0	15.8	18.8	41.6	163	312	379	230	173	133
MAX	143	90	45	22	53	75	363	588	642	456	712	265
MIN	17	28	16	10	13	11	79	145	239	100	73	77
AC-FT	2,740	2,710	1,720	970	1,080	2,560	9,690	19,170	22,570	14,160	10,630	7,900
CFSM	1.44	1.48	0.91	0.51	0.61	1.35	5.27	10.1	12.3	7.45	5.60	4.30
IN.	1.66	1.65	1.04	0.59	0.66	1.55	5.88	11.64	13.70	8.59	6.45	4.79

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 2004, BY WATER YEAR (WY)*

	83.5	70.7	36.7	32.4	26.7	30.4	106	376	488	260	117	86.2
MEAN	83.5	70.7	36.7	32.4	26.7	30.4	106	376	488	260	117	86.2
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 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1912 - 2004**	
ANNUAL TOTAL	43,560		48,349			
ANNUAL MEAN	119		132		141	
HIGHEST ANNUAL MEAN					184	
LOWEST ANNUAL MEAN					86.4	
HIGHEST DAILY MEAN	1,120	May 26	712	Aug 26	4,130	Jun 8, 1964
LOWEST DAILY MEAN	16	Dec 31	10	Jan 29	a0.00	Nov 14, 1976
ANNUAL SEVEN-DAY MINIMUM	18	Jan 18	12	Jan 28	4.6	Nov 13, 1976
MAXIMUM PEAK FLOW			773	Aug 26	b6,700	Jun 8, 1964
MAXIMUM PEAK STAGE			3.98	Aug 26	c10.00	Jun 8, 1964
ANNUAL RUNOFF (AC-FT)	86,400		95,900		101,800	
ANNUAL RUNOFF (CFSM)	3.86		4.28		4.55	
ANNUAL RUNOFF (INCHES)	52.44		58.21		61.79	
10 PERCENT EXCEEDS	308		346		387	
50 PERCENT EXCEEDS	51		80		65	
90 PERCENT EXCEEDS	21		15		17	

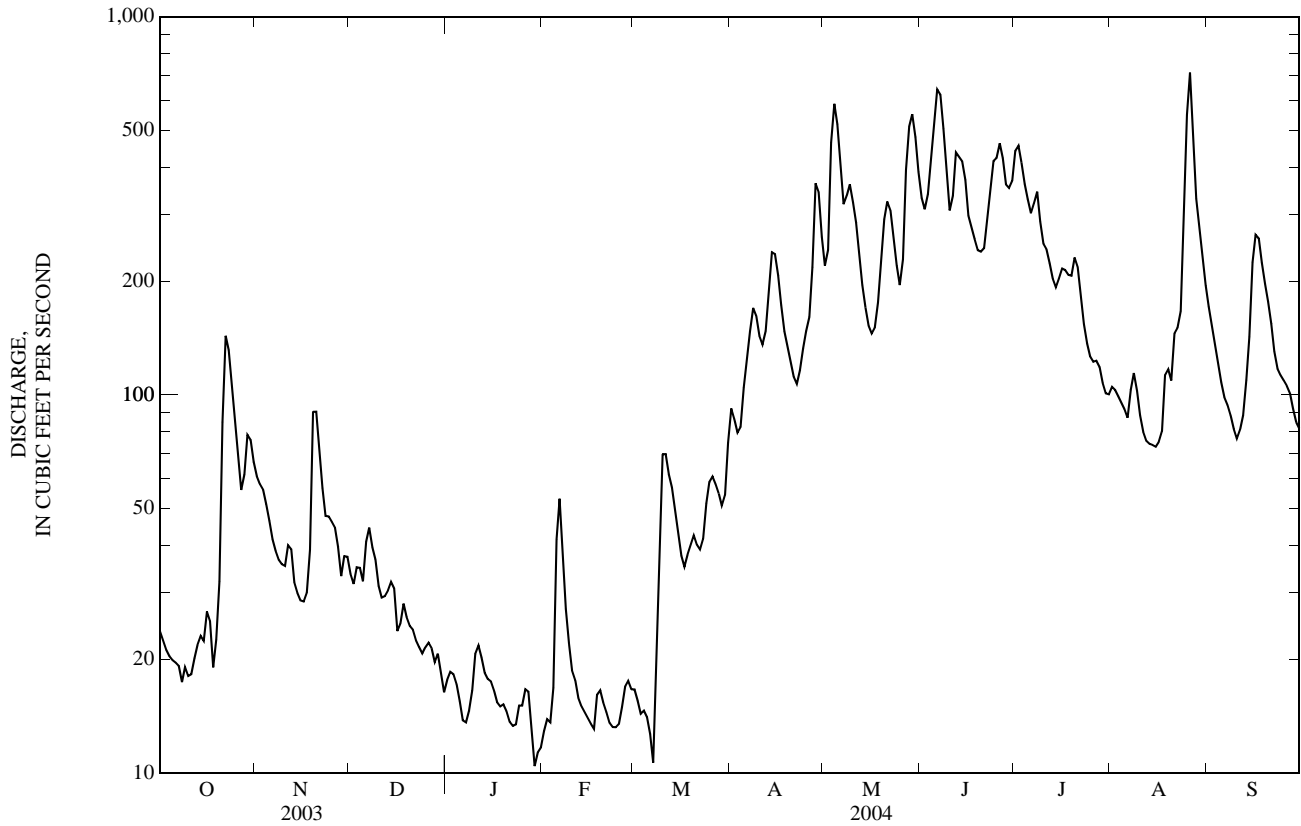
*--Only for complete months of operation (records incomplete most years prior to 1959)

**--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.



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

LOCATION.--Lat 48°49'42", long 113°31'16" (NAD 27), in SE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ 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, 50,740 acre-ft, July 28, gage height, 79.11 ft; minimum, 4,780 acre-ft, Oct. 1, gage height, 36.72 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, SEPTEMBER 2003 TO SEPTEMBER 2004

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
September 30	36.72	4,780	--
October 31	37.18	5,120	+340
November 30	42.70	9,460	+4,340
December 31	45.66	12,000	+2,540
Calendar year 2003			+3,630
January 31	47.46	13,620	+1,620
February 29	49.03	15,080	+1,460
March 31	52.80	18,720	+3,640
April 30	39.69	7,030	-11,690
May 31	55.25	21,210	+14,180
June 30	70.40	38,570	+17,360
July 31	77.60	48,510	+9,940
August 31	61.22	27,670	-20,840
September 30	49.56	15,570	-12,100
Water year 2004	--	--	+10,790

05016000 SWIFTCURRENT CREEK AT SHERBURNE, MT

LOCATION.--Lat 48°49'49", long 113°30'59" (NAD 27), in NW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.36, T.36 N., R.15 W., Glacier County, Hydrologic Unit 10010002, Blackfeet Indian Reservation, on left bank 1,200 ft downstream from outlet of Lake Sherburne Dam at Sherburne and 4.2 mi southwest of Babb.

DRAINAGE AREA.--64.6 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1912 to November 1915 (no winter records), March 1916 to October 1923, May 1924 to September 1981 (no winter records), March 1984 to October 2004 (seasonal records only), (discontinued). Monthly discharge only for some periods, published in WSP 1308, 1728. Published as "at Sherburne Lake" 1912-14.

REVISED RECORDS.--WSP 1388: Drainage area. WSP 1508: 1935.

GAGE.--Water-stage recorder. Elevation of gage is 4,730.26 ft (NGVD 29). Prior to Aug. 10, 1920, nonrecording gages at two sites within 1,000 ft of present site at different elevations. Aug. 10, 1920, to May 17, 1921, nonrecording gage at present site and May 18, 1921, to Sept. 30, 1975, water-stage recorder at present site, all at elevation 9.45 ft lower.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulated by Lake Sherburne (see preceding page). Bureau of Reclamation satellite telemeter at station.

AVERAGE DISCHARGE.--7 years (1916-23), 199 ft³/s, 144,200 acre-ft/yr, unadjusted.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e3.5	167	401	244	45	535	518	e1.0		
2			e3.5	405	400	246	44	533	514	e1.0		
3			e3.5	607	377	247	45	553	509	e1.0		
4			e3.4	631	296	249	45	569	506	e1.0		
5			e3.4	561	262	214	45	621	503	e1.0		
6			e3.4	462	207	162	45	604	500	e1.0		
7			e3.2	433	170	58	46	599	496	e1.0		
8			e3.2	429	172	42	46	596	518	e1.0		
9			e3.2	424	174	65	46	591	556	e1.0		
10			e3.2	421	148	106	46	614	559	e1.0		
11			e3.0	418	74	127	46	626	570	e1.0		
12			e3.0	430	33	153	46	621	564	e1.0		
13			e3.0	442	33	213	109	616	661	e1.0		
14			e3.0	440	33	288	146	610	863	e1.0		
15			e3.0	439	34	323	226	606	867	e1.0		
16			e3.0	466	34	323	280	601	810	e1.0		
17			e3.0	484	118	239	280	596	743	e1.0		
18			e3.0	478	304	240	280	591	596	e1.0		
19			e3.0	473	448	297	280	587	464	e1.0		
20			e3.0	465	503	330	280	581	311	e1.0		
21			e3.0	458	478	330	280	579	154	e1.0		
22			e3.0	450	411	377	96	574	64	e1.0		
23			e3.0	444	329	413	48	570	e3.0	e1.0		
24			e14	438	159	361	48	581	e2.0	e1.0		
25			24	429	36	250	48	650	e1.5	e1.0		
26			36	422	36	209	48	762	e1.0	e1.0		
27			22	406	144	184	48	799	e1.0	e1.0		
28			17	399	235	122	208	666	e1.0	e1.0		
29			e34	402	238	60	463	507	e1.0	e1.0		
30			93	404	241	45	538	448	e1.0	e1.0		
31			78	---	243	---	537	493	---	e1.0		
TOTAL			390.5	13,327	6,771	6,517	4,788	18,479	11,857.5	31.0		
MEAN			12.6	444	218	217	154	596	395	1.00		
MAX			93	631	503	413	538	799	867	1.0		
MIN			3.0	167	33	42	44	448	1.0	1.0		
AC-FT			775	26,430	13,430	12,930	9,500	36,650	23,520	61		

STATISTICS OF MONTHLY MEAN DATA FOR 1924 - 2004 SEASONS*

MEAN	76.6	224	353	371	431	527	362	97.0	a169	b86.1
MAX	407	644	1,033	973	970	756	792	477	495	172
(WY)	(1981)	(1963)	(1972)	(1975)	(1982)	(1937)	(1975)	(1951)	(2000)	(2000)
MIN	0.00	0.54	11.0	17.9	134	76.1	0.16	0.01	4.91	.048
(WY)	(1954)	(1967)	(1987)	(1963)	(1956)	(1988)	(1992)	(1975)	(2002)	(1966)

SUMMARY STATISTICS

	FOR 2004 SEASON		SEASONS 1924 - 2004*	
HIGHEST DAILY MEAN	867	Sep 15	2,340	Jun 12, 1964
LOWEST DAILY MEAN	1.0	Many days	0.00	Oct 3, 1935
MAXIMUM PEAK FLOW	1,620	Aug 5	2,510	Jun 7, 1995
MAXIMUM PEAK STAGE	7.46	Aug 5	8.63	Jun 7, 1995

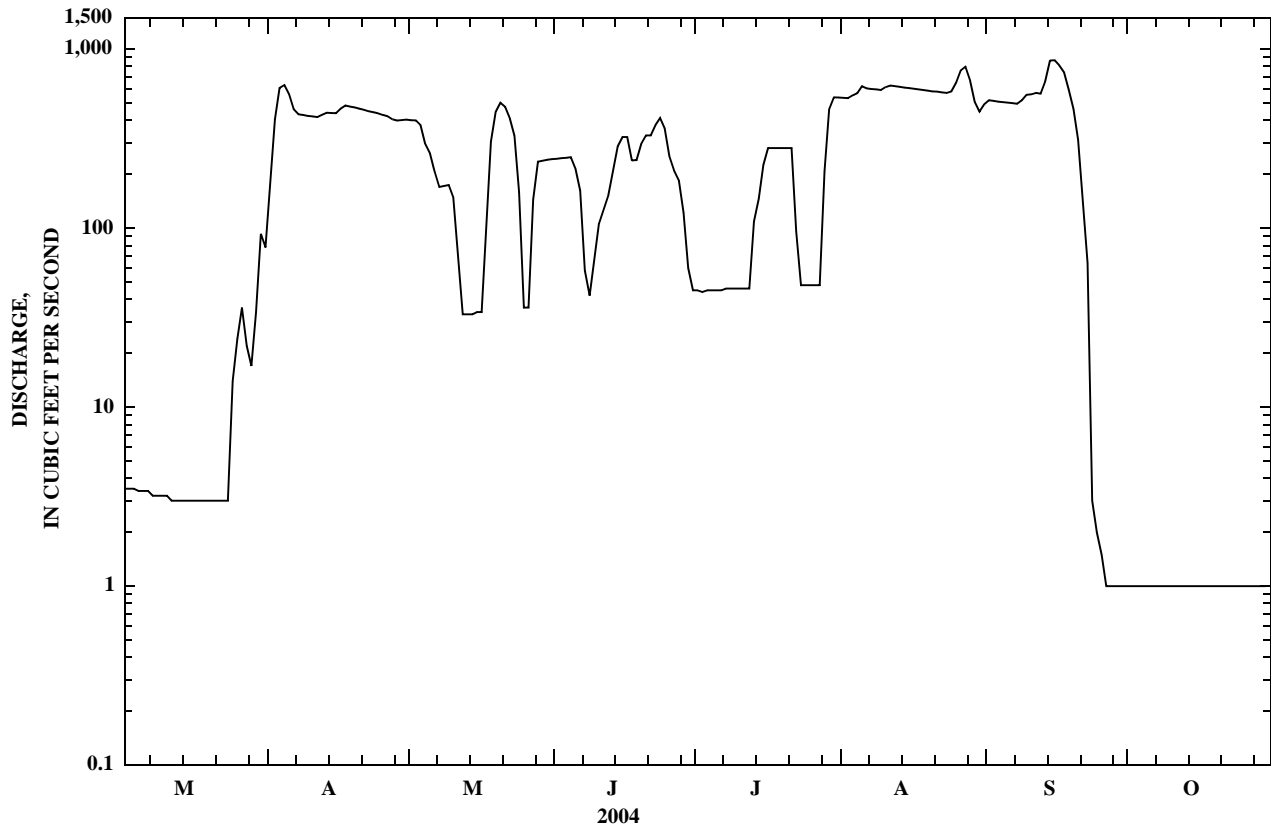
*--During periods of seasonal operation (May 1924 to September 1981, March 1984 to current year).

a--Based upon 4 years of record (water years 1966, 1998, 2000, and 2002).

b--Based upon 2 years of record (water years 1966 and 2000).

e--Estimated.

05016000 SWIFTCURRENT CREEK AT SHERBURNE, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--1990-92, 1996 to current year, (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
APR 01...	1140	78	77	0.0	2.0	96	3	.64
MAY 27...	1140	176	127	11.0	9.5	74	41	19
JUL 29...	0900	377	130	18.0	16.0	82	4	4.1
AUG 24...	1245	569	106	16.0	16.5	80	6	9.2

05017500 ST. MARY RIVER NEAR BABB, MT

LOCATION.--Lat 48°50'00", long 113°25'08" (NAD 27), in NW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ 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 observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	485	129	45	77	46	214	1,210	1,660	1,880	1,030	1,420
2	100	385	114	48	77	46	284	1,220	1,610	1,890	1,040	1,380
3	97	332	105	52	76	47	417	1,270	1,570	1,870	1,040	1,290
4	94	291	106	54	73	48	567	1,410	1,590	1,860	1,040	1,210
5	92	266	107	54	73	50	670	1,500	1,710	1,870	1,040	1,130
6	90	238	113	56	70	51	690	1,580	1,900	1,830	1,040	1,060
7	90	229	114	54	69	50	684	1,560	2,050	1,800	1,040	1,010
8	90	213	112	53	66	56	696	1,520	2,040	1,810	1,040	969
9	91	202	111	54	65	59	727	1,520	1,930	1,770	1,030	945
10	84	204	107	56	62	66	757	1,500	1,800	1,680	1,010	932
11	80	192	102	56	59	69	777	1,490	1,700	1,580	1,010	931
12	83	192	99	57	58	73	789	1,400	1,630	1,480	995	921
13	79	182	97	57	53	83	814	1,260	1,610	1,380	978	940
14	74	175	97	58	53	87	887	1,140	1,650	1,340	957	1,070
15	72	161	94	58	52	91	939	1,030	1,690	1,320	935	1,250
16	70	154	90	57	50	92	1,010	947	1,680	1,350	924	1,350
17	85	148	90	56	48	96	1,060	884	1,640	1,360	912	1,390
18	78	156	88	54	50	104	1,090	911	1,540	1,360	963	1,370
19	73	175	85	54	50	109	1,070	1,020	1,460	1,350	965	1,280
20	69	164	83	53	49	113	1,030	1,190	1,430	1,350	967	1,160
21	79	161	78	53	49	115	984	1,360	1,420	1,340	1,010	1,010
22	91	158	74	50	49	119	943	1,460	1,410	1,280	1,010	846
23	115	160	70	50	49	124	914	1,510	1,500	1,120	1,020	710
24	126	164	67	49	49	132	877	1,450	1,670	1,010	1,040	616
25	142	164	64	49	48	139	860	1,250	1,780	918	1,140	554
26	161	152	62	49	48	142	855	1,120	1,870	843	1,440	507
27	167	143	61	57	47	150	868	1,110	1,980	791	1,720	476
28	181	147	57	66	47	154	973	1,310	1,970	759	1,800	448
29	e400	156	53	65	46	160	1,080	1,510	1,900	839	1,700	427
30	e600	142	50	72	---	170	1,160	1,640	1,880	956	1,570	411
31	641	---	48	77	---	191	---	1,690	---	1,010	1,480	---
TOTAL	4,394	6,091	2,727	1,723	1,662	3,032	24,686	40,972	51,270	42,996	34,886	29,013
MEAN	142	203	88.0	55.6	57.3	97.8	823	1,322	1,709	1,387	1,125	967
MAX	641	485	129	77	77	191	1,160	1,690	2,050	1,890	1,800	1,420
MIN	69	142	48	45	46	46	214	884	1,410	759	912	411
AC-FT	8,720	12,080	5,410	3,420	3,300	6,010	48,960	81,270	101,700	85,280	69,200	57,550

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2004, BY WATER YEAR (WY)*

MEAN	373	255	147	109	103	157	486	1,630	2,446	1,596	1,017	717
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)

05017500 ST. MARY RIVER NEAR BABB, MT—Continued

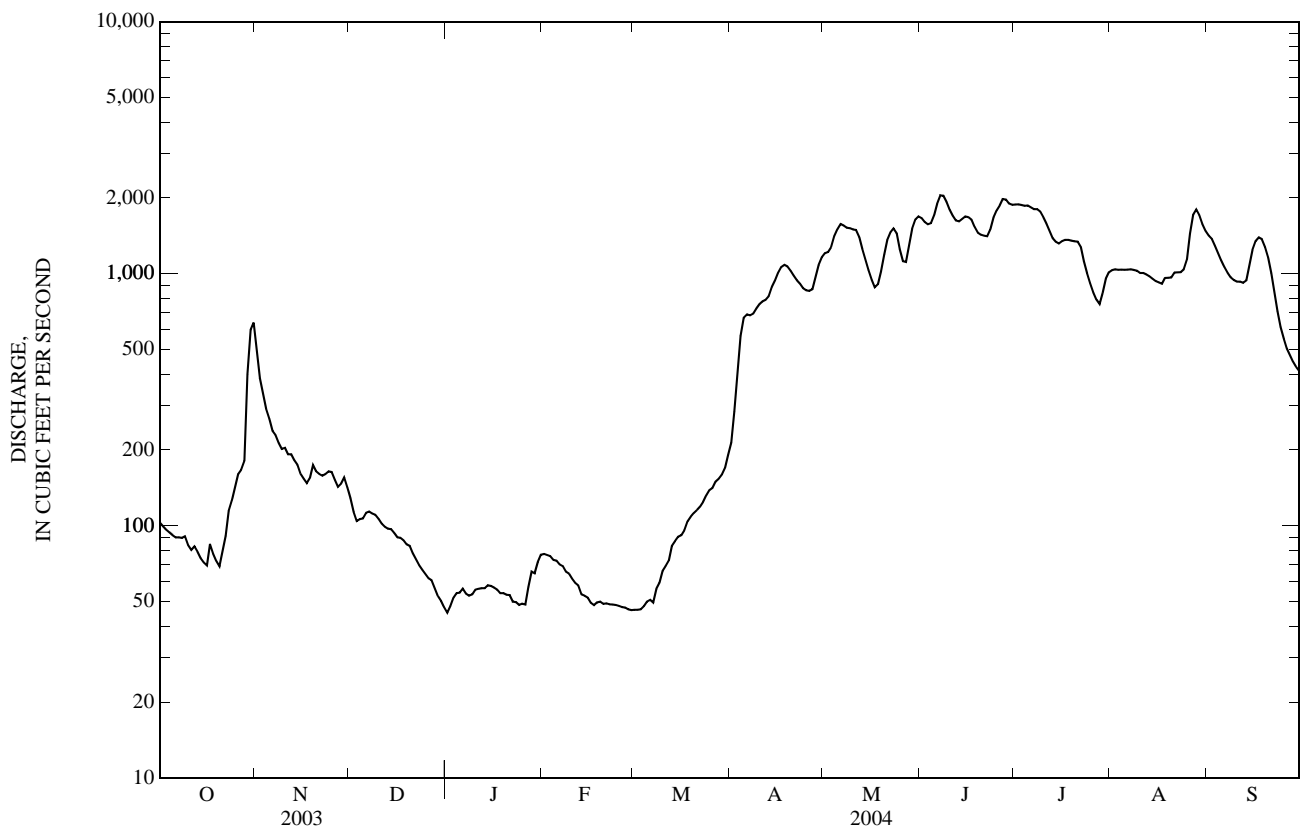
SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1951 - 2004*	
ANNUAL TOTAL	215,534		243,452			
ANNUAL MEAN	591		665		755	
HIGHEST ANNUAL MEAN					1,073	1951
LOWEST ANNUAL MEAN					442	2001
HIGHEST DAILY MEAN	2,950	May 31	2,050	Jun 7	15,600	Jun 9, 1964
LOWEST DAILY MEAN	48	Dec 31	45	Jan 1	27	Jan 3, 1953
ANNUAL SEVEN-DAY MINIMUM	56	Dec 25	47	Feb 26	28	Dec 30, 1952
MAXIMUM PEAK FLOW			2,080	Jun 7	a16,500	Jun 9, 1964
MAXIMUM PEAK STAGE			4.03	Jun 7	b12.96	Jun 9, 1964
INSTANTANEOUS LOW FLOW					27	Jan 3, 1953
ANNUAL RUNOFF (AC-FT)	427,500		482,900		547,300	
10 PERCENT EXCEEDS	1,430		1,610		1,870	
50 PERCENT EXCEEDS	225		414		357	
90 PERCENT EXCEEDS	78		53		73	

*--During periods of operation (1951 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.



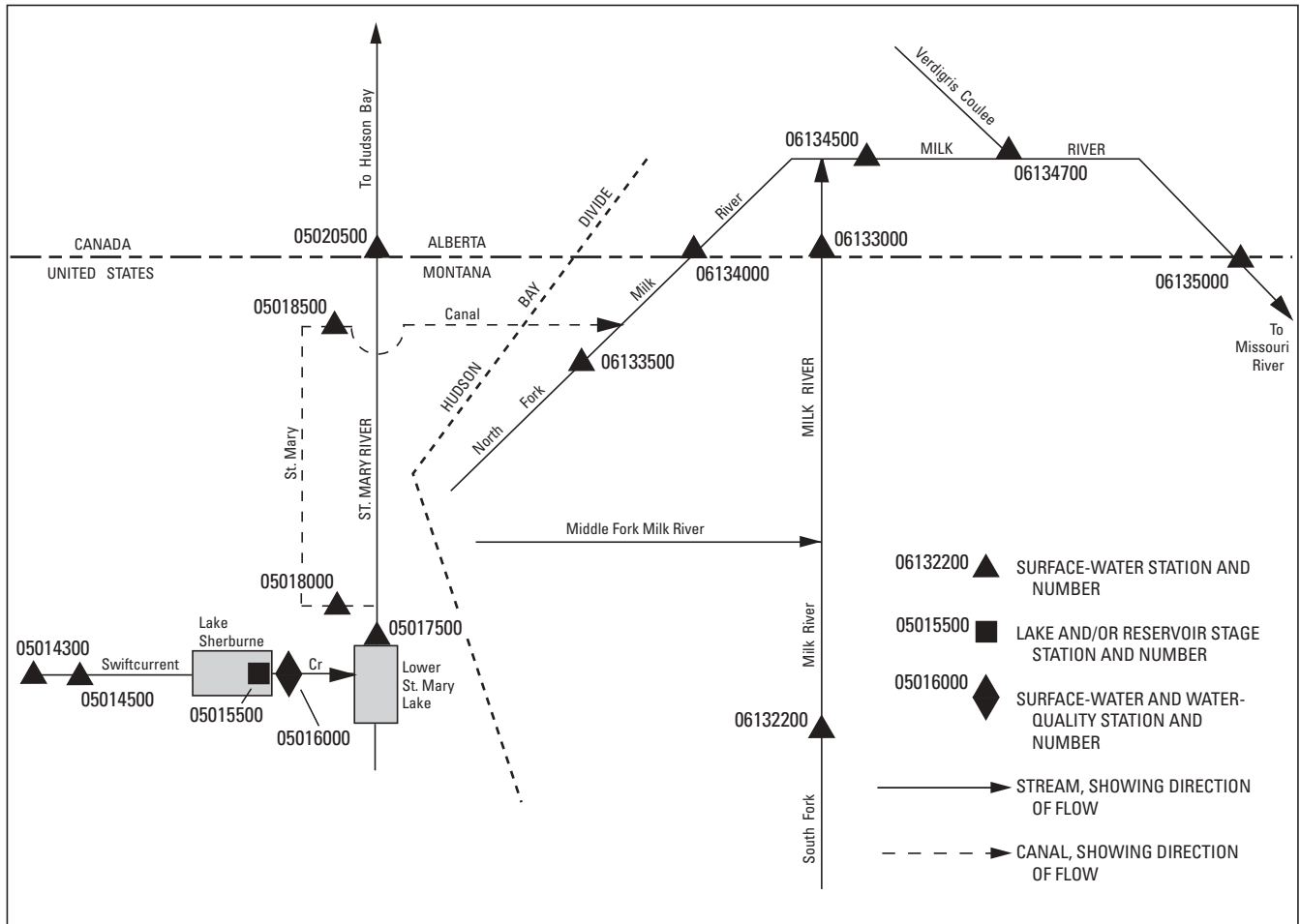


Figure 9. Schematic diagram showing diversion from St. Mary River in Part 5 to Milk River in Part 6.

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

LOCATION.--Lat 48°51'10", long 113°24'57" (NAD 27), in SE $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$ 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.

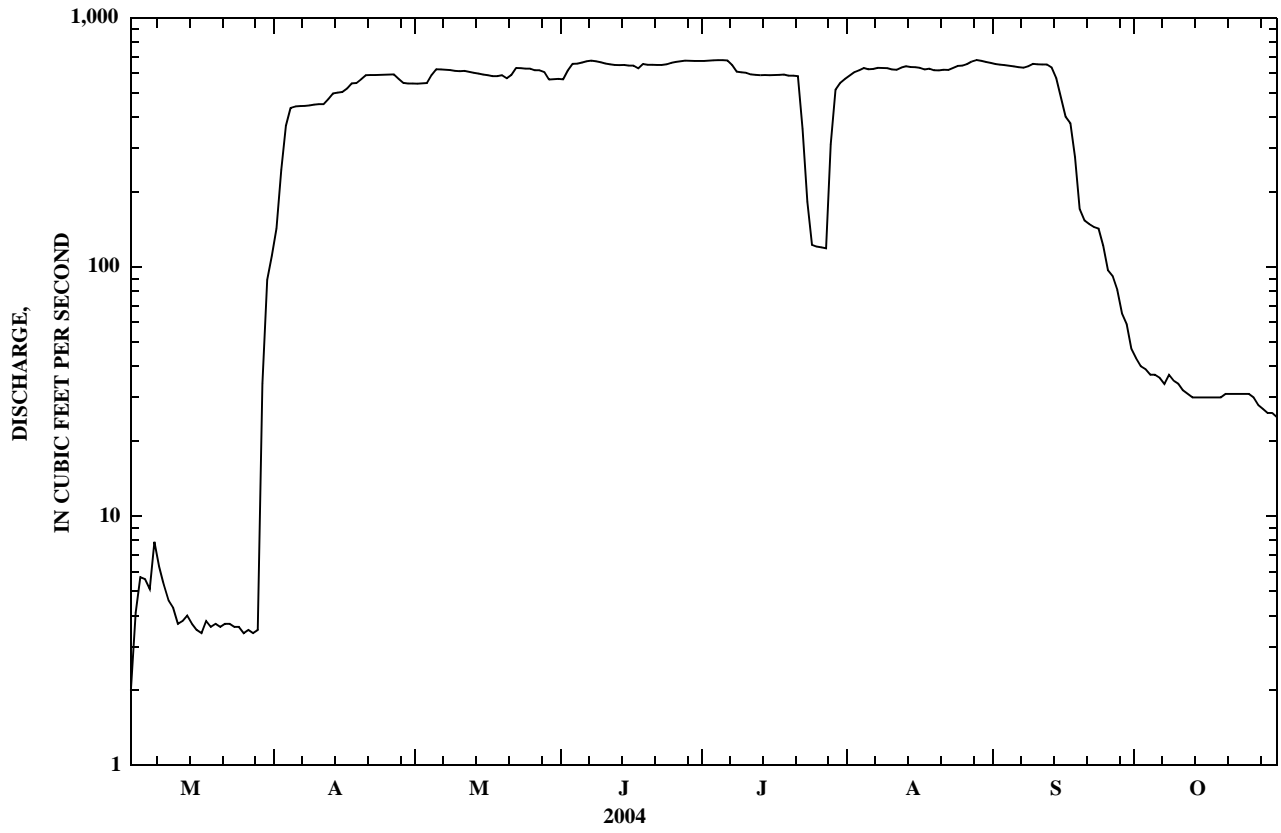
REMARKS.--Records good. Canal diverts water from left bank of St. Mary River near Babb and discharges into North Fork Milk River. This water flows in the natural channel of Milk River through Canada and then back into Montana where it is used for irrigation in Milk River Valley downstream from Havre, Montana. U.S. Geological Survey satellite telemeter at station. Several 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 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e5.4	143	545	567	672	588	654	43		
2			e5.4	246	547	615	674	606	650	40		
3			5.7	370	548	655	676	617	647	39		
4			5.6	436	590	656	677	630	643	37		
5			5.1	442	623	662	677	623	639	37		
6			7.9	443	622	670	675	624	635	36		
7			6.3	444	620	674	648	631	632	34		
8			5.3	446	618	670	609	630	640	37		
9			4.6	449	613	664	605	629	655	35		
10			4.3	451	612	657	603	622	652	34		
11			3.7	451	613	652	594	620	651	32		
12			3.8	472	608	648	591	633	651	31		
13			4.0	498	603	647	589	640	634	30		
14			3.7	502	598	648	590	636	572	30		
15			3.5	505	593	644	589	635	477	30		
16			3.4	521	589	644	590	631	402	30		
17			3.8	547	584	628	591	622	378	30		
18			3.6	548	584	654	593	626	276	30		
19			3.7	568	589	649	587	617	171	30		
20			3.6	589	573	649	587	616	154	31		
21			3.7	590	591	648	584	620	149	31		
22			3.7	590	630	648	359	619	145	31		
23			3.6	591	629	652	183	631	143	31		
24			3.6	592	626	660	123	642	122	31		
25			3.4	593	626	666	121	644	97	31		
26			3.5	594	617	670	120	654	92	30		
27			3.4	570	617	674	119	669	81	28		
28			3.5	549	607	673	311	678	65	27		
29			34	546	566	672	516	673	59	26		
30			89	546	568	672	549	666	47	26		
31			111	---	570	---	570	660	---	25		
TOTAL			354.8	14,832	18,519	19,588	15,972	19,632	11,813	993		
MEAN			11.4	494	597	653	515	633	394	32.0		
MAX			111	594	630	674	677	678	655	43		
MIN			3.4	143	545	567	119	588	47	25		
AC-FT			704	29,420	36,730	38,850	31,680	38,940	23,430	1,970		

e--Estimated.



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.

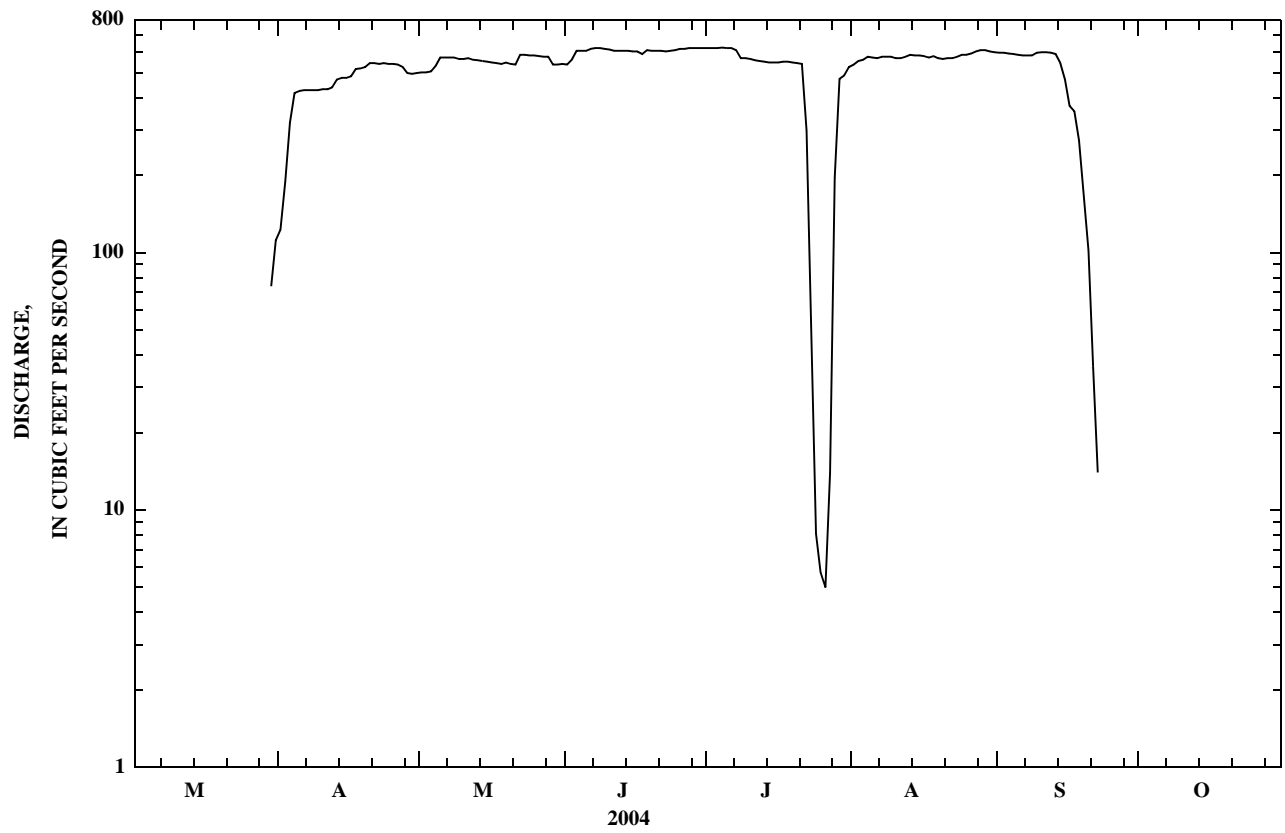
REMARKS.--Records excellent. Canal diverts water from left bank of St. Mary River near Babb and discharges into North Fork Milk River. This water flows in the natural channel of Milk River through Canada and then back into Montana where it is used for irrigation in Milk River Valley downstream from Havre, Mt. 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 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0.00	123	501	537	622	537	597	0.00		
2			0.00	189	501	561	622	554	597	0.00		
3			0.00	319	505	607	622	561	593	0.00		
4			0.00	417	530	607	625	576	590	0.00		
5			0.00	424	572	607	622	572	586	0.00		
6			0.00	427	572	618	622	569	583	0.00		
7			0.00	427	572	622	611	576	583	0.00		
8			0.00	427	572	622	569	576	583	0.00		
9			0.00	427	565	618	569	576	597	0.00		
10			0.00	431	565	614	565	569	600	0.00		
11			0.00	431	569	607	558	569	600	0.00		
12			0.00	438	561	607	554	576	597	0.00		
13			0.00	470	558	607	551	586	590	0.00		
14			0.00	477	554	607	547	583	544	0.00		
15			0.00	477	551	604	547	583	470	0.00		
16			0.00	484	547	604	547	579	371	0.00		
17			0.00	516	544	590	551	572	353	0.00		
18			0.00	519	540	611	551	579	272	0.00		
19			0.00	526	547	607	547	569	161	0.00		
20			0.00	544	540	607	544	565	102	0.00		
21			0.00	544	537	607	540	569	36	0.00		
22			0.00	540	586	604	298	569	14	0.00		
23			0.00	544	586	607	85	576	0.00	0.00		
24			0.00	540	583	611	8.1	586	0.00	0.00		
25			0.00	540	583	618	5.7	586	0.00	0.00		
26			0.00	537	579	618	5.0	593	0.00	0.00		
27			0.00	526	576	622	14	604	0.00	0.00		
28			0.00	498	576	622	195	611	0.00	0.00		
29			0.00	494	537	622	473	611	0.00	0.00		
30			74	498	537	622	487	604	0.00	0.00		
31			112	---	540	---	526	600	---	0.00		
TOTAL			186.00	13,754	17,186	18,217	14,182.8	17,936	10,019.00	0.00		
MEAN			6.00	458	554	607	458	579	334	0.00		
MAX			112	544	586	622	625	611	600	0.00		
MIN			0.00	123	501	537	5.0	537	0.00	0.00		
AC-FT			369	27,280	34,090	36,130	28,130	35,580	19,870	0.00		



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

LOCATION.--Lat 49°00'43", long 113°17'57" (NAD 27), in NE $\frac{1}{4}$ 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, MT.

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, MT, 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 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	144	515	e160	e60	e98	e72	123	836	1,370	1,600	536	906
2	140	405	e130	e58	e100	e68	133	864	1,280	1,570	524	856
3	135	342	e120	e62	e100	e70	107	958	1,220	1,530	506	775
4	134	310	e120	e62	e98	e68	156	1,110	1,270	1,520	485	695
5	131	287	e120	e68	e94	e70	276	1,190	1,430	1,520	481	626
6	129	277	e130	e68	e92	e70	314	1,250	1,630	1,480	475	560
7	138	265	e140	e74	e90	e72	320	1,160	1,780	1,460	475	512
8	132	249	e140	e72	e88	e74	333	1,130	1,730	1,470	468	467
9	139	247	e130	e70	e86	e90	365	1,140	1,580	1,420	467	424
10	133	222	e130	e72	e84	e100	388	1,110	1,440	1,310	452	412
11	125	e200	e120	e72	e82	e105	411	1,120	1,340	1,210	450	409
12	123	e195	e120	e72	e80	e110	413	1,010	1,300	1,080	430	413
13	125	e190	e120	e72	e78	e115	401	854	1,270	979	400	430
14	120	e190	e120	e74	e74	116	481	742	1,280	925	387	593
15	113	e180	e120	e76	e72	115	535	670	1,320	889	369	823
16	112	187	e110	e76	e72	116	592	585	1,300	913	363	1,020
17	130	178	e110	e74	e70	119	610	512	1,320	926	363	1,090
18	123	190	e110	e70	e68	125	632	528	1,140	918	439	1,170
19	118	242	e100	e70	e72	128	605	630	1,040	901	430	1,210
20	115	218	e100	e70	e70	124	554	835	1,010	896	428	1,160
21	117	178	e100	e68	e70	126	511	1,020	1,030	889	508	1,070
22	129	e175	e96	e66	e74	132	467	1,120	1,040	1,110	580	914
23	152	e180	e96	e64	e80	136	437	1,180	1,120	1,170	565	773
24	166	e190	e94	e64	e86	146	406	1,120	1,370	1,140	572	699
25	180	e190	e90	e64	e84	154	386	934	1,430	1,050	627	629
26	200	e180	e84	e66	e82	152	377	814	1,500	957	844	568
27	214	e180	e82	e74	e80	156	419	771	1,610	868	1,120	536
28	222	e170	e76	e80	e78	155	592	953	1,600	629	1,220	509
29	373	e180	e70	e90	e76	162	731	1,240	1,580	428	1,140	485
30	643	e190	e64	e86	---	102	798	1,370	1,590	504	1,040	472
31	693	---	e62	e94	---	106	---	1,410	---	533	969	---
TOTAL	5,648	6,902	3,364	2,208	2,378	3,454	12,873	30,166	40,920	33,795	18,113	21,206
MEAN	182	230	109	71.2	82.0	111	429	973	1,364	1,090	584	707
MAX	693	515	160	94	100	162	798	1,410	1,780	1,600	1,220	1,210
MIN	112	170	62	58	68	68	107	512	1,010	428	363	409
AC-FT	11,200	13,690	6,670	4,380	4,720	6,850	25,530	59,830	81,160	67,030	35,930	42,060

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1902 - 2004, BY WATER YEAR (WY)

MEAN	448	338	201	153	150	189	471	1,666	2,586	1,323	597	489
MAX	1,588	1,423	844	729	411	516	1,330	3,565	7,499	3,463	1,460	1,511
(WY)	(1952)	(2000)	(1996)	(1918)	(1934)	(1916)	(1934)	(1928)	(1908)	(1916)	(1909)	(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 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1902 - 2004	
ANNUAL TOTAL	164,493		181,027			
ANNUAL MEAN	451		495		719	
HIGHEST ANNUAL MEAN					1,353	1908
LOWEST ANNUAL MEAN					316	1941
HIGHEST DAILY MEAN	2,840	May 31	1,780	Jun 7	28,000	Jun 5, 1908
LOWEST DAILY MEAN	62	Dec 31	58	Jan 2	16	Nov 29, 1936
ANNUAL SEVEN-DAY MINIMUM	75	Jan 6	62	Dec 30	27	Nov 26, 1936
MAXIMUM PEAK FLOW			1,820	Jun 7	a40,000	Jun 5, 1908
MAXIMUM PEAK STAGE			5.61	Jun 7	b13.46	Jun 21, 1975
ANNUAL RUNOFF (AC-FT)	326,300		359,100		520,900	
10 PERCENT EXCEEDS	972		1,240		1,820	
50 PERCENT EXCEEDS	239		317		357	
90 PERCENT EXCEEDS	86		72		109	

SUMMARY STATISTICS	WATER YEARS 1902 - 1916*		WATER YEARS 1917 - 2004**	
ANNUAL MEAN	1,002		674	
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		488,200	
10 PERCENT EXCEEDS	2,470		1,680	
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.

